PEOPLE WHO BUILD

ADCO

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

RISK REGISTER

PROJECT NAME

QANTAS GROUP FLIGHT TRAINING CENTRE & CARPARK

PROJECT NO.

3418

VERSION CONTROL

Rev. No.	Issue Date	Approved By	Position	Details
01	13/11/19	S. Chamberlain	Snr Project Manager	
02	22/11/19	S Chamberlain	Snr Project Manager	
03	4/12/19	S Chamberlain	Snr Project Manager	Driver conduct guide added. Contamination Management Plan Appendix Added
04	10/12/19	S Chamberlain	Snr Project Manager	DPIE Comments Addressed including amendment to Driver Conduct Guide, amendment to CTMP section 4.2, amended Erosion and Sediment Control drawing, updated NVMP and Flood Emergency Plan.
05	16/12/19	S Chamberlain	Snr Project Manager	Completed Community consultation added to CNVMP, Compliance Matrix added as an appendix

ADCO PROJECT PERSONNEL CONSULTATION AND SIGN OFF

We, the undersigned, confirm that we have been consulted on the contents of this document, read and understood the contents of this document, and agree to implement the requirements of this Plan on this project site

Name	Position	Signature	Date

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INTRODUCTION

PURPOSE

ADCO Constructions (ADCO) implements an integrated safety and environmental management system on all projects. Our HSE (Health, Safety and Environment) Management System, documents the manner in which construction-related activities are required to be completed on ADCO project sites. This Management Plan provides information on how workplace health, safety and environment will be managed on this project to provide a safe, injury and incident free workplace for workers and the general community.

MANAGEMENT SYSTEM AND DOCUMENTATION

System documents which are referenced in this Plan or any associated Plan or Risk Register can be sourced by accessing the ADCO Constructions Intranet. (ADCO personnel only). Additional information can be obtained from the HSE Manager in each State.

ADCO PERSONNEL SIGN OFF

ADCO project personnel will be inducted into the requirements of this Plan and any associated Plan or Risk Register by the relevant Project Manager. Evidence of induction and discussion will be recorded within section ADCO Project Personnel Consultation and Sign off.

INFORMATION SUPPLY TO SUBCONTRACTORS

This Plan and any associated Plan or Risk Register (including any future revisions) will be supplied to subcontractors for review through the Aconex portal or another approved format.

PLAN REVIEW

This document will be reviewed on a periodic basis, not exceeding 6-monthly, to ensure its compliance to legislative and operational requirements of the. Project. Review and updates to this plan will initiate a change to the plan revision number and be recorded in the “Version Control’ section of the document. Superseded Plans will be marked as such and will be located within the Management Plan Folder located in the Site Office.

SITE FILING

A hard copy of this Plan and any associated Plan or Risk Register (including any future revisions) will be held on site

PLAN ARCHIVING

Copies of this and superseded Project Management Plans and associated Risk Registers will also be maintained (archived) by ADCO for a period of at least 24 months following an update completion.

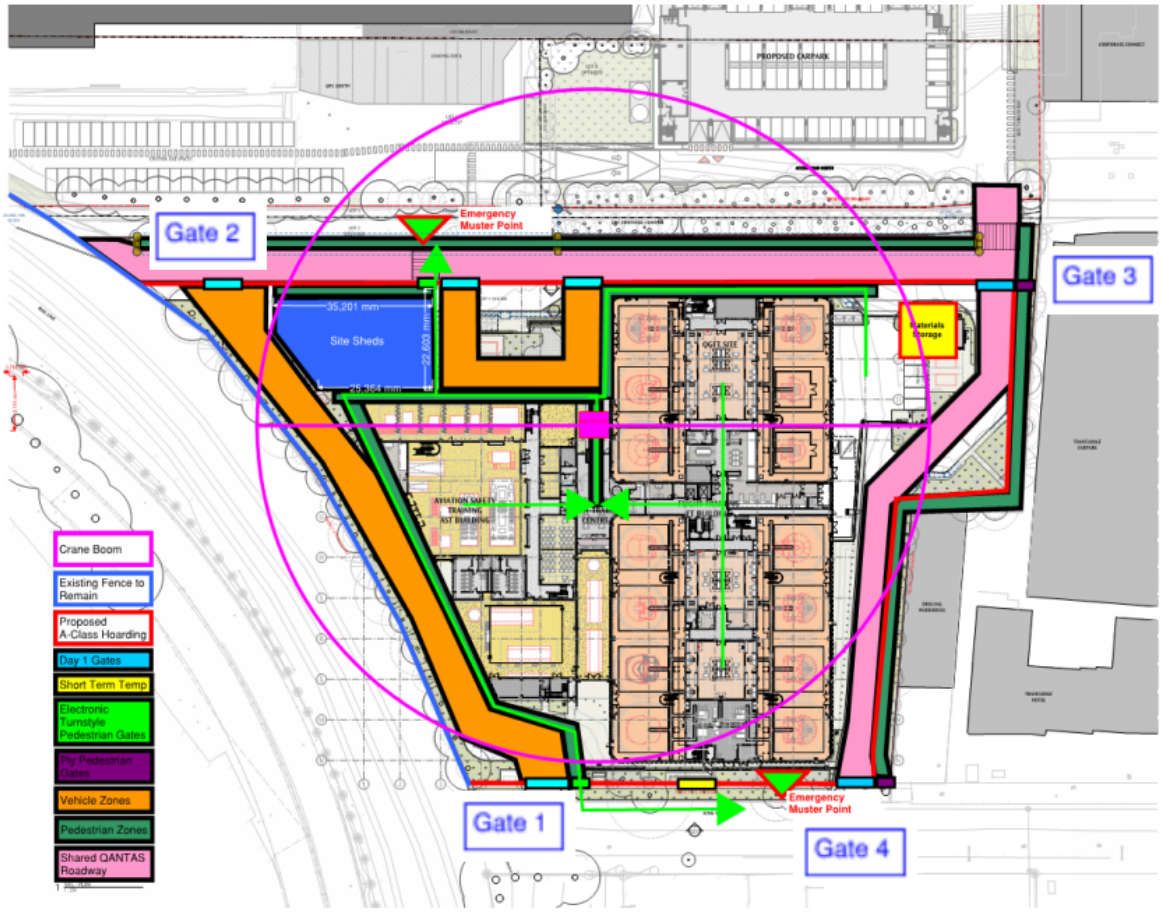
PRINCIPAL CONTRACTORS DETAILS

Name	State Address		ABN
ADCO Constructions Pty Ltd	Address	Level 2, 7-9 West Street	46 001 044 391
	Suburb	North Sydney	
	State	New South Wales	
	Phone	(02) 8437 5000	

PROJECT INFORMATION

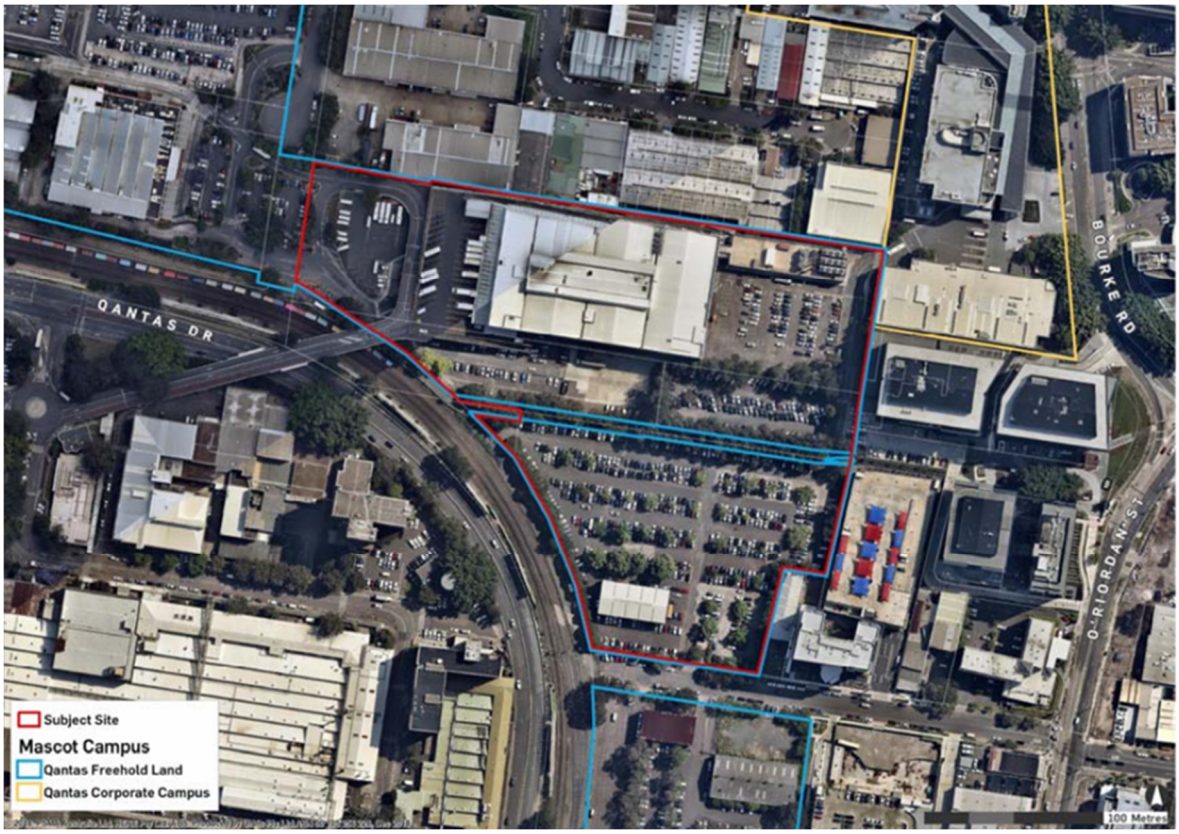
Project Description	The proposed flight training centre will occupy the southern portion of the site. It is a building that comprises 4 core elements as follows: • Emergency Procedures Hall • Flight Training Centre • Teaching and Office Spaces • Ancillary Spaces
Project Address	297 King Street, Mascot, NSW, 2020

SITE VIEW

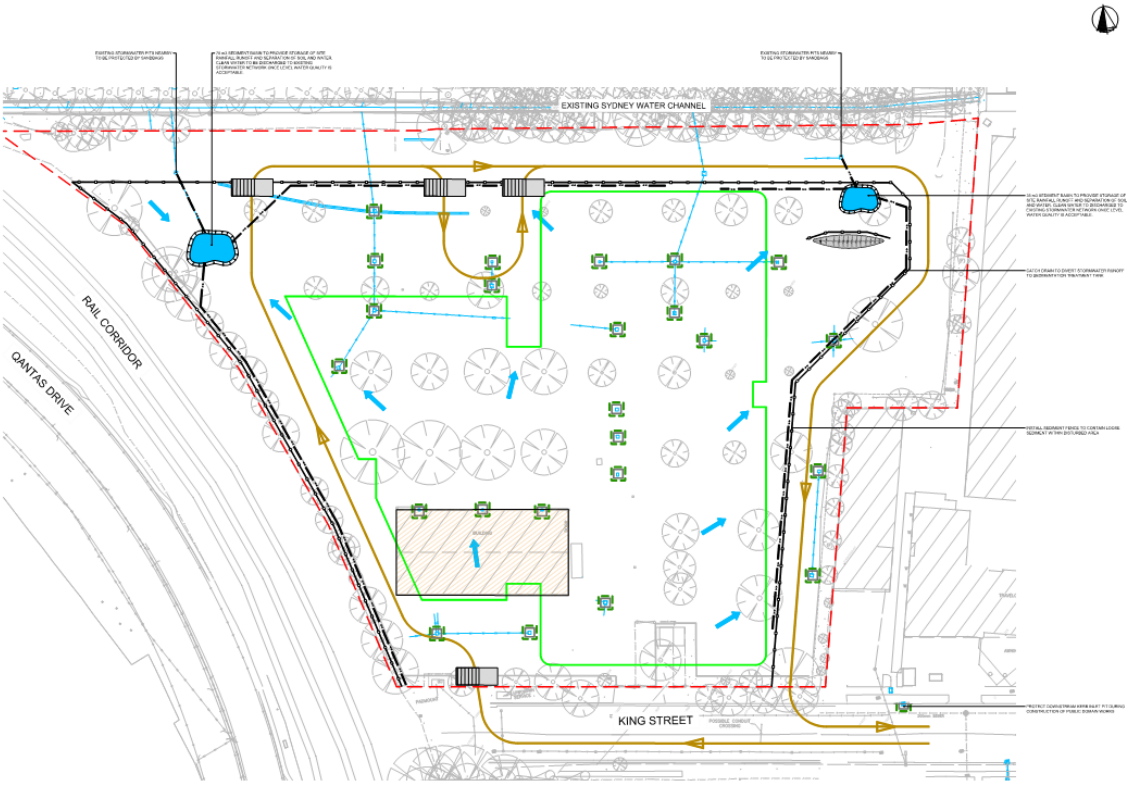


Site Establishment Plan is subject to change throughout project delivery. Any changes will be communicated to workers through project consultative forums.

AERIAL VIEW


QANTAS DR
BOURKE RD
O'RIORDAN ST
Subject Site
Mascot Campus
Qantas Freehold Land
Qantas Corporate Campus
100 Metres

EROSION AND SEDIMENT CONTROL



Site Establishment Plan is subject to change throughout project delivery. Any changes will be communicated to workers through project consultative forums. Refer to Appendix B for erosion and sediment controls .

SITE REQUIREMENTS

OBJECTIVES AND TARGETS

Environmental Management	On all projects, ADCO will manage construction activities and operations are conducted in a manner which, so far as is practicable, minimises any impact upon natural or heritage protected environments. In general, construction activities will seek to: Minimise land disturbance. Where required (e.g. DA conditions), restore the area to pre-disturbed conditions.

	Protect flora and fauna ecosystems. Implement controls to prevent the pollution of surface and ground water quality. Implement air quality control measures (e.g. dust suppression, contained work area). Implement waste control / management strategies including (where practicable) recycling, recovering and re-using resources from waste. Implement noise and vibration reduction strategies in accordance with our Construction Noise and Vibration Management Plan. Refer to Appendix C for a copy of this plan. Ensure compliance with all laws, regulations and rules pertaining to the environment that are applicable to the site.
Incident Management	Zero reportable incidents. All incidents are reported to ADCO site management immediately on occurrence. Incidents investigated within two hours of notification. Corrective actions are implemented according to the ADCO risk management time frame. Incident reports are completed within 7 days of occurrence. Incident reports are closed out within 28 days of occurrence. Preventative actions implemented across the project and noted in Incident Reports.
Waste Management	A form of waste minimisation, recycling and reuse program is established and promoted throughout the project period. Construction Demolition & Waste Management will be undertaken in accordance with our plan which can be found in Appendix D. Where waste minimisation is a requirement of project compliance (e.g. green star), waste strategies are included in the site induction program. Work activities are monitored for compliance through the Weekly Site Inspection.
Fauna and Flora Management	Where fauna and flora minimisation is a requirement of project compliance, work activities are completed with consideration and protection of the same. Management requirements are included in the site induction program. Work activities are monitored for compliance through the Weekly Site Inspection.

Air and Water Quality Management	Work activities are completed with nil to minimal impact on air and water quality in and around the site. Mitigation strategies (e.g. dust suppression, nominated trade waste wash off areas and refuelling locations) are identified for the project and per work activity (i.e. SWMS). Management requirements are included in the site induction. Work activities are monitored for compliance through the Weekly Site Inspection.
Cultural Heritage Management	Cultural Heritage requirements will be included in the site induction for all workers as part of the site induction to the project. Refer to Appendix G for heritage induction materials. Management requirements are included in the site induction program. Work activities are monitored for compliance through the Weekly Site Inspection.
Employee Health and Wellbeing	Work activities which may impact on employee health and well-being are identified at project design / commencement / construction stages. Information and management requirements are included in the site induction program. Work activities are monitored for compliance through the Weekly Site Inspection.

LEGAL AND OTHER REQUIREMENTS

COMPLIANCE

Risks, hazards and controls on this project will be implemented in accordance with legislation, Codes of Practice and Standards applicable in this State. Legislation, Codes of Practice and Standards which will be applied to this project are noted in the Environmental Risk Register.

IDENTIFICATION

The identification and assessment of environmental risks (aspects and impacts) that could eventuate during construction of the project will be completed by ADCO at any / all of the following project stages:

- Design
- Tender
- Project planning
- Project construction

Aspects and impacts will be assessed relative to:

- The potential to cause the discharge or release of pollutants to water, air, or land.

- The impact on flora, fauna or heritage.
- The potential to impact on the surrounding neighbourhood (e.g. noise, vibration).

The identification, assessment and risk mitigation of environmental risks is documented in the Risk Register (Environmental).

MONITORING

Actions taken to mitigate environmental risks must be reviewed for ongoing compliance by the Project Manager, Site Manager and HSE Adviser. Verification of monitoring should be noted on the Weekly Site Inspection form

RISK AND HAZARD MANAGEMENT

The Project Manager, Site Manager and HSE Adviser are responsible for ensuring that all site personnel comply with environmental risk mitigation requirements.

NOISE AND VIBRATION

ADCO will implement working hours that are compliant with legislative requirements. Refer to the Construction Noise and Vibration Management Plan which can be found as Appendix C of this plan. Generally, to ensure that plant and equipment used throughout construction is the quietest reasonably available ADCO Constructions will:

- Ensure that Plant is inspected at first entry to site and then at regular intervals. Refer to Procedure: Operating Plant (mobile plant).
- Where practicable, position Plant / equipment (e.g. start-up, parking, refuelling) away from noise-sensitive areas and security sensitive areas.
- Where practicable, avoid simultaneous operation of noisy Plant /or equipment.
- Ensure that Plant / equipment is serviced as per the manufacturer's instruction and maintained in good working order.
- Ensure that Plant / equipment is switched off when not in use.
- Where practicable, select alternative Plant or equipment to complete the activity.

The ADCO Project team will ensure compliance to noise management controls through:

- Carrying out works within approved Construction Hours.
- Regular inspections (documented in the Weekly Site Inspection) and completion of corrective actions where required.
- Inclusion of noise and vibration awareness and control requirements through consultative forums.
- The use of the daily Pre-Start Meeting to discuss awareness, control compliance and requirements.
- Ensuring, so far as is practicable, that personnel involved in or working near noise generating activities on the construction site, wear PPE applicable to the activity.
- Ensuring, that signage advising of the hazard/s are posted in visible locations around the work activity area.
- Where construction activities may result in noise / vibration impacts Facility, notification will be provided to the affected parties.

DUST

ADCO will prevent any nuisance occurring through the discharge of dust, dirt, water, fumes and the like on to persons or property. Strategies to be implemented to prevent dust generation and potential nuisance includes but is not limited to:

- Restrict vehicle movements to designated routes.
- Apply water sprays to earthwork locations as required during periods of dry weather, strong winds or dust generating activities or utilise a watercart.
- In the event that excavated materials will be stockpiled, onsite stockpile management practices will be carried out. These include water sprays and locating stockpiles away from public and residential properties as much is reasonably practicable.
- Minimise dust generating construction activities during periods of high winds or adverse weather.
- Cease relevant construction activities should they be found to be generating excessive dust until effective control measures are implemented.
- As required, implement regular sweeping (including road sweeping) and cleaning activities.
- Monitor and manage the incidence of dust deposition from construction activities and construction vehicles.
- Daily and Weekly visual monitoring of dust and dust management controls will be carried out by the Site team..
- Ensure that subcontract personnel adopt work methods to include dust minimisation practices.
- Implement corrective action in response to diminished air quality as a consequence of construction activities or vehicles.
- Restrict construction traffic to designated / sign posted traffic routes.
- No burning off will occur on the site.
- Site amenities areas will have nil dust generating activities that will require additional dust management strategies in place.
- Dust controls related to any asbestos management works are covered in the Construction Contamination Management Plan

WASTE

For details of Construction and Demolition Waste Management refer to the Demolition and Construction Waste Management Plan in Appendix D of this plan. In general, Waste categories / types on the project will consist of:

1. Solid Waste;
2. Liquid Waste; and
3. Food waste.

Waste management of the project will consist of co-mingled bins to collect waste material. All waste (excluding hazardous waste) will be collected in a single waste bins onsite and will be separated into different waste streams at an offsite recycling facility. The project will manage waste by:

- Designating waste storage areas.
- Waste storage areas will be located in accessible areas for both vehicles and personnel to allow for easy access for collection and transport.
- Waste bins will be maintained in good condition to prevent leaks and spills.
- Defective containers will not be used for waste storage or transport.
- Hazardous waste will be contained and separated from other waste categories.
- If applicable – Material contaminated by spills i.e. fuel, oil, lubricants etc. will be stored in sealed containers and disposed of at an approved facility.
- Generate a Waste Management Report detailing percentage waste recycled and waste to landfill to determine if construction targets have been achieved
- Actively encouraging Contractors and Suppliers to use non-toxic or recycled products and recycled packaging.
- Encouraging Contractors and Suppliers to reduce the amount of packaging materials brought on to site.
- Ensuring that all persons working on our projects are made aware of their responsibility for achieving a green working environment.

Food waste will be managed to prevent birds and vermin accessing the waste.

- Lidded food waste bins will be located in the site amenities areas i.e. offices / lunchrooms.
- Designated food waste bins will be emptied on a daily basis.
- Food waste bins are to be kept covered
- Food waste will be contained in bags which will be secured / tied when emptied
- Work areas are to be kept free of rubbish and other debris at all times.
- No food waste to be deposited directly into external construction waste skips.
- Active rodent control established on the site i.e. baits around site perimeter.

CONTAMINATION

An unexpected finds protocol has been prepared for siteworks which can be found in section 9. of the **Construction Contamination Management Plan** which is contained in Appendix H of this Management Plan. This includes a clear flow chart of how unexpected finds are to be treated. This protocol will be posted on site noticeboards. In accordance with Approval Condition B39, any material which is identified as contaminated will be appropriately disposed off-site, with disposal locations and the results of testing submitted to the planning secretary prior to disposal.

MATERIALS STORAGE

Construction material required to carry out project works will be stored within designated storage areas within the site compound. Prior to any delivery of materials, mobile plant or tools, subcontractors to consult with ADCO Site Management on the following:

- Permissible items permitted on site including DG/Hazardous Substances.
- Storage areas for trades / materials / substances / Plant.
- Permits or pre- entry inspections including documentation (e.g. Safety Data Sheets, Validation Certificates etc.) required for Plant, tools or substances.

- Hazardous substances and flammable goods to be stored in an approved lockable storage cage. Subcontractors to provide their own lockable cages.
- Pre- delivery inspections to ensure that materials are in accordance with SHE requirements.
- Items found not to be conforming are to be secured and removed from site.

In relation to the storage of substances the following applies:

- Documentation (SWMS and current SDS) to be supplied to and approved by ADCO prior to the storage and use of such items on site.
- Register for substances to be maintained on site by user company and supplied to ADCO on request.
- Substances and containers to be compliant and correctly labelled.
- Substances only to be stored in approved locations on site. No storage within shipping containers permitted.
- Bunds to be of sufficient size and capacity to accommodate substances stored in the event of a spill.
- Persons using the substance to have knowledge of, and training in the use of the substance.
- “DANGER” signage to be placed in visible positions to warn of dangers (flammable substances).
- Fire suppression equipment to be located with the substances.
- Spill management requirements to be implemented.

HAZARDOUS SUBSTANCES AND DANGEROUS GOODS

ADCO will have appropriate measures in place to use and store hazardous substances / dangerous goods to prevent accidental or intentional release to the natural environment leading to environmental harm, including impacts to air and water. The following management protocols will be implemented and monitored for implementation on a daily basis:

- Maintaining a limit of 250 litres of each substance on site at any one time. Note: Any requirement to use or store more than this quantity, requires a ATW Permit issued.
- Subcontractors providing a site-specific SWMS detailing the work activities, risks and control measures. (No work will proceed until ADCO Constructions has accepted the SWMS).
- Current MSDS for each substance will be available for reference. MSDSs are to be Australian and issued within the previous 5 years. MSDS information will be located in the Site Office.
- Current Register for such substances as used on the site. (The Register detailing the nature, quantity and location of all hazardous material must be maintained and regularly updated).
- Ensuring that the substances and their containers are correctly labelled and contained.
- Storing the substances in a manner which complies with the Code (and with AS 1940, AS 4332 and any other applicable legislation or standards) and which does not endanger the work area or storage area of other subcontractors or ADCO Constructions. (i.e. not stored in the back of containers).
- Erection of appropriate warning/emergency panel signage to warn of the location of the substance.
- Ensuring that the substances are safe from use or access by other parties.
- Completing regular inspections of vehicles, containers, bunding and equipment to check for any leaks or spills.
- Providing appropriate fire suppression equipment.
- Providing details for ensuring that at the completion of the works, all residual stocks of substances are guaranteed to be removed from the construction area.

REFUELLING

The following management protocols will be implemented to ensure that target performance is achieved:

- Fuels, oils and chemicals are to be stored in accordance with the relevant Standards and all appropriate measures taken to ensure that environmental performance is being fulfilled
- Regular inspections of vehicles, containers and equipment to be completed to check for any leaks or spills.
- Ensure that appropriate storage facilities and fire suppression, spill management is used.
- Ensure that containers are correctly labelled and that minimal quantities are stored on site.
- Where possible, request substitution of substance with less harmful substances.
- Major servicing of machinery to be completed off site.
- Refuelling to occur in a designated area and not within 30m of a water body.
- Hoses to be fitted with a stop valve
- Spill response kit to be readily available during refuelling activities.

SEDIMENT CONTROL AND WATER QUALITY

To control the risk of erosion or sediment impacting on the natural environment, ADCO will:

- Install erosion and sediment control devices to mitigate and manage the impact of excess soils on nearby roads, surface water quality, air quality, fauna and flora.
- Erosion and sedimentation controls to be monitored on a weekly basis or immediately following a rainfall event.
- Ensure that the handling and placement of excavated material is in accordance with WMS, Client instructions, EPA requirements etc.
- Complete daily inspections of stockpiles, excavated areas and control methods for erosion and sediment management.
- Residue to be disposed of in an appropriate manner.

ADCO Constructions will ensure that all drains and gutters leading to the storm water system within the Site have sediment control measures installed to prevent sediment entering into the drainage system and waterways. Refer to appendix B for Sediment Control drawings and details.

Entering Site

- Identify vulnerable locations on site and install control devices to halt or alter course of water.
- Inspections prior to a major weather event.

Exiting Site

- Identify vulnerable drains, low points and stormwater runoff points.
- Install control devices (i.e. silt fencing, bunding, diversion devices, sand bags, etc).
- Daily inspections and maintenance of control

FOREIGN OBJECT DAMAGE

All materials handling and storage on the Site will be in accordance with the Site Management Plan, WHS Management Plan and Environmental Management Plan.

Site Compound

- Area to be fully contained.
- Appropriate storage containers based on the nature of the product being stored will be provided and located in a designated area.
- Containers must be closed except for when personnel are accessing or working within the container.
- Items within containers must be secured.
- Waste must be placed into supplied receptacles fitted with lids.
- Waste lids are to be closed at all times.
- Material or equipment stored external to site sheds or containers must not have any fittings, fixtures or wrapping which could come loose and cause a hazard.

Work Areas

- Material or equipment transported to the work area must be secured to ensure that no fittings, fixtures or wrapping could come loose and cause a hazard during transportation
- Work areas are to be maintained with a high standard of housekeeping at all times and must be free of loose material, packaging, debris etc. at the close of each shift.

HAULAGE

To ensure that no fuel, lubricant, mud, dirt, stones or other materials is spilled, or other materials is spilled or deposited onto roads or footpaths resulting in damage, loss, injury or nuisance ADCO will:

General

- Install control measures (i.e. water spraying, rumble grids, road sweepers) which limit the opportunity for dust, noise or spillage to occur.
- Limit site speed Limits.
- Loads to be covered prior to leaving the site.
- Daily inspections of control measures to be conducted and immediately rectified as required.
- Work activity requirements to be included in the Site Induction.

Traffic Management / Movement

- Comply with any approved Traffic Management Plan for external site traffic management (Refer to the Construction Traffic Management Plan appended to this document as Appendix A)
- Where practicable, co-ordinate deliveries and site activities with out of peak traffic hours.
- Monitor traffic flows and implement corrective actions in response to traffic impacts as a consequence of construction activities.
- Daily inspections of control measures to be conducted and immediately rectified as required.
- Work activity requirements to be included in the Site Induction.
- If required under planning, inform local community about the timing and scale of construction traffic impacts.

Roads And Footpaths

- Protect footpaths, kerbs and roads from damage through (e.g.) use of metal plates, restriction of heavy vehicles, prohibition for storing equipment or material on roads and footpaths etc.
- Daily inspections of control measures to be conducted and immediately rectified as required.
- Work activity requirements to be included in the Site Induction.

COMPLAINT MANAGEMENT

Complaints can be raised for issues such as, but not limited to:

- Noise
- Vibration
- Dust
- Pollution
- Harassment
- Perceived safety or environmental management issues.
- Breaches of legislation, DA/BA conditions

Refer to the Community Consultation Plan which can be found in Appendix E of this document for further details of Community Consultation.

Information relating to complaints is documented on the ADCO Constructions Complaints Form. Complaints are registered on the Register - Project Complaints.

Complaints must:

- Immediately - Be reviewed and Investigated by the Project Manager, Site Manager and/or HSE Adviser.
- 48 Hours - Be actioned by the Project Manager, Site Manager and/or HSE Adviser. Actions to be noted on the form. This includes a response (email or verbal) to the person generating the complaint.

In general, the below recommended actions should be followed:

- Respond to the complainant in an objective, polite and courteous manner.
- Engage with the complainant to correctly understand the complaint.
- Seek clarification and confirm the issues, relevant information, and outcomes sought (i.e. summarise the main points).
- Clarify the application of any relevant legislation, policies or procedures.
- Resolve the complaint and acknowledge the complainant.
- If the complaint cannot be resolved within a reasonable time frame, advise the complainant about the complaints process and indicative response.
- Take reasonable action to prevent similar complaints in the future.

INCIDENT MANAGEMENT

REPORTING

The reporting of all incidents is mandatory on ADCO project sites.

Workers are advised at the site induction that all incidents – irrespective of type or severity – must be reported to the Site Manager or HSE Adviser immediately upon occurrence.

MANAGEMENT

Refer to Appendix F for the Emergency Management Plan. The Emergency Management plan also contains the Flood Emergency Response Plan which has been prepared for the project. All incidents will be recorded by the Site Manager or HSE Adviser.

- Environmental incidents will be recorded in the Incident Report located on HammerTech.

INVESTIGATION

Incidents recorded in an Incident Report must be investigated by the Site Manager and HSE Adviser. The investigation is intended to:

- Collate information / documentation associated with the incident.
- Identify non-conformances leading to the incident.
- Identify corrective and preventative action to mitigate recurrence of the incident.
- The extent to which additional positions (e.g. Project Manager, HSE Manager, Construction Manager) are involved in the investigation of an incident is dependent on the severity and complexity of the incident and the requirements for participation are noted within the ADCO Corporate HSE Management System.

NOTIFICATION

Where an incident is notifiable under the WHS/ Environmental legislation of the state in which it occurred, notification to the regulator will be made by any of the following positions: HSE Manager, Construction Manager, State Manager.

MONITORING

The Project Manager, Site Manager and HSE Adviser are responsible for ensuring that actions (corrective / preventative) arising out of an incident investigation are implemented and monitored for compliance and reviewed at appropriate intervals,

MONITORING AND REVIEW

MONITORING

Progress against project targets is monitored by the project team (Project Manager, Site Manager, HSE Adviser) through:

- Regular daily visual inspections of work activities.
- Completion of the Weekly Site Inspection report.
- Close out of identified actions for non-conformances.

REVIEW

Confirmation of achievement of project targets is reviewed through:

- Project audits.
- Other internal or external audits (e.g. client, FSC).
- HammerTech Reporting
- A reduction in incident and non-conformances across the State and nationally.

INSPECTIONS

ADCO will complete daily and weekly workplace inspections to review and confirm compliance to approved work practices and controls.

- Regular daily visual inspections of work activities and work areas will be completed by the Site Manager, HSE Adviser and Health and Safety Representative (if applicable)
- Formal inspections will be completed by the Project Manager, Site Manager, HSE Adviser using the Weekly Site Inspection form.

The inspection is required to reflect the project's level of compliance to:

- Control measures required per active work permits.
- Accepted subcontractor SWMS for high risk work activities.
- General site conditions.

AUDITS

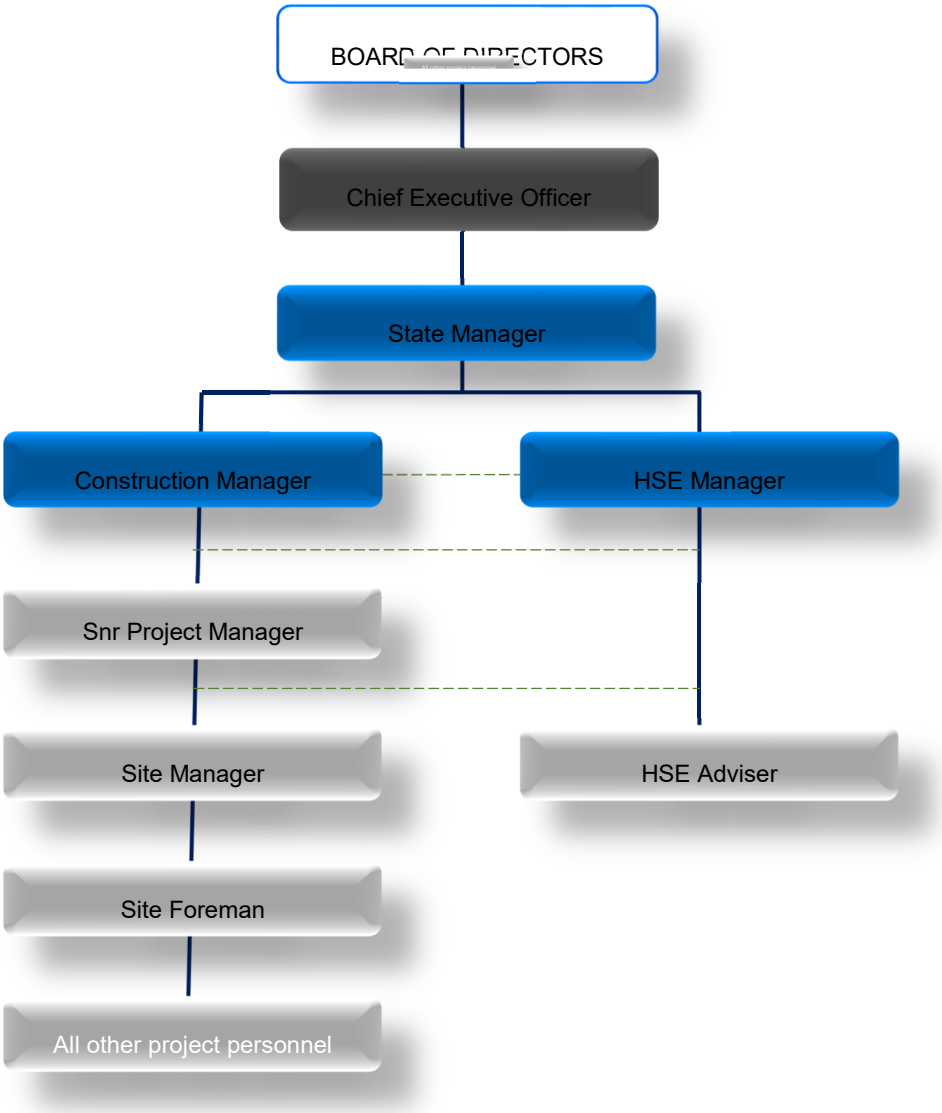
Project audits, completed by the HSE Manager are a formal a review of project compliance against select criteria of the Corporate HSE Management System.

Applicable projects are required to be audited against national and project criteria listed on the Audit Report which is located in HammerTech.

The level of compliance to the requirements of the Corporate HSE System is determined by the audit score achieved. Any corrective action (e.g. non-conformances) identified in the audit must, depending on the level of risk associated with the non-conformance, be addressed by the site team within a maximum of seven working days of receipt of the audit report.

Corrective actions and supporting evidence must be attached to the Audit Report in HammerTech.

PROJECT MANAGEMENT STRUCTURE



Chief Executive Officer

Neil Harding

State Manager

John Basilisco

Construction Manager

Caroline Crook

HSE Manager

Phil Provenzano

Snr Project Manager

Stephen Chamberlain

HSE Adviser

Keelan Falls

Site Manager

John Portelli

Site Foreman

Myles Finlay

POSITION DESCRIPTION

Chief Executive Officer	Provide commitment, leadership and direction in the development, implementation and management of the Corporate Management Systems, including but not limited to: / Development of a corporate strategic plan incorporating safety, environment, quality and health management risks and controls. / An assessment of the effectiveness of the Corporate Management Systems. (e.g. review of incidents and non-conformances to identify non-conformance trends and areas of improvement to the Corporate Management Systems.) / Full management obligations including continual improvement of the Corporate Safety, Environment and Quality Management Systems. / Ensure that appropriate resources are allocated to ensure compliance legislative requirements and the requirements of the Corporate Management Systems. / Ensure that resources are competent to deliver the requirements of the Corporate Management Systems.
State Manager	Ensure that: / Corporate Management Systems are implemented at all levels in the State. / Appropriate resources are allocated to project teams to ensure compliance legislative requirements and the requirements of the Corporate Management Systems. / Project operations are in compliance with applicable state or federal legislation. / A review of the safety, environment, quality and health management performance of the State is completed regularly to identify non-conformances, trends and areas of improvement.
Construction Manager	Ensure that: / Corporate Management Systems are implemented on projects within the State. / HSE requirements have been identified and accounted for during project tender processes. / Project operations are in compliance with applicable state or federal legislation. / Appropriate resources are allocated to project teams to ensure compliance legislative requirements and the requirements of the Corporate Management Systems. / Project team personnel have received training to fulfil their duties and responsibilities with the Corporate Management Systems. / A review of the safety, environment, quality and health management performance of the State is completed regularly to identify non-conformances, trends and areas of improvement.
Health, Safety & Environment (HSE) Manager	Ensure that: / Legislative requirements for HSE management are implemented and maintained on project sites. / The requirements of the Corporate HSE Management System are implemented on project sites.

- Where required, project HSE requirements and risks are identified during project tender and/or trade tender processes and incorporated into project management plans.
- Reviews of HSE performance are completed on all projects to ensure compliance with legislative and corporate requirements.

Snr Project Manager

Ensure that:

- HSE requirements are identified and assessed during trade tender evaluations.
- In conjunction with the HSE Manager, project management plans are developed and implemented on projects.
- Resources are allocated to implement and maintain the HSE requirements on the project.
- ADCO project personnel have received training to fulfil their HSE responsibilities.
- Project personnel are aware of current HSE legislation and their obligations.
- HSE performance on the project is reviewed and non-compliant activities by employees and subcontractors are addressed.

Site Manager

Ensure that:

- Legislative requirements for HSE management are implemented and maintained on the project site.
- The requirements of project HSE Management Plans are implemented and managed on the project.
- The requirements of the Corporate Management Systems are implemented and managed on the project.
- Any issues which may arise over HSE requirements (legislative or Corporate) are managed on site.
- Employees and subcontractors complete their work in compliance with legislative and Corporate Management System requirements.
- Open lines of communication and consultation are maintained with the HSE Adviser and other parties (i.e. subcontractors, employee representatives) to ensure that the site operates in a safe manner and in compliance with regulatory and corporate requirements.
- HSE performance on the project is reviewed and non-compliant activities by employees and subcontractors are addressed.

HSE Adviser

Ensure that:

- Legislative requirements for HSE management are implemented and maintained on project sites.
- The requirements of the Corporate Management Systems are implemented on project sites.
- HSE performance on the project is reviewed and non-compliant activities by employees and subcontractors are addressed.

Health and Safety

In general:

Representative (HSR)	/ Participate in risk and hazard identification and control. / Participate in incident investigations and management. / Participate in workplace inspections (e.g. with the Committee, with the project team). / Participate in project consultative forums. (e.g. HSE Committee) / Consult with and represent workers (i.e. work group) in health and safety issues.
All Other Project Personnel	All personnel are responsible for actively promoting and complying with Safety, Health and Environmental Management requirements as determined / advised / required by ADCO. Activities that all personnel are required to participate in include, but are not limited to: / Attend pre-start meetings. / Conduct pre-start tasks analysis. / Adhere to all permit requirements. / Report all hazards, near misses and incidents (including injuries). / Immediately stop any "at risk behaviour" identified during daily work activities. / Attend safety presentations and toolbox meetings. / Assist in achieving project HSE objectives and targets.

ENVIRONMENTAL RISK REGISTER

REFERENCE LEGISLATION

The following legislation is applicable to the Qantas GFTC Project but not limited to:

/ Environmental Planning and Assessment Act 1979 and Regulations;
/ Protection of the Environment Operations Act 1997 and Regulations;
/ Environmental Protection and Biodiversity Conservation Act 2000 (Cth);
/ Heritage Act 1997 and Regulation;
/ Heritage Amendment Act 2001 and Regulation;
/ Australian Heritage Commission Act 1975 (Cth);
/ Contaminated Land Management Act 1997 and Regulation;
/ Soil Conservation Act 1939 and Regulation;
/ Threatened Species Conservation Act 1995 and Regulation;
/ Endangered Species Protection Act 1992 (Cth);
/ Noxious Weeds Act 1993 and Regulation;
/ Native Vegetation Conservation Act 1997;
/ Companion Animals Act 1998;
/ Dangerous Goods Act 1975 and Regulation;
/ Environmentally Hazardous Chemicals Act 1985 and Regulation;
/ Sydney Water Act 1994 and Regulation;
/ Water Act 1912 and Regulation;
/ Water Management Act 2001 and Regulation;
/ Waste Avoidance and Resource Recovery Act 2001;
/ Local Government Act 1993;
/ Protection of the Environment Legislation Amendment Act 2011;
/ Protection of the Environment Operations Amendment (Miscellaneous) Regulation 2011;

- Heritage Regulation 2012;
- Work Health and Safety Act (2011) and Regulation (2011); and
- Building Code of Australia

Other documents that may be relevant to the Qantas GFTC Project include, but may not be limited to:

- SEPP 55 Remediation of Land
- AS 1055 Parts 1 to 3 Acoustics: Description and management of environmental noise
- AS 2659 Sound level meters
- AS 2659.1 Guide to the use of sound measuring equipment
- AS 2072 Acoustics: Methods for measurement of road traffic noise
- AS 2922 Ambient Air: Guide for siting of sampling units
- AS 2724.3 Determination of total suspended particulates (TSP): High volume air sampler gravimetric method
- AS 3580.10.1 Determination of particulates: Deposited matter: Gravimetric method
- AS 2031 Selection of containers and preservation of water samples for chemical and microbiological analysis
- AS 1216 Classification, hazard identification and information systems for dangerous goods
- AS 1940 Storage and handling of flammable and combustible liquids
- AS 2508 Safe storage and handling: Information cards for hazardous materials
- AS 4970 Protection of Trees on Development Sites
- AS/NZS ISO 14001 Environmental Management Systems – Specification with guidance for use;
- AS/NZS ISO 19011:2003 Guidelines for quality and/or environmental management systems auditing;
- ANZG 2018 Australian and New Zealand Guidelines for Fresh and Marine Quality Water
- AWWA Standard Methods for the Examination of Water and Wastewater
- DLWC Urban Erosion and Sediment Control Handbook
- DoH Managing Urban Stormwater: Soils and Construction “The Blue Book”
- Heritage Council, Guidelines for Photographic Recording of Heritage Sites, Buildings and Structures
- Heritage Council, How to Prepare Archival Records of Heritage Items
- NSW EPA Environmental Noise Control Manual 1994
- NSW Industrial Noise Policy
- NSW EPA 2014 Waste Classification Guidelines, Part 1 Classifying
- NSW OEH 2011;
- NSW EPA,2017 Contaminated Land Management – Guidelines for NSW Auditor Scheme (3rd Edition)
- NSW EPA, 1995. Contaminated Sites: Sampling Design Guidelines
- NSW EPA 2015. Guidelines for the Duty to Report Contamination under the Contaminated Land Management Act 1997
- DEC NSW, 2007. Guidelines for the Assessment and Management of Groundwater Contamination.
- National Environment Protection (Assessment of Land Contamination) Measure, National Environment Protection Council, 1999
- Conditions of Development Consent

HSE System References

Procedure

- Environmental Management

General Requirements

- Erosion and Sediment Management
- Air Quality Management
- Water Quality Management
- Noise and Vibration Management
- Contaminants
- Heritage Management
- Waste Management
- Spills Management
- Fauna and Flora Protection
- Potable Water Management
- Non-potable Water Management

RISK ASSESSMENT FRAMEWORK

Risk controls are implemented by ADCO and subcontractor companies through any or all of: SWMS, Authority to Work Permits, Risk Assessments, consultation mechanisms, engineering approvals, etc.

HIERARCHY OF CONTROL

Eliminate

Can the risk or hazard be eliminated or removed?

Substitute

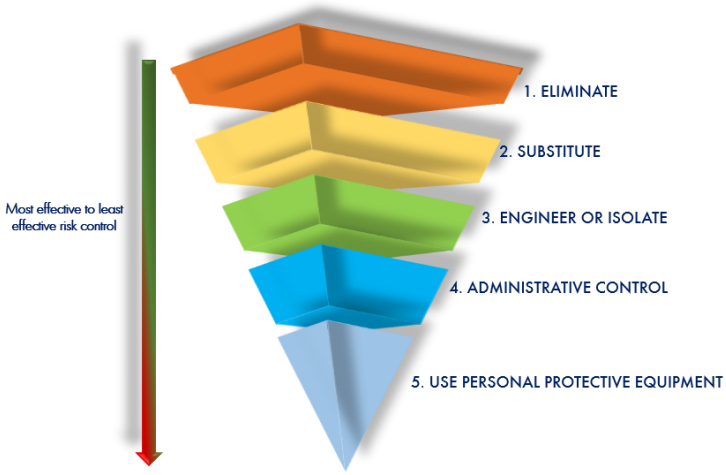
Can the activity or product be substituted by something else (a substance or a process) that has less potential to cause injury or damage?

Engineer or Isolate

Can a structural change to the work environment or work process be made to interrupt the path between the worker and the risk?

Admin Control

Will an administrative change (i.e. by upgrading training, changing rosters) reduce the risk?



Personal Protective Equipment (PPE)

Can personal protective equipment (gloves, goggles, etc.) or clothing be worn to safe-guard against the hazard?

RISK MATRIX

(P) PROBABILITY - A measure of the chance of the occurrence		CONSEQUENCE (C) - The outcome or impact of an event			
		1	2	3	4
	SAFETY	Permanent disability or death.	Serious bodily injury.	Hospitalisation resulting in LTI.	External medical treatment. No LTI.
	ENVIRONMENT	Toxic release off site with detrimental environmental impact	Offsite release contained with outside treatment/assistance. Minimal detrimental environmental impact.	On site release contained with outside treatment/assistance. No detrimental environmental impact.	On site release contained. No environmental impact
Expected to occur in most circumstances.	ALMOST CERTAIN	E	E	H	M
Probably occur at some time.	LIKELY	E	H	M	M
May occur at some time.	POSSIBLE	H	H	M	L
Not likely to occur in normal circumstances.	UNLIKELY	H	M	M	L

ACTION TIME FRAME			
EXTREME (E)	HIGH (H)	MEDIUM (M)	LOW (L)
IMMEDIATE action required	Action **IN THE SAME SHIFT**.	Action in < **48 HOURS**.	Action **AS AGREED**.
Involvement and approval of Construction Manager / SHE Manager National SHEQ Manager required.	Construction Manager / SHE Manager to be advised of actions to be taken, prior to continuation.	Site Manager and S&E Adviser to review and agree on actions to be taken, prior to continuation.	SWMS review by contractor supervisor. Observation by ADCO.

In accordance with the Standard, impacts resulting in a residual risk rating of (E) Extreme or (H) High will be defined as “Significant”. Communicating impacts falling into these categories will be undertaken through the following but not limited to; induction process, contractor meeting and client meetings.

PROJECT RISKS – DESIGN

RISKS IN THE DESIGN OF THIS PROJECT WHICH MAY IMPACT ON BUILDABILITY OR WORKER SAFETY

IR	Potential Risks	Actions and Controls	RR

PROJECT RISKS – ENVIRONMENTAL

ESTABLISHMENT AND USE OF PROJECT OFFICES

Description

Project operations, Use of consumables - paper, cups, cutlery, Use of electricity – Lighting, Air-conditioning, Heating

IR	Potential Risks	Actions and Controls	RR
M	/ Increase in environmental impact and associated cost with disposal / recycling	/ Where possible; use electronic devices for communications. / Where possible; use recycled paper. / Lights only to be turned on as required. / Use long life globes (low voltage where possible) / Switch off all lights on departure from office / Doors to be closed when cooling / heating is used. / General waste to be disposed of in appropriate designated waste facilities. / Use environmentally friendly cleaning products for amenities cleaning.	L

VEGETATION CLEARING / REVEGETATION

Description

Clearing of vegetation (trees / shrubs) in accordance with planning / building approvals.

IR	Potential Risks	Actions and Controls	RR
H	/ Decrease in air and water quality. / Build-up of sediment in water systems from land run off.	Clearing / Clearing methods to follow approved (DA or other) procedures. / Trees (including root zones where possible) to be retained will be identified with visible warning tape (at 900 mm above ground) to ensure that workers are aware of their presence and they are not inadvertently damaged. / Limited disturbance of ground covers to excavation areas.	M

			/ No burning off-on site. / Stockpile excavated material into areas which have no impact on the eco system. / Stockpiles to be vegetated (where practicable) to improve soil stability. / Vegetative material brought to site to meet appropriate standards and be free of debris, seeds, etc. / Noxious or banned vegetative material to be segregated and removed from site. / Appropriate control measures to be installed to ensure containment of disturbed areas and stockpiles. / Dust mitigation to be implemented as required. / Daily inspections and inspections following a major weather event (i.e. storm, high wind). / Work activity locations to be identified on the Traffic Movement Plan. / Environmental management requirements will be included in the Site Induction.	
	/ Introduction of invasive species		Revegetation / Vegetative material brought to site to meet appropriate standards and be free of debris, seeds, etc. / Landscaping, so far as is practicable is to be completed as soon as possible after disturbance in accordance with the approved landscaping plans. / Revegetated areas to be excised to prevent unauthorised access or damage by animals, unauthorized persons or workers. / Areas of revegetation are to be inspected monthly by an accredited horticulturist to ensure that no weed infestation has occurred / Noxious or banned vegetative material prohibited from being brought to the project site.	

EROSION AND SEDIMENT MANAGEMENT

Description

Construction works potentially impacting on the surrounding environment through the erosion of ground.

IR	Potential Risks	Actions and Controls	RR
H	/ Dust emissions degrade air quality. / Degradation of water from contamination of watercourses through silt and sediment build-up. / Sediment impacting on the external environment / public areas.	General / Determine control methods to mitigate against erosion and sediment creation. / Identify areas susceptible to erosion and sediment impacts and if required - Install erosion and sediment control devices to mitigate and manage the impact of excess soils on surface water quality, air quality, fauna and flora. / Complete inspections of stockpiles, excavated areas and control methods for erosion and sediment management. / Wheel wash / rumble grid etc. to be implemented to minimize tracking of soil into public areas. / Erosion and sedimentation controls to be monitored regularly and immediately rectified as required. / Erosion and sedimentation controls to be immediately inspected following a severe weather event. / Environmental management requirements will be included in the Site Induction.	M
	/ Contamination of watercourses. / Potential dust emission which degrade air quality	Stockpile management / Topsoil stockpiles to be located on flat areas, clear of drainage lines and at significant distance away from waterways, roads, and slopes of greater than 10%. / Stockpiles to be located at least 3 metres from tree drip lines. / Stockpiled materials not to be placed inside VPO areas or within 5 metres of retained trees.	M

			/ Stockpiled materials not to be placed within 5 metres of waterways or stormwater inlets. / Clean topsoil and friable subsoil to be stockpiled separately and re-spread in areas to be revegetated / Weed infested topsoil to be stockpiled separately and removed from site or re-spread in a manner which mitigates the spread or re-introduction of weeds. / Install bunding/silt fencing around stockpiles to prevent against water runoff. / Dampen stockpiles by means of water sprays to management dust emissions. / Where practicable, vegetate stockpiles to improve soil stability. / Limit the height and volume of stockpiles so that control measures can be implemented. / Stockpiles and control measures to be monitored regularly and immediately rectified as required. / Environmental management requirements will be included in the Site Induction.	

