CONSTRUCTION MANAGEMENT PLAN FOR 180 GEORGE STREET, PARRAMATTA

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1. Introduction

This Construction Management Plan (CMP) has been specifically prepared for the proposed construction phase of works for DA/480/2018 issued to the City of Parramatta Council. Construction works include construction of a 5-level basement carpark and construction of a mixed-use development consisting of a 67 storey North Tower and a 59 storey South Tower.

This report has been prepared to manage the construction of the site to address access, egress and safety of retail owners/tenants, people visiting the site, vehicular movements, parking and construction.

2. Existing Building & Owner Access

2.1 Background

Buildings D, E and A were demolished in 2018 with the existing basement carpark and Buildings C and D being part of the new development. The buildings are concrete framed structures with below ground parking levels excavated into rock foundation.

The existing premises located at 180 George Street Parramatta include a 11-story building with 2 basement levels of car parking. The existing mixed-use premises are stratum lots subdivided as a strata plan comprising of an apartment building with retail and commercial lots located on the Ground Floor. Retail and business lots own a number of carparks in the basement and have shared access to the basement carpark.

As part of the development the existing apartments are to be refurbished. Retail and commercial tenancies located on the Ground Floor are external to the construction zone and will remain in operation for the duration of the development.

2.2 Access for Owners & Staff

Safe vehicle and pedestrian access for retail owners, tenants and their staff is to be maintained at all times. Vehicular access will be maintained so that owners and tenants can use the carpark and access their business without disruption and will be clearly sign-marked. The Ground Floor includes 2 passenger and goods lifts and a stairwell providing pedestrian access from the basement carpark to the ground floor.

Pedestrian and vehicular access plans during the construction phase for owners, tenants and staff is shown in the Access Plan at **Appendix 1**.

Retail tenant/staff parking have been made available in the existing basement and have been using this procedure for over 8 months at the time of this report. Future vehicular/pedestrian for retail tenant/staff will continue so similarity remains as already approved by Council.

Additional directional signage will be put in place to further improve pedestrian egress from the car park to the ground floor.

2.3 Construction Parking

Ramp access is provided from George Street to the basement carpark. The entry to the ramp is external from the construction zone with a secured private entry, providing safe access for the retail tenants.

2.4 Safety & Security

A security guard is located at the George St driveway entrance to the carpark allowing tenants and staff entry to underground parking. The driveway entry is hoarded form the construction zone.

A security guard is also located at the Ground Floor permitting pedestrian access to Charles Street.

Lighting is provided and maintained to the basement carpark and the lift lobbies at all times. All pedestrian routes from the carpark to the Ground Floor are kept clear of debris and materials. The site and shared areas are to be kept clean with cleaning taking place on a daily basis.

Construction materials are stored in designated material storage areas separate from retail tenant and staff parking.

At all times construction personnel are to put safety first. For further information on site security and safety in this CMP refer to Section: **12 Safety**.

2.5 Tenant/ Community Consultation

All complaints can be directed to Karimbla's Site Manager whose name and number will be displayed on-site. This person will be based on-site and will be responsible for obtaining all relevant information which will then be passed onto Meriton's Project Manager or Strata Manger for further action as required.

Contact details:

- Karimbla Site Manager – 0417 257 607
- Meriton Project Manager – 0450 288065
- Meriton Strata Manager – 0430 885 529

Consultation will be implemented to liaise with tenants and community members to advise on construction management matters as they arise.

Meriton will undertake letter box drops notifying tenants and the community of any works which could impact them in any way. The immediate community and retail tenants will be notified of Works (subject to necessary authority approvals) such as road/ footpath occupancy, out of hours activity, revised traffic or pedestrian conditions. Tenants and community members can then make contact for any queries/ concerns.

For Operational Noise Management and noise complaints refer to Section 12 Community Interaction/Complaints Handling are the Acoustic/Operational Management in **Appendix 2**.

A complaints register will be kept to record details of all complaints received during the construction phase: The register will record:

- The date and time of the complaint;
- The means by which the complaint was made;
- Any personal details of the complainants that were provided, or if no details were provided, a note to that affect;
- Nature of the complaints;
- Any action(s) taken by the applicant in relation to the complainant, including any follow up contact with the complainant.
- If no action was taken by the applicant in relation to the complaint, the reason(s) why no action was taken.

3. Cranes and Material Handling

All construction materials and deliveries will be unloaded or loaded within the existing site boundary and the designated Work Zone that is separate from the retail parking spaces and pedestrian routes. During the construction phase a designated Work Zone area located along the site frontage to both George and/or Charles Streets is required. The use of temporary on-site tower cranes will enable deliveries to be safely moved to a suitable on-site location away from the public and retail tenants/owners.

The temporary tower crane will primarily provide service to the following on-site activities:

- Formwork delivery
- Reinforcement steel
- Concrete placement
- Precast panel and brick / blockwork delivery
- Gyprock and cladding deliveries
- Waste management

All relevant permits for mobile cranes and/or works zones will be obtained separately from the relevant authorities prior to construction related activity.

Material handling will be in accordance with the Dust Control Checklist included in **Appendix 5:** Dust Management Plan. Drivers of trucks shall work in accordance with the approach and departure routes shown in **Appendix 3:** Construction Traffic Management Plan.

4. Construction Zones and Material Loading Areas

The construction zone will be secured with fencing and hoardings.

A Work Zone will be applied for along the existing on street parking lane at the George Street site frontage to allow for construction vehicles to deliver materials, unloading and loading as well as a safe platform for the concrete boom pump.

Future Works Zones will be applied for along the site frontages to both George and Charles Streets and will be used during the construction phase of this development.

It is not anticipated that any road closures will be required during the excavation and/or construction period of the development. Should temporary closures be required, applications for approval will be made with the relevant authority and/or Council.

5. Contact Details and Site Accommodation

The Karimbla Site Manager will be housed in a builders site shed located near the main entry to the site off George Street. All the sheds are to be located entirely within the site and/or on top of the Class 'B' hoarding structure which is to be installed along George and Charles Streets. The Site Managers shed will be clearly marked on site as required by conditions of consent and Work, Health and Safety Regulations.

Contact details:

- Karimbla Site Manager – 0417 257 607

6. Hours of Work

The hours of construction, including, removal of spoil and delivery of materials to and from the site, will be in accordance with the conditions of the Development Approval.

7. Sediment and Erosion Control Measures

All sediment and erosion control measures will be installed and maintained in accordance the Sediment Control Plan included in **Appendix 4**: Erosion & Sediment Control Plans.

A vehicle cattlegrid and wash down pit will be installed at the temporary construction exit driveway which is separate to the retail parking and pedestrian access/egress. It is envisaged that after post excavation phase the cattle grids can be removed, as truck deliveries to site will be kept to hardstand road or concrete areas. All truck loads will be suitably covered and any spills will be cleaned from the load-out area so as to avoid tracking of dust and/or sediment onto the street.

8. Tree Protection Measures

Street trees are to be protected as per the relevant conditions of approval unless otherwise approved for removal by Council.

9. Noise and Vibration Management

A Construction Noise and Vibration Management Plan has been specifically prepared for this site by Acoustic Logic Consultancy Pty Ltd. Refer to **Appendix 7**.

All noise generating equipment associated with the proposed construction activities will be carried out in accordance with the NSW EPA Environmental Noise Management criteria.

Where practical, the use of electrical machinery may be used in lieu of mechanical devices which reduces noise.

Major plant and machinery will be regularly serviced and operated by qualified operators so as to ensure no excess emissions and quiet operation is maintained.

10. Traffic Management Plan

The Construction Traffic Management Plan (CTMP) including Pedestrian Management Plan prepared by SBMG Planning is contained in **Appendix 3**.

Vehicle movement and delivery of materials will be in accordance with the approach and departure routes shown in the CTMP.

Pedestrian access is maintained along the existing street footpaths along Charles and George Streets using both Class A and B Hoardings as required by the relevant Work, Health, Safety Regulations.

11. Waste Management Plan

A detailed Construction Waste Management Plan (CWMP) has been specifically prepared for the construction phase of works relating to Development Application No: DA/480/2018 issued to City of Parramatta Council. The CWMP is included in **Appendix 5:** Waste Management Plan.

This Construction Waste Management Plan includes the following:

- Handling of Waste and Site Overview Plan
- Site Management
- Environmental Controls & Recycling
- Expected types and volumes of waste to be generated during construction

12. Safety

All site staff, contractors and visitors to the site will be required to undertake a site induction course prior to working on the site. This induction course will be supervised by Karimbla's OH&S + WPH&S officer:

- Karimbla Constructions Services (NSW) – phone: (02) 9287 2888.

All compliance issues will be co-ordinated by Karimbla's appointed Site Manager during hours of construction and a 24-hour contact number will be displayed outside the site office.

All public complaints will be directed to Karimbla's Site Manager whose name and number will be displayed on-site. This person will be based on-site and will be responsible for obtaining all relevant information which will then be passed on to Meriton's Project Manager for further action as required.

It will be the responsibility of Karimbla to obtain 'Work Method Statements' from all contractors, which must also include safety manuals / policies from each company. Karimbla's OH&S Manager, will monitor this.

All contractors will be required to comply with Karimbla's site-specific safety management plan. Regular meetings will be held on-site with the trades including the formation of a special on-site safety committee, which will inspect the project on a regular basis.

13. Dust Control Measures

A Dust Management Plan prepared by Airsafe is included in **Appendix 6: Dust Management Plan**.

In order to mitigate the risk of air-borne dust the following procedures may need to be implemented for the following items:

Excavation
Water down all working surfaces as required and install wash out pit for trucks during initial excavation stages.

Site Perimeter
Install solid or shade cloth panels to fence.

Material Stockpiles
Avoid stockpiles wherever possible, however, water down if required.

Scaffold
To be fitted with mesh and dust/shade cloth (if necessary).

Trucks
Cover loose loads prior to leaving site.

Site
Ensure access points are kept clean and free of spoil at all times.

Plant and Equipment
Contractors to service machinery regularly and ensure qualified operators minimise excessive emissions.

Garbage Chutes
May be used during construction and at the base of these chutes a bulk bin will be used to collect the waste. The chutes may be fitted with devices that hose down the garbage as it is dropped in to the chutes.

Power Tools
Whenever possible, wet processes will be used during cutting, drilling and grinding to limit dust emissions.

14. Conclusion

This report has been prepared to ensure the safety of the public, retail tenants/staff and construction workers. All matters relevant to Work, Health and Safety will be scrupulously undertaken in accordance with all relevant Acts and Regulations. Importantly, procedures for communication have been put in place as highlighted in this report.

Appendix 1 – Access Plans

- Construction Zone
- A Class Hoarding Line
- B-Class Double Height Hoarding
- Driveway/Ramp Entry Exit
- Work Zone

- Security Guard
- Vehicle Access
- Construction Vehicle Access

KEY PLAN

Plan 1 - Charles & George - Existing Building Access

NOTE: FOR ALL DISCREPENCIES AND OMISSIONS PLEASE CONTACT ARCHITECT AS SOON AS THEY ARE NOTED.

E	28.07.03	STAIR ADDED TO RAISED AREA, CONSTRUCTION JOINT NOTE ADDED TO TILES	PJB	ARCH.
		PLANTER ADDED TO BLOCK D		
D	23.07.03	NOTE ADDED TO PLANTER'S	PJB	ARCH.
C	03.07.03	DISABLED ACCESS RAMPS ADDED TO SHOPS & LOBBY'S	PJB	ARCH.
B	20.06.03	COURTYARD FENCE AMMENDED	PJB	ARCH.
A	20.05.03	FHR RELOCATED TO PICKUP ALL THREE UNITS	PJB	PS.
0	06.02.03	ISSUED FOR FORMWORK TENDER	JRW	ARCH

R	29-10-04	LAMP POSTS ADDED	TWJ	SALES
Q	29-10-04	UNIT NUMBERS REVISED	TWJ	SALES
P	31-08-04	FENCE TO EAST SIDE NEIGHBOURS INTRODUCED	DMS	P.S.
N	13-08-04	PLANTER NEAR BBQ AREA AMENDED TO THE SHAPE OF DEEP PLANTING ZONE	DMS	STRUCT.CONS
H	27.08.03	STAIR AMMENDED, STAIRS & RAMP ADDED NEAR CARPARK RAMP	PJB	ARCH.
G	22.08.03	STAIR WIDENED TO BE 1000 CLEAR	PJB	ARCH.
F	15.08.03	COURTYARD SCREENS AMMENDED TO MATCH DETAILS	PJB	ARCH.

DRAWING STATUS

ON BEHALF OF MERITON APARTMENTS PTY. LTD.

SIGNED

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PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT AT CNR CHARLES & GEORGE STREETS PARRAMATTA

SCALE: 1=100

DRG. No. CC10

ISSUE: R

DRAWING: LEVEL 3 GROUND PART B

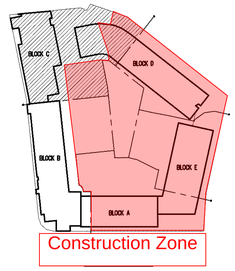
DATE: 23.01.03

CAD FILE: LEVEL 3-GROUND.dwg | PROJECT No. 662 | PLOT DATE: DATE: 27/08/03 TIME: 15:21:10 | DRG.BY PJB | DO NOT SCALE USE FIGURED DIMENSIONS AT ALL TIMES IF in DOUBT INQUIRE with ARCHITECT | SERVICES INDICATED ON DRAWING ARE INDICATIVE ONLY FOR ACCURATE SIZES AND LOCATION REFER TO RELEVANT DETAIL DRAWINGS DISCREPANCIES TO BE CHECKED WITH THE ARCHITECT

- Construction Zone

- A Class Hoarding Line

- Ramp



Construction Zone

- Car Parking allocated to retail

- Construction Parking

- Vehicle Access

- Pedestrian Access

George Street

Plan 2 - Charles & George - Existing Building Access

U	30.03.05	CARPARK SPACES RE-ALLOCATED. LOT NUMBERS ADDED	TWJ	SALES
T	17-11-04	CLEAN & DIRTY LINEN ROOMS SWAPPED AROUND, INTERNAL ROLLER SUTTER REMOVED	JN	SERV.AP.
S	12.11.04	LINEN STORAGE (CLEAN & DIRTY) ADDED NEXT TO RAMP.	DMS	SERV.AP.
R	28.10.04	CARPARK PLACES RE-ALLOCATED	TWJ	SALES
Q	23.09.04	SERVICED APPARTMENTS LINEN STORAGE ADDED - TWO CARPARK PLACES REMOVED	DMS	SERVIC.AP.
P	24.08.04	CARPARK PLACES RE-ALLOCATED	DMS	SALES
N	10.05.04	FLUE FOR POOL SHOWN OVER	JK	ARCH.
M	11.12.03	STORE ROOMS ADDED, BOLLARDS ADDED, DISABLED CARPARKS REVISED (BCA)	DMS	ARCH.
L	24.11.03	UNIT NUMBERS,STORE ROOMS ADDED & DOORS AMENDED	JK	ARCH.
K	27.08.03	STAIR AMMENDED, SAUNA AMMENDED	PJB	ARCH.
J	22.08.03	STAIR WIDENDED TO BE 1000 CLEAR	PJB	ARCH.
H	01.08.03	PENETRATION MOVED	PJB	MECH.
G	28.07.03	CPE PENO AT E10,EG AMMENDED & RETAIL CONDENSOR UNITS ADDED, DOUBLE DOOR TO CPE FAN ROOM ADDED	PJB	MECH.
F	25.07.03	FW WASTES ADDED AT 6000 CENTRES	PJB	ARCH.
E	20.06.03	1000LTR GREASE TRAP ADDED TO GREASE ARRESTOR & HYDR. PUMP ROOM	PJB	ARCH.
D	12.06.03	SPACE 77 CHANGED TO DISABLED VISITORS	PJB	ARCH.
C	28.05.03	GLASS AROUND STAIR CHANGED TO HANDRAIL	PJB	ARCH.
B	31.03.03	EXTENT OF SKYLIGHT ABOVE POOL INCREASED PENOS FROM ABOVE ADDED	PJB	ARCH.
A	25.03.03	DIMENSIONS ADDED AND LIFT SIZES INCREASED	PJB	ARCH.
0	06.02.03	ISSUED FOR FORMWORK TENDER	JRW	ARCH
DRAWING STATUS	ISSUE	DATE	REVISION	BY	CHECKED

NOTE: FOR ALL DISCREPENCIES AND OMISSIONS PLEASE CONTACT ARCHITECT AS SOON AS THEY ARE NOTED.

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PROJECT : PROPOSED RESIDENTIAL & COMMERCIAL DEVELOPMENT AT CORNER CHARLES & GEORGE STREET PARRAMATTA

DRAWING : LEVEL 2 (PART B) FLOOR PLAN

SCALE : 1=100 | DRG. No. CC07 | ISSUE : U | DATE: 17-09-02

ON BEHALF OF MERITON APARTMENTS PTY. LTD. SIGNED

CAD FILE : LEVEL 2.dwg | PROJECT No. 662 | PLOT DATE : DATE: 27/08/03 TIME : 15:55:56 | DRG.BY PJB | DO NOT SCALE USE FIGURED DIMENSIONS AT ALL TIMES IF IN DOUBT INQUIRE WITH ARCHITECT | SERVICES INDICATED ON DRAWING ARE INDICATIVE ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL RELEVANT DETAIL ON SITE AND TO REPORT ANY DISCREPANCIES TO BE CHECKED WITH THE ARCHITECT

- Construction Zone

- A Class Hoarding Line

Construction Zone

Car Parking allocated to retail

Construction parking/ storage

Pedestrian Access

Vehicle Access

LIFT AND STAIR ACCESS TO GROUND FLOOR

138 CARSPACES
6 DISABLED
2 CAR WASH BAYS

Plan 3. - Charles & George - Existing Building Access

NOTE: FOR ALL DISCREPENCIES AND OMISSIONS PLEASE CONTACT ARCHITECT AS SOON AS THEY ARE NOTED.

Q	30.03.05	CARPARK SPACES RE-ALLOCATED. LOT NUMBERS ADDED	TWJ	SALES
P	12.11.04	CARPARK PLACES RE-ALLOCATED - LINEN STORAGE ADDED	DMS	SERV.AP.
N	28.10.04	CARPARK PLACES RE-ALLOCATED	TWJ	SALES
M	24.08.04	CARPARK PLACES RE-ALLOCATED	DMS	SALES
L	01.12.03	STORE ROOMS ADDED, BOLLARDS ADDED, DISABL.CARPARKS REVISED (BCA)	DMS	ARCH.
K	24.11.03	UNIT NUMBERS,STORE ROOMS ADDED & DOORS AMENDED	JK	ARCH.
J	01.08.03	PENETRATION MOVED	PJB	MECH.
H	28.07.03	PENO AT E10, E9 AMMENDED & HYD. SPRINK ROOM ADDED NEXT TO TANK ALSO	PJB	MECH.
		RETAIL CONDENSOR UNITS ADDED, DOUBLE DOOR TO CPE FAN ROOM ADDED		
G	21.07.03	VENTILATION PENO ADDED FOR GARBAGE ROOM, LIFT LOBBY AMMENDED	PJB	ARCH.
F	20.06.03	GREASE ARRESTOR ROOM AT B11 CHANGED TO MANAGER'S STORE AND ADDED	PJB	ARCH.
		AT LIFT 4 WITH 1000LTR GREASE TRAP		
E	12.06.03	SECOND CAR WASH BAY ADDED, DISABLED VISITOR	PJB	ARCH.
		SPACE ADDED & MDF ROOM ADDED		

D	22.05.03	PENOS FOR DATA, SPRINKLER & COMMS SHOWN	PJB ARCH.
C	02.05.03	SWITCH AND COMM. ROOMS COMBINED	PJB ELEC. CONS.
B	17.04.03	PENETRATIONS AND ACCESS LADDER ADDED FOR SPRINKLER TANK	JK GUARDIAN
A	25.03.03	DIMENSIONS ADDED AND LIFT SIZES INCREASED	PJB ARCH.
0	06.02.03	ISSUED FOR FORMWORK TENDER	JRW ARCH

DRAWING STATUS

ISSUE | DATE | REVISION | BY | CHECKED

ON BEHALF OF MERITON APARTMENTS PTY. LTD.

