LOGOS DEVELOPMENT
MANAGEMENT PTY LTD

TRANSPORT AND ACCESSIBILITY IMPACT ASSESSMENT FOR PROPOSED FLIGHT TRAINING CENTRE, ST PETERS

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1. INTRODUCTION

1.1 Colston Budd Rogers and Kafes Pty Ltd has been commissioned by LOGOS Development Management Pty Ltd to prepare the transport and accessibility impact assessment in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs), and in support of the State Significant Development Application (SSD-47601708) for the proposed flight training centre at 28-30 Burrows Road, St Peters.

Site Location

1.2 The site is located at 28-30 Burrows Road, St Peters and comprises land known as Lot 2 of DP 212652 and Lot 15 of DP 32332. The site is identified in Figure 1.1.

Figure 1.1 (Source: Urbis 2022)

1.3 Key features of the site are as follows:

- The site is approximately 7,961sqm and is rectangular in shape. The primary frontage to Burrows Road is approximately 123m in length and the site maintains a depth of approximately 63.5m.
- The site is currently occupied by two industrial/warehouse buildings with a large hardstand area for vehicle parking and deliveries. Alexandra Canal runs along the southern boundary of the site. A Site Survey Plan accompanies the application which details the topographic characteristics of the site.
- Limited vegetation is located along both the road frontage and the canal. The proposed development is to include a setback of 10m along the southern boundary to align with the City of Sydney's vision for a pedestrian and cycling network along the water's edge.
- Vehicular access to the site from the local road network is available from Burrows Road which links the site to the WestConnex road network in the north and Sydney Airport to the west.
- Industrial land uses extend along Burrows Road and Euston Road. St Peters railway station is approximately 1.5km from the site. The nearest residential neighbours south of the site are about 300m away and are separated by industrial warehouse buildings and the Alexandra Canal.
- The site is located within the City of Sydney LGA.

1.4 The site is approximately 6km south-west of the Sydney CBD. It is close to Sydney Airport (1km north) and the Gateway Project which will link the new St Peters Interchange with Sydney Airport domestic and international terminals and Port Botany. A new bridge will be constructed over Canal Road.

1.5 The site is surrounded by a variety of uses, including:

- North: The site has a direct road frontage to Burrows Road, close to the intersection with Campbell Road. Directly opposite the site to the north is the Westconnex Transurban MCC Main Office which comprises car parking facilities for motorists at the St Peters interchange. Sydney Park is further north on the opposite side of Campbell Parade.
- East: The immediately adjoining site to the east comprises industrial development. Campbell Road and Campbell Road Bridge are further east, with additional industrial land uses on the opposite side of Alexandra Canal, including Alexandria and Rosebery. Campbell Road connects the site to the broader Westconnex road network.
- South: The site is bound to the south by Alexandra Canal, a State Significant Heritage Item. Additional industrial land uses are located across the canal to the south, primarily comprising warehouse and distribution centres. Gardeners Road and Bourke Street provide access to Mascot and Eastlakes. Sydney Kingsford Smith Airport is further south.
- West: The immediately adjoining land comprises industrial development. The St Peters WestConnex Interchange is located to the north-west, with the Princes Highway beyond. Further west is low density residential and industrial land uses in the suburb of Sydenham. Sydenham Train Station is approximately 1.5km west of the site, providing services to the Sydney CBD.

Project Description

1.6 The proposed flight training facility will enable pilots and flight crews from Qantas and other airlines to undertake periodic training and testing to meet regulatory requirements by simulating both aircraft and emergency procedural environments. The flight training centre will be situated within a three-storey industrial building and will include:

- Flight simulator hall:
  - 8 x simulator bays – State of the art full motion flight simulators with visual fidelity, motion and sound. This allows crew to be trained in all aspects of normal and non-normal operations, including instrument approaches and landings in all weather conditions.
  - The proposed simulators will complement the flight training facilities in other states.

- Emergency procedures component including:
  - Cabin evacuation emergency trainer – Full-scale cabin mock-up is used as practical training device. These facilities allow emergency situations to be accurately portrayed and allow pilots and cabin crew to handle emergency situations in both wide and narrow-bodied aircraft.
  - Slide descent tower – Enables realistic training of deployment and use of slides to evacuate aircraft for pilots and cabin crew.
  - Door trainers – Enables realistic training of use of emergency exits to evacuate aircraft for pilots and cabin crew.

- Ancillary spaces (administration and training areas) including:
  - Equipment room – Storage of emergency equipment (oxygen tanks, defibrillators etc.) that supports the training and assessment of cabin crew and pilots of aviation medicine.
  - Pilots lounge – Area for pilots to wait prior to simulator sessions.
  - Meeting rooms and lunch room.
  - Reception area.
  - Toilets, plant, loading dock.

Planning Secretary's Environmental Assessment Requirements (SEARs)

1.7 The Planning Secretary's Environmental Assessment Requirements (SEARs) for the proposed development and the relevant sections of the report in which they are addressed, are set out in Table 1.1.

Table 1.1: SEARs

SEARs requirement	Section of report
Traffic and Transport *A qualitative traffic impact assessment prepared in accordance with relevant Transport for NSW and Autroads guidelines, that includes:*	

- *details of all daily and peak traffic and transport movements likely to be generated (vehicle, public transport, pedestrian and cycle trips) during construction and operation of the development, including:*
  ○ *a description of vehicle type; and*
  ○ *access routes.*
	Chapters 6 and 7.

- *an assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts at key intersections using SIDRA or a similar traffic model.*	Chapter 6.

- *The chosen model must:*
  ○ *be calibrated and validated in accordance with the Traffic Modelling Guidelines (RMS, 2013) and the relevant Austroads guidelines;*
  ○ *include identification and consideration of approved and proposed developments/future precinct roads in the vicinity of the site in 'Day 1' and 2036 scenarios.*
	Chapter 6.

- *details of any road upgrades, infrastructure works and/or new access points required to facilitate the development.*	Chapters 5 and 6.
- *details and plans of the internal driveway network, loading docks and on-site parking arrangements, in accordance with the relevant Australian Standards.*	Chapter 5.
- *justification of the amount of car parking proposed.*	Chapter 3.

- *swept path diagrams which show the largest design vehicle:*
  ○ *entering, exiting and manoeuvring throughout the site;*
  ○ *manoeuvring through key intersections in the vicinity of the site.*
	Appendix A.

- *details of sustainable travel choices for employees, residents, guests and visitors, including Green Travel Plan.*	Chapter 2.
- *provide a Construction Traffic Management Plan detailing predicted construction vehicle movements, routes, access and parking arrangements, coordination with other construction occurring in the area, and how impacts on existing traffic, pedestrian and bicycle networks would be managed and mitigated.*	Chapter 7.
Consultation *During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners.*	Chapter 8.

In particular, you must consult with: • *City of Sydney Council;* • *Environment and Heritage Group of the Department;* • *Transport for NSW;* • *Fire & Rescue NSW;* • *Sydney Water;* • *Ausgrid;* • *Metropolitan Local Aboriginal Land Council;* • *surrounding local landowners, businesses and stakeholders;* • *any other public transport, utilises or community service providers.*	Chapter 8.

Report Structure

1.8 This report assesses the traffic, transport and accessibility implications of the proposed development, including addressing the SEARs, through the following chapters:

- Chapter 2 - proposed development;
- Chapter 3 - public and active transport aspects;
- Chapter 4 - parking provision;
- Chapter 5 - access, car parking layout, circulation and servicing;
- Chapter 6 - traffic effects;
- Chapter 7 – draft construction traffic management plan; and
- Chapter 8 – consultation with authorities.

2. PROPOSED DEVELOPMENT

2.1 The site is located on the southern side of Burrows Road between Campbell Road and Canal Road/Ricketty Street. It is located to the south-east of the WestConnex Interchange. On and off ramps for the WestConnex are located onto Campbell Road and Euston Road to the north-east, and onto Gardeners Road via a bridge connection over Burrows Road and Alexandra Canal to the south-west. Alexandra Canal is immediately south of the site.

2.2 In the vicinity of the site, industrial land uses extend along Burrows Road and Euston Road. The site is currently occupied by two industrial buildings, hardstand storage area and on-site parking. Access to the site is currently provided via three combined entry and exit driveways onto Burrows Road.