FAUNA AND FLORA MANAGEMENT

Description

Impact on nearby flora and fauna

IR	Potential Risks	Actions and Controls	RR
M	/ Loss, damage or harm to local and/or protected flora and fauna. / Environmental pollution	/ Manage in accordance with requirements of an applicable Act and/or DA requirements. / Where required, ADCO to engage a competent person to spot / manage Act / DA requirements. / Where applicable, complete a dilapidation / aerial survey of existing retained or removed plant to form a baseline comparison during construction works. / Implement approved protection controls around flora to be preserved or fauna to be protected. / Utilise accredited Spotters/ to assist with fauna identification and relocation.	L

			/ Utilise accredited Personnel to identify and relocate protected species. / Daily inspections of control measures to be conducted and immediately rectified as required. / Environmental management requirements will be included in the Site Induction.	

CULTURAL HERITAGE

Description

Archaeological artefacts, Unexpected finds.

IR	Potential Risks	Actions and Controls	RR
M	/ Construction activities damage or destroy archaeological artefacts or heritage listed items.	/ Prior to the commencement of the project, determine heritage / cultural significance of the project site. / Where required, ADCO to engage a competent person to develop an applicable management plan. / Approved management plan requirements to be included in site induction. / Report all finds to Site Management immediately. / Identified locations to be noted on the Traffic Movement Plan. / Where required, information on Cultural Heritage Management to be posted on site notice boards.	L

AIR QUALITY

Description

Dust generation, Plant emissions

IR	Potential Risks	Actions and Controls	RR
H	/ Erosion of soil. / Discomfort to site personnel and neighbouring properties or persons. / Breach of legislation or development conditions	/ Monitor and manage the incidence of dust from construction activities / vehicles. / Minimise dust generating construction activities during periods of high winds or adverse weather.	M

			/ Ensure that contract personnel adopt work methods to include dust minimisation practices. / Apply water sprays as required during periods of dry weather, strong winds or dust generating activities. / As required, implement regular sweeping (including road sweeping) and cleaning activities. / Vegetate, cover and/or dampen stockpiles. / Mobile plant on site to be in good working order. / Daily inspections of control measures to be conducted and immediately rectified as required. / Environmental management requirements will be included in the Site Induction.	

WATER QUALITY

Description

Potential for impact on water quality within the area due to poor construction practices

IR	Potential Risks		Actions and Controls	RR
M	/ Deterioration of ground or storm water quality. / Increased disposal costs. / Increased housekeeping requirements to maintain the site in a clean and tidy condition. / Environmental pollution into waterways, roads etc. / Flora / Fauna impact due to contaminated water.		/ Where required, prior to major surface disturbances, install drainage structures for waterways, catch drains to intercept flow. / If required in approval conditions - monitor water quality and implement a testing regime (i.e. pH, solids, etc) where degrade water quality is suspected. / Identify vulnerable locations on site and install control devices to halt or alter course of water. (e.g. sand bags, hay bales, spoon drains etc.) / Take all reasonable and practicable measures to minimise the potential for the release of contaminants to surface waters that could adversely affect the environment. / Conducted a site inspection after significant weather events to check status of control measures	L

		/ Ensure work areas as listed above are bunded. / Daily inspections of control measures to be conducted and immediately rectified as required. / Environmental management requirements will be included in the Site Induction.	

NOISE AND VIBRATION

Description

Noise and Vibration attributed to building and construction activities

IR	Potential Risks	Actions and Controls	RR
E	/ Noise pollution. / Discomfort to site personnel and adjoining neighbours and properties.	/ Review equipment on an ongoing basis to ensure condition and suitability for use. / Plant, equipment and machinery to be fitted with noise reducing attachments (i.e. mufflers). / Plant, equipment and machinery to be maintained in accordance with manufacturers specifications. / Works (so far as is practicable) to be completed during approved work hours (i.e. per DA, Council or EPA conditions). / As applicable (e.g. condition of licence, complaint management), install noise and vibration monitors to measure and record discomfort levels. / Investigate noise complaints or causes of excessive noise and implement control measures as required to manage noise emissions. / Daily inspections of control measures to be conducted and immediately rectified as required. / Environmental management requirements will be included in the Site Induction.	M

WASTE MANAGEMENT

Description

Waste generated from building and construction activities

IR	Potential Risks	Actions and Controls	RR
E	/ Environmental pollution into waterways, roads etc. / Contamination of ground soil, sewerage systems and storm water systems. / Health hazards to site personnel and other non-construction personnel. / Increased housekeeping and waste removal requirements and costs.	General / Provide waste bins to accommodate construction waste (i.e. concrete, paint, plaster). / Where practicable, install waste bins for separate waste streams. / Ensure that regulated or contaminated waste is disposed of licensed disposal locations by licensed contractors. / All materials, packaging etc is to be made secure at all times and to be disposed of using allocated sealed waste bins. / No debris to be dropped/left outside of the waste skips. / Waste bins to be located in a suitable location with minimal impact from environmental conditions i.e. wind. / Include waste minimisation requirements in Subcontract Agreements, trade requirements and during trade tendering. / Daily inspections of control measures to be conducted and immediately rectified as required. / Environmental management requirements will be included in the Site Induction.	M
	/ Discomfort to site personnel and neighbouring properties or persons. / Health hazards to site personnel and other non-construction personnel.	Odour management / Waste bins to be kept covered preventing odour and secured at all times. / Work areas are to be kept free of rubbish and other debris at all times. / No food waste to be deposited in external construction waste skips. (i.e. to prevent bird access)	

HAZARDOUS SUBSTANCES AND DANGEROUS GOODS

Description

Use of Hazardous Substances and Dangerous Goods

IR	Potential Risks	Actions and Controls	RR
H	/ Contamination of ground, air or water from spillage or leakage.	/ Comply with the requirements of applicable legislation and Australian Standards. / Ensure that appropriate storage facilities are used. / Ensure that appropriate fire suppression and spill management is provided. / Ensure that containers are correctly labelled and that minimal quantities are stored on site. / Ensure that refuelling is completed in approved locations. / Where possible, request substitution of substance with less harmful substances. / Manage spills or leakage in a manner which inhibits further contamination. / Advise relevant personnel or authorities of reportable incidents. / Include substances management in the project Emergency Plan. / Ensure that substances use/storage has been included in worker SWMS. / Ensure that site personnel comply with the conditions of use of such substances. / Daily inspections of control measures to be conducted and immediately rectified as required. / Environmental management requirements will be included in the Site Induction.	M

HAULAGE

Description

Access and Egress of vehicles throughout project delivery.

IR	Potential Risks	Actions and Controls	RR
H	/ Potential dust emission which degrade air quality. / Exhaust emissions which exceed accepted standards. / Noise generation. / Fuel/oil spills which impact on environment quality.	General / Install control measures (i.e. water spraying, rumble grids, road sweepers) which limit the opportunity for dust, noise or spillage to occur. / Limit site speed Limits. / Loads to be covered prior to leaving the site. / Daily inspections of control measures to be conducted and immediately rectified as required. / Work activity requirements to be included in the Site Induction.	L
	/ Impact on other road users due to uncontrolled traffic management into/out of the site. / On site congestion, hazards or incidents due to uncontrolled haulage routes.	Traffic Management / Movement / Comply with any approved Traffic Management Plan for external site traffic management. / If required under planning, inform local community about the timing and scale of construction traffic impacts. / Where practicable, co-ordinate deliveries and site activities with out of peak traffic hours. / Monitor traffic flows and implement corrective actions in response to traffic impacts as a consequence of construction activities. / Daily inspections of control measures to be conducted and immediately rectified as required. / Work activity requirements to be included in the Site Induction.	M

	/ Degradation of surfaces and kerbs due to excessive force or weight of heavy vehicles and plant. / Impact on the safety of pedestrians and other road users from obstructions and degradation of surfaces.	Roads and footpaths / Protect footpaths, kerbs and roads from damage through (e.g.) use of metal plates, restriction of heavy vehicles, prohibition for storing equipment or material on roads and footpaths etc. / Daily inspections of control measures to be conducted and immediately rectified as required. / Work activity requirements to be included in the Site Induction.	**M**

FOREIGN OBJECT DAMAGE

Description

Adverse impact from loose or windborne material

IR	Potential Risks	Actions and Controls	RR
H	/ Loose or windborne material	Site Compound / Within the site compound all material and equipment to be secured or securely stored. / Containers to be closed except for when personnel are accessing or working within the container. Items within containers to be secured. / Waste to be placed into supplied receptacles and with cover nets or lids fastened. / Material or equipment stored external to site sheds or containers must not have any fittings, fixtures or wrapping which could come loose and cause a hazard.	**M**
	/ Loose or windborne material	Work areas / Material or equipment transported to the work area must be secured to ensure that no fittings, fixtures or wrapping could come loose and cause a hazard during transportation / Work areas to be maintained with a high standard of housekeeping at all times and	

			must be free of loose material, packaging, debris etc at the close of each shift.	

APPENDIX A

CONSTRUCTION TRAFFIC MANAGEMENT PLAN

Construction Traffic Management Plan

Overview

PTC has submitted, on behalf of ADCO Constructions Pty LTd, a Construction Traffic Management Plan and Traffic Control Plan for temporary traffic arrangements to be implemented during construction works of Qantas Group Flight Training Centre at 297 King Street in Mascot.

The CTMP provided details the proposed traffic and pedestrian management strategies which seek to provide for safe and efficient construction of a residential development, while minimising the construction traffic impacts to surrounding public road network users.

Given the proximity to nearby major project works, access to this development will change over the project timetable and this CTMP may be subject to revision. Access to the development is via King and O'Riordan Street. The proposed overall development of the site will commence in December 2019, with piling and civil works commencing January 2020. The largest construction vehicle anticipated is an 19m AV with expected maximum volume of 60 vehicles a day. Oversize vehicles that are required to travel to the project will be dealt with separately and via Bayside Council permit prior to delivery.

Anticipated Hours of Operation (subject to Conditions of Consent):

- Earthworks and External Construction works, Monday to Sunday: 7:00am to 7:00pm (impact piling between 9am-12pm, and 2-5pm, Mon to Fri)

Recommendation

The attached CTMP has satisfactorily addressed the necessary requirements of the CTMP process and is RECOMMENDED FOR APPROVAL subject to the following conditions:

- Updated Construction Vehicle Routes – noting new restrictions around Mill Pond Drive and recently opened Wentworth Avenue underpass (and height restrictions). Vehicle trips during the AM and PM peak periods to be minimised.
- Any Traffic Control Plans (TCP) prepared are to comply with AS1742.3 and RMS's "Traffic Control at Worksites" manual and be signed by a person with RMS certification to prepare TCP's. A copy of the TCP is to be held on site at all times throughout the period by the responsible traffic controllers.
- Any marshals/traffic controllers involved in the direction of traffic or overseeing the implementation and maintenance of the TCP(s) are to be suitably qualified to RMS standards. Marshalls/traffic controllers are to be equipped and clothed to RMS standards and carry proof of accreditation at all times.
- Barricades and signs to be provided in accordance with Australian Standards.
- All affected residents, businesses and stakeholders and all emergency services to be advised in writing at least seven days prior to the commencement of works.
- Access to be maintained for local residents, businesses and emergency vehicles at all times.
- Provision of RMS accredited traffic controllers to control pedestrian and vehicle movements where necessary. Directional signage to be included in the TCP to direct pedestrian to cross the road and use the footpath on the opposite side of the road.
- Any temporary and permanent changes to the road marking and signage along this section of Wallis Street need to be reported as per the Guide to the delegation to Councils.
- No marshalling or queueing of construction vehicles is to occur on public roads.

- The Road and Maritime Services reserve the right to alter the CTMP Conditions at any time to maintain safe and efficient traffic and pedestrian movements in this area;
- Any additional conditions that Council, SCO or SACL may require.

RECOMMENDED	Date: 8 November 2019	Mark Carruthers Network and Safety Officer Sydney Division
CONCURRENCE	Date: 8 November 2019	Peter Bache A/Network and Safety Services Manager Sydney Division

construction traffic management plan;

Qantas Group Flight Training Centre

For ADCO Constructions Pty Ltd
10th December 2019

parking;
traffic;
civil design;
wayfinding;

ptc.

Document Control

Qantas Group Flight Training Centre, Construction traffic management plan

Issue	Date	Issue Details	Author	Reviewed	For the attention of
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2	29/10/2019	Final	EL	SW	Ellis Lamond
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1. Introduction

1.1 Project Summary

ptc. has been engaged by ADCO Constructions Pty Ltd to prepare a construction traffic management plan (CTMP) to accompany a State Significant Development Application (SSDA) to Bayside Council, for the development of Qantas Group Flight Training Centre at 297 King Street in Mascot.

This CTMP is associated with the demolition, excavation and construction associated with the following proposal:

- Demolition of the existing warehouse building; and
- Construction of a flight training centre comprising an Emergency procedures Hall, Flight Training Centre, Teaching and Office Spaces, and Ancillary Spaces.

Figure 1.1 presents the location of the site.

Figure 1.1 – Site Location

1.2 Purpose of this Report

This report presents the following considerations in relation to the construction traffic management of the Proposal:

Section 2	A description of the project;
Section 3	A description of the road network serving the development property;
Section 4	Management of construction vehicles and non-site traffic; and
Section 5	Summary.

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2. The Development

2.1 Site Content

The proposed development is located within the Qantas campus in the General Industrial land zone with Mascot Train Station 760 metres to the north and Sydney Domestic Airport across Qantas Drive. Local Centre land use is located around Mascot Station and along Botany Road. Figure 2.1 presents the local land use map.

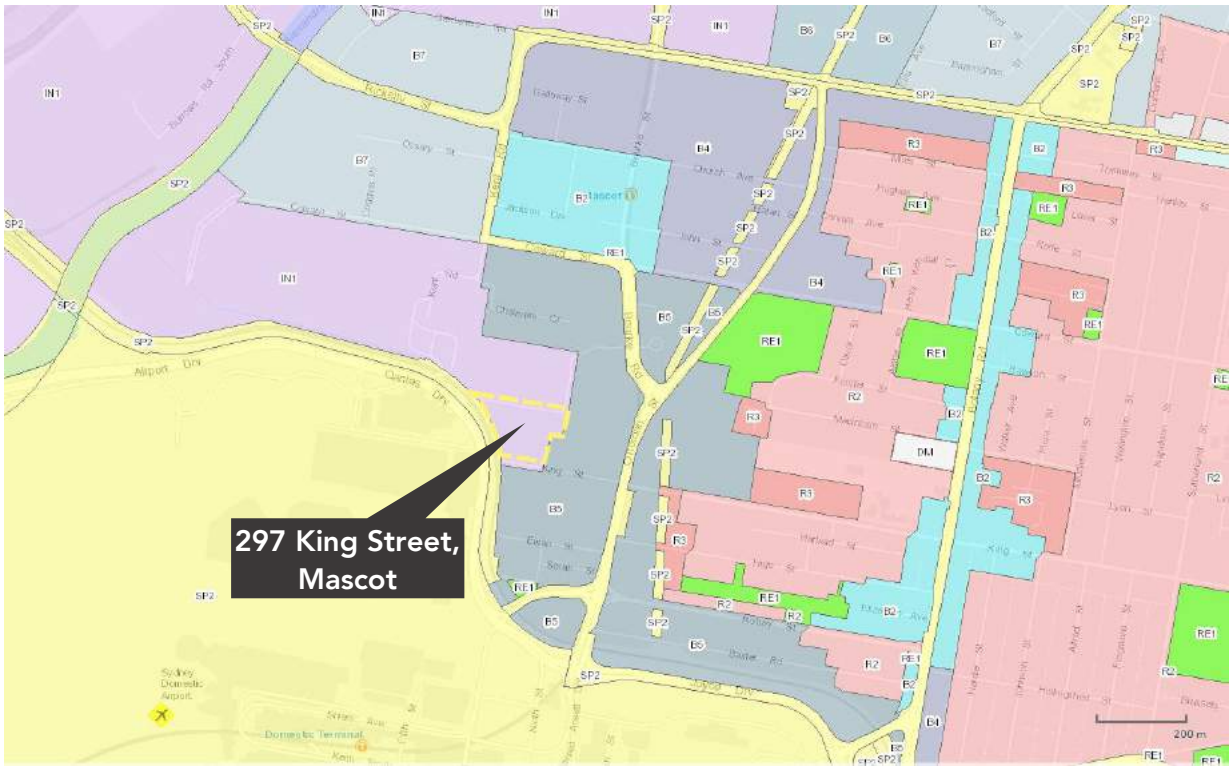

Figure 2.1 – Local Land Use Map (Source: NSW Planning Viewer)

The subject site comprises the following property:

- DP234489 Lot 2

The aerial photograph in Figure 2.2 provides an overview of the area and context in relation to the surrounding land uses.

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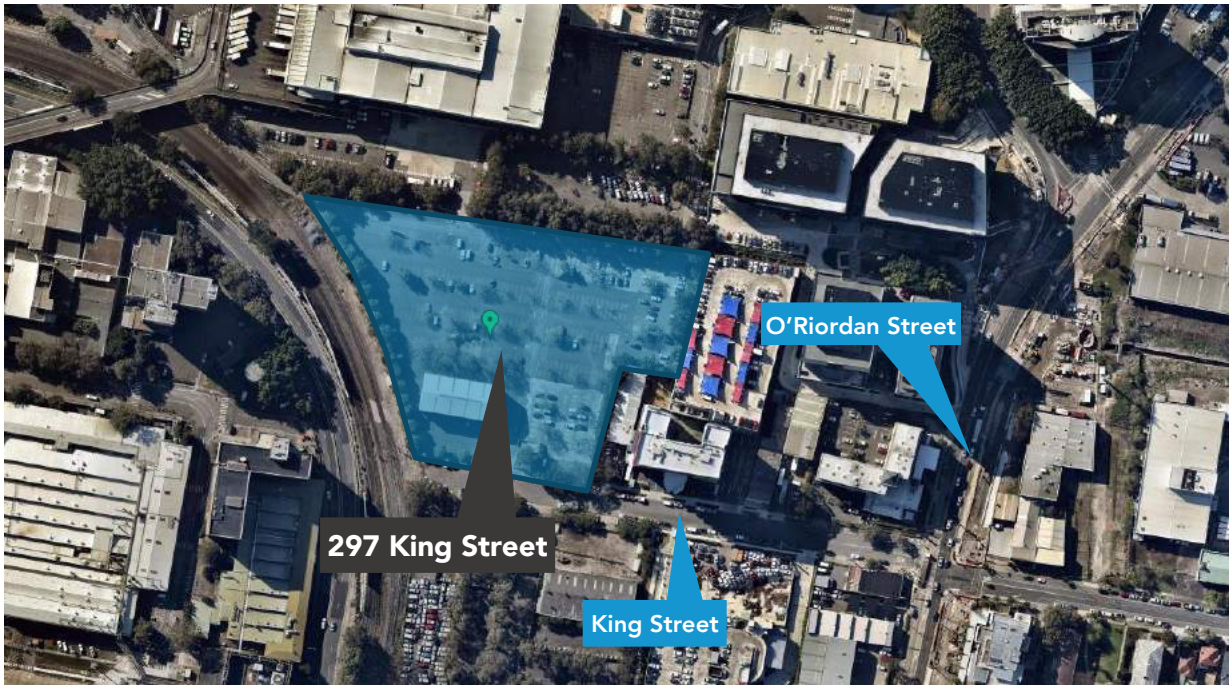

Figure 2.2 – Aerial of the Subject Site

2.2 Development Proposal

The proposed development involves demolition of the existing warehouse building, excavation, and construction of a flight training centre building with amenities. The site layout is presented in Figure 2.3.

Figure 2.3 – Site layout

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3. Existing Transport Facilities

3.1 Road Hierarchy

The subject site is located in Mascot to the west of the Botany Road and to the south of Gardeners Road, and in this regard has excellent connections to the major road network.

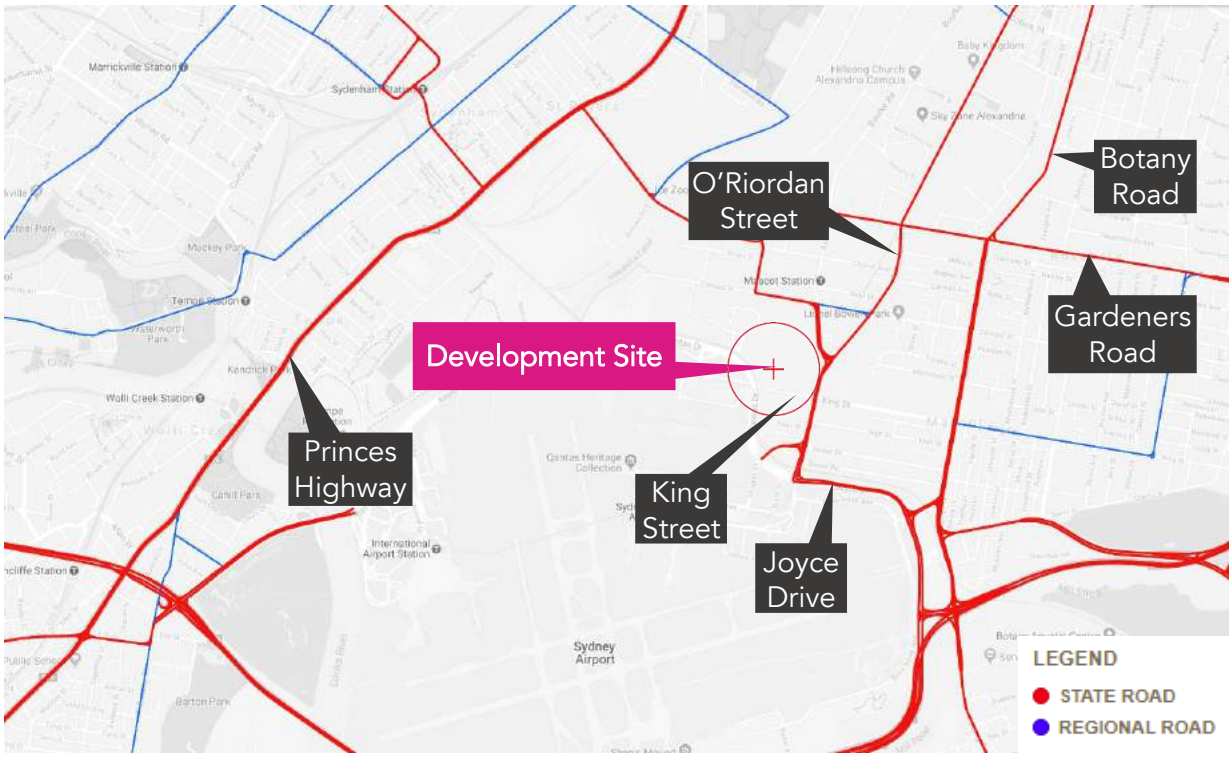

Figure 3.1 – Road Hierarchy

The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy as follows:

State Roads	- Freeways and Primary Arterials (RMS Managed)
Regional Roads	- Secondary or Sub Arterials (Council Managed, partly funded by the State)
Local Roads	- Collector and Local Access Roads (Council Managed)

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King Street	
Road Classification	Local Road
Alignment	East-West
Number of Lanes	One lane in each direction
Carriageway Type	Undivided
Carriageway Width	13m
Speed Limit	50 km/h
School Zone	No
Parking Controls	Time restricted parking on the southern side; unrestricted on the northern side
Forms Site Frontage	Yes

Figure 3.2: King Street – Westbound from O'Riordan Street

O'Riordan Street	
Road Classification	State Road
Alignment	North-South
Number of Lanes	2 lanes in each direction
Carriageway Type	Undivided
Carriageway Width	12m
Speed Limit	60 km/h
School Zone	No
Parking Controls	Clearway from 6am-10am & from 3pm-7pm Mon-Fri
Forms Site Frontage	No

Figure 3.3: O'Riordan Street – Southbound from King Street

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Joyce Drive	
Road Classification	State Road
Alignment	East-West
Number of Lanes	2 lanes in each direction
Carriageway Type	Divided
Carriageway Width	21m
Speed Limit	60 km/h
School Zone	No
Parking Controls	No Parking
Forms Site Frontage	No

Figure 3.4: Joyce Drive – Eastbound from O'Riordan Street

Botany Road	
Road Classification	State Road
Alignment	North-South
Number of Lanes	2 lanes in each direction
Carriageway Type	Divided
Carriageway Width	13m
Speed Limit	50 km/h
School Zone	Yes, between Tunbridge Street and High Street
Parking Controls	Time restricted parking
Forms Site Frontage	No

Figure 3.5: Botany Road – Northbound from King Street

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Gardeners Road	
Road Classification	State Road
Alignment	East-West
Number of Lanes	2 lanes in each direction
Carriageway Type	Undivided
Carriageway Width	12m
Speed Limit	60 km/h
School Zone	Yes, between Botany Road and Middlemiss Street
Parking Controls	Clearway westbound from 6am-10am & eastbound from 3pm-7pm
Forms Site Frontage	No

Figure 3.6: Gardeners Road – Westbound from Ellis Avenue

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3.2 Public Transport

The development is well serviced by both train and bus services.

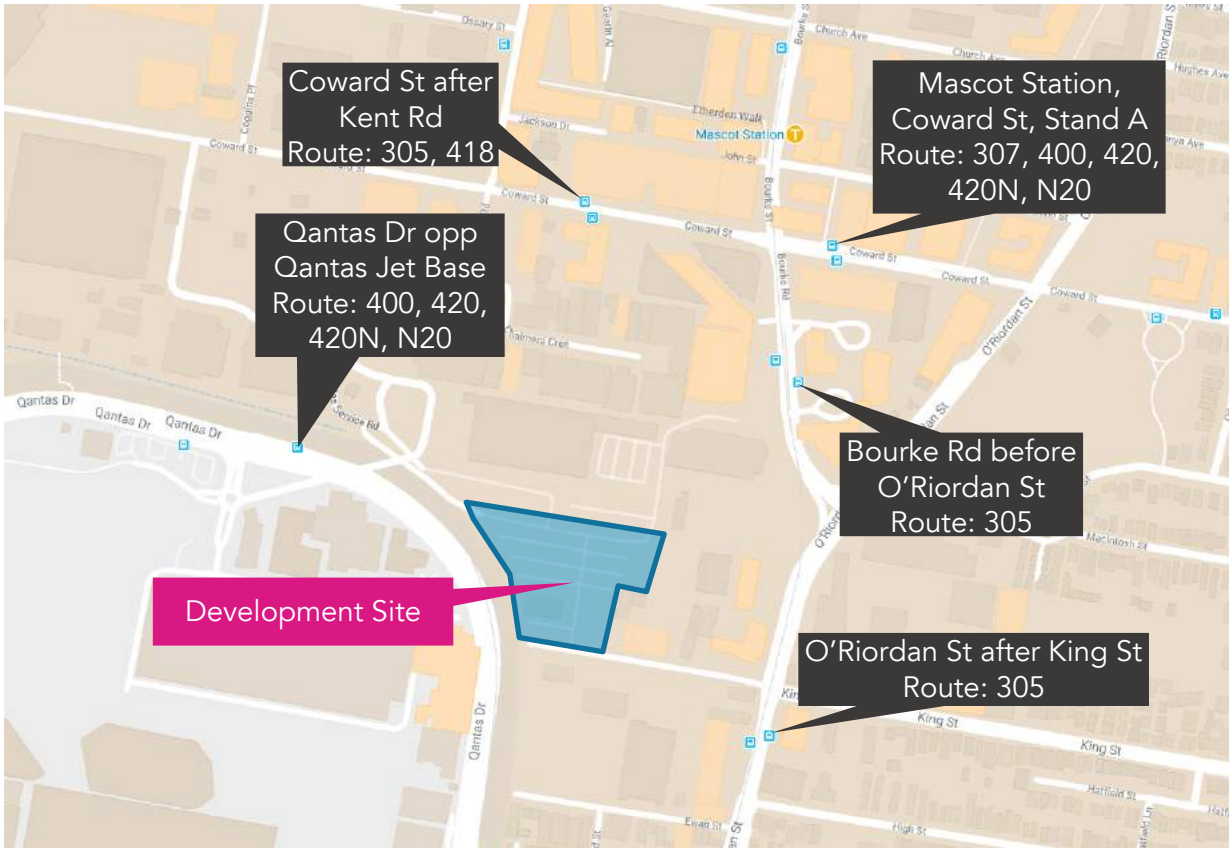

Figure 3.7 – Surrounding Public Transport

3.2.1 Rail

Mascot Station is located approximately 530m walking distance away, which provides services to T8 – Airport & South Line.

Table 3.1 – Rail Services

Rail Route	From	To	Frequency on Weekdays (approx.)
T8 – Airport & South Line	Central	Macarthur	Every 7-8 minutes Mon-Fri Every 10 minutes on weekends

Services via the Airport & South Line are frequent and provide excellent availability throughout the day, especially during peak hours.

3.2.2 Bus

The development is located 230 metres away from the closest bus stop on O'Riordan Street. The frequency of bus services is summarised in Table 3.2.

Table 3.2 – Bus Services Frequency

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Route	Frequency (approx.)	Coverage	Stop Location
305	Only operate every 30 minutes from 6:07am to 8:37am and from 2:40pm to 5:40pm Mon-Fri	Mascot Stamford Hotel to Redfern	230m
307	Every 20 minutes during peak and every 30 minutes off peak from 5:40am to 12:00am Mon-Fri Every 30 minutes from 6:40am to 7:40pm and hourly from 7:40pm to 11:38pm on weekends	Port Botany Depot to Mascot	490m
400	Every 20 minutes from 5:23am to 11:38pm Mon-Fri Every 20 minutes from 5:50am to 11:37pm on weekends	Bondi Junction to Sydney Airport via Eastgardens	490m
418	Every 15 minutes during peak and every 30 minutes off peak from 5:53am to 11:36pm Mon-Fri Every 30 minutes from 6:49am to 11:55pm on weekends	Kingsford to Burwood via Mascot, Sydenham & Dulwich Hill	590m
420	Every 20 minutes from 5:24am to 7:51pm and every 30 minutes from 7:51pm to 12:24am Mon-Fri Every 20 minutes from 5:20am to 7:06pm and every 30 minutes from 7:06pm to 12:13am on weekends	Burwood to Eastgardens via Rockdale & Sydney Airport	490m
420N	Only operate two services at 1:37am and at 2:37am Mon-Fri and four services hourly from 12:22am to 3:14am on weekends	Eastgardens to Burwood via Sydney Airport & Rockdale (Night Service)	490m
N20	Only operate hourly from 1am to 4am seven days a week	Riverwood to City Town Hall	490m

The bus services provide a good connection to the nearby suburbs.

3.3 Active Travel

In addition to public transport, the locality has been assessed for its active transport potential. When defining accessibility, the NSW Guidelines to Walking & Cycling (2004) suggest that 400m-800m is a comfortable walking distance.

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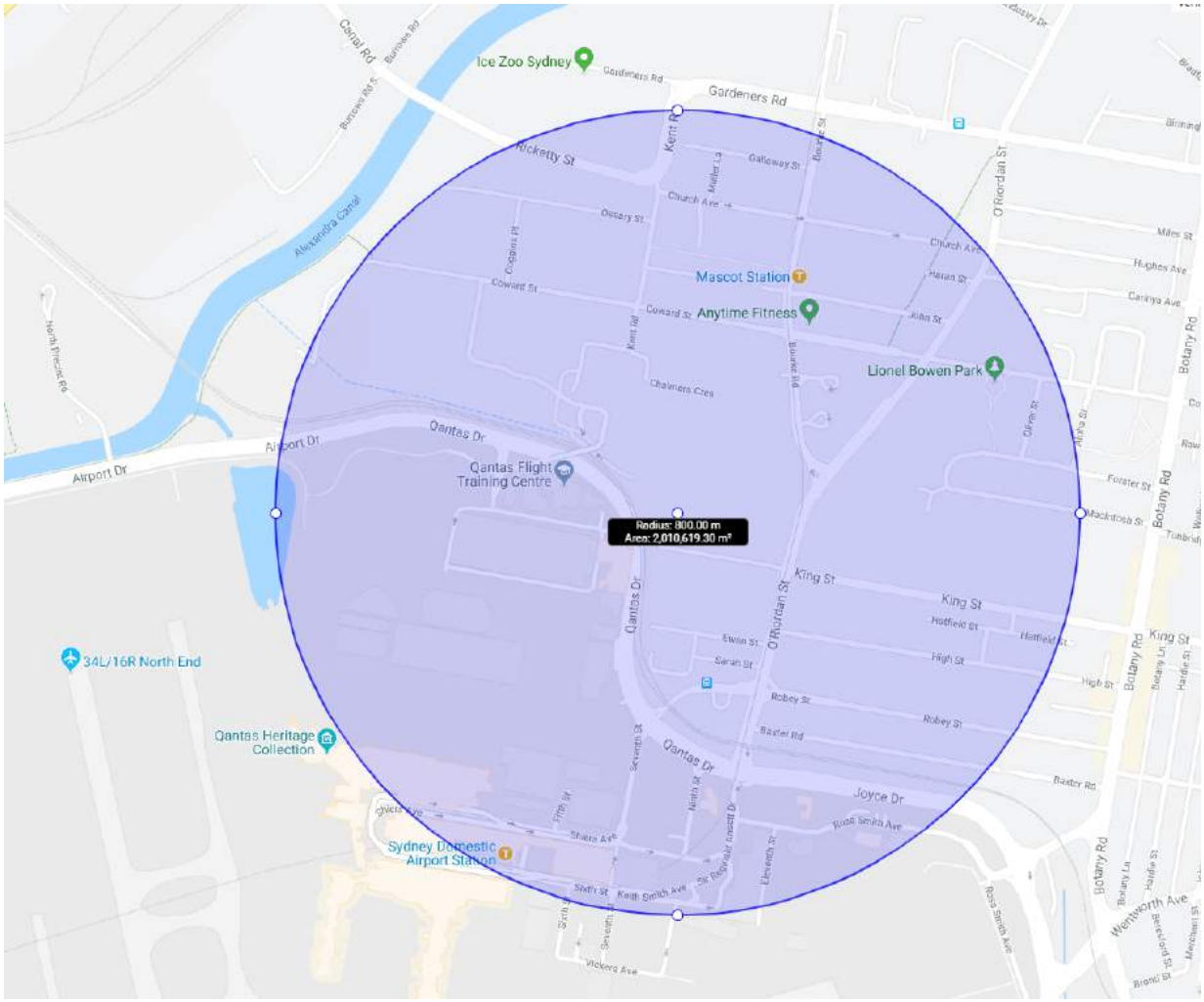

Figure 3.8 – 800m radius of the subject site

3.3.1 Walking

In terms of public infrastructure, the local road network offers a high level of amenity and safety for pedestrians, providing footpaths on either side of most roadways, pedestrian crossings, supporting signage and appropriate lighting throughout the locality.

3.3.2 Cycling

The existing bike routes within the Bayside Local Government Area are currently under review by Council. According to the information available, the subject site is located within a well-connected bicycle network. Figure 3.9 presents a screenshot of the bicycle routes published by Council. This will encourage and promote cycling as an alternative mode of transport for its occupants which is a healthy, low cost and environmentally-friendly method of travel.

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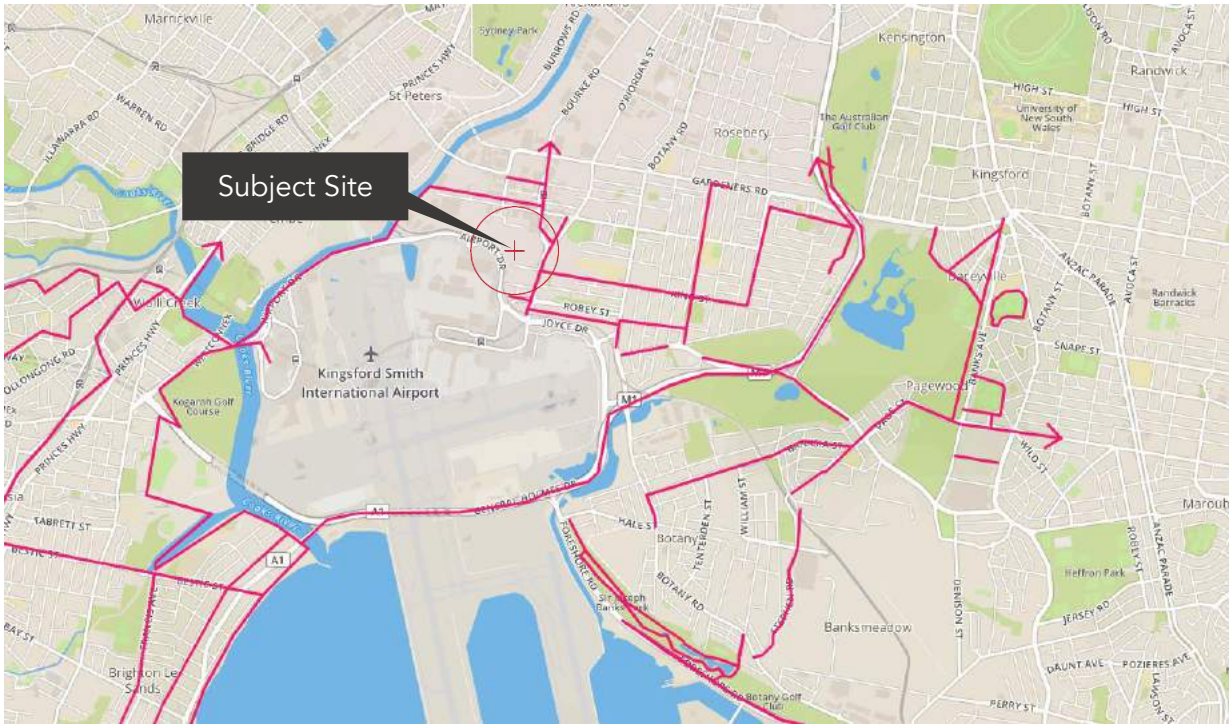

Figure 3.9: Surrounding cycle paths (Source: Bayside Council's Have Your Say website)

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4. Construction Traffic Management Plan

4.1 Objective

The traffic management plan associated with the construction activity aims to ensure the safety of all workers and road users within the vicinity of the construction site and the following are the primary objectives:

- To minimise the impact of the construction vehicle traffic on the overall operation of the road network;
- To ensure continuous, safe and efficient movement of traffic for both the general public and construction workers;
- Installation of appropriate advance warning signs to inform users of the changed traffic conditions;
- To provide a description of the construction vehicles and the volume of these construction vehicles accessing the construction site;
- To provide information regarding the changed access arrangement and also a description of the proposed external routes for vehicles including the construction vehicles accessing the site; and
- Establishment of a safe pedestrian environment in the vicinity of the site.

4.2 General Requirements

In accordance with Road and Maritime Services (RMS) requirements, all vehicles transporting loose materials will have the entire load covered and/or secured to prevent any large items, excess dust or dirt particles depositing onto the roadway during travel to and from the site.

All subcontractors must be inducted by the lead contractor to ensure that the procedures are met for all vehicles entering and exiting the construction site. The lead contractors will monitor the roads leading to and from the site and take all necessary steps to rectify any road deposits caused by site vehicles.

Vehicles operating to, from and within the site shall do so in a manner, which does not create unreasonable or unnecessary noise or vibration. No tracked vehicles will be permitted or required on any paved roads. Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances.

As outlined in the 'Construction Environmental Management Plan' (prepared by Adco, dated 4th December 2019), any issues arising from noise, vibration, dust or pollution, due to construction vehicles, will be dealt with through the Complaints Management Process.

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4.3 Staging and Program

The proposed overall development of the site will involve site setup, demolition, earthworks / excavation and construction, to which this CTMP relates.

The estimated staging, description and programming of the works are summarised in Table 3.

Table 3 – Staging and Program of the Overall Project

Phase	Duration	Estimated Commencement
Site Establishment and Early Works	1 month	December 2019
Piling and Civil Works	3 months	January 2020
Superstructure	4 months	April 2020
Façade and Fitout	6 months	August 2020
Commissioning / External Works / Pavements and Landscaping	2 months	February 2021

4.4 Hours of Work

All works, associated with the project will be restricted to the time periods specified in the Conditions of Consent. As the Conditions of Consent has yet to be issued, the following indicative hours of works are proposed:

- Earthworks and External Construction works - Monday to Sunday - 7:00am to 7:00pm;
- Internal Construction works - Monday to Sunday - 24 hours; and
- Operation - Monday to Sunday - 24 hours

In addition:

- Impact pile driving is only to be undertaken between 9am – 12pm and 2pm – 5pm, Monday to Friday,
- Bored piling is only undertaken between 7 am – 7 pm, Monday to Sunday.

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4.5 Site Establishment

As shown in Figure 4.1 the site will be set up to provide separate access and egress points, site accommodation, standing areas, material storage and handling areas as well as crane/hoist locations.

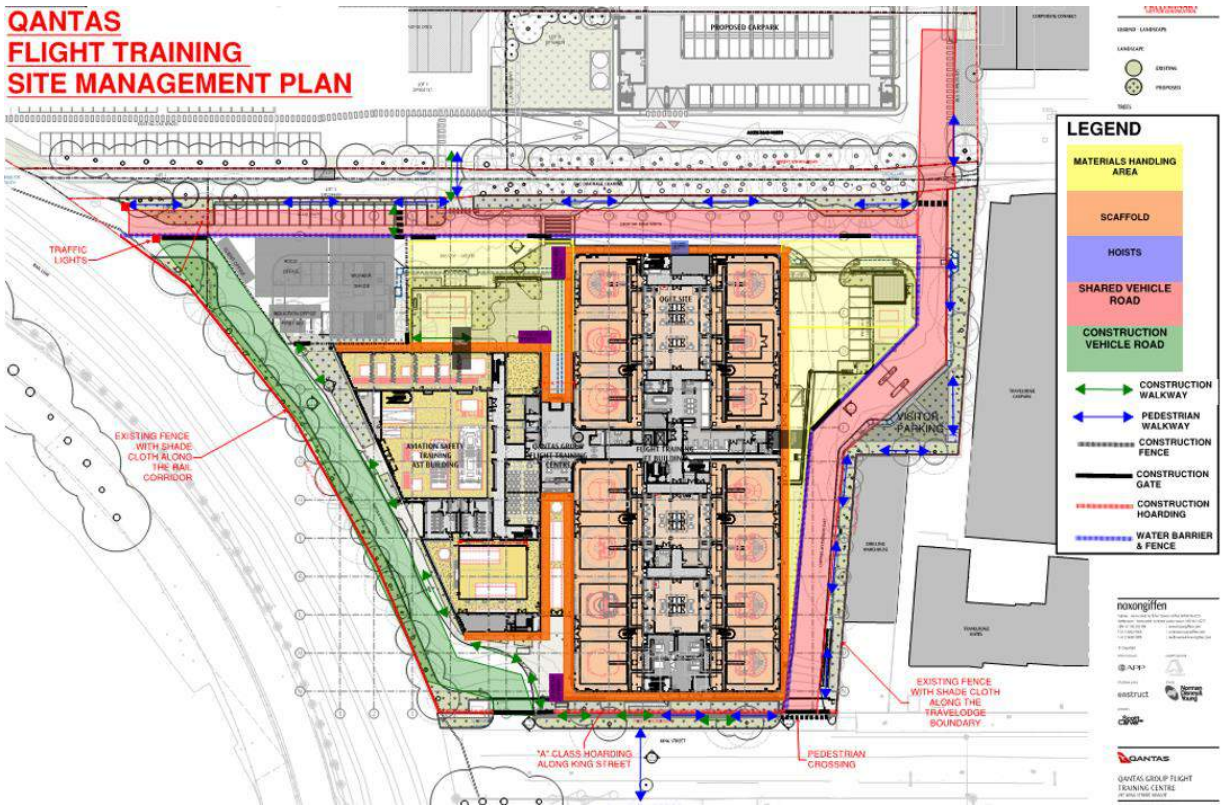

Figure 4.1 – Site Establishment

As outlined in Section 4.8, vehicles will initially access the site via the existing driveway on King Street during the site establishment stage. Once the two new driveways are constructed, construction vehicle access to the site will be via a 10.2m wide access gate of King Street and egress will be via a 9.3m wide egress gate onto King Street. All vehicles will enter and exit the site in a forward direction.

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4.6 Construction Vehicle Types

As discussed in Section 4.3, construction will be undertaken in three stages and each stage will require access and egress for various vehicles dependent on the stage of construction.

Table 4 – Construction Vehicles and Estimated Vehicle Trips

Phase	Maximum Size of Vehicle	Estimated Max Daily Trips
Site Establishment and Early Works	19m Articulated Vehicle (AV)	15
Piling and Civil Works	19m AV	60
Superstructure	19m AV	50
Façade and Fitout	19m AV	40
Commissioning / External Works / Pavements and Landscaping	MRV	15

**These are the estimated maximum trips during each stage and the intensity will vary dependent on the construction activity being undertaken, i.e. – concrete pours, material deliveries, etc.*

Any oversized vehicle that is required to travel to the project will be dealt with separately, with the submission of required permits to and subsequent approval by Bayside Council prior to any delivery.

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4.7 Construction Vehicle Routes

The site is located in Mascot and the proposed construction vehicle routes have regard for the surrounding traffic arrangements within the vicinity of the site, as shown in Figure 4.2.

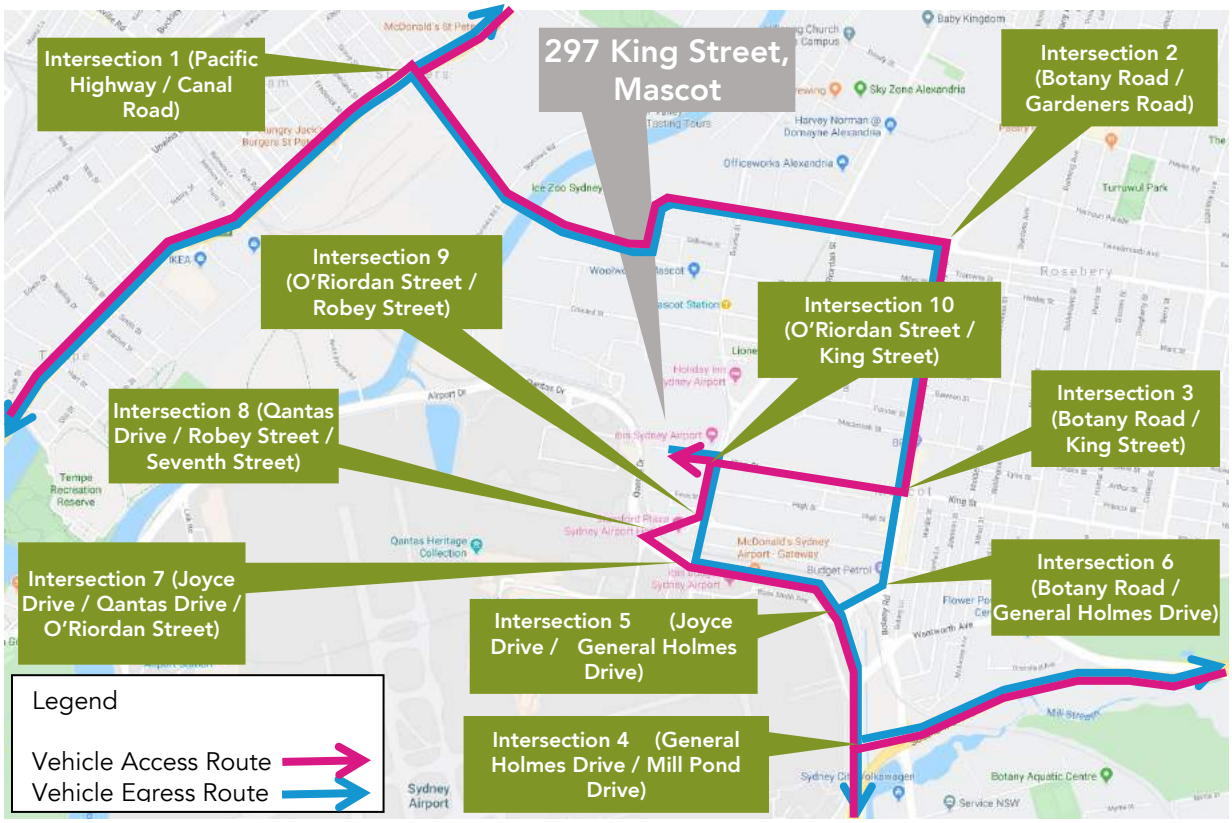

Figure 4.2 – Construction Vehicle Routes

Trucks coming from the north and west along Princes Highway will turn into Canal Road and remain straight through Ricketty Street, Kent Road and Gardeners Road, then turn right onto Botany Road and turn right again onto King Street.

Trucks coming from the south and east along M1 will exit onto General Holmes Drive and remain straight through Joyce Drive and Qantas Drive, then turn right onto Robey Street, turn left onto O'Riordan Street and turn left again onto King Street.

Trucks travelling from the site to the north and west will turn right from King Street onto O'Riordan Street, turn left onto Joyce Drive, turn left onto General Holmes Drive, turn left onto Botany Road, turn left onto Gardeners Road and remain straight through Kent Road and Ricketty Street and then turn left or right at the intersection of Pacific Highway with Canal Street depending on the destination.

Trucks travelling from the site to the south and east will turn right from King Street onto O'Riordan Street, turn left onto Joyce Drive and remain straight onto General Holmes Drive, and then turn left or remain straight at the intersection of General Holmes Drive with Mill Pond Drive depending on the destination.

No queuing or marshalling of trucks is permitted on any public road.

All vehicle routes are constrained to existing public roads that have the physical geometry to accommodate the turning movements.