SIGNED

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PROJECT : PROPOSED RESIDENTIAL & COMMERCIAL DEVELOPMENT AT CORNER OF CHARLES & GEORGE STREET PARRAMATTA

DRAWING : LEVEL 2 (PART A) FLOOR PLAN

SCALE : 1=100 | DRG. No. CC06 | ISSUE : Q | DATE: 17-09-02

CAD FILE : LEVEL 2.dwg | PROJECT No. 662 | PLOT DATE : DATE : 01/08/03 TIME : 16:35:57 | DRG BY PJB

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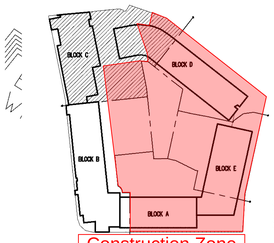
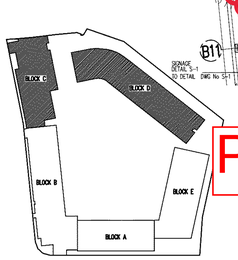
SERVICES INDICATED ON DRAWING ARE INDICATIVE ONLY FOR ACCURATE SIZES AND LOCATIONS OF SERVICES REFER DETAIL DRAWINGS. SERVICES TO BE CHECKED WITH THE ARCHITECT

- Construction Zone
- A Class Hoarding Line
- B-Class Hoarding
- Pedestrian access



Construction Zone

Refer to Plan 5. showing pedestrian egress/ingress



Plan 4. - Charles & George - Existing Building Access

V	29.10.04	UNIT NUMBERS REVISED	TWJ	SALES	K	28.07.03	STAIR ADDED TO RAISED AREA, CONSTURCTION JOINT NOTE ADDED TO TILES	PJB	ARCH.
U	31.08.04	DIMENSIONS ADDED TO FOR PLANTER SETOUT	DWS	P.S.			PLANTER ADDED TO BLOCK D		
							NOTE ADDED TO PLANTER'S, EXTRA LIGHT POST ADDED	PJB	ARCH.
							NOTE SAILS OVER ADDED & TILES AMMENDED TO SUIT	PJB	ARCH.
							AMENDMENT TO FIRE STAIR C1		
							HOBS ADDED AROUND CONSTRUCTION JOINT, BALC. AMMENDED	PJB	ARCH.
							DISABLED ACCESS RAMPS ADDED TO SHOPS & LOBBY'S	PJB	ARCH.
P	18.05.04	SET OUT POINT FOR PUPLIC STAIR WAY	JK	ARCH.	E	27.05.03	STAIRS ADDED	PJB	ARCH.
N	11.12.03	WALL NEXT TO STAIRS TOWARDS FERRY WHARF REVISED	DWS	ARCH.	D	25.06.03	STAIR AMMENDED AND FENCE AMMENDED	PJB	ARCH.
M	18.08.03	COURTYARD SCREENS AMMENDED TO MATCH DETAILS, PALISADE FENCE DIVISIONS	PJB	ARCH.	C	26.05.03	STAIR AMMENDED AND FENCE AMMENDED	PJB	ARCH.
		ADDED BETWEEN UNITS ON RIVER SIDE BLD-D			B	20.05.03	FHR RELOCATED TO PICKUP ALL THREE UNITS	PJB	ARCH.
L	08.08.03	STAIR TO FERRY TERMINAL AMMENDED	PJB	ARCH.	A	01.04.03	COURTYARDS AMMENDED TO SUIT NEW LAYOUTS OF BLOCK D	PJB	ARCH.
W	01.11.04	LAMP POSTS(LP) ADDED	TWJ	P.SPIRA					

NOTE: FOR ALL DISCREPENCIES AND OMISSIONS PLEASE CONTACT ARCHITECT AS SOON AS THEY ARE NOTED.

0	06.02.03	ISSUED FOR FORMWORK TENDER	JRW ARCH
ISSUE	DATE	REVISION	BY CHECKED

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PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT AT CNR CHARLES & GEORGE STREETS PARRAMATTA

SCALE: 1=100 | DRG. No. CC09 | ISSUE: W

DRAWING: LEVEL 3 GROUND PART A

DATE: 23.01.03

CAD FILE: LEVEL 3-GROUND.dwg | PROJECT No. 662 | PLOT DATE: 18/08/03 TIME: 10:06:25 | DRG.BY PJB

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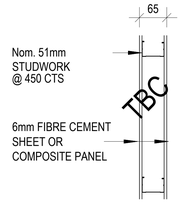

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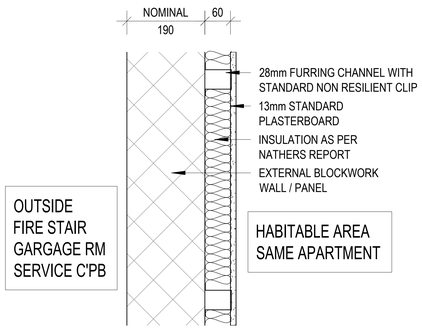
SCALE 1:5

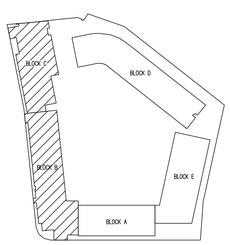


TYPE PC3 CONCRETE/MASONRY WALL
SCALE 1:5

Hoarding

Pedestrian Access

Security Guard



PLAN 5. GROUND FLOOR - Existing Building Access

NOTE: FOR ALL DISCREPENCIES AND OMISSIONS PLEASE CONTACT ARCHITECT AS SOON AS THEY ARE NOTED.

	DATE	REVISION	BY	CHECKED
B	21.11.2018	UPDATED STAIR LAYOUT AFTER STRUCTURAL FEEDBACK		MERITON
A	15.11.2018	ISSUE FOR INFORMATION		MERITON

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PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT AT CNR CHARLES & GEORGE STREETS PARRAMATTA
SCALE: 1=100
DRG. No. LB_SK_03
ISSUE: B

DRAWING: LEVEL 3 GROUND PART A
DATE: 23.01.03

ON BEHALF OF MERITON APARTMENTS PTY. LTD.
SIGNED

CAD FILE:	PROJECT No.	PLOT DATE:	DRG.BY	DO NOT SCALE
LEVEL 3-GROUND.dwg	662	DATE: 18/08/03 TIME : 10:09:25	PJB	USE FIGURED DIMENSIONS AT ALL TIMES IF IN DOUBT INQUIRE WITH ARCHITECT

SERVICES INDICATED ON DRAWING ARE INDICATIVE ONLY FOR ACCURATE SIZES AND LOCATION REFER TO RELEVANT DETAIL DRAWINGS DISCREPANCIES TO BE CHECKED WITH THE ARCHITECT

Appendix 2 – Acoustic & Operational Management Plan

ACOUSTIC LOGIC

DIRECTORS
MATTHEW PALAVIDIS
VICTOR FATTORETTO
MATTHEW SHIELDS

20180915.3/0808A/R1/TA

08/08/2019

Karimbla Constructions Services (NSW) Pty Limited
Level 11, Meriton Tower
528 Kent Street
SYDNEY NSW 2000

ATTN: NORELLE JONES

180 George Street, Parramatta - Port Bar - Noise Emissions

This letter has been prepared to address noise emissions from the Port Bar restaurant affecting the proposed residential development at 180 George Street, Parramatta.

Conditions of consent (DA/1535/2004/A) for the Port Bar outdoor area state the following:

> 24. *The LA10 noise level emitted from the licensed premises shall not exceed the background noise level in any Octave Band Centre Frequency (31.5Hz – 8kHz inclusive) by more than 5dB between 7.00am and midnight at the* ***boundary of any affected residence****.*
>
> ***Reason****: To protect the amenity of the surrounding area.*
>
> *The LA10 noise level emitted from the licensed premises shall not exceed the background noise level in any Octave Band Centre Frequency (31.5Hz – 8kHz inclusive) by more than 5dB between Midnight and 7.00am at the boundary of any affected residence.* ***Reason****: To protect the amenity of the surrounding area.*
>
> 25. *Notwithstanding compliance with the above, the noise from the licensed premises shall not be audible within any habitable room in any residential premises between the hours of Midnight and 7.00am.*
>
> *For the purposes of this condition, the LA10 can be taken as the average maximum deflection of the noise emission from the licensed premises.*
>
> ***Reason:*** *To protect the amenity of the surrounding area.*

The existing residential development at 180 George Street is the nearest residential property boundary. See figure 1 below with the location of the proposed residential podium apartments in relation to the exiting Port Bar:

Port Bar

Location of podium units.

Figure 1 - Port Bar

We make the following comments regarding the existing Port Bar:

- Provided the Port Bar is operating in accordance with the noise emission criteria of their own consent (detailed above), noise from the Port Bar operation would be deemed acceptable for any future residential development on the existing property boundary at 180 George Street, Parramatta.

- The Port Bar The Point Bar dining establishment has been operating since the occupation of the existing Meriton Serviced Apartments and ground floor shops on the site. The Meriton Group has advised that overtime there have been no noise complaints from guests about noise from the Port Bar.

- The orientation of the outdoor dining area of the Port Bar is such that the rear of the building provides partial screening between the outdoor area and proposed podium apartments. The outdoor dining area is largely covered by a canvas canopy, further reducing patron noise levels to the proposed apartments.

- The hours of operation of the Port Bar are similar to restaurants on Church Street, where Council's City Strategy is to incorporate new residential development in an existing dining precinct.

- In order to increase the acoustic amenity for occupants within the proposed podium apartments The Meriton Group propose to use an upgraded large air gap double glazed system, which will provide a 40-45dB(A) reduction external patron noise when measured within the proposed podium apartments.

Given the information above, it can be concluded that:

a) Noise emissions from the existing Port Bar would be acceptable at the future residential podium apartments provided the Port Bar is operating in accordance with the operational noise management plan and consent;
b) It is typical to have ground floor restaurants and bars with outdoor areas in urban areas with residential development.; and
c) In addition to the above, The Meriton Group are providing an upgraded façade system to further increase the amenity of the podium level future residential properties facing the existing outdoor area of the Port Bar.

We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,

Acoustic Logic Consultancy Pty Ltd
Thomas Aubusson MAAS

ACOUSTIC LOGIC

DIRECTORS
MATTHEW PALAVIDIS
VICTOR FATTORETTO
MATTHEW SHIELDS

20180915.3/0908A/R1/TA

09/08/2019

Karimbla Constructions Services (NSW) Pty Limited
Level 11, Meriton Tower
528 Kent Street
SYDNEY NSW 2000

ATTN: WALTER GORDON

180 George Street, Parramatta - Retail Tenancies Operational Noise Management Plan

This letter has been prepared to address the Planning Panel decision regarding the proposed mixed use development at 180 George Street Parramatta.

The planning panel has requested that an operational noise management plan be proposed that will guide noise management of future non-residential uses at ground level.

The architectural plans and Development Application do not specify individual non-residential uses at ground level as Meriton is yet to finalise leases, which occur during the fitout stages of the main building when potential tenants can properly view the shell of the complete floor space. The original development on this site was approved by Council that comprised ground floor shops with residential units in four separate buildings and included basement car parking. Overtime, Meriton applied to Council to convert the units into Serviced Apartments and subsequently approved. Over the last 10 years Meriton operated the Serviced Apartments with retail and business uses on the ground floor along Charles and George Streets with no amenity conflicts.

The proposed floor plan retains most of the existing shops with new ground floor tenancies facing Parramatta River. See attached floor plan below.

Figure 1 - Ground Floor

The addition of retail and business tenancies along the northern boundary at ground level are more than likely to contain similar uses that currently exist and may include cafes, food outlets, restaurants or other general business uses. As with the existing arrangement of retail premises and units above facing Charles Street, the same arrangement will occur along the northern boundary.

Future first uses that involve food will require a Development Application to be lodged with the City of Parramatta Council which is standard procedure. Council will impose conditions of consent that relate to management of noise. Council may also refer the proposed uses to the Local Police for comment on noise and safety and seek appropriate conditions. There are also requirements under the Building Code of Australia that requires a sound reduction index of $R_w+C_{tr}50$ between the ground floor and the residential properties above.

With respect to the formulation of noise emission criteria for the outdoor seating area, the Department of Planning, Industry and Development provides the following guidance (which is echoed in the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

A footway or a public open space adjacent, connected or part of a café or restaurant (food and drink premises) may be used as an outdoor dining area without planning approval (known as exempt development) if it meets the following standards set out in the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 (the State Policy).

The outdoor footpath and outdoor dining area must comply with the following standards:

- *the café or restaurant the outdoor dining is connected to must have approval to operate as a food or drink premise;*
- *the food and drink premises cannot be a pub or a small bar;*
- *the outdoor area must be carried out in accordance with any an approval under section 125 of the Roads Act 1993and any approval under section 68 of the Local Government Act 1993 (LGA).*

Restaurants should not be given unrestricted use of the outdoor areas. The following design principles (building and management requirements) should be adopted for retail tenancies in order to create acceptable acoustic amenity within the forecourt for both the surrounding public and residential premises above. These design principles and treatments have been developed based on the proposed operating hours of 7am to 11pm, Monday to Sunday. It is noted that the residential spaces above are generally being constructed with a modern façade system with glazing systems of between 6.38mm laminated glass which when closed, provides reductions of 30-35dB(A) from patron noise. Large air gap double glazing will be provided to podium units on the northern boundary which will provide a 40-45dB(A) reduction from external patron noise

NOISE MANAGEMENT

The following operational management procedures are recommended to ensure the acoustic amenity of the public forecourt, the retail tenancies themselves and the residential apartments above:

- Outdoor seating for all areas to be closed at 11pm. Food and beverage premises may continue to operate until 12am internally, provided windows and doors are closed and all patrons are contained within the premises.
- Management should ensure that patrons depart the premises in a prompt and orderly manner at closing times. Management to ensure that patrons act in an orderly manner in the outdoor spaces at all times.
- Background music is to be limited to a level of 65dB(A)L_{eq} within the food and beverage premises and 60dB(A)L_{eq} within the outdoor spaces (adjustment of levels may be appropriate based on final tenant layout).
- Benches within the kitchen are to be isolated from structural walls and columns (no rigid connection).
- Any tiled flooring within the kitchen or back of house and bar area is to be acoustically treated with 5mm thick Acoustic Supplies Vibramat.
- Any loudspeakers installed within the space should be suitably vibration isolated from the building structure to render structure borne noise inaudible within the residences above.
- Prominent notices shall be placed to remind patrons that a minimum amount of noise is to be generated when leaving the premises.
- All garbage should be retained within the premises and removed the following day after 7am.

Any proposed licenced premises proposing late night operation would require a separate development application where detailed review of operating times and patron numbers (and the associated noise generated) would be assessed with reference to Council and (if necessary) NSW Liquor and Gaming acoustic criteria as follows:

> *The LA10 noise level emitted from the licensed premises shall not exceed the background noise level in any Octave Band Centre Frequency (31.5Hz – 8kHz inclusive) by more than 5dB between 7.00am and midnight at the boundary of any affected residence.*
>
> *The LA10 noise level emitted from the licensed premises shall not exceed the background noise level in any Octave Band Centre Frequency (31.5Hz – 8kHz inclusive) by more than 5dB between Midnight and 7.00am at the boundary of any affected residence.*
>
> *Notwithstanding compliance with the above, the noise from the licensed premises shall not be audible within any habitable room in any residential premises between the hours of Midnight and 7.00am.*

The operational noise management procedures recommended in this report are in line to with typical current State and Local government requirements. The management procedures listed in this report will ensure noise emanating from shops will be managed, and people purchasing units in the podium have access to plans of the development.

We trust this information is satisfactory.
Yours faithfully,

ACOUSTIC LOGIC CONSULTANCY PTY LTD
Tom Aubusson MAAS

Appendix 3 – Traffic Management Plan

s|b|m|g

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Traffic Management Plans

Pedestrian and Traffic Management Plan

180 GEORGE STREET, PARRAMATTA

MIXED USE DEVELOPMENT

Prepared for: MERITON GROUP PTY LTD

Prepared By: Matthew Young
RMS Prepare a Work Zone Traffic Management Plan
Certificate #: 0051718998

Friday, 9 August 2019
Document Number: SBMG01481-40

Table of Contents

1 Project Details

1.1 Project Summary

Project: Mixed Use Development
Location: 180, 180A & 180B George Street, Parramatta NSW
Hours of Operation: Monday - Friday 0700 - 1700
Saturdays 0800 - 1700
No Demolition work on Sundays or Public Holidays

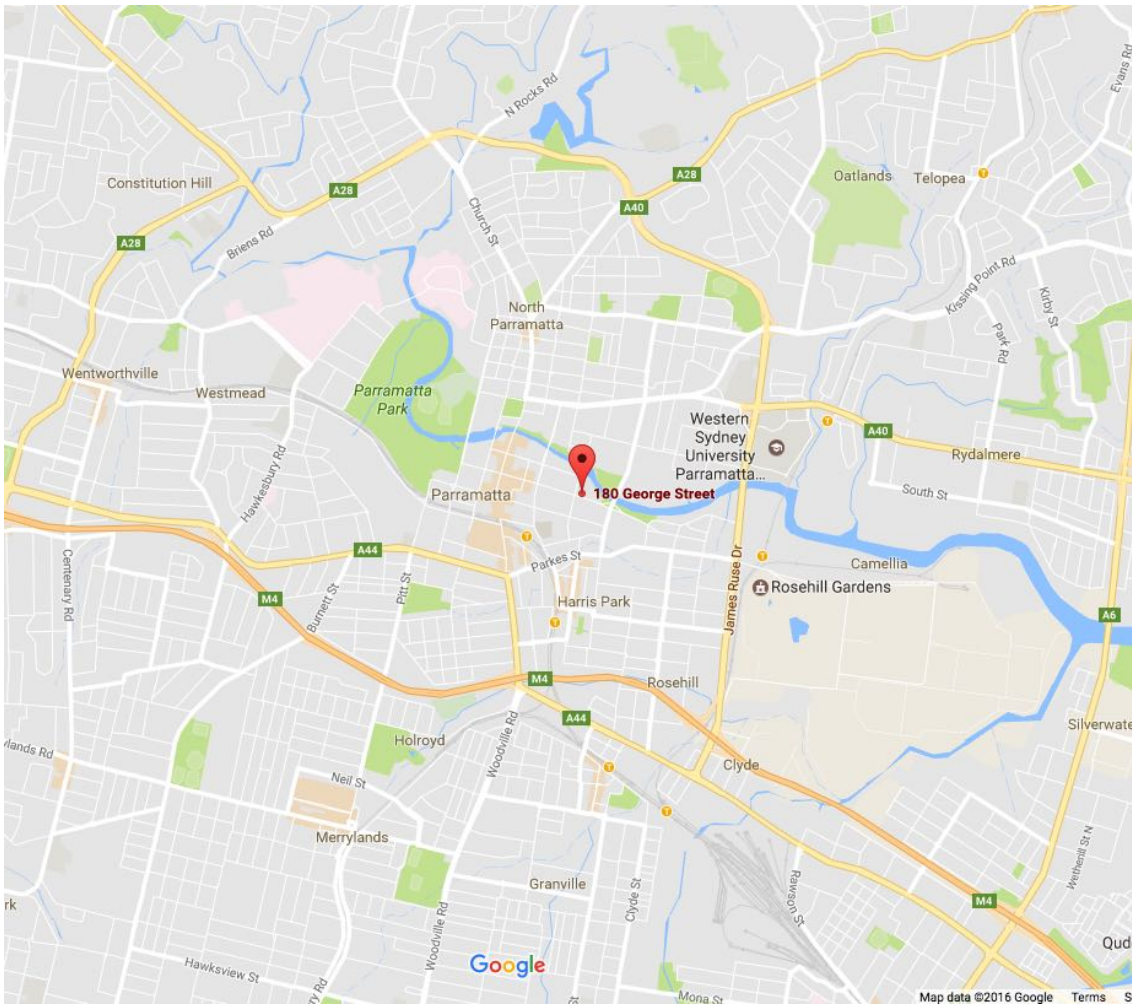
Scope of Works: Construction of a Mixed-Use Development.

This Pedestrian Traffic Management Plan has been prepared to support DA submission for proposed construction works.

1.2 Revisions

Rev	Date	Description
0	09/08/19	Initial Submission for Construction Phase

1.3 Map



1.4 Development Process

This traffic management plan covers the stage(s) listed below, subsequent stages will require amendments and additional plans to be prepared.

Included Stages / Phases:

Stage / Phase	Duration (Approx)
Construction Phase	20 Months

1.5 Construction Phase

Largest Truck Size: Articulated Vehicle (up to 19m in length)

Daily Vehicle Movements: up to 40 on peak days
Approx. 4-5 trucks (8-10 movements) accessing the site between 8-9am & 2:30-4pm
Approx. 10-15 trucks (20-30 movements) access the site outside of peak hours

Site access to use temporary access point off George Street - Gate 1.
Remaining retails stores to access the basement parking area via driveway / ramp off George Street (see site plan in Appendix A for location). Construction vehicle also to use this ramp to access the construction parking and storage area - Gate 2.

The serviced apartments to be closed for the duration of the construction phase.