2.3 It is proposed to demolish the existing industrial/warehouse buildings on the site and construction a three-storey industrial building to house a new flight training facility, with some 1,840m^2 GFA of SIM hall and some 4,670m^2 GFA of office and training facilities. The development will be used by pilots and flight crews from Qantas and other airlines to undertake periodic training and testing, by simulating both aircraft and emergency procedural environments.

2.4 Access to the site will be provided via separate entry and exit driveways onto Burrows Road, located adjacent to the eastern and western boundary of the site. The two new driveways will replace the three existing driveways onto Burrows Road. On-site parking will be provided on the southern and eastern sides of the building for some 35 vehicles.

3. PUBLIC AND ACTIVE TRANSPORT NETWORK

Bus Services

3.1 Transport NSW operates bus services along Canal Road (some 600 metres to the south-west) and along Princes Highway (some 800 metres to north-west). Bus route 358 operates along Canal Road and provides a loop service between Sydenham railway station and Randwick, via Mascot railway station. The service operates seven days a week at a 10 to 15 minute frequency during the weekday morning and afternoon peak periods and at a 20 minute frequency outside of peak times and on weekends.

3.2 The site is some five to 10 minutes walking distance from bus stops located either side of Canal Road, adjacent to the intersection with Burrows Road. The bus stop on the southern side of Canal Road can be accessed via the signalised pedestrian facility at the intersection.

3.3 Public transport commuters using this bus service will be able to transfer to rail services at either Sydenham or Mascot railway stations, providing access to the surrounding Sydney metropolitan area.

3.4 In association with the proposed development, a private shuttle bus service will also be introduced to operate between the site and the Qantas Corporate Campus in Mascot (located close to Mascot railway station).

3.5 Depending on the cabin crew training requirements and schedule, the private shuttle bus service will be a 27 seater minibus or a larger 37 seater bus,

transporting pilots and flight crew between the site and the Qantas Corporate Campus. The service will operate half hourly, potentially between 6:00am and 11:00pm.

3.6 The shuttle bus service will provide convenient access for pilots, training staff and personnel travelling by public transport to access the site.

Train Services

3.7 Training staff and personnel will be able to access the site from either Sydenham or Mascot railway stations, via existing bus services or the proposed shuttle bus service. Mascot railway station is on the T8 Line (Macarthur to City via Airport) and Sydenham railway station is on the T3 Line (Liverpool to City via Bankstown) and T4 Line (Waterfall or Cronulla to Bondi Junction). These train services combine to provide regular and convenient services linking to the surrounding Sydney metropolitan area.

3.8 Train services run frequently throughout the day through these stations, with train frequencies of some six to ten minutes in each direction.

Active Transport

3.9 Pedestrian facilities in the vicinity of the site are provided by existing footpaths on the surrounding road network and pedestrian crossing facilities at signalised intersections. The intersection of Campbell Road/Euston Road/M8 Motrway and Canal Road/Ricketty Street/Burrows Road include signalised pedestrian crossings.

3.10 There is a cycle path along Campbell Road, to the east of the site. This cycle path forms part of the Westconnex New M5 Active Transport Network and connects to cycle paths at the St Peters Westconnex interchange, along Bourke Road to the south-east, Princes Highway and Unwin Bridge Road to the north-west and through Sydney Park to Sydney Park Road and Mitchell Road to the north. The cycle path network in the area will also be enhanced with connections to the future Alexandra Canal cycle way and to the future Sydney Airport Gateway project.

3.11 The proposed development will provide pedestrian access and bicycle facilities connecting to the surrounding available active transport network. The development will also provide appropriate bicycle parking and end of trip facilities.

3.12 Staff and visitors will be made aware of the available means of travel, including access to the site by public transport, shuttle bus, walking and cycling. A green travel plan will be prepared and made available to all staff and visitors.

Green Travel Plan

3.13 A green travel plan (GTP) has been developed to identify measures to promote sustainable transport options and to encourage travel modes away from single occupant private vehicles. It adopts a transport management approach and provides a site-specific management strategy for delivering long term behavioural change and sustainable travel patterns. It outlines a range of actions and initiatives to increase travel modes such as walking, cycling, public transport, car sharing and car pooling.

3.14 The provision of a GTP creates a number of social, economic, environmental and health benefits for staff and visitors to the site. These include:

- promoting the use of sustainable transport modes by increasing awareness of public transport routes and facilities;
- the provision of car parking is reflected in the sites' proximity to public transport and the ability to provide alternative travel modes for staff and visitors by encouraging non car based travel;
- reducing the growth in greenhouse gas emissions resulting in significant benefits for the environment as a result of reducing car based travel and also result in improved health benefits;
- encourage healthier travel options for staff and visitors, such as walking and cycling; and
- the GTP reduces traffic impacts and traffic congestion on the surrounding road network by reducing the number of vehicles travelling to and from the site.

3.15 The GTP includes the following measures and action strategies:

- all staff and visitors to the site will be made aware of the available means of travel, including access to the site via public transport;
- identify existing bus routes which stop close to the site, including the location of bus stops and pedestrian crossings at signalised intersections;

- work with bus operators to improve services;

- provision of a shuttle bus service connecting the Qantas Corporate Campus to the fight training facility, including the operating times of the service and location of the shuttle bus pick-up and set-down areas;

- encourage public transport by staff and visitors through the provision of information, maps and timetables in a site travel plan;

- raise awareness of health benefits of walking and cycling (including maps showing walking and cycling routes, including adjacent to and near the site);

- reward and encourage staff who travel actively to help develop a healthy, active culture within the workplace;

- allow staff and employees the flexibility to commute outside of peak periods to reduce traffic impacts and travel time, by developing flexible working hours; and

- encourage cycling by providing safe and secure bicycle parking, including the provision of bicycle parking and end of trip facilities for staff and visitors, plus change rooms, lockers and showers.

3.16 The GTP will deliver sustainable transport objectives, by considering the means available for reducing dependence solely on cars for travel purposes, encouraging the use of public transport, cycling and walking and supporting the efficient and viable operation of public transport services.

3.17 The site provides opportunities for staff and visitors to travel to the site by means other than car. This is consistent with the following government objectives and planning principles of:

(a) improving accessibility to employment and services by walking, cycling, and public transport;

(b) improving the choice of transport and reducing dependence solely on cars for travel purposes;

(c) moderating growth in the demand for travel and the distances travelled, especially by car; and

(d) supporting the efficient and viable operation of existing and future public transport services.

Monitoring and Reviewing the Green Travel Plan

3.18 Prior to the implementation of the GTP, it will be reviewed and refined. The GTP will be monitored to ensure that it is meeting its objectives and having the intended impact on car use and transport choices for employees and visitors. The plan will be updated to reflect changing circumstances and to identify which initiatives are having an impact or need to be modified to ensure appropriate travel behaviour.

3.19 A travel plan coordinator (TPC) will be appointed to oversee the measures and resultant impacts of the GTP. This person will review and assess the travel characteristics of staff and visitors.

4. PARKING PROVISION

Car Parking

4.1 The proposed development will be a flight training facility for pilots and flight crews to undertake flight training and emergency procedural simulations. The flight training facility will be situated within a three-storey industrial building and will include some 1,840m^2 GFA of SIM hall and some 4,670m^2 GFA of office and training facilities.

4.2 Parking for development on the site is subject to the provisions set out in Sydney LEP 2012. However, the flight training centre is a unique development which is not covered in LEP 2012. The proposed facility will cater for some 80 full time staff and training personnel, including some 25 to 32 employees at any one time. It is estimated that approximately up to some 160 flight crew (pilots and cabin crew) will attend the facility for training over the day. The facility will operate 24 hours, seven days a week, with the main office hours being between 7:00am and 6:00pm and flight training occurring between 6:00am and 11:00pm. Maintenance of the flight simulators will be undertaken outside these hours.

4.3 Parking provision for the proposed development has therefore been based on the existing facility at Sydney Airport. Work undertaken for a previous study to relocate the flight training facility to a site in Mascot identified a requirement for some 39 spaces. The proposed Mascot project was larger than that proposed at St Peters and included additional facilities. On this basis, a parking provision of some 35 spaces has been provided.