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Figure 4.4 – Swept Path Analysis – 19m AV at intersection 2 (Botany Road/Gardeners Road)

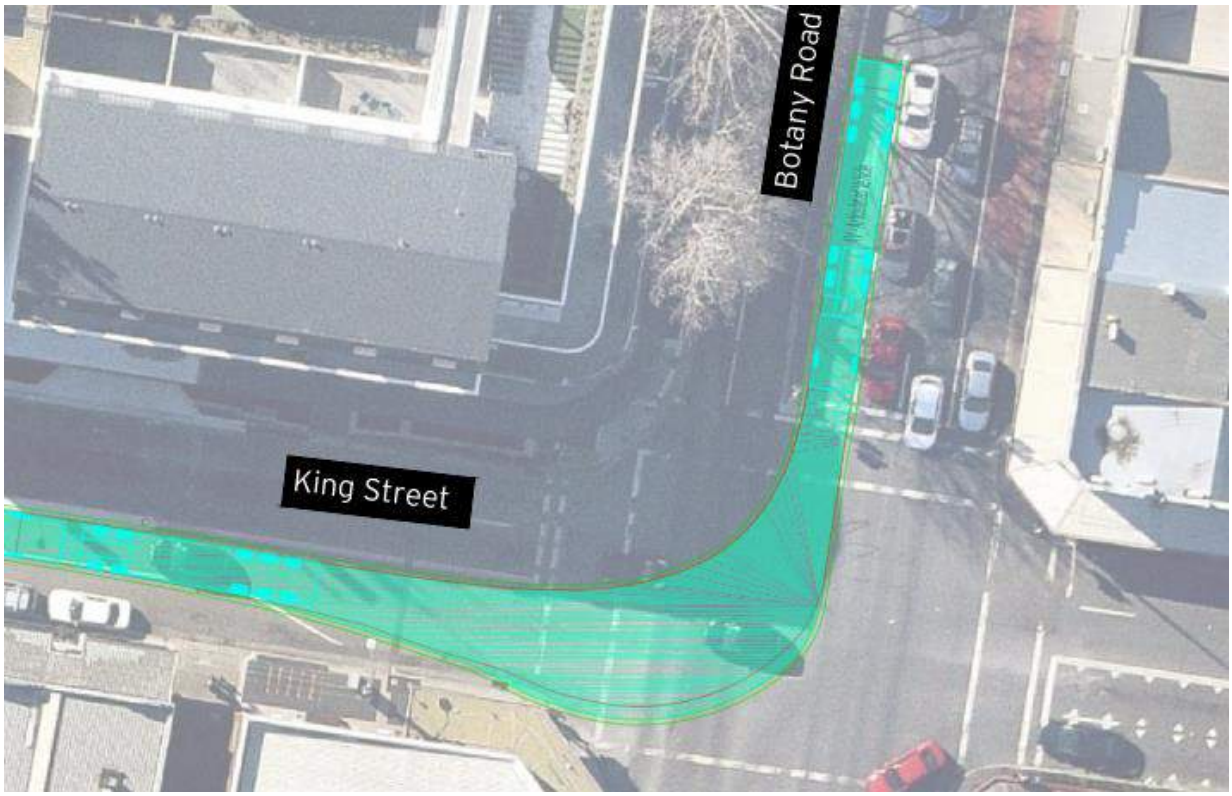

Figure 4.5 – Swept Path Analysis – 19m AV at intersection 3 (Botany Road/King Street)

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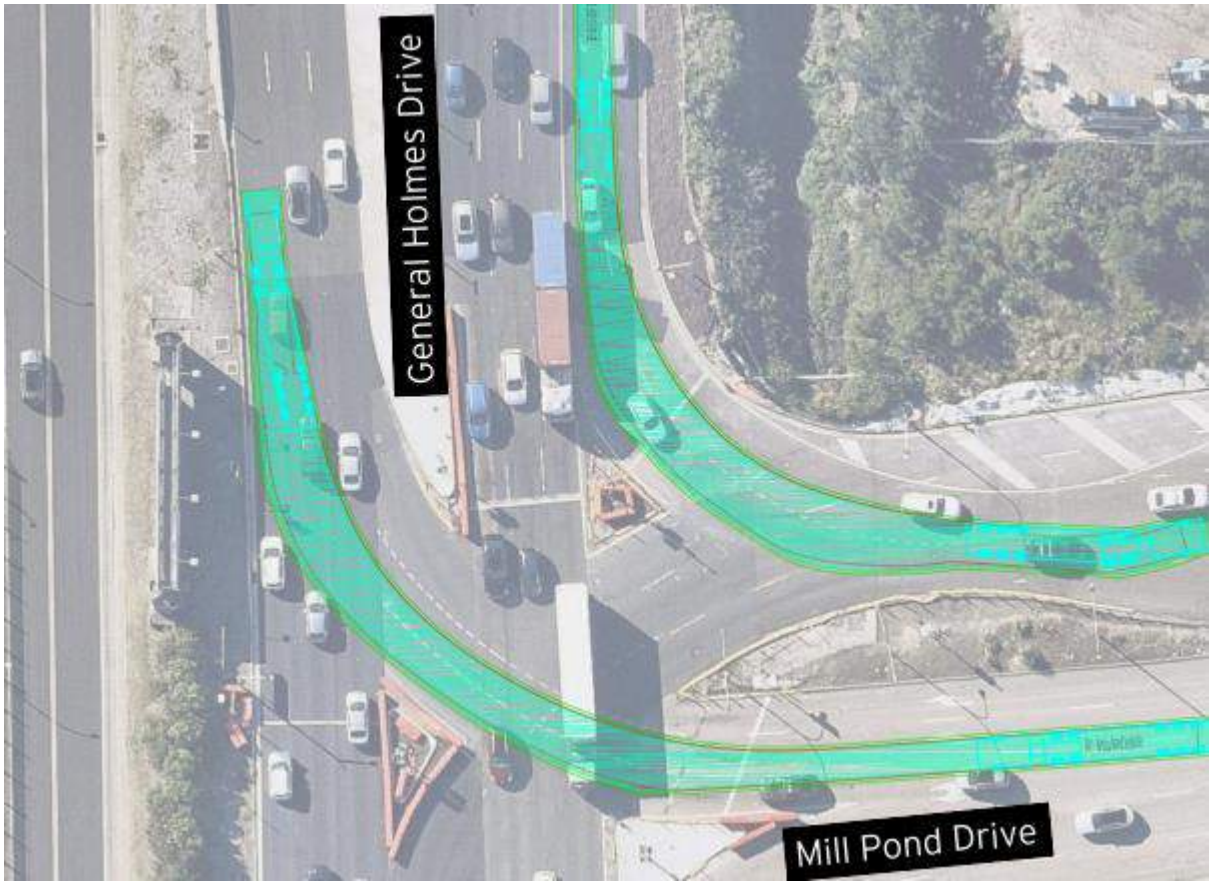

Figure 4.6 – Swept Path Analysis – 19m AV at intersection 4 (General Homes Drive/Mill Pond Drive)

Figure 4.7 – Swept Path Analysis – 19m AV at intersection 5 (Joyce Drive/General Holmes Drive)

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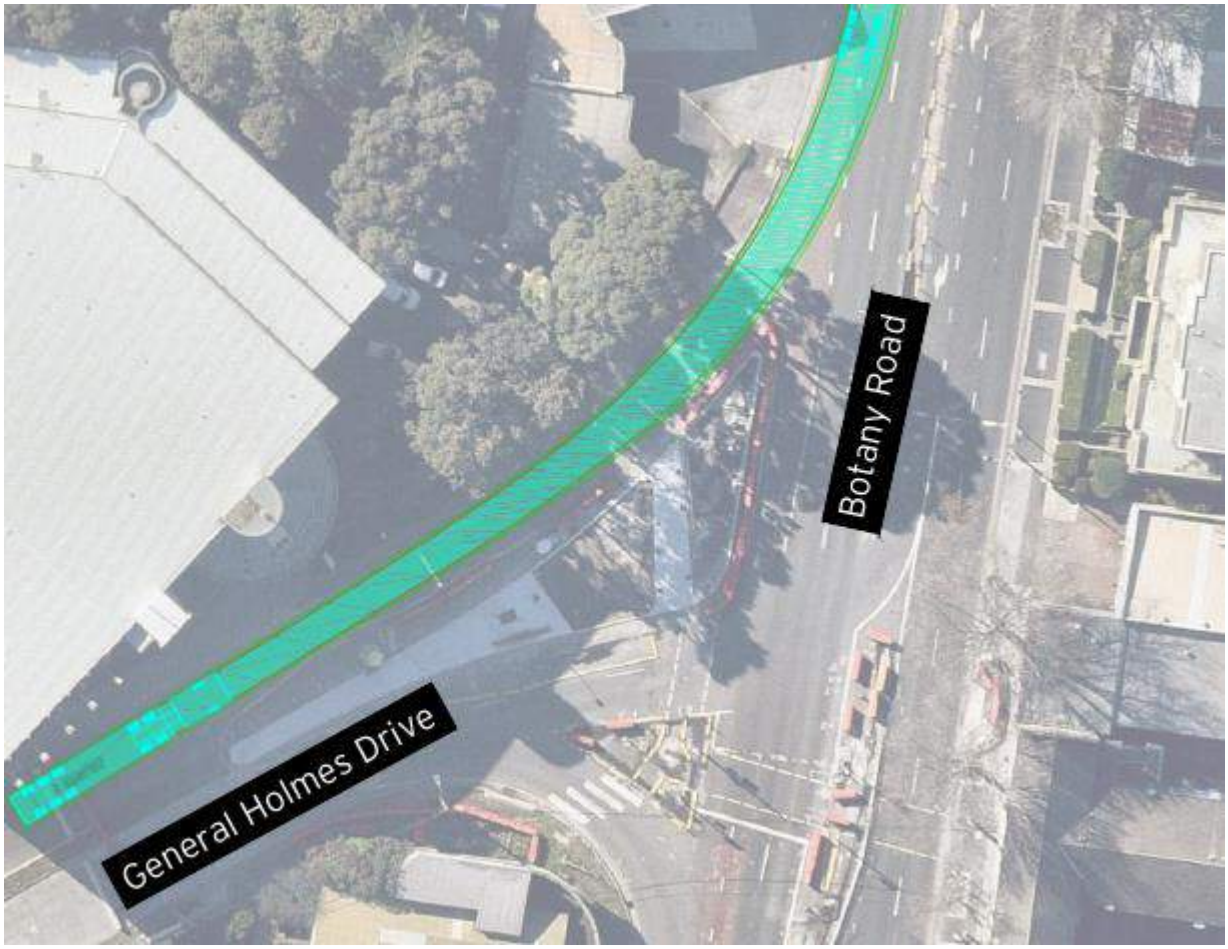

Figure 4.8 – Swept Path Analysis – 19m AV at intersection 6 (Botany Road/General Holmes Drive)

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All access gates to the site will be managed by gate controllers to ensure the safe management of the ingress and egress to the site and its interaction with non-construction traffic on the road network.

Swept path analysis has been undertaken utilising the expected largest vehicle type on the key intersections to confirm that the exiting intersections can accommodate these vehicles.

The swept path analysis for each critical intersection can be found in Figure 4.3 through to Figure 4.12 and Attachment 1.

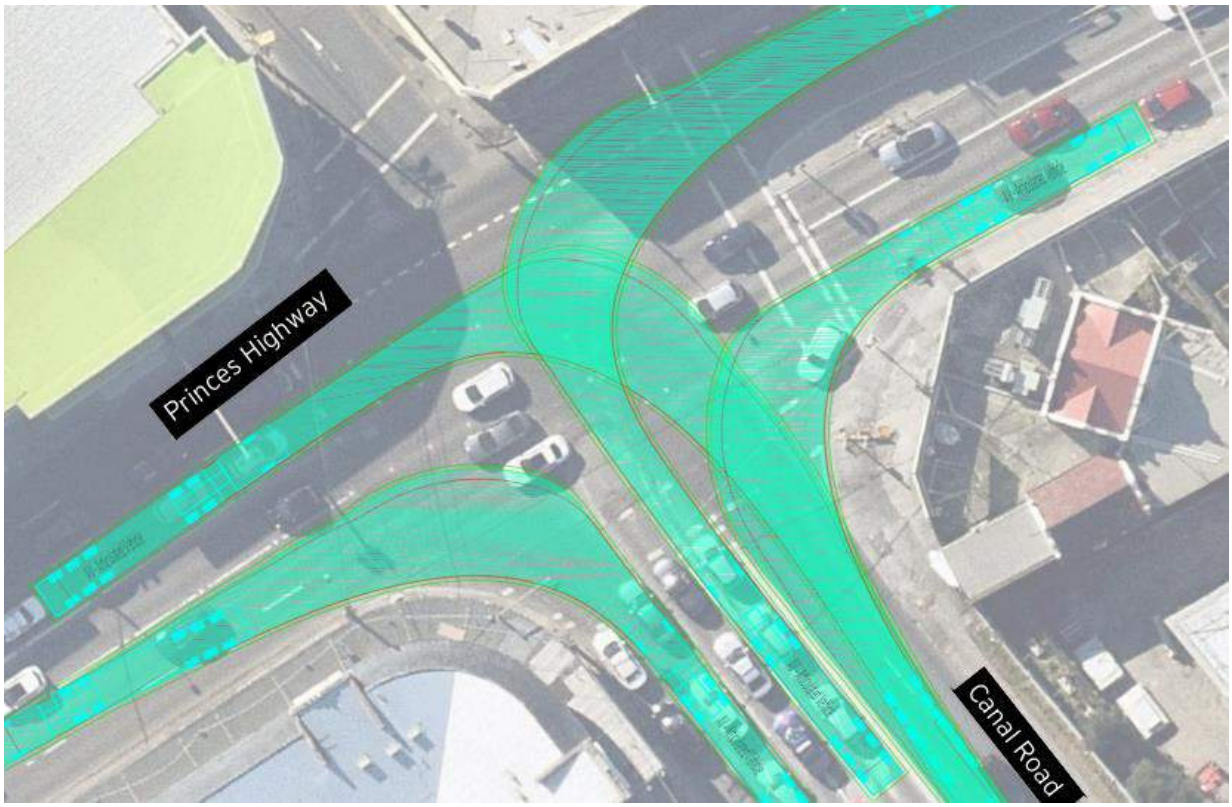

Figure 4.3 – Swept Path Analysis – 19m AV at Intersection 1 (Pacific Highway/Canal Road)

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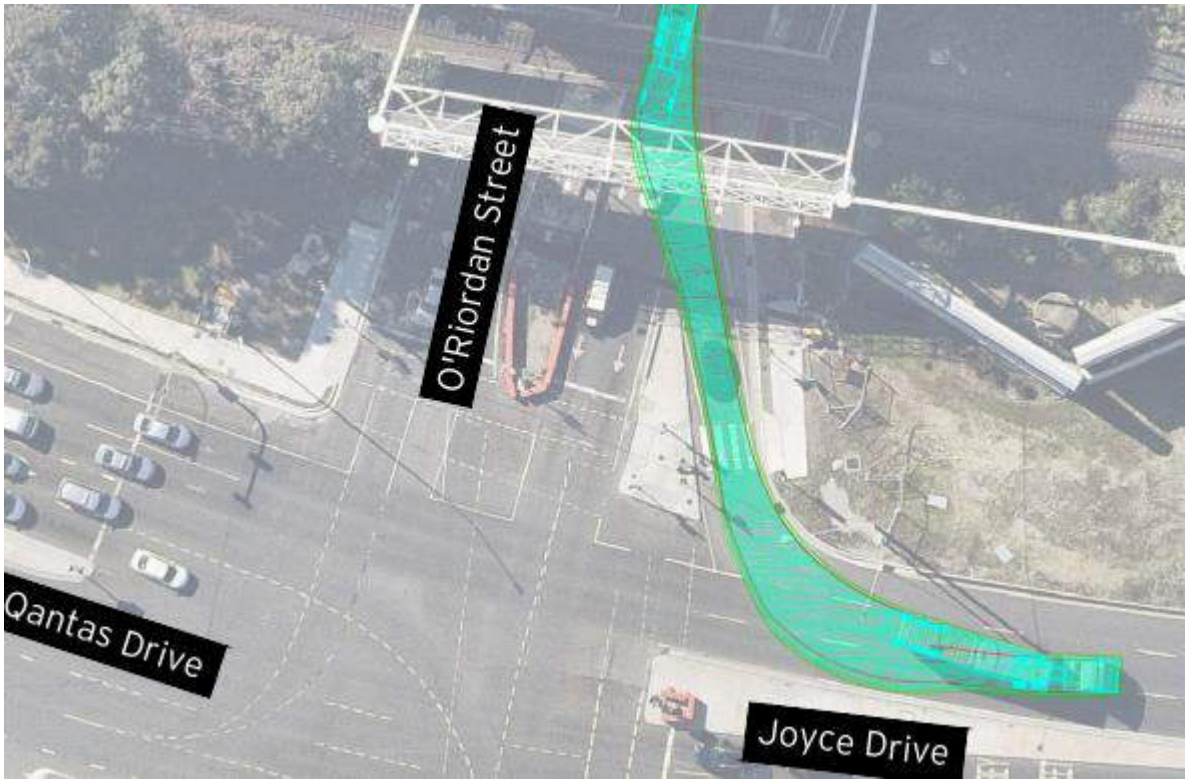

Figure 4.9 – Swept Path Analysis – 19m AV at intersection 7 (Joyce Drive/Qantas Drive/O'Riordan Street)

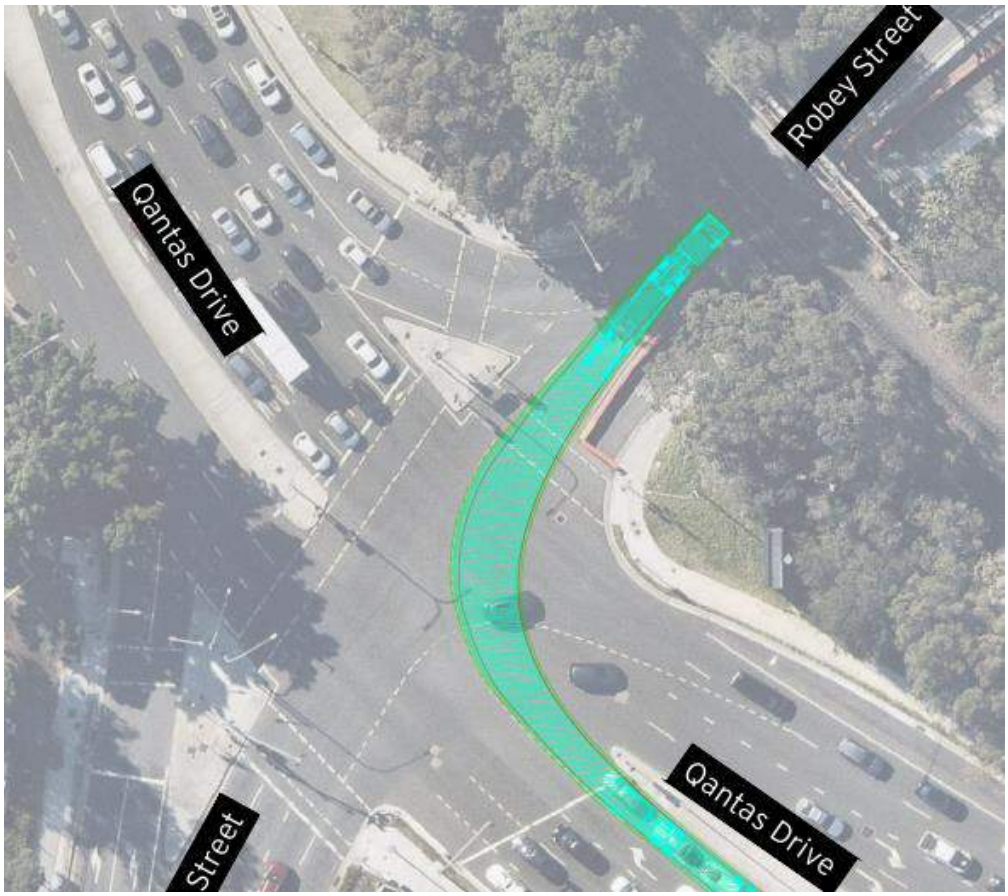

Figure 4.10 – Swept Path Analysis – 19m AV at intersection 8 (Qantas Drive/Robey Street/Seventh Street)

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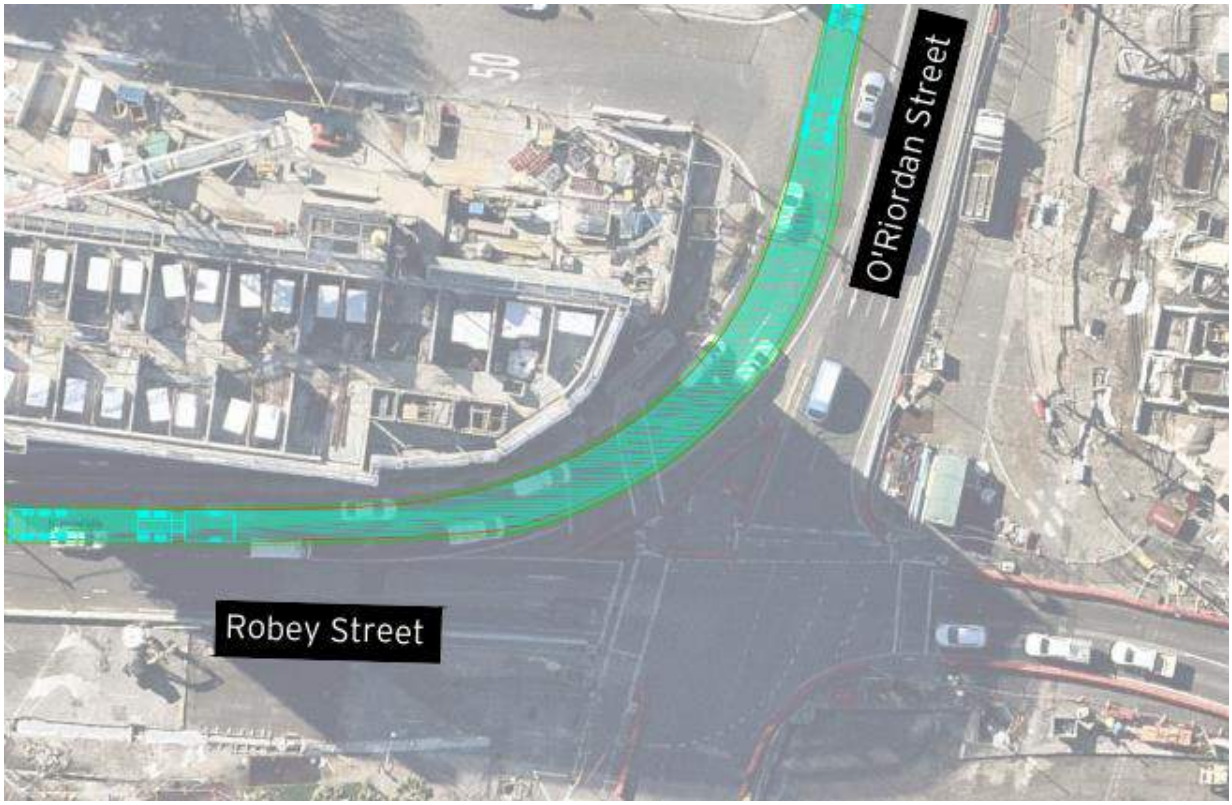

Figure 4.11 – Swept Path Analysis – 19m AV at intersection 9 (O'Riordan Street/Robey Street)

Figure 4.12 – Swept Path Analysis – 19m AV at intersection 10 (O'Riordan Street/King Street)

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4.8 Construction Vehicle Site Access and Egress

During the initial site establishment stage, the site will be accessed through the existing driveway on King Street. As part of this proposal, two new driveways are proposed leading to the car park access road and the service road respectively.

After these two new driveways are completed during this initial stage, construction vehicles will enter the site via the car park access road on King Street, passing through the internal drop off road, and then exiting the site via the service road onto King Street in a one-way arrangement. Loading/Unloading of materials and plants, as well as concrete pour activities will occur fully within the site. Hence, a Works Zone is not required.

Gate controllers will be utilised to safely manage access and egress from the site at all times.

It should be noted that access to Australian Rail Track Corporation (ARTC) rail corridor gates via King Street will not be impeded during all stages of construction. A site plan showing the access and egress points of the site is shown in Figure 4.13.

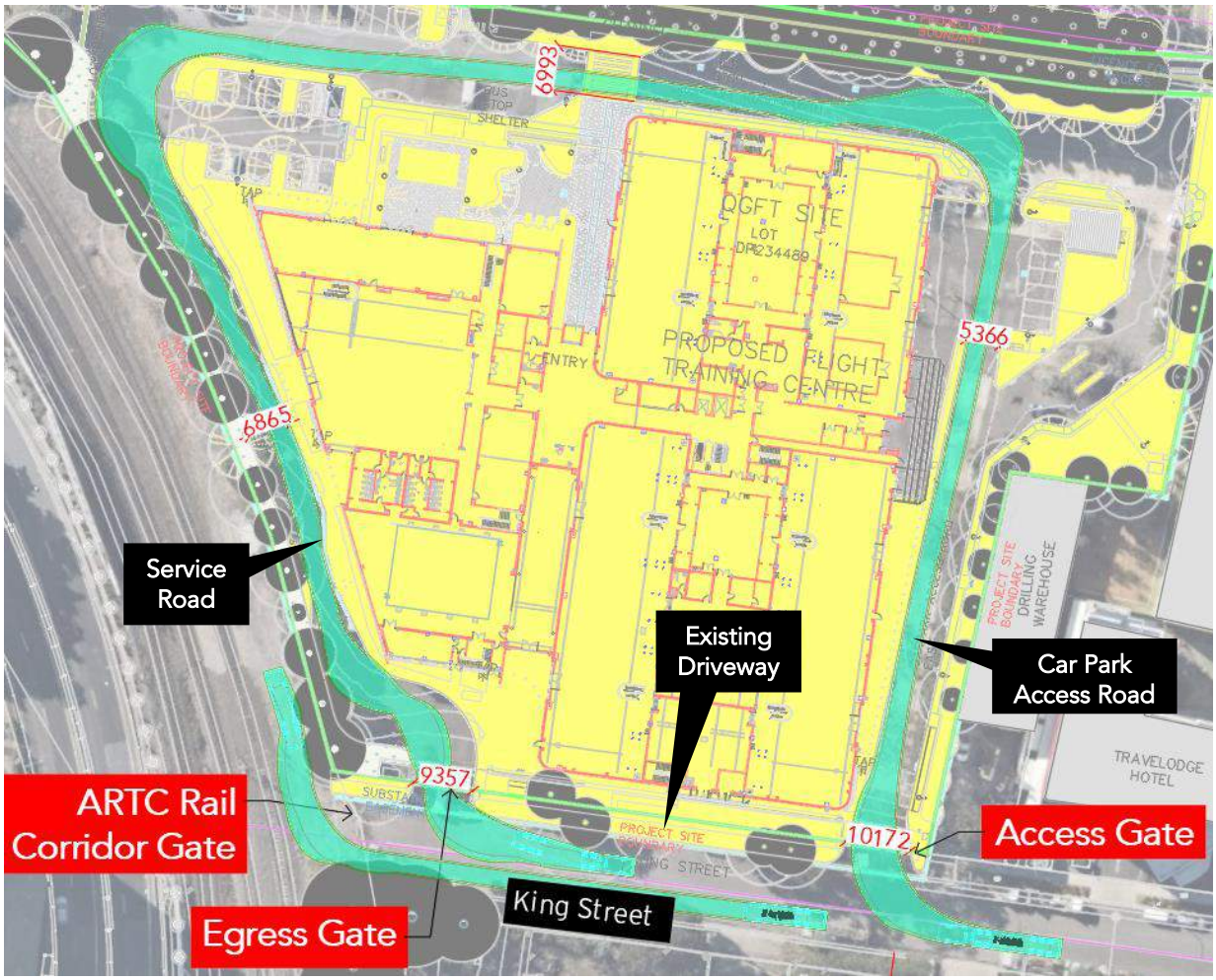

Figure 4.13 – 19m AV Site Manoeurve

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4.9 Traffic Control Measures

The Traffic Control Plan (TCP) outlines the proposed traffic management to inform road users of the changed traffic conditions in the vicinity of the works site.

Traffic control will be provided in accordance with the requirements of the RMS Guide to Traffic Control at Worksites.

Traffic management will be provided on the westbound approach on King Street in accordance with TCP 195 (see Attachment 2) and gate controllers will be provided to manage access and egress to the site.

4.10 Works Zone

As outlined in Section 4.8, a Works Zone is not required.

4.11 Pedestrian Access

Pedestrian access to and around the site is to be maintained at all times. As the site is within the Qantas campus, the following access is maintained for Qantas vehicles and pedestrians:

- Northern access route for the Ground Transport buses that transfer Qantas staff around the campus and airport;
- Service vehicle access from King Street to the northern campus area;
- Pedestrian access from King Street to the northern campus and Qantas Catering;
- Qantas catering access to loading dock and carpark; and
- Maintain service access to the Trigeneration Plant and pedestrian access from King Street.

To provide segregation and protection for pedestrians, it is proposed a Class A hoarding is installed on the King Street frontage while a fence is to be erected along the remainder of the site boundary. These hoarding/fencing will define the extent of the works site.

All access points are to be securely locked when construction activities are not in progress.

The exact location of this hoarding/fence is to be agreed on site, prior to commencement of the works.

4.12 Special Deliveries

Whilst not anticipated, any oversized vehicle that is required to travel to the site will be dealt with separately, with the submission of required permits to and subsequent approval by Council prior to any delivery. Requests shall be submitted 28 days prior to the scheduled date of use of an oversized vehicle.

4.13 Staff Parking

It is expected that there will be an average of 150 workers on site with a peak of 220 workers on site at any given time. There will be no staff parking available on site. All site personnel are to be advised that they are not to park in the on-street parking in the vicinity of the development site. To minimise the required parking, the contractor will also be encouraged to assist in the transportation of workers to the site. Also, site personnel will be advised to car pool (where ever practicable) and site personnel will be informed of the public transport options available in the vicinity of the site (refer to Section 3.2) and advised to utilise these facilities (wherever practicable).

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A public transport pack information is to be provided to all staff and contractors, advising them of the public transport options available.

4.14 Work Site Security

As discussed in Section 4.11 and shown in Figure 4.1, to provide security to the works site and protection to the general public, it is proposed that a hoarding/fence is to be erected along the development site boundary. This combination of hoarding/fencing will define the extent of the works site. All access points are to be securely locked when construction activities are not in progress. The locations of the access points are outlined in Section 4.11.

4.15 Staff Induction

All staff and subcontractors engaged on site will be required to undergo a site induction. The induction will include permitted access routes to and from the construction site for all vehicles, as well as standard environmental, OH&S, driver protocols and emergency procedures. Additionally, the lead contractor will discuss TMP requirements regularly as a part of toolbox talks and advise workers of public transport and car-pooling opportunities.

4.16 Emergency Vehicle Access

The proposed traffic control arrangements do not propose closure of any local roads.

Any emergency vehicles requiring access to the project site will do so via the site access on King Street.

4.17 Access to adjoining properties

Access to all adjoining properties will be maintained throughout the works.

4.18 Occupational Health and Safety

Any workers required to undertake works or traffic control within the public domain shall be suitably trained and will be covered by adequate and appropriate insurances. All traffic control personnel will be required to hold RMS accreditation in accordance with Section 8 of Traffic Control at Worksites.

4.19 Method of Communicating Traffic Changes

The traffic control plan (TCP) in accordance with Australian Standards (AS 1742.3 – Traffic Control Devices for Works on Roads) and RMS Traffic Control at Worksites manual will advise motorist of upcoming changes in the road network.

During construction the contractor shall each morning, prior to work commencing, ensure all signage is erected in accordance with the TCP and clearly visible. Each evening, upon completion of work, the contractor is to ensure signage is either covered or removed as required. Sign size is to be size "A".

No deviation from the approved TCP shall be permitted, unless otherwise approved by Council and certified by an RMS accredited personnel.

The associated TCP road signage will inform drivers of works activities in the area including truck movements in operation.

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Prior to commencement of works on site the contractor is to inform neighbouring properties of proposed works and provide site contact information by means of a letter box distribution.

4.20 Contact Details for On-Site Enquiries and Site Access

For enquiries related to site access, Stephen Chamberlain, Senior Project Manager of ADCO Constructions Pty Ltd can be contacted via email on schamberlain@adcoconstruct.com.au or phone on 0458 748 199.

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5. Summary

This CTMP has been prepared to outline the construction traffic measures to improve site safety to the public and workers and the construction process.

The construction activity is anticipated to have minimal disruption to the daily activities within the vicinity of the site.

It is envisaged that this document will be continually reviewed and amended if required, due to changes in design, RMS, Councils or any other authority requirements.

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Attachment 1 Truck Route Swept Paths

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comments

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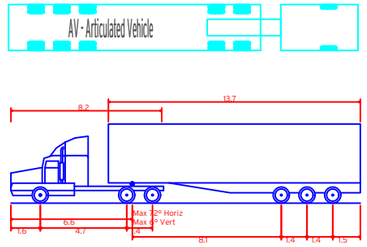
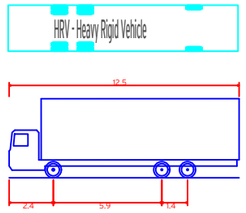


AV - Articulated Vehicle

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

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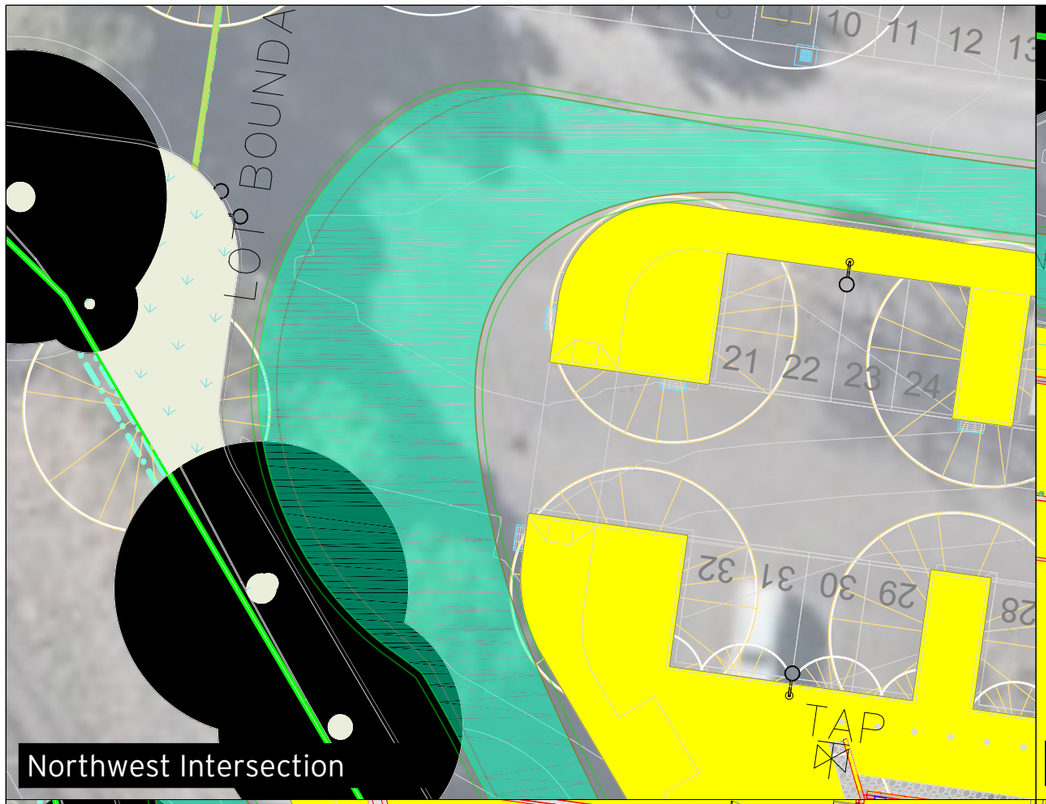
rev	date	comment / description	drawn	reviewed
2	29/10/19	FOR INFORMATION	EL	SW
1	23/10/19	FOR INFORMATION	EL	SW

project
Qantas Group Flight Training Centre

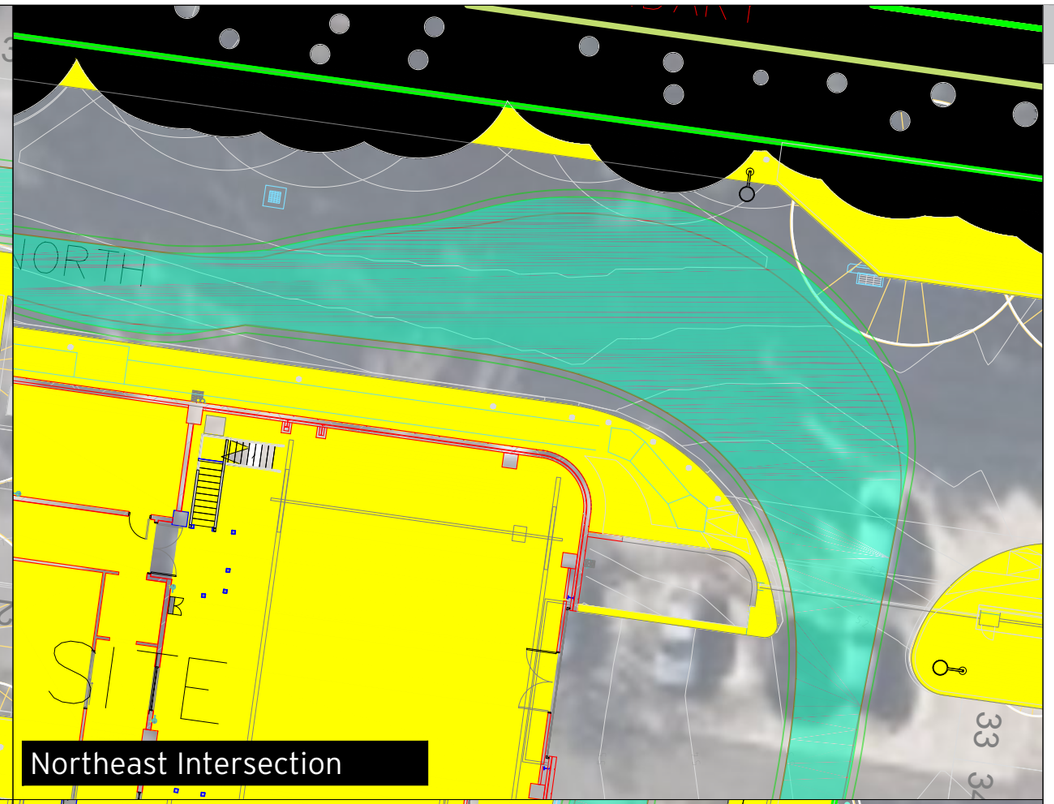
drawing title
Site Access Overview

client	ADCO Constructions Pty Ltd
drawing #	TP-001
project #	2715
scale	1 : 600

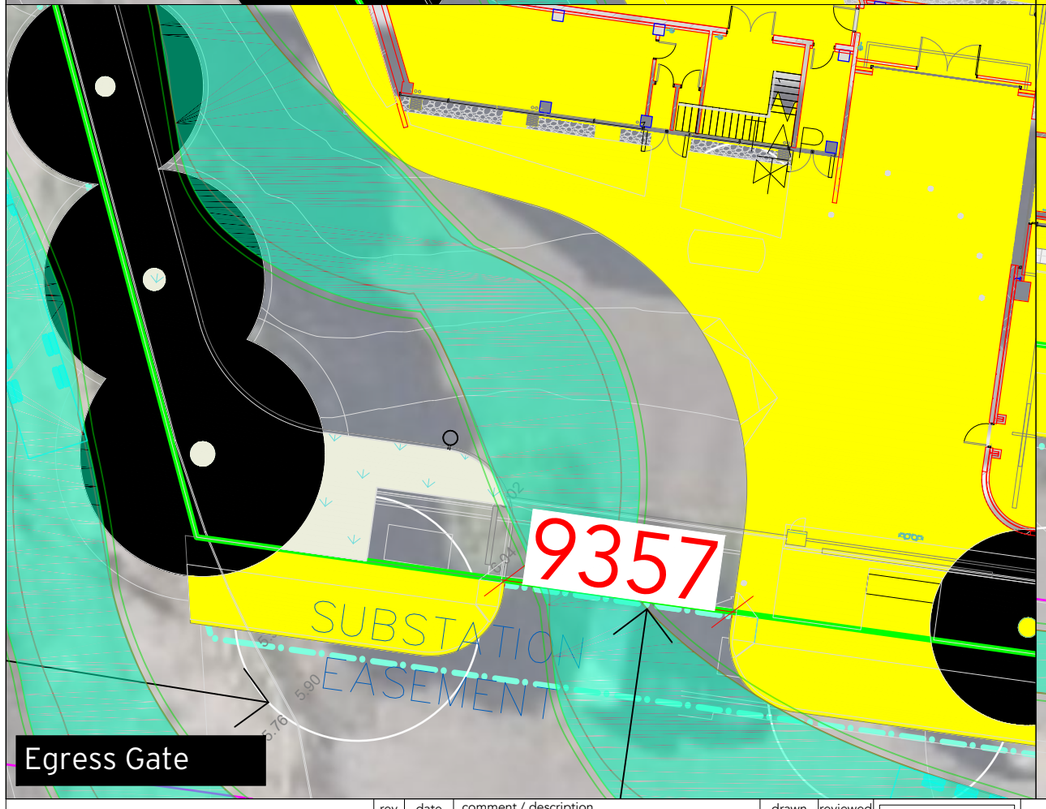
rev 2



Northwest Intersection



Northeast Intersection

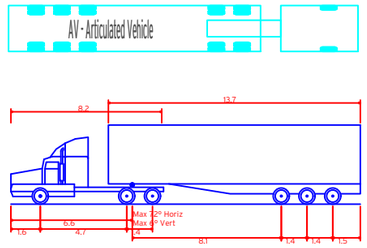


Egress Gate

Access Gate

comments

A3



AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

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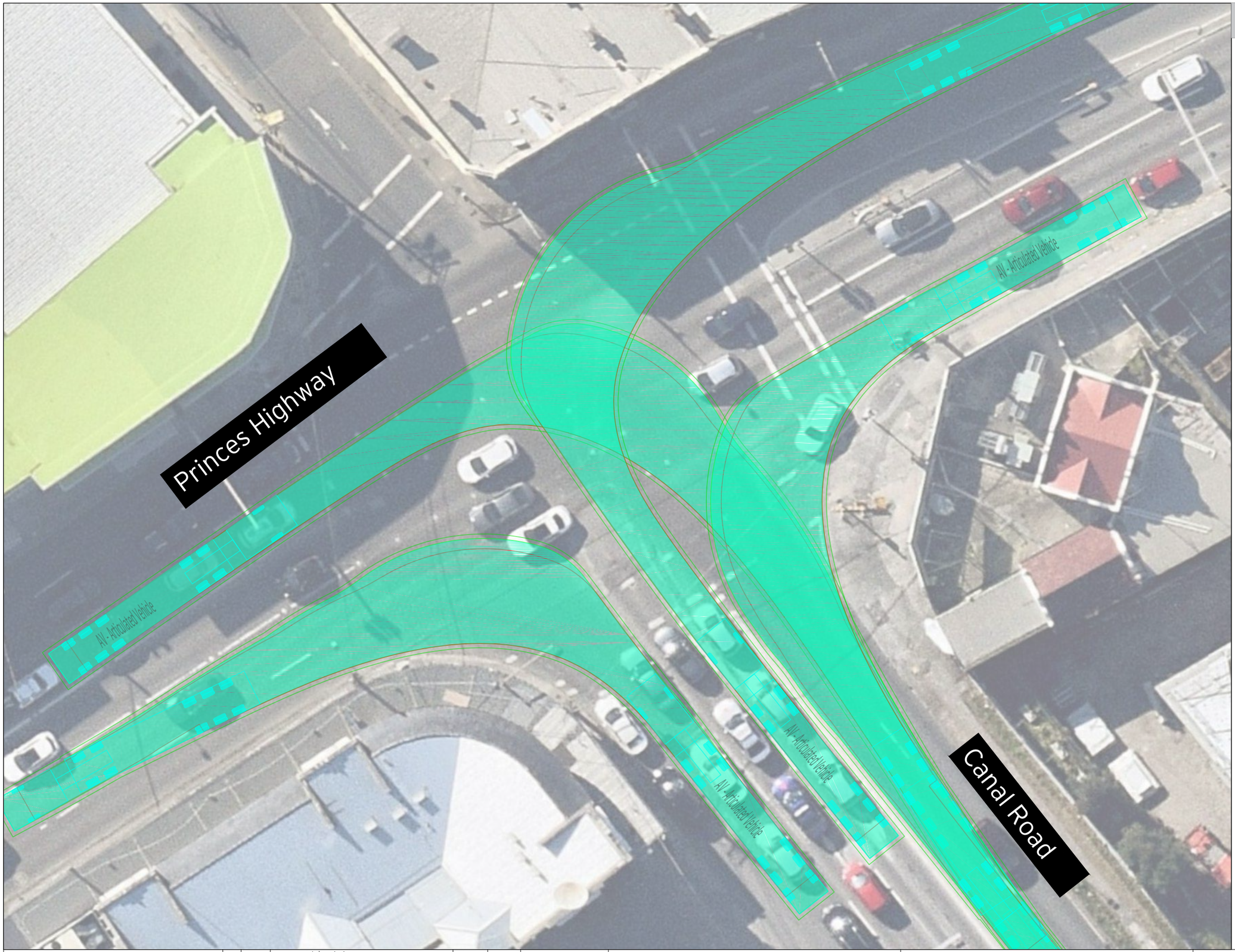
rev	date	comment / description	drawn	reviewed
2	29/10/19	FOR INFORMATION	EL	SW
1	23/10/19	FOR INFORMATION	EL	SW

project
Qantas Group Flight Training Centre

drawing title
Site Access Enhanced View

client	ADCO Constructions Pty Ltd
drawing #	TP-002
project #	2715
scale	1 : 250

rev 2



comments

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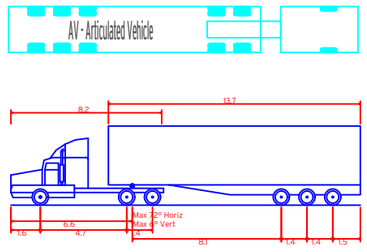

AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

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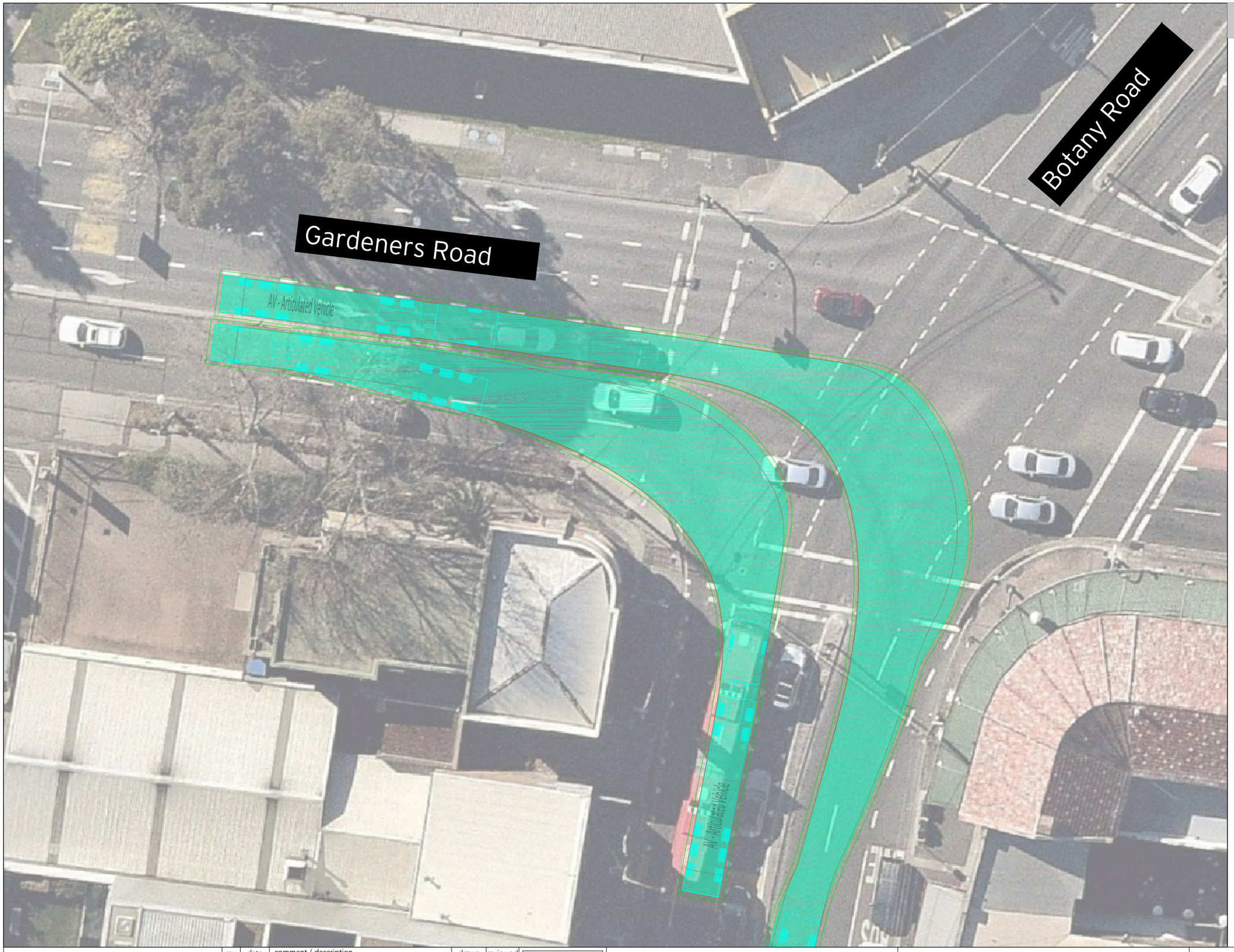
rev	date	comment / description	drawn	reviewed
2	29/10/19	FOR INFORMATION	EL	SW
1	23/10/19	FOR INFORMATION	EL	SW

project
Qantas Group Flight Training Centre

drawing title
Intersection of Princes Highway / Canal Road (Intersection 1)

client	ADCO Constructions Pty Ltd
drawing #	TP-101
project #	2715
scale	1 : 250

rev 2



comments

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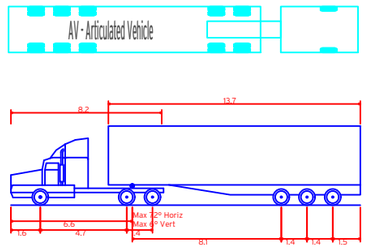

AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

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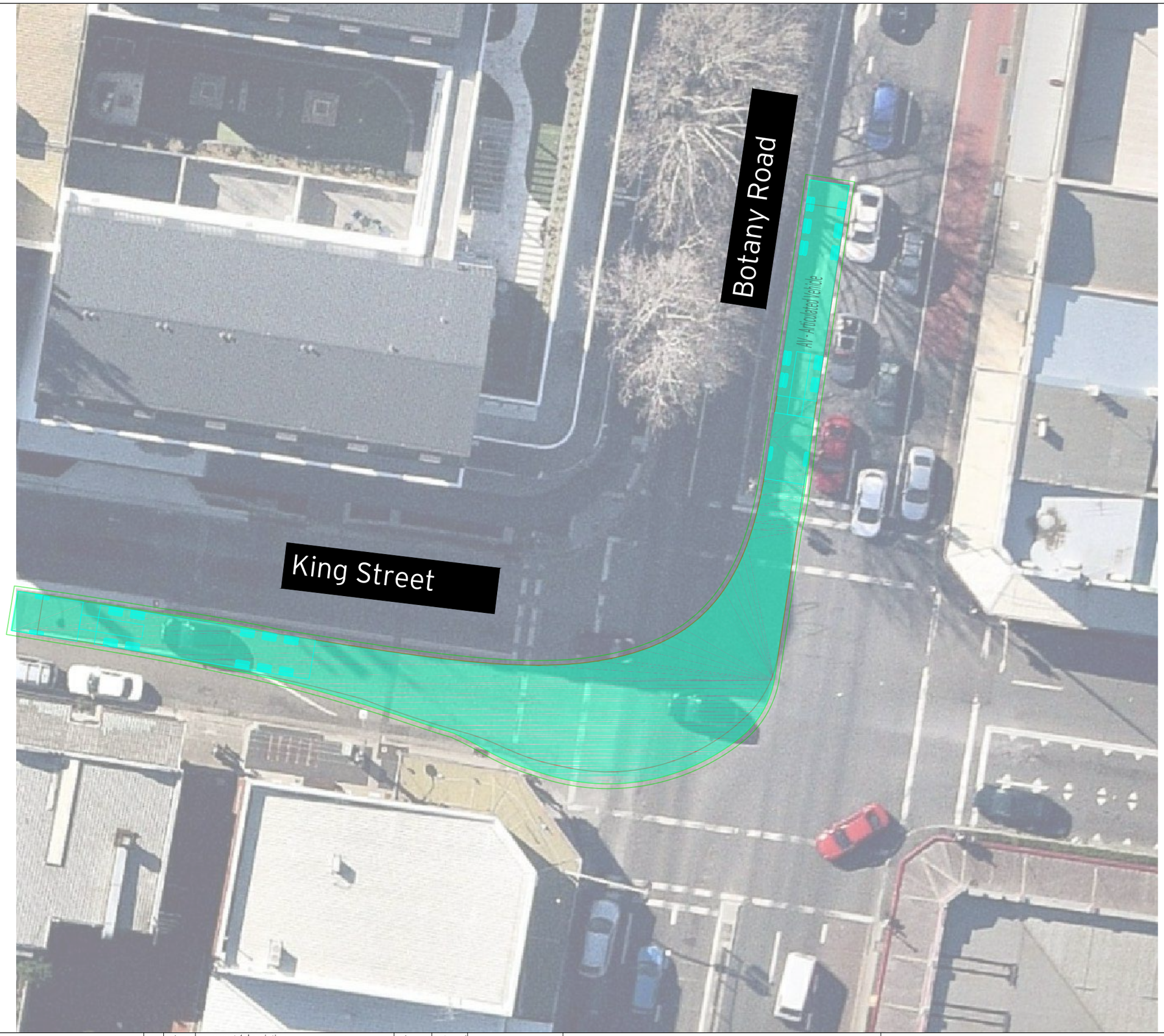
rev	date	comment / description	drawn	reviewed
2	29/10/19	FOR INFORMATION	EL	SW
1	23/10/19	FOR INFORMATION	EL	SW

project
Qantas Group Flight Training Centre

drawing title
Intersection of Botany Road / Gardeners Road (Intersection 2)

client	ADCO Constructions Pty Ltd
drawing #	TP-102
project #	2715
scale	1 : 250

rev 2



comments

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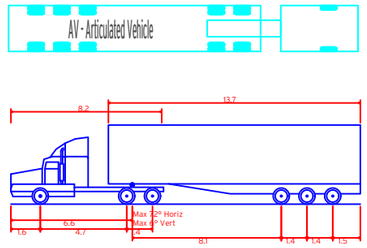

AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

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rev	date	comment / description	drawn	reviewed
2	29/10/19	FOR INFORMATION	EL	SW
1	23/10/19	FOR INFORMATION	EL	SW

project

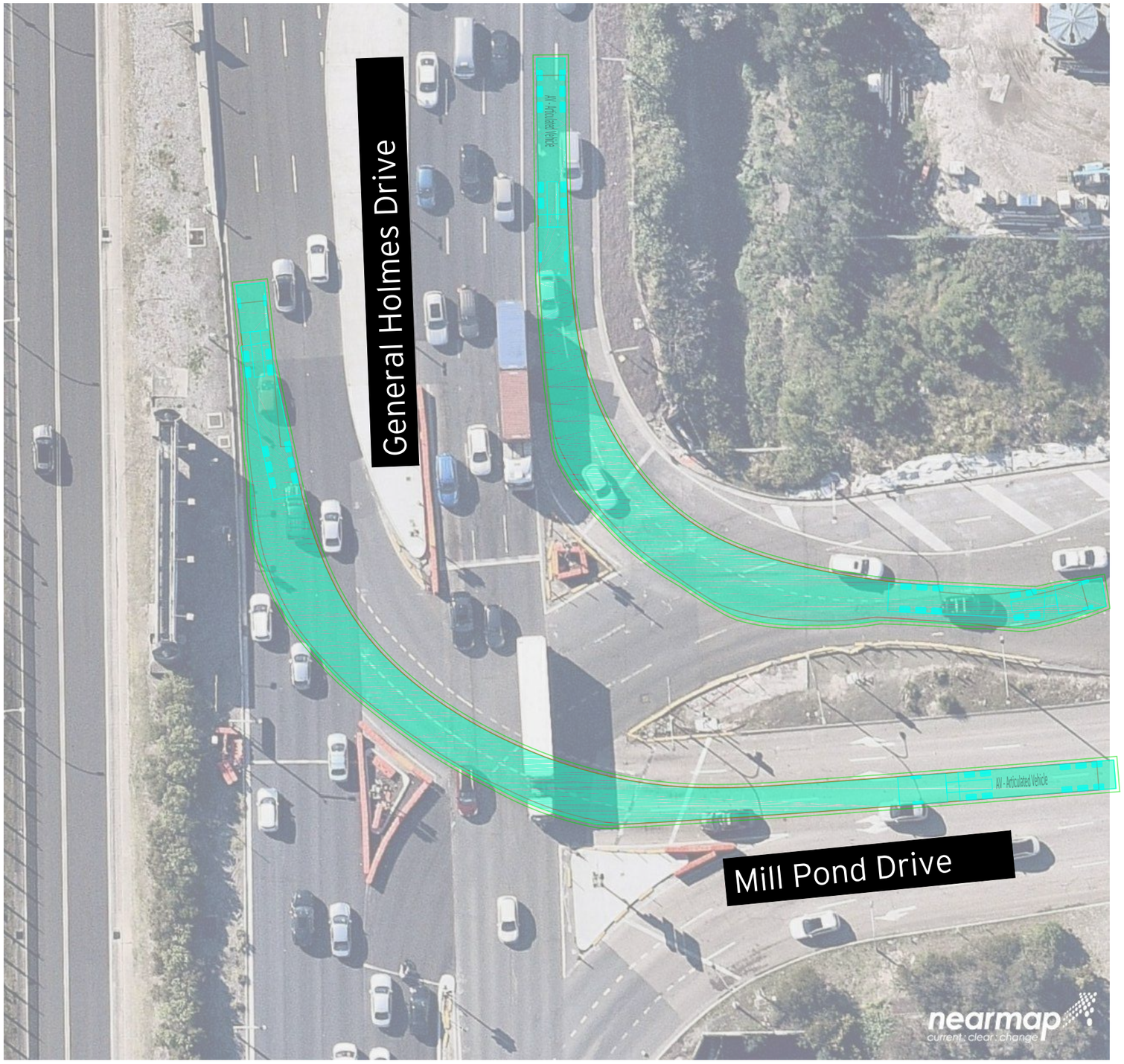
Qantas Group Flight Training Centre

drawing title

Intersection of Botany Road / King Street (Intersection 3)

client	ADCO Constructions Pty Ltd
drawing #	TP-103
project #	2715
scale	1 : 250

rev 2



comments

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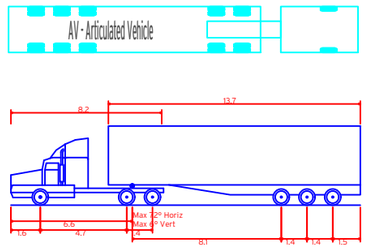

AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

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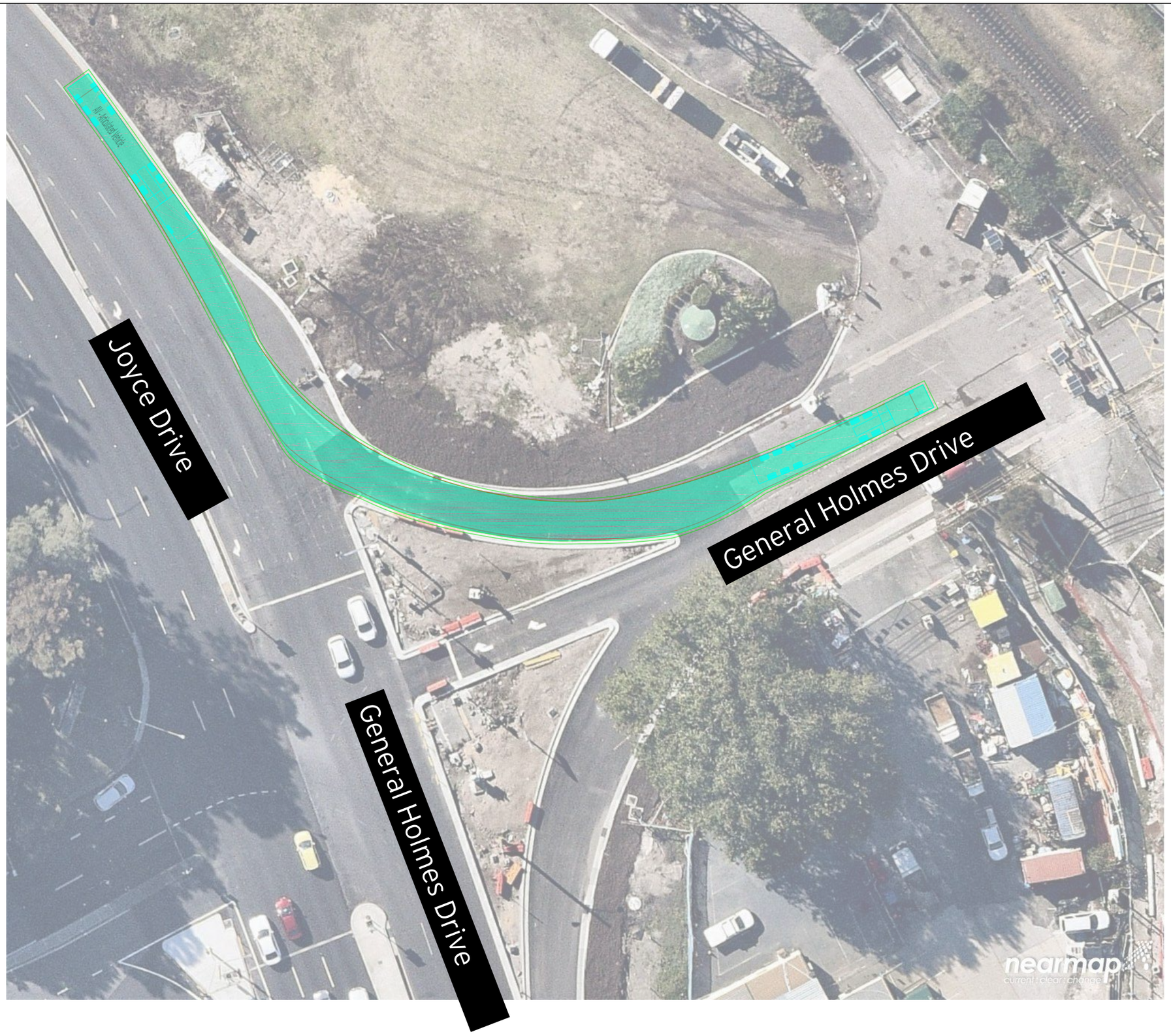
rev	date	comment / description	drawn	reviewed
2	29/10/19	FOR INFORMATION	EL	SW
1	23/10/19	FOR INFORMATION	EL	SW

project
Qantas Group Flight Training Centre

drawing title
Intersection of General Holmes Drive / Mill Pond Drive (Intersection 4)

client	ADCO Constructions Pty Ltd
drawing #	TP-104
project #	2715
scale	1 : 400

rev 2



comments

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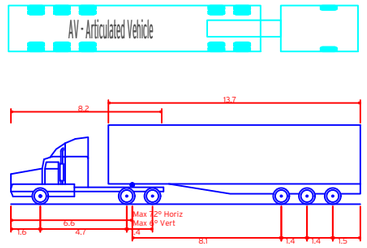

AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

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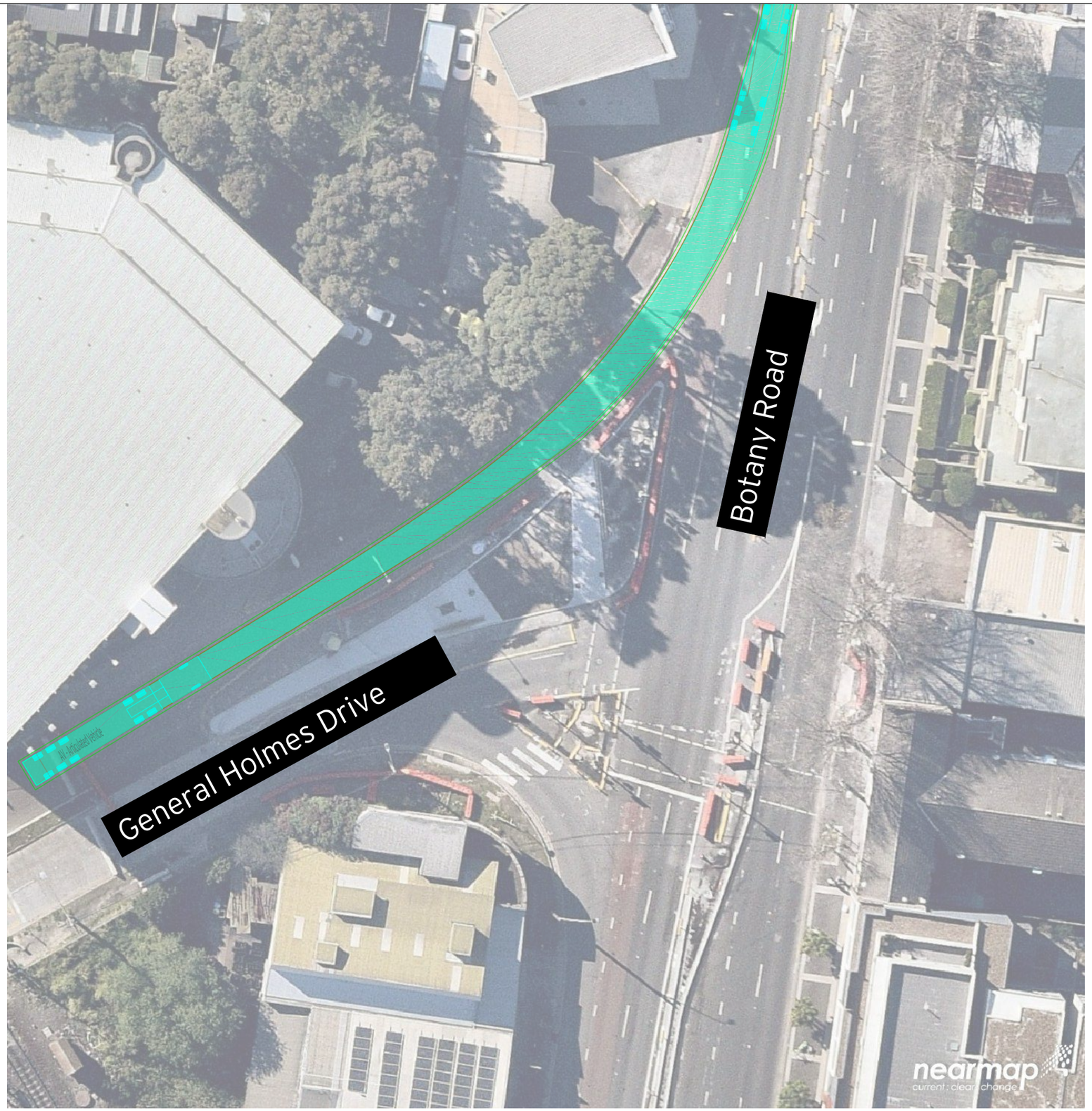
rev	date	comment / description	drawn	reviewed
2	29/10/19	FOR INFORMATION	EL	SW
1	23/10/19	FOR INFORMATION	EL	SW

project
Qantas Group Flight Training Centre

drawing title
Intersection of Joyce Drive / General Holmes Drive (Intersection 5)

client	ADCO Constructions Pty Ltd
drawing #	TP-105
project #	2715
scale	1 : 400

rev 2



comments

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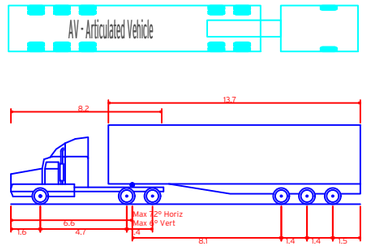

AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

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rev	date	comment / description	drawn	reviewed
2	29/10/19	FOR INFORMATION	EL	SW
1	23/10/19	FOR INFORMATION	EL	SW

project
Qantas Group Flight Training Centre

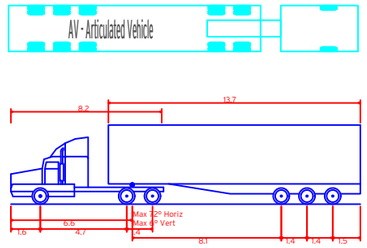
drawing title
Intersection of Botany Road / General Holmes Drive (Intersection 6)

client	ADCO Constructions Pty Ltd
drawing #	TP-106
project #	2715
scale	1 : 400

rev 2

comments

A3



AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

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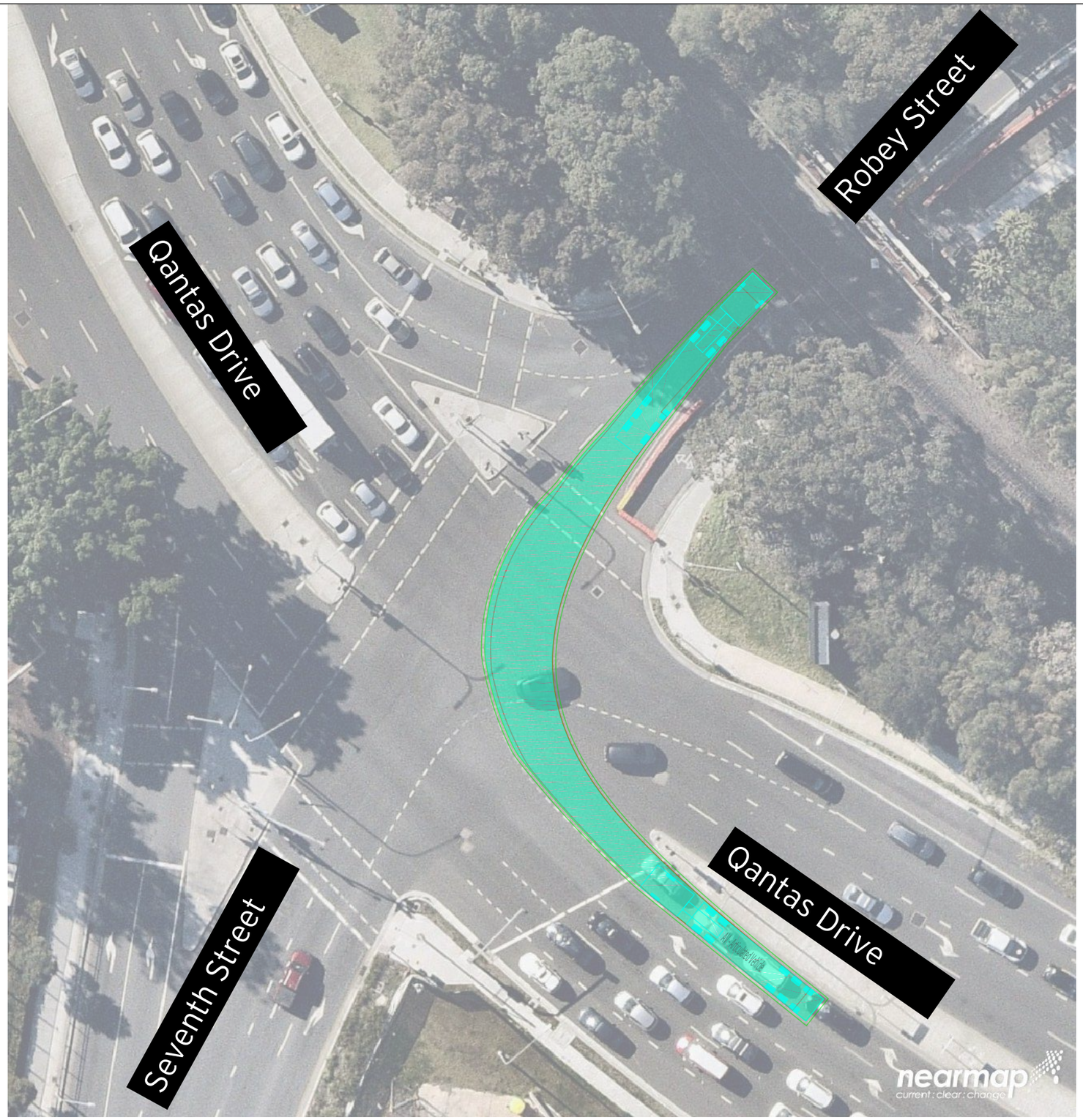
rev	date	comment / description	drawn	reviewed
2	29/10/19	FOR INFORMATION	EL	SW
1	23/10/19	FOR INFORMATION	EL	SW

project
Qantas Group Flight Training Centre

drawing title
Intersection of Joyce Drive / Qantas Drive / O'Riordan Street (Intersection 7)

client	ADCO Constructions Pty Ltd
drawing #	TP-107
project #	2715
scale	1 : 400

rev 2



comments

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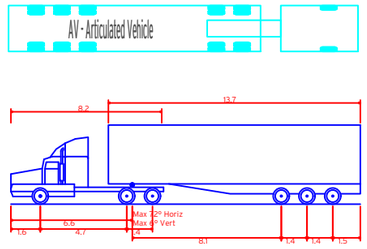

AV - Articulated Vehicle

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

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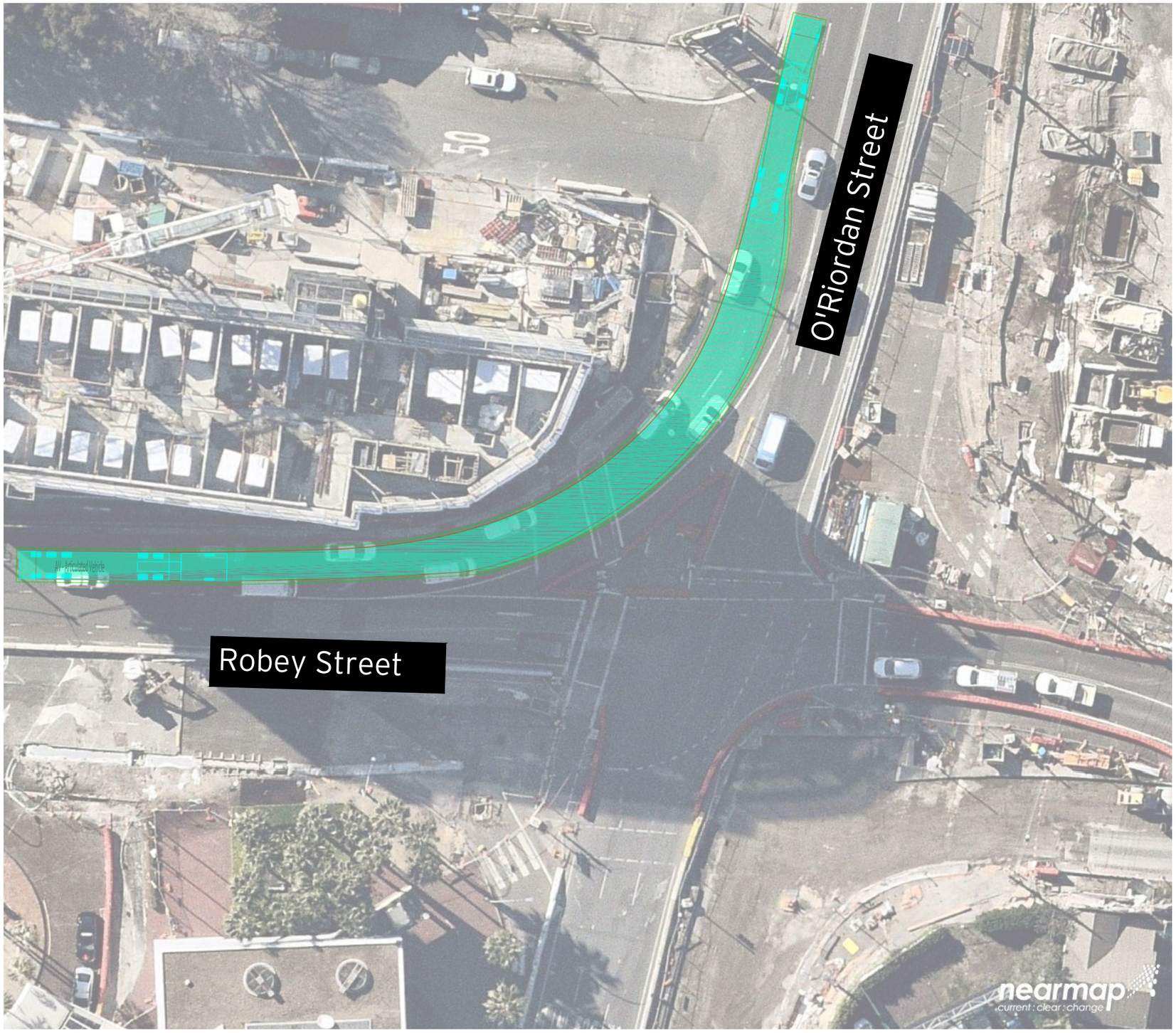
rev	date	comment / description	drawn	reviewed
2	29/10/19	FOR INFORMATION	EL	SW
1	23/10/19	FOR INFORMATION	EL	SW

project
Qantas Group Flight Training Centre

drawing title
Intersection of Qantas Drive / Robey Street / Seventh Street (Intersection 8)

client	ADCO Constructions Pty Ltd
drawing #	TP-108
project #	2715
scale	1 : 400

rev 2



comments

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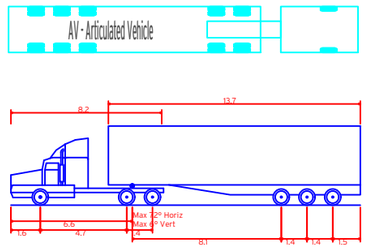

AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

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rev	date	comment / description	drawn	reviewed
2	29/10/19	FOR INFORMATION	EL	SW
1	23/10/19	FOR INFORMATION	EL	SW

project
Qantas Group Flight Training Centre

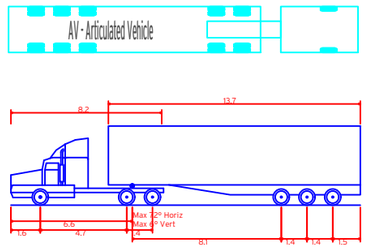
drawing title
Intersection of O'Riordan Street / Robey Street (Intersection 9)

client	ADCO Constructions Pty Ltd
drawing #	TP-109
project #	2715
scale	1 : 400

rev 2

comments

A3



AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

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rev	date	comment / description	drawn	reviewed
2	29/10/19	FOR INFORMATION	EL	SW
1	23/10/19	FOR INFORMATION	EL	SW

project
Qantas Group Flight Training Centre

drawing title
Intersection of O'Riordan Street / King Street (Intersection 10)

client	ADCO Constructions Pty Ltd
drawing #	TP-110
project #	2715
scale	1 : 250

rev 2

Attachment 2 Traffic Control Plans

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comments

A3

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rev	date	comment / description	drawn	reviewed
2	29/10/19	FOR INFORMATION	EL	SW
1	23/10/19	FOR INFORMATION	EL	SW

project
Qantas Group Flight Training Centre

drawing title
Traffic Control Plan

client	ADCO Constructions Pty Ltd
drawing #	TP-003
project #	2715
scale	1 : 600

rev 2

Hours of Work

All work associated with the project will be restricted to the permitted working hours as defined in the CTMP:

Monday to Sunday	7:00am to 7:00pm

Emergency Contact Numbers

RMS Transport Management Centre
131 700

Bayside Council
1300 581 299

ADCO Constructions Snr Project Manager (Stephen Chamberlain)
0458 748 199

ADCO COnstructions Sydney
02 8437 5000

All other Emergencies
000

ADCO
BUILDER OF CHOICE

Qantas Group Flight Training Centre

Construction Traffic Management Plan

Driver Code of Conduct

This Driver Code of Conduct applies to all personnel and any other person conducting business for the Qantas Group Flight Training Centre, whether a direct employee of ADCO Constructions or employed by some other organisation providing service or working with ADCO Constructions.

General Requirements

- As a driver, you are required to know and comply with all the road rules pertaining to your vehicle;
- You are expected to hold a valid driver's license for the class of the vehicle you are operating;
- Undertake a site induction carried out by an approved member of the construction staff or suitably qualified person;
- Participate in regular toolbox meetings with appropriate and qualified person; and
- You are to operate the vehicle in a safe manner within and outside the construction site and comply with the direction of authorised site personnel while inside the site.

Truck Routes

Heavy vehicle drivers are to carefully plan their routes so that state and regional roads are given priority for route selection, keeping in mind the certain restrictions of during particular times of the day (i.e. No Right Turn from 7am to 10am, etc.) Local roads should only be used in an emergency situation.

Other Considerations

- Speed Limits – All heavy vehicle drivers are to observe the posted speed limits, within or outside of the construction site. Keep in mind that there are changes in traffic conditions and altered speed limits are posted on approach to the site;
- Driver Fatigue – Driver fatigue is a road safety hazard and one of the biggest causes of accidents especially for heavy vehicle drivers. All drivers have a duty to not drive a vehicle while impaired by fatigue.
- Covering Loads – RMS requires all loads covers to secure and contain all materials within the vehicle and trailer;
- Heavy Vehicle Interval – to increase road

Other Considerations

safety, heavy vehicles leaving the construction site should be separated, as far as practicable, a minimum of a 10-minute interval;

- Heavy Vehicle Compression Braking – all Adco heavy vehicle drivers are to minimise the use of compression breaks, so as not to create excessive noise that could disturb local residents. Where possible, compression breaking within or adjacent residential areas should only be used if required for safety reasons;
- Vehicle Breakdowns – in the case of a breakdown, the vehicle must be towed to the nearest breakdown point as soon as possible and reported to the RMS Transport Management Centre (131 700).

APPENDIX B

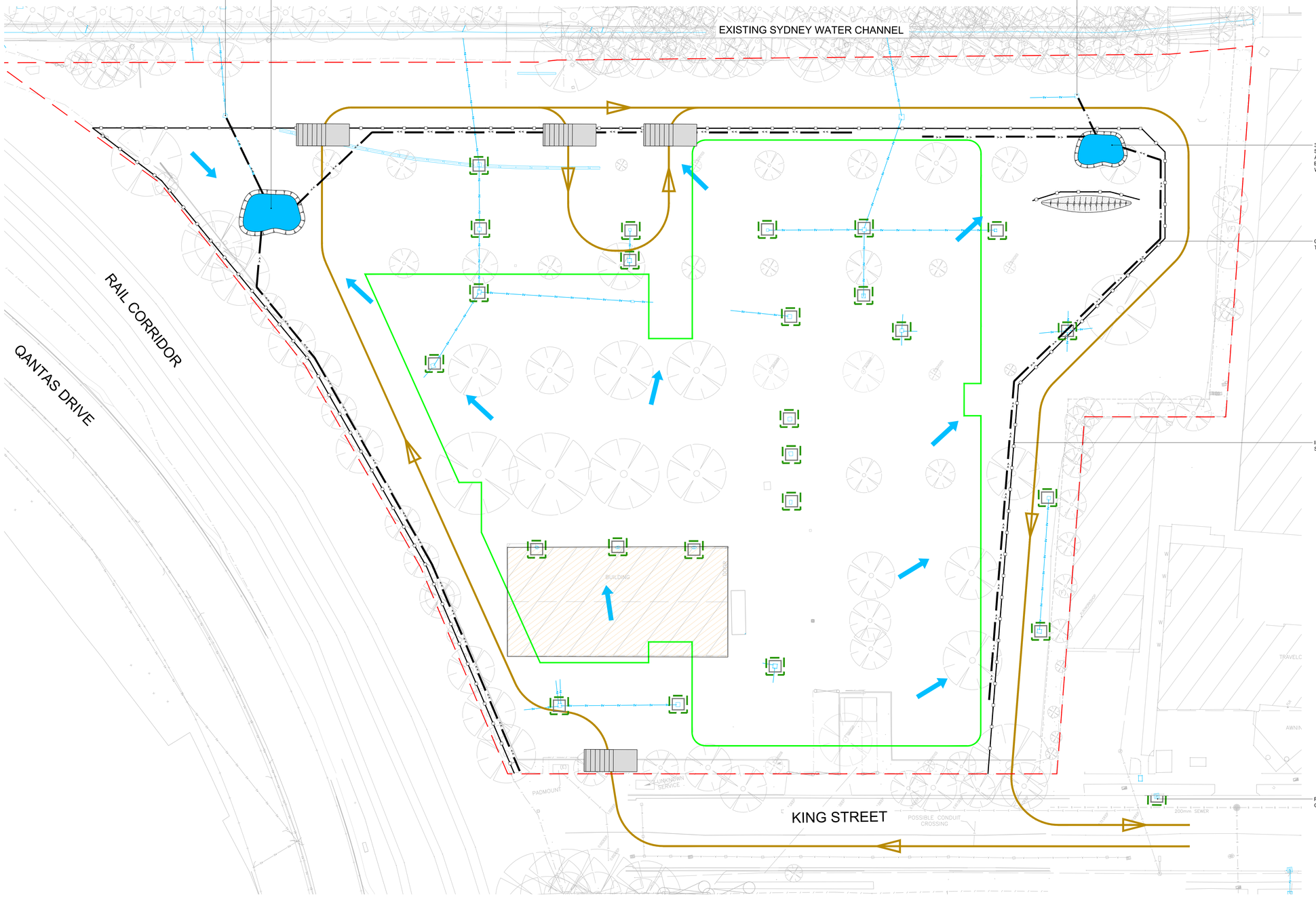
EROSION AND SEDIMENT CONTROL PLANS

A0

EXISTING STORMWATER PITS NEARBY TO BE PROTECTED BY SANDBAGS

70 m3 SEDIMENT BASIN TO PROVIDE STORAGE OF SITE RAINFALL RUNOFF AND SEPARATION OF SOIL AND WATER. CLEAN WATER TO BE DISCHARGED TO EXISTING STORMWATER NETWORK ONCE LEVEL WATER QUALITY IS ACCEPTABLE.

EXISTING STORMWATER PITS NEARBY TO BE PROTECTED BY SANDBAGS



35 m3 SEDIMENT BASIN TO PROVIDE STORAGE OF SITE RAINFALL RUNOFF AND SEPARATION OF SOIL AND WATER. CLEAN WATER TO DISCHARGED TO EXISTING STORMWATER NETWORK ONCE LEVEL WATER QUALITY IS ACCEPTABLE.

CATCH DRAIN TO DIVERT STORMWATER RUNOFF TO SEDIMENTATION TREATMENT TANK

INSTALL SEDIMENT FENCE TO CONTAIN LOOSE SEDIMENT WITHIN DISTURBED AREA

PROTECT DOWNSTREAM KERB INLET PIT DURING CONSTRUCTION OF PUBLIC DOMAIN WORKS

LEGEND

- BUILDING TO BE DEMOLISHED
- PROPOSED BUILDING OUTLINE
- SITE BOUNDARY
- SEDIMENT FENCE
- PROPOSED TEMPORARY CATCH SWALE
- OVERLAND FLOW ARROW
- INTENDING TRAFFIC DIRECTION
- PROPOSED TEMPORARY SHAKER GRID AND WASH DOWN FACILITY
- PROTECT EXISTING PIT WITH STRAW BALE AROUND UNTIL DEMOLISH
- TEMPORARY SANDBAGS AROUND PITS DURING CONSTRUCTION OF PUBLIC DOMAIN WORKS

Rev.	Date	Description
A	07.11.19	ISSUED FOR CONSTRUCTION

STRUCTURAL / CIVIL CONSULTANT

enstruct

enstruct group pty ltd

Level 4, 2 Glen Street, Milsons Point NSW 2061
Telephone (02) 8904 1444
http: //www.enstruct.com.au

CLIENT

QANTAS

PROJECT NAME

QANTAS GROUP FLIGHT TRAINING CENTRE

PROJECT NUMBER: 5728

DRAWING TITLE

SEDIMENT AND EROSION CONTROL PLAN

SCALE AT A0: 1:250
DRAWN BY: MM
CHECKED BY: TH

DRAWING STATUS

FOR CONSTRUCTION

DRAWING NUMBER: ENS-CV-0401

REV.: A

11/7/2019 12:20 PM ENS-CV-0401.DWG

EROSION AND SEDIMENT CONTROL:

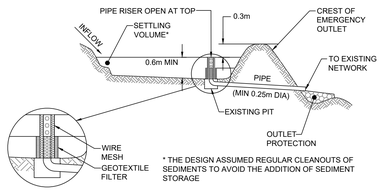
1. THE CONTRACTOR SHALL PROVIDE ADEQUATE TRUCK WASH FACILITIES AT THE SITE EXIT AND SHALL CLEAN ALL VEHICLES EXITING THE SITE TO ENSURE MATERIALS AND MUD IS NOT TRANSPORTED AND DEPOSITED OFF SITE. WATER FROM ANY WASHBAY IS TO BE DIVERTED TO THE SEDIMENT FENCE OR TO THE SEDIMENT BASIN PRIOR TO DISCHARGE.
2. NOTWITHSTANDING THE EROSION AND SEDIMENT CONTROL NOTES THE CONTRACTOR SHALL NOTE THEIR OVERARCHING OBLIGATION WITH THE BAYSIDE COUNCIL IN RESPECT OF ENVIRONMENTAL CONTROLS. PARTICULARLY ONGOING TESTING OF DISCHARGE, MAINTENANCE, DREDGING OF SEDIMENTATION PONDS AND FINAL FILTRATION AT OUTLETS.
3. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO PROTECT THE ENVIRONMENT AND IN PARTICULAR SHALL CONTROL EROSION, SEDIMENTATION AND POLLUTION DURING CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE EPA, DEC, COUNCIL, AND THE EROSION AND SEDIMENT CONTROL PLAN.
4. EROSION AND SEDIMENT CONTROL DEVICES ARE TO BE CONSTRUCTED IN ACCORDANCE WITH "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION' (2004 - BLUE BOOK), AND BAYSIDE COUNCIL'S DCP.
5. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CONFIRMED IN THE QUALITY PLAN PRODUCED BY THE CONTRACTOR AND SHALL BE IMPLEMENTED AND ADJUSTED TO SUIT CONSTRUCTION ACCESS AND STAGING.
6. FOLLOWING EVERY RAINFALL EVENT EXCEEDING 10mm OR WHEN BASINS ARE GREATER THAN 50% FULL, WATER SHALL BE TESTED FOR COMPLIANCE WITH EPA'S STANDARDS AND, IF FOUND NOT TO COMPLY, WATER SHALL BE TREATED BY APPROPRIATE FLOCCULATION, FILTRATION OR OTHER APPROVED METHODS.
7. WATER SHALL NOT BE REMOVED FROM SEDIMENT BASIN UNTIL TESTED WATER MEETS EPA WATER QUALITY REQUIREMENTS e.g <50 MG/L SUSPENDED SOLIDS.
8. CONTRACTOR TO PROVIDE ALL PERIMETER SITE FENCING FOR SECURITY & SAFETY PURPOSES AS REQUIRED.
9. OBTAIN APPROVALS FROM SYDNEY WATER OR COUNCIL TO PUMP TO RECEIVING PIT.
10. EMPTY SEDIMENT BASIN WITHIN 72 HOURS OF RAINFALL. TREAT WATER AS NECESSARY TO ACHIEVE REQUIRED WATER QUALITY STANDARDS.

REMEDIATION NOTES:

1. REMOVE ALL DEBRIS AND SMOOTH ALL EXPOSED AREAS TO GRADE EVENLY TO EXTENT OF EXPOSED AREA TO MATCH EXISTING SURROUNDING GROUND LEVELS
2. SPRAY GRASS EXTENT OF DISTURBED AREA
3. MAINTAIN AND WATER SPRAY GRASS UNTIL ESTABLISHMENT OF DENSE GRASS COVER

NOTE:

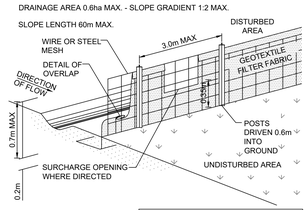
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH MSP-ENS-CV-0401



* THE DESIGN ASSUMED REGULAR CLEANOUTS OF SEDIMENTS TO AVOID THE ADDITION OF SEDIMENT STORAGE

TYPICAL SEDIMENT BASIN (TYP.)

N.T.S.



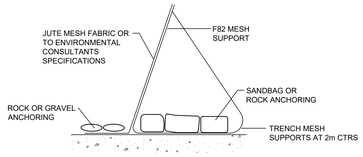
SEDIMENT FENCE

N.T.S.

NOTE:
POSITION OF SEDIMENT FENCE AS DIRECTED BY SUPERINTENDENT. FENCE TO REMAIN IN PLACE UNTIL EXCAVATION IS BELOW FOOTPATH LEVEL.

INSTALLATION

1. EXCAVATE A TRENCH 200mm DEEP.
2. DRIVE POSTS 500-700mm INTO GROUND AT A MAXIMUM SPACING OF 3.0m CENTRES.
3. PLACE AND FIX SUPPORT MESH (F52) TO POST.
4. LAY BIDIM GEOFABRIC (SF 2000) AGAINST THE SUPPORT MESH AND FIX BY TIE WIRE, STAPLES OR HOG RINGS.
5. PLACE BIDIM IN TRENCH AND BACKFILL WITH SOIL.

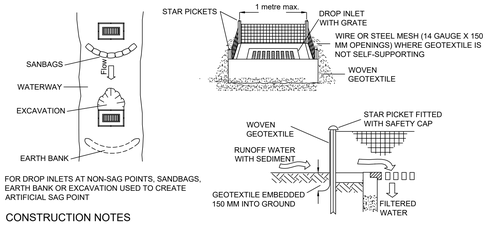


ALTERNATIVE SEDIMENT FENCE

N.T.S.

ALTERNATIVE SEDIMENT FENCE NOTES

1. INSTALL THIS TYPE OF SEDIMENT FENCE WHEN USE OF SUPPORT POSTS IS NOT DESIRABLE OR NOT POSSIBLE. SUCH CONDITIONS MIGHT APPLY, FOR EXAMPLE, WHERE APPROVAL IS GRANTED FROM THE APPROPRIATE AUTHORITIES TO PLACE THESE FENCES IN HIGHLY SENSITIVE ESTUARINE AREAS.
2. USE BENT TRENCH MESH TO SUPPORT THE F82 WELDED MESH FACING AS SHOWN ON THE DRAWING ABOVE. ATTACH THE JUTE MESH TO THE WELDED MESH FACING USING UV-RESISTANT CABLE TIES.
3. STABILISE THE WHOLE STRUCTURE WITH SANDBAG OR ROCK ANCHORING OVER THE TRENCH MESH AND THE LEADING EDGE OF THE JUTE MESH. THE ANCHORING SHOULD BE SUFFICIENTLY LARGE TO ENSURE STABILITY OF THE STRUCTURE IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.



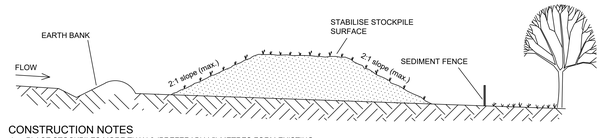
FOR DROP INLETS AT NON-SAG POINTS, SANDBAGS, EARTH BANK OR EXCAVATION USED TO CREATE ARTIFICIAL SAG POINT

CONSTRUCTION NOTES

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARDS DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DON NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER

N.T.S.

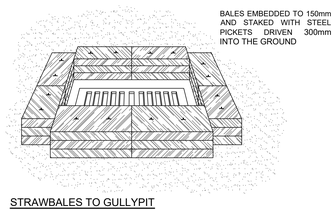


CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FORM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.

STOCKPILES

N.T.S.



STRAWBALES TO GULLYPIT

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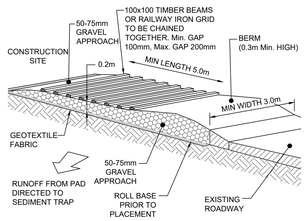
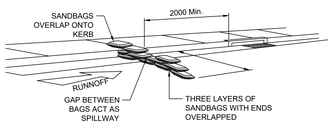


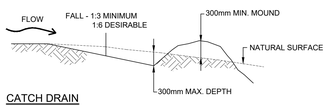
TEMPORARY CONSTRUCTION EXIT/ENTRANCE

N.T.S.



SANDBAG SEDIMENT TRAP

N.T.S.



CATCH DRAIN

N.T.S.

Rev.	Date	Description
B	09.12.19	NOTES AMENDED
A	07.11.19	ISSUED FOR CONSTRUCTION

STRUCTURAL / CIVIL CONSULTANT
enstruct
enstruct group pty ltd
Level 4, 2 Glen Street, Milsons Point NSW 2061
Telephone (02) 8904 1444
http: //www.enstruct.com.au

CLIENT
QANTAS

PROJECT NAME
QANTAS GROUP FLIGHT TRAINING CENTRE

PROJECT NUMBER: 5728

DRAWING TITLE
SEDIMENT AND EROSION CONTROL DETAILS

SCALE AT A0: NTS
DRAWN BY: AW
CHECKED BY: PL

DRAWING STATUS
FOR CONSTRUCTION

DRAWING NUMBER: ENS-CV-0451
REV.: B

APPENDIX C

CONSTRUCTION NOISE AND VIBRATION MANAGHEMENT PLAN

ACOUSTICS AND AIR

QANTAS FLIGHT TRAINING FACILITY

CONSTRUCTION NOISE & VIBRATION MANAGEMENT PLAN

REPORT NO. 19314-A
VERSION C

DECEMBER 2019

PREPARED FOR

ADCO CONSTRUCTIONS PTY LTD
LEVEL 2, 7-9 WEST STREET
NORTH SYDNEY NSW 2060

WILKINSON MURRAY

DOCUMENT CONTROL

Version	Status	Date	Prepared By	Reviewed By
C	Final	16 December 2019	Sam Demasi	-
B	Final	10 December 2019	Sam Demasi	-
A	Final	14 November 2019	Sam Demasi & Brian Mendieta	Sam Demasi

Note

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Quality Assurance

Wilkinson Murray operates a Quality Management System which complies with the requirements of AS/NZS ISO 9001:2015. This management system has been externally certified by SAI Global and Licence No. QEC 13457 has been issued.

AAAC

This firm is a member firm of the Association of Australasian Acoustical Consultants and the work here reported has been carried out in accordance with the terms of that membership.

Celebrating 50 Years in 2012

Wilkinson Murray is an independent firm established in 1962, originally as Carr & Wilkinson. In 1976 Barry Murray joined founding partner Roger Wilkinson and the firm adopted the name which remains today. From a successful operation in Australia, Wilkinson Murray expanded its reach into Asia by opening a Hong Kong office early in 2006. Today, with offices in Sydney, Newcastle, Wollongong, Queensland and Hong Kong, Wilkinson Murray services the entire Asia-Pacific region.

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GLOSSARY OF ACOUSTIC TERMS

Most environments are affected by environmental noise which continuously varies, largely as a result of road traffic. To describe the overall noise environment, a number of noise descriptors have been developed and these involve statistical and other analysis of the varying noise over sampling periods, typically taken as 15 minutes. These descriptors, which are demonstrated in the graph below, are here defined.

Maximum Noise Level (L_{Amax}) – The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.

L_{A1} – The L_{A1} level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the L_{A1} level for 99% of the time.

L_{A10} – The L_{A10} level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the L_{A10} level for 90% of the time. The L_{A10} is a common noise descriptor for environmental noise and road traffic noise.

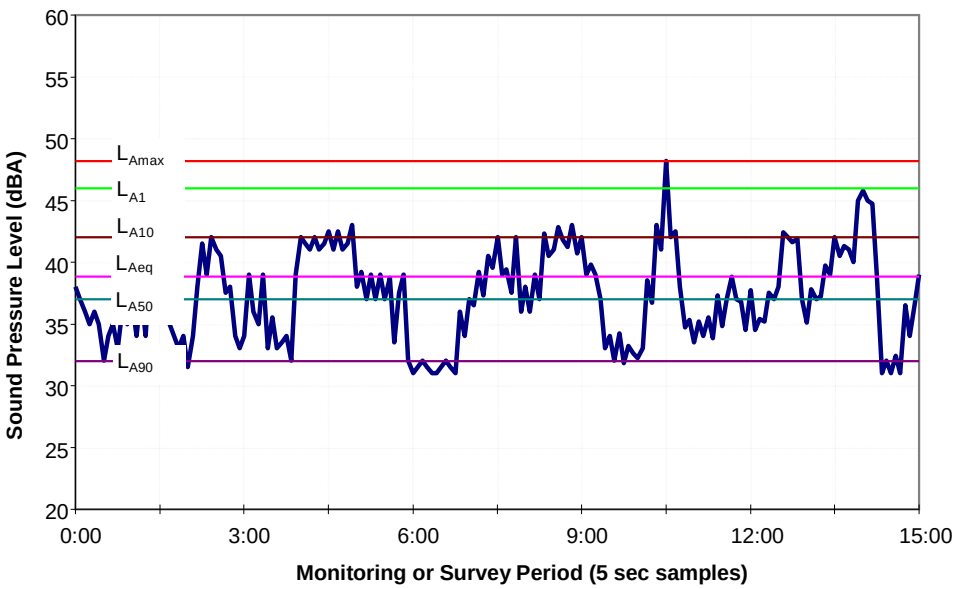
L_{A90} – The L_{A90} level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the L_{A90} level for 10% of the time. This measure is commonly referred to as the background noise level.

L_{Aeq} – The equivalent continuous sound level (L_{Aeq}) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.

ABL – The Assessment Background Level is the single figure background level representing each assessment period (daytime, evening and night time) for each day. It is determined by calculating the 10th percentile (lowest 10th percent) background level (L_{A90}) for each period.

RBL – The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night time.

Typical Graph of Sound Pressure Level vs Time



1 INTRODUCTION

The proposed Sydney Gateway Project is part of the NSW Government's vision to complete the missing links in the road network, improve traffic flow and reduce travel times.

Once approved, construction of the Sydney Gateway Project will require the partial demolition of Qantas's existing flight training centre. Therefore, a new flight training facility is required, and it is proposed to construct this new facility close to the existing site to allow Qantas to continue its operation.

The proposal for this new flight training facility is currently being assessed by the Independent Planning Commission and draft conditions have been issued (Application Number SSD-10154).

Construction of the facility has been awarded to ADCO Constructions Pty Ltd (ADCO).

Works associated with the carpark do not currently form part of the works package and so have not been considered in this report.

Wilkinson Murray Pty Limited (WMPL) has been commissioned by ADCO to undertake a construction noise management plan as per B22 of the draft conditions. Condition B22 is reproduced below:

Construction Noise Management Plan

B22. The Applicant must prepare a Construction Noise Management Plan for the development to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with condition C2 and must:

(a) be prepared by a suitably qualified and experienced noise expert;

(b) describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time);

(c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers including the Travelodge Hotel;

(d) include strategies that have been developed with the community for managing high noise generating works;

(e) describe the community consultation undertaken to develop the strategies in condition B22(d); and

(f) include a complaints management system that would be implemented for the duration of construction.

In preparing this assessment, the following Environmental Protection Authority (EPA) guideline documents have been considered:

- *Noise Policy for Industry* (NPfI).
- *Interim Construction Noise Guideline* (ICNG).
- *Road Noise Policy* (RNP).
- *Assessing Vibration: A Technical Guideline* (AVTG).

The AVTG can be supplemented with reference to:

- British Standard BS5228-2 2009 – *Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration* (BS 5228-2).

Regarding risk of damage building, the following Standard is most appropriate:

- British Standard BS7385-2 1993 – *Evaluation and Measurement for Vibration in Buildings – Part 2: Guide to Damage Levels from Groundborne Vibration* (BS 7385-2).

BS 7385-2 can be supplemented with reference to:

- Transport for NSW (TfNSW) – *Construction Noise and Vibration Strategy* - May 2018 (CNVS v4.0).

The following documents provided by ADCO were also referenced:

- Draft Development Consent (SSD-10154) for as issued by Independent Planning Commission.
- Draft Construction Management Plan prepared by ADCO (Rev No. V01 – 16/10/2019).
- Draft Environmental Management Plan prepared by ADCO (Rev No. 01 – 14/10/2019).
- Construction Traffic Management Plan prepared by ptc (Issue. 1 – 29/10/2019).
- Draft Environmental Management Plan prepared by ADCO (Rev No. 01 – 14/10/2019).
- Assessment of Noise and Vibration Emission (SEARS) prepared by Norman Disney & Young report ref: rp190131s0004, revision 7.0 issued 28 May 2019Issue. 1 – 29/10/2019.

Furthermore, this revision (Revision B) captures Comment 4 (relevant to this management plan) of the 5 comments issued by Department of Planning, Industry and Environment (DPIE). The comments were issued via email to QANTAS on 9 December 2019 and Comment 4 reproduced below:

> *"Condition B28(c)*
>
> *Besides restricting impact piling (9-12 and 2-5) I cannot locate any measures to address this condition. This leads to Condition B28(e) which requires community consultation in developing strategies to manage high noise generating works (i.e. piling). The CEMP Compliance Matrix document states that "Minor exceedances only noted as part of modelling therefore not required". This is not an optional required and must be undertaken. It is suggested that consultation with the Travelodge in particular be undertaken upfront and an undertaking to engage in wider consultation be included in the CNMP"*

Mr Sam Demasi is suitability qualified to prepare a Construction Noise & Vibration Management Plan. He is employed as an Associate of Wilkinson Murray with over 20 years' experience in the field of acoustics. He has been involved in many similar construction projects and prepared many construction noise and vibration management plans. He is a member of the Australian Acoustical Society (AAS).

Wilkinson Murray is a member firm of the Association of Australasian Acoustical Consultants (AAAC), having extensive experience with many similar projects.

2 SITE DESCRIPTION & SURROUNDING SENSITIVE RECEIVERS

The development site is located within 297 King Street, Mascot NSW 2020.

Immediately adjoining the site to the north is the Sydney Water Drainage Channel and further north is at grade carparking for the Qantas Catering building further north as well as industrial receivers.

Adjoining the site to the south is King Street and further south commercial buildings, including carparking.

The Port Botany Rail Line (freight) adjoins the site to the west with Qantas Drive located further west. Across Qantas Drive are commercial receivers.

Adjoining the site to the south-east is an industrial building that is currently a drilling warehouse and to the east is the carpark associated with the Travelodge. The Travelodge Hotel is located further south-east. The Hotel is a multi-level building that overlooks the site and is the nearest and most impacted sensitive receiver.