2 Concurrent Projects

2.1 Parramatta Light Rail

During previous meetings with Transport for NSW (TfNSW) the project schedule for the Parramatta Light Rail (PLR) was discussed and the proposed construction works would commence prior to their enabling works. As these initial PLR works will include implementing changes to the existing road configurations close to the site such as George Street, Meriton and the PLR will keep in contact to discuss the impact of any revisions to this schedule.

Where PLR works impact the proposed routes, including lane alterations and traffic direction revisions, this Pedestrian and Traffic Management Plan will be revised to incorporate the new conditions.

Site Contacts for the project are:

Ashley Wark - Senior Project Manager - Meriton
Phone: 02 9287 2636 email: ashleyw@meriton.com.au

Justin Ciampa - Site Project Manager - Karimbla Construction Services NSW Pty Ltd
Phone: 0417 257 607 email: justinc@karimbla.com.au

3 Proposed Traffic Management

3.1 General

a) Site Vehicles
- Site vehicles enter and exit the site in a forward facing direction.
- All drivers will be made aware of the approved routes prior to commencing work at the site as part of the site induction.
- Vehicles will be scheduled in such a manner as to not require queuing on the road network surrounding the site.

b) Road Occupancy
- Approval from council and/or RMS when required will be sought prior to any works requiring road occupancy.
- All Traffic Control Plans (TCPs) associated with this CTMP will comply with relevant Australian Standards and RMS Traffic Control at Worksites Manual.

c) Parking for Site Workers
- Throughout the project site workers will park within site boundaries whenever possible or use existing on-street parking on surrounding streets abiding by existing restrictions.

d) Public Transport
- Surrounding public transport access maintained during this project.

e) Surrounding Roads
- Site vehicles accessing the site are to use approved approach and departure routes only.
- Truck queuing on surrounding streets is not required during this project. The site manager will monitor area within the site to ensure adequate area is available for trucks. Additional vehicles that canoe accommodated will be directed to stand within the industrial area off Grand Avenue, Camellia. Vehicles will be contacted as required and will approach the site using the approved route only.

3.2 Construction Phase

a) Approach and Departure Routes
- Approach Route - Traveling along James Ruse Drive, turn left onto Hassall Street, turn right onto Harris Street , turn left onto Macquarie Street, turn right onto Charles Street, turn right onto George Street and then turn left onto the site in a forward facing direction.
- Departure Route - Exit the site in a forward-facing direction and turn left onto George Street, turn right onto Harris Street, turn left onto Parkes Street, continue onto Hassall Street and then turn onto James Ruse Drive.
- See Appendix A for details - plan # SBMG01481-41

b) Site Access
- Temporary crossover installed on the George Street frontage to allow site access to the construction area.
- Construction vehicles to use basement ramp to access basement level parking and storage area as shown on plan SBMG01481-43.
- Vehicles will be loaded whilst standing within the Works Zone. Traffic Management implemented as per TCP SBMG01481-50.

c) Vehicle Movements Within Site
- Adequate area within the site boundary to allow for vehicles to turn around and exit in a forward-facing direction.

d) Loading / Unloading Vehicles
- Vehicles to be loaded from within site boundaries.

e) Road Occupancy
i. Standing Plant - All plant and equipment to be located within the site boundaries.
ii. Works Zone - Proposed along the George Street site frontage.
iii. Parking for Site Workers - All site workers will park within site boundaries whenever possible or use existing off-street parking facilities abiding by existing restrictions.

f) Storage for Equipment, Materials and Waste.
- All located within site boundaries only.

g) Removal of Materials from Site

- Vehicles are to be loaded within site boundaries with the existing hardstand driveway used at exit point to inspect vehicles prior to exit. Vehicles are cleaned and loads covered as required to ensure surroundings roadways are not contaminated with site material or spoil.

Note: Where water is used for cleaning vehicles, appropriate sediment control measures will be taken to ensure untreated water is not allowed to directly enter the storm water system.

h) Pedestrian Management

- Pedestrian access maintained using the existing concrete footpaths. A traffic controller to be located at the site access gate to manage pedestrian activity. Pedestrians to be for short periods when vehicles are crossing the footpath area.
- When vehicles are being loaded whilst standing the on the footpath a temporary footpath closure is implemented with onsite traffic controllers to assist pedestrian across the road way as required (see TCP SBMG01481-50).
- B Class Hoarding at North rear retail area to maintain access. See site overview in Appendix A for location.

4 Project Impact

4.1 Residents / Surrounding Property Owners

Existing surrounding driveways and access points along George Street to be maintained throughout the project. Remaining retail stores to have access to the basement parking level throughout the project.

As the serviced apartment building will be closed the basement level parking to be used by remaining retail stores only.

4.2 Pedestrians & Cyclists

Cyclist routes will be as per existing conditions along the roadway.

Pedestrian access maintained along the footpath with onsite traffic controllers to be located at site gates to manage pedestrian access whenever construction vehicles are crossing the footpath.

Onsite Traffic controllers used to maintain pedestrian access around the site whenever the temporary footpath closure is implemented.

4.3 Emergency Services

Access along George Street to be permitted as per existing conditions. Priority access is given to emergency vehicles as per normal procedure.

4.4 Local Traffic

Site works are contained within the site boundaries.

On street parking on George Street only impacted along the site frontage and replaced by a Work Zone (continued Council approval from previous phases). The impact is reduced by the the removal of the service apartments and some retail stores within 180 George street who were frequent users of these spaces.

4.5 Public Transport

No public transport facilities impacted by this project.

4.6 Impact on Community & Businesses

Impact to the community is reduced due to the development works including vehicle staging being contained within the site boundary.

Appendix A - Site Plans

SBMG01481-41 - Approach & Departure Routes - Construction Phase
SBMG01481-42 - Site Overview - Construction Phase
SBMG01481-43 - Car Park Overview - Construction Phase
SBMG01481-44 - TCP - Site Access
SBMG01481-50 - TCP - Construction Phase - Site Access + Works Zone

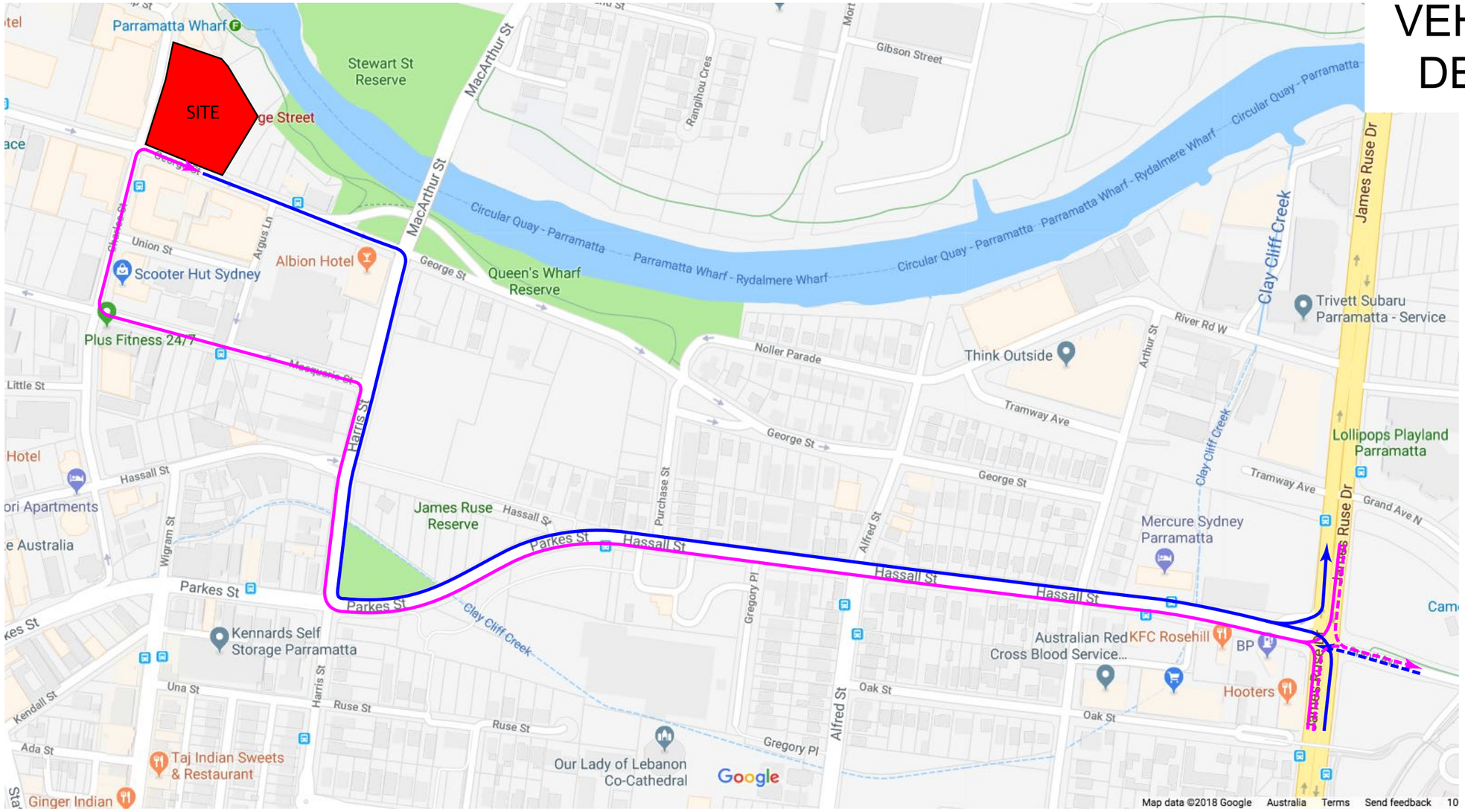
Appendix B - Swept Paths

SBMG01481-45 - Truck and Dog - Entry Gate 1
SBMG01481-46 - Truck and Dog - Exit Gate 1
SBMG01481-47 - Truck and Dog - Entry Gate 2
SBMG01481-48 - Truck and Dog - Exit gate 2
SBMG01481-49 - Truck and Dog - Footpath Access

Appendix A

VEHICLE APPROACH & DEPARTURE ROUTES

CONSTRUCTION PHASE



LEGEND:

- SITE BOUNDARY
- SITE APPROACH ROUTE (SITE ACCESS)
- SITE DEPARTURE ROUTE (SITE ACCESS)
- SITE APPROACH ROUTE (QUEUE AREA)
- SITE DEPARTURE ROUTE (QUEUE AREA)

NOTES:

1. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH RMS "TRAFFIC CONTROL AT WORKSITES" MANUAL AND AS1742.3.
2. ALL SIGNAGE AND DELINEATION MUST BE INSTALLED BY RMS CERTIFIED TRAFFIC CONTROLLER(S) ONLY.
3. VEHICLES TO USE APPROVED ROUTES ONLY.
4. VEHICLES ARE TO ENTER AND EXIT THE SITE IN A FORWARD FACING DIRECTION ONLY.
5. SITE VEHICLE TO GIVE WAY TO EXISTING TRAFFIC WHEN EXITING THE SITE.

RECOMMENDED MAXIMUM SPACING OF CONES AND BOLLARDS		
Purpose an usage	Approach Speed (km/h)	Max Spacing (m)
All purposes on residential or commercial streets	<=50	4
Center-line on approach to Traffic Controller position	All Cases	4
Outer edge of traffic lane - i.e. working on shoulder	51-70 / >70	18 / 24
Separating opposing traffic on 2 lane 2 way road	51-70 / >70	12 / 18
separating opposing traffic on a multilane undivided road	51-70 / >70	12 / 18
adjacent to a closed lane on a multilane road	51-70 / >70	18 / 24
Merge tapers	51-70 / >70	9 / 12
Lateral shift tapers	51-70 / >70	12 / 18
Protecting freshly painted lines	51-70 / >70	24 / 60
FIGURES EXTRACTED FROM RTA TCWS MANUAL v4.0 (TABLES 5.1 & 5.2). REFER TO MANUAL FOR FURTHER INFO		

RECOMMENDED TAPER LENGTHS			
Approach speed (km/h)	Traffic control at start	Lateral shift taper	Merge taper
< 45	15	0	15
46-55	15	15	30
56-65	30	30	60
66-75	N/A	70	115
76-85	N/A	80	130
86-95	N/A	90	145
96-105	N/A	100	160
> 105	N/A	110	180

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Traffic Management Plans

Project/Event:	MIXED USE DEVELOPMENT			
Location:	180A GEORGE STREET, PARRAMATTA NSW			
Client :	MERITON GROUP PTY LTD			
Plan No.	SBMG01481-41	A	Date:	7TH AUGUST 2019
SCALE: NOT TO SCALE				

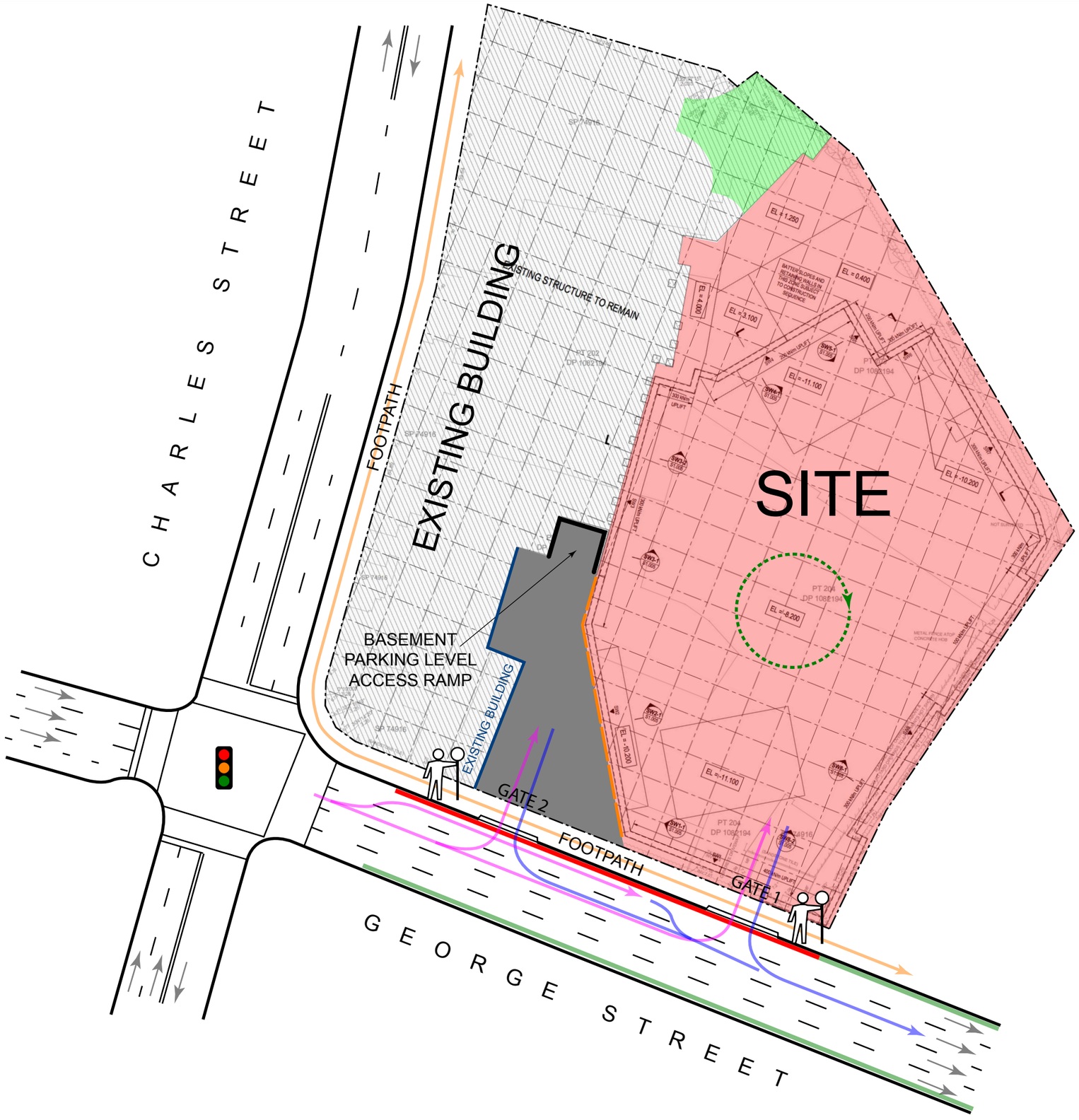
N

PREPARED BY: MATTHEW YOUNG
RMS PREPARE A WORKZONE TRAFFIC MANAGEMENT PLAN CERTIFICATE No. 0051718998

SIGNED:

DATE		DESCRIPTION
	E	
	D	
	C	
	B	
07/08/19	A	INITIAL SUBMISSION

SITE OVERVIEW
CONSTRUCTION PHASE



NOTES:

1. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH RMS "TRAFFIC CONTROL AT WORKSITES" MANUAL AND AS1742.3.
2. ALL SIGNAGE AND DELINEATION MUST BE INSTALLED BY RMS CERTIFIED TRAFFIC CONTROLLER(S) ONLY.
3. VEHICLES TO USE APPROVED ROUTES ONLY.
4. VEHICLES ARE TO ENTER AND EXIT THE SITE IN A FORWARD FACING DIRECTION ONLY.
5. SITE VEHICLE TO GIVE WAY TO EXISTING TRAFFIC WHEN EXITING THE SITE.
6. RETAIL TENNANTS TO ACCESS BAEMENT PARKING VIA RAMP OFF GEORGE STREET ADJACENT TO THE RETAINED BUILDING.
7. PEDESTRIAN ACCESS MAINTAINED ALONG THE FOOTPATH WITH TRAFFIC CONTROLLERS TO MANAGE ACCESS AS REQUIRED.

LEGEND:

- SITE BOUNDARY (SITE FENCING INSTALLED AS REQUIRED)
- PAVEMENT
- CONSTRUCTION AREA
- TEMPORARY CONCRETE BARRIERS
- WORKS ZONE INSTALLED
- MAINTAINED ON-STREET PARKING
- SITE APPROACH ROUTE
- SITE DEPARTURE ROUTE
- VEHICLE TURNING AREA (WITHIN SITE BOUNDARIES)
- B-CLASS HOARDING
- PEDESTRIAN ROUTE
- TRAFFIC CONTROLLER

RECOMMENDED MAXIMUM SPACING OF CONES AND BOLLARDS			RECOMMENDED TAPER LENGTHS			
Purpose an usage	Approach Speed (km/h)	Max Spacing (m)	Approach speed (km/h)	Traffic control at start	Lateral shift taper	Merge taper
All purposes on residential or commercial streets	<=50	4				
Center-line on approach to Traffic Controller position	All Cases	4				
Outer edge of traffic lane - i.e. working on shoulder	51-70 / >70	18 / 24	< 45	15	0	15
Separating opposing traffic on 2 lane 2 way road	51-70 / >70	12 / 18	46-55	15	15	30
separating opposing traffic on a multilane undivided road	51-70 / >70	12 / 18	56-65	30	30	60
adjacent to a closed lane on a multilane road	51-70 / >70	18 / 24	66-75	N/A	70	115
Merge tapers	51-70 / >70	9 / 12	76-85	N/A	80	130
Lateral shift tapers	51-70 / >70	12 / 18	86-95	N/A	90	145
Protecting freshly painted lines	51-70 / >70	24 / 60	96-105	N/A	100	160
FIGURES EXTRACTED FROM RTA TCWS MANUAL v4.0 (TABLES 5.1 & 5.2). REFER TO MANUAL FOR FURTHER INFO			> 105	N/A	110	180

s|b|m|g
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Traffic Management Plans

Project/Event:	MIXED USE DEVELOPMENT
Location:	180A GEORGE STREET, PARRAMATTA NSW
Client :	MERITON GROUP PTY LTD
Plan No.	SBMG01481-42 | A | Date: 7TH AUGUST 2019
SCALE: NOT TO SCALE	

N

PREPARED BY: MATTHEW YOUNG
RMS PREPARE A WORKZONE TRAFFIC MANAGEMENT PLAN CERTIFICATE No. 0051718998

SIGNED:

DATE		DESCRIPTION
	E	
	D	
	C	
	B	
07/08/19	A	INITIAL SUBMISSION

EXISTING CAR PARK OVERVIEW
CONSTRUCTION PHASE

NOTES:

1. BASEMENT LEVEL ACCESS VIA RAMP OFF GEORGE STREET.
2. CAR PARK REQUIREMENTS ARE REDUCED AS THE SERVICED APARTMENTS ARE CLOSED DURING WORKS.
2. THE REMAINING RETAILS STORES WILL HAVE ACCESS TO REMAINING SPACES SHOWN WHICH EXCEEDS THE EXISTING ALLOTMENT FOR RETAIL PARKING.