4.4 This provision is equivalent to a parking rate of one space per 150m^2 GFA of office area and is significantly less than the Sydney LEP 2012 maximum allowable provision of one space 75m^2 GFA. The proposed parking provision therefore satisfies Council's LEP maximum provision and is considered appropriate.

4.5 In addition to the on-site parking, and as discussed in the previous section, the facility will operate a shuttle bus service between the site and the Qantas Corporate Campus. This service will allow for better management of on-site parking and improved access to the site by public transport.

Bicycle Parking

4.6 In accordance with the WTP and to encourage travel modes other than cars, appropriate bicycle parking will be provided. As discussed above, the proposed facility will cater for some 80 full time staff and training personnel, including some 25 to 32 employees at any one time, and visitation of up to some 160 flight crew (pilots and cabin crew) over the day. Some 24 bicycle parking spaces will be provided, representing a target mode split of some 12.5% for active bicycle transport.

4.7 By comparison, Sydney DCP 2012 suggests a bicycle parking provision for industry of one space per 10 staff. With some 25 to 32 employees at any one time and visitations of up to some 160 flight crew over the day, some 18 to 19 bicycle parking spaces would be required. The proposed bicycle parking provision of some 24 spaces satisfies Council's requirement.

4.8 Bicycle parking and end of trip facilities will be provided within the proposed building. Access to these facilities will be provided via the shared pedestrian and

bicycle paths extending around the perimeter of the building with access to and from Burrows Road. These facilities will be available to employees, training personnel and visitors to the site.

5. ACCESS, CAR PARK LAYOUT, CIRCULATION AND SERVICING

Access Arrangements

5.1 Vehicular access to the proposed development will be provided via two access driveways onto Burrows Road located at the north-eastern and north-western corners of the site. The two driveways will replace three existing driveways currently servicing the overall site. The driveways will provide access to on-site parking located on the southern side of the building, access servicing areas, flight train facilities and a shuttle bus drop-off bay located on the western side of the building.

5.2 The proposed access driveways onto Burrows Road will be provided in accordance with the Australian Standard for Parking Facilities Part 1: Off-street car parking and Part 2: Off-street commercial vehicle facilities (AS2890.1-2004 and AS2890.2-2018). They will be designed cater for the swept path of the largest service vehicle required to access the site and to allow vehicles to enter and exit the site in a forward direction. The swept path of vehicles accessing the site and circulating through the site are shown in Appendix A.

Car Park Layout and Internal Circulation

5.3 An internal circulation aisle will be provided through the site to allow access to on-site parking and for the shuttle bus and service vehicles to circulate around the perimeter of the building. The circulation aisle will allow service vehicles to manoeuvre within the site, clear of on-site parking, emergency services and pedestrian facilities.

5.4 On-site parking will be provided with dimensions of 2.4 metres wide by 5.4 metres long and an adjacent circulation aisle of some eight metres wide. Parking spaces located adjacent to structure will be 300mm wider to provide appropriate access for door opening. These dimensions are appropriate, being in accordance with the Australian Standard AS2890.1-2004.

5.5 Disabled parking spaces will be provided in accordance with the Australian Standard for Parking Facilities Part 6: Off-street parking for people with disabilities (AS2890.6-2009). These spaces will be 2.4 metres wide by 5.4 metres long with an adjacent shared zone of 2.4 metres wide for wheelchair access.

5.6 The proposed car parking spaces will be linked via a pedestrian pathway around the perimeter of the building, providing convenient access to the main access points to the flight training facility.

5.7 In association with the proposed development a shuttle bus service will operate between the site and the Qantas Corporate Campus, with up to two services per hour over the day. The shuttle bus drop-off bay will be located on the western side of the building, with a pedestrian pathway linking to the main access point to the flight training facility. As shown in Appendix A, the shuttle bus will access the site via the western site access driveway and exit via the eastern driveway. The shuttle bus will enter and exit the site in a forward direction. Appropriate sight lines will be provided at the site access driveways to allow entering and exiting vehicles to observe pedestrian movements along the adjacent pedestrian footpath.

Servicing and Emergency Vehicles

5.8 Servicing for the flight training centre will be provided from the internal circulation aisle. A loading area will be provided in the south-eastern corner of the building. The service area will be designed to cater for rigid trucks and to comply with the requirements of the Australian Standards AS2890.2-2018. Service vehicles will enter and exit the site in a forward direction and will typically enter via the eastern site access driveway and exit via the western driveway.

5.9 On occasion an articulated vehicle will need to access the flight training centre to install or replace a flight simulator. The flight simulators typically need to be replaced every five to 10 years. The service area and internal circulation aisle adjacent to the building will be designed to allow circulation by articulated vehicles. However, as the vehicle will take up the full width of Burrows Road to access the site, appropriate traffic management will need to be provided to manage traffic conditions on the surrounding road network. These events will occur outside normal on road peak periods. A traffic management plan will need to be prepared and approved by the authorities, prior to the installation and/or replacement of the flight simulators.

5.10 With regards to emergency vehicle access, the site will be designed to include a FRNSW staging space (south eastern corner of the site) and a perimeter access path suitable for a specialist fire fighting appliance vehicle up to 12.5 metres long to circulate around the building, as shown in Appendix A Figure A2.

5.11 Following DA approval, access arrangements, parking layouts, servicing and vehicle swept paths should be reviewed and confirmed for compliance certification.

6. TRAFFIC EFFECTS

6.1 Counts of the existing Qantas flight training facility found traffic generations of some 20 to 30 vehicles per hour two-way during the weekday morning and afternoon peak periods. The proposed flight training facility will have a similar low traffic generation. When this traffic is distributed to the adjacent road network, it results in an increase of some 10 to 25 vehicles per hour two-way on surrounding roads. Such minor increases in traffic would not have noticeable effects on the operation of the surrounding road network and its intersections.

6.2 The traffic effects are assessed through the following sections:

- road network;
- traffic flows;
- intersection analysis;
- traffic generation;
- traffic effects.

Road Network

6.3 The road network in the vicinity of the site includes the WestConnex (M8 Motorway), Campbell Road, Canal Road, Ricketty Street, Gardeners Road, Euston Road and Burrows Road. The WestConnex Interchange is located to the north-west. On and off ramps for the WestConnex are located onto Campbell Road and Euston Road to the north-east, and onto Gardeners Road via a bridge connection over Burrows Road and Alexandra Canal to the south-west. The motorway connects Kingsgrove to St Peters via a nine kilometre twin tunnel. It

provides a four lane divided two-way road with a signposted speed limit of 80km/hr.

6.4 Campbell Road is located to the east and provides a north-south connection between Princes Highway and Unwin Bridge Road in the north and Bourke Road and Gardeners Road in the south. In the vicinity of the site, it provides a four lane divided carriageway with two traffic lanes in each direction, clear of intersections. The intersection of Campbell Road and Burrows Road is a priority controlled intersection, with turning movements restricted to left in and left out of Burrows Road.

6.5 Canal Road and Ricketty Street are located to the west and combine to provide a north-south connection between Princes Highway in the north and Kent Road and Gardeners Road in the south-east. Canal Road and Ricketty Street provide undivided carriageways with two traffic lanes in each direction, clear of intersections. The intersection of Canal Road/Ricketty Street/Burrows Road is controlled by traffic signals.

6.6 Euston Road is located to the north-east and combines with McEvoy Street to provide an east-west connection between Campbell Road and Bourke Street. In the vicinity of the site Euston Road provides a divided carriageway with two traffic lanes and one parking lane in each direction, clear of intersections.

6.7 Burrows Road is located adjacent to the northern boundary of the site and connects to Campbell Road in the north-east and canal Road and Ricketty Street in the south-west. It provides access to adjacent industrial developments and provides an undivided carriageway with one traffic lane and one parking lane in each direction, clear of intersections.

Traffic Flows

6.8 Traffic generated by the proposed flight training centre will have its greatest effects during the weekday morning and afternoon peak periods. In order to gauge traffic conditions, counts were undertaken during these times at the following intersections:

- Campbell Road/Burrows Road; and
- Canal Road/Ricketty Street/Burrows Road.