The nearest residential receivers are located on the corner of King Street and O'Riordan Street, Mascot and located at least 200m away. This location is partly shielded from the site and located at a busy road intersection.

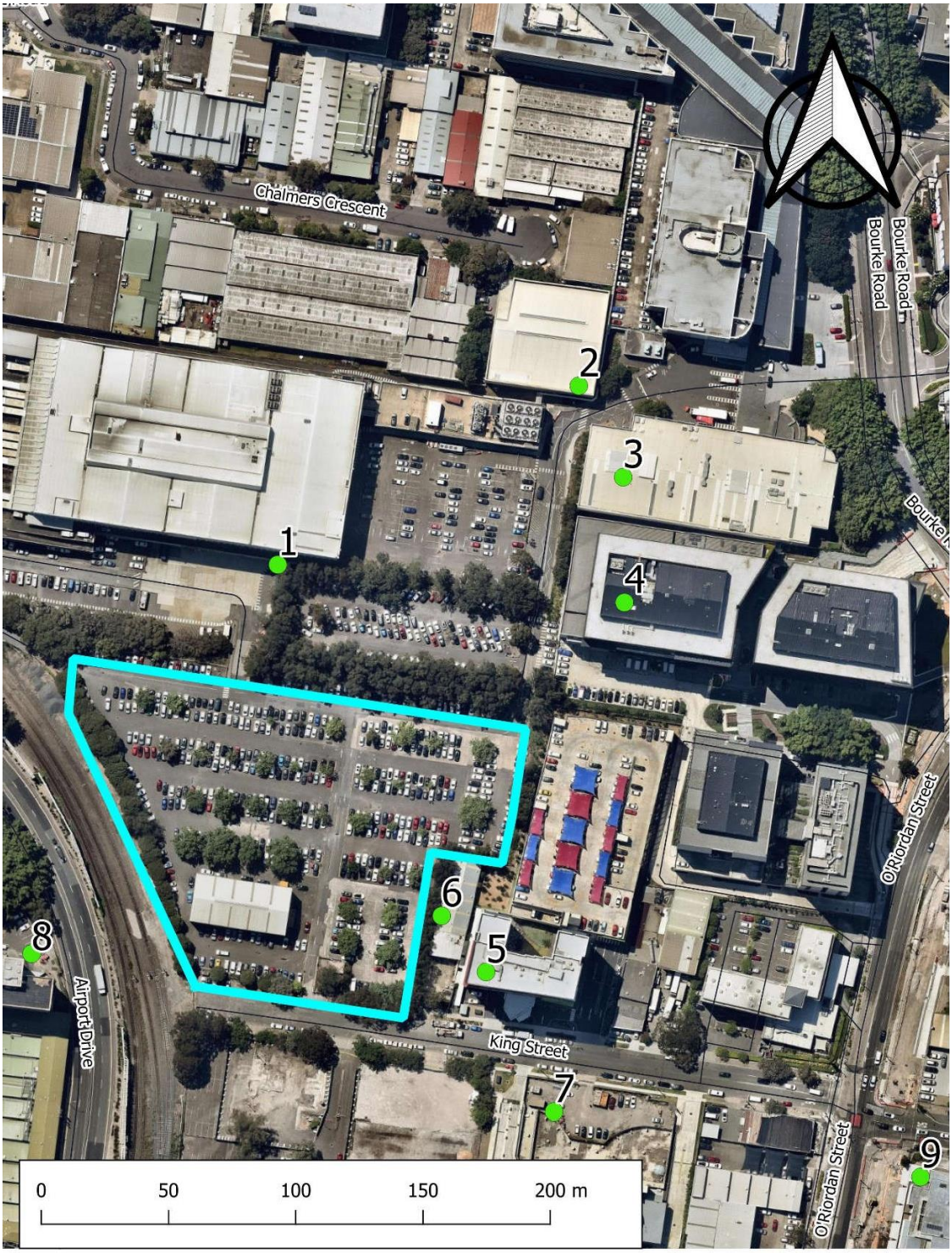
The Travelodge Hotel is located further south-east. The Hotel is a multi-level building that overlooks the site and is the nearest and most impacted sensitive receiver.

Table 2-1 provides as summary of the main surrounding receivers and **Figure 2-1** identifies these receivers on an aerial as well as the extent of the construction boundary.

Table 2-1 Surrounding receivers

Receiver ID	Address	Orientation	Receiver Type
01	297 King St, Mascot	North	Onsite Qantas development (Commercial)
02	18 Chalmers Cr, Mascot	North	Industrial
03	10 Bourke Rd, Mascot	North-East	Qantas Campus (Commercial)
04	185 O'Riordan St, Mascot	East	Commercial
05	289 King St, Mascot	East	Travelodge Hotel (Commercial)
06	295 King St, Mascot	East	BG Drilling (Commercial)
07	336 King St, Mascot	South-East	East Coast Car Rental (Commercial)
08	Sydney Kingsford Smith Airport	West	Commercial
09	330 King St, Mascot	East	Residential

Figure 2-1 Site location and surrounding receivers



3 DESCRIPTION OF CONSTRUCTION WORKS

3.1 Works Overview

The training facility is a building that comprises four core elements as follows:

- Emergency Procedures Hall
- Flight Training Centre
- Teaching and Office Spaces
- Ancillary Spaces

The preliminary construction site layout is provided in **Figure 3-1**.

Figure 3-1 Preliminary construction site layout

In terms of noise and vibration, the main works can be divided into the following six main scenarios as summarised in **Table 3-1**, which includes the plant type, quantity and sound power level.

Table 3-1 Construction scenarios

Scenario	Estimated Plant	Quantity (worst-case 15-min)	Sound Power Level (typical)
1 – Demolition	Excavator with hammer (medium)	1	118
	Delivery Truck	1	103
	Powered hand tools	4	112
	Excavator with bucket (medium)	1	110
2A – Piling	Bored Piling	2	110
2B – Piling	Sheet Piling	1	110
3 – Excavation	Delivery Truck	1	103
	22t Excavator with bucket (medium)	1	110
4 – Concreting	Concrete Pump	1	103
	Concrete Truck	1	105
	Power hand tools	2	112
5 – Construction	Generator	1	95 (Attenuated)
	Hand tools (at a height)	4	105
	Delivery Truck	1	103
	Crane	1	103
6 – Fitout	Generator	1	95 (Attenuated)
	Hand tools	4	105
	Delivery Truck	1	103

The main impacts related to the construction scenarios will be on-site airborne noise. This is the same conclusion as per the NDY preliminary construction noise assessment.

In terms of construction traffic, the most sensitive route would be along King Street towards O'Riordan Street and past the Hotel. The number of heavy vehicle movements associated with construction is assumed to be 8 per hour (4 in and 4 out). This is insignificant compared to the existing vehicles along King Street and a detailed noise impact for construction traffic is not considered necessary. It is worthy to note that the NDY report did not consider noise from construction traffic off-site, however the assessment of operational traffic noise was assessed, and compliance was determined. This confirms the low risk associated with construction traffic and further supports that a detailed approach is not considered necessary.

Similarly, for construction vibration, the most vibration intensive activity will be limited to:

- Vibratory piling
- Excavator + hammer attachment (medium)

These activities are constrained to a small area to the south-west of the site and the nearest sensitive receivers include:

Commercial (BG Drilling) 75m away

Commercial (Hotel) 90m away

Bored piling is not considered to be vibration intensive, particularly in sand.

With reference to the safe working distances within the CNVS, these activities can occur within 25m of residential receivers with a low risk that vibration limits associated with human comfort would be triggered.

Given that the distances to the nearest receivers are significantly further and the receiver type is less sensitive, a detailed vibration assessment is not considered necessary.

This conclusion is not inconsistent with the finding within the NDY report.

However, in response to DPIE comments, mitigation that is specific in addressing impacts from piling is included in Section 6 of this report.

3.2 Indicative Works Programme

The anticipated construction staging is provided in **Table 3-2**.

Table 3-2 Construction Staging

Phase	Duration	Estimated Commencement
Site Establishment and Early Works	1 month	December 2019
Piling and Civil Works	3 months	January 2020
Superstructure	4 months	April 2020
Façade and Fitout	6 months	August 2020
Commissioning / External Works / Pavements and Landscaping	2 months	February 2021

3.3 Approved Hours of Work

The approved hours of work will be as per Conditions B20, B21 and B22, reproduced below (relevant to construction):

Hours of Work

B20. The Applicant must comply with the hours detailed in Table 1, unless otherwise agreed in writing by the Planning Secretary.

Table 1: Hours of Work

Earthworks and external construction works	*Monday – Sunday*	*7am to 7pm*
Internal construction works	*Monday – Sunday*	*24 hours*

As instructed by ADCO, the works will be undertaken Monday to Saturday 7:00am to 7:00pm (the majority of the time works will be completed before 6:00pm). Considering the EPA definitions, this time period is day (7:00am to 6:00pm) and includes the first hour (6:00pm to 7:00pm) of evening (6:00pm to 10:00pm). Given the additional hour coincides with a peak hour, it is reasonable to use the RBL for the day period to establish noise criteria.

B21. The Applicant must ensure any:

(a) impact pile driving is only undertaken between 9am – 12pm and between 2pm – 5pm, Monday to Sunday; and

(b) bored piling is only undertaken between 7am – 7pm, Monday to Sunday.

B22. Works outside of the hours identified in condition B19 may be undertaken in the following circumstances:

(a) works that are inaudible at the nearest sensitive receivers;

(b) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or

(c) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

4 EXISTING NOISE ENVIRONMENT & MANAGEMENT LEVELS

4.1 Existing Noise Levels

To assess noise impacts to receivers from construction related activities, knowledge of the background noise levels is usually required, particularly for residential receivers. Impacts to commercial and industrial receivers typically do not require background noise levels.

Monitoring of the existing ambient noise in the area was undertaken as part of the EIS study by Norman Disney & Young (NDY) report ref: rp190131s0004, revision 7.0 issued 28 May 2019.

The relevant established background rating levels (RBLs) along with the ambient L_{Aeq} noise levels have been reproduced from the EIS and are presented below in **Table 4-1**. Given that logging was conducted less than 2 years ago and given that no major changes have occurred in the environment since, the data collected is considered by WMPL as suitable.

Furthermore, the hours that ADCO propose are within the EPA defined day period (7:00am to 6:00pm) except for the first hour (6:00pm to 7:00pm) of the EPA defined evening period (as mentioned previously, works will be completed before 6:00pm the majority of times). Given that the first hour is associated with peak hour road traffic movements, it is reasonable to derive noise criteria on the RBL for the day period only.

Table 4-1 Established noise levels – Day period – NDY

Monitoring ID	Location	Noise Level (dBA)	
		RBL	L_{Aeq}
L1	Western Receiver (Qantas Jetbase)	63	71
L2	Eastern Site Boundary (295 King Street)	50	65
L3	Residential Receiver (314 King Street)	50	65

4.2 Airborne Noise from On-site Construction

Criteria for noise from construction (including demolition) works are prescribed by the NSW Environment Protection Authority's (EPA) *Interim Construction Noise Guideline (the "Guideline")*. The Guideline presents a methodology for determining numerical limits – or Noise Management Levels (NMLs) for the impacts of construction noise on residences and other land uses according to the scale of the project being considered.

Noise Management Levels for residential land uses is presented in **Table 4-2**.

Table 4-2 Noise at residences using quantitative assessment

Time of Day	Management Level $L_{Aeq,(15min)}$	How to Apply
Recommended Standard Hours: Monday to Friday 7am to 6pm Saturday 8am to 1pm No work on Sundays or Public Holidays	Noise affected RBL + 10dBA	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured $L_{Aeq\ (15min)}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75dBA	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: 1. times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences; 2. if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside Recommended Standard Hours	Noise affected RBL + 5dBA	A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5dB(A) above the noise affected level, the proponent should negotiate with the community. For guidance on negotiating agreements see section 7.2.2.

Source – Table 2 of the Guideline

Other nearby receivers include commercial, industrial and a Hotel. The Hotel, although a sensitive receiver, is commercial in nature, located in a business zone and designed to meet appropriate internal noise levels from aircraft flyovers and busy road traffic. Furthermore, it incorporates non-operable fixed windows. Considering acoustic impacts, it is not as sensitive as a residential receiver. This approach is not inconsistent with the NDY assessment.

On the basis of the above, **Table 4-3** provides a summary of NMLs for all receiver types and for both standard and outside standard (approved hours only) hours. The NMLs are applied externally at a location just inside the boundary of a receiver.

Table 4-3 Project-specific construction noise management levels for standard hours and outside standard construction hours

Receivers	Standard Construction Hours		Outside Standard Construction Hours
	Noise Affected Level $L_{Aeq,15min}$ – dB(A)	Highly Noise Affected Level $L_{Aeq,15min}$ – dB(A)	Noise Affected Level $L_{Aeq,15min}$ – dB(A)
Residential[1]	60	75	55
Commercial	70	-	70
Industrial	75	-	75
Hotel[2]	65	75	65

Note 1: NML based on Monitoring ID L3 (Table 4-1).
Note 2: NML during standard hours based in residential NML + 5dB. Highly noise affected level of 75dBA also referenced.

For this project, the construction hours as approved and proposed by ADCO are defined below:

Standard Construction Hours

Monday to Friday 7:00am to 6:00pm

Saturday 8:00am to 1:00pm

Outside Standard Construction Hours

Monday to Friday 6:00pm to 7:00pm

Saturday 7:00am to 8:00am and 1:00pm to 7:00pm

5 PREDICTED NOISE LEVELS & ASSESSMENT

5.1 Methodology of Predictions

Site related noise emissions were modelled using the CadnaA noise prediction software. To complete this, a representative 3-D model within the software was constructed of the site and surrounding receivers.

Factors that are addressed in the modelling are:

- source sound level emissions and locations;
- screening effects from buildings (modelled as individual buildings);
- receiver locations;
- noise attenuation due to geometric spreading;
- reflections (third order); and
- absorption (ground 50% and atmospheric).

5.2 Worst-Case Predicted Noise Level

The *ICNG* requires predicted noise levels at receivers to be based on 15-minute periods. The modelling assumes a "typical worst-case" scenario (refer **Table 3-1**) whereby all the plant is running continuously.

As such, the modelling represents likely noise levels that would occur during intensive periods of construction. Therefore, the presented noise levels can be considered in the upper range of noise levels that can be expected at surrounding receivers when the various construction scenarios occur.

Based on the above, resultant noise levels at receivers have been predicted, as shown in **Table 5-1** and **Table 5-2**.

Table 5-1 Predicted L_{Aeq} construction noise dBA for each scenario – Standard construction hours

Receiver ID	Receivers	Scenario 1 Predicted Level	Scenario 2A Predicted Level	Scenario 2B Predicted Level	Scenario 3 Predicted Level	Scenario 4 Predicted Level	Scenario 5 Predicted Level	Scenario 6 Predicted Level	NML *Standard Construction Hours*
1	297 King St – Onsite Qantas	65	63	51	46	53	47	47	70
2	18 Chalmers Cr – Industrial	62	57	45	43	51	45	45	75
3	10 Bourke Rd – Qantas campus	61	58	46	44	49	43	43	70
4	185 O'Riordan St – Commercial	64	62	49	48	56	46	46	70
5	289 King St – Hotel	***71 (6)***	***69 (4)***	55	60	64	57	57	65
6	295 King St – Commercial	***73 (3)***	***75 (5)***	57	65	70	60	60	70
7	336 King St – Car Rental	66	62	51	53	53	46	46	70
8	Sydney Kingsford Smith Airport	***71 (1)***	59	56	50	53	52	52	70
9	330 King St – Residential	59	52	43	44	45	42	42	60

Note: Values in ***bold italics*** are predicted exceedances and the values in brackets show the residual exceedance.

Table 5-2 Predicted L_{Aeq} construction noise dBA for each scenario – Outside standard construction hours

Receiver ID	Receivers	Scenario 1 Predicted Level	Scenario 2A Predicted Level	Scenario 2B Predicted Level	Scenario 3 Predicted Level	Scenario 4 Predicted Level	Scenario 5 Predicted Level	Scenario 6 Predicted Level	NML *Outside Standard Construction Hours*
1	297 King St – Onsite QANTAS	65	63	51	46	53	47	47	70
2	18 Chalmers Cr – Industrial	62	57	45	43	51	45	45	75
3	10 Bourke Rd – Qantas campus	61	58	46	44	49	43	43	70
4	185 O'Riordan St – Commercial	64	62	49	48	56	46	46	70
5	289 King St – Hotel	***71 (6)***	***69 (4)***	55	60	64	57	57	65
6	295 King St – Commercial	***73 (3)***	***75 (5)***	57	65	70	60	60	70
7	336 King St – Car Rental	66	62	51	53	53	46	46	70
8	Sydney Kingsford Smith Airport	***71 (1)***	59	56	50	53	52	52	70
9	330 King St – Residential	***59 (4)***	52	43	44	45	42	42	55

Note: Values in ***bold italics*** are predicted exceedances and the values in brackets show the residual exceedance.

Works are not expected to occur often during this 1hr period and are likely to be at reduced intensity and not a worst case scenario. Furthermore, it is important to note that many of the industrial and commercial receivers will be closed.

Considering the above, many of these exceedances may not be realised.

6 ASSESSMENT

6.1 Discussion of Predictions

The predictions show exceedances of the NML during the more intensive construction Scenarios 1 and 2A at some of the closer / more sensitive receivers (5, 6, 8 and 9) and, as such, all reasonable and feasible mitigation is to be considered to reduce these exceedances.

Exceedances range between 1 and 6dBA above the NML. Such exceedances of NMLs that occur during Standard Hours (day) or Outside Standard Hours (evening) are likely to be perceived as "Noticeable" when referenced to the CNVS. Such exceedances can be managed as necessary to reduce impacts.

As mentioned previously, it is important to note that these exceedances are based on a worst-case 15-minute construction scenario and that most of the time the levels will be lower. Furthermore, it has been assumed that the intensity of works would occur during the entire approved work hours. This is rarely the case from experience.

6.2 Recommended Mitigation Measures to be Considered

In order to manage and mitigate noise impacts as a result of the construction works, the following measures shall be adopted where reasonable and feasible. It is noted that the Hotel does overlook the site and therefore barriers would not be effective:

- All works to be confined to within the approved work hours;
- All plant to be well maintained and fitted with noise mufflers, engine hoods etc;
- Construction timetabling to minimise noise impacts, particularly during the approved outside standard construction hours;
- Maximising the offset distance between noisy plant items and sensitive receivers;
- Avoiding using noisy plant simultaneously and/or close together, adjacent to sensitive receivers, where practicable;
- Orienting equipment away from sensitive receivers, where practicable;
- Carrying out loading and unloading away from sensitive receivers, where practicable;
- Avoid unnecessarily dropping materials from a height;
- Selecting plant and equipment based on noise emission levels;
- Using spotters, closed circuit television monitors, "smart" reversing alarms, or "squawker" type reversing alarms in place of traditional reversing alarms;
- Appointing a community liaison officer and consulting with local residents and businesses about scheduling activities to minimise impacts from noise and vibration;

- In accordance with condition B28(e), Community Consultation has been undertaken by ADCO Constructions with adjacent stakeholders including Travelodge Hotel, BG Drilling, Connect Corporate and the Qantas Greater Campus. This consultation included an overview of the projects program and activities, along with the exchange of key contacts that will be available during construction of the facility. General construction activities were also discussed. It was agreed that changes in activities would be communicated directly to the stakeholders prior to works occurring. The communication channels have been established allowing the open dialogue to continue for the duration of construction. It was reinforced that at any stage they should feel free to contact ADCO Constructions if there was any issue whatsoever as the contacts were site based and would be able to address any concern without delay. Previous experience on similar projects has demonstrated that affected noise sensitive receptors may be willing to endure higher construction noise levels for a shorter duration if they have been provided with sufficient warning in the place of intermittent but extended periods of construction noise at lower levels.
- Provide details of noisy works to residents/businesses prior to commencement including letterbox drops;
- Maintaining a suitable Complaint Register. All complaints will be investigated. Complaints will receive a verbal response as soon as possible and will be followed up by a written response as soon as practical and in line with the complaint management methodology. Reasonable and feasible mitigation measures would then need to be implemented to reduce any impacts and could include:
    - Temporary stopping of works to assess impact/activity/complaint.
    - Negotiated respite periods.
- Attended noise and vibration monitoring to be undertaken periodically throughout the works as required, notionally at the commencement of significant work stages / activities.
- The results of such noise and vibration measurements could be used to confirm mitigation and update models if deemed necessary.
- Education and training of site staff is necessary for satisfactory implementation of noise mitigation measures.

6.3 Monitoring of Impacts

If required, the following section provides guidance regarding the monitoring of construction noise and vibration.

6.3.1 Construction Noise Monitoring

Noise monitoring shall be undertaken periodically throughout the works on an attended basis in order to differentiate between construction noise sources and other sources, such as road traffic noise, and in order to observe and identify any abnormally noisy construction equipment or operations.

During the attended monitoring, typical maximum (L_{Amax}) noise levels associated with particular plant items should be noted as well as the L_{Aeq} descriptor. Where possible, extraneous noise events, such as road traffic noise should be excluded from the results or highlighted in accompanying notes.

Noise monitoring of construction noise will be conducted by a competent person at the beginning

stages of demolition at locations representative of nearby receivers, as identified in **Table 2-1**.

The results of measurements will be documented along with any recommendations for mitigation. Any mitigation will be determined in consultation with the site Project Manager.

The results of measurements will be documented along with comparison with management levels. In the event of exceedances, measures would be put in place to reduce noise to within acceptable levels. Mitigation will be determined in consultation with ADCO.

Monitoring must be conducted with equipment that holds current NATA calibration. The time of day, duration and weather shall be noted as well as the contribution from construction activities.

6.3.2 Construction Vibration Monitoring

Attended vibration monitoring is to be undertaken if vibration intensive works are undertaken within 20m of any buildings or in response to a complaint. As a minimum, typical peak and rms vibration velocity levels associated with particular plant items / processes should be measured in all three orthogonal directions. Where possible, extraneous events should be excluded from the results, or highlighted in accompanying notes. This can be conducted using vibration loggers which would practically be located as close to the foundation of the building as possible, facing the vibration source. In addition, attended measurements are to be undertaken to confirm the event being measured and to conduct specific VDV / rms / peak velocity measurements to confirm a transfer function from outside to inside. These measurements are to confirm that the VDV goals are being achieved and, as such, need to be conducted in the middle of the floor within the typically worst impacted receiver. Given the difficulty in obtaining such approval for such measurements and inconvenience to the occupants, up to 1-hour for these attended measurements would be sufficient.

In all cases, monitoring must be conducted with equipment that holds current calibration certificates and that can simultaneously measure in all three orthogonal directions and measure the dominant frequency. The time of day, duration and weather shall be noted, as well as the contribution from construction activities.

Vibration monitoring of vibration intensive construction activities will be conducted by a competent person at the beginning stages of demolition, at locations representative of nearby receivers.

The results of measurements will be documented along with comparison with management levels, any recommendations for mitigation or remodelling.

In the event of appreciable vibration levels arising, measures would be put in place to reduce vibration to within acceptable levels. Mitigation will be determined in consultation with ADCO.

7 CONCLUSION

ADCO have been awarded the construction of a new Flight Training Facility for Qantas. The facility is located at 297 King Street, Mascot.

Based on information provided by ADCO and the draft Consent Conditions, Wilkinson Murray has prepared this Construction Noise & Vibration Management Plan for the Project in accordance with relevant guidelines and standards.

ADCO will have responsibility for implementation of this Plan. This includes ensuring that all staff and subcontractors are fully informed about their individual obligations under the Plan.

Typical worst-case scenarios have been assumed, resulting in worst-case predicted noise levels. It is important to note that it is most likely that most of the time, the resulting impacts would be less.

Airborne noise impacts from on-site construction activities are to be expected given the inherent nature of construction and the proximity of receivers. This assessment has identified the potential for exceedances of the adopted construction noise management levels; however, the exceedances are not major and can be managed.

Impacts due to construction traffic and vibration are expected to be very low risk and a detailed assessment not necessary.

A number of best practice noise mitigation measures have been outlined that would be expected both reduce these impacts and managed receiver expectations during the works to the best practicable extent.

APPENDIX D

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT PLAN

PEOPLE WHO BUILD

ADCO

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT PLAN

PROJECT NAME

QANTAS GROUP FLIGHT TRAINING CENTRE

PROJECT NO.

3418

VERSION CONTROL

Rev. No.	Issue Date	Approved By	Position	Details
01	11/11/19	S. Chamberlain	Snr Project Manager	

ADCO PROJECT PERSONNEL CONSULTATION AND SIGN OFF

We, the undersigned, confirm that we have been consulted on the contents of this document, read and understood the contents of this document, and agree to implement the requirements of this Plan on this project site

Name	Position	Signature	Date

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PROJECT MANAGEMENT STRUCTURE 5
POSITION DESCRIPTIONS 6
PROJECT INFORMATION 8
PROJECT WASTE MANAGEMENT 9

INTRODUCTION

Purpose of this Plan	This Management Plan has been produced for the following purposes: / Compliance to local and state legislation. / Establishment of objectives for the project. / Establishment of recycling requirements. / Subcontractor management requirements. / Other as determined by project or client requirements.
Plan Structure	Document to form part of Environmental Management Plan
Policies	Refer to the Corporate Policies
Application	This Management Plan addresses issues associated with the construction of the project and any impacts (permanent or otherwise) that construction activities may have on the building footprint and/or the surrounding areas.
HSE Management System	Document references contained in this Plan can be sourced by accessing the ADCO Constructions HUB. (ADCO Constructions personnel only).

PROJECT OBJECTIVES AND TARGETS

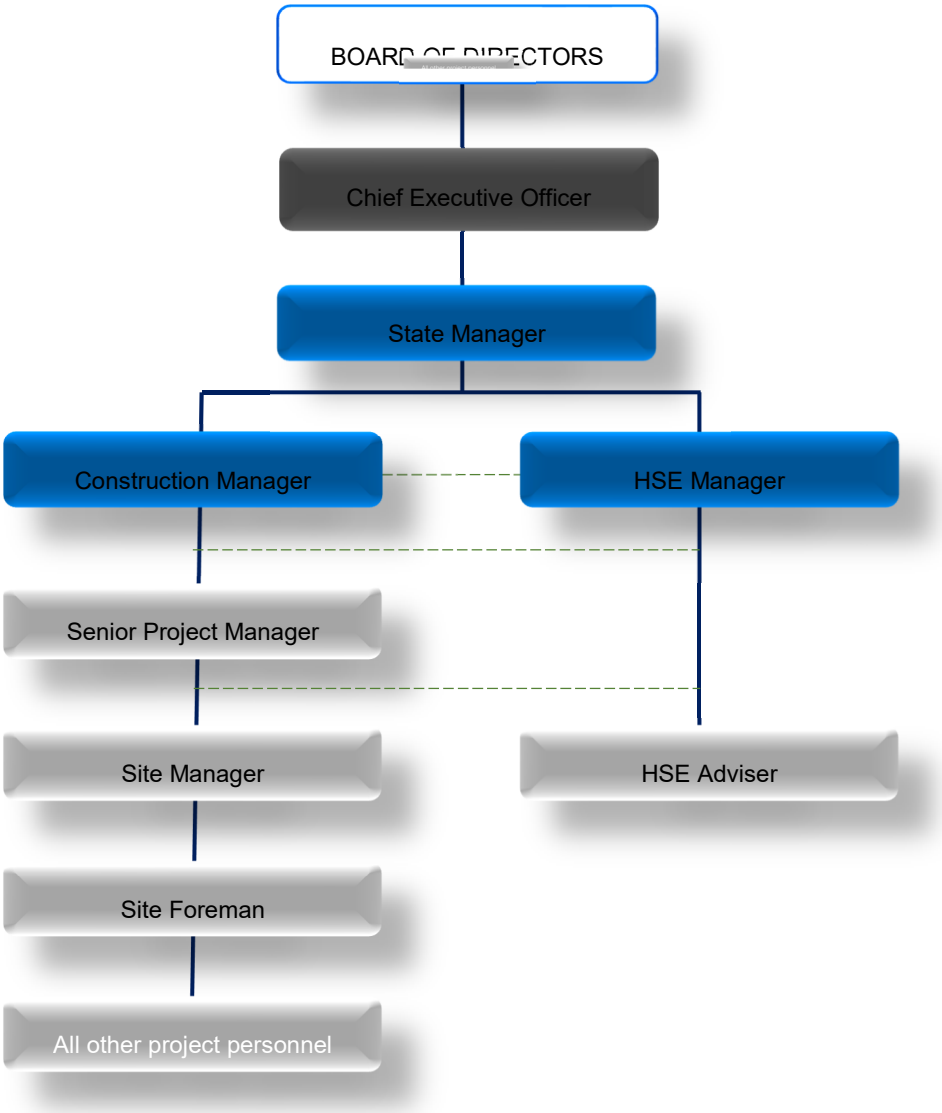
Objectives and Targets

/ Avoid waste where practicable via innovation.
/ Minimise waste where practicable by producing of site building component i.e. Concrete Panels, prefabrication of elements etc.
/ Recycle waste by requesting where possible the use of recyclable materials.
/ Treat waste (as required)
/ Dispose waste as last resort

Target:

/ 85% recycling (off site)
/ Treat all contaminated waste where possible and reuse / encapsulate on site under building footprint and pavements in accordance with CEMP and site Auditors requirements

PROJECT MANAGEMENT STRUCTURE



Chief Executive Officer

Neil Harding

State Manager

John Basilisco

Construction Manager

Caroline Crook

HSE Manager

Phil Provenzano

Snr Project Manager

Stephen Chamberlain

HSE Adviser

Keelan Falls

Site Manager

John Portelli

Site Foreman

Myles Finlay

POSITION DESCRIPTIONS

Chief Executive Officer

Provide commitment, leadership and direction in the development, implementation and management of the Corporate Management Systems, including but not limited to:

- Development of a corporate strategic plan incorporating safety, environment, quality and health management risks and controls.
- An assessment of the effectiveness of the Corporate Management Systems. (e.g. review of incidents and non-conformances to identify non-conformance trends and areas of improvement to the Corporate Management Systems.)
- Full management obligations including continual improvement of the Corporate Safety, Environment and Quality Management Systems.
- Ensure that appropriate resources are allocated to ensure compliance legislative requirements and the requirements of the Corporate Management Systems.
- Ensure that resources are competent to deliver the requirements of the Corporate Management Systems.

State Manager

Ensure that:

- Corporate Management Systems are implemented at all levels in the State.
- Appropriate resources are allocated to project teams to ensure compliance legislative requirements and the requirements of the Corporate Management Systems.
- Project operations are in compliance with applicable state or federal legislation.
- A review of the safety, environment, quality and health management performance of the State is completed regularly to identify non-conformances, trends and areas of improvement.

Construction Manager

Ensure that:

- Corporate Management Systems are implemented on projects within the State.
- HSE requirements have been identified and accounted for during project tender processes.
- Project operations are in compliance with applicable state or federal legislation.
- Appropriate resources are allocated to project teams to ensure compliance legislative requirements and the requirements of the Corporate Management Systems.
- Project team personnel have received training to fulfil their duties and responsibilities with the Corporate Management Systems.
- A review of the safety, environment, quality and health management performance of the State is completed regularly to identify non-conformances, trends and areas of improvement.

Health, Safety & Environment (HSE) Manager

Ensure that:

- Legislative requirements for HSE management are implemented and maintained on project sites.

- The requirements of the Corporate HSE Management System are implemented on project sites.
- Where required, project HSE requirements and risks are identified during project tender and/or trade tender processes and incorporated into project management plans.
- Reviews of HSE performance are completed on all projects to ensure compliance with legislative and corporate requirements.

Project Manager

Ensure that:

- HSE requirements are identified and assessed during trade tender evaluations.
- In conjunction with the HSE Manager, project management plans are developed and implemented on projects.
- Resources are allocated to implement and maintain the HSE requirements on the project.
- ADCO project personnel have received training to fulfil their HSE responsibilities.
- Project personnel are aware of current HSE legislation and their obligations.
- HSE performance on the project is reviewed and non-compliant activities by employees and subcontractors are addressed.

Site Manager

Ensure that:

- Legislative requirements for HSE management are implemented and maintained on the project site.
- The requirements of project HSE Management Plans are implemented and managed on the project.
- The requirements of the Corporate Management Systems are implemented and managed on the project.
- Any issues which may arise over HSE requirements (legislative or Corporate) are managed on site.
- Employees and subcontractors complete their work in compliance with legislative and Corporate Management System requirements.
- Open lines of communication and consultation are maintained with the HSE Adviser and other parties (i.e. subcontractors, employee representatives) to ensure that the site operates in a safe manner and in compliance with regulatory and corporate requirements.
- HSE performance on the project is reviewed and non-compliant activities by employees and subcontractors are addressed.

HSE Adviser

Ensure that:

- Legislative requirements for HSE management are implemented and maintained on project sites.
- The requirements of the Corporate Management Systems are implemented on project sites.
- HSE performance on the project is reviewed and non-compliant activities by employees and subcontractors are addressed.

Health and Safety Representative (HSR)	In general: / Participate in risk and hazard identification and control. / Participate in incident investigations and management. / Participate in workplace inspections (e.g. with the Committee, with the project team). / Participate in project consultative forums. (e.g. HSE Committee) / Consult with and represent workers (i.e. work group) in health and safety issues.
All Other Project Personnel	All personnel are responsible for actively promoting and complying with Safety, Health and Environmental Management requirements as determined / advised / required by ADCO. Activities that all personnel are required to participate in include, but are not limited to: / Attend pre-start meetings. / Conduct pre-start tasks analysis. / Adhere to all permit requirements. / Report all hazards, near misses and incidents (including injuries). / Immediately stop any “at risk behaviour” identified during daily work activities. / Attend safety presentations and toolbox meetings. / Assist in achieving project HSE objectives and targets.

PROJECT INFORMATION

Project Address	297 King Street Mascot, NSW 2020
Start Date	December 2019
Completion Date	March 2021
Project Overview	The proposed flight training centre will occupy the southern portion of the site. It is a building that comprises 4 core elements as follows: • Emergency Procedures Hall • Flight Training Centre • Teaching and Office Spaces • Ancillary Spaces

PROJECT WASTE MANAGEMENT

On Site Management	General	/ Waste products will be recycled wherever possible. / Waste bins will be provided and emptied regularly. / Waste unsuitable for recycling will be disposed of to an approved landfill. / Tipping dockets will be obtained as required.
	Solids and liquids	/ Disposal of any solid and liquid waste will be by an approved contractor to an approved location.
	Concrete	/ A concrete wash out area will be nominated on site. / Concrete washout will be recycled where possible and used on site to stabilise access or for fill material.
	Contaminated materials	/ Refer to CEMP for details regarding treatment of any potential contaminated materials
	Stockpiles	/ Refer to the CEMP for details regarding stockpile management.
Waste Contractors and Forecast Waste Type and Quantities	During the construction of the project, removal and recycling of waste will be provided by a: licenced waste removal organisation with tipping locations including 36 Mcpherson St Banksmeadow and 76 Burrows Rd Alexandria. Waste removed from site will be transported to an approved waste or recycling facility. All waste removed from site will be tracked through waste documents and/or monthly waste reports provided by the contractor. The Following is a forecast of Waste type and quantity produced during construction.	

Material	Approximate Quantity (m3)	Recycled or Landfill
Sand and gravel	190	Recycled
Concrete, Brick, Asphalt, Tiles	734	Recycled
Metals (Ferrous and non-ferrous)	326	Recycled
Recyclable Paper and Cardboard	190	Recycled
Recyclable Plasterboard	109	Recycled
Recyclable Plastics	163	Recycled
Recyclable Timber and Green Waste	598	Recycled
Misc Waste	408	Landfill

Waste Material

Concrete and masonry product

- Concrete waste generated during demolition will be recycled
- Concrete wash out will be used for access paths and road where possible. All other concrete waste will be placed in designated skips on site.
- Excess concrete will be returned to the supplier.
- Masonry recovered during demolition will be recycled where possible by the demolition contractor.
- Masonry off cuts from construction may be reused on site for temporary access ways or placed in designated skip bins for recycling.

General waste

- All general waste generated on site including food scraps will be placed in the bins provided in the amenities buildings.
- Such waste will be removed from site by an approved contractor.

Excavated material

- Normal excavation methods will be used by the approved contractor.
- Excavated material will be handled, stockpiled and treated in strict accordance with the sites CEMP.

Green waste

- Green waste generated as a result of tree felling, mulching or top soil removal will be:
- Maintained on site and reused during landscaping works.

Glass, paper, plastic and cardboard	/ During the construction of the project, such products will be placed in designated bins for recycling.
Plasterboard	/ During the construction of the project, such products will be placed in designated bins for recycling.
Polystyrene	/ During the construction of the project, such products will be placed in designated bins for recycling.
Steel and aluminium	/ Where practicable, such products recovered during the demolition process will be recycled. During the construction of the project, such products will be placed in designated bins for recycling.
Timber	/ Timber recovered during the demolition process will be assessed on site by the demolition contractor and recycled where possible / Timber will be used and cut in the most economical fashion where ever possible. / Timbers for formwork, temporary structures and handrails will be reused and maintained at full lengths wherever possible. / Rainforest timbers and Australian high conservation timbers will not be used on this project.

APPENDIX E

COMMUNINITY CONSULTATION PLAN

PEOPLE WHO BUILD

ADCO

COMMUNITY CONSULTATION PLAN

PROJECT NAME

QANTAS GROUP FLIGHT TRAINING CENTRE

PROJECT NO.

3418

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1. INTRODUCTION

1.1. PROJECT DESCRIPTION

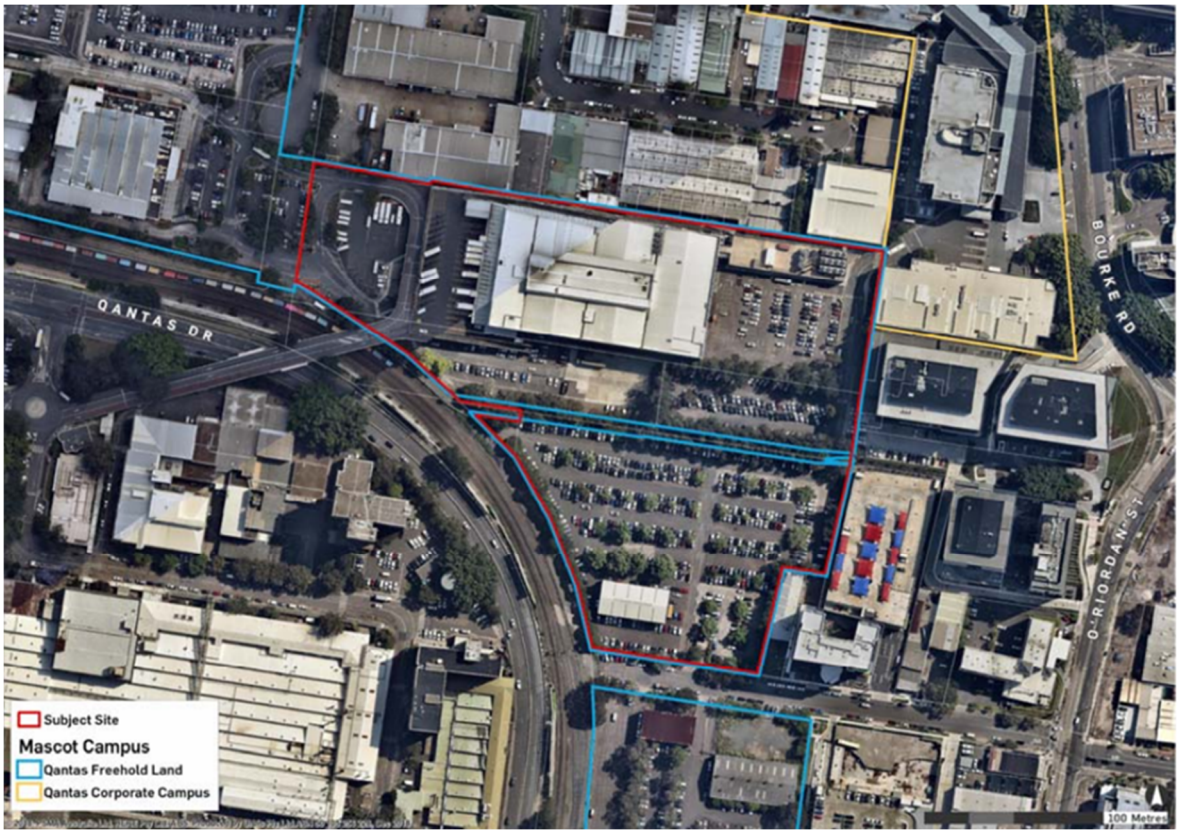
PRINCIPAL CONTRACTORS DETAILS

Name	State Address		ABN
ADCO Constructions Pty Ltd	Address	Level 2, 7-9 West Street	46 001 044 391
	Suburb	North Sydney	
	State	New South Wales	
	Phone	(02) 8437 5000	

PROJECT INFORMATION

Project Description	The proposed flight training centre will occupy the southern portion of the site. It is a building that comprises 4 core elements as follows: • Emergency Procedures Hall • Flight Training Centre • Teaching and Office Spaces • Ancillary Spaces
Project Address	297 King Street, Mascot, NSW, 2020

AERIAL VIEW



FEATURES OF THE LOCALITY

The following is a broad overview of the sites surrounding neighbours and operations:

- **North:** The site is bounded by low scale industrial development, beyond which is Coward Street. Further north of the site is the Mascot Town Centre which is characterised by transport-oriented development including high density mixed-use development focussed around the Mascot Train Station.
- **East:** The site is bounded by commercial development including a newly completed Travelodge hotel which includes a commercial car park. Additional commercial development to the east includes Corporate Connect, Ibis Hotel, BG Drilling and Pullman Sydney Airport fronting O'Riordan Street.
- **South:** The site is bounded by King Street, beyond which is Qantas owned at-grade car parking (King Street South Site) and other industrial uses. Further South is the Botany Freight Rail Line and Qantas Drive beyond which is the Domestic Terminal at Sydney Airport.
- **West:** The site is bordered by the Botany Freight Rail Line and Qantas Drive, beyond which lies Sydney Kingsford Smith Airport and the Qantas Jet Base (the location of the current Flight Training Centre).

1.2. PURPOSE OF THE PLAN

This Consultation Plan provides the framework which will enable ADCO Constructions to positively engage with neighbours and stakeholders, fulfilling our commitment to minimise disruption. ADCO will successfully manage communications and stakeholder engagement during construction of this project.

The plan forms an integral component of the Construction Environment Management Plan. It recognises and is consistent with project plans including those produced for the management of the environment, construction, work health and safety.

/ The plan addresses the requirements requested in SSD 10154 Condition C3 identified in Conditions of consent requiring approval from the Planning Secretary. Consultation Requirements' (extract inserted below)

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

C2. The Applicant must prepare a Construction Environmental Management Plan (CEMP) in accordance with the requirements of condition C1 and to the satisfaction of the Planning Secretary.

C3. As part of the CEMP required under Condition C2 of this consent, the Applicant must include the following:

(a) Construction Traffic Management Plan (see Condition B1);

(b) Erosion and Sediment Control Plan;

(c) Construction Noise Management Plan (see Condition B22);

(d) Construction and Demolition Waste Management Plan (see Condition B30);

(e) Community Consultation and Complaints Handling.

(f) Flood Emergency Response (see Condition B12)

2. OBJECTIVES & STRATEGIES

2.1. ROLES AND RESPONSIBILITIES

QANTAS and their appointed Superintendent's Representative have the overall responsibility for the Stakeholder Management and Consultation for the project. As described in the above mentioned contract document, ADCO Constructions has been delegated responsibility for management and coordination of certain consultation information and involvement and will primarily do this through the site project team as required by the project needs.

2.2. ADCO PROJECT MANAGER

The main point of contact for the project will be the Senior Project Manager. The Senior Project Manager's responsibilities are those associated with advising members of the community and stakeholders on construction activity that could directly affect the community and stakeholders and to ensure that the Project Team and the client are informed of community and stakeholder issues including any approach by media, council, a member of parliament or local member. ADCO's communication manager, Jonathon Ford will also be available to assist with any communications or consultations advice and objectives.

The Project Manager will be available at all reasonable times to answer questions and to address any concerns including up-to-date information on:

- Planned construction activity
- Project construction progress
- Issue of the 3-Weekly Communications Schedule

2.3. LIMITATIONS

This plan is specifically written to address the communication obligations required by the contractor and does not cover internal communication and consultation such as;

- Consultation required to facilitate detail design completion – this is covered in the Design Plan.

2.4. DELIVERABLE, STRATEGY & TOOLS

The objectives and strategies for community and stakeholder information and involvement during construction have been developed in consideration of obligations, and in compliance with the requirements of the Principal's Project Requirements and referenced documents, in relation to community and stakeholder consultation and communication obligations.

Deliverable	Strategy	Tools
Letterbox Drops	- ADCO will consult with the community via letterbox drops on key construction activities that may impact the community. It is anticipated that the following events will require consultation; > Establishment of Compound / Site Access > Commencement of Remediation / Demolition > Completion	
Site Signage	- Around the perimeter of the Project ADCO site signage will be clearly visible to the public. On this signage there will be clear direction to the following methods of contacting the project team; > Directional Signage to the Site Office > Phone Numbers of the Site Manager and Project Manager > Afterhours emergency contact phone number - 1800 232 628	- ADCO Site Signage - Refer to Appendix B
QANTAS Communication	- ADCO propose to establish a weekly communication forum between QANTAS and the ADCO Site Manager / Project Manager through the Superintendent's Authorised Person. This will be a two way communication forum facilitating; > ADCOs 3 weekly plan to be coordinated with QANTAS activities to ensure minimal disruption > Feedback from the QANTAS and other stakeholders to ADCO	- Example 3 weekly Communications Schedule – Refer to Appendix A

3. COMPLAINTS AND ENQUIRIES MANAGEMENT

3.1 ENQUIRIES MANAGEMENT

"ADCO sub-contractors and ADCO employees respectively will be told to avoid direct interaction with the Qantas Workforce. Both ADCO sub-contractors and ADCO Employees will be briefed on how to respond to ad-hoc enquiries from Qantas staff. They will listen politely to the enquiry and offer a simple response if the enquiry is of a simple nature, unable to be misconstrued or misinterpreted. If the enquiry is not of a simple nature and the Qantas employee wishes to go into further depth or detail the ADCO sub-contractor or ADCO

employee will respond by distributing a red 'Our Mascot Precinct' business card to the Qantas employee with a request to refer to the Qantas team directly with their query using the contact details on the card.

Traffic control staff, ADCO Site Management and Project Management, together with any other ADCO sub-contractor or employee who is deemed likely to encounter the Qantas workforce on any given construction day, will be supplied with a number of ' Our Mascot Precinct ' business cards to facilitate this process. Should the Qantas employee continue to request a response to their enquiry they are to be directed to the ADCO Project Manager or Site Manager who will provide the employee with details of Qantas Senior Change Manager for the Qantas Group Flight Training Centre Melinda Bruce on 0410 357 560 or Melinda.Bruce@qantas.com.au. "

3.2. MANAGING RESPONSIBILITY

The purpose of this section is to outline the procedure for managing complaints during the construction of the QANTAS GROUP FLIGHT TRAINING CENTRE. Complaints may include interaction with a community member or stakeholder who expresses dissatisfaction with the project, policies, staff members or subcontractors' actions, or proposed actions, during the project.

Complaints will generally be categorised in one of two ways for reporting:

- Unavoidable complaints – relating to the design, purpose, timing or planning of the project that are out of the control of ADCO.
- Avoidable complaint – relating to impacts from the construction or behaviour of the project and team.

3.3. MANAGING COMPLAINTS

3.3.1. UNAVOIDABLE COMPLAINTS

In the event that an unavoidable complaint is received, the complaint details will be registered on the ADCO Community Contact Database and the Superintendent will be notified.

3.2.2. AVOIDABLE COMPLAINTS

In the event that an avoidable complaint is received, the following is the typical process for managing the event;

- Complaint received via in person, telephone or via email
- Project Manager reviews detail and seeks further information via a phone call to the complainant if required
- Project Manager agrees remediation plan and implements
- Project Manager formally closes out the issue with the complainant
- The complaint details are registered on the ADCO Community Contact Database
- The CCD register will be included in the Contractor Monthly Report

> If deemed significant, the issue will be referred to the ADCO Construction Manager and discussed at the next Project Control Group Meeting.

3.3. RESPONDING TO COMPLAINTS

The ADCO Project Manager will have responsibility for receiving and responding to complaints. The Project Manager is suitably experienced and qualified to handle complaints and will be able to establish the nature of the complaint and the needs of the complainant.

To ensure equity in complaint handling;

> All complainants will be treated with respect and fairness
> All complaints will be considered on their merits
> The substance of a complaint dictates the level of resources dedicated to it, not a complainant's demands or behaviour

The Project Manager and their team will work to expeditiously address and resolve all complaints and claims directed against the project.

APPENDIX A – 3 WEEKLY COMMUNICATIONS SCHEDULE

APPENDIX B – ADCO SITE SIGNAGE DESIGN

ADCO
PROJECT DETAILS
BRISBANE AIRPORT, BRISBANE
1800 000 000
JOHN SURNAME
1800 000 000
ROBERT SURNAME
JOHN AVON, LAUREN GRIFFITHS
BELLA PLUSH
CONDITIONS OF ENTRY
/ Visitors must report to the ADCO site office prior to entry
/ Workers must complete the site induction program prior to starting work
/ The following personnel Productive Equipment (PPE) must be worn whilst on site
/ Defaulters must be pre arranged with the Site Manager prior to arriving on site
/ Work Method Statements (SWMS) must be approved by ADCO
/ No drugs or alcohol permitted on site. Workers may be subject to random drug and alcohol testing
1800 232 628
AFTER HOURS EMERGENCY CONTACT
DANGER
CONSTRUCTION SITE
SITE PERSONNEL MUST BE INDUCTED BEFORE STARTING ON SITE
GATE
2
ADCO SITE OFFICE
ALL VISITORS MUST REPORT TO THE SITE OFFICE
DANGER
CONSTRUCTION SITE
SITE PERSONNEL MUST BE INDUCTED BEFORE STARTING ON SITE
SAN CLINIC PARKWAY
PROJECT DETAILS
BRISBANE AIRPORT, BRISBANE
1800 000 000
JOHN SURNAME
1800 000 000
ROBERT SURNAME
JOHN AVON, LAUREN GRIFFITHS, BELLA PLUSH
Service Provider
Service Provider
Service Provider
Service Provider
Service Provider
Service Provider
ADCO SITE OFFICE
ALL VISITORS MUST REPORT TO THE SITE OFFICE
DANGER
CONSTRUCTION SITE
SITE PERSONNEL MUST BE INDUCTED BEFORE STARTING ON SITE

APPENDIX F

EMERGENCY MANAGEMENT PLAN

PEOPLE WHO BUILD

ADCO

EMERGENCY MANAGEMENT PLAN

RISK REGISTER

PROJECT NAME

QANTAS GROUP FLIGHT TRAINING CENTRE

PROJECT NO.

3418

VERSION CONTROL

Rev. No.	Issue Date	Approved By	Position	Details
01	11/11/19	S. Chamberlain	Snr Project Manager	
02	01/12/19	S. Chamberlain	Snr Project Manager	Flood Emergency Plan Updated

ADCO PROJECT PERSONNEL CONSULTATION AND SIGN OFF

We, the undersigned, confirm that we have been consulted on the contents of this document, read and understood the contents of this document, and agree to implement the requirements of this Plan on this project site

Name	Position	Signature	Date

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INTRODUCTION

PURPOSE

ADCO Constructions (ADCO) implements an integrated safety and environmental management system on all projects. Our HSE (Health, Safety and Environment) Management System, documents the manner in which construction-related activities are required to be completed on ADCO project sites. This Management Plan provides information on how workplace health, safety and environment will be managed on this project to provide a safe, injury and incident free workplace for workers and the general community.

MANAGEMENT SYSTEM AND DOCUMENTATION

System documents which are referenced in this Plan or any associated Plan or Risk Register can be sourced by accessing the ADCO Constructions Intranet. (ADCO personnel only). Additional information can be obtained from the HSE Manager in each State.