LEGEND:

- CONSTRUCTION PARKING / STORAGE
- MAINTAINED TENNANT PARKING
- TENNANT LIFT FROM PARKING LEVEL (ACCESS MAINTAINED)
- CONSTRUCTION HOIST
- TENNANT TRAFFIC FLOW
- HOARDING / FENCING
- WORK AREA
- SITE ACCESS

RECOMMENDED MAXIMUM SPACING OF CONES AND BOLLARDS		
Purpose an usage	Approach Speed (km/h)	Max Spacing (m)
All purposes on residential or commercial streets	<=50	4
Center-line on approach to Traffic Controller position	All Cases	4
Outer edge of traffic lane - i.e. working on shoulder	51-70 / >70	18 / 24
Separating opposing traffic on 2 lane 2 way road	51-70 / >70	12 / 18
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adjacent to a closed lane on a multilane road	51-70 / >70	18 / 24
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Lateral shift tapers	51-70 / >70	12 / 18
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FIGURES EXTRACTED FROM RTA TCWS MANUAL v4.0 (TABLES 5.1 & 5.2). REFER TO MANUAL FOR FURTHER INFO		

RECOMMENDED TAPER LENGTHS			
Approach speed (km/h)	Traffic control at start	Lateral shift taper	Merge taper
< 45	15	0	15
46-55	15	15	30
56-65	30	30	60
66-75	N/A	70	115
76-85	N/A	80	130
86-95	N/A	90	145
96-105	N/A	100	160
> 105	N/A	110	180

s|b|m|g
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Traffic Management Plans

Project/Event:	MIXED USE DEVELOPMENT			
Location:	180A GEORGE STREET, PARRAMATTA NSW			
Client :	MERITON GROUP PTY LTD			
Plan No.	SBMG01481-43	A	Date:	7TH AUGUST 2019
SCALE: NOT TO SCALE				

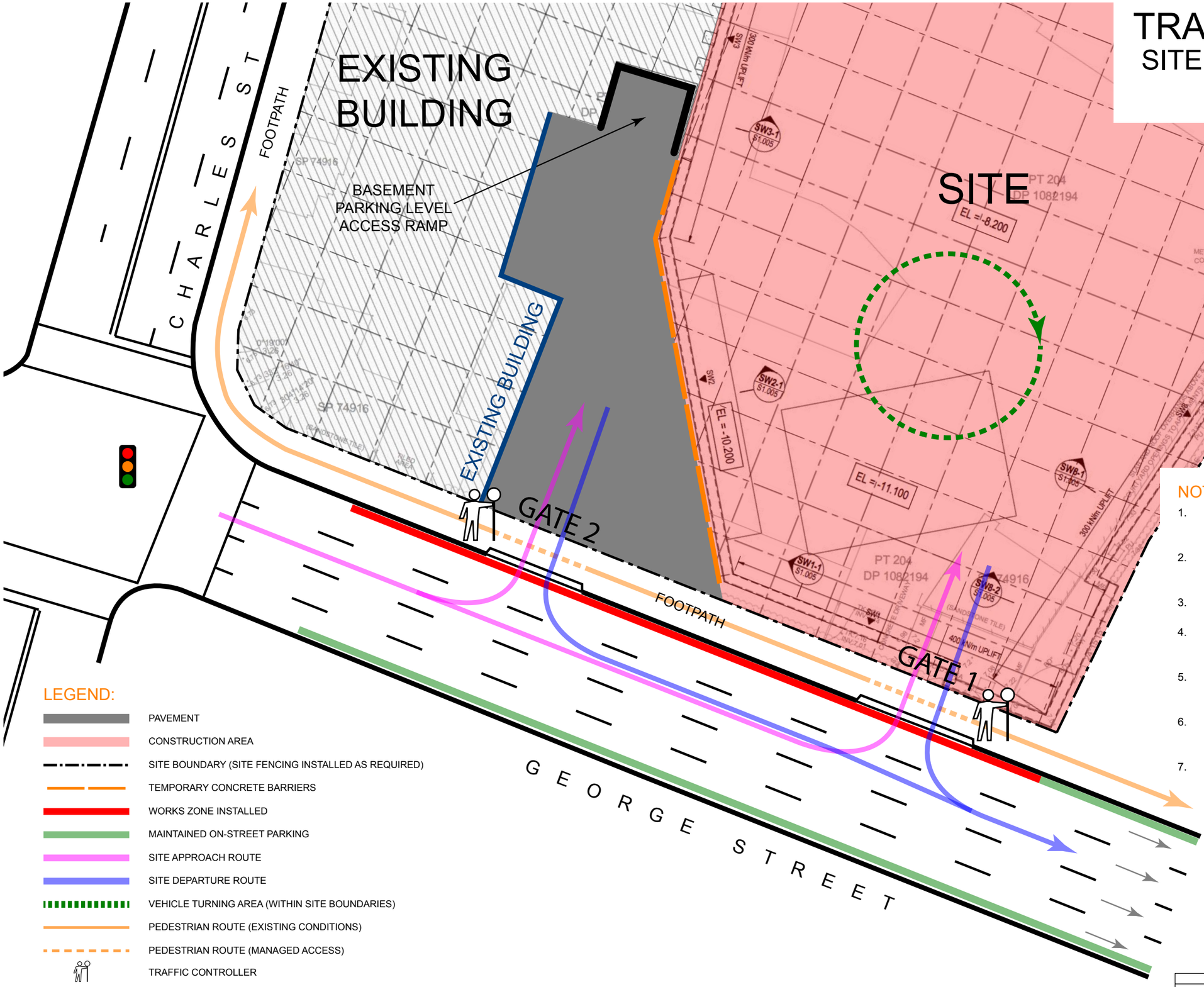
N

PREPARED BY: MATTHEW YOUNG
RMS PREPARE A WORKZONE TRAFFIC MANAGEMENT PLAN CERTIFICATE No. 0051718998

SIGNED:

DATE		DESCRIPTION
	E	
	D	
	C	
	B	
07/08/19	A	INITIAL SUBMISSION

TRAFFIC CONTROL PLAN
SITE ACCESS - GEORGE STREET
CONSTRUCTION PHASE



LEGEND:

- PAVEMENT
- CONSTRUCTION AREA
- SITE BOUNDARY (SITE FENCING INSTALLED AS REQUIRED)
- TEMPORARY CONCRETE BARRIERS
- WORKS ZONE INSTALLED
- MAINTAINED ON-STREET PARKING
- SITE APPROACH ROUTE
- SITE DEPARTURE ROUTE
- VEHICLE TURNING AREA (WITHIN SITE BOUNDARIES)
- PEDESTRIAN ROUTE (EXISTING CONDITIONS)
- PEDESTRIAN ROUTE (MANAGED ACCESS)
- TRAFFIC CONTROLLER

NOTES:

1. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH RMS "TRAFFIC CONTROL AT WORKSITES" MANUAL AND AS1742.3.
2. ALL SIGNAGE AND DELINEATION MUST BE INSTALLED BY RMS CERTIFIED TRAFFIC CONTROLLER(S) ONLY.
3. VEHICLES TO USE APPROVED ROUTES ONLY.
4. VEHICLES ARE TO ENTER AND EXIT THE SITE IN A FORWARD FACING DIRECTION ONLY.
5. SITE VEHICLE TO GIVE WAY TO EXISTING TRAFFIC WHEN EXITING THE SITE.
6. RETAIL TENNANTS TO ACCESS BASEMENT PARKING VIA RAMP OFF GEORGE STREET ADJACENT TO THE RETAINED BUILDING.
7. PEDESTRIAN ACCESS MAINTAINED ALONG THE FOOTPATH. TRAFFIC CONTROLLERS TO HOLD PEDESTRIANS FOR SHORT PERIODS WHEN VEHICLES ARE CROSSING THE FOOTPATH.

RECOMMENDED MAXIMUM SPACING OF CONES AND BOLLARDS		
Purpose an usage	Approach Speed (km/h)	Max Spacing (m)
All purposes on residential or commercial streets	<=50	4
Center-line on approach to Traffic Controller position	All Cases	4
Outer edge of traffic lane - i.e. working on shoulder	51-70 / >70	18 / 24
Separating opposing traffic on 2 lane 2 way road	51-70 / >70	12 / 18
separating opposing traffic on a multilane undivided road	51-70 / >70	12 / 18
adjacent to a closed lane on a multilane road	51-70 / >70	18 / 24
Merge tapers	51-70 / >70	9 / 12
Lateral shift tapers	51-70 / >70	12 / 18
Protecting freshly painted lines	51-70 / >70	24 / 60

FIGURES EXTRACTED FROM RTA TCWS MANUAL v4.0 (TABLES 5.1 & 5.2). REFER TO MANUAL FOR FURTHER INFO

RECOMMENDED TAPER LENGTHS			
Approach speed (km/h)	Traffic control at start	Lateral shift taper	Merge taper
< 45	15	0	15
46-55	15	15	30
56-65	30	30	60
66-75	N/A	70	115
76-85	N/A	80	130
86-95	N/A	90	145
96-105	N/A	100	160
> 105	N/A	110	180

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Sbmg Pty Ltd
ABN: 34 167 185 560
matt@sbmgplanning.com.au
m: 0467 370 380
f: 02 8834 0752
Traffic Management Plans

Project/Event:	MIXED USE DEVELOPMENT			
Location:	180A GEORGE STREET, PARRAMATTA NSW			
Client :	MERITON GROUP PTY LTD			
Plan No.	SBMG01481-44	A	Date:	7TH AUGUST 2019
SCALE: NOT TO SCALE				

N

PREPARED BY: MATTHEW YOUNG
RMS PREPARE A WORKZONE TRAFFIC MANAGEMENT PLAN CERTIFICATE No. 0051718998

SIGNED:

DATE		DESCRIPTION
	E	
	D	
	C	
	B	
07/08/19	A	INITIAL SUBMISSION

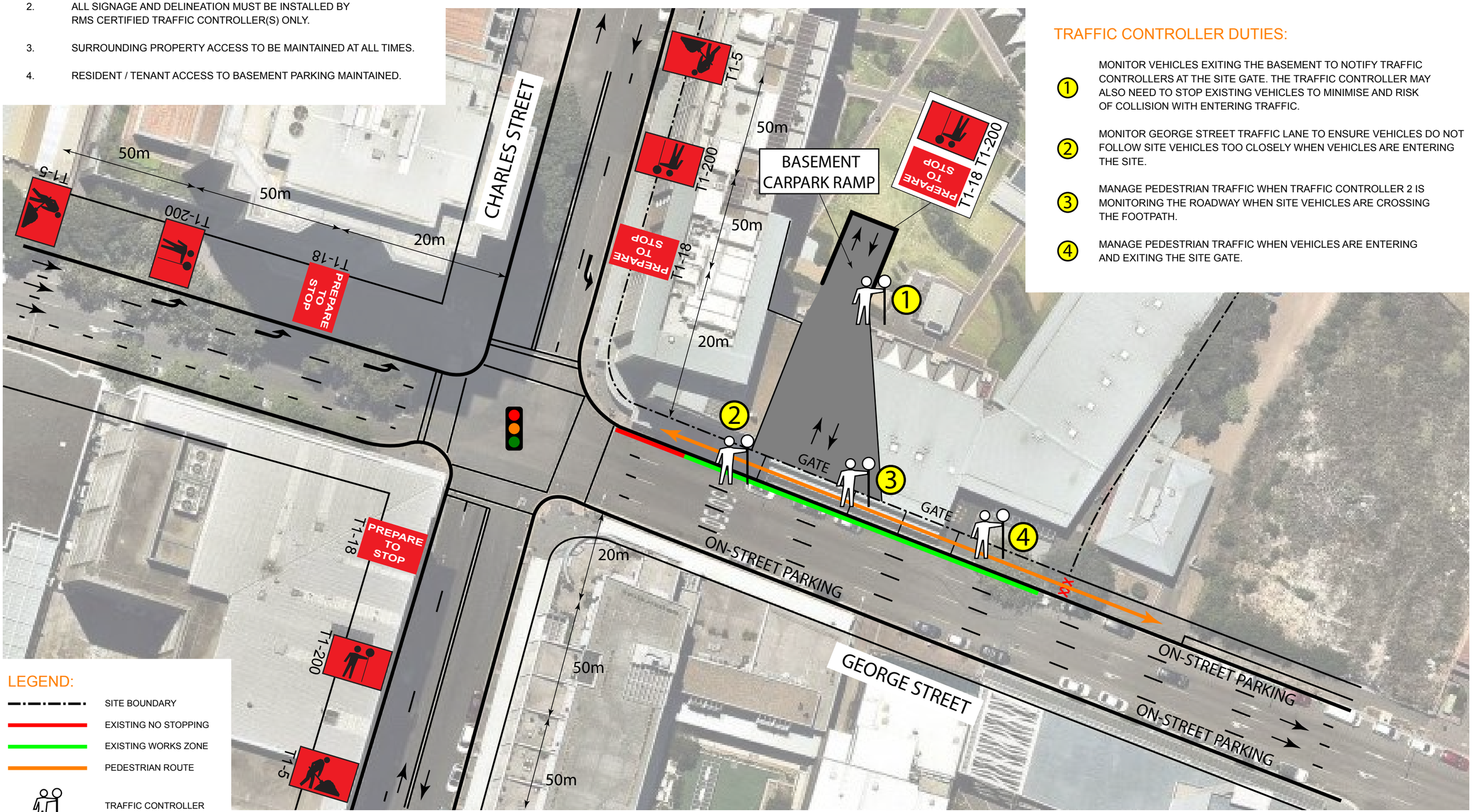
TRAFFIC CONTROL PLAN
SITE ACCESS - GEORGE STREET

NOTES:

1. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH RMS "TRAFFIC CONTROL AT WORKSITES" MANUAL AND AS1742.3.
2. ALL SIGNAGE AND DELINEATION MUST BE INSTALLED BY RMS CERTIFIED TRAFFIC CONTROLLER(S) ONLY.
3. SURROUNDING PROPERTY ACCESS TO BE MAINTAINED AT ALL TIMES.
4. RESIDENT / TENANT ACCESS TO BASEMENT PARKING MAINTAINED.

TRAFFIC CONTROLLER DUTIES:

1. MONITOR VEHICLES EXITING THE BASEMENT TO NOTIFY TRAFFIC CONTROLLERS AT THE SITE GATE. THE TRAFFIC CONTROLLER MAY ALSO NEED TO STOP EXISTING VEHICLES TO MINIMISE AND RISK OF COLLISION WITH ENTERING TRAFFIC.
2. MONITOR GEORGE STREET TRAFFIC LANE TO ENSURE VEHICLES DO NOT FOLLOW SITE VEHICLES TOO CLOSELY WHEN VEHICLES ARE ENTERING THE SITE.
3. MANAGE PEDESTRIAN TRAFFIC WHEN TRAFFIC CONTROLLER 2 IS MONITORING THE ROADWAY WHEN SITE VEHICLES ARE CROSSING THE FOOTPATH.
4. MANAGE PEDESTRIAN TRAFFIC WHEN VEHICLES ARE ENTERING AND EXITING THE SITE GATE.



LEGEND:

- SITE BOUNDARY
- EXISTING NO STOPPING
- EXISTING WORKS ZONE
- PEDESTRIAN ROUTE
- TRAFFIC CONTROLLER

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Traffic Management Plans

Project/Event:	MIXED USE DEVELOPMENT			
Location:	180 GEORGE STREET, PARRAMATTA NSW			
Client :	MERITON GROUP PTY LTD			
Plan No.	SBMG01481-50	A	Date:	7TH AUGUST 2019
SCALE: NOT TO SCALE				

N

PREPARED BY: MATTHEW YOUNG
RMS PREPARE A WORKZONE TRAFFIC MANAGEMENT PLAN CERTIFICATE No. 0051718998

SIGNED:

DATE		DESCRIPTION
	E	
	D	
	C	
	B	
07/08/19	A	INITIAL SUBMISSION

RECOMMENDED MAXIMUM SPACING OF CONES AND BOLLARDS		
Purpose an usage	Approach Speed (km/h)	Max Spacing (m)
All purposes on residential or commercial streets	<=50	4
Center-line on approach to Traffic Controller position	All Cases	4
Outer edge of traffic lane - i.e. working on shoulder	51-70 / >70	18 / 24
Separating opposing traffic on 2 lane 2 way road	51-70 / >70	12 / 18
separating opposing traffic on a multilane undivided road	51-70 / >70	12 / 18
adjacent to a closed lane on a multilane road	51-70 / >70	18 / 24
Merge tapers	51-70 / >70	9 / 12
Lateral shift tapers	51-70 / >70	12 / 18
Protecting freshly painted lines	51-70 / >70	24 / 60
FIGURES EXTRACTED FROM RTA TCWS MANUAL v4.0 (TABLES 5.1 & 5.2). REFER TO MANUAL FOR FURTHER INFO		

RECOMMENDED TAPER LENGTHS			
Approach speed (km/h)	Traffic control at start	Lateral shift taper	Merge taper
< 45	15	0	15
46-55	15	15	30
56-65	30	30	60
66-75	N/A	70	115
76-85	N/A	80	130
86-95	N/A	90	145
96-105	N/A	100	160
> 105	N/A	110	180

Appendix B

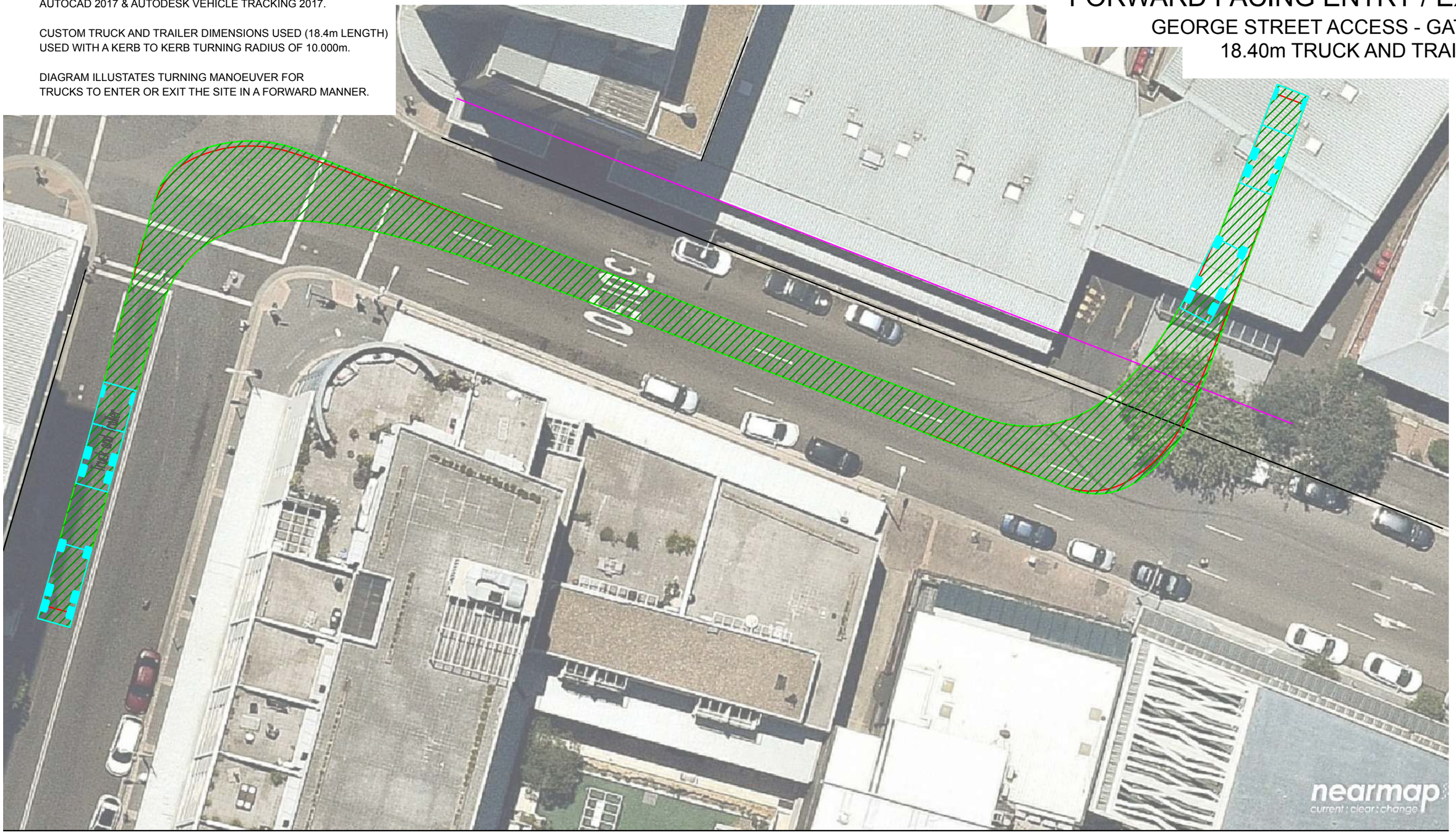
SWEPT PATH
FORWARD FACING ENTRY / EXIT
GEORGE STREET ACCESS - GATE 1
18.40m TRUCK AND TRAILER