6.9 The results of the surveys are shown on Figures 2 and 3, and summarized in Table 6.1.

Table 6.1: Existing Peak Hour Two-Way (sum of both directions) Traffic Flows

Road/Location	Weekday Morning	Weekday Afternoon
Campbell Road		
– north of Burrows Road	1750	1925
– south of Burrows Road	1685	1890
Canal Road		
– north of Burrows Road	2185	2210
Ricketty Street		
– south of Burrows Road	2175	2190
Burrows Road		
– west of Campbell Road	115	115
– east of Canal Road	165	190
– west of Canal Road	245	220

6.10 Table 6.1 reveals the following:

- Canal Road and Ricketty Street traffic flows are some 2,100 to 2,200 vehicles per hour two-way during the weekday morning and afternoon peak periods;

- Campbell Road traffic flows are some 1,650 to 1,750 vehicles per hour two-way during the weekday morning and some 1,850 to 1,950 vehicles per hour two-way during weekday afternoon peak periods; and

- Burrows Road traffic flows are some 115 vehicles per hour two-way west of Campbell Road and 150 to 250 vehicles per hour two-way east of Canal Road during the weekday morning and afternoon peak periods.

Intersection Analysis

6.11 The capacity of the road network is largely determined by the capacity of its intersections to cater for peak period traffic flows. The intersections of Campbell Road/Burrows Road and Canal Road/Ricketty Street/Burrows Road have been analysed using SIDRA 9 Network Model for the traffic flows shown in Figures 2 and 3.

6.12 SIDRA simulates the operations of intersections to provide a number of performance measures. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle. Based on average delay per vehicle, SIDRA estimates the following levels of service (LOS):

- For traffic signals, the average delay per vehicle in seconds is calculated as delay/(all vehicles), for roundabouts the average delay per vehicle in seconds is selected for the movement with the highest average delay per vehicle, equivalent to the following LOS:

0 to 14	=	"A"	Good
15 to 28	=	"B"	Good with minimal delays and spare capacity

29 to 42	=	"C"	Satisfactory with spare capacity
43 to 56	=	"D"	Satisfactory but operating near capacity
57 to 70	=	"E"	At capacity and incidents will cause excessive delays. Roundabouts require other control mode
>70	=	"F"	Unsatisfactory and requires additional capacity

- For give way and stop signs, the average delay per vehicle in seconds is selected from the movement with the highest average delay per vehicle, equivalent to following LOS:

0 to 14	=	"A"	Good
15 to 28	=	"B"	Acceptable delays and spare capacity
29 to 42	=	"C"	Satisfactory but accident study required
43 to 56	=	"D"	Near capacity and accident study required
57 to 70	=	"E"	At capacity and requires other control mode
>70	=	"F"	Unsatisfactory and requires other control mode

6.13 It should be noted that for roundabouts, give way and stop signs, in some circumstances, simply examining the highest individual average delay can be misleading. The size of the movement with the highest average delay per vehicle should also be taken into account. Thus, for example, an intersection where all movements are operating at a level of service A, except one which is at level of service E, may not necessarily define the intersection level of service as E, if that movement is very small. That is, longer delays to a small number of vehicles may not justify upgrading an intersection unless a safety issue was also involved.

6.14 The analysis found that:

- the signalised intersection of Canal Road/Ricketty Street/Burrows Road is operating with average delays of less than 20 seconds per vehicle during the weekday morning and afternoon peak periods. This represents level of service B, a good level of intersection operation;

- the priority controlled (left in/left out) intersection of Campbell Road/Burrows Road is operating with average delays, for the movement with the highest average delay, of less than 15 seconds per vehicle during peak periods. This represents a level of service A/B, a good level of intersection operation.

Traffic Generation

6.15 As discussed above, the proposed training facility will have a low traffic generation of some 20 to 30 vehicles per hour two-way during the weekday morning and afternoon peak periods. When this traffic is distributed to the adjacent road network, it results in an increase of some 10 to 25 vehicles per hour two-way on surrounding roads, as shown in Table 6.2 and on Figures 2 and 3.

Table 6.2: Existing Peak Hour Two-Way (sum of both directions) Traffic Flows plus Additional Development Traffic Flows				
Road/Location	**Weekday Morning**		**Weekday Afternoon**	
	Existing	**Plus Dev**	**Existing**	**Plus Dev**
Campbell Road				
– north of Burrows Road	1750	+5	1925	+5
– south of Burrows Road	1685	+5	1890	+5
Canal Road				
– north of Burrows Road	2185	+15	2210	+15
Ricketty Street				
– south of Burrows Road	2175	+10	2190	+10
Burrows Road				
– west of Campbell Road	115	+10	115	+10
– east of Canal Road	165	+25	190	+25
– west of Canal Road	245	-	220	-

Traffic Effects

6.16 The intersections previously analysed have been reanalysed using SIDRA 9 Network Model for the additional development traffic flows added to existing flows shown in Figures 2 and 3. The analysis found that:

- the signalised intersection of Canal Road/Ricketty Street/Burrows Road will continue to operate with average delays of less than 20 seconds per vehicle during the weekday morning and afternoon peak periods. This represents level of service B, a good level of intersection operation;

- the priority controlled (left in/left out) intersection of Campbell Road/Burrows Road will continue to operate with average delays, for the movement with the highest average delay, of less than 15 seconds per vehicle during peak periods. This represents a level of service A/B, a good level of intersection operation.

6.17 With the additional traffic generated by the proposed fight training centre added to existing flows, the surrounding intersections will continue to operate at their existing good levels of service.

6.18 We have reviewed the TfNSW annual average daily traffic flow data (AADT) from the permanent count station in Canal Road, located some 60 metres north of Burrows Road. The AADT results for the last 10 years are shown in Table 6.3.

Table 6.3: AADT Data for Canal Road (18041)

	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Eastbound	12,746	13,294	13,655	14,113	15,089	15,651	15,314	13,989	11,172	11,007
Westbound	14,147	15,082	15,075	16,039	17,044	16,809	15,397	14,837	10,801	10,938
Total	26,893	28,376	28,730	30,152	32,133	32,460	30,711	28,826	21,973	21,945

6.19 It can be seen from Table 6.3 that traffic flows on Canal Road have reduced considerably, from an AADT of some 32,460 vehicles per day two-way in 2018 to some 21,945 vehicles per day two-way in 2022, following the completion of the first stage of the Westconnex Motorway.

6.20 We have requested 2036 traffic forecast flows from TfNSW. Prior to obtaining these forecast flows, 2036 traffic flows have been estimated based on a 1% annual growth factor applied to the existing 2022 traffic flows along Canal Road and Campbell Road. The forecast 2036 traffic flows, with the additional development traffic, for the weekday morning and afternoon peak periods, are summarised in Table 6.4.

Table 6.4: Forecast 2036 Two-Way (sum of both directions) Traffic Flows plus Additional Development Traffic Flows				
Road/Location	**Weekday Morning**		**Weekday Afternoon**	
	2036	**Plus Dev**	**2036**	**Plus Dev**
Campbell Road				
– north of Burrows Road	1990	+5	2200	+5
– south of Burrows Road	1925	+5	2165	+5
Canal Road				
– north of Burrows Road	2485	+15	2515	+15
Ricketty Street				
– south of Burrows Road	2475	+10	2495	+10
Burrows Road				
– west of Campbell Road	115	+10	115	+10
– east of Canal Road	165	+25	190	+25
– west of Canal Road	245	-	220	-

6.21 For the forecast 2036 traffic flows plus additional development traffic flows, the intersections would operate as follows:

- the signalised intersection of Canal Road/Ricketty Street/Burrows Road will operate with average delays of less than 20 seconds per vehicle during the weekday morning and afternoon peak periods. This represents level of service B, a good level of intersection operation;

- the priority controlled (left in/left out) intersection of Campbell Road/Burrows Road will operate with average delays, for the movement with the highest average delay, of less than 15 seconds per vehicle during peak periods. This represents a level of service A/B, a good level of intersection operation.

6.22 The intersections would therefore continue to operate at good levels of service with 2036 traffic flows plus additional development traffic.