ADCO PERSONNEL SIGN OFF

ADCO project personnel will be inducted into the requirements of this Plan and any associated Plan or Risk Register by the relevant Project Manager. Evidence of induction and discussion will be recorded within section ADCO Project Personnel Consultation and Sign off.

INFORMATION SUPPLY TO SUBCONTRACTORS

This Plan and any associated Plan or Risk Register (including any future revisions) will be supplied to subcontractors for review through the Aconex portal or another approved format.

PLAN REVIEW

This document will be reviewed on a periodic basis, not exceeding 6-monthly, to ensure its compliance to legislative and operational requirements of the. Project. Review and updates to this plan will initiate a change to the plan revision number and be recorded in the “Version Control’ section of the document. Superseded Plans will be marked as such and will be located within the Management Plan Folder located in the Site Office.

SITE FILING

A hard copy of this Plan and any associated Plan or Risk Register (including any future revisions) will be held on site

PLAN ARCHIVING

Copies of this and superseded Project Management Plans and associated Risk Registers will also be maintained (archived) by ADCO for a period of at least 24 months following an update completion.

PRINCIPAL CONTRACTORS DETAILS

Name	State Address		ABN
ADCO Constructions Pty Ltd	Address	Level 2, 7-9 West Street	46 001 044 391
	Suburb	North Sydney	
	State	New South Wales	
	Phone	(02) 8437 5000	

PROJECT INFORMATION

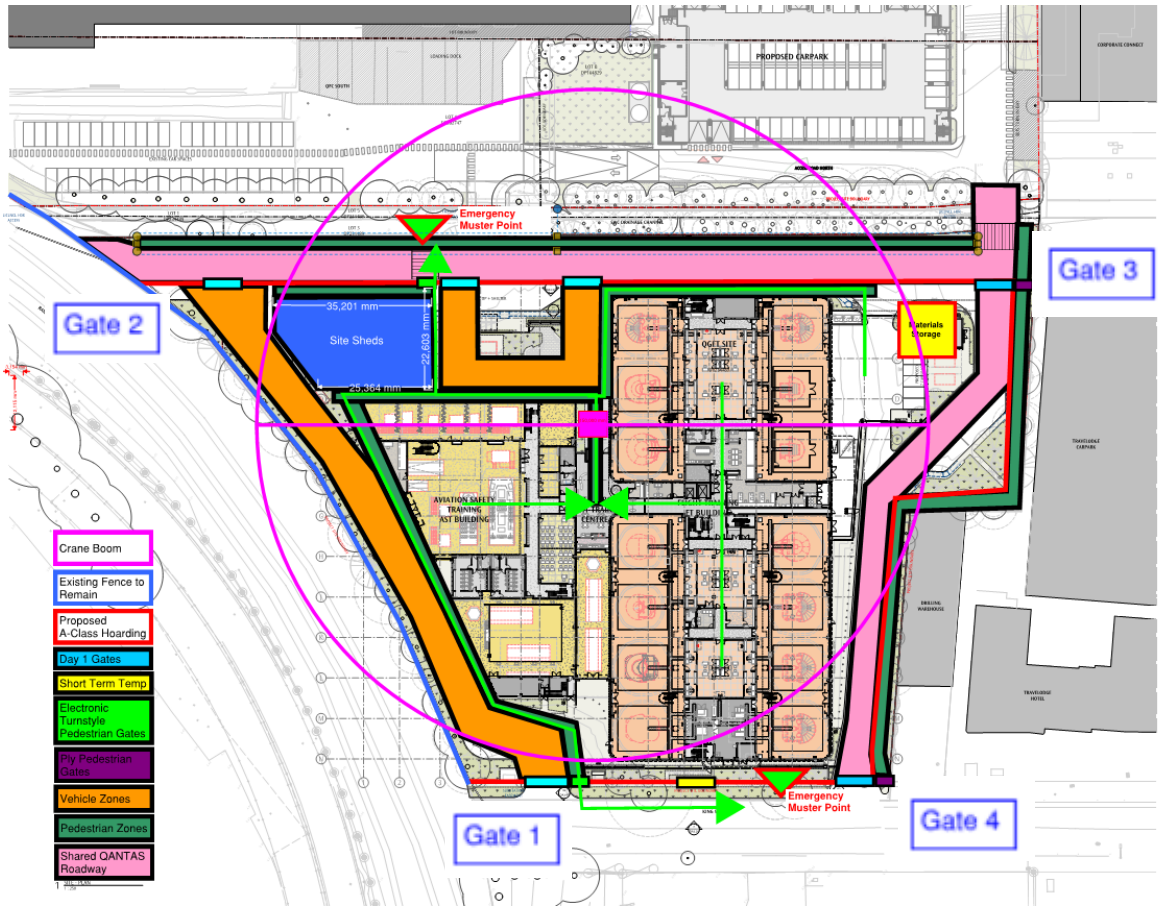
Project Description	The proposed flight training centre will occupy the southern portion of the site. It is a building that comprises 4 core elements as follows: • Emergency Procedures Hall • Flight Training Centre • Teaching and Office Spaces • Ancillary Spaces
Project Address	297 King Street, Mascot, NSW, 2020

SITE REQUIREMENTS

SITE ACCESS

Main Site Entry Location	Gate 1 297 King Street Mascot
Other Entry Points	Gate 4, 297 King Street Mascot
Worker Entry Locations	Gate 2a, Enter via the pedestrian walkway along the hoarding
Visitor Entry Locations	Gate 2a, Enter Via the pedestrian walkway along the hoarding

EMERGENCY PLAN



EMERGENCY EQUIPMENT

Relative to the Project Emergency Risk Assessment, the following emergency equipment will be provided by ADCO on this project

	Type	Location
First Aid Kit	Wall Mounted / Portable	Site Office
Fire Extinguishers	Dry Chemical	Site Compound, Temporary Power Boards, Hot Work Activities
Spill Kit	Large 240 L / Portable	Site Compound / Refuelling areas
Other		

EMERGENCY NOTIFICATION METHODS

Type	Location
Nurse Call	Distributed on-site and at the first aid shed
2-way radio	Not applicable
Siren	Site Office
Loud Hailer / Air Horn	Site Office

EMERGENCY CONTACT INFORMATION

Medical Centre	Mascot Medical and Dental 934 Botany Rd, Mascot NSW 2020 (02) 9317 4222

Hospital	Prince of Wales Hospital 320-346 Barker St, Randwick NSW 2031 Phone - (02) 9382 2222
Electricity	Enwave 24hr Emergency Fault Line (02) 9667 1327 For life threatening faults contact 000
Water	Sydney Water 24 hr emergency number 13 20 90
Gas	Jemena Faults and Emergencies 131 909
Communications	Telstra 13 22 03
Poison	Poisons Information Centre 13 11 26

EMERGENCY MANAGEMENT STRUCTURE

Emergency Coordinator	John Portelli
First Aid	Myles Finlay
Emergency Warden	Stephen Chamberlain

PRACTICE AND INSPECTION SCHEDULE

EMERGENCY PRACTICE

Practice Type	Frequency
Full Site Evacuation	Must be practiced at least once over the time of the project. Additional practice required if major changes to site access occur.
Height Rescue	Must be practiced at least once each quarter.
Depth Rescue	Must be practiced at least once over the time of the project.

Water Rescue	Must be practiced at least once over the time of the project.
Substance Spill	Must be practiced at least once over the time of the project
Fire Explosion	Must be practiced at least once over the time of the project.
Traffic Plant Incident	Practice according to risk of the event occurring.

EMERGENCY EQUIPMENT INSPECTION

Equipment Type	Frequency
Man Box	Inspect weekly. Notation within the Weekly Site Inspection form.
EWPs or Other Reach Equipment	Operator daily inspection.
First Aid Kits	Inspection at each 3-month interval.
Fire Extinguishers, Reels, Blankets etc.	Testing / inspection at each 6-month interval.
Spill Kits	Inspection at each 3-month interval.
Air Horns / Loud Hailers	Inspection at each 3-month interval.

SITE REQUIREMENTS INSPECTION

Site Condition	Frequency
Tower Crane Operator Access	Inspect daily. Notation within the Weekly Site Inspection form.

Roof Access	Inspect daily. Notation within the Weekly Site Inspection form.
Deck Access	Inspect daily. Notation within the Weekly Site Inspection form.
Stair Access	Inspect daily. Notation within the Weekly Site Inspection form.
Basement / Excavation Access	Inspect daily. Notation within the Weekly Site Inspection form.
Refuelling Location	Inspect Weekly Notation within the Weekly Site Inspection form.
Substance Storage Locations	Inspect Weekly Notation within the Weekly Site Inspection form.
General Access / Egress	Inspect daily. Notation within the Weekly Site Inspection form.

RISK AND HAZARD MANAGEMENT

DEFINITIONS

Emergency	A sudden, unexpected, abnormal or extreme event requiring precise and timely operational action to control, retain and restore to a safe condition.
Emergency Management	The process of preparing for, mitigating, responding to and recovering from an emergency.
Emergency Management Team	The collective name given to personnel who perform roles with the team.
Emergency Response	The deployment of human and material resources, and the application of procedures and techniques to mitigate or limit the consequences of an emergency.
Incident	An event that has affected, or may affect any aspect of business operations.
Critical Incident	A traumatic event, or the threat of such which has the potential to harm life or well-being and causes extreme stress, fear or injury to the person experiencing or witnessing the event. i.e. Site based death, suicide, serious work injury, armed hold up, allergic reaction, snake bite (venomous).

IDENTIFICATION

The identification and assessment of potential emergency situations risks that could eventuate during construction of the project will be completed by ADCO at any / all of the following project stages*:

- Project planning
- Project construction

MANAGEMENT

On identification of potential emergency situations (e.g. risk assessment, actual incident information, etc.), the Project Manager together with the Site Manager and HSE Adviser must ensure:

- That appropriate resources are provided to the site (e.g. first aid kits, fire extinguishers).
- ADCO site personnel are in passion of the required qualification to manage an emergency situation (e.g. first aid, fire warden).
- Emergency management information is located on site plans (e.g. traffic movement plan, emergency plan).
- That emergency management information is provided to workers through the consultative forums (e.g. site induction, pre-start meetings).
- That regular inspections of emergency equipment are undertaken and recorded in the **Checklist – Emergency Management**.

PRACTICES

Emergency practice exercises will be conducted throughout the project life span to test the efficiency of the emergency response system. The type and frequency of the exercises will depend on the stage of constructions, the number of personnel on site, and identified risks.

Emergency practice will be required to be completed at least once every 6 months. Practices may relate to a particular risk / hazard e.g. work at height) or incorporate a full site evacuation. If required, external emergency groups may be requested to participate in these emergency exercises to ensure communications and joint actions are assessed and addressed where lacking. (e.g. Tower Crane extraction).

- The Checklist – Emergency Evacuation must be completed as a record of the practice.
- Information on outcome (e.g. compliance / non-compliance) will be provided to workers through a Pre-Start Meeting or a Toolbox meeting
- A debrief will occur at the completion of each emergency practice and the practice will be recorded using the *Checklist – Emergency Evacuation* form

EVACUATION ROUTES

- Evacuation routes will be developed for each area as the project progresses.
- All personnel are required to follow the safest route to the nominated assembly area.

- Any changes to evacuation routes / assembly areas must be noted on the site plan and communicated to the workforce via site inductions, pre-start meetings/ toolbox talks.

EVACUATION ASSEMBLY AREAS

- The position of assembly areas will be nominated as the project develops - such areas will normally be located outside of construction and office areas. Should any assembly area be inappropriate or unsafe, then alternative location(s) will be designated by the Site Manager
- Signage will be installed to provide direction to personnel.
- Assembly areas and evacuation routes must be regularly communicated (notices, toolbox talks, etc.) to project personnel.

EMERGENCY EQUIPMENT

- The type of emergency equipment available on site must be reviewed periodically and form part of a 3-monthly review to reflect changing site conditions.
- Emergency equipment must be maintained through preventive maintenance procedures (inspection and testing) to ensure that equipment is in ready condition for use. The *Checklist – Emergency Management* form must be completed to verify inspection.
- Subcontractors providing their own emergency equipment should maintain equivalent inventories and inspection protocols and safe work method statements must identify emergency equipment required for that task.

SITE INDUCTION

Information on the projects emergency management Plan / requirements / practices etc., will be provided to project personnel at site induction, pre-start meetings and through other consultative forums (e.g. notice boards).

AUTHORITY TO WORK PERMITS

Authority to Work Permits will be automatically suspended in the event of an emergency situation and may be re-issued once the work site / area is deemed safe.

Personnel who have been working under an ATW Permit, e.g., hot work, confined space, excavation permit, etc., may not return to work until the Permit has been revalidated by the Site Manager or the HSE Adviser.

SUBCONTRACTOR COMPLIANCE

Subcontractors are required to provide information on emergency management – relative to the work activities – in their SWMS.

LEGAL PRIVILEGE

Where applicable, legal privilege may be imposed by Counsel. Where this is required this will be advised to the site team by the State Manager or the National Risk Manager.

CONFIDENTIALITY

When communicating via radios, personnel should be cognisant of not providing personal details of injured / missing persons. Personal information or discussion of injuries is not to be broadcast over the radio and must be conveyed via mobile phones or face-to- face

MEDIA COMMUNICATION

In the event of interest from the media, only the State Manager or persons specifically authorised by the Chief Executive Officer may comment.

POSITION RESPONSIBILITIES

Site Emergency Co-Ordinator (SEC)	/ Contact / communicate with emergency services. / Coordinate emergency response. / Communicate with First Aid Officer and Wardens. / Coordinate the activities of all personnel in the emergency team and initiate further directions as required by the situation. / Give the all clear when including when authorised to do so by the emergency services.
First Aid	/ Provide initial response to injured personnel. / Assist emergency personnel, as required. / Maintain a working knowledge of the emergency management system, plan and processes. / Ensure that first aid supplies are stocked and suited to project conditions / Participate in the scheduled review of this Plan.
Emergency Warden	/ Conduct a search sweep of the designated area, ensuring all persons have cleared the area. / After completion of the search sweep, assemble at the designated emergency assembly area. / Await roll call and / or further directions as given by the Emergency Coordinator.
Site Manager	/ Act as the initial Site Emergency Co-ordinator during emergencies until relieved by emergency services or control is handed over to another member of the team (i.e. First Aider, SHE Manager). / Maintain a working knowledge of the emergency management system, plan and processes. / Participate in the scheduled review of the Plan. / Ensure that drills and exercises are conducted throughout the project period to test the Plan.
HSE Adviser	/ Assist the Site Emergency Co-ordinator. / Ensure that adequate emergency response information and instructions are provided at inductions etc. / Conduct inspections to ensure emergency response equipment and facilities are suited to project conditions. / Maintain a working knowledge of the emergency management system, plan and processes.

	/ Participate in the scheduled review of the Plan. / Ensure that drills and exercises are conducted throughout the project period to test the Plan
All Other Project Personnel	/ Provide emergency equipment (e.g. First Aid kits, FFE, Spill Kits) at their work locations. / Follow instructions given emergency personnel. / If directed, provide assistance at the scene / Reporting to the Warden at the muster point for roll call and remaining at the muster point until instructed to return to work.

POSITION QUALIFICATIONS

Site Emergency Co-Ordinator (SEC)	No formal qualification required. Training as a First Aid Officer or Fire Warden recommended.
First Aid	Certification through a Registered Training Organisation (RTO) Recommended refresher training every 3 years.
Emergency Warden	Certification through a Registered Training Organisation (RTO

PERSONNEL

Spotter / Notifier	/ Notify the Site Manager, HSE Adviser or First Aid Officer. / Describe the scene (e.g. person trapped in an EWP, person has fallen over the side, person is suspended). / Where practicable, stay at the location of the event.
Site Emergency Co-Ordinator (SEC)	/ Sound the emergency alarm. / Evaluate the situation and identify any further hazards that could arise. / Determine whether rescue can be co-ordinated on site using site equipment. If No – contact emergency services. / If radios are used on site – enable radio silence and move to an emergency channel.
First Aid	/ Where practicable, administer First Aid, at the location of the event. / If the area is safe, assist any person/s in immediate danger. / Do not move injured person/s – UNLESS they are in imminent danger of further injury. / If the injury is from a fall – DO NOT move the person/s.

	/ Assist emergency services.
Emergency Warden	/ Where required, isolate incident zone. / Ensure that workers in the immediate vicinity of the incident have stopped working. / Move all non-affected workers out of incident zone. / Instruct a designated worker to the site gate to meet the response team (police, medical, fire, etc.) and ensure that they have a safe access path to the accident scene.
Plant Operators	/ All Plant and machinery in the incident areas to be parked safely, switched off - keys left in ignition - and vacated. / Make safe any suspended loads. / Ensure that emergency access is not blocked. / If Plant is used for a rescue, Operators to remain with Plant and await instruction. / If necessary to save life or prevent further injury, SEC / Warden to instruct that plant or machinery be moved to safer location on site.
All Other Project Personnel	/ Follow instructions / provide assistance to emergency team and/or emergency services.

EMERGENCY ACTIONS

All Situations	Assess the situation. If it cannot be contained and/or personnel have not been trained to deal with the situation – EVACUATE AND STAND DOWN AND CONTACT EMERGENCY SERVICES. Where practicable - isolate the sources of live services. If this cannot be done - STAND DOWN AND CONTACT EMERGENCY SERVICES. Where required - delegate a person to contact emergency services and service provider (e.g. electricity, gas, water) to advise of the emergency.
EWP Rescue	/ Bring the EWP to the incident site and use it to reach the suspended worker. / Ensure that rescue workers are wearing full-body harnesses attached to appropriate anchors in the EWP. / Ensure that the EWP has the load capacity for both the rescuer(s) and the fallen worker. / If the fallen worker is not conscious, two rescuers will probably be needed to safely handle the weight of the fallen worker. / Position the EWP platform below the worker and disconnect the worker's lanyard when it is safe to do so. / When the worker is safely on the EWP, reattach the lanyard to an appropriate anchor point on the EWP if possible. / Lower the worker to a safe location and administer first aid.

	/	Treat the worker for suspension trauma and any other injury. Arrange transportation to hospital if required.
Ladder Rescue	/	If the fallen worker is suspended from a lifeline, move the worker (if possible) to an area that rescuers can access safely with a ladder.
	/	Set up the appropriate ladder(s) to reach the fallen worker.
	/	Rig separate lifelines for rescuers to use while carrying out the rescue from the ladder(s).
	/	If the fallen worker is not conscious or cannot reliably help with the rescue, at least two rescuers may be needed.
	/	If the fallen worker is suspended directly from a lanyard or a lifeline, securely attach a separate lowering line to the harness.
	/	Other rescuers on the ground (or closest work surface) should lower the fallen worker while the rescuer on the ladder guides the fallen worker to the ground (or work surface).
	/	Once the fallen worker has been brought to a safe location, administer first aid and treat the person for suspension trauma and any other injury. Arrange transportation to hospital if required.
Rescue from Same Level or Level Below	/	Ensure that rescuers are protected against falling.
	/	If possible, securely attach a second line to the fallen worker's harness to help rescuers pull the fallen worker to a safe area.
	/	Take up any slack in the retrieving line to avoid slippage.
	/	Once the worker has been brought to a safe location, administer first aid and treat the person for suspension trauma and any other injury. Arrange transportation to hospital if required.
Fire / Explosion	/	Raise the alarm.
	/	Where practicable, contain the fire by closing doors and windows - provided it is safe to do so.
	/	Assess the situation.
	/	Attempt to extinguish the fire. Only action this if you are trained and it is safe to do so.
	/	Attempt to rescue any person/s in immediate danger - provided it is safe to do so
	/	Fight the fire using the correct equipment:
	/	Only use the correct extinguisher type. If you are unsure of firefighting methods or the cause of the explosion – RETREAT.
	/	Always keep an Emergency Exit behind you (away from the fire).
	/	Stay low to avoid heat and smoke.
	/	Direct extinguisher stream at the base of the flame.
	/	Move extinguisher in a side to side sweeping motion.
	/	On extinguishment of fire, pull apart burnt areas to get at hot spots and repeat same action
	/	If the fire gets out of hand, RETREAT.
Man Box Rescue	/	Confirm that other rescue methods are not possible.
	/	Instruct the crane operator to position the crane to attach the box and to await instructions.

- While the box is being attached, Rigger to ensure that all safety rigging is done and required safety equipment is available.
- With two rescuers in the box, hoist to a position that is above and as close as possible to the fallen worker.
- Designated worker on the ground to guide the box with a tag line. Designated worker to ensure that when the rescue basket reaches the right elevation, the door of the box is facing the landing area - to provide an easy exit for rescuer #1.
- Rescuer #1 to exits the rescue box and get into a position to reach the fallen worker. When doing this, rescuer #1 must be tied-off at all times to either the structure or the rescue box.
- Rescuer #2, (still in the rescue box), lowers the line that will be used to retrieve the worker.
- Rescuer #2 attaches an extra lanyard to the line if required.
- Rescuer #1 assesses the fallen worker for injuries and then decides how to proceed (i.e., treat injuries first, guide the fallen worker into the rescue box, or lower the basket to the ground with the fallen worker attached to it).
- Once the fallen worker has been brought to a safe location, administer first aid. Treat the person for suspension trauma and any other injury. Arrange transportation to hospital.

Ensure the following are maintained in or near the rescue basket

- First-aid kit.
- Three lanyards equipped with shock absorbers.
- One full-body harness.
- Tag line attached to the basket at all times
- Descent controller rescue device in good working condition.
- Secondary safety line to tie the basket above the headache ball of the crane

Note

- Perform a box rescue only when it is not possible to use conventional equipment to rescue the fallen worker in a safe manner.
- Never exceed the maximum number of workers in the box as indicated on the nameplate.
- Ensure that a competent worker inspects the crane and equipment being used prior to lifting rescuers.
- Always equip the crane with a fail-safe mechanism to prevent the boom from descending in the event of a power source or system failure.
- Maintain an adequate means of communication between the rescuers in the box and the crane operator at all times.
- Ensure that workers in the rescue box wear full-body safety harnesses attached to a lanyard and anchored to appropriate points in the box at all times.
- Make sure that all rigging used to attach the rescue box to the hook of a load line has a safety factor of 10 against failure. There should be a safety line attached to the load line directly from the box.
- Do not allow cranes to travel while rescuers are in the box.

	/ Do not use suspended rescue boxes during high winds, electrical storms, snow, ice, sleet, or other adverse conditions that could affect the safety of personnel on the platform or in the box.
Electrical	/ Raise the alarm. / If the person / Plant / equipment is in contact with live apparatus, isolate the electric power source before attempting any action. / Secure the immediate area to prevent access or injury to other persons. / Assess the incident area. / Assess worker and give necessary first aid treatment, apply basic life support if required. Low Voltage / Break the contact by switching off the current. / If the above action is not possible, stand on something dry (blanket, rubber mat, newspapers) and break the contact by pushing the affected person free with a wooden pole or board, or pulling with a loop of rope around an arm or a leg. / Delegate a person to contact emergency services. / If practical – administer first aid until emergency services arrive (e.g. to conduct on site ECG to clear person). High Voltage / Immediately disconnect power source. / If the above action is not possible, stand CLEAR. Do not touch the person / Plant as they may still be energised. / Delegate a person to contact emergency services and advise of the situation. / Contact the nominated electricity provider and advise of the emergency. / Maintain a presence at the incident scene until arrival of emergency services and instructions from them.
Gas Leak	/ Raise the alarm. / Immediately evacuate the site. / If safe to do so, isolate gas supply. If this action is not possible, stand CLEAR. / Do not enter any confined area where there is a risk of being overcome by gas. / Do not allow any electrical equipment to be operated in the immediate vicinity and do not touch any electrical equipment Assess the incident area. / Delegate a person to contact emergency services and advise of the situation. / Delegate a person to contact the nominated gas provider and advise of the emergency. / Assess any injuries worker and give necessary first aid treatment, apply basic life support if required. Only action this if it is safe to do so.
Plant	/ Raise the alarm. / Evacuate the area. / Assess the situation. / If safe to do so – switch off the ignition. / If required and safe to do so, isolate any live services in the incident area.

	/ If required – provide first aid assistance. If persons condition is uncertain / possibly life-threatening call for an ambulance. / If required – provide firefighting assistance. / Identify any Plant / equipment / machinery that may be used to assist with the movement of the Plant. If a person is injured / Plant is on fire await instruction from emergency services before use.
Confined Space	/ Raise the alarm. / Evacuate the area. / Conduct a roll call to determine who is working in the confined space/area. / Assess the situation. / If required and safe to do so - isolate any live services in the incident area. / If required – provide first aid assistance. If persons condition is uncertain / possibly life-threatening call emergency services. / If required and safe to do so – provide firefighting assistance. / Identify any equipment that may be used to assist with the movement of the Plant. If a person is injured / Plant is on fire await instruction from emergency services before use.
Water Incident	/ For Flood Emergency Management, refer to response plan which can be found in appendix 1 of this document. / Sound the alarm. / Attempt to rescue the person using the rescue equipment located in the area (life buoy etc.). / Evacuate the area or site. / If the situation cannot be immediately controlled delegate a person to contact emergency services and advise of the situation. / Await instruction from emergency services.
Spills	/ Do not enter any confined area where there is a risk of being exposed to toxic atmospheres. / Assess the incident area. / If required - sound the alarm. / If required - evacuate the area and ensure that persons assemble in a well-ventilated, safe area, upwind from the spill. / If required – isolate the area. / Do not allow any ignition sources or electrical equipment to be operated in the immediate vicinity of the spill. / Minor Spill / If required – review the SDS to identify spill recovery instructions. / Particular attention should be paid to nearby drains and these may need to be dammed using appropriate bunding. / Use the contents of a Spill Kit to contain / absorb the spill. / Dispose of used material in the manner prescribed on the Spill Kit instructions. / Make safe any areas affected by the spill / If there is any concern about your safety or the safety of others, do not permit spillage recovery – leave for specialist Fire Brigade personnel. / Major Spill

	/ Sound the alarm. / Evacuate the area or site. / If required and safe to do so, isolate gas and electrical supply to the area. If this action is not possible, stand CLEAR. / Delegate a person to contact emergency services and advise of the situation. / Delegate a person to contact the nominated service provider and advise of the emergency. / Await instruction from emergency services.
Structural Collapse	/ Immediately evacuate the area. / If safe to do so, isolate services (e.g. electricity, gas, water) supply. If this above action is not possible, stand CLEAR. / If necessary – evacuate surrounding buildings / structures. / Delegate a person to contact emergency services and advise of the situation. / Conduct a roll call to determine whether any persons are missing and may under / within the collapsed area. / Identify any Plant / equipment / machinery that may be used to assist with the movement of structural components – wait instruction from emergency services before use.
Traffic Incident	/ Ascertain if any person/s injured. If yes, request Ambulance and render First Aid if practicable. / Determine if vehicle/s pose/s a hazard to persons nearby (e.g. leaking fuel). / If yes, request appropriate emergency services (e.g. Fire Brigade) and evacuate persons from immediate danger area / If no person injured and no danger, determine if vehicle/s pose/s an obstruction to normal vehicular traffic flow. / If yes, request driver/s to move vehicles off road (e.g. into car park). / If vehicle unable to be moved, request driver to immediately obtain tow truck assistance. / Confirm if driver/s require Police to be called (if persons are injured, Police must attend).
Non-Incident Medical Emergency	/ Raise the alarm. / First Aider to respond to the scene. / If persons condition is uncertain / possibly life-threatening call for an ambulance. / Obtain relevant personnel details- it possible. / If practical – administer first aid / basic life support until emergency services arrive.

RISK ASSESSMENT FRAMEWORK

Risk controls are implemented by ADCO and subcontractor companies through any or all of: SWMS, Authority to Work Permits, Risk Assessments, consultation mechanisms, engineering approvals, etc.

HIERARCHY OF CONTROL

Eliminate

Can the risk or hazard be eliminated or removed?

Substitute

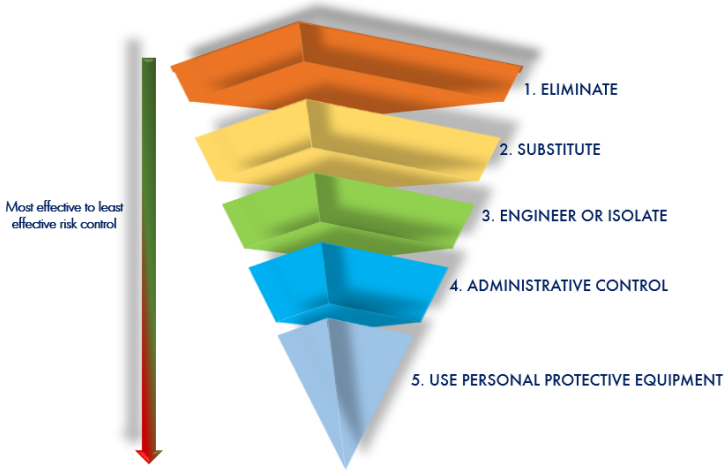
Can the activity or product be substituted by something else (a substance or a process) that has less potential to cause injury or damage?

Engineer or Isolate

Can a structural change to the work environment or work process be made to interrupt the path between the worker and the risk?

Admin Control

Will an administrative change (i.e. by upgrading training, changing rosters) reduce the risk?



Personal Protective Equipment (PPE)

Can personal protective equipment (gloves, goggles, etc.) or clothing be worn to safe-guard against the hazard?

HIERARCHY OF CONTROL – WORKING AT HEIGHT

Solid Ground

The most effective way to protect workers against falls from height.

Fall Prevention

Using equipment designed to prevent a fall for temporary work at heights

Fall Restraint

Using equipment designed to prevent workers falling over an unprotected edge

Fall Arrest

Using equipment designed to safely stop a worker falling an uncontrolled distance and reduce the impact of the fall.

Other Systems

The LAST option for safely working at height.

RISK MATRIX

(P) PROBABILITY - A measure of the chance of the occurrence		CONSEQUENCE (C) - The outcome or impact of an event			
		1	2	3	4
	SAFETY	Permanent disability or death.	Serious bodily injury.	Hospitalisation resulting in LTI.	External medical treatment. No LTI.
	ENVIRONMENT	Toxic release off site with detrimental environmental impact	Offsite release contained with outside treatment/assistance. Minimal detrimental environmental impact.	On site release contained with outside treatment/assistance. No detrimental environmental impact.	On site release contained. No environmental impact
Expected to occur in most circumstances.	ALMOST CERTAIN	E	E	H	M
Probably occur at some time.	LIKELY	E	H	M	M
May occur at some time.	POSSIBLE	H	H	M	L
Not likely to occur in normal circumstances.	UNLIKELY	H	M	M	L

ACTION TIME FRAME			
EXTREME (E)	HIGH (H)	MEDIUM (M)	LOW (L)
IMMEDIATE action required	Action **IN THE SAME SHIFT**.	Action in < **48 HOURS**.	Action **AS AGREED**.
Involvement and approval of Construction Manager / SHE Manager National SHEQ Manager required.	Construction Manager / SHE Manager to be advised of actions to be taken, prior to continuation.	Site Manager and S&E Adviser to review and agree on actions to be taken, prior to continuation.	SWMS review by contractor supervisor. Observation by ADCO.

In accordance with the Standard, impacts resulting in a residual risk rating of (E) Extreme or (H) High will be defined as “Significant”. Communicating impacts falling into these categories will be undertaken through the following but not limited to; induction process, contractor meeting and client meetings.

ASSESSMENT OF POTENTIAL PROJECT RISKS

WORKING AT HEIGHT

IR	Potential Emergency	Controls	RR
E	/ Person falling from one level to another and sustaining an injury. / An item (tool, equipment, material) to falling and injuring a person below / causing property damage. / Person becoming incapacitated in a EWP, Man Box, Swinging Stage or Tower Crane.	/ Where required, engineer approved methodology / plans to be provided to ADCO for approval. / Work activity sequencing to be planned and agreed with subcontractors. / Subcontractors to provide site-specific SWMS for their work activities. “Hierarchy of Controls” to be implemented as far as practicable for safe work practices.	M

			/ Emergency management procedures to be documented in the SWMS. / Competent (verified) contract personnel to complete activities. / Only approved, certified and engineered fall arrest and fall restraint equipment to be used. / Non-propriety elements prohibited. / As required, engineering certification to be obtained for ground conditions prior to use of Plant. / As required, work at height activities to be controlled through a Checklist and Permit to Work, managed by ADCO. / Only approved mobile Plant permitted to be used for work at height activities. / Safe access and egress to be provided to work areas. / Exclusion zones are to be established below the work area with barricading and signage. / Work area specific emergency management to be discussed, reviewed and approved.	

FIRE / EXPLOSION

IR	Potential Emergency	Controls	RR
H	/ Fire or explosion resulting from: / Hot Works / Plant contact with live services (gas, electricity). / Substances stored / used on site. / Naked flames (e.g. cigarettes / matches.) / Deliberate acts. / Natural weather events (e.g. lightning).	/ Raise the alarm. / Where practicable, contain the fire by closing doors and windows - provided it is safe to do so. / Assess the situation. / Attempt to extinguish the fire. Only action this if you are trained and it is safe to do so. / Attempt to rescue any person/s in immediate danger - provided it is safe to do so / Fight the fire using the correct equipment: / Only use the correct extinguisher type. If you are unsure of firefighting methods or the cause of the explosion – RETREAT.	M

			/ Always keep an Emergency Exit behind you (away from the fire). / Stay low to avoid heat and smoke. / Direct extinguisher stream at the base of the flame. / Move extinguisher in a side to side sweeping motion. / On extinguishment of fire, pull apart burnt areas to get at hot spots and repeat same action / If the fire gets out of hand, RETREAT.	

ELECTRICAL

IR	Potential Emergency	Controls	RR
E	/ Electrocution / electric shock to personnel from contact with live wires. / Plant / material contact with live electrical elements. / Exposure of live electrical elements during work activities.	/ Raise the alarm. / If the person / Plant / equipment is in contact with live apparatus, isolate the electric power source before attempting any action. / Secure the immediate area to prevent access or injury to other persons. / Assess the incident area. / Assess worker and give necessary first aid treatment, apply basic life support if required.	H

GAS

IR	Potential Emergency	Controls	RR
M	/ Personnel exposure to live gas. / Fire / explosion from contact with live services. / Plant / material contact with live electrical elements. / Exposure of live gas elements during work activities.	/ Raise the alarm. / Immediately evacuate the site. / If safe to do so, isolate gas supply. If this action is not possible, stand CLEAR. / Do not enter any confined area where there is a risk of being overcome by gas. / Do not allow any electrical equipment to be operated in the immediate vicinity and do not touch any electrical equipment Assess the incident area. / Delegate a person to contact emergency services and advise of the situation.	L

			/ Delegate a person to contact the nominated gas provider and advise of the emergency.	

STRUCTURAL COLLAPSE

IR	Potential Emergency	Controls	RR
H	/ Collapse of formwork / scaffolding / concrete elements / structural steel, etc. / Collapse of all / part of a structure during demolition.	/ Immediately evacuate the area. / If safe to do so, isolate services (e.g. electricity, gas, water) supply. If this above action is not possible, stand CLEAR. / If necessary – evacuate surrounding buildings / structures. / Delegate a person to contact emergency services and advise of the situation. / If required - delegate a person to contact the nominated service provider and advise of the emergency. / Conduct a roll call to determine whether any persons are missing and may under / within the collapsed area. / Identify any Plant / equipment / machinery that may be used to assist with the movement of structural components – wait instruction from emergency services before use.	M

WORK AT DEPTH

IR	Potential Emergency	Controls	RR
H	/ A person falling into an excavated area from another level. / Engulfment from collapsed side walls / material.	/ Where required, work activity support structures / sequencing to be approved by an Engineer. / Proprietary support equipment to be used. Supporting manufacture and installation documentation / evidence to be provided to ADCO prior to use. / Work activity sequencing to be planned and agreed with subcontractors. / Services to be identified and plotted on a Plan. Information to be provided to workers.	M

			/ Competent (verified) personnel to complete activities. / Traffic Movement Plan to reflect excavations, services, mobile plant routes, etc. / Exclusion zone barriers / barricading / warning signage to be visibly located to advise of risks. / Work activities to be controlled through a Checklist and Permit to Work, managed by ADCO.	

PLANT

Description

Potential for impact on water quality within the area due to poor construction practices

IR	Potential Emergency	Controls	RR
M	/ Injury to persons due to impact from moving Plant / vehicles. Plant rollover. / Plant connecting with other Plant. / Plant connecting with a structure. / An item of Plant becoming inoperable at elevation (e.g. EWP, swinging stage) or at a below ground level area (e.g. excavator in a pit).	/ Ascertain if any person/s injured. If yes, request Ambulance and render First Aid if practicable. / Determine if vehicle/s pose/s a hazard to persons nearby (e.g. leaking fuel). / If yes, request appropriate emergency services (e.g. Fire Brigade) and evacuate persons from immediate danger area	L

SUBSTANCE SPILL

IR	Potential Emergency	Controls	RR
M	/ Spill of a quantity of dangerous goods or a hazardous substance onto a person / Spill of a quantity of dangerous goods or a hazardous substance onto ground / into water.	/ Do not enter any confined area where there is a risk of being exposed to toxic atmospheres. / Assess the incident area. / If required - sound the alarm. / If required - evacuate the area and ensure that persons assemble in a well-	L

			ventilated, safe area, upwind from the spill. / If required – isolate the area. / Do not allow any ignition sources or electrical equipment to be operated in the immediate vicinity of the spill.	

WORK ON / OVER / IN WATER

IR	Potential Emergency	Controls	RR
	/ Personnel drowning / engulfment in water. / Loss of Plant / machinery into water during work activities or other natural event. / Work site flooding due to a natural event.	Evacuate staff in accordance with the Flood emergency rescue plan.	M

CONFINED SPACE / RESTRICTED WORK AREAS

IR	Potential Emergency	Controls	RR
E	/ Person becoming incapacitated due to fumes / health issues/ collapse. / Collapse of walls / materials etc. endangering life. / Fire/Explosion	/ Rescue to be as per approved Confined Space Rescue Procedure.	H

TRAFFIC

IR	Potential Risks	Actions and Controls	RR
H	/ Injury to persons due to impact from moving Plant / vehicles. / Damage to structure / equipment due to impact from moving Plant / vehicles. / Damage to road surface / footpath due to impact from moving Plant / vehicles.	/ Ascertain if any person/s injured. If yes, request Ambulance and render First Aid if practicable. / Determine if vehicle/s pose/s a hazard to persons nearby (e.g. leaking fuel). / If yes, request appropriate emergency services (e.g. Fire Brigade) and evacuate persons from immediate danger area	M

			/ If no person injured and no danger, determine if vehicle/s pose/s an obstruction to normal vehicular traffic flow. / if yes, request driver/s to move vehicles off road (e.g. into car park). / If vehicle unable to be moved, request driver to immediately obtain tow truck assistance. / Confirm if driver/s require Police to be called (if persons are injured, Police must attend)	

CONTAMINATION

IR	Potential Risks		Actions and Controls	RR
H	/ Identification of unknown contaminants (e.g. asbestos, lead, methane) with an effect on human health.		/ Refer to project documentation prior to commencement of works. / Emergency management provision to be sufficiently detailed within the relevant documentation i.e. Asbestos Management Plan, Demolition Management Plan.	L

SEVERE WEATHER EVENT

IR	Potential Risks		Actions and Controls	RR
M	/ Fire – lightening, downed electrical cables, damaged substation. / Flooding – man made or estuarine. / Damage to Plant/ services / structures from high wind. / Environmental impact – damage to substances storage facilities.		/ Assess the situation / Assemble at Muster Point or other agreed location based on weather conditions. / Await further instructions.	L

PERSONAL EVENT

IR	Potential Risks	Actions and Controls	RR
M	/ Injury to persons / public from non-work-related sources (e.g. heart attack, anaphylactic reaction, epilepsy, diabetes, etc.). / Injury to persons due to temperature extremes / exertion. / Injury to persons from contact with ticks/snakes/spiders. (e.g. working in or adjacent to bush).	/ Controls as identified within Emergency Types detailed within Risk Register. / Employee assistance program available.	/ L

APPENDIX 1 – FLOOD EMERGENCY RESPONSE PLAN

QANTAS GROUP FLIGHT TRAINING CENTRE

FLOOD EMERGENCY RESPONSE PLAN

Prepared for: ADCO Constructions Pty Ltd
and Qantas Airways Limited
By: **en**struct group pty ltd
December 2019

QANTAS GROUP FLIGHT TRAINING CENTRE

FLOOD EMERGENCY RESPONSE PLAN

ISSUE AUTHORISATION

PROJECT: Qantas Group Flight Training Centre
Project No: 5728
Prepared by: Tim Henderson, BE (civil), CPEng, NER
Reviewed and approved by: Phillip Lambley, BE (civil), CPEng, NER

Rev	Date	Purpose of Issue / Nature of Revision	Prepared by	Reviewed by	Issue Authorised by
1	25/10/19	Draft	TH		
2	6/11/19	Final	TH	PL	PL
3	9/12/19	Final (minor amendment)	TH	PL	PL

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I. Definitions

For the purpose of this Manual, the definitions below apply:

Assembly area(s)

The designated place or places where people assemble during the course of an evacuation.

Emergency

An event that arises internally, or from external sources, which may adversely affect the occupants or visitors in a facility, and which requires an immediate response.

Emergency Control Organization (ECO)

A person or persons appointed by the emergency planning committee to direct and control the implementation of the facility's emergency response procedures.

Emergency plan

The written documentation of the emergency arrangements for a facility, generally made during the planning process. It consists of the preparedness, prevention and response activities and includes the agreed emergency roles, responsibilities, strategies, systems and arrangements.

Emergency Planning Committee (EPC)

Persons responsible for the documentation and maintenance of an emergency plan, as outlined in the Qantas Emergency Management Plan.

Evacuation

The orderly movement of people from a place of danger.

Refuge

An area that is specifically designed to protect people from flood and which provides direct access to an exit

Notes:

1. An area of refuge is intended to facilitate a safe delay in egress from the floor or area, thus constituting a space for people to await assistance for their evacuation.

2. Refuges are normally nominated by the relevant warden.

Shall

Indicates that a statement is mandatory.

Should

Indicates a recommendation.

Warden intercommunication point (WIP)

The location on a floor or evacuation zone, that includes a handset provided through which instructions can be received from the intercommunication panel via the emergency intercom system.

II. Abbreviations

The following abbreviations are used in this Emergency Plan Document

AHD	Australian Height Datum
AEP	Annual Exceedance Probability
AP	Assembly Point
ARI	Average Recurrence Interval
DDA	Disability Discrimination Act
ECO	Emergency Control Organization
EPC	Emergency Planning Committee
FERP	Flood Emergency Response Plan
FFL	Finished Floor Level
EOT	End of Trip
PMF	Probable Maximum Flood
SES	State Emergency Service
WIP	Warden Intercommunication Point

1 Introduction

enstruct group have been engaged by ADCO Constructions Pty Ltd and Qantas Airways Limited to provide a Flood Emergency Response Plan (FERP) for the Flight Training Centre at King Street, Mascot.

The aim of the FERP is to raise awareness of the risk of flooding and provide a safe access for pedestrians and occupants in the event of flooding. The FERP will include flood warnings, safe route, and evacuation options.

The FERP will discuss the methodology applied in this report, the flooding conditions in the vicinity of the site, proposed methods of detecting flooding, proposed routes for refuge, and details of the lift design and operating during a flooding event.

2 Methodology

This report was based on flood information obtained from the Flood Impact Assessment prepared by enstruct for the Qantas Group Flight Training Centre project.

3 Flood Behaviour

3.1 Flood Source

The Sydney Water stormwater channel that traverses the site from west to east does not have a significant impact on the development site. During a PMF event, the channel does not rise over its banks to either the car park or the Flight Training Centre.

During a 1% AEP event, flooding from Bourke Road overtops the Qantas Head office loading dock and around the northern car park before flowing into the channel. The access road around the car park has been designed to convey flood waters. Refer to Figure 1

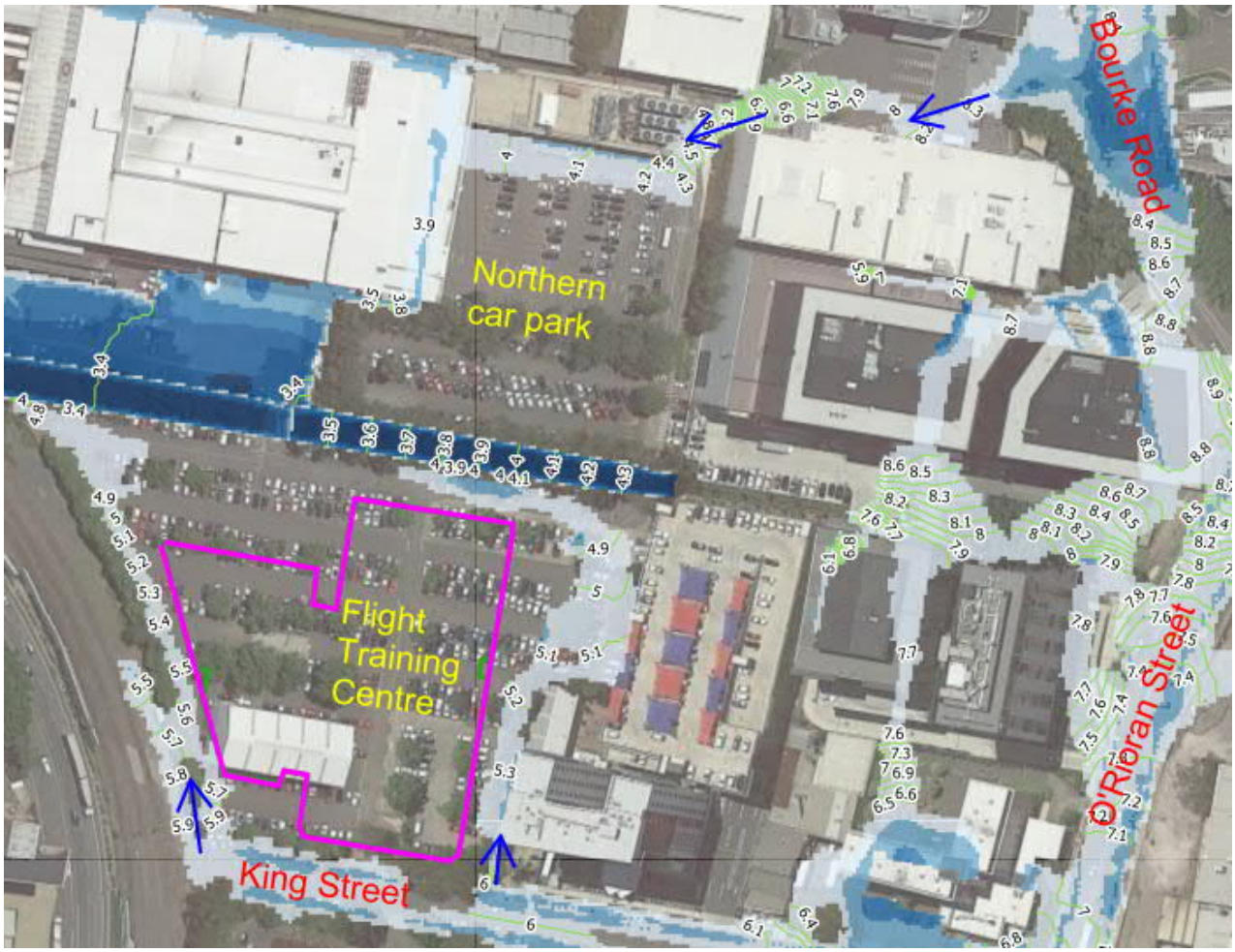


Figure 1 **1% AEP Flood Behaviour**

Flooding from King Street enters the site through both the access gate and along an overland flow route along the rail corridor. The site has been designed to direct overland flows away from the building.

3.2 Flood Behaviour and Hazard Category

The report shows that all overland flow/flooding on the site is can be classified as Low Hazard as per the floodplain development manual. The exception to this is the Sydney Water channel, which is categorised as high hazard.

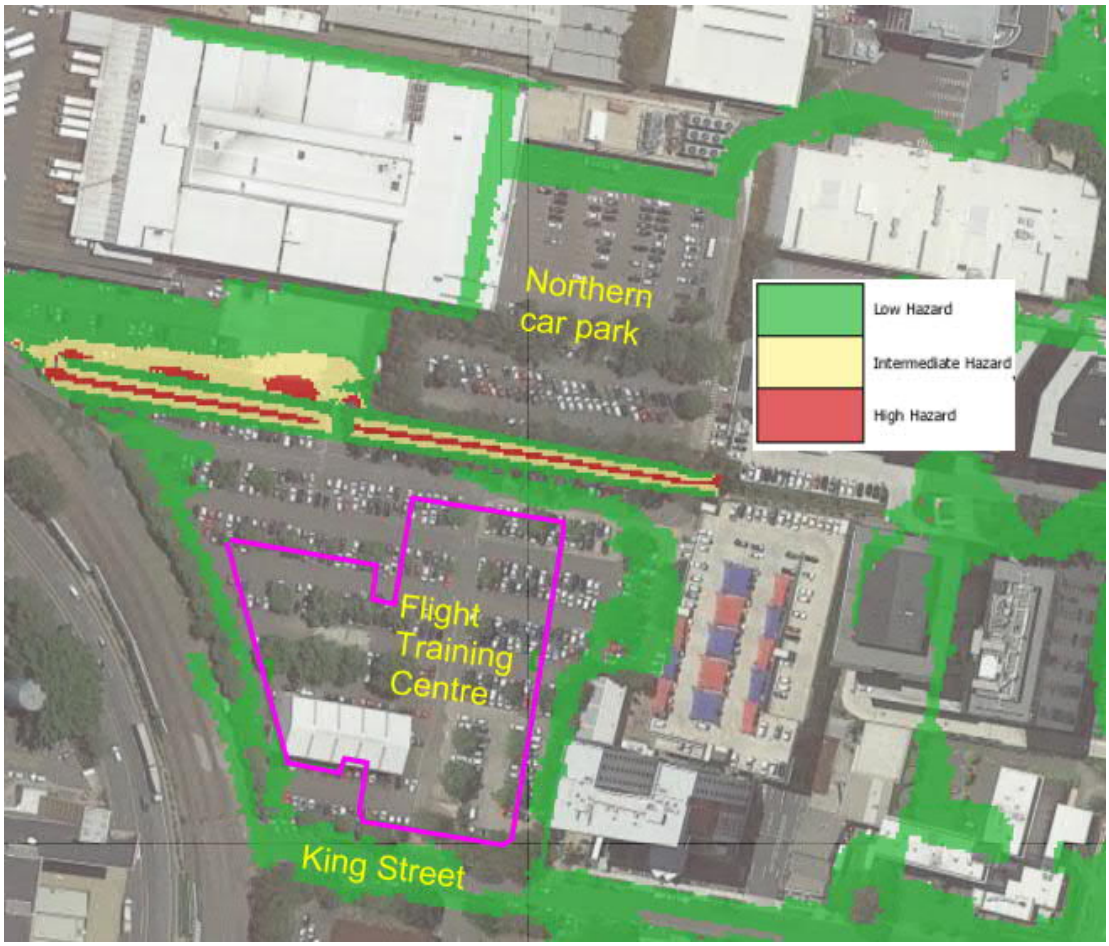


Figure 2 **Provisional Flood Hazard Categories**

Occupants shall not attempt to cross the channel during a flood event.

During a 1% AEP (100-year) storm event:

- The Flight Training Centre building is not flood affected.
- The northern car park is not flood affected.
- Roads in the vicinity of the site including King Street, Bourke Road and O'Riordan Street are flood affected. Some internal roads are also flood affected.

During a Probable Maximum Flood (PMF) event:

- The Flight Training Centre is affected by overland flow from King Street, however it is not impacted by flooding from the Sydney Water channel.
- The lower ground floor of the northern car park is flooded up to 300mm deep.

The depth of flooding on King Street and O'Riorden Street is approximately 500mm, and on Bourke Road up to 1 m.