NOTES:

1. VEHICLE PATHS CALCULATED USING AUTODESK AUTOCAD 2017 & AUTODESK VEHICLE TRACKING 2017.

2. CUSTOM TRUCK AND TRAILER DIMENSIONS USED (18.4m LENGTH) USED WITH A KERB TO KERB TURNING RADIUS OF 10.000m.

3. DIAGRAM ILLUSTATES TURNING MANOEUVER FOR TRUCKS TO ENTER OR EXIT THE SITE IN A FORWARD MANNER.



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f: 02 8834 0752
Traffic Management Plans

Project/Event:	MIXED USE DEVELOPMENT			
Location:	180A GEORGE STREET, PARRAMATTA NSW			
Client :	MERITON GROUP PTY LTD			
Plan No.	SBMG01481-35	A	Date:	11TH APRIL 2019

N

PREPARED BY: MATTHEW YOUNG
RMS PREPARE A WORKZONE TRAFFIC MANAGEMENT PLAN CERTIFICATE No. 0051718998

SIGNED:

DATE		DESCRIPTION
	E	
	D	
	C	
	B	
11/04/19	A	INITIAL SUBMISSION

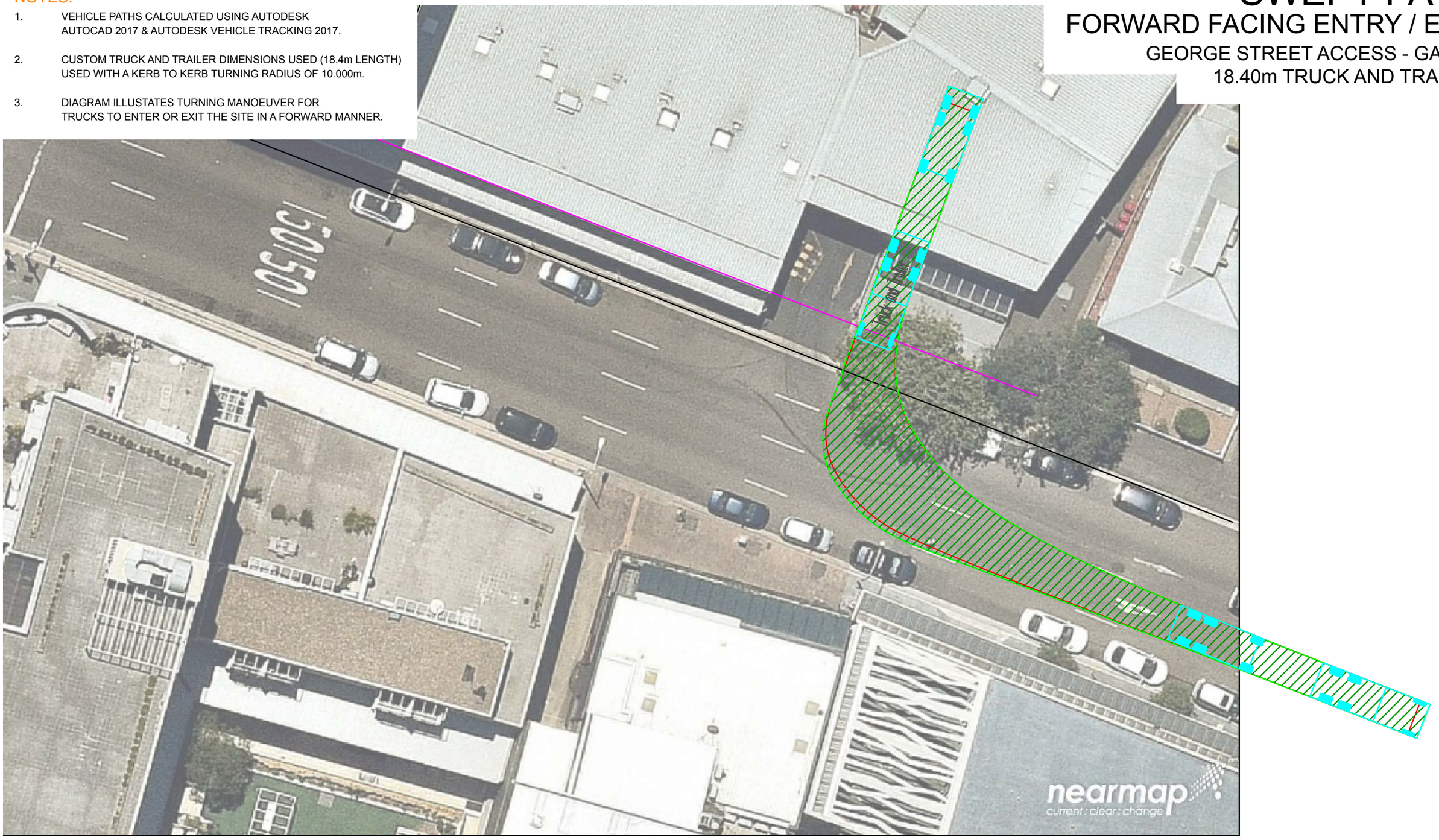
LEGEND:

- WHEEL PATH - FORWARD MOTION
- FRONT OVERHANG - FORWARD MOTION
- WHEEL PATH - REVERSE MOTION
- FRONT OVERHANG - REVERSE MOTION
- SITE BOUNDARY

SWEPT PATH
FORWARD FACING ENTRY / EXIT
GEORGE STREET ACCESS - GATE 1
18.40m TRUCK AND TRAILER

NOTES:

1. VEHICLE PATHS CALCULATED USING AUTODESK AUTOCAD 2017 & AUTODESK VEHICLE TRACKING 2017.
2. CUSTOM TRUCK AND TRAILER DIMENSIONS USED (18.4m LENGTH) USED WITH A KERB TO KERB TURNING RADIUS OF 10.000m.
3. DIAGRAM ILLUSTATES TURNING MANOEUVER FOR TRUCKS TO ENTER OR EXIT THE SITE IN A FORWARD MANNER.



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f: 02 8834 0752
Traffic Management Plans

Project/Event:	MIXED USE DEVELOPMENT			
Location:	180A GEORGE STREET, PARRAMATTA NSW			
Client :	MERITON GROUP PTY LTD			
Plan No.	SBMG01481-46	A	Date:	7TH AUGUST 2019

N

PREPARED BY: MATTHEW YOUNG
RMS PREPARE A WORKZONE TRAFFIC MANAGEMENT PLAN CERTIFICATE No. 0051718998

SIGNED:

DATE		DESCRIPTION
	E	
	D	
	C	
	B	
07/08/19	A	INITIAL SUBMISSION

LEGEND:

- WHEEL PATH - FORWARD MOTION
- FRONT OVERHANG - FORWARD MOTION
- WHEEL PATH - REVERSE MOTION
- FRONT OVERHANG - REVERSE MOTION
- SITE BOUNDARY

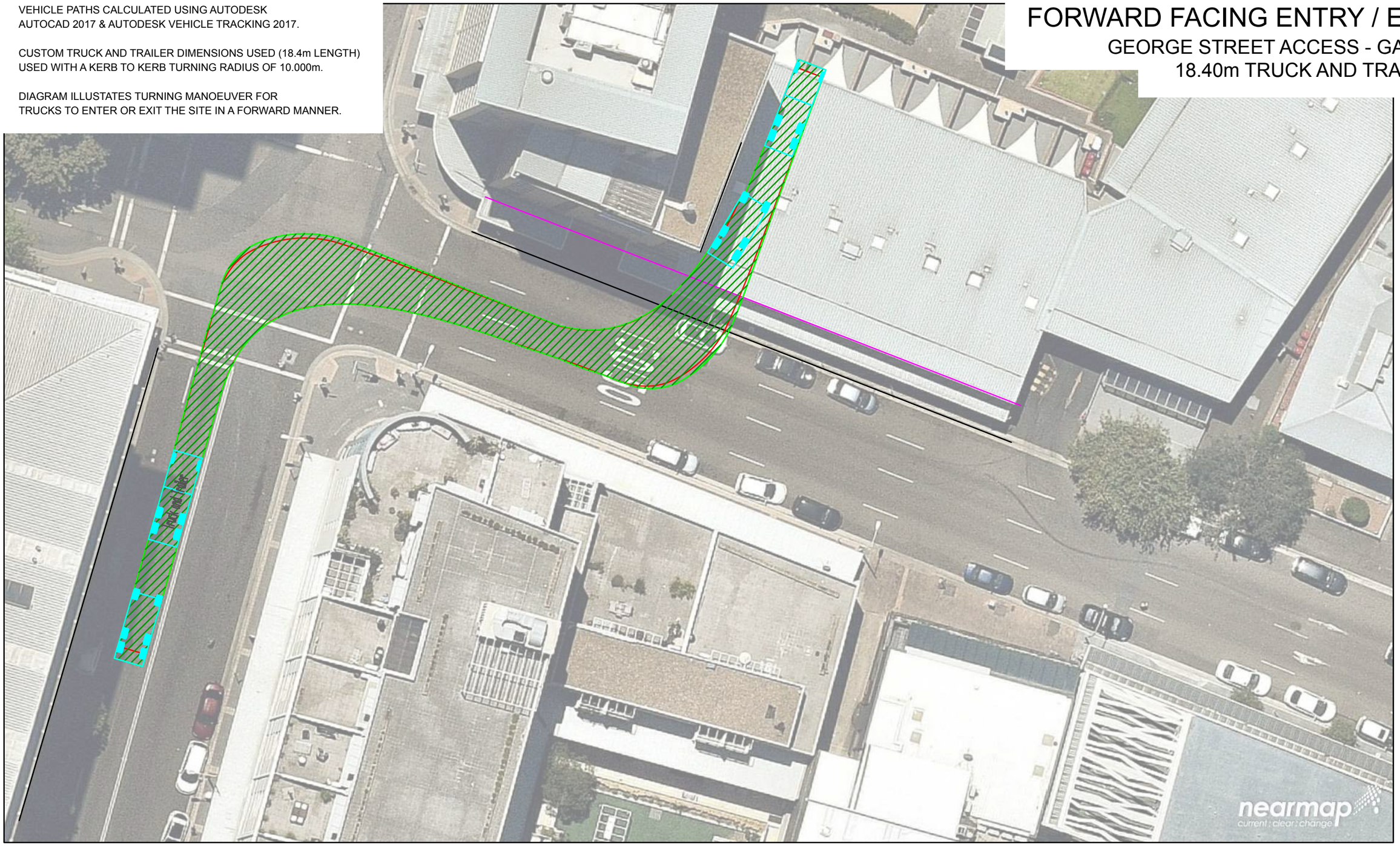
SWEPT PATH
FORWARD FACING ENTRY / EXIT
GEORGE STREET ACCESS - GATE 2
18.40m TRUCK AND TRAILER

NOTES:

1. VEHICLE PATHS CALCULATED USING AUTODESK AUTOCAD 2017 & AUTODESK VEHICLE TRACKING 2017.

2. CUSTOM TRUCK AND TRAILER DIMENSIONS USED (18.4m LENGTH) USED WITH A KERB TO KERB TURNING RADIUS OF 10.000m.

3. DIAGRAM ILLUSTATES TURNING MANOEUVER FOR TRUCKS TO ENTER OR EXIT THE SITE IN A FORWARD MANNER.



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f: 02 8834 0752
Traffic Management Plans

Project/Event:	MIXED USE DEVELOPMENT			
Location:	180A GEORGE STREET, PARRAMATTA NSW			
Client :	MERITON GROUP PTY LTD			
Plan No.	SBMG01481-47	A	Date:	7TH AUGUST 2019

N

PREPARED BY: MATTHEW YOUNG
RMS PREPARE A WORKZONE TRAFFIC MANAGEMENT PLAN CERTIFICATE No. 0051718998

SIGNED:

DATE		DESCRIPTION
	E	
	D	
	C	
	B	
07/08/19	A	INITIAL SUBMISSION

LEGEND:

- WHEEL PATH - FORWARD MOTION
- FRONT OVERHANG - FORWARD MOTION
- WHEEL PATH - REVERSE MOTION
- FRONT OVERHANG - REVERSE MOTION
- SITE BOUNDARY

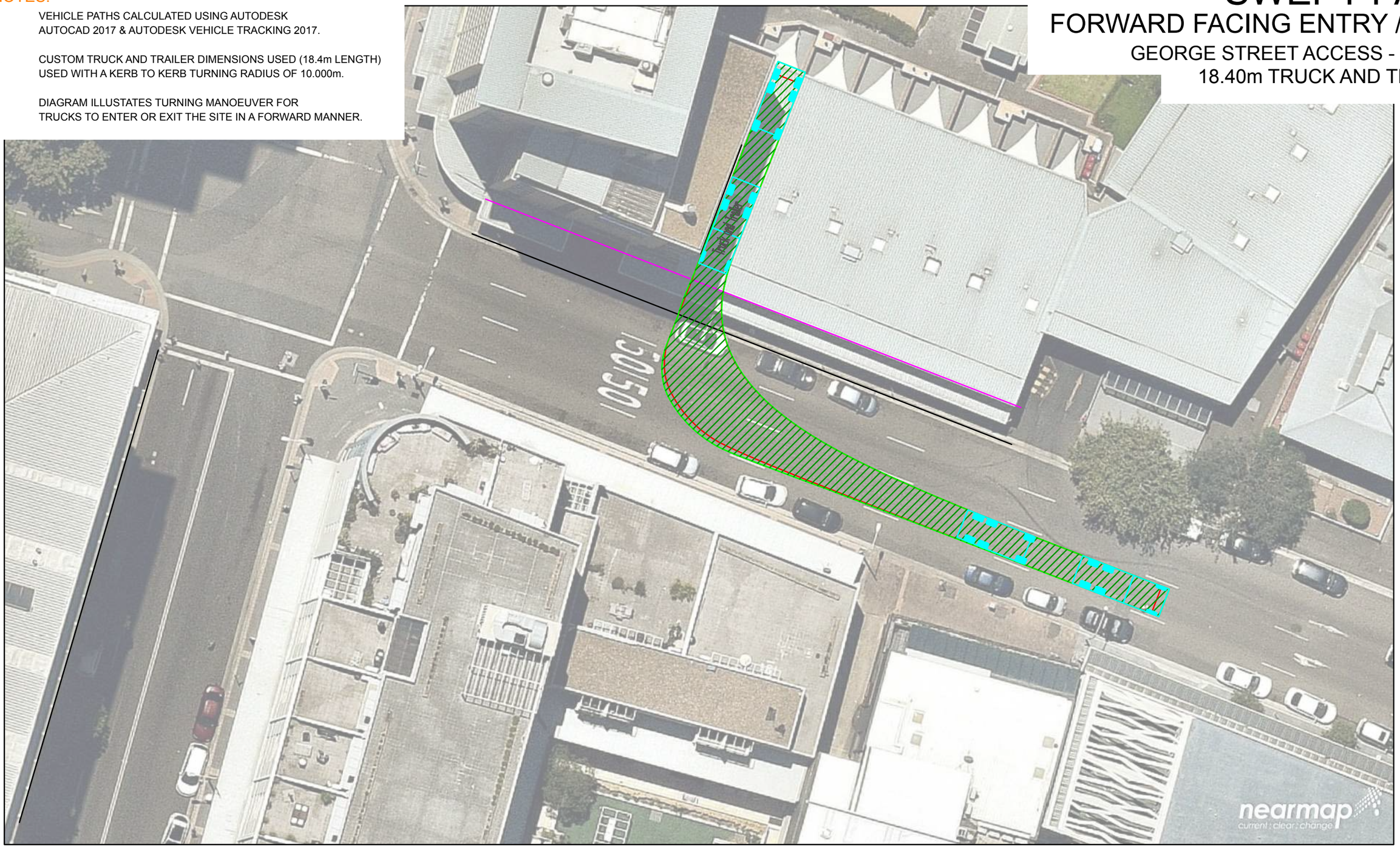
SWEPT PATH
FORWARD FACING ENTRY / EXIT
GEORGE STREET ACCESS - GATE 2
18.40m TRUCK AND TRAILER

NOTES:

1. VEHICLE PATHS CALCULATED USING AUTODESK AUTOCAD 2017 & AUTODESK VEHICLE TRACKING 2017.

2. CUSTOM TRUCK AND TRAILER DIMENSIONS USED (18.4m LENGTH) USED WITH A KERB TO KERB TURNING RADIUS OF 10.000m.

3. DIAGRAM ILLUSTATES TURNING MANOEUVER FOR TRUCKS TO ENTER OR EXIT THE SITE IN A FORWARD MANNER.



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Traffic Management Plans

Project/Event:	MIXED USE DEVELOPMENT			
Location:	180A GEORGE STREET, PARRAMATTA NSW			
Client :	MERITON GROUP PTY LTD			
Plan No.	SBMG01481-48	A	Date:	7TH AUGUST 2019

N

PREPARED BY: MATTHEW YOUNG
RMS PREPARE A WORKZONE TRAFFIC MANAGEMENT PLAN CERTIFICATE No. 0051718998

SIGNED:

DATE		DESCRIPTION
	E	
	D	
	C	
	B	
07/08/19	A	INITIAL SUBMISSION

LEGEND:

- WHEEL PATH - FORWARD MOTION
- FRONT OVERHANG - FORWARD MOTION
- WHEEL PATH - REVERSE MOTION
- FRONT OVERHANG - REVERSE MOTION
- SITE BOUNDARY

SWEPT PATH
FORWARD FACING ENTRY / EXIT
GEORGE STREET ACCESS - FOOTPATH STANDING
18.40m TRUCK AND TRAILER

NOTES:

1. VEHICLE PATHS CALCULATED USING AUTODESK AUTOCAD 2017 & AUTODESK VEHICLE TRACKING 2017.
2. CUSTOM TRUCK AND TRAILER DIMENSIONS USED (18.4m LENGTH) USED WITH A KERB TO KERB TURNING RADIUS OF 10.000m.
3. DIAGRAM ILLUSTATES TURNING MANOEUVER FOR TRUCKS TO ENTER OR EXIT THE STANDING AREA IN A FORWARD MANNER.

0 1 2 3 4 5 10 20

LEGEND:

- WHEEL PATH - FORWARD MOTION
- FRONT OVERHANG - FORWARD MOTION
- WHEEL PATH - REVERSE MOTION
- FRONT OVERHANG - REVERSE MOTION
- 300mm CLEARANCE ENVELOPE
- SITE BOUNDARY

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f: 02 8834 0752
Traffic Management Plans

Project/Event:	MIXED USE DEVELOPMENT			
Location:	180A GEORGE STREET, PARRAMATTA NSW			
Client :	MERITON GROUP PTY LTD			
Plan No.	SBMG01481-49	A	Date:	7TH AUGUST 2019

N

PREPARED BY: MATTHEW YOUNG
RMS PREPARE A WORKZONE TRAFFIC MANAGEMENT PLAN CERTIFICATE No. 0051718998

SIGNED:

DATE		DESCRIPTION
	E	
	D	
	C	
	B	
07/08/19	A	INITIAL SUBMISSION

Appendix 4 – Erosion & Sediment Control

Construction Plan

Construction Zone

RL.0.400

RL.0.400

RL.0.400

RL.0.400

RL.0.400

RL.0.400

RL.−8.000

RL.−11.800

RL.−11.800

Cattle Grid / Wheel Wash

Gate

Construction access

EXISTING TWO STOREY BRICK BUILDING

EXITISING BUIDLING

George Street

Charles Street

6.32 DENOTES ADJACENT BASEMENT PARKING LEVELS

EXTENT OF SECTION 5 REMAINDER OF WALL AS PER SECT 1 U.N.O.

ALIGN ANCHORS TO MISS BASEMENT COLUMNS

MULTI STOREY BRICK AND CONCRETE BUILDING

LEVEL OF BUILDING FOUNDATION TO BE DETERMINED BY CONTRACTOR PRIOR TO SHORING WALL INSTALLATION

6 No 600ø PILES SEE SECTION 5-5 FOR DETAILS

2	24/09/18	UPDATED BULK EX. LEVELS AND SHORING FOOTPRINT	TF	TF
1	08/01/16	ISSUED FOR EXCAVATION DA APPROVAL	TF	TF

KARIMBLA
CONSTRUCTION SERVICES (NSW)
PTY LIMITED

Level 11, 528 Kent Street, Sydney NSW 2000
Tel: (02) 9287 2888 Fax: (02) 9287 2777

Email: info@design.meriton.com.au
Internet: http://www.meriton.com.au

DO NOT SCALE
USE FIGURED DIMENSIONS. AT ALL TIMES IF IN DOUBT INQUIRE WITH ARCHITECT

PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT
CRN. CHARLES & GEORGE STREET,PARRAMATTA

DATE: 24/09/18
No. -

SCALE: 1=200

DRG. No.