7. DRAFT CONSTRUCTION TRAFFIC MANAGEMENT PLAN

7.1 A draft construction traffic management plan (CTMP) has been prepared. The construction methodology, process and staging for the flight training centre has not yet been precisely defined. The successful builder/contractor will be responsible for the preparation of a construction traffic management plan, which will be prepared prior to the commencement of work, taking into account relevant consent conditions.

7.2 The CTMP will be prepared in consultation with the City of Sydney and TfNSW, and will include the following:

- location of all proposed work zones;
- proposed crane locations and methods of erection and dismantling;
- haulage routes;
- construction vehicle access arrangements;
- proposed construction hours;
- construction fencing and hoardings;
- estimated number and type of construction vehicle movements including morning and afternoon peak and off peak movements;
- construction program highlighting details of peak construction activities and proposed construction staging;
- identify any potential impacts to general traffic, cyclists, pedestrians and bus services within the vicinity of the site from construction vehicles, during the period of construction;
- identify measures to mitigate any associated impacts, including signage, traffic management and traffic control.

Overall Principles for Traffic Management

7.3 The overall principles for traffic management during construction of the development are:

- provide a convenient and appropriate environment for pedestrians and cyclists;
- minimise effects on pedestrian movements and amenity;
- manage and control vehicular movements to and from the site;
- maintain traffic capacity at intersections and mid-block around the site;
- maintain access to other properties adjacent to the site;
- restrict vehicle activity to designated truck routes through the area;
- maintain safety for workers;
- provide appropriate access to the site for construction traffic; and
- manage and control construction vehicle activity in the vicinity of the site.

7.4 It is not anticipated that an on-street works zone would be required during the construction period. However, if a works zone is required, a separate application will be made to City of Sydney.

Hours of Work

7.5 Subject to conditions of consent, work associated with construction activities will be carried out between the following hours:

- Monday to Friday: - 7:00am to 6:00pm;
- Saturday: - 8:00am to 1:00pm; and
- Sunday/public holidays: - No work.

7.6 All work including demolition, excavation and construction work during these hours will comply with the "City of Sydney Code of Practice for Construction Hours/Noise 1992" and the Australian Standard AS2436.10 Guide to Noise Control and Construction, Maintenance and Demolition Sites.

7.7 The "City of Sydney Code of Practice for Construction Hours/Noise 1992" allows extended working hours subject to approval of an application in accordance with the Code under Section 96 of the Environmental Planning and Assessment Act 1979. The following extended working hours are proposed:

- Impact piling
  - Monday to Friday: - 6:00pm to 10:00pm;
  - Saturday: - 1:00pm to 10:00pm;
  - Sunday: - 8:00am to 10:00pm;

- Concrete pours
  - Monday to Friday: - 5:00am to 7:00am and 6:00pm to 10:00pm;
  - Saturday: - 5:00am to 8:00am and 6:00pm to 10:00pm;
  - Sunday: - 5:00am to 10:00pm;

- Internal fit-out, including deliveries
  - Monday to Sunday - 24 hours, seven days a week.

7.8 The site contractor will be responsible to instruct and control all workers and sub-contractors regarding the hours of work.

Truck Routes

7.9 During demolition, excavation and construction, trucks removing spoil and transporting material to the site will be accommodated within an on-site construction compound. Vehicular access to and from the site will be provided from Burrows Road, via existing site access driveways. Access arrangements and vehicle movements to and from the site will be managed by qualified traffic controllers. Construction vehicles will include single unit dump truck, truck and trailer combinations, concrete trucks, large rigid trucks and articulated vehicles.

7.10 General traffic movements on surrounding roads and continued access to adjacent properties will be maintained during construction. Truck movements will be restricted to designated truck routes and will be confined to the main road network through the area. Trucks at no time during demolition, excavation and construction will be permitted to park on-street in the vicinity of the site.

7.11 The proposed truck routes for construction vehicles accessing the site include M8 Motorway, Campbell Road, Princes Highway, Euston Road, Canal Road, Ricketty Street, Kent Road, Gardeners Road and Burrows Road. Truck drivers will be inducted and advised of the designated truck routes to and from the site.

Construction Site Entries

7.12 During demolition, excavation and construction, all construction vehicles and materials handling, including the removal of spoil and delivery of construction material, will be accommodated within an on-site construction compound/ materials handling area. Construction hoarding and containment fencing will be

erected around the perimeter of the site compound, with scaffolding and overhead protection provided where required.

7.13 Trucks will enter and exit the site in a forward direction. The existing site access driveways onto Burrows Road will be used as temporary construction access driveways. The driveways will be managed and controlled by qualified traffic controllers. The traffic controllers will be located within the site and will manage pedestrians and truck movements across the adjacent footpath. They will ensure that the access driveways are kept clear at all times, to allow trucks unobstructed access to the site. They will not enter the public road reserve or attempt to stop vehicles within the adjacent street. Trucks exiting the site will give way to traffic and pedestrians and will wait for appropriate gaps in the traffic stream in order to enter the surrounding road network.

7.14 The construction access driveways will provide appropriate sight lines for construction vehicle access, with regards to the number, type and size of construction vehicles. Pedestrian warning signs will be erected adjacent to the driveways and on the pedestrian footpaths across the driveways, in accordance with SafeWork NSW requirements.

7.15 Truck drivers will be advised of the presence of the traffic controllers. All traffic controllers will be fully qualified with the relevant TfNSW Traffic Controllers qualifications.

7.16 All traffic controllers and work personnel will be required to wear high visibility fluorescent safety vests and Personnel Protective Equipment (PPE). Wet weather clothing will be made of fluorescent high visibility material.

Construction Traffic Effects

7.17 The peak traffic activity generated during the construction period will occur during concrete pours. It is estimated that during peak periods there will be up to two to three concrete pours per week.

7.18 The number of concrete trucks generated during a concrete pour will typically range from 30 to 40 concrete trucks per day for large pours and some 15 to 20 concrete trucks per day for moderate sized pours. This traffic generation translates to an average of 6 to 8 trucks per hour two-way over the day entering or exiting the site for large pours, or one truck movement every eight to 10 minutes at peak times.

7.19 At other time during construction, the number of trucks associated with the delivery of reinforcement, formwork, blockwork and other construction materials, including the removal of waste bins, will be some 15 to 20 trucks per day.

7.20 These are relatively modest traffic flows. Construction traffic will be managed to minimise the overall traffic effects on the surrounding road network, particularly during the morning and afternoon peak periods, through the following measures:

- ensure that construction vehicles travel to and from the site along the designated truck routes;
- traffic controllers to manage the movement of construction vehicles on and off the site;

- control the size of construction vehicles;
- ensure that trucks do not park within surrounding streets. All construction vehicles are to be accommodated on-site;
- co-ordinate and manage the arrival of trucks and the delivery of construction material to and from the site; and
- ensure that all truck drivers are advised of the construction traffic management procedures.

Construction Workers

7.21 Construction workers will be encouraged to use public transport services when travelling to and from the site. Public transport timetables will be made available to all construction workers.

7.22 Construction workers will be required to undergo site induction before access to the site is permitted. During the induction process and at more regular tool time talks, construction workers will be encouraged to use public transport. Appropriate on-site storage facilities, for the storage of tools, will be provided for construction workers.

Pedestrians and Cyclists

7.23 During construction, pedestrian and cycle routes in the vicinity of the site will be maintained during construction. This will include pedestrian footpaths adjacent to

the site along Burrows Road and connection to Campbell Road and the Westconnex New M5 Active Transport Network.

7.24 No construction vehicles will be parked nor will material/equipment be stored on the public footpaths adjacent to the site. Class A construction fence will be erected around the perimeter of the construction site and Class B construction hoarding will be erected where required.

7.25 The movement of trucks entering and exiting the site, and the movement of pedestrians across the construction access driveways when in use, will be managed and controlled by traffic controllers. Pedestrian warning signs will be erected adjacent to the driveways and on pedestrian paths adjacent to the construction activity, in accordance with SafeWork NSW requirements.

Community Public Consultation

7.26 In regards to community public consultation process relating to the demolition, excavation and construction activity, the appointed builder/contractor will undertake meetings and discussions with City of Sydney and other authorities. A line of communication will be established between the builder and the various stakeholders to discuss the proposed construction staging.