4 Flood and Evacuations Warnings

There are a number of official flood warnings issued by the Bureau of Meteorology which can assist in the preparation of a potential flood. The warning types are:

Severe Weather Warnings (Bureau of Meteorology)

Severe Weather Warnings *are provided for potentially hazardous or dangerous weather that is not directly related to severe thunderstorms, tropical cyclones or bushfires. They are issued for sustained winds of gale force; wind gusts of 90km/h or more; very heavy rain that may lead to flash flooding; abnormally high tides; unusually large surf waves expected to cause dangerous conditions and widespread blizzards in Alpine areas.*

Severe Thunderstorm Warnings (Bureau of Meteorology)

Severe Thunderstorm Warning *is issued if the severe phenomena are directly caused by the thunderstorm and include wind gusts of 90km/h or more; gale force winds; tornados; blizzards\ heavy rainfall that is conducive to flash flooding; hail with a diameter of at least 2cm; abnormally high tides and unusually large surf waves expected to cause dangerous conditions on the coast.*

- *Flood Watch (Bureau of Meteorology)*

A Flood Watch *is issued by the Bureau of Meteorology if flood producing rain is expected to happen in the near future and flooding is expected to be above Minor level. A Flood Watch covers a river basin or catchment. The general weather forecasts can also refer to flood producing rain. You should be prepared to act should flooding occur.*

- *Flood Warning (Bureau of Meteorology)*

A Flood Warning *is issued by the Bureau of Meteorology when flooding is expected to occur or is happening. Flood Warnings provide a predicted flood level and time at which a river will reach that level. Flood Warnings are issued in relation to flood gauges which are situated at a certain point on a river. Flood Warnings may contain observed, peak or predicted river heights.*

- *NSW SES Flood Bulletins (SES)*

NSW SES Flood Bulletins provide information on likely flood consequences and what actions are required to protect yourself and your property.

- *Evacuation Warning (SES)*

When flooding is likely to cut evacuation routes or inundate property, the NSW SES issues an Evacuation Warning to indicate that you should get prepared to evacuate. Being prepared will allow you to respond quickly if an Evacuation Order is issued.

- *Monitor the flood situation*

In addition to receiving an official warning, monitoring the situation before flooding begins to impact the site is important. All business owners need to be aware of the flood situation.

This can be undertaken by monitoring the situation by personally witnessing the height and rate at which floodwaters are rising; maintaining contact with other people the building and local radio stations to receive and share updates on the flood situation.

- *the likelihood of flash flooding*

Severe Weather Warnings and Severe Thunderstorm Warnings issued by the Bureau of Meteorology warn of the possibility of flash flooding.

When flash flooding is likely, leaving low-lying businesses (evacuation) well before flash flooding begins is the best action to take, but only if it is safe to do so. If you are trapped by rising floodwater, seek refuge in the Lobby of the building. Stay there and call '000' (triple zero) if you need rescue.

All warnings will be issued through the Bureau of Meteorology website, television and local radio stations for weather warnings such as 702 ABC SYDNEY 702 AM, 2CH 1170 AM, 2DAY FM 104.1 FM, 2GB 873 AM, 2ME 1638 AM, 2SM/GORILLA 1269 AM, 2UE 954 AM, C91.3 FM 91.3 FM, MIX 106.5 106.5 FM, NOVA 96.9 FM, RADIO 2MORO 1620 AM, RADIO 2RDJ 88.1 FM, SBS RADIO 97.7 FM, SYDNEY'S 95.3 95.3 FM, TRIPLE M 104.9 FM and WFSM 101.7 FM.

5 Flood Response Personnel

Summarised below are personnel and responsibilities in managing flood response.

	Responsibility
Emergency Control Organisation	• Coordinate flood evacuation drills
Chief Warden	• Monitor weather at daily for upcoming extreme rainfall events, • Decide when Evacuation required, • Liaison with SES or Emergency Services personnel if they attend site. • Manage the evacuation process in consultation with Emergency Services.

Table 4: Personnel and Responsibilities

6 Assembly Point (AP) and Evacuation Routes

6.1 Construction Phase

During construction, the site will be constantly evolving as the buildings are progressively erected. The ground floor slab is above the 1% AEP flood level. The site sheds are in an area which has been demonstrated to be generally flood free under existing conditions. Overland flow paths shall be maintained and managed to direct flows around the site sheds and material storage areas.

Site Emergency Muster Points have been nominated near the Sydney Water channel and near King Street. During a flood event, only the King Street muster point can be used. This shall be made clear to staff and contractors as part of the site induction process.

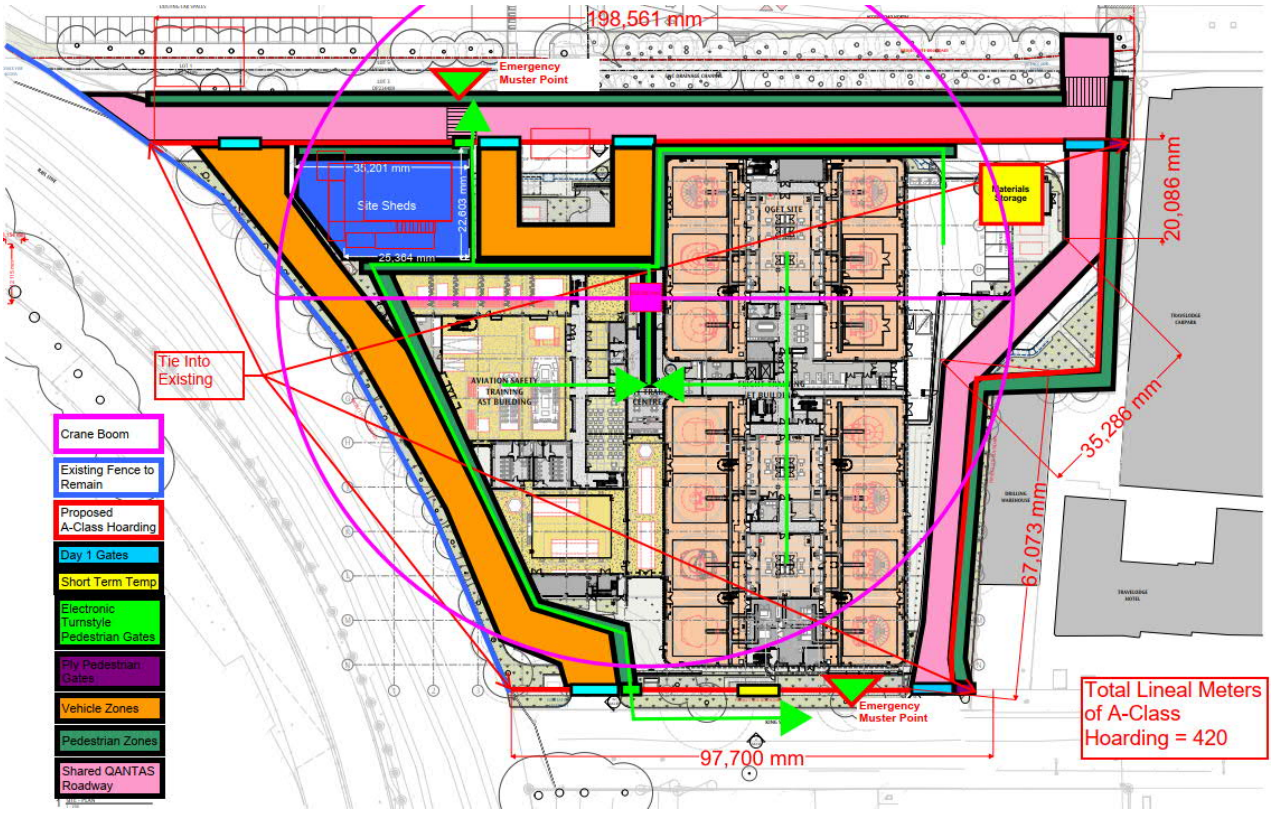


Figure 3 **Construction siteworks plan**

6.2 Operation Phase

The buildings are above the 1%AEP Flood Level and therefore are nominated for the emergency assembly point and refuge area. There are no floors below ground level.

To ensure protection in a PMF event, site occupants should evacuate the ground floor and seek refuge on higher levels.

For those persons in this area with a disability or mobility impairment either temporary or permanent and those persons who are abled bodied will need to make their way to upper levels via elevators. In the event of a power failure, the Chief Warden shall ensure any impaired persons are assisted to level 1.

The assembly point for the flight training centre is the L1 EP classrooms (refer to Figure 4)

The northern car park remains flood free in the 1% AEP flood event. Access to and from the car park is restricted during a flood event. Staff shall be notified through emergency response training that the car park may inaccessible during a flood event. The lower ground floor is flood affected to a depth of approximately 200mm in a PMF event. Any staff in the car park during a flood event should evacuate the lower ground floor to a higher level and stay in place until flood waters recede.

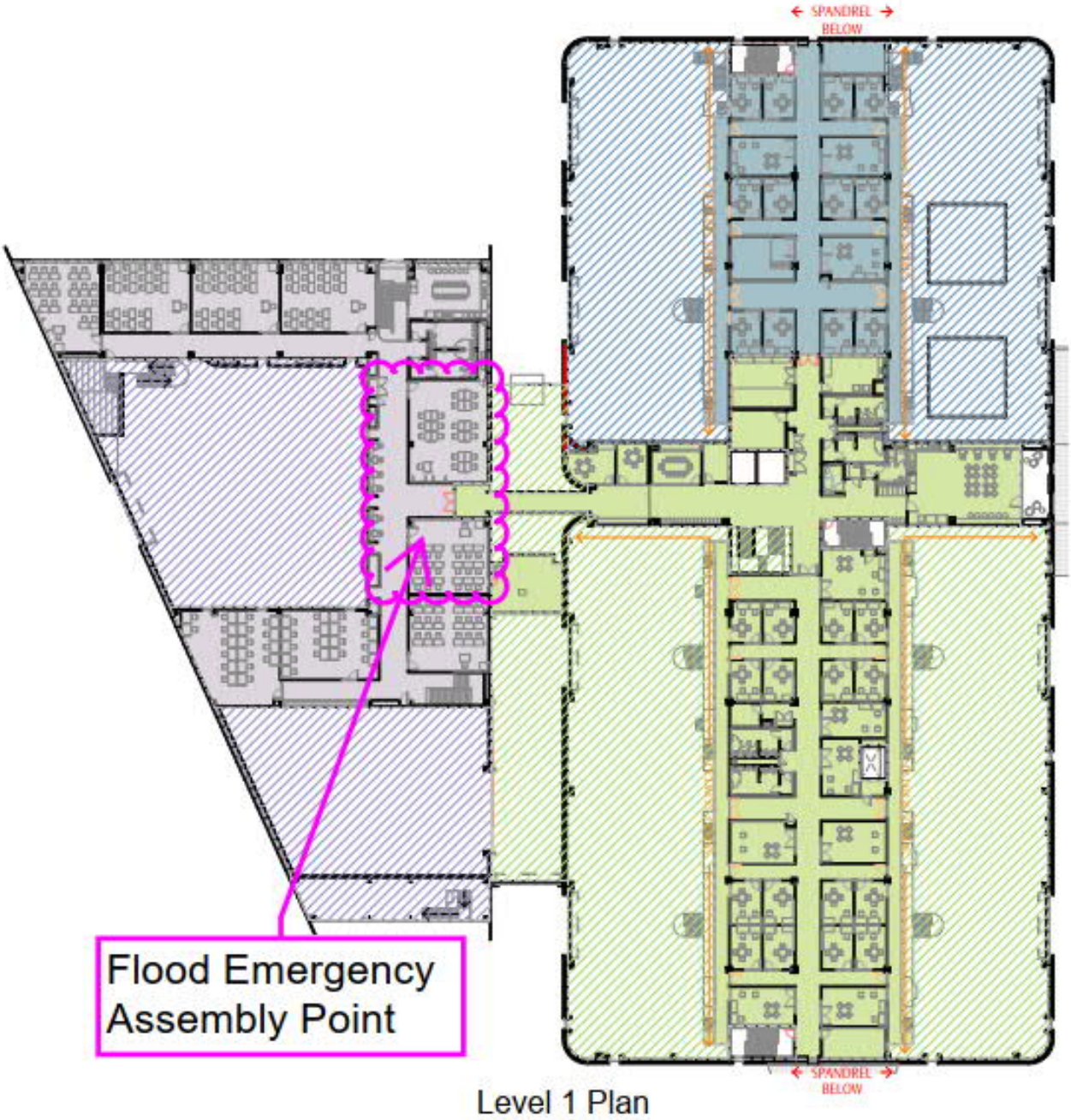


Figure 4 **Assembly Point**

7 Flood Levels and On-Site Refuge

The flood levels set around the site are based on flood modelling undertaken for the Flood Impact Assessment. This flood modelling utilised a modified version of the model used for the Mascot, Roseberry & Eastlakes Flood Study undertaken by WMA Water Ltd in 2015.

Results from the Flood Impact Study show flood levels presented in Table 1, below. Flood levels around the site are shown in Figure 1.

Table 1 Flood Levels

Location	Finished floor level (mAHD)	1% AEP flood level (mAHD)	Freeboard (m)
Northern car park lower ground level	4.33	3.9	0.43
Northern car park upper ground level	5.83	4.30	1.53
Flight training centre	5.70	4.30	1.40
King Street		6.00	

Notwithstanding the above, on-site refuge is recommended for this site. Refuge can be sought above the ground floor.

8 Emergency Contact

Contact the Chief Warden via the WIP phone at all times to ensure they are ready to assist with evacuation.

For emergency assistance during flood events, please call the SES on 132 500.

If you are in a life-threatening situation please call Police, Fire or Ambulance on 000.

9 Flood Response Preparation

It is the responsibility of the Emergency Planning Committee as part of the site Emergency Management Plan that they prepare the building for a flood event. This will be achieved through: induction training, nomination of a flood wardens reporting to the Chief Warden, education of flood risks and behaviour, and the preparation and maintenance of a Floodsafe Emergency Kit.

The information presented above is a summary of the flood behaviour and considered key to understanding the risks associated with flooding. This should be displayed in conjunction with other emergency information (such as fire, etc) throughout the building.

9.1 Evacuation Drills

Evacuation drills are designed to increase flood awareness within the building. These drills are to be undertaken annually to familiarise employees in the building of the procedures when responding to a flood event.

9.2 Flood Emergency Kit

Potential items for a flood emergency kit are outlined at www.floodsafe.com.au and reproduced below:

- A copy of the building emergency management plan,
- A torch with spare batteries,
- A first aid kit,

Waterproof bag for valuables,

A copy of emergency numbers.

The kit should be kept in the **fire control room** in an area suitable for easy deployment in the event of an evacuation. The contents of the kit and management during a flood event will be the responsibility of the Chief Warden.

10 Flood Response Actions

10.1 Construction Phase

In the event of a forecast storm:

- The site shall be checked to ensure there are no loose materials and the like. These shall be appropriately stored and strapped as required.
- ADCO supervisory staff shall alert the site workers, including via Hammertech notification that there is a storm forecast and in the event of flooding the site may require evacuation.
- Environmental controls should be checked.

Once a Flood Warning or Flood Bulletin for the area has been issue:

- ADCO supervisory staff shall alert the site workers, including via Hammertech notification that flooding is imminent.
- Should flooding occur the site will be evacuated in accordance with the ADCO emergency Management Plan

10.2 Evacuation During Work Hours and After hours

Once a Flood Warning or Flood Bulletin for the area has been issued;

- Sound evacuation tone**.**
- Chief Flood Warden to the Assembly Point.
- Employees direct all visitors to the Assembly Point.
- Chief Flood Warden clear all relevant floors.
- Roll call to ensure everyone is accounted for.
- Leave signage undercover that evacuation has occurred, and to where.
- Control evacuation to higher ground (Lobby).
- Wait it out at the designated refuge point.
- Maintain regular communication with employees and visitors providing updates to the situation.

TRIGGERS FOR EVACUATION;

- Issue of a **Generalised Flood Warning** for flooding of the area.

RESPONSIBLE FOR THE DECISION; Chief Warden

10.3 After a Flood

Once a Final Flood Warning or SES “All Clear” has been received; a thorough check of services such as electricity, sewer, and water should be undertaken by qualified

persons. Advice should be sought from a suitably qualified engineer as to the structural integrity of buildings prior to their use.

Worker safety during clean up can be improved with personal protective equipment and disinfectant.

11 Revision of Flood Emergency Response Plan

This plan should be revised if the Mascot, Rosebury and Eastlakes Floodplain Risk Management Studies and Plans are revised.

The Emergency Planning Committee shall be responsible for ensuring the Flood Management Plan is reviewed annually and updated as required. As part of the review, the Emergency Planning Committee shall contact Bayside Council and Sydney Water annually to confirm if the any drainage upgrades are planned or have been constructed.

12 Conclusion

The Qantas Flight Training Facility, King Street Mascot is currently susceptible to flooding for events larger than the 1% AEP event. The surrounding streets are flood affected. The recommended response to a flood emergency is to shelter in place, seeking refuge above the ground level when required in a flood event larger than the 1% AEP event.

The Chief Warden is to monitor and control the flood response as well as undertaking one response drill per year. This will provide an opportunity to raise awareness of the flood behaviour around the site and what to do in the event of an emergency.

It is considered therefore the proposed development adequately minimises the flood risks. The recommendations contained herein are considered to assist in managing the risk to life of the staff and visitors to the site.

13 References

Mascot, Roseberry & Eastlakes Flood Study, WMA Water Ltd, 2015

Qantas Group Flood Impact Assessment, **en**struct, 2019

SES (2019) Floodsafe Website

APPENDIX G

CULTURAL HERITAGE INDUCTION MATERIALS

URBIS

CULTURAL HERITAGE – LEGAL REQUIREMENTS

NATIONAL PARKS AND WILDLIFE ACT 1974 (NPW ACT)

- Primary legislation for the protection of Aboriginal cultural heritage in New South Wales.
- Provides statutory protection for Aboriginal objects by making it illegal to 'harm' Aboriginal objects and Aboriginal places.
- Penalties include:

❑ Harm or desecration of an object that the person knows is an Aboriginal object

Individual - $275,000- $550,00/ maximum 2 years imprisonment

Corporation - $1,100,000

❑ Harm or desecrate an Aboriginal object

Individual- $55,000- $110,000

Corporation- $220,000

❑ Harm or desecrate an Aboriginal place

Individual- $550,000/ maximum imprisonment 2 years

Corporation- $1,100,000

"Aboriginal object":

Any deposit, object or material evidence relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains

"Harm":

Destruction, defacing or damaging an Aboriginal object or place; or

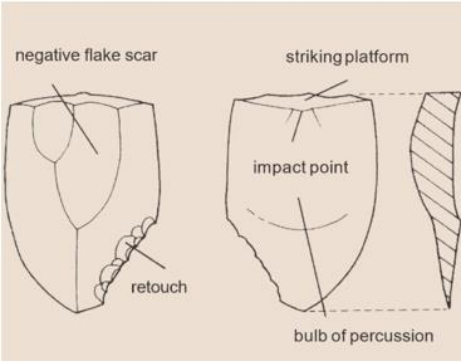
Moving the object from the land on which it is situated

URBIS

CULTURAL HERITAGE – SITE TYPES THAT MAY BE FOUND DURING WORKS

ARTEFACTS AND ARTEFACT SCATTERS

- Several types of stone were used by Aboriginal people to create tools for many everyday uses, such as cutting meat and vegetation, or as tips on the ends of spears.
- Commonly used stone types flaked to produce stone tools are fine-grained materials including quartz, quartzite, silcrete and chert.
- These artefacts will look like rocks, but often with distinctive sharp edges or other features as shown in the image below.
- It is unlikely these will be found during works, but if they are found they must be managed in accordance with the NPW Act.



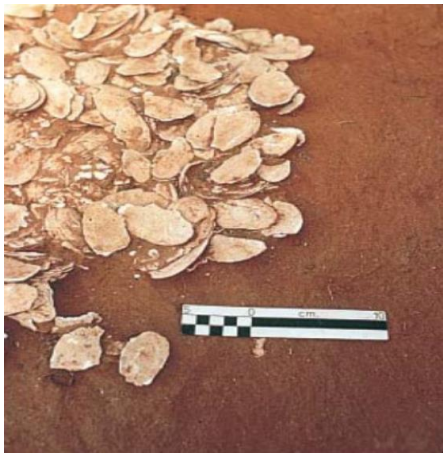
If artefacts are thought to be found, follow the Chance Finds Procedure

URBIS

MIDDENS

- The diet of Aboriginal people living along the coast or along watercourses often included many species of shellfish.
- Large dumps of shells discarded after eating the contents are called 'middens'.
- Middens can include large quantities of shells, charcoal, ash, stone artefacts, plant remains, stone, bone and sometimes burials.
- It is unlikely middens will be found during works, but if large collections of shell are found it could be a midden.
- Any such finds require management under the NPW Act.

If a midden is thought to be found, follow the Chance Finds Procedure



ARCHAEOLOGICAL FINDS PROCESS

NEW DISCOVERY IS MADE

STOP WORK IN VICINITY OF FIND

- Work stops upon discovery. Discovery is **not moved**.
- Contact Urbis Senior Archaeologist Balazs Hansel on 02 8233 7668 to discuss, assess the find, and provide further instruction.

HUMAN SKELETAL REMAINS

- Contact NSW Police on 131 444 for further instructions and assessment.
- No works to continue in the vicinity of the find until directed by the Police.

- Works recommence upon direction of NSW Police

SUSPECTED ARCHAEOLOGICAL MATERIAL

Not Archaeological Material

- Find assessed by archaeologist as **not** archaeological material. Works can recommence with caution.

Archaeological Material

- Find assessed by archaeologist as archaeological material.

Not Potentially Significant

- Archaeologist determines the find is unlikely to be significant.
- Find is recorded by archaeologist if necessary
- Works recommence upon instruction by archaeologist.

Potentially Significant

- Archaeologist determines the find is likely to be significant.
- Archaeologist to advise on process required, which may include:
  - Consultation with Aboriginal Groups and/or EES
  - Notification to EES and seeking approval under an Aboriginal Heritage Impact Permit to proceed
  - Archaeological Excavation
- Works do not proceed until directed by archaeologist

APPENDIX H

CONSTRUCTION CONTAMINATION MANAGEMENT PLAN

JBS&G

ADCO Constructions Pty Ltd
Contamination Management Plan

297 King Street, Mascot, NSW

4 December 2019

57752-125738 (Rev B)

JBS&G Australia Pty Ltd

www.jbsg.com.au

ADCO Constructions Pty Ltd

Contamination Management Plan

297 King Street, Mascot, NSW

4 December 2019

57752-125,738 (Rev B)

JBS&G Australia Pty Ltd

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Figure 2: Site Layout

Figure 3: Historical Sample Locations and Identified Asbestos Impacts

1. Introduction

1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by ADCO Constructions Pty Ltd (ADCO, the client) to prepare a Contamination Management Plan (CMP) for the Qantas Flight Training Centre and Carpark Redevelopment located at 297 King St, Mascot NSW 2020 (the site). The site is formally identified as Lot 4 in DP234489 and comprises an area of approximately 1.75 hectares (ha). The site location and layout are presented on **Figure 1** and **Figure 2** respectively.

A Construction Environmental Management Plan (CEMP) has previously been prepared by Arcadis Australia Pacific Pty Limited (Arcadis 2019b). It is understood that Arcadis (2019b) provides the majority of environmental procedures required to be implemented during construction works to be compliant with relevant development consent conditions. On this basis, this CMP is required to supplement the existing CEMP with additional information to address procedures to be implemented to manage site related contamination issues.

Previous environmental and waste classification assessments, summarised in **Section 2**, have identified the presence of non-friable (bonded) asbestos containing material (ACM) and friable asbestos impacted fill materials (soils) at the site. Therefore, asbestos impacted fill materials at the site require remediation or management to address the long-term health exposure risks and enable completion of the proposed development works.

This CMP is required under the *Work Health and Safety Regulations 2019* as a consequence of asbestos being present within the soils on a worksite. This CMP has been prepared to ensure that when impacted soils or materials are being handled at the site, they are appropriately managed to ensure the protection of the health of the site workers dealing with impacted materials, future site workers, visitors, employees and the neighbouring community. This CMP also outlines the requirements for the disposal of, or onsite management of, any impacted soils encountered at the site.

With the exception of the asbestos impacts in site soils, it is understood that there are no other identified impacts in site soils that require management/remediation to make the site suitable for the proposed development. However, it is understood that zinc impacts to groundwater requires on-going management via long term environmental management plan to be prepared for the site.

1.2 Objectives

The objective of this CMP is to detail the procedures required to minimise the risk of exposure to contaminants for all site occupants, maintenance contractors, visitors or future site occupants for the ongoing operation of the site and to properly outline the correct procedures to manage any maintenance, unexpected finds, removal or disposal of impacted soils, if required.

1.3 Site Audit

As outlined in the overarching CEMP (Arcadis 2019), the site is subject to an audit in relation to the 'contamination status' in accordance with the requirements/provisions of policy for relevant guidelines.

In order to achieve signoff by the NSW EPA Accredited Site Auditor (Auditor), the CEMP (Arcadis 2019) and this CMP will need to be implemented in full along with the maintenance of comprehensive records.

A Site Audit Report (SAR) and Site Audit Statement (SAS) are required at the completion of civil and bulk earthworks. The State Significant Development consent conditions must be adhered to.

At the completion of bulk earthworks a validation report must be prepared to facilitate the completion of the site audit process. The validation report must document the implementation of the CEMP and this CMP, with respect to contaminated land and water at the site including the following:

- The contamination status of the site based on the investigation results in the environmental assessment report and any changes resulting from the excavation, movement and/or importation and placement of fill material;
- The source, volumes, classification, tracking and disposal of any waste materials generated at the site;
- The location and design of any management measures at the site to reduce or eliminate exposure to potentially contaminated material remaining at the site; and
- A clear statement by a suitably qualified environmental consultant regarding the suitability of the land for the future land uses, from a contamination perspective.

2. Previous Assessments

This CMP has been prepared on the basis of a range of previous assessments completed at the site, which are summarised below. Samples locations are presented on **Figure 3**.

2.1 Environmental Site Assessment (Arcadis 2019a)

Arcadis carried out an ESA on a larger parcel of land, which included the site. Soil sampling on the site was undertaken from twenty-four boreholes (BH09 to BH28, MW03 to MW07) with groundwater sampling undertaken from four of the locations completed as groundwater monitoring wells (MW03 to MW07). Arcadis sampling locations are shown on **Figure 3**.

Fill material comprising silty sands, with anthropogenic inclusions such as bricks, wood, ceramics, glass, plastics were encountered to depths up to 3.5 m bgs across the site.

Selected soil samples were submitted for a range of common contaminants of concern including total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene and xylene (BTEX), semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), organophosphorous pesticides (OPPs), polychlorinated biphenyls (PCBs), per- and poly-fluoroalkyl substances (PFAS) and asbestos.

Most concentrations of contaminants of potential concern (COPCs) were below health investigation levels or health screening levels applicable to commercial/industrial landuse. Fibrous asbestos/asbestos fines (FA/AF) concentrations in soils samples MW05 at a depth of 1 m bgs (0.036% w/w FA/AF) exceeded the applicable criterion (0.001% w/w FA/AF). FA/AF were detected in MW04 at a depth of 0.5 m, however, the asbestos was not quantified by the laboratory.

Groundwater samples were analysed for a range of common contaminants including semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), TRH, heavy metals, BTEX, PFAS and ammonia. Elevated concentrations of cadmium were detected in groundwater collected from MW05 and MW07 and elevated zinc was recorded in groundwater collected from monitoring wells MW04 to MW07.

Arcadis concluded the site was suitable for commercial/industrial use subject to implementation of an Asbestos Management Plan, and that an Environmental Management Plan (EMP) be prepared to manage elevated heavy metal concentration in groundwater at the site.

2.2 Construction Environmental Management Plan (Arcadis 2019b)

A CEMP was prepared by Arcadis which provides the majority of environmental procedures required to be implemented during construction works to be compliant with relevant development consent conditions.

2.3 Waste Classification (WSP 2019)

WSP was engaged by APP Corporation (on behalf of Qantas Airways) to complete a waste classification assessment of approximately 7,000 m^3 material across a larger area, including the site.

Soil samples were collected from sixteen locations within the site, primarily within the extent of the proposed building footprint. Test pits were advanced to maximum depths of between 1 m and 4 m below ground surface (bgs). Fill material was described as reworked sand and silty sandy material with inclusions of bricks, rusty nails, plastics, ceramics, tiles, metal fragments, steel reinforcement bar fragments, glass, bottles, asphalt and concrete fragments, timber fragments and lumps. The fill material was underlain by natural yellow/white sand at depths of 0.5 m (TP22) bgs to 3.9 m (TP17, TP20).

Soil samples were analysed for a range of contaminants including heavy metals, TRH, BTEX, polyaromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), organophosphate pesticides (OPPs), polychlorinated biphenyls (PCBs), per- and poly-fluoroalkyl substances (PFAS) and asbestos.

Concentrations of BTEX compounds were reported below the laboratory limit of reporting (LOR) and concentrations of TRH, PFAS, OCPs, OPPs and PCBs were reported as either below the LOR or below the General Solid Waste (GSW) classification criteria.

Benzo(a)pyrene, lead and nickel concentrations exceeded the GSW contaminant threshold, however, the concentration of these contaminants were below the GSW specific contaminant concentration. Leachability testing was conducted, and all leachate concentrations were reported below the GSW leachate criteria.

ACM fragments were collected from six test pits (TP09, TP10, TP11, TP15, TP16 and TP20) on the site at depth between of 0.2 to 3.0 m bgs. The ACM was not quantified at these locations.

WSP classified the soil at the site as Special Waste (Asbestos) mixed with General Solid Waste (non-putrescible), due to isolated identification of asbestos within the fill material across the site.

Arcadis (2019a) had previous noted the potential for acid sulfate soils at the site. WSP reported that the relatively high pH range from the soil samples indicates that the material is generally alkaline and the risk of the presence of actual sulfate soil material is relatively low.

WSP also noted that unexpected finds should be assessed on a case by case basis.

2.4 Soil Asbestos Delineation (HEC 2019)

In November 2019, Harwood Environmental Consultants (HEC) carried out an additional assessment at the site, mainly focussing on asbestos quantification. HEC reported that sampling was also undertaken to assess whether fill/soil in some could be classified as Excavated Natural Material (ENM) and whether natural soils were actual or potential acid sulfate soils (ASS/PASS). The sampling locations are shown on **Figure 3**.

Soil sampling for asbestos was undertaken at twenty-one test pits (AS-01 to AS05, AS-07, AS-08, AS-10, AS-13 to AS-22, AS24, AS-25, AS-26) and three soil bores (SB-01, SB-02, SB-03) were advanced into the underlying material at the site, with samples analysed from maximum depth of 2.0 m and 4.0 m respectively. Asbestos was reported in the following samples:

- 0.554 %w/w ACM at AS-03 (1.0-1.1 m) exceeding the health-screening level (HSL) for commercial industrial use (HSL-D) for bonded ACM;
- FA/AF in soil at AS-17 (0.5-0.6 m) with a concentration of 0.0024 % w/w exceeding HSL-D for FA/AF;
- 0.085 %w/w ACM in AS-18 (0.4 m) exceeding HSL-D;
- 0.1579 %w/w ACM in AS-19 (0-0.1 m) exceeding HSL-D and 0.026 %w/w ACM in AS-19 (0.3 m) at less than HSL-D;
- FA/AF detected below the LOR (0.001 % w/w) at AS-21 (0.6-0.7 m); and
- FA/AF detected below the LOR (0.001 % w/w) at SB-01 (1.5 m).

In addition, ACM pipe was encountered at a depth 0.5 m bgs at AS-21.

The sample locations, asbestos detection locations are provided in **Figure 3**.

3. Summary of Contamination Conditions

From review of information summarised in **Section 2**, intrusive investigations have identified asbestos in soil requiring remediation or management. Heavy metals in groundwater are to be addressed separately and will managed via a long-term site management plan to be prepared for the site.

Sample location management zones are provided in **Figure 3**.

3.1 Asbestos Overview

Friable asbestos is defined by Safe Work Australia in the *How to Safely Remove Asbestos - Code of Practice* (2018) as being "*…material that is in a powder form or that can be crumbled, pulverised or reduced to a powder by hand pressure when dry, and contains asbestos*". This includes asbestos fibre impacted soils and asbestos fines as identified by laboratory analysis.

Non-friable asbestos material is defined by Safe Work Australia (2018) as being *"…material containing asbestos that is not friable asbestos, including material containing asbestos fibres reinforced with a bonding compound."*

ACM can be classified as being present in either a non-friable form or friable form.

Mechanical disturbance of fragments of ACM may result in the release of fibres and therefore, such activities should be managed to prevent any fibres becoming airborne. The health effects of asbestos are detailed in enHealth (2005)[1] *Management of Asbestos in the Non-Occupational Environment.*

Asbestos materials in a bonded form (e.g. contained within cement or resins) do not present an immediate health risk, if they remain undisturbed and in a good condition. It is the inhalation of fibres from friable forms of asbestos or dusts generated by disturbing bonded materials that may lead to the risk of asbestos related disease.

The primary issue associated with the asbestos contamination is inhalation of respirable fibres if the materials were to be disturbed and abraded.

3.2 Known Extent of Asbestos in Soil

Soil sampling and/or observation for asbestos have been undertaken at 62 sampling locations across the site, as detailed in Section2.. Fill materials were reported across the extent of the site to a maximum depth of 3.5 m bgs. Asbestos quantification was completed at each sampling location in which it is understood that no fragments of ACM were observed in the field during soil sampling activities. However, the analytical laboratory identified the following:

- Friable asbestos at a concentration of 0.036 % w/w at MW05 at a depth of 1.0 m bgs; and
- Friable asbestos was reported in sample MW04 at a depth of 0.5 m bgs.

The supplementary soil, waste classification investigation, completed at the site by WSP (2019) reported that ACM fragments were collected from six individual test pits on the current site, from a between of 0.2 to 3.0 m bgs. Asbestos was not detected by the laboratory in any samples submitted for analysis.

An additional asbestos assessment completed across the site by HEC (2019) reported asbestos impacts were at six locations. ACM in soil was detected at three locations, and FA/AF was detected at three locations.

[1] *Management of Asbestos in the non-occupational environment.* enHealth, 2005 (enHealth 2005).

The locations of asbestos impacted soils based on historical environmental investigations are presented on **Figure 3**.

3.3 Asbestos Work Zones

Any concentration of bonded or friable asbestos must be managed in accordance with WHS regulations.

When ground disturbance works are occurring within the asbestos impacted areas (refer to **Section 3.2**) or when additional asbestos impacts are identified as part of an unexpected find, the procedures to ensure the safety of workers and the surrounding community and compliance with relevant WHS regulations must be implemented as defined in **Sections 5** & **7**.

3.4 Asbestos and Site Suitability

Given the proposed future site use is for the development of a new flight training centre with a basement excavation, the commercial/industrial land use scenario trigger values were selected to assess the site suitability. Asbestos concentrations in soil are to be compared against NEPC (2013) health-based screening levels (HSLs).

Table 3.1 below outlines the adopted HSLs for assessment of site suitability.

Table 3.1 Health screening levels for asbestos contamination in soil

Form of Asbestos	Health Screening Level Commercial/industrial (HSL D)
Bonded ACM	0.05%
FA and AF (Friable asbestos)	0.001%
All forms of asbestos	No visible asbestos for surface soil

Application of CMP Responsibilities

3.5 Application of CMP

This CMP shall apply from the commencement of the development works until the completion of the development / construction works at the site and is inclusive of all intermediary phases of work.

The requirements of this CMP are intended to apply to any activities within the site which could involve disturbance or exposure of impacted soils.

This CMP and the requirements set out within shall apply during all future removal/disturbance works including asbestos removal, or asbestos related works (earthworks) at the site until such time as contaminants are removed from the site or are otherwise shown to not present a risk to human health.

The responsibilities for site management with regards to any impacted soils at the site, outlined in **Section 3.2**, apply to all works from the commencement of civil works until the completion of the development / construction at the site, except where a more specific management or works plan will be provided by a person conducting business or undertaking (PCBU), *i.e.,* a detailed asbestos removal plan, prepared in accordance with relevant Codes of Practice and WHS legislation, provided by a demolition / construction PCBU prior to the removal of asbestos as a part of the demolition process.

3.6 CMP Responsibilities During Proposed Asbestos Related Works

3.6.1 Appointment of Principal Contractor

In accordance with the provision of the *Work Health and Safety Regulation 2019*, a principal contractor shall be appointed for the proposed works.

3.6.2 Responsibilities of the Principal Contractor

Responsibilities of the Principal Contractor include but are not limited to the following. The Principal Contractor must:

- Be responsible for the proposed project work at all times until the work is completed;
- Ensure that all persons involved with asbestos removal work have undertaken occupational health and safety training;
- Keep records of induction training for site workers and any site-specific training;
- Ensure that any subcontractors provide safe work method statements for the activities for which they are engaged;
- Monitor any subcontractors to ensure that they are complying with the safe work method statements; and
- Maintain a hazardous substance register for all hazardous substances used or present on site.

The Principal Contractor is responsible for co-ordinating health and safety activities for the project. Other responsibilities of the Principal Contractor include:

- Compliance with occupational health and safety and environmental legislation, regulations, standards, codes and the site-specific rules relating to safety contained in this CMP;
- Ensuring that sufficient funds are available to procure the necessary health and safety equipment such as personal protective equipment (PPE);
- Managing accident and emergency procedures;

- Managing workplace injury management and rehabilitation; and
- The Principal Contractor has the authority to provide for the auditing of compliance with the provisions of this CMP, suspension or modification of work practices, and administration of disciplinary actions for individuals whose conduct does not meet the requirements set forth herein.

3.6.3 Environmental Consultant

An Environmental Consultant shall be engaged to assess any suspected asbestos containing materials or unexpected finds when required. Where asbestos removal/disturbance works are to be undertake, either a Licenced Asbestos Assessor (LAA) for licensed friable asbestos works or suitably qualified Competent Person for licensed or non-licensed bonded asbestos works must be engaged.

The Consultant shall:

- Where required, complete static asbestos air monitoring during works associated with the asbestos impacted materials including removing, transport and placement until such time that the final clearance inspection has been completed. All daily results of air monitoring activities are to be displayed or be readily available for the information of site workers. All air monitoring events shall be undertaken in accordance with the *National Occupational Health and Safety Commission's Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres* [NOHSC: 3003(2005)].
- Conduct formal clearance inspections and prepare formal clearance certificates.
- Audit of controls and management implemented on the site.
- Provide on-site advice, if required, in relation to suspected ACM, groundwater or unexpected finds and the management of contamination issues associated with the works.
- Collaboration with, and audit of, the Licensed Asbestos Removalist or principal contractor to ensure the CMP is being implemented and best practices with regards to asbestos or other contaminant management requirements are being implemented.
- Be available, if required, for consultation with regards to the conditions and requirements of this CMP.

Should asbestos or unexpected finds be encountered during the planned works, additional clearance inspections, validation works and where appropriate, clearance asbestos air monitoring may be required to confirm the appropriate management of contamination prior to re-occupation.

3.6.4 Licensed Class A or Class B Asbestos Removal Contractor

Based on assessment results to date, asbestos impact has been identified in friable and non-friable form. As such a Class A (for friable impacted soils) and Class B (for non-friable asbestos impacted soils only) licensed asbestos removal contractor shall be engaged to complete the asbestos related works in the areas of impact.

The licensed asbestos removal contractor will be the primary person responsible and in charge for works on site involving the disturbance or removal of ACM in soils. Their responsibilities include:

- Ensuring compliance with relevant legislation and the conditions of this CMP;
- Handling and management of ACM in soils at the site in accordance with relevant legislation;
- Ensure appropriate environmental and safety controls outlined in this CMP are maintained for the duration of the works; and
- Assisting all site sub-contractors, where required, in complying with relevant legislation and the procedures outlined in this CMP.

4. Health and Safety Management

4.1 Safe Work Method Statements

Safe work method statements (SWMS) that must be prepared by the Principal Contractor or by sub-contractors completing significant intrusive works and also covering other aspects of the proposed project works not related to significant intrusive works, are to be prepared and approved by the Principal Contractor prior to those activities commencing.

Safe Work Method Statements must:

- Describe how work is to be carried out;
- Identify the safety risks;
- Describe the control measures that must be applied to the work;
- Describe the equipment used in the work;
- Describe any standards or codes applicable to the work; and
- Training and qualifications required of persons undertaking the work.

Safe work method statements for all workers should be reviewed and approved by the Principal Contractor.

4.2 Site Access Control

The Principal Contractor shall ensure that the area in which works are taking place is designated a construction area and that the construction area is securely fenced and that access is controlled. Entrance to the site will be via a dedicated entry point which will contain the following features in addition to site security measures as required for a construction site as per relevant health and safety provisions:

- Readily identifiable and delineated site access / egress point. Where possible this location shall be visibly identifiable by site fencing / barricading;
- Decontamination area for all site personnel to remove PPE and dispose of contaminated articles and will also include a hand wash and boot wash facility. The decontamination area will be in proximity of the designated site access / egress point;
- Signage including “No Entry Without Required PPE” and a contact number for members of the public to direct any queries / complaints; and
- Emergency contact details.

The overall construction site boundary will be secured by appropriate fencing/barricades. It is anticipated that localised active construction site access points may be delineated within the overall site boundaries. Access to the construction site will be controlled and permitted by the person in charge of the site only after persons entering the site have been advised of the potential contamination hazards. This shall at least include notification of the potential presence of asbestos containing materials within fill material.

Any authorised person accessing the site should do so in accordance with health and safety requirements as indicated in this CMP. The implementation of the health, safety and environmental requirements should be administered by the Principal Contractor.

Impacted soil removal/disturbance area access will not be allowed until the site personnel have been inducted, have signed in, and have donned the required PPE (**Section 4.6**), where required. Upon exiting the removal area, personnel must remove and dispose of/clean the PPE in the provided decontamination area.

Exclusion zones/removal boundaries shall be determined by the Principal Contractor in consultation with the environmental consultant and/or LAA and licensed asbestos removalist and will vary according to the location and size of the required daily activities. Any removal/disturbance boundaries will be designed to allow other site works not involving significant intrusive works to continue without being required to adhere to this CMP.

Where practical/possible, buffer zones of at least 5 metres between exclusion/removal zones and "clean" areas of the site, may be implemented subject to a qualitative risk assessment by the Environmental Consultant and competent person or LAA where asbestos removal works are required.

4.3 Training and Certification

The Principal Contractor must not allow any person to carry out project works unless he/she is satisfied that the person has undergone WHS induction training.

The WHS induction training required by the Regulation is as follows:

- General occupational health and safety training for construction work;
- Work activity based health and safety training (job specific training);
- Site-specific health and safety induction training; and
- Asbestos awareness training (formal or site-specific).

For each person carrying out asbestos disturbance/removal, for a period of three years, the Principal Contractor must keep a record of the following:

- A copy of relevant statements of WHS induction training, or a statement indicating that the Principal Contractor is satisfied that the relevant WHS induction training has been undertaken; and
- A brief description of the site-specific training undertaken by the person.

4.4 Site Safety Induction

It is the responsibility of the Principal Contractor to ensure that all persons carrying out removal works on site are given a site-specific induction on relevant work health and safety requirements. The induction shall be undertaken by the Principal Contractor. The induction shall be undertaken as per a standard presentation which will address the following topics as per the requirements of this CMP:

- Identification of any site-specific hazards and risk control measures in relation to the asbestos impacted nature of the site;
- Regulatory requirements or codes of practice relevant to identified site specific hazards restricted to asbestos impact;
- Site orientation at least including location of asbestos decontamination areas at site access / egress points; and
- Site specific safety rules in relation to asbestos.

The Principal Contractor is responsible for establishing site specific safety rules. The rules must be displayed in an easily observable location (nominally in the site office) to ensure that all site workers, including any sub-contractors, have ready access.

At the completion of the Induction Presentation, each 'inducted person' shall be required to acknowledge that they have understood the requirements for the site works and health, safety and environmental obligations by completion of a Site Induction Form.

4.5 Asbestos Awareness Training

All workers that will conduct work potentially involving asbestos on the site must have undertaken asbestos awareness training (either formal or in-formal/site specific) to ensure that workers on the site are familiar with the risks posed from asbestos and asbestos controls.

4.6 Personal Protective Equipment

Prior to any asbestos or unexpected finds being disturbed, no additional PPE is required above the standard construction site PPE outlined by the Principal Contractor for the site.

In the event of an unexpected find, consideration should be given to additional PPE, including gloves and dust masks.

When asbestos (ACM and friable) is encountered during site activities, the requirements for PPE will apply in all areas within nominated asbestos removal works boundaries and applies for any ground workers within the asbestos work area, as defined by the supervising Environmental Consultant.

Type/Duration of Work	Bonded ACM and trace level friable asbestos removal/disturbance works within fill materials	Friable asbestos removal/disturbance works in fill materials
Respirator	P2 respirator as a minimum	Half-face reusable respirator, P2 minimum.
Coveralls	Type 5, category 3 disposable coveralls required	Type 5, category 3 disposable coveralls required
Footwear	Disposable booties/boot covers OR Dedicated steel capped gumboots	Disposable booties/boot covers OR Dedicated steel capped gumboots
Gloves	Disposable latex/nitrile gloves OR Dedicated asbestos zone gloves	Disposable latex/nitrile gloves OR Dedicated asbestos zone gloves

Approved respirators shall always be worn in asbestos works areas to provide respiratory protection. The minimum protection is an approved properly fitting disposable respirator or half faced respirator fitted with a particulate cartridge.

The contractor shall supply and keep in good order, two complete sets of protective clothing and respirators for authorised inspection personnel. These will remain the property of the contractor at the end of the contract.

Respirators should be issued for personal use only and shall be kept in a clean condition. Alcohol based antiseptic swabs should be made available for the cleaning of respirators.

Any respirator defects should be reported for subsequent repair. They should be maintained in a clean and safe working condition.

Employees must receive instruction in the correct method of using the respirator and on the importance of correct facial fit and maintenance. No person with a beard shall be allowed within the asbestos work area except using an approved positive pressure continuous airflow hood.

A fit check should be completed by the wearer of the respiratory protection equipment (RPE) each time the respirator is to be used and should comprise the following steps:

- Close off inlet to filter;
- Inhale gently;
- Hold for 10 seconds; and
- Check face piece remains collapsed.

If the face piece does not remain collapsed, there is likely to be a leak in the seal and the RPE would not be providing adequate protection. RPE should be re-adjusted until the fit check is satisfactory. If a satisfactory result in the fit check cannot be achieved, the person will be unable to work within the asbestos works zone and will be required to attain new RPE and complete a new fit test.

It is further noted that, as part of the SafeWork permitting process, additional PPE may be required. If this occurs, then the above PPE requirements will be upgraded to reflect SafeWork's requirements.

4.7 Plant

All plant operators must close cabin doors and windows and set air conditioning to re-circulate when operating within the asbestos work area.

In any plant with open cabins, operators must wear PPE and RPE.

Operators should wear booties to access the plant. Booties are to be removed and placed within an asbestos waste bag prior to entering the cabin.

4.8 Management of Subcontractors

Contractors and subcontractors working on-site will be required to adopt the provisions of this CMP and will be advised of potential safety and environmental issues on site during site-specific induction training. This induction will include the work health and safety responsibilities, requirements and controls for all subcontractors working on site. All subcontractor activities will be monitored by the Principal Contractor, the licensed asbestos removal contractor and/or the Environmental Consultant to ensure compliance with the requirements of this CMP.

Contractors and subcontractors whose work will be performed on-site, or who otherwise could be exposed to health and safety hazards, will be advised of known hazards through distribution of site information contained in this CMP.

They shall be solely responsible for the health and safety of their employees and shall comply with all applicable laws and regulations. All contractors and subcontractors are responsible for:

- Providing their own personal protective equipment as required by the Principal Contractor and the conditions set out in this CMP;
- Training their employees in accordance with applicable laws;
- Providing medical surveillance and obtaining medical approvals for their employees, as appropriate;
- Ensuring their employees are advised of and meet the minimum requirements of this CMP and any other additional measures required by their site activities; and
- Designating their own site safety officer.

Subcontractors must sign an acceptance form prior to commencing work on site. Subcontractors may only modify, and then only to improve, the conditions specified in this CMP with approval from the Principal Contractor, or their nominee.

5. Asbestos Management Procedures

The requirements for management of asbestos during implementation of the various management options are discussed in detail in the following sections. All works are to be undertaken in accordance with the Code of Practice (SWA 2018).

The following sections detail the requirements for the removal and handling of contaminated soil identified within the site, in the event that remedial works are proposed to occur.

5.1 Intrusive Works

In the event that intrusive works, such as trenching, excavation or piling, are to be carried out in identified contamination areas then the following management measures will apply:

Prior to any intrusive work commencing:

- Review of the information available for the site;
- Approval for the works must be sought from the Principal Contractor who will assess whether the works are necessary. The Principal Contractor must review the job specific risk assessment (JSRA) and safe work method statements (SWMS) of any subcontractors and ensure that site personnel and/or contractors who will undertake the works are inducted into the CMP;
- The environmental consultant must complete regular inspections of the significant intrusive works and complete regular inspections for the presence of indicators of contamination including staining, odours or visible asbestos. Static airborne asbestos monitoring must also be completed by the environmental consultant for the duration of significant intrusive works where asbestos has been encountered;
- The works area must be isolated from casual entry using temporary barriers (where smaller than the secure site boundary fencing) and only personnel inducted in the requirements of the CMP will be permitted to enter the works area;
- Sufficient room must be provided within the works area to allow stockpiling of spoil from excavations, if required, in accordance with **Section 5.3**; and
- A water supply must be provided to the works area for the purpose of maintaining exposed asbestos impacted fill or soil in the excavations and stockpiles in a moist state.

During intrusive work:

- Personnel entering the works area must wear appropriate PPE in accordance with **Section 4.6**;
- Exposed asbestos impacted material and associated stockpiles of excavated spoil must be managed in accordance with **Section 5.3**; and
- Air monitoring requirements must be met as outlined in **Section 8.1**.

Post Excavation

- Any remaining impacted soils shall be covered with a marker layer (e.g. geofabric) in areas not to be covered in hardstand. Once the geofabric is installed and approved by the environmental consultant, any additional works in the area, excluding significant intrusive works beneath the marker layer, may be completed under normal conditions; or
- The excavation floor and walls shall be inspected by the trained and experienced environmental consultant; and

- Validation samples shall be collected from the excavation walls and base and analysed at a NATA Accredited testing laboratory for the contaminant of concern; and
- Upon receipt of both visual and laboratory data confirming the management or removal and absence of the contaminant, the work area shall be deemed suitable for re-occupation.

5.2 Specific Requirements for Working with Asbestos Impacted Material

As determined by the supervising environmental consultant, the following procedures shall be implemented for the earthworks to ensure workers safety and to mitigate any potential off-site migration of contamination.

Prior to Excavation:

- A SafeWork notification for asbestos removal works shall be sought by the appropriately licensed asbestos removal contractor. The asbestos notification must be submitted at least 5 days prior to any asbestos being disturbed/removed.
- Workers and visitors to the asbestos work area will be made aware of the encountered soil contamination and only authorised people shall enter the asbestos work area, which must contain a perimeter barrier separate to the site boundaries to restrict entry to amenities areas of the work site. Where the asbestos work area boundary is also the site perimeter boundary, an exclusion zone of at least 5 m shall be erected beyond the site perimeter boundary (if practical/possible) to restrict access to the asbestos work area.
- Asbestos removal caution signs shall be placed on the perimeter barrier (or exclusion zone barrier, whichever is furthest from the asbestos removal work area), as per AS1319.

During Excavation/Transport/Disposal:

- All potential wastes, including used disposable PPE will be classified, managed and disposed in accordance with the *Waste Classification Guidelines: Part 1 Classifying Waste* (EPA 2014). Personal protective equipment used during the works, including disposable coverall suits and half faced respirators, shall be disposed of as asbestos waste.
- Personnel within the excavation work area shall wear a Tyvek suit, respirator (e.g. minimum requirement of half faced P2 respirator), disposable gloves and steel capped rubber soled work shoes (covered with booties) or gumboots at all times when within the asbestos work area and until clearance certification is provided by the environmental consultant.
- Any obvious pieces of asbestos containing materials shall be picked up and placed into a labelled asbestos waste bag and set aside in a designated waste storage area for off-site disposal.
- The excavation and exposed ground surface shall be kept damp by water spraying at all times during excavation to reduce the possibility of dust generation.
- Airborne asbestos monitoring shall be conducted for the duration of the excavation works in accordance with **Section 8.1**.
- Any stockpiled excavated material shall be kept moist and controlled if left for more than 24 hours in accordance with **Section 5.3**.
- Appropriate leak proof transport vehicles must be used to transport materials off-site.
- Transport vehicle shall be covered prior to leaving site and any material removed from wheels to prevent tracking outside the site.