DRG.BY : TF

DRAWING:

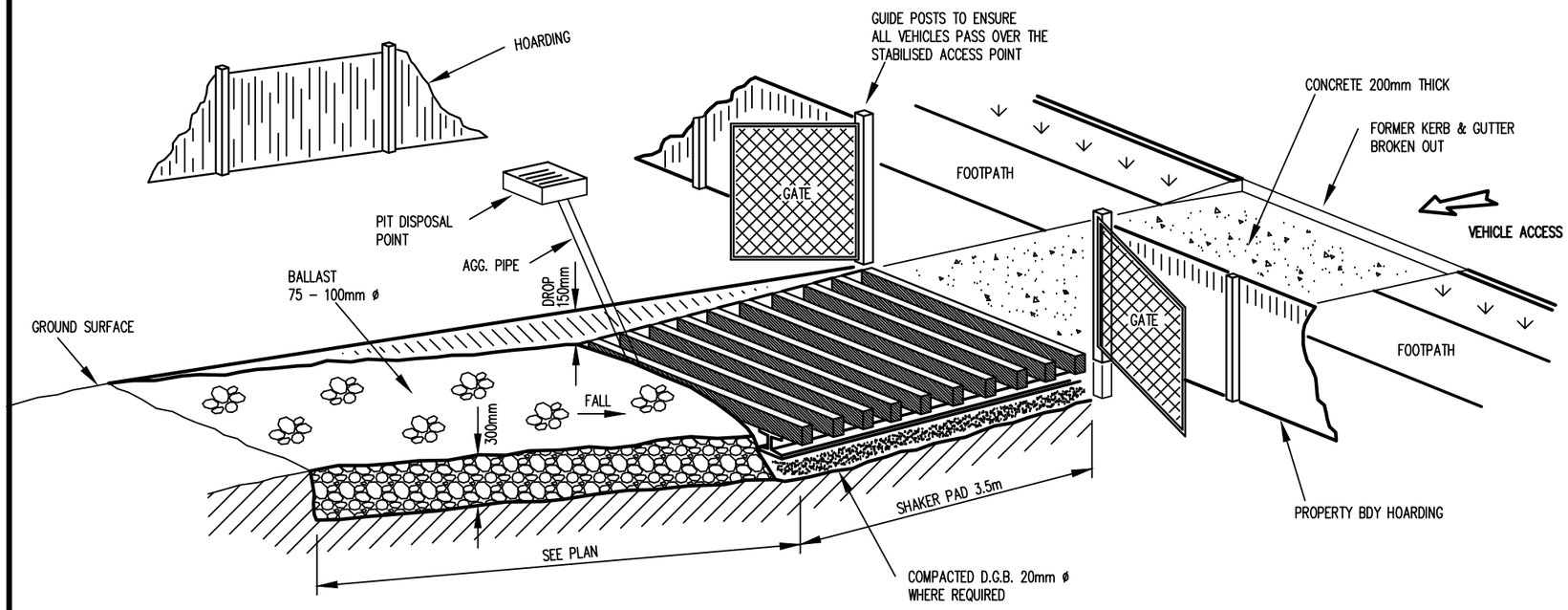
PROJECT .

REV.

A1

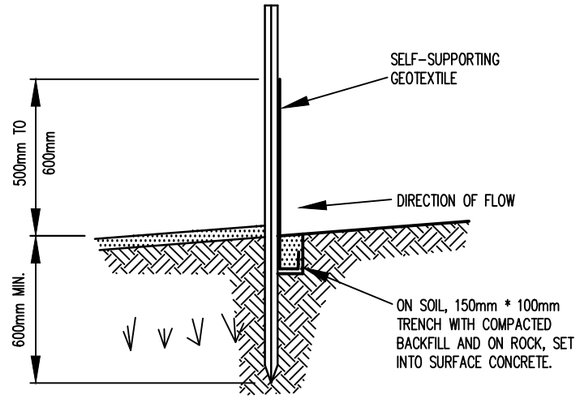
GENERAL CONSTRUCTION NOTES

1. CONSTRUCT FILTER FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5m LONG STAR PICKETS INTO GROUND,3m APART.
3. DIG A 150mm DEEP TRENCH ALONG THE UP SLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC.
5. FIX SELF-SUPPORTING GEOTEXTILE TO UP SLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERL



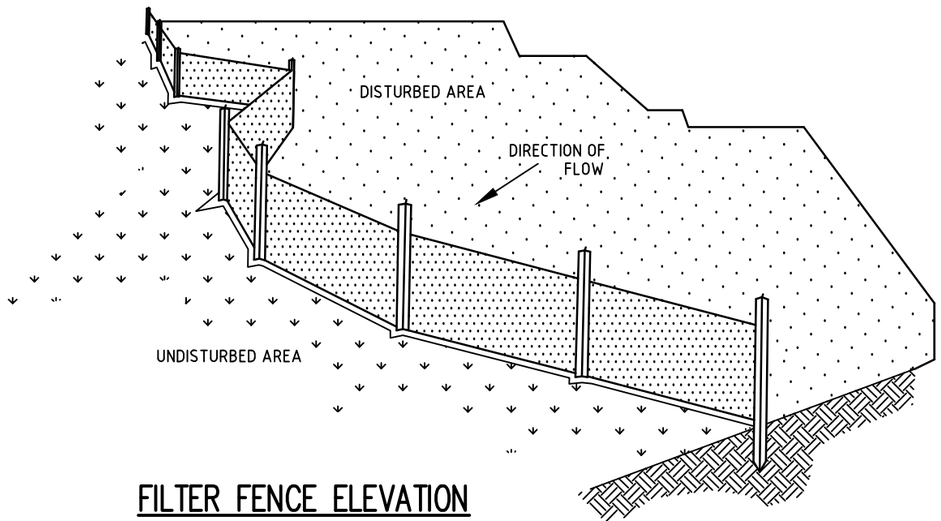
TEMPORARY CONSTRUCTION EXIT

SCALE : NTS



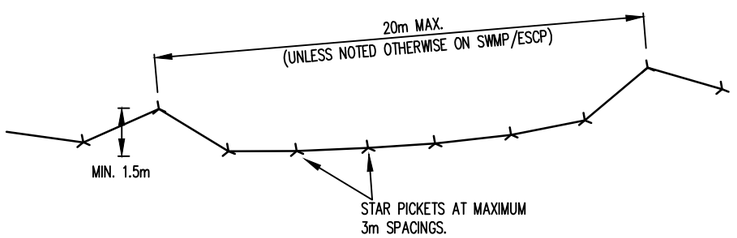
TYPICAL SECTION THRU' FENCE

SCALE : NTS



FILTER FENCE ELEVATION

SCALE : NTS



FILTER FENCE PLAN

SCALE : NTS

DO NOT SCALE
USE FIGURED DIMENSIONS AT ALL TIMES. IF IN DOUBT CHECK WITH MERITON APARTMENTS PTY. LTD. CONTRACTOR/S TO CHECK AND VERIFY ALL LEVELS, DATUMS AND DIMENSIONS ON SITE AND SHALL REPORT ANY DISCREPENCIES OR OMMISSIONS TO MERITON APARTMENTS PTY. LTD. PRIOR TO COMMENCEMENT OF WORK AND DURING THE CONSTRUCTION PHASE.

20 10 0 10 20 30 40 50 70mm

NORTH:

KARIMBLA
CONSTRUCTION SERVICES (NSW)
PTY LIMITED
Level 11, 528 Kent Street, Sydney NSW 2000
Tel: (02) 9287 2888 Fax: (02) 9287 2777
Email: info@design.meriton.com.au
Internet: http://www.meriton.com.au

PROJECT:
PROPOSED RESIDENTIAL & COMMERCIAL DEVELOPMENT AT CORNER OF CHARLES & GEORGE STREET
PARRAMATTA
NSW

DRAWING TITLE:
SEDIMENT CONTROL PLAN

PROJECT No.	DATE:	DRAWING No:	REV:
–	NOV. 16	E-3000-CS	A
DRAWN BY: RIF	SCALE: AS SHOWN		

CAD FILE: S:\STANDARD\ENG\SEDIMENT-CONTROL.dwg

A3

Appendix 5 – Waste Management Plan

CONSTRUCTION WASTE MANAGEMENT PLAN FOR CONSTRUCTION WORKS AT 180 GEORGE STREET, PARRAMATTA

Prepared by: Karimbla Constructions Services (NSW) Pty Ltd
Builders and Developers
Level 11, 528 Kent Street
SYDNEY NSW 2000

T: 02 9287 2888
F: 02 9287 2777

Client: Meriton Property Services Pty Limited
(Part of the Meriton Group)
Level 11, 528 Kent Street
SYDNEY NSW 2000

REVISIONS

November 2018	Revision 001

Table of Contents

APPENDICES

1. Introduction

This Construction Waste Management Plan (CWMP) has been specifically prepared for the construction phase of works relating to Development Application No: DA/480/2018 issued to City of Parramatta Council.

This Construction Waste Management Plan includes the following:

- Handling of Waste and Site Overview Plan
- Site Management
- Environmental Controls & Recycling
- Expected types and volumes of waste to be generated during construction

2. Project Overview & Site Description

The site is located on the corner of 180 George Street and Charles Street Parramatta. There is an existing 11 storey Meriton Services Apartment building bounding the development on Charles St. To the South the development will have frontage onto George Street. To the North the development will have frontage to public parkland and the Parramatta River. To the East there is a public footway easement connecting George St to the Parramatta River.

The development will be construction of 2 mixed use towers (66 and 57 storeys) comprising residential units and serviced apartments. There will be 5 basement levels of car parking and the development will also provide floor space for retail, gymnasium and a child care centre.

3. Handling of Waste Material & Loading Areas

Construction waste will be loaded into allocated skip bins within the existing site boundary. Bins will be picked up within the boundary and loaded onto trucks. A temporary tower crane will primarily provide service for bins to be moved within the site boundary. Refer to **Appendix 1:** Site Overview Plan.

3.1 Work Zones

A designated 'work zone' area located along the site frontage to both George and/or Charles Streets may be required for the loading of bins and the delivery of empty bins to the site. The use of temporary on-site tower cranes will enable these deliveries to be safely moved in and out of the site.

All relevant permits for mobile cranes and/or works zones will be obtained separately from the relevant authorities prior the construction related activity.

3.2 Traffic Management

The Construction Traffic Management Plan (CTMP) will be completed in consultation with SBMG Consultants. The CTMP will have consideration of the project location so to minimally impact local

vehicular and pedestrians whilst maintaining a safe environment. Waste trucks will enter the site to drop off and pick up bins as per the Site Overview Plan (refer to **Appendix 1**).

Pedestrian access will be managed throughout all construction stages with the upmost importance to safety. A suitable construction hoarding and lockable gates will be installed along all site frontages to ensure pedestrian safety at all times. Additionally, the hoardings with relevant directional signage will prevent unlawful or mistaken entry into site. All existing footpaths fronting the site will be kept clear and clean from any construction debris and trip hazards at all times.

4. Site Management

Trade subcontractors appointed will be responsible for disposing of waste in accordance with site requirements and their contract agreements. Inductions will be held for trade contractors working within the site as well as waste companies appointed to deliver skip bins and remove waste. Waste management requirements include:

- Trade subcontractors are responsible for cleaning their own works and disposing of waste in the allocated bins
- Ensuring waste is disposed of so the site is kept clear and safe of obstructions
- Waste allocation into the appropriate bins
- Locations of waste bins. Skips/Bins will be located within the site and the location will vary to suit construction requirements
- Environmental controls
- Garbage Chutes may be used during construction and at the base of these chutes a bulk bin will be used to collect the waste. The chutes may be fitted with devices that hose down the garbage as it is dropped in to the chutes.

The Site Manager will be responsible for overseeing the management of waste on site. The ordering and removal of skips/bins will be the Site Managers responsibility and site personnel will be required to notify the Site Manager when bins are nearing full or further bins are needed.

All the waste bins are to be located entirely within the site. The Site Managers shed will be clearly marked on site.

Contact details:

- Karimbla Constructions Site Manager – Justin 0417 257 607

5. Environmental Controls

5.1 Wash Down Areas

A designated paint wash down area will be established on-site and kept away from stormwater collection areas. If on-site treatment and re-use is not viable then waste will be stored in separate holding tanks. A specialised waste contractor may need to be engaged for the removal of paint fines/solids and similar waste materials

5.2 Storage Spill Kits

All harmful materials shall be stored and recorded in bunted facilities and clearly marked as to their contents to minimise potential pollution of material substances within the site. Wherever possible, storage of materials shall be kept out of site and locked to deter thieves.

Spill kits will be provided on site and smaller kits will accompany any mobile plant at all times to minimise the impact of potential spills.

5.3 Site Security

Access to the site will be controlled by Karimbla to avoid trespassing and vandalism which may result in pollution. All storage tanks shall be locked when not in use to avoid tampering by vandals.

5.4 Environmental Incidence Response

Contractors shall produce an Environmental Incident Response Plan (EIRP) that is specific to their work showing all stores, bulk storage vessels, drums or containers intended for storing oils, chemicals or other potentially polluting materials. This shall be a clear plan of the site showing layout and access details, along with a schematic representation of the site drainage arrangements.

6. Expected Waste, Recycling & Disposal

6.1 Expected Waste & Volumes

The towers will be a concrete structure with a glazed façade. Estimated quantities of the material types used in the development are as follows:

Concrete	54,116 m3
Hebel/Brick	57,460 m2
Plasterboard	329,783 m2
Tiling	79,893 m2

Based on the materials used for the development waste quantities and recycling/disposal locations are provided in the table below.

MATERIAL	WASTE QTY (estimate)	OFF-SITE (CONTRACTOR RECYCLING OUTLET)	CONTRACTOR/ DISPOSAL SITE
Asbestos	N/A		
Green Waste	N/A		
Concrete/Brick/Tiles	2,700m3	Boral Recycling/Concrete Recyclers/Bingo Recycling	
Plasterboard/Timber	600m3	ReGyp	Suez Kemps Creek/SITA Landfill/Huntley Heritage
Metals	500m3	Sell & Parker	
Cardboard/Paper/Plastics	400m3	Cardboard King	Suez Kemps Creek

6.2 Resource Recovery Facility & Recycling

Karimbla will engage a licensed contractor(s), such as Earthworx and Bingo for the removal of waste during construction process.

Skip bins will be delivered and collected on a regular basis and placed in a location on-site to suit construction staging and requirements. It is intended that waste materials will be recycled where possible.

A likely contractor to be used will be Bingo Group to recover construction waste from the site. Bingo Group offers a complete, comprehensive solution to the management and recycling of wastes to assure compliance with clients' waste management policy.

Bingo Recycling Centre Homebush Bay and Bingo Recycling Centre St Peters combine bin storage, waste collection, waste recycling and waste transfer to service the building and construction industry and domestic waste management needs in the Sydney metropolitan area. Wastes collected by Bingo Skip Bins are taken directly to either facility where approximately 85 - 90% of wastes are converted to recovered resources.

Bingo Recycling Centre Homebush Bay
3 Burroway Rd, Homebush Bay
DECCW Licence No. 12696

Bingo Recycling Centre St Peters
6-10 Burrows Rd South, St Peters
DECCW Licence No. 13142

As can be expected waste materials vary considerably and are delivered to the Recycling Centres in tipping and non-tipping vehicles or in skip bins. Of the wastes inwards approximately 85 - 90% is recovered and recycled as materials outwards and the balance 10 - 15% to landfill. Waste materials inwards are processed to achieve the maximum recovery of resources and the minimum of un-recoverable material for offsite disposal.

Typical Composition of Bingo's Wastes Inwards

Wastes Inwards	Percentage (approx.)
Heavy Recyclable Materials	45%
Light Recyclable Materials	35%
Metals	10%
Non-Recyclable Materials	10%
Total	100%

Heavy Recyclable Materials:
Soil
Dirt
Sand
Rubble
Brick
Concrete
Tiles
Stone
Asphalt

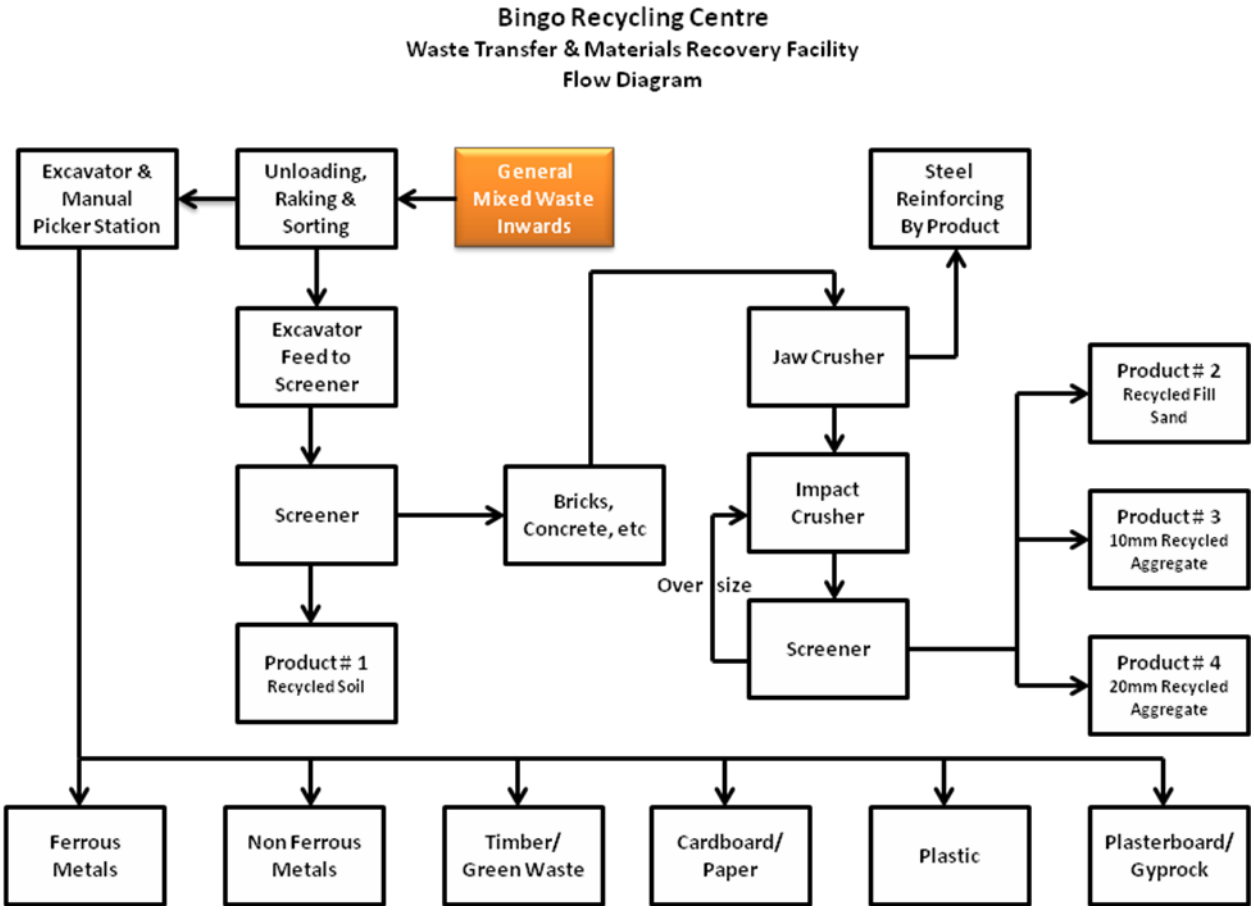
Light Recyclable Materials:
Timber
Green Waste
Cardboard / Paper
Plastic / Polystyrene
Plasterboard / Gyprock

Metals:
Ferrous (steel, black iron)
Non-Ferrous (copper, wire, aluminium, stainless)

At the Resource Recovery Facility, a simple and effective waste processing procedure is applied. See Materials Flow Diagram (below). Wastes inwards unloaded onto the sorting area where the waste is raked with a hydraulic excavator to expose the contents and where recyclable materials are hand and machine sorted. The raking process separates the waste into four streams for further processing.

Stream #1	Non-recyclable materials. These wastes pass to a holding area for off-site disposal.
Stream #2	Metals and light recyclable materials are removed and stored for off-site recycling.
Stream #3	Large sized heavy weight brick, concrete and rubble pieces. These wastes pass to the crushers where they are crushed and re-enforcing fabric removed. The output from the crushers passes to the screener where products of different size are separated and stored in stockpiles. Re-enforcing fabric is collected and stored in the general steel bin for off-site recycling.
Stream #4	Small sized heavy weight soil, sand, brick, concrete and rubble. These wastes pass to the screener where the soil is separated from the brick, concrete and rubble. The brick, concrete and rubble then pass through Stream #3.