7.27 In addition, the builder/contractor will establish a 24 hour feedback telephone hotline and complaints register, and establish procedures to respond to issues raised by stakeholders, public and community groups. A dedicated website will be established containing information about the project, status of work and other relevant notices.

Draft Construction Traffic Management Plan

7.28 The draft traffic management plan for construction includes the principles of traffic management and is subject to SafeWork NSW requirements, as well as survey and final design.

7.29 The appointed builder/contractor will be responsible for preparation of a detailed construction traffic management plan, to incorporate these principles and refine the construction methodology, staging and timing.

7.30 Site operations, signage, construction fencing/hoarding, overhead protection, safety barriers and line marking detail will be provided in accordance with Australian Standards and the TfNSW Manual for Traffic Control at Work Sites. A copy of the traffic management plan will be kept on-site at all times. Signage details, traffic management, the control of pedestrians in the vicinity of the site, and the control of trucks to and from the site will be the responsibility of the site contractor.

7.31 The draft construction traffic management plan includes the following:

- all construction activity to be provided for on-site;
- the construction activity to be coordinated with the construction of other developments in the vicinity of the site, including the cumulative effect of other buildings under construction;
- construction vehicle access to be provided via existing access driveways onto Burrows Road;

- where required, the movement of trucks on and off the site to be managed and controlled by traffic controllers in accordance with a safe work method statement and appropriate traffic control plans;

- construction vehicles will include single unit dump truck, truck and trailer combinations, concrete trucks, large rigid delivery trucks and articulated vehicles;

- truck movements to and from the site to be restricted to the designated truck route;

- trucks to enter and exit the site in a forward direction;

- minimise loss of on-street parking in the vicinity of the site;

- construction fencing/hoarding, and overhead protection where required, to be provided adjacent to the site frontages;

- openings to be provided in the construction fence for access to the site for construction vehicles;

- the temporary construction access driveways will be managed and controlled by a qualified traffic controllers;

- traffic controllers to ensure that the construction access driveways are kept clear at all times, to allow trucks unobstructed access to the site;

- the management of the site works will be the responsibility of the site contractor/builder;

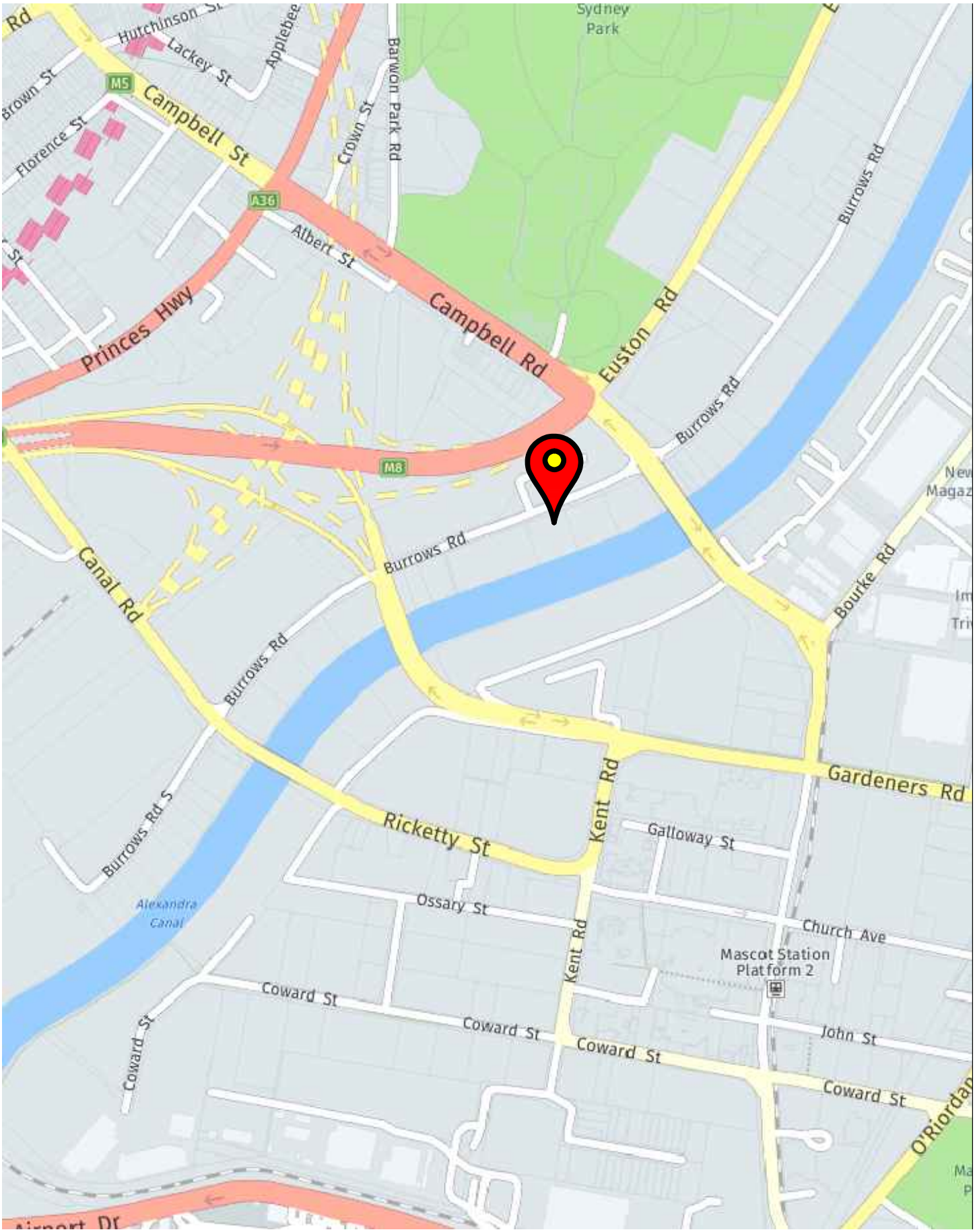
- pedestrian warning signs to be utilised in the vicinity of the site;

- pedestrian arrangements, construction activity and erection of safety fencing will be provided in accordance with SafeWork NSW requirements; and

- construction signage to be provided in accordance with Australian Standards and the TfNSW Manual for Traffic Control at Work Sites.

8. CONSULTATION WITH AUTHORITIES

8.1 LOGOS Development Management and Colston Budd Rogers & Kafes Pty Ltd (CBRK) have undertaken consultation with TfNSW and the City of Sydney. Matters raised by the authorities have been incorporated into the Transport and Accessibility Impact Assessment for the proposed development.