Post Excavation

- Any remaining asbestos impacted soils shall be covered with a marker layer (e.g. geofabric) in areas not to be covered in hardstand. Once the geofabric is installed and approved by the environmental consultant, any additional works, excluding significant intrusive works beneath the marker layer, in the area may be completed under non-asbestos conditions; or
- The excavation floor and walls shall be inspected by the environmental consultant who is trained and experienced in the identification of asbestos. Any visible asbestos shall be removed by the licensed asbestos removal contractor; and
- Where friable asbestos has been encountered, validation samples shall be collected from the excavation walls and base and analysed at a NATA Accredited testing laboratory for the presence of asbestos. Clearance airborne asbestos monitoring shall also be conducted following the completion of the excavation and reinstatement works to be included in clearance certification. Clearance monitoring is not required if only non-friable asbestos is encountered; and
- Upon receipt of both visual and laboratory data (where required) confirming the management or removal and absence of asbestos, the asbestos work area shall be deemed suitable for re-occupation and a clearance letter shall be provided by the environmental consultant.

5.3 Stockpile Management

5.3.1 Temporary Management

Any temporary stockpiles must be kept damp (not flooded) and covered by geo-fabric/plastic or sealed with a soil binding product as soon as practical. Where weather conditions are appropriate (cool/cold weather, minimal wind and/or precipitation), temporary stockpiles may be kept moist as a temporary control measure. The control measure will extend beyond the perimeter of the stockpiles and shall be secured to prevent being blown away by wind. Stockpiles must be placed in a secured, signed and excluded location onsite.

5.3.2 Long Term Management

Long term stockpiles must be covered with geo-fabric or sealed with a soil binding product (dust-bloc) or sealed with hydro mulch. Large stockpiles should be bunded to prevent impacted water runoff.

Regular inspections of long-term stockpiles should be undertaken to ensure the controls implemented are in good condition, no dust is being generated from the stockpile and no runoff is occurring.

When the seal is broken on long term stockpiles, such as moving, excavation or tracking over the stockpile, the interim management measures (**Section 5.3.1**) must be implemented until such a time that the long-term controls can be re-implemented on the stockpile.

5.4 Decontamination

<u>Chemical Contaminants</u>

The Removal Contractor shall ensure that an area is established on the site for people to personally decontaminate themselves and any tools and equipment when they are entering and leaving each work zone.

If any part of a worker's body comes into direct contact with any potentially contaminated material the affected part(s) should be immediately washed with clean water.

<u>Asbestos</u>

The Licenced Asbestos Removal Contractor shall ensure that an area is established on the site for people to personally decontaminate themselves and any tools and equipment when they are entering and leaving each asbestos work zone.

The details for decontamination shall be specified in the Licenced Asbestos Removal Contractor's Asbestos Removal Control Plan and SWMSs for asbestos related work and is to comply with the requirements outlined (SWA 2018).

In general, provision/procedures for decontamination may include, but are not limited to, the following:

- A dirty decontamination area including:
  - Equipment for vacuum cleaning (i.e. HEPA fitted Vacuum cleaners) or hosing down (by use of a fine mist) contaminated clothing and footwear;
  - Storage for contaminated clothing and footwear;
  - Labelled waste bags / bins for disposing of protective clothing;
  - Shower area with an adequate supply of hot and cold water and toiletries;
- A clean decontamination area that includes:
  - Storage for individual PPE in containers or lockers;
  - Airflow towards the dirty decontamination area;
  - Shower area with an adequate supply of hot and cold water and toiletries;
- A clean changing area that includes:
  - Storage for clean clothing;
  - Separate storage for clean and dirty towels;
  - Airflow away from the 'clean' asbestos decontamination area towards the 'dirty' decontamination area.

If any part of a worker's body comes into direct contact with any potentially contaminated material the affected part(s) should be immediately washed with clean water.

Where works are of a short duration in a non-friable ACM areas, personal decontamination via wet wipes/spray mist may be appropriate. This should not be implemented as the standard decontamination procedure.

The decontamination procedures specified below will be followed whenever personnel, plant or equipment leave the asbestos work area.

5.4.1 Personal Decontamination

Personal decontamination involves the removal of all visible asbestos dust / residue from PPE and respiratory protective equipment (RPE). Personal decontamination must be undertaken each time a worker leaves a designated asbestos work area. Personal decontamination should be done within the decontamination unit/area via a four-stage decontamination procedure:

- Stage 1 – asbestos removal area. Remove obvious signs of asbestos dust/impacted soil from PPE and remove footwear.
- Stage 2 – dirty decontamination area. Wet decontamination whilst wearing PPE and RPE. Leaving RPE on, remove PPE and place in waste bag.
- Stage 3 – clean decontamination area. Wet decontamination and remove RPE. Store RPE in suitable container.

- Stage 4 – clean change area. Change into clean clothing.

Asbestos-contaminated PPE must not be transported outside the asbestos work area except for disposal purposes. Before work clothes and footwear worn during asbestos removal work are removed from the asbestos removal area for any reason, they should be thoroughly vacuumed with an asbestos vacuum cleaner to remove any asbestos fibres and the footwear should also be wet wiped.

RPE must remain on until all contaminated disposable coveralls and clothing has been cleaned and / or removed and bagged for disposal and personal washing has been completed. Any PPE used while carrying out asbestos removal work must not be taken home by a worker.

Personal hygiene and careful washing are essential. Particular attention should be paid to the hands, fingernails, face and head.

5.4.2 Hand Tools

All hand tools used during asbestos removal work should be fully dismantled (where appropriate), cleaned under controlled conditions and decontaminated using either wet or dry decontamination procedures before they are removed from the asbestos work area. The method chosen will depend on its practicality, the level of contamination and the presence of any electrical hazards.

If tools cannot be decontaminated in the asbestos work area, or are to be reused at another asbestos work area, they should be:

- Tagged to indicate asbestos contamination; and
- Double bagged in asbestos labelled bags before removal from the asbestos removal work area.

The bags containing the tools must remain sealed until decontamination or the commencement of the next asbestos related task where equipment can be taken into the removal work area and reused under controlled conditions.

PPE must be worn when opening the bags to clean or reuse the equipment or tools, and decontamination should only be performed in a controlled environment.

In some circumstances it may be better to dispose of contaminated tools and equipment, depending on the level of contamination and ease of replacement.

5.4.3 Vehicle, Plant and Equipment

All equipment, including non-disposable PPE, will be washed or otherwise cleaned to ensure that contaminated soil, water and dust is removed before it leaves the designated work area.

A plant decontamination area shall be established within designated work areas comprising a geofabric lined pad to capture washed off sediment. All plant and equipment will have their outer bodies thoroughly cleaned of soil and sediment before moving out of the designated work area.

6. Management Strategies

Potential management strategies at the site for impacted soils include on-site containment or excavation and off-site disposal. The procedures required to implement these options are detailed in the following sections.

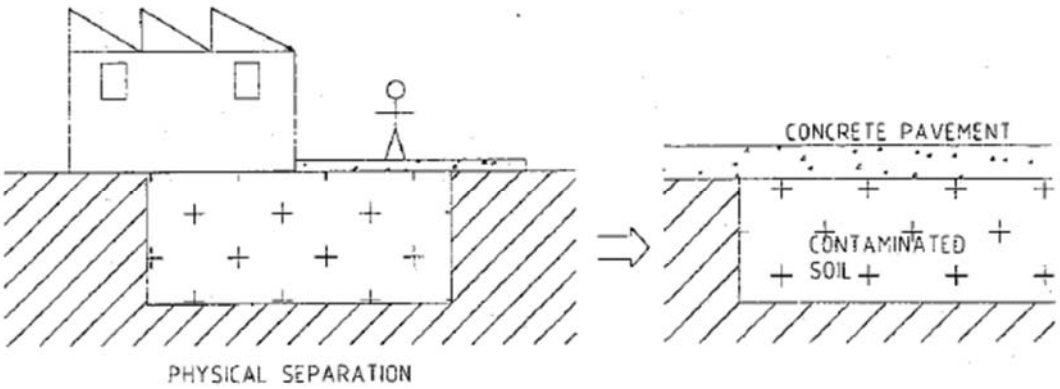
6.1 On-site Containment

Procedures as documented in the following sections will require to be implemented to ensure all environmental/health objectives are addressed should the proposed management of the identified impacted soils at the site comprise onsite containment beneath future finished levels.

6.1.1 Containment Overview

Impacted fill may be managed via a cap and contain remedial strategy, which includes the implementation of permanent physical separation which eliminates the exposure pathway. A marker layer and capping layer is required to implement the containment management strategy.

A conceptual sketch, sourced from ANZECC 1999[2], is shown following:



6.1.2 Marker Layer Requirements

The marker layer shall consist of a bright orange coloured non-woven polyester continuous filament or PET (such as nonwoven geotextiles) or similar with a minimum density of approximately 150 grams per square metre (or equivalent). The marker layer must:

- Be easily recognisable within soils (i.e., bright orange in colour);
- Be durable as a long-term marker layer (i.e., > 150 grams per square metre); and
- Maintain integrity during remedial/civil works such as capping layer installation and construction works.

Additionally, the marker layer must meet geotechnical and civil specifications where required, i.e., underlying roads.

The specific details of the marker layer are required to be included in a Long-Term Site Management Plan document in addition to surveyed plans showing the extent of capped area within the site.

6.1.3 Capping Layer Requirements

The following capping procedures will be applied to appropriate scenarios across the site, prior to completion of construction works:

[2] *Guidelines for the Assessment of On-site Containment of Contaminated Soil,* Australian and New Zealand Environment and Conservation Council, September 1999. (ANZECC 1999).

- Permanent hardstand structures – installation of a marker layer in these areas is optional, however the sub-grade material will be required to be validated as environmentally suitable materials for human exposure and then the permanent hardstand structure. The depth of the proposed permanent hardstand must be demonstrated to be a permanent physical structure as opposed to an interim physical structure (e.g., construction blinding slab). Potential permanent hardstand capping arrangements include:
    - Concrete slab;
    - Asphaltic concrete (road pavement); or
    - Shotcrete (subject to sufficient reinforcement and thickness such that the shotcrete will be permanent in nature).
- Turfed areas – installation of the marker layer at a minimum depth of 500 mm below final finished site levels, with a capping layer consisting of environmentally suitable materials for potential human and/or ecological exposure.
- Mass planting / shallow landscaping areas – installation of the marker layer at a minimum depth of 500 mm below the final finished site levels, with a capping layer consisting of environmentally suitable materials for potential human and/or ecological exposure.
- New tree pit zones – installation of the marker layer at a minimum depth of 1500 mm below the final finished site levels, with a capping layer consisting of environmentally suitable materials for potential human and/or ecological exposure, noting that the maker layer should extend the depth required for installation of the new tree's existing root ball.
- Existing tree zones – installation of the marker layer consistent with immediately adjacent marker layer depths (e.g., 500 mm in turfed areas and 500 mm in mass planting areas) to the extent practicable, with a capping layer consisting of environmentally suitable materials for potential human and/or ecological exposure.
- Within underground services trenches / services – service infrastructure will require remediation to 150 mm below the depth of services, with a marker layer and capping layer installed consisting of environmentally suitable materials for potential human and/or ecological exposure.

Material above the marker layer extending to the final finished ground level will be required to be environmentally suitable material for human and/or ecological exposure (as appropriate). This may include: virgin excavated natural material (VENM) sourced from on-site, imported VENM, excavated natural material (ENM) or similar material certified in accordance with an exemption issued by the NSW EPA that also meets site suitability criteria; or imported road making materials comprising fresh quarried material or material covered by a beneficial reuse exemption issued by the NSW EPA.

Additionally, material underlying load bearing structures such as roads, should be geo-technically suitable, in accordance with geo-technical reports prepared for the site.

In the interface of remediated and non-remediated areas, the extent of the marker and capping layer should be extended a minimum of 300 mm laterally outside the extent of remediated area, where practicable. This may include battering of the marker/capping layer to tie-in with existing site levels within the 300 mm outside of the remediated area, where practicable.

Validation of the interim and permanent capping arrangements will be required, including inspections by the environmental consultant, a survey plan prepared by a registered surveyor showing the vertical level and lateral extent of the marker layer and capping layer in relation to the site boundaries.

6.2 Off-site Disposal

6.2.1 Disposal Overview

Where onsite containment is not a suitable option, management of impacted soils should be completed via excavation and off-site disposal, procedures as documented following will require to be implemented to ensure all environmental/health objectives are addressed.

It is anticipated that off-site disposal will only be required in situations where impacted soils (encountered as an unexpected find) pose an unacceptable risk to human health (under the propose development scheme) or the environment.

6.2.2 ACM Sheeting/ ACM Products

Large quantities of ACM sheeting / ACM products encountered that are not bound within the soil matrix are not suitable for onsite containment and should be disposed offsite in accordance with regulatory requirements.

6.2.3 Excavation of Impacted Soils

The impacted soils shall be 'chased' under the direction and supervision of the environmental consultant. The procedure for undertaking this excavation activity will be:

- Excavation of impacted soils to lateral and vertical extent until the soils meet the adopted validation criteria;
- Excavated soils shall be stockpiled on a hardstand or plastic liner pending offsite disposal or loaded directly into the back of a truck for disposal; and
- Any unexpected finds will be managed as per **Section 9**.

6.2.4 Offsite Disposal of Material

Any material requiring disposal shall be classified in accordance with *Waste Classification Guidelines Part 1: Classifying Waste,* NSW EPA (2014) and relevant waste regulations by the environmental consultant. Disposal of waste to licensed waste facilities in accordance with relevant waste regulations will be undertaken by the Contractor. All waste tracking documentation including disposal dockets must be maintained by the Contractor and must be provided to the Principal and the Environmental Consultant for inclusion in the validation report. Any asbestos waste exceeding 100 kilograms or more than 10 m^2 of bonded ACM in one load disposed off-site must be tracked using the NSW EPA online system WasteLocate.

6.2.5 Validation

Validation of the remedial works will be conducted by the environmental consultant to demonstrate the remediation objectives have been achieved.

6.2.6 Backfilling

Upon confirmation of soil validation, excavations will be reinstated (where required) using validated material which has been treated onsite, existing on-site materials and/or validated imported fill material where required. Materials proposed to be imported to the site will be assessed and approved prior to importation.

6.3 Site Disestablishment

On completion of the remediation works all plant/equipment and safety/environmental controls shall be removed from the site by the Contractor. All equipment used during disturbance/remediation works will need to be appropriately decontaminated or disposed of appropriately as waste by the Contractor, in accordance with SWA (2018), EPA (2014) and relevant waste regulations.

7. Validation Plan

7.1 Overview

Validation data is required to be collected to verify the effectiveness of the management works and document the asbestos impact materials have been appropriately managed. Validation activities will be required for the following:

- Marker and capping layers have been installed correctly;
- Waste materials disposed offsite;
- Residual soils following excavation of impacted soils, or stockpile footprints following stockpile removal;
- Confirmation the site surface (0 – 100 mm) does not contain visually identifiable contaminants or other unacceptable aesthetic issues; and
- Importation of capping materials to site.

7.2 Validation Requirements

Table 7.1 summarises validation requirements for the site.

Table 7.1: Validation Summary

Item	Sampling Frequency			Analytes
	Excavation Base	Excavation Walls	Other	
Marker and capping layers	N/A	N/A	Visual inspection and survey information for all marker and capping layer installations	N/A
Excavation / stockpile footprints of Impacted materials that will not be subject to containment	1 sample / 100 m^2 (10 m grid), with a minimum of 2 samples	For walls greater than 0.3 in height: 1 sample / 20 linear metres; and 1 sample / 1 m depth	Visual inspection across extent of base and walls	Asbestos (500 mL) (or contaminant of concern)
Imported Materials of VENM, if required	N/A	N/A	Site inspection required for all sources. Minimum 3 samples per source site. No samples required for quarried VENM.	<u>As a minimum:</u> Heavy metals TRH/BTEX PAHs OCPs/PCBs Asbestos (500mL)
Imported Materials of ENM, if required	N/A	N/A	As per ENM Order.	Heavy metals TPH/BTEX PAHs pH EC RTA 276 (foreign materials) Asbestos (500mL)
Recycled/Recovered Products	N/A	N/A	As per relevant exemption	As per exemption plus Asbestos (500mL)

7.3 Validation Methodology

7.3.1 Validation of Onsite Containment

Marker Layer

Visual inspection will be undertaken by the environmental consultant to verify the installation of the marker layer across required areas. Photographic records and a survey prepared by a Registered Surveyor of the marker layer installation, including vertical and lateral extents by the Contractor will be retained for inclusion in the validation report.

Capping Layer

Material to be used as a capping layer must be validated by the environmental consultant to be environmentally suitable, consisting of VENM, ENM, suitable on-site materials (i.e. not containing materials) or material considered suitable for beneficial reuse via a resource recovery exemption issued by NSW EPA. Additionally, contaminant concentrations in any capping layer material must not exceed the adopted site validation criteria for soils.

The capping layer must be placed at the thicknesses specified for each capping scenario**.** Photographic records and a survey of the capping layer installation, which details the final thicknesses of the capping layer, including the vertical and lateral extents prepared by the Contractor will be retained for inclusion in the validation report.

Surveys

The remedial contractor must provide a survey of the marker layer and capping layer that demonstrates the lateral and vertical extents each layer. The capping layer survey must demonstrate that the minimum capping thicknesses have been achieved.

7.3.2 Impacted Material Footprints

The validation program for the impacted material footprints which are not subject to onsite containment will be:

- Inspection of the excavation or stockpile footprint by a suitably trained and experienced person.
- Following visual validation, soil samples will be collected from the footprint on a systematic 10 m grid, and analysed in accordance with **Table 7.1**; and
- If contaminants of concern are identified in a validation sample at concentrations above the site validation criteria, the soil represented by the failed validation sample will be scraped and disposed offsite (or capped onsite), and the validation inspection and sampling process repeated for the failed area. Alternatively, where contaminants are below the site criteria in visual observations and laboratory analysis, the footprint will be deemed to have been successfully validated.

Where impacted material footprints are subject to onsite containment, no further validation is required.

7.3.3 Ground Surface Validation (Aesthetics)

Prior to the completion of civil earthworks, the ground surface of the site shall be thoroughly inspected by the environmental consultant to confirm the absence of visual asbestos. Should any observable asbestos be identified, the area should be emu-picked or capped with 100 mm of environmentally validated soil prior to re-inspection by the remediation consultant.

7.3.4 Imported Materials

Fill materials imported on site are required to be either VENM, ENM or any other suitable material. Imported materials will require validation prior to being imported to site.

Imported material source sites will be visited by the environmental consultant. Supporting documentation must be provided by the Contractor for imported materials to be assessed against the validation plan, relevant guidelines/exemptions and adopted site criteria. The environmental consultant will collect additional samples and prepare appropriate documentation for imported materials in lieu of adequate information provided by the Contractor to ensure all material imported to site is validated.

Validation sampling will be undertaken in accordance with **Table 7.1**.

7.4 Laboratory Analysis

NATA accredited laboratories shall be used for all analysis of samples. Appropriate methods and limits of reporting (LORs) are required for comparison to relevant criteria.

7.5 Soil Validation Criteria

The soil validation criteria for asbestos contamination in soil has been adopted from NEPC (2013) as outlined in **Section 3.4**.

In the event of an unexpected find (e.g. hydrocarbons or heavy metals), concentrations within representative validation samples must be below the adopted site assessment criteria (outlined in Arcadis 2019a).

Any material exceeding site assessment criteria that is deemed suitable for site retention must me managed under a Long-Term Contamination/Asbestos Management Plan.

7.5.1 Remedial Excavations Protective of Human Health

Should the remedial excavation be required to be protective of human health (under the proposed development), consideration will be given to validation criteria derived from the following:

- HILs for commercial/industrial land use - HIL-D;
- HSL for petroleum hydrocarbons considering potential for vapour intrusion, coarse grained soil for commercial/industrial land use at the appropriate depths; AND
- Where there are no NSW EPA endorsed thresholds the laboratory LOR will be adopted as an initial screening value.

7.5.2 Remedial Excavation Protective of Environment

When remedial excavations are required to remove materials acting as source to ongoing environmental impact, it is expected that this will mainly comprise soils causing on-going impacts to groundwater. In such instances, validation criteria are required to assess the successful removal of significantly impacted soil (if identified as part of an unexpected finds) that may act as source for groundwater impact. As source material removal at the site will primarily be undertaken to protect offsite ecological receptors appropriate criteria are considered to be those related to protection of groundwater (as offsite migration of groundwater is the primary future pathway to ecological receptors). As a result, consideration will be given the leachability of the contaminant and an assessment of risk of groundwater/ecological receptors will be completed.

7.6 Waste Disposal Off-site

All wastes requiring off-site disposal must be classified in accordance with *Waste Classification Guidelines* (EPA 2014). The Contractor is responsible for the lawful disposal of the classified waste to a licensed waste disposal facility lawfully able to accept the waste.

Disposal dockets for each individual off-site waste disposal load must be provided to the Principal and to the Environmental Consultant by the Contractor to demonstrate appropriate off-site disposal of waste occurred for site validation purposes.

7.7 Material Tracking Plan

The movement of all earth/aggregate based materials on the site, to the site and from the site is required to be subject to a Material Tracking Plan (MTP). The MTP shall be administered by the Environmental Consultant with the provision of all required information by the Contractor.

Material tracking shall be required for all materials that are moved / excavated from a location on the site and not wholly replaced in the same locations within 12 hours of material movement (i.e., soils excavated for testpitting / assessment do not require material tracking, however all other material will require tracking).

7.8 Material Tracking Data

To this extent, all excavation and filling works as undertaken for the purposes of site remediation require the following information to be recorded by the Contractor on Material Tracking Forms (MTFs) and in an electronic Material Tracking Spreadsheet (MTS) and verified by the Consultant, with respect to material placement activities:

- Date (yyyy/mm/dd);
- Site figure showing source (cut) and placement (fill);
- Estimated volume (cubic metres);
- Type of material (asbestos, VENM etc)
- Depth of source (RL)
- Depth of placement (RL);
- Source (from) information in terms of MGA56 co-ordinates as established by site GPS and/or survey;
- Placement (to) information in terms of MGA56 co-ordinates as established by site GPS and/or survey;
- Source (from) information in terms of site feature (e.g. Building X);
- Placement (to) information in terms of site feature (e.g. Remedial Zone);
- Source (from) information from off-site source site (e.g., Quarry A);
- Placement (to) information for off-site disposal (e.g., tip, EPA tracking number, docket reference);
- Reference document (where necessary, i.e. virgin excavated natural material / excavated natural material classification);
- Purpose of placement (i.e. containment, surplus to site requirements etc); and
- Comments (when required).

For material which has been removed for the purposes of remediation, and is proposed to be moved again subsequent to the completion / validation of environmental remediation works, MTFs for the replacement of the material shall make reference to the initial MTFs generated by the excavation of the materials for remediation. As part of the validation of the material tracking forms, mass / material balances shall be assessed at each stage where additional material tracking forms are generated for particular site material.

It is the responsibility of the Contractor to ensure the MTF(s) are completed and submitted to the Remediation Consultant at the end of weeks work. The Remediation Consultant has ownership of the MTFs on receipt of all the necessary information from the Contractor.

The Remediation Consultant is required to review the submitted MTFs and to investigate/resolve any discrepancies. Following this review, a copy of the MTFs will be forwarded to the Principal. Ideally this would occur within two days of the Remediation Consultant verifying the MTFs from the Contractor.

The MTP is considered an active process and revisions of the MTP will be undertaken to improve the MTFs and MTS to ensure comprehensive and efficient material tracking.

7.9 Reporting

7.9.1 Clearance Certificate

At the completion of asbestos management works, a clearance certificate must be prepared that documents the site is suitable for re-occupation by workers and staff with no further management for normal site activities. If capping has been implemented as a management strategy, the clearance certificate must document that any works below the marker layer will require implementation of the following management plan.

7.9.2 Validation Reporting

The validation report shall be prepared by the remediation consultant written in general accordance with EPA reporting guidelines (OEH 2011). The validation report is required to report the site suitability for the proposed land use and should contain information including:

- Results of previous investigations conducted at the site;
- Details of the remediation and validation works conducted;
- Information demonstrating that the objectives of the CMP have been achieved;
- Information demonstrating compliance with appropriate regulations and guidelines;
- All material tracking data/information;
- Information demonstrating the cap installation in compliance with this CMP;
- Any variations to the strategy undertaken during the implementation of the remedial works;
- Details of any environmental incidents occurring during the course of the remedial works and the actions undertaken in response to these incidents; and
- Other information as appropriate, including site suitability and any requirements for ongoing management.

7.9.3 Long Term Contamination/Asbestos Management Plan

Should the management result in on-site containment of asbestos impacted fill materials, a Long-Term Contamination/Asbestos Management Plan will be required. The LTAMP will document provisions for the long-term management of the marker and capping layers integrity and detail the required controls for future works below the marker layer.

8. Groundwater Management Procedures

8.1 Groundwater Seepage

As outlined in the CEMP, the extraction of groundwater is restricted at the site, as it falls within the Botany Basin Groundwater Exclusion Area (Area 2).

If dewatering is required as part of the remediation works, a licence shall be applied for from the Department of Primary Industry (previously the NSW Office of Water) for approval to extract groundwater.

8.2 Accumulated Surface Water/Rainfall

If rainwater accumulates at the site and requires dewatering, permission should be sought from the local council and criteria met prior to the release of the water into stormwater assets.

Any excavation pump out water shall be sampled by the environmental consultant for analysis for total suspended solid concentrations, turbidity, pH and the identified contaminants of concern (TRH, PAHs and metals) prior to release to stormwater with appropriate documentation indicating that the discharged water is compliant with the ANZECC toxicity trigger values (TTVs) for the 95% Protection of Aquatic Ecosystems. If not suitable for stormwater discharge, water disposal will be undertaken using appropriate waste disposal practices by a suitably licensed and experienced waste contractor.

9. Monitoring Program

To ensure that the control measures being implemented at the site are effective, the following monitoring procedures will be implemented during any disturbance of asbestos impacted materials at the site.

9.1 Daily Static Airborne Asbestos Fibre Monitoring

Asbestos air monitoring is a requirement where works are to be undertaken involving the removal and/or disturbance of friable asbestos. Although there is no requirement for it, it is recommended that asbestos air monitoring be undertaken during bonded asbestos removal/disturbance works. This is due to the potential for the release of fibres during the mechanical disturbance of fragments of ACM.

Airborne asbestos fibre monitoring will be undertaken by the Environmental Consultant using calibrated portable air sampling pumps. Monitoring locations shall be determined by the Environmental Consultant but shall include at least 4 locations surrounding the work area or site boundary. The number of monitors shall be determined by the Environmental Consultant. At the end of each monitoring period the pump and attached filter will be collected and analysed at a NATA-accredited laboratory.

Monitoring works shall be conducted in accordance with *NOHSC Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* (NOHSC:3003 [2005]).

Daily air monitoring reports shall be displayed in a common area outside of the asbestos work area (e.g. site office or lunch shed) or be able to be produced upon request.

The following action levels will be applied upon receipt of daily results, as outlined in the SWA (2018):

- Reading of less than 0.01 fibres/mL – control measures in place are working effectively, site works to continue;
- Reading between 0.01 and 0.02 fibres/mL – a review of control measures shall be completed in the work area; and
- Reading greater than 0.02 fibres/mL – works shall cease until the cause of contamination is identified and rectified.

It is noted that these action levels adopted are more conservative than the exposure standard for airborne asbestos (0.1 fibres/mL (TWA)) as outlined in the *Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment* [NOHSC: 1003(1995)] for an 8 hour shift.

9.2 Contingency for Monitoring Exceedance

Any exceedance of the NOHSC airborne asbestos fibre monitoring level of 0.02 fibres/ml specified in **Section 8.1** will result in a stop work direction to the Principal Contractor until such time as a field assessment by an experienced consultant is undertaken to identify the potential source of fibres within the works zone and establish appropriate additional management procedures to appropriately manage the risk of worker exposure and/or asbestos fibre migration to other areas of the site.

10. Unexpected Finds Protocol

It is acknowledged that previous investigations of the site have been undertaken to assess the identified contaminants of potential concern. However, ground conditions between sampling points may vary, and further hazards may arise from unexpected sources and / or in unexpected locations during remediation. The nature of any residual hazards which may be present at the site are generally detectable through visual or olfactory means, for example:

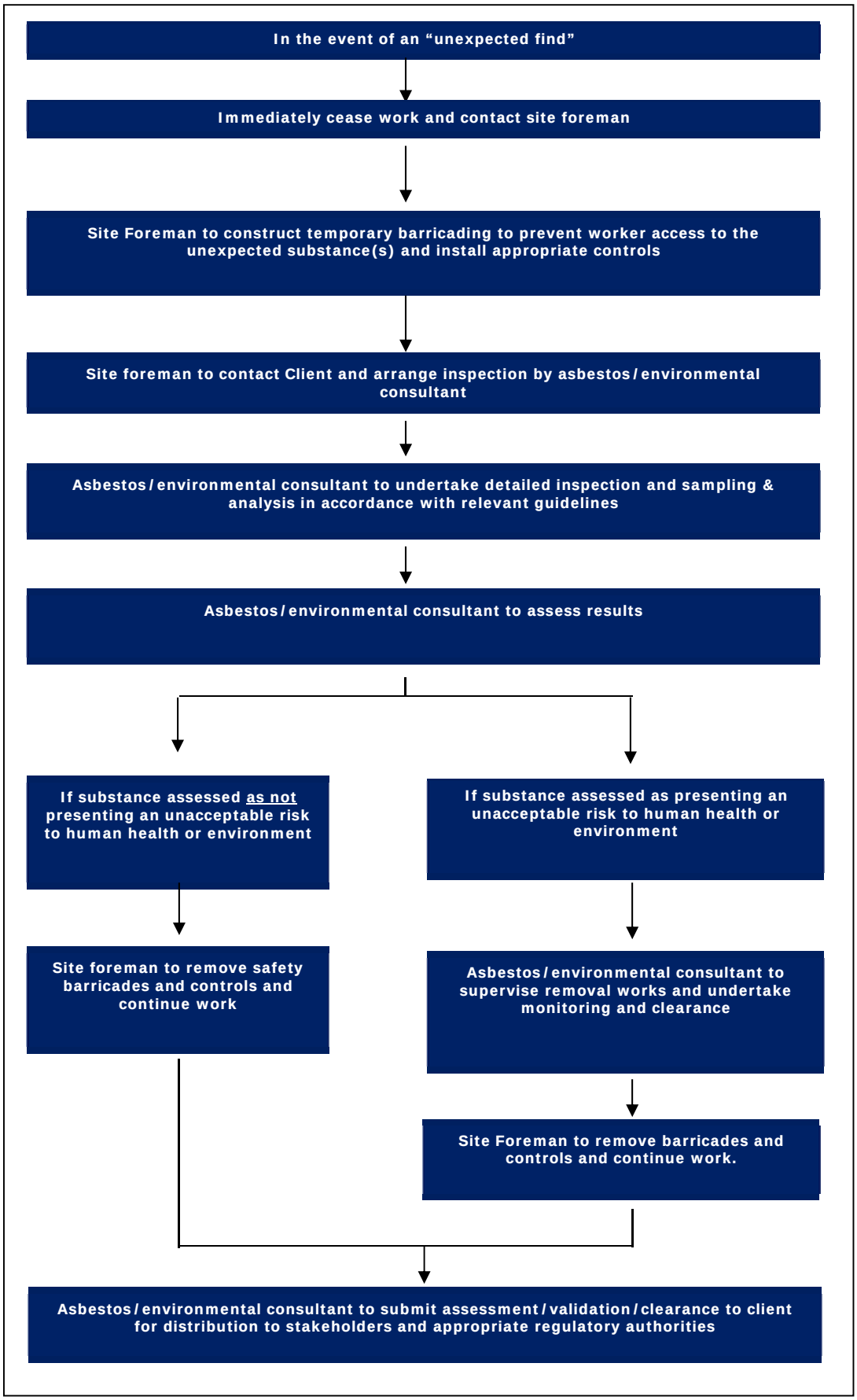
- The presence of significant aggregates of friable asbestos materials (visible) as ACM and or AF/FA impacted material;
- Bottles / containers of chemicals (visible);
- Ash and/or slag and/or tar contaminated soils / fill materials (visible);
- Drums, waste pits, former pipework or unrecorded USTs (visible); and
- Volatile organic compound (VOC) contaminated soils (odorous) and vapours.

As a precautionary measure to ensure the protection of the workforce and surrounding community, should any of the abovementioned substances be identified (or any other unexpected potentially hazardous substance), the procedure summarised in **Flowchart 9.1** is to be followed.

An enlarged version of the unexpected finds protocol, suitable for use on-site, should be posted in the site office and referred to during the site-specific induction by the Principal contractor.

The sampling strategy for each “unexpected find” shall be designed by a suitably qualified asbestos/environmental consultant. The strategy will, however, be aimed at determining the nature of the substance – that is, is it hazardous and, if so, is it at concentrations which pose an unacceptable risk to human health or the environment.

Flowchart 9.1 – Unexpected Finds Protocol



11. Regulatory Approvals / Licensing

11.1 Asbestos Regulations, Codes of Practice and Guidelines

The removal, assessment and disposal of asbestos is normally managed in accordance with the following:

- *Work Health and Safety Regulation 2017*;
- Code of Practice for How to Manage and Control Asbestos in the Workplace (SafeWork 2019);
- How to Manage and Control Asbestos in the Workplace (SWA 2018); and
- *Waste Classification Guidelines - Part 1: Classifying waste*, NSW EPA, 2014 (EPA 2014).

The hazards that are present from ACM in the soils at the site require the management to be in accordance with the abovementioned code of practice and appropriate guidelines and regulations.

11.2 Notifications

As required by the NSW *Work Health and Safety Regulation 2017*, a licensed asbestos removalist must give written notice to the regulator at least 5 days before the removalist commences licensed asbestos removal work. This includes any asbestos removal works that requires either a Class A or Class B licenced contractor.

12. Contamination Management Records

Contamination records should be stored and updated as required. The record system should contain but is not limited to:

- Records of training and inductions.
- Records of worker and others involvement in site works.
- Records of inspection and test plans.
- Records of corrective actions.
- Records of notifications/certifications/approvals by statutory authorities.
- Records of inspections, maintenance and test results.
- Records of audits.
- Records of complaints.

13. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquiries.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

14. References

Arcadis 2019a, *Environmental Site Assessment,* Qantas Flight Training Centre and Carpark, 297 King Street, Mascot NSW 2020, Arcadis Australia Pacific Pty Limited, V03, 7 June 2019

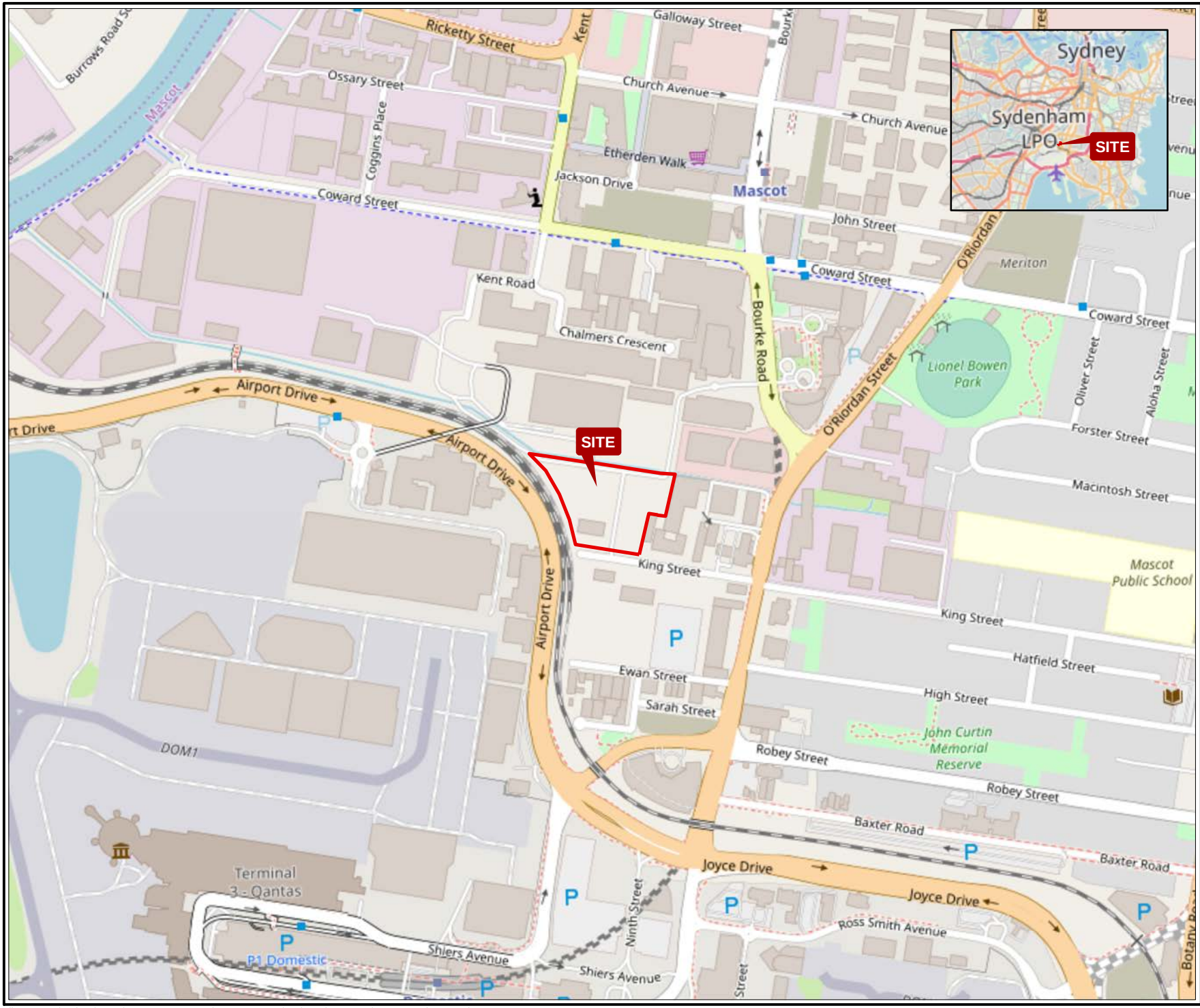
Arcadis 2019b, *Construction Environmental Management Plan*, 297 King Street, Mascot NSW 2020, Arcadis Australia Pacific Pty Limited, 12 September 2019

HEC 2019, *Soil Asbestos Delineation, 297 King Street, Mascot, NSW 2020*, Harwood Environmental Consultants, Version 00, 28 November 2019

NEPC 2013, *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)*, National Environment Protection Council, 2013

WSP 2019, *Waste Classification of 297 King Street, Mascot NSW 2020*, WSP Australia Pty Ltd, 20 September 2019

Figures



Legend:

Lot Boundary - LPI NSW

JBS&G

Job No: 57752	
Client: ADCO	
Version: R01 Rev A	Date 11/11/2019
Drawn By: AV	Checked By: CB
Scale 1:7,500	

0 80 160
metres

Coord. Sys. GDA 1994 MGA Zone 56

297 King Street
Mascot, NSW

SITE LOCATION

FIGURE 1

File Name: N:\Projects\ADCO\57752 Qantas 297 King Street Mascot\GIS\Maps\R01 Rev A\57752_01_SiteLoc.mxd
Reference: © OpenStreetMap (and) contributors, CC-BY-SA

Legend:

- Lot Boundary - LPI NSW
- Building Footprint
- Lift Pit Footprint

JBS&G

Job No: 57752	
Client: ADCO	
Version: R01 Rev A	Date 11/11/2019
Drawn By: AV	Checked By: CB
Scale 1:1,250	

0 10 20
metres

Coord. Sys. GDA 1994 MGA Zone 56

297 King Street
Mascot, NSW

SITE LAYOUT

FIGURE 2

File Name: N:\Projects\ADCO\57752 Qantas 297 King Street Mascot\GIS\Maps\R01 Rev A\57752_02_SiteLay.mxd
Reference: Nearmap - nearmap.com.au - Imagery 22-10-2019

Legend:

- Lot Boundary - LPI NSW
- WPS Approximate Site Boundary
- Lift Pit Footprint

Historical Sample Locations

- Monitoring Wells - Arcadis June 2019
- Soil Bores - Arcadis June 2019
- Test Pits - WPS August 2019
- Soil Bore Location - HEC 2019
- Test Pit Location - HEC 2019

Exceedances

- Bonded Asbestos Detected
- Friable Asbestos Detected
- Inferred Extent of Bonded Asbestos
- Inferred Extent of Friable Asbestos

JBS&G

Job No: 57752	
Client: ADCO	
Version: R01 Rev A	Date 4/12/2019
Drawn By: RF	Checked By: CB
Scale 1:1,000	

0 10 20
metres

Coord. Sys. GDA 1994 MGA Zone 56

297 King Street
Mascot, NSW

FORMER SAMPLE LOCATIONS AND IDENTIFIED ASBESTOS IMPACTS

FIGURE 3

File Name: N:\Projects\ADCO\57752 Qantas 297 King Street Mascot\GIS\Maps\R01 Rev A\57752_03_HistoricalSampleLoc.mxd
Reference: Nearmap - nearmap.com.au - Imagery 22-10-2019

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Document Status

Rev No.	Author	Reviewer	Approved for Issue		
		Name	Name	Signature	Date
A	Chris Bielby	John De Martin	John De Martin	Draft for client review	12/11/2019
B	Chris Bielby	John De Martin	John De Martin	Draft for client review	4/12/2019

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APPENDIX I

BIODIVERSITY – PRE-CLEARANCE SURVEY

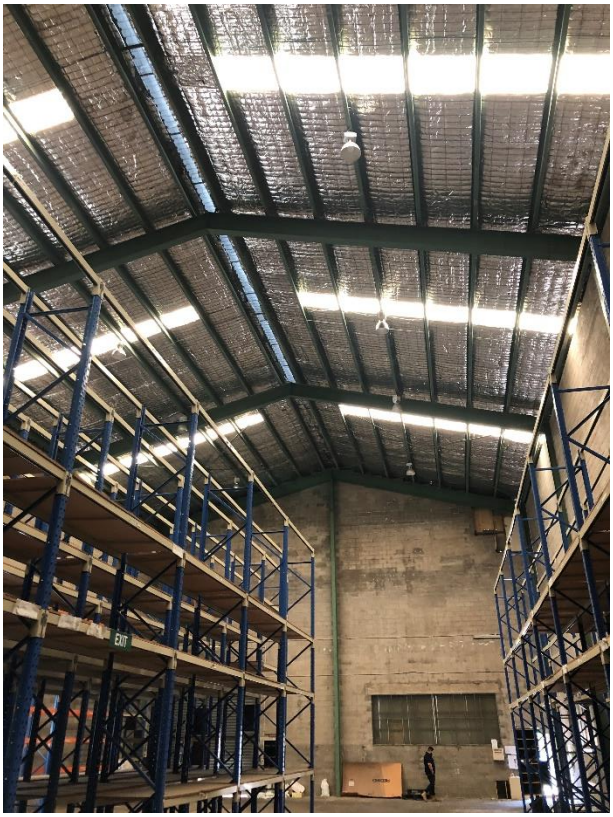

Figure 1. Roof structure of large warehouse

Figure 2. Roof structure of office

Level 3
101 Sussex Street
Sydney NSW 2000
t: (02) 9259 3800

Date: 13/11/2019

Our ref: 14719

ADCO Constructions
Level 2, 7-9 West Street
North Sydney, NSW.
2060

Attention: Matthew Griva

Dear Matthew,

Inspection of buildings at 297 King Street Mascot for roosting bats

I can confirm that today I inspected two buildings at 297 King Street to determine if any roosting microchiropteran bats were present or if there was any evidence of them using the buildings at any stage. The first building was a large warehouse made of concrete blocks and with an open beamed lined roof that provided a few options for roosts in between the beams and the roof and walls (Figure 1). The other building was a small brick office with a lined roof, but with one section of ceiling missing allowing for an opening into the roof cavity (Figure 2). This allowed some access into the building, but there was no clear access externally into the roof cavity or into the office area.

I inspected all available roof and wall cavities to locate any roosting bats or staining indicating that they were being used as roosts. I also looked across the floors for any signs of typical concentrations of droppings and staining that occur under bat roosts. No roosting bats were seen and there were no signs of bats detected in the form of staining or droppings.

Based on this my inspection I conclude that neither of the buildings are being or have been used for roosting by microchiropteran bats.

Regards,

Frank Lemckert
Senior Ecologist

APPENDIX J

COMPLIANCE MATRIX

3418 Qantas Flight Training Centre			16/12/2019
CEMP COMPLIANCE MATRIX			
#	**SSD CONDITION**	**CEMP Reference**	**Status**
	PART B SPECIFIC ENVIRONMENTAL CONDITIONS		
	TRAFFIC AND ACCESS		
	Construction Traffic Management Plan		
B1	Prior to the commencement of construction, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition C2 and must: (a) be prepared by a suitably qualified and experienced person(s); (b) be prepared in consultation with TfNSW; (c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction; (d) detail heavy vehicle routes, access and parking arrangements; (e) include a Driver Code of Conduct to: (i) minimise the impacts of earthworks and construction on the local and regional road network; (ii) minimise conflicts with other road users; (iii) minimise road traffic noise; and (iv) ensure truck drivers use specified routes; (f) include a program to monitor the effectiveness of these measures; (g) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes; and (h) demonstrate that access via King Street to the Australian Rail Track Corporation rail corridor will not be impeded during construction.	Construction Traffic Management Plan prepared in accordance with this condition. Refer to Appendix A Page 42 of the CEMP. (a) Prepared by Qualified Traffic Consultant PTC. (b) TfNSW / RMS Approval received - refer to pages 43-44 (c) Refer to CTMP Section 4 pages 60-74 (d) Refer to CTMP Section 4.8 page 70 (e) Refer to Drivers Code of Conduct page 91-92 (f) Refer to CTMP Section 4.2 page 60 (g) Refer to CEMP page 19 (h) Refer to CTMP swept paths page 81 & 88	Compliant
B2	The Applicant must: (a) not commence construction until the Construction Traffic Management Plan required by condition B1 is approved by the Planning Secretary; and (b) implement the most recent version of the Construction Traffic Management Plan approved by the Planning Secretary for the duration of construction.	(a) Noted, Construction Traffic Management Plan submitted for approval. (b) Noted.	Noted
	SOILS, WATER QUALITY AND HYDROLOGY		
	Erosion and Sediment Control		
B13	Prior to the commencement of construction, the Applicant must install and maintain suitable erosion and sediment control measures on-site, in accordance with the relevant requirements of the Managing Urban Stormwater: Soils and Construction - Volume 1: Blue Book (Landcom, 2004) guideline and the Erosion and Sediment Control Plan included in the CEMP required by condition C2.	Erosion & Sediment Control Plans prepared in accordance with this condition. Refer Appendix B Page 93-94 of the CEMP. Erosion & Sediment Control Plans updated 10/12/19 to reference Bayside Council.	Compliant
	Flood Management		
B17	Prior to the commencement of construction, the Applicant must prepare a Flood Emergency Response Plan to the satisfaction of the Planning Secretary. The Plan must form part of the CEMP and OEMP required by Conditions C2 and C5 and must: (a) be prepared by a suitably qualified and experienced person(s); (b) address the provisions of the Floodplain Risk Management Guideline (OEH, 2007); (c) include details of: (i) the flood emergency responses for both construction and operation phases of the development; (ii) predicted flood levels; (iii) flood warning time and flood notification; (iv) assembly points and evacuation routes; (v) evacuation and refuge protocols; and	Flood Emergency Response Plan prepared in accordance with this condition and is contained in our Emergency Response Management Plan (appendix to the CEMP) - Refer Appendix F Page 175. (a) Prepared suitably Qualified Civil Engineer Enstruct - refer page 176 for Consultant details and qualifications (b) Refer to Section 3 & 4 pages 181-184 (c) Refer to Section 6 pages 186	Compliant
B18	The Applicant must: (a) not commence construction until the Flood Emergency Response Plan required by condition B12 is approved by the Planning Secretary; and (b) implement the most recent version of the Flood Emergency Response Plan approved by the Planning Secretary for the duration of the development.	(a) Noted, Flood Emergency Response Plan submitted for approval. (b) Noted.	Noted
	Construction Noise Management Plan		
B28	The Applicant must prepare a Construction Noise Management Plan for the development to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with condition C2 and must: (a) be prepared by a suitably qualified and experienced noise expert; (b) describe procedures for achieving the noise management levels in the Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time); (c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers including the Travelodge Hotel; (d) include strategies that have been developed with the community for managing high noise generating works; (e) describe the community consultation undertaken to develop the strategies in condition B28(d); and (f) include a complaints management system that would be implemented for the duration of construction.	Construction Noise Management Plan prepared in accordance with this condition. Refer to Appendix C page 95 of the CEMP. (a) Prepared by qualified Acoustic Consultant Wilkinson Murray. (b) Refer to 6.2 page 114 (c) Refer to 6.2 page 114-116 (d) Refer to 6.2 page 115 - details of Community Consultation undertaken (e) Refer to 6.2 page 115 - - details of Community Consultation undertaken (f) Refer to CEMP - Complaint Management page 19 & 20	Compliant
	WASTE MANAGEMENT		
	Construction and Demolition Waste Management Plan		

3418 Qantas Flight Training Centre			16/12/2019
CEMP COMPLIANCE MATRIX			
#	**SSD CONDITION**	**CEMP Reference**	**Status**
B35	Prior to the commencement of construction, the Applicant must prepare a Construction and Demolition Waste Management Plan for the development to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with condition C2 and must: (a) detail the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations; and (b) be implemented for the duration of construction works.	Construction and Demolition Waste Management Plan prepared in accordance with this Condition. Refer Appendix D page 118 of the attached. (a) Refer to page 128. (b) Noted.	Compliant
B36	The Applicant must: (a) not commence construction until the Construction and Demolition Waste Management Plan is approved by the Planning Secretary. (b) implement the most recent version of the Construction and Demolition Waste Management Plan approved by the Planning Secretary.	(a) Noted, Construction and Demolition Waste Management Plan submitted for Approval. (b) Noted.	Noted
	CONTAMINATION		
	Unexpected Finds		
B42	Prior to the commencement of earthworks, the Applicant must prepare an unexpected contamination procedure to ensure that potentially contaminated material is appropriately managed. The procedure must form part of the of the CEMP in accordance with condition C2 and must ensure any material identified as contaminated must be disposed off-site, with the disposal location and results of testing submitted to the Planning Secretary, prior to its removal from the site.	Refer to section 10 on page 231 of the CEMP.	Compliant
	PART C ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING		
	ENVIRONMENTAL MANAGEMENT		
	Management Plan Requirements		
	CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN		
C2	The Applicant must prepare a Construction Environmental Management Plan (CEMP) in accordance with the requirements of condition C1 and to the satisfaction of the Planning Secretary.	Refer to attached CEMP.	Noted
C3	As part of the CEMP required under Condition C2 of this consent, the Applicant must include the following: (a) Construction Traffic Management Plan (see Condition B1); (b) Erosion and Sediment Control Plan; (c) Construction Noise Management Plan (see Condition B23); (d) Construction and Demolition Waste Management Plan (see Condition B31); (e) Community Consultation and Complaints Handling; (f) Flood Emergency Response (see Condition B12); and (g) Cultural heritage induction materials.	CEMP prepared in accordance with this submission: (a) Construction Traffic Management Plan - Refer to Appendix A Page 45 of the CEMP. (b) Erosion and sediment Control Plans - Refer Appendix B Page 93 of the CEMP. (c) Construction Noise Management Plan - Refer Appendix C page 95 of the CEMP. (d) Construction Waste Management Plan - Refer Appendix D page 118 of the CEMP. (e) Community Consultation - Refer Appendix E page 130 of the CEMP (f) Flood Management is addressed in our Emergency Response Management Plan(appendix to this plan) - Refer Appendix F Page 143 (g) Cultural Heritage Induction Materials - Refer Appendix G Page 193 of the CEMP	Compliant
C4	The Applicant must: (a) not commence construction of the development until the CEMP is approved by the Planning Secretary; and (b) carry out the construction of the development in accordance with the CEMP approved by the Planning Secretary and as revised and approved by the Planning Secretary from time to time.	(a) Noted, CEMP submitted for approval. (b) Noted.	Noted