Stream #1 wastes are currently not recyclable and are removed from the land for off- site disposal. Stream #2 wastes, recovered metals and light recyclable materials are recycled off-site. Stream #3 and Stream #4 wastes are processed on site by crushing and screening to form saleable products such as soil, sand, and aggregates. These products are retained on site until sold.



In summary, Bingo Skip Bins take all their mixed waste skip bins directly to Bingo Recycling Centres. From there the waste is sorted and separated into the following material classes for processing and recycling.

Type of Material	Where Processed / Recycled	How Processed / Recycled
Heavy Recyclable Materials (soil, dirt, sand, rubble, concrete, brick, tiles, asphalt, stone)	Bingo Recycling Centres	Re-processed into recycled products (such as recycled soil, fill sand, aggregates, roadbase) by crushing and screening.
Timber / Green Waste	Bingo Recycling Centres	Re-processed into woodchip and mulch by shredding.
Metal / Steel	Sell & Parker	Sent to appropriate recycling plants.
Cardboard / Paper / Plastic	Cardboard King	Sent to appropriate recycling plants.
Plasterboard / Gyprock	ReGyp	Sent to appropriate recycling plants
General Waste	SITA Landfill / Huntley Heritage	n/a

Bingo Recycling Centres:
3 Burroway Road, Homebush Bay NSW 2127
6-10 Burrows Road South, St Peters NSW 2044

Sell & Parker:
45 Tattersall Road, Blacktown NSW 2148

Cardboard King:
8 Kommer Place, St Marys NSW 2760

ReGyp:
Lot 1221, Captain Cook Drive, Kurnell NSW 2231

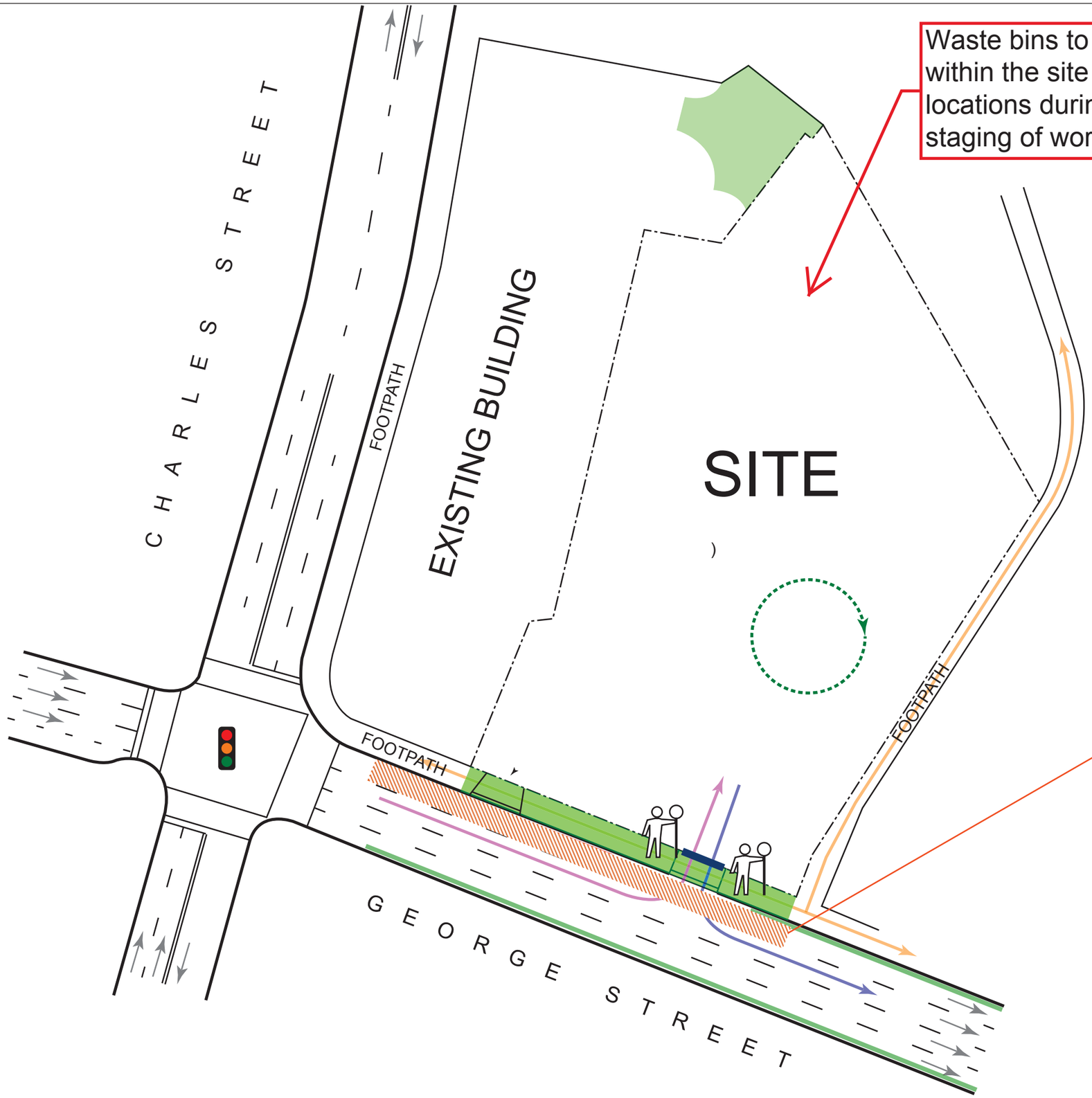
SITA Landfill:
1725 Elizabeth Drive, Kemps Creek NSW 2178

Huntley Heritage:
Lot 2, Avondale Road, Dapto NSW 2530

APPENDIX 1

Site Overview Plan

SITE OVERVIEW
WASTE MANAGEMENT



NOTES:

1. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH RMS "TRAFFIC CONTROL AT WORKSITES" MANUAL AND AS1742.3.
2. ALL SIGNAGE AND DELINEATION MUST BE INSTALLED BY RMS CERTIFIED TRAFFIC CONTROLLER(S) ONLY.
3. VEHICLES TO USE APPROVED ROUTES ONLY.
4. VEHICLES ARE TO ENTER AND EXIT THE SITE IN A FORWARD FACING DIRECTION ONLY.
5. SITE VEHICLE TO GIVE WAY TO EXISTING TRAFFIC WHEN EXITING THE SITE.
6. RETAIL TENNANTS TO USE THE EXISTING DRIVEWAY TO ACCESS THE BASEMENT LEVEL PARKING AREA. NO CONSTRUCTION RELATED HEAVY VEHICLES TO USE THIS DRIVEWAY.
7. DESIGNATED PAINT WASH DOWN AREA WILL BE ESTABLISHED ON SITE
8. SPILL KITS WILL BE LOCATED ON SITE

LEGEND:

- SITE BOUNDARY (SITE FENCING INSTALLED AS REQUIRED)
- WORKS ZONE INSTALLED
- SITE APPROACH ROUTE
- SITE DEPARTURE ROUTE
- SITE GATE - CONSTRUCTION VEHICLE
- VEHICLE TURNING AREA (WITHIN SITE BOUNDARIES)
- B-CLASS HOARDING
- PEDESTRIAN ROUTE
- TRAFFIC CONTROLLER

s|b|m|g
Sbmg Pty Ltd
ABN: 34 167 185 560
matt@sbmgplanning.com.au
m: 0467 370 380
f: 02 8834 0752
Traffic Management Plans

Project/Event:	MIXED USE DEVELOPMENT			
Location:	180A GEORGE STREET, PARRAMATTA NSW			
Client :	MERITON GROUP PTY LTD			
Plan No.	SBMG01481-03	A	Date:	6TH NOVEMBER 2018
SCALE: NOT TO SCALE				

N

PREPARED BY: MATTHEW YOUNG
RMS PREPARE A WORKZONE TRAFFIC MANAGEMENT PLAN
CERTIFICATE No. 0051718998

SIGNED:

DATE		DESCRIPTION
	E	
	D	
	C	
	B	
05/11/18	A	INITIAL SUBMISSION

RECOMMENDED MAXIMUM SPACING OF CONES AND BOLLARDS		
Purpose an usage	Approach Speed (km/h)	Max Spacing (m)
All purposes on residential or commercial streets	<=50	4
Center-line on approach to Traffic Controller position	All Cases	4
Outer edge of traffic lane - i.e. working on shoulder	51-70 / >70	18 / 24
Separating opposing traffic on 2 lane 2 way road	51-70 / >70	12 / 18
separating opposing traffic on a multilane undivided road	51-70 / >70	12 / 18
adjacent to a closed lane on a multilane road	51-70 / >70	18 / 24
Merge tapers	51-70 / >70	9 / 12
Lateral shift tapers	51-70 / >70	12 / 18
Protecting freshly painted lines	51-70 / >70	24 / 60
FIGURES EXTRACTED FROM RTA TCWS MANUAL v4.0 (TABLES 5.1 & 5.2). REFER TO MANUAL FOR FURTHER INFO		

RECOMMENDED TAPER LENGTHS			
Approach speed (km/h)	Traffic control at start	Lateral shift taper	Merge taper
< 45	15	0	15
46-55	15	15	30
56-65	30	30	60
66-75	N/A	70	115
76-85	N/A	80	130
86-95	N/A	90	145
96-105	N/A	100	160
> 105	N/A	110	180

Appendix 6 – Dust Management Plan

Dust Management Plan (DMP)

Meriton Site Redevelopment
180 George Street
PARRAMATTA NSW 2150

Prepared by:

Philip Turner
Occupational Hygienist
Airsafe OHC Pty Ltd
93 Beattie St
BALMAIN NSW 2041

November 2018

Table of Contents

1.0 Executive Summary

Following completion of the demolition phase, excavation and construction is proposed at the Meriton redevelopment. Planning for dust control is underway.
Dust emissions from site will be kept to a level acceptable to both neighbours and Council.
One of the main dust control methods will be watering sprays.

2.0 Introduction

2.1 Dust Management Plan

This *dust management plan* (DMP) for the Meriton redevelopment at 180 George Street in Parramatta has been prepared for Karimbla Constructions Services (NSW) Pty Ltd by Airsafe OHC Pty Ltd. It is intended to assist planning for dust control during excavation.

2.2 Scope of Works

City of Parramatta development application requires Karimbla Constructions to implement dust control measures during all periods of earthworks, excavation and construction to minimise the dust nuisance on surrounding properties.

Dust minimisation must be carried out in accordance with the City of Parramatta *Guidelines for Controlling Dust from Construction Sites.*

2.3 Objectives

Meriton aims to reduce dust emissions during excavation and construction at the premises to a level acceptable to neighbours, and a level acceptable to the *City of Parramatta.*

3.0 Meriton Redevelopment

3.1 Location

The Meriton redevelopment is located at 180 George Street, in the *City of Parramatta* local government area.

3.2 Surrounding Land Uses

The redevelopment is located on the corner of George Street and Charles Street in the Parramatta business district. It has office buildings, shops, other commercial operations, and residential units as neighbours.

3.3 Nearest Receptors

The nearest receptors are shops, offices and residential units on George Street and Charles Street.

3.4 Main Sources of Dust Emission

Excavation
Vehicle movements
Wind action on excavation activity & cleared areas

3.5 Project Start Date

The excavation stage of the project (5 basement levels) will be starting in February 2019.

4.0 Potential Environmental Effects of Dust

Large dust particles quickly fall from the air, but can be a nuisance if they soil horizontal surfaces such as painted finishes (including motor vehicles), leading to property damage and cleaning expenses. Fine dust particles can reduce visibility. If they are breathed in they can become an irritant to the mouth, nose and throat. Respiratory irritants can trigger an asthma attack in people who already have this condition.

5.0 Statutory Requirements

The *Protection of the Environment Operations Act 1997* (NSW) requires occupiers to maintain and operate plant in a manner that minimises the risk of air pollution, and to deal with materials in a similar manner.

6.0 Proposed Dust Control Methods

Dust Management Plan Yes - A dust management plan (DMP) has been prepared for the site	
Community Consultation Yes – A letter will be sent to the community advising them about the excavation	
Limit the Cleared Area Yes - Only 3 of the 4 existing buildings on site have been demolished.	
Physical Barriers Yes – A construction hoarding has been erected around the site	
Site Traffic Control Yes – The site will have a traffic control plan	
Earthmoving Management Yes – A construction hoarding has been erected around the site	
Watering Sprays Yes – This will be on e of the main control measures	
Soil Compaction Yes – Use of machinery will result in some unplanned soil compaction	
Vegetative Stabilisation No – This is not practicable during the excavation stage	
Chemical Stabilisation No – water sprays are the preferred dust-control method	
Stockpile Management Yes – Stockpiles will be subject to water sprays	
Hauled Material Management Yes – Trucks will have material covers.	
Site Access/Exit Controls Yes – Gravel pads will be installed at site exits	
Daily Site Completion Yes – A sweeper will be available for daily use	

6.1 Dust Management Plan

6.1.1 A dust management plan (DMP) has been prepared for the site
6.1.2 A dust management plan site map will be prepared
6.1.3 The site map will show the neighbouring sites & prevailing winds
6.1.4 The site map will show work areas & areas that will remain undisturbed
6.1.5 The site map will show barriers (such as fencing)
6.1.6 The site map will show stockpile locations & storage areas
6.1.7 The site map will show traffic, entry/exit points, & stabilised areas
6.1.8 The Site Manager will be responsible for the day-to-day implementation of the plan
6.1.9 The dust-control checklist (Section 8) will be used as required to identify issues

6.2 Community Consultation

6.2.1 A letter will be sent to local residents & businesses prior to the start of excavation work.
6.2.2 The letter will include the project details & the estimate duration of the project
6.2.3 The letter will include the contact details for the site manager.

6.3 Limit the Cleared Area

6.3.1 In accordance with DA/762/2016 (for demolition) three of the five buildings on site have been demolished. The existing 11-storey building on Charles St remains. For reference see the attached stamped DA demolition plan.
6.3.2 Buildings & ground to be retained will be protected from damage

6.4 Physical Barriers

6.4.1 A construction hoarding will be erected around the site
6.4.2 Stockpile covers will be used if required - the use of water sprays is preferred by Meriton
6.4.3 Temporary screens will be installed during the excavation phase of the project

Construction Hoarding

6.5 Site Traffic Control

6.5.1 Traffic management will be in accordance with the *Construction Traffic Management Plan* completed by SBMG
6.5.2 There will be no public access to the site
6.5.3 There will be limited or no parking on site
6.5.4 Designated traffic routes will be established, including for access & haulage
6.5.5 Traffic-control signage will be posted
6.5.6 There will be a traffic speed limit for on site

Designated Traffic Routes

6.6 Works & Earthmoving Management

6.6.1 Works will be planned to minimise stockpiling
6.6.2 The site manager will monitor the weather forecast using the *WeatherZone* smartphone app
6.6.3 A site shut down will be considered in extreme weather conditions (high wind, low humidity)
6.6.4 Work areas will be pre-watered, as required

6.7 Watering Sprays

6.7.1 This will be one of the primary dust-control methods
6.7.2 Surfaces will be dampened only, to avoid runoff
6.7.3 Hand-held hoses will be used as required
6.7.4 Water blasters will be used as required
6.7.5 Sprinklers will be used as required
6.7.6 A water truck will be used as required

Water Blaster

Water Truck

6.8 Soil Compaction

6.8.1 Nothing deliberate is planned, but use of machinery will cause some soil compaction

6.9 Vegetative Stabilisation

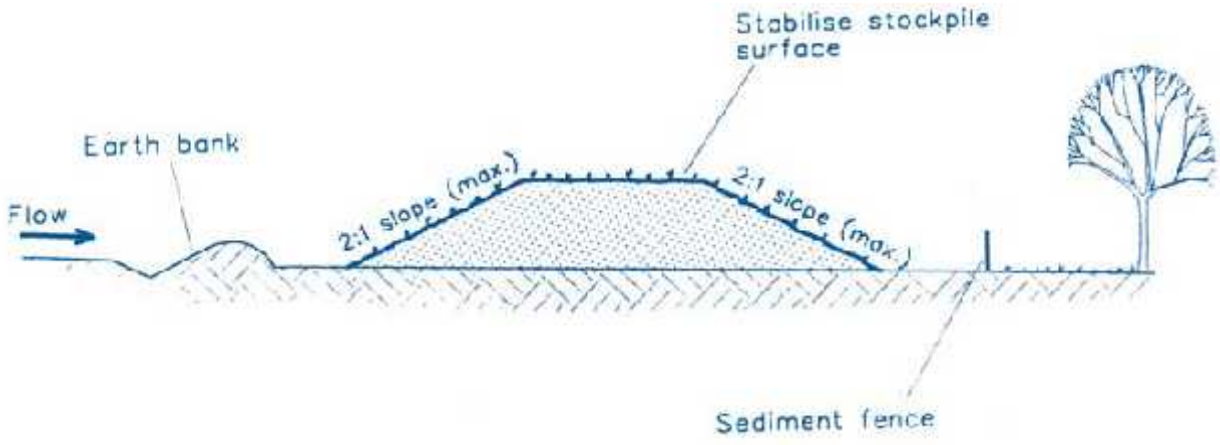
6.9.1 This is not practicable during the excavation stage

6.10 Chemical Stabilisation

6.10.1 Not applicable - water sprays are the preferred dust-control method

6.11 Stockpile Management

6.11.1 Stockpiles will be located in sheltered areas to the extent possible
6.11.2 Stockpiles will be located lengthways into the wind to the extent possible
6.11.3 The slope of the upwind surface will be minimised to the extent possible
6.11.4 Stockpile sizes will be minimised to the extent possible
6.11.5 If required, screens or barriers will be installed on 3 sides
6.11.6 Stockpiles will be covered as required
6.11.7 Stockpiles will be watered as required



Potential Stockpile Control Measures

6.12 Hauled Material Management

6.12.1 Haul trucks will have material covers.
6.12.1 Trucks will not be loaded above the sidewalls
6.12.1 Additional watering may be required when loading

Tippers with Material Covers

6.13 Site Access/Exit Controls

6.13.1 A *Construction Traffic Management Plan* has been completed by SBMG
6.13.2 Grates, gravel pads, paving or compaction are required at the site exit
6.13.3 A wheel wash for tyres may be needed at the site exit
6.13.4 Additional road sweeping may be required at the site exit

Gravel Pads

6.14 Daily Site Completion

6.14.1 A sweeper will be used as required
6.14.2 The site will be cleaned as required, and secured at the end of the each shift

7.0 Dust Control Checklist

Date	/ /
Dust Management Plan	Yes
Limit the Cleared Area	Not applicable
Physical Barriers	
Site hoarding is in place	Yes / No
Building screens are installed & secure	Yes / No / NA
Site Traffic Control	
Vehicles are following the site traffic plan	Yes / No
Traffic control signage & fencing is in place	Yes / No
Vehicles are observing the site speed limit	Yes / No
Earthmoving Management	
Is the earthmoving works schedule suitable?	Yes / No
Are weather conditions suitable for earthmoving (after adequate watering)?	Yes / No
Was there adequate pre-watering?	Yes / No / NA
Watering Sprays	
Has there been adequate watering?	Yes / No
Soil Compaction	Not applicable
Vegetative Stabilisation	Not applicable
Chemical Stabilisation	Not applicable
Stockpile Management	
Are stockpiles in sheltered areas & lengthwise into the wind?	Yes / No
Are stockpile sizes & upwind slope minimised?	Yes / No
Are there barriers on 3 sides, with limited downwind activity?	Yes / No
Is there a last-in, first-out system?	Yes / No
Are the stockpiles adequately watered?	Yes / No
Hauled Material Management	
Are load sizes limited – with materials loaded below the sidewalls of the vehicle?	Yes / No
Do vehicles have material covers & bedliners?	Yes / No
Are drivers making smooth & slow vehicle movements?	Yes / No
Are the loads adequately watered?	Yes / No
Site Access/Exit Controls	
Do soils need compaction or a gravel bed?	Yes / No
Is wheel washing required?	Yes / No
Daily Site Completion	
Does a road or any hardstand need sweeping?	Yes / No
Comments	

8.0 Handling Complaints

8.1 All complaints received by the site office will be recorded
8.2 The Site Manager's diary will be used as the site complaints register
8.3 The date & time of the compliant will be recorded
8.4 The way the compliant was made will be recorded (in person, telephone, other)
8.5 The nature of the compliant will be recorded
8.6 Any details provided buy the person making the complaint will be recorded
8.7 All community complaints will be investigated as soon as possible
8.8 If required, dust emissions will be rectified as soon as possible
8.9 The action taken will be recorded
8.10 Any follow up with the person who made the complaint will be recorded

9.0 Review of Dust Management Plan (DMP)

9.1 The Project Manager is responsible for reviewing the dust management plan (DMP)
9.2 The plan will be reviewed in the following circumstances

9.2.1 If there are persistent community complaints
9.2.2 If required by the *City of Parramatta* or the EPA
9.2.3 If the company identifies improvements to the plan

10.0 References

10.1 City of Parramatta *No Dust No Fuss Guidelines for Controlling Dust from Construction Sites*

10.2 ACT Government (2015) *Dust Suppression during Construction*

10.3 EPA Victoria (1996) *Environmental Guidelines for Major Construction Sites*

Appendix 7 – Noise & Vibration Management Plan

180 George Street, Parramatta

Construction Noise and Vibration Management Plan

SYDNEY
A: 9 Sarah St
MASCOT 2020
T: (02) 8339 8000

SYDNEY MELBOURNE BRISBANE CANBERRA
LONDON DUBAI SINGAPORE GREECE

www.acousticlogic.com.au
ABN: 11 068 954 343

DOCUMENT CONTROL REGISTER

Project Number	20180915.3
Project Name	180 George Street, Parramatta
Document Title	Construction Noise and Vibration Management Plan
Document Reference	20180915.3/0808A/R3/WY
Issue Type	Email
Attention To	Karimbla Constructions Services (NSW) Pty Limited

Revision	Date	Document Reference	Prepared By	Checked By	Approved By
0	17/12/2016	20161720.1/1712A/R0/MF	MF		GW
1	12/11/2018	20161720.1/1211A/R1/MF	MF		GW
2	11/04/2019	20161720.1/1104A/R2/MF	MF		MF
3	8/08/2019	20180915.3/0808A/R3/WY	WY		GW

TABLE OF CONTENTS

1 INTRODUCTION

This document presents a discussion of the processes which will be followed in order to manage noise and vibration impacts from the proposed construction activities associated with the proposed residential development to be constructed at 180 George Street, Parramatta.