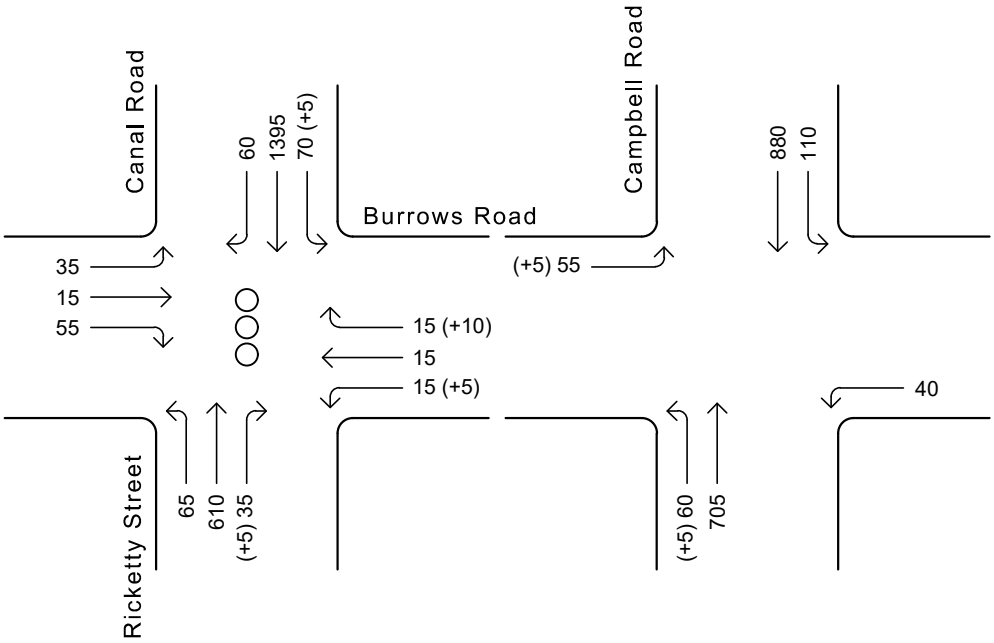
Click: https://goo.gl/maps/xxxxxxxxxx

Location Plan

Colston Budd Rogers & Kafes Pty Ltd

Drawn By: CBRK Pty Ltd_hs Ref: 11960 28.06.2022

Figure 1



LEGEND

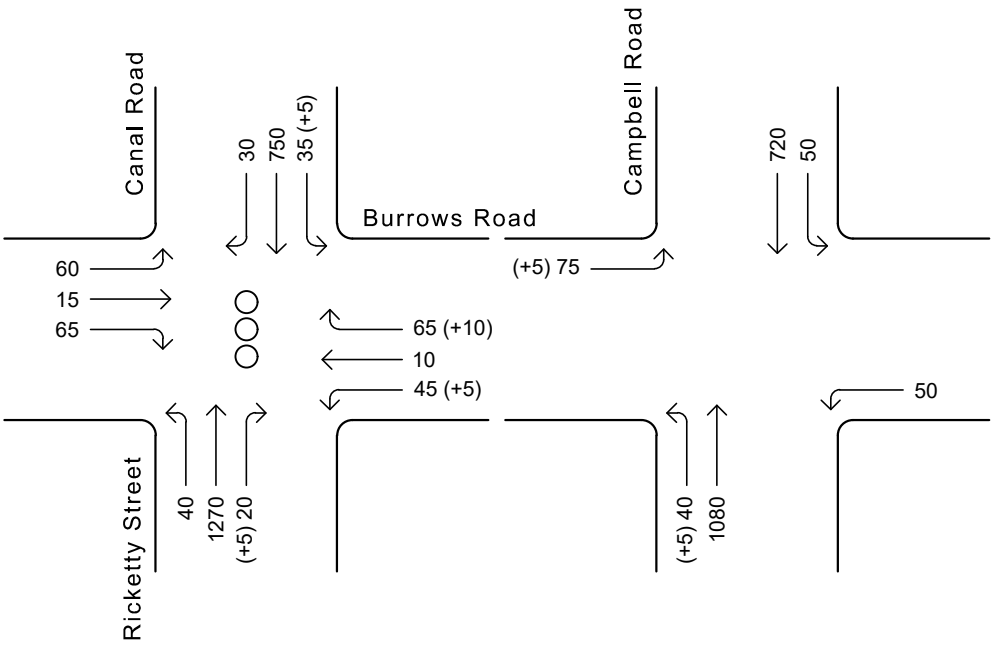
100 - Existing Peak Hour Traffic Flows
(+10) - Additional Development Traffic
- Traffic Signals

Existing weekday morning peak hour traffic flows

Colston Budd Rogers & Kafes Pty Ltd

Drawn By: CBRK Pty Ltd_hs Ref: 11960 28.06.2022

Figure 2



LEGEND

100 - Existing Peak Hour Traffic Flows
(+10) - Additional Development Traffic
- Traffic Signals

Existing weekday afternoon peak hour traffic flows

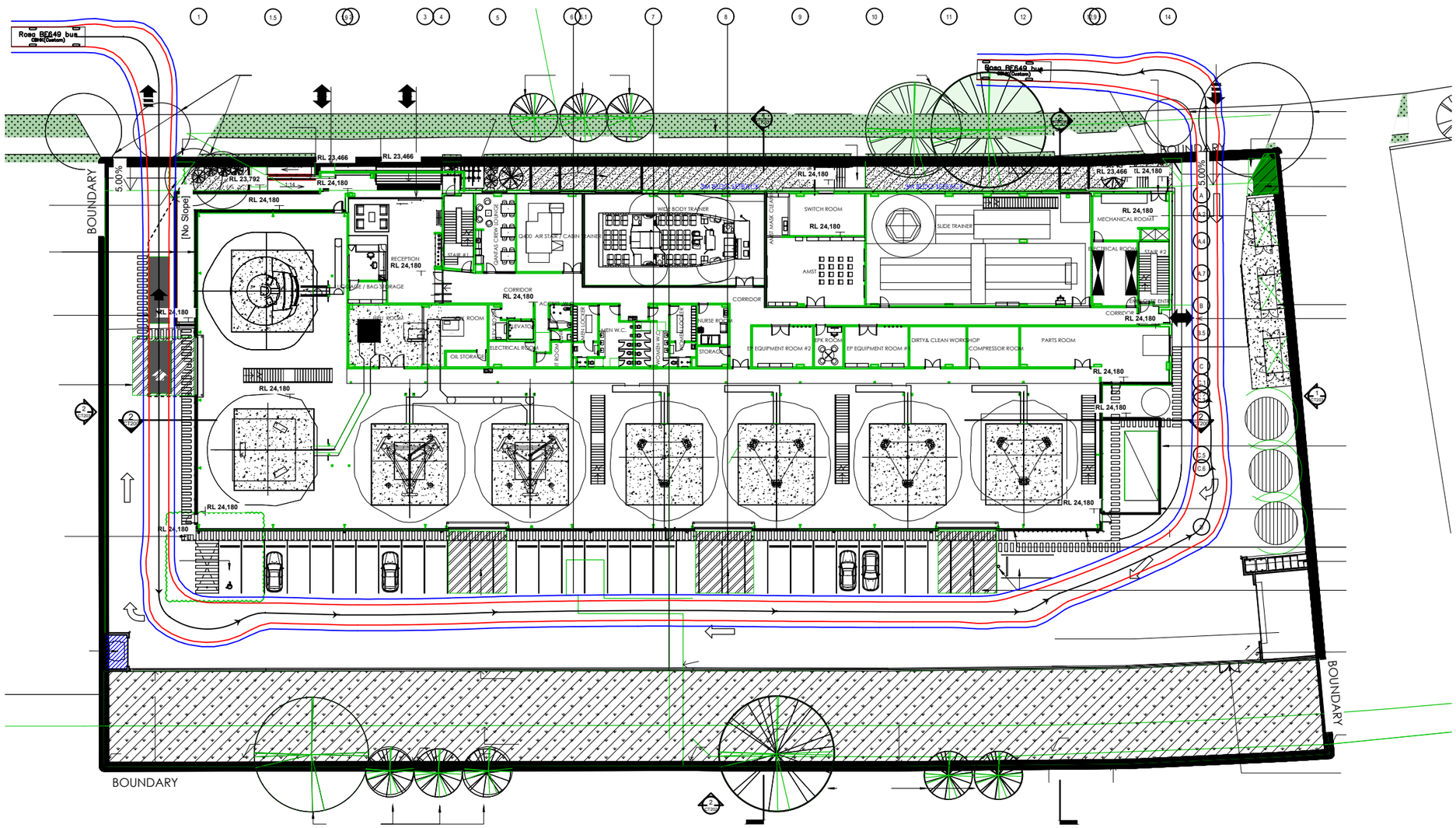
Colston Budd Rogers & Kafes Pty Ltd

Drawn By: CBRK Pty Ltd_hs Ref: 11960 28.06.2022

Figure 3

APPENDIX A

VEHICLE SWEPT PATHS



NOTE:
SKETCH PLAN ONLY. PROPERTY BOUNDARIES, UTILITIES, KERBLINES & DIMENSIONS ARE SUBJECT TO SURVEY AND FINAL DESIGN. TRAFFIC MEASURES PROPOSED IN THIS PLAN ARE CONCEPT ONLY AND ARE SUBJECT TO FINAL DESIGN BY CIVIL ENGINEERS.

Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

7.7m MINI BUS SWEPT PATHS

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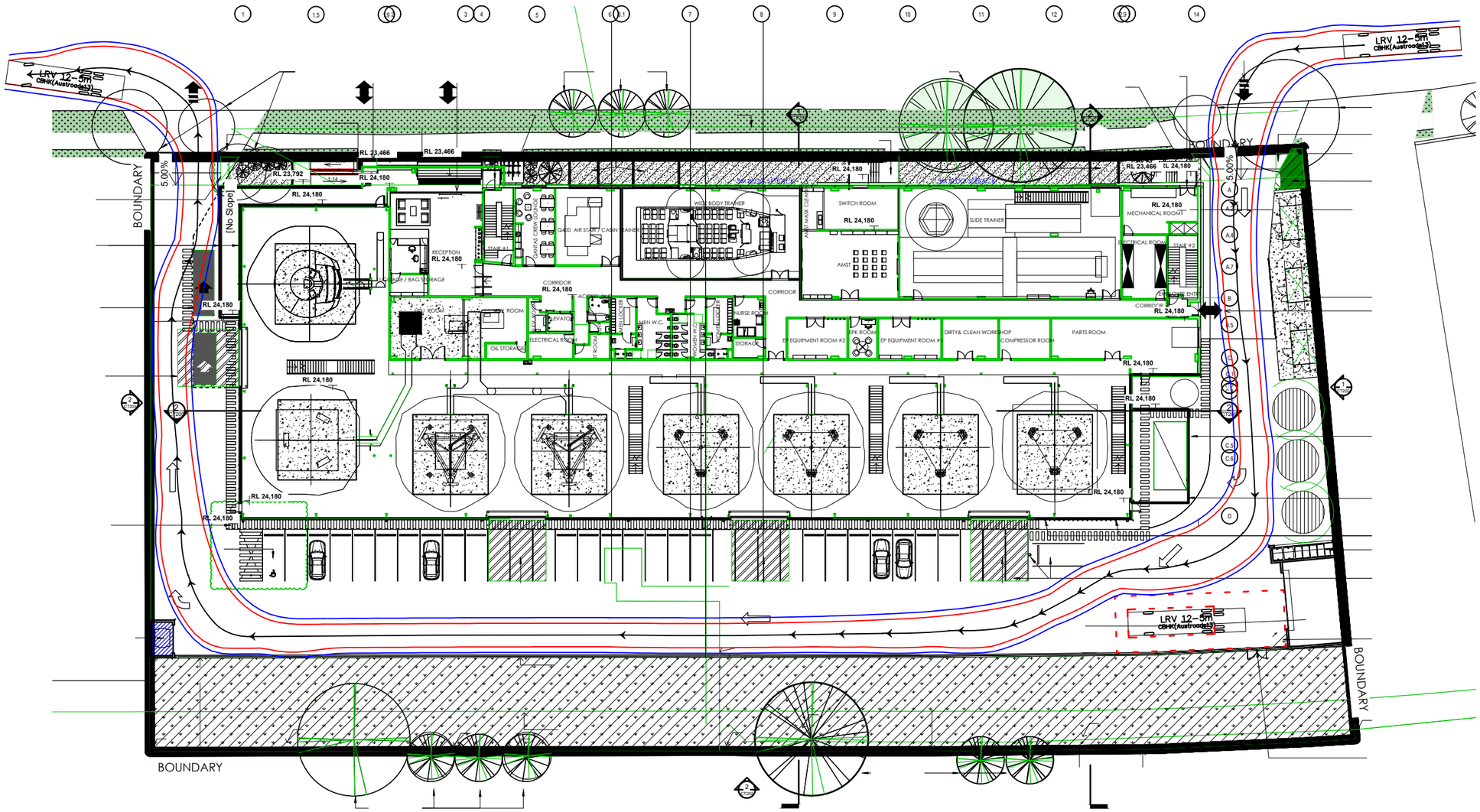

NOTE:
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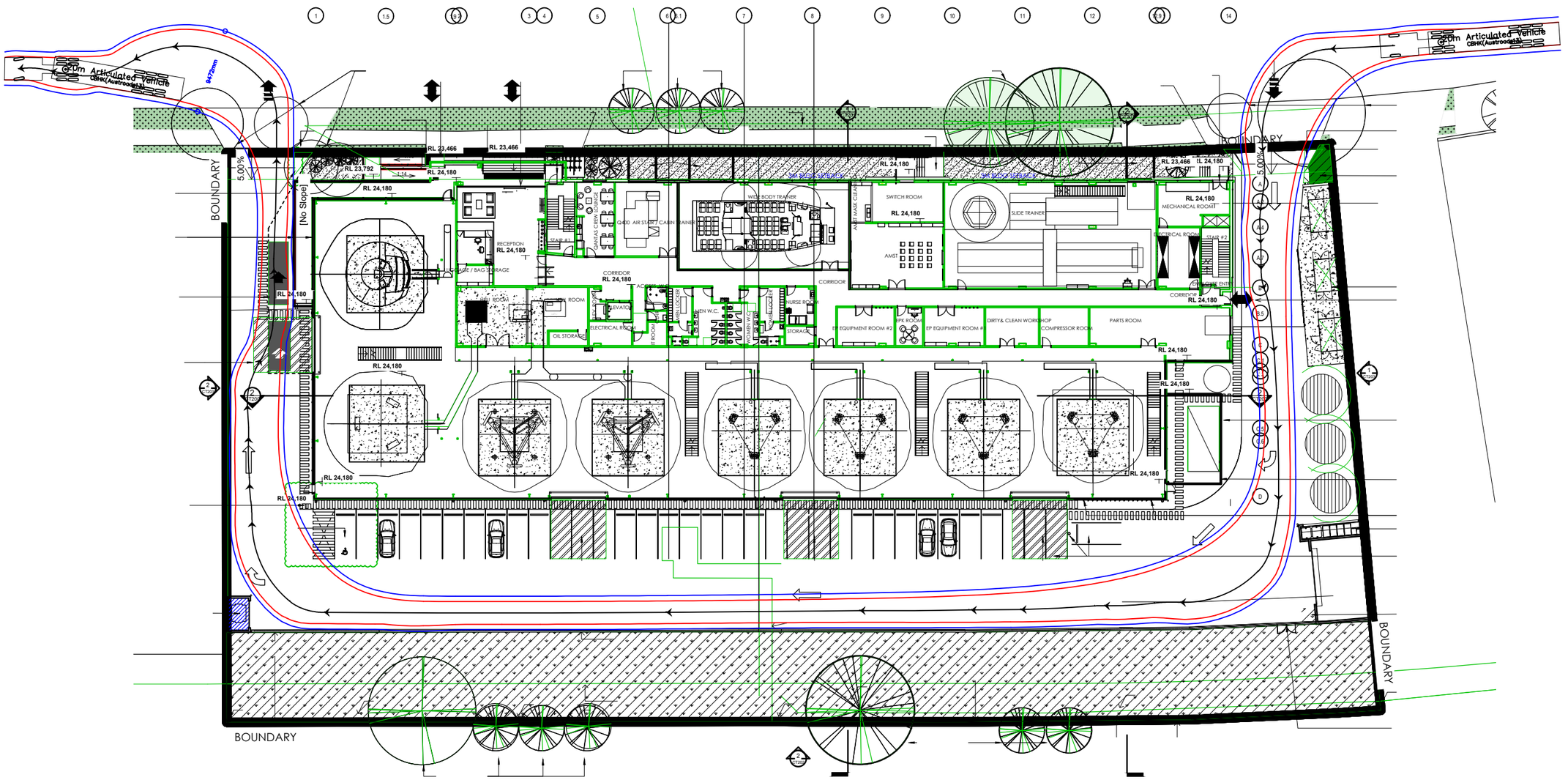
Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

12.5m SPECIALIST FIRE FIGHTING APPLIANCE VEHICLE SWEPT PATHS

DRAWN BY CBRK Pty Ltd_mc Ref: 11960 16.09.2022

2



NOTE:
SKETCH PLAN ONLY. PROPERTY BOUNDARIES, UTILITIES, KERBLINES & DIMENSIONS ARE SUBJECT TO SURVEY AND FINAL DESIGN. TRAFFIC MEASURES PROPOSED IN THIS PLAN ARE CONCEPT ONLY AND ARE SUBJECT TO FINAL DESIGN BY CIVIL ENGINEERS.

Swept Path of Vehicle Body
Swept Path of Clearance to Vehicle Body

20.0m ARTICULATED VEHICLE SWEPT PATHS

DRAWN BY CBRK Pty Ltd_mc Ref: 11960 16.09.2022

3