The principal objective of this study is to undertake an evaluation of equipment/processes proposed during the construction stage of the project, based on the requirements of the Department of Environmental & Climate Change NSW – "Construction Noise – Interim Guideline". The evaluation will be used to formulate and streamline effective regulation and mitigation measures.

The principal issues, which will be addressed in this report, are:

- Identification of noise and vibration standards which will be applicable to this project.
- Formulation of a strategy for construction to comply with the standards identified in the above point.
- Establishment of direct communication networks between affected groups namely City of Parramatta, surrounding receivers and the developer (Karimbla Constructions).

2 PROJECT DESCRIPTION

Following the completion of the demolition and excavation works, the proposed construction works will be for the mixed use high-rise development consisting of a 67 storey North Tower and 59 storey South Tower.

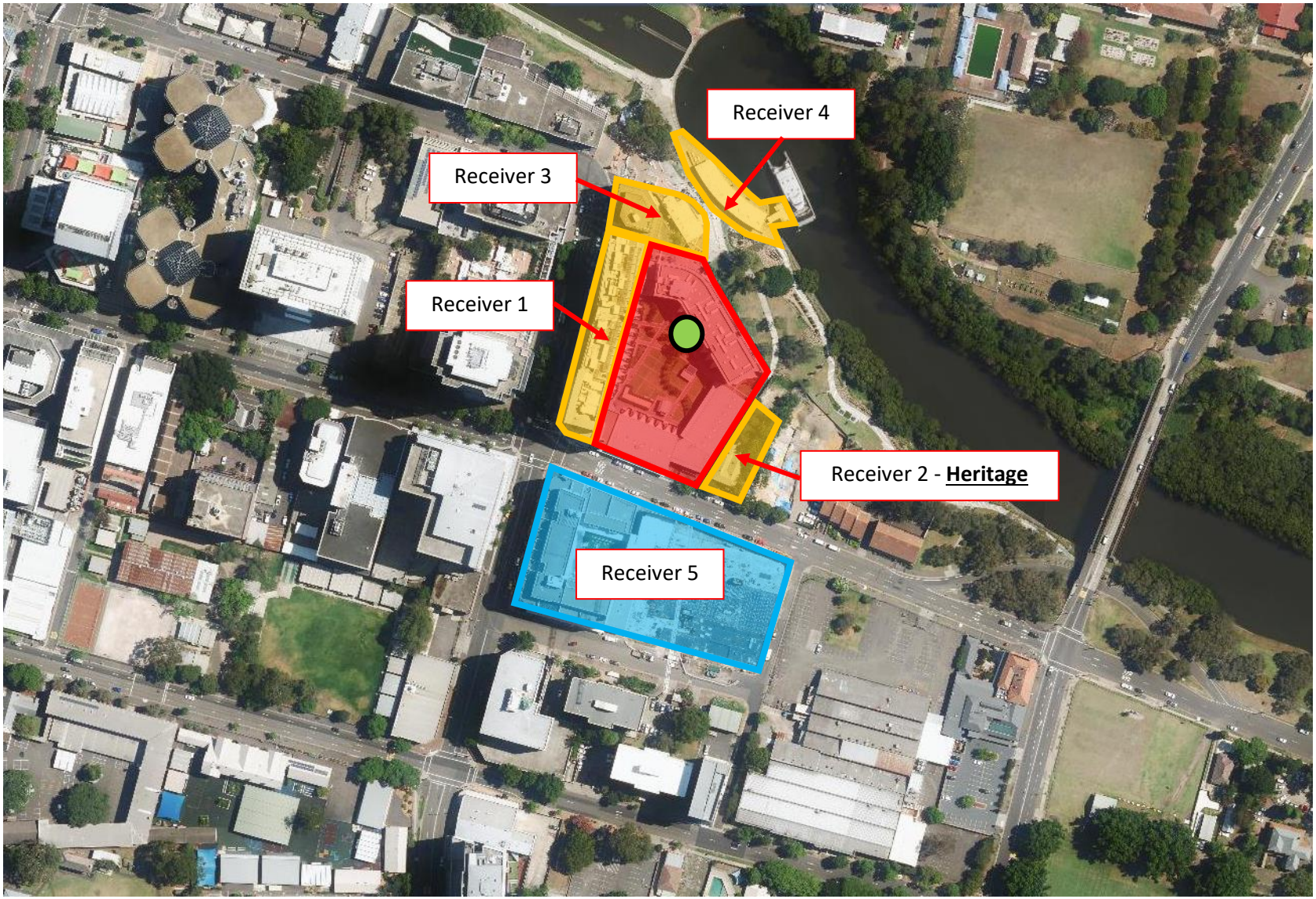
Upon site investigations the site is bounded by the following uses:

- Parramatta Wharf to the north, further this is Parramatta River and existing residential dwellings.
- Existing multi-storey commercial receiver to the eastern boundary.
- George Street to the south, further this is existing multi-storey commercial and residential buildings.
- Existing multi-storey commercial receivers to the west.

The nearest receivers have been summarised below.

- Receiver 1 – Commercial shops located along the ground floor of 180 George Street, Parramatta, which is west of the project site;
- Receiver 2 – Multi storey heritage listed dwelling located at 182 George Street, Parramatta, which is east of the project site;
- Receiver 3 – Multi storey commercial building located at 34 Charles Street, Parramatta, which is north of the project site;
- Receiver 4 – Parramatta Wharf Terminal located on Parramatta River which is to the north of the site;
- Receiver 5 – Multi storey residential dwelling located at 107 George Street, Parramatta, which is south of the project site.

Figure 1 shows the site location, measurement locations and surrounding receiver locations.



Unattended Noise Monitoring

Figure 1: Site Map and Measurement Locations
Sourced SixMaps NSW

Commercial Receiver

Residential Receiver

3 ACTIVITIES TO BE CONDUCTED AND ASSOCIATED NOISE SOURCES

The proposed construction activities are based on advice provided to this office by Karimbla Constructions as to the anticipated processes. A description of each of these noises producing processes and the associated equipment is presented below:

Construction Stage

The construction stage will include erection of concrete, brick and blockwork structure, followed by internal fit out works. Typical activities during this stage may include;

- Mobile crane.
- Hand tools – Impact drills, electric drills, hammering (jack hammers), power saw and angle grinders.
- Concrete pump
- Concrete truck
- Trucks and trailers delivering materials and removing soil from site.
- Site personal and materials hoist.

4 HOURS OF WORK

4.1 DEVELOPMENT APPLICATION NOTICE OF DETERMINATION – DA/480/2018 – CITY OF PARRAMATTA

DA condition 130 states the following:

Hours of Work and Noise

130. All work (excluding demolition which has separate days and hours outlined elsewhere in this consent), including building and excavation work; and activities in the vicinity of the site generating noise associated with preparation for the commencement of work (e.g. loading and unloading of goods, transferring of tools, machinery etc.) in connection with the proposed development, must only be carried out between the hours of 7:00am and 6.00pm on Monday to Friday inclusive, and 8:00am to 3pm on Saturday. No work is to be carried out on Sunday or public holidays.

Note: Council may allow extended work hours in limited circumstances and upon written application and approval being given by City of Parramatta Council at least 30 days in advance. Such circumstances where extended hours may be permitted include:

(a) Delivery of cranes required to the site outside of normal business hours;
(b) Site is not located in close proximity to residential use or sensitive land uses;
(c) Internal fit out work.

Reason: To protect the amenity of the area.

5 NOISE AND VIBRATION OBJECTIVES

This Construction Noise Vibration Management Plan (CNVMP) has been prepared for the construction works associated with the DA/480/2018 from Parramatta City Council.

5.1 CITY OF PARRAMATTA – NOTICE OF DETERMINATION – DA/480/2018

Conditions 78, 79 and 145 state the following:

Acoustic Report

78. Prior to the issue of the relevant Construction Certificate, written certification from a suitably qualified person(s) shall be submitted to the Principal Certifying Authority and City of Parramatta Council, stating that all works/methods/procedures/control measures approved by Council in the following report are reflected in the construction drawings:

- ***Development Assessment Acoustic Report (Document Reference: 20180291.1/2603A/R0/TA)*** prepared by ***Acoustic Logic*** dated ***26/03/2018;***
- ***Construction Noise and Vibration Management Plan (Document Reference: 20161720.1/1712A/R0/MF)*** prepared by ***Acoustic Logic*** dated ***17/12/2016***.

Reason: To demonstrate compliance with submitted reports.

Construction Noise Management Plan

79. A noise management plan must be prepared in accordance with the NSW Department of Environment, Climate Change and Water 'Interim Noise Construction Guidelines 2009' and accompany the application for any Construction Certificate. The Principal Certifying Authority must be satisfied the Construction Noise Management Plan will minimise noise impacts on the community during the construction of the development.

The Construction Noise Management Plan must include:

(a) Identification of nearby residences and other sensitive land uses.
(b) Assessment of expected noise impacts.
(c) Detailed examination of feasible and reasonable work practices that will be implemented to minimise noise impacts.
(d) Community Consultation and the methods that will be implemented for the whole project to liaise with affected community members to advise on and respond to noise related complaints and disputes.

Reason: To prevent loss of amenity to the area.

Noise/Vibration

145. Noise emissions and vibration must be minimised, work is to be carried out in accordance with the NSW Department of Environment, Climate Change and Water's Interim Noise Construction Guidelines 2009 for noise emissions from construction activities.

5.2 DEPARTMENT OF ENVIRONMENTAL & CLIMATE CHANGE NSW – "CONSTRUCTION NOISE – INTERIM GUIDELINE"

5.2.1 Residential Receivers

Interim Construction Noise Guideline section 4.1 Airborne noise explains that noise from construction works at residential properties should comply with the following recommendations.

In Table 2 the rating background level (RBL) is used when determining the management level. The RBL is the overall single-figure background noise level measured in each relevant assessment period (during or outside the recommended standard hours). The term RBL is described in detail in the *NSW Industrial Noise Policy* (EPA 2000).

As a guide, the difference between the internal noise level and the external noise level is typically 10 dB with windows open for adequate ventilation.

Table 2: Noise at residences using quantitative assessment

Time of day	Management level $L_{Aeq\ (15\ min)}$ *	
Recommended standard hours: Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. • Where the predicted or measured $L_{Aeq\ (15\ min)}$ 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 75 dB(A)	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 + 5 dB	• 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 5 dB(A) above the noise affected level, the proponent should negotiate with the community. • For guidance on negotiating agreements see section 7.2.2.

* Noise levels apply at the property boundary that is most exposed to construction noise, and at a height of 1.5 m above ground level. If the property boundary is more than 30 m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30 m of the residence. Noise levels may be higher at upper floors of the noise affected residence.

5.2.2 Commercial Receivers

4.1.3 Commercial and industrial premises

Due to the broad range of sensitivities that commercial or industrial land can have to noise from construction, the process of defining management levels is separated into three categories. The external noise levels should be assessed at the most-affected occupied point of the premises:

- industrial premises: external $L_{Aeq\ (15\ min)}$ 75 dB(A)
- offices, retail outlets: external $L_{Aeq\ (15\ min)}$ 70 dB(A)
- other businesses that may be very sensitive to noise, where the noise level is project specific as discussed below.

5.3 AUSTRALIAN STANDARD 2436-1981 "GUIDE TO NOISE CONTROL ON CONSTRUCTION MAINTENANCE AND DEMOLITION SITE"

Noise emissions to be managed in accordance with principles in AS2436:

- That reasonable suitable noise criterion is established.
- That all practicable measures be taken on the building site to regulate noise emissions, including the siting of noisy static processes on parts of the site where they can be shielded, selecting less noisy processes, and if required regulating construction hours.
- The undertaking of noise monitoring where non-compliance occurs to assist in the management and control of noise emission from the building site.

Based on these the following procedure will be used to assess noise emissions:

- Predict noise levels produced by typical construction activities at the sensitive receivers.
- If noise levels exceed "background + 10 dB(A)" noise goal at sensitive receiver locations, investigate and implement all practical and cost effective techniques to limit noise emissions. A background + 10 dB(A) criterion has been applied because, due to the size of the whole site, impacts at any one sensitive receiver are unlikely to occur for a greater period than 6 months.
- If the noise goal is still exceeded after applying all practical engineering controls to limit noise emissions investigate management and other techniques to mitigate noise emissions.

5.4 VIBRATION

Vibrations caused by any proposed activities on site, at the façade or incident on the structure of any surrounding sensitive receivers, will be assessed against the following provisions:

- For structural damage vibration, German Standard DIN 4150-3 *Structural Vibration: Effects of Vibration on Structures; and*
- For human exposure to vibration, the evaluation criteria presented in NSW Environmental Protection Authority (EPA) "*Assessing Vibration: A Technical Guideline*" guideline.

The criteria and the application of these guidelines are discussed in separate sections below.

5.4.1 Structure Borne Vibrations

German Standard DIN 4150-3 (1999-02) provides vibration velocity guideline levels for use in evaluating the effects of vibration on structures. The criteria presented in DIN 4150-3 (1999-02) are presented in Table 2.

It is noted that the peak velocity is the absolute value of the maximum of any of the three orthogonal component particle velocities as measured at the foundation, and the maximum levels measured in the x- and y-horizontal directions in the plane of the floor of the uppermost storey.

Table 1 – DIN 4150-3 (1999-02) Safe Limits for Building Vibration

	TYPE OF STRUCTURE	PEAK PARTICLE VELOCITY (mms^{-1})			
		At Foundation at a Frequency of			Plane of Floor of Uppermost Storey
		< 10Hz	10Hz to 50Hz	50Hz to 100Hz	All Frequencies
1	Buildings used in commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
3	Structures that because of their particular sensitivity to vibration, do not correspond to those listed in Lines 1 or 2 and have intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8

5.4.2 Assessing Amenity

The NSW Environment Protection Authority's (EPA) publication "*Assessing Vibration: A Technical Guideline*" (Feb 2006), outlines vibration criteria to assess the effects on human exposure to vibration from industry, transportation and machinery. This will ensure the amenity of tenants within surrounding residential properties is not adversely impacted.

This document classifies vibrations in buildings into continuous (with magnitudes varying or remaining constant with time), impulsive (such as shocks) or intermittent (with the magnitude of each event being either constant or varying with time). Criteria stipulated in this publication is based on the type of vibrations generated by the source.

Criteria relevant to the proposed construction activities on site are detailed below.

Table 2 – EPA Recommended Human Comfort Vibration Criteria

		RMS acceleration (m/s^2)		RMS velocity (mm/s)		Peak velocity (mm/s)	
Place	**Time**	**Preferred**	**Maximum**	**Preferred**	**Maximum**	**Preferred**	**Maximum**
Continuous Vibration							
Residences	Daytime	0.01	0.02	0.2	0.4	0.28	0.56
Offices		0.02	0.04	0.4	0.8	0.56	1.1
Workshops		0.04	0.08	0.8	1.6	1.1	2.2
Impulsive Vibration							
Residences	Daytime	0.3	0.6	6.0	12.0	8.6	17.0
Offices		0.64	1.28	13.0	26.0	18.0	36.0
Workshops		0.64	1.28	13.0	26.0	18.0	36.0

6 NOISE EMISSION MANAGEMENT LEVELS

6.1 TO RESIDENTIAL RECEIVERS

Noise generated by plant and equipment throughout the duration of the project will be managed to generally comply with the NSW Interim Construction Noise Guideline noise emission criteria, and where these noise goals may be exceeded, noise levels will be managed in strict compliance with AS2436.

Existing background noise levels in the area have previously been measured by this office, for the development application assessment of 180 George Street, Parramatta. An unattended noise monitor was installed at the property as detailed in Figure 1 above during the Noise Impact Assessment for the project, from the 1st to 7th December, 2016. The noise levels measured by this monitor will be representative of the ambient noise level on site. Monitoring was conducted using an Acoustic Research Laboratories noise monitor set to A-weighted fast response. The monitor was calibrated at the start and end of the monitoring period using a Rion NC-73 calibrator. No significant drift was noted.

Refer to Appendix 1 for detailed noise logging data

Table 3 – Measured Daytime Rating Background Noise Level and Noise Management Levels for Residential Receivers

Measurement Location	Associated Receiver	Day of Week	Measured Rating Background Noise Level Daytime dB(A) $L_{90(period)}$	Noise Goal dB(A) $L_{eq\ (15minutes)}$
180 George Street, Parramatta (See Figure 1)	Receiver 5	Monday - Friday	7am-5pm = 45 dB(A)	7am-5am (BG + 10dB) = 55 dB(A)
		Saturday	8am-2pm = 41 dB(A)	8am-2pm (BG +10dB) = 51 dB(A)

6.2 TO COMMERCIAL RECEIVERS

Noise generated by plant and equipment throughout the duration of the project will be managed to generally comply with the NSW Interim Construction Noise Guideline noise emission criteria, and where these noise goals may be exceeded, noise levels will be managed in strict compliance with AS2436.

Table 4 – Noise Management Levels for Commercial Receivers

Associated Receiver	Day of Week	Noise Goal dB(A)$L_{eq\ (15minutes)}$
Receiver 1, 2, 3 and 4	Monday – Friday (7:00am-5:00pm)	70 dB(A)L_{eq}
	Saturday (8:00am-2:00pm)	70 dB(A)L_{eq}

7 ASSESSMENT OF POTENTIAL NOISE EMISSIONS

7.1 ACTIVITIES TO BE CONDUCTED AND THE ASSOCIATED NOISE SOURCES

We have been advised of the typical equipment/processes anticipated to be used for the construction of the subject development. Noise impacts from these activities on the amenity of the surrounding identified sensitive receivers, will be predicted in this section. .

The A-weighted sound power levels for the anticipated equipment/processes are outlined in the tables below.

Table 5 – Sound Power Levels

EQUIPMENT /PROCESS	SOUND POWER LEVEL dB(A)
Construction	
Mobile Crane	104
Trucks (upto 12 tonnes)	100
Large Trailers	116
Drilling	94*
Hammering (jackhammers)	120*
Angle grinders	114*
Power Saw	115*
Impact drill	110*
Concrete/Shortcrete Pump	107
Cement Mixing Truck	105

*** - includes 5 dB(A) addition for characteristics of noise source.**

The noise levels presented in the above table are derived from the following sources:

1. On-site measurements;
2. Table D2 of Australian Standard 2436-1981 & Table A1 of Australian Standard 2436-2010; and
3. Data held by this office from other similar studies.

7.2 NOISE EMISSION PREDICTIONS

7.2.1 Methodology

Noise generated by plant and equipment will be managed to generally comply with the nominated acoustic criteria, and where this noise goal may be exceeded, noise will be managed based on principles consistent with Australian Standard 2436.

Predictions of noise levels at the sensitive receivers identified have been made of the construction processes with the potential to produce significant noise.

It is noted that:

- Many of the noise sources are present over a small period of the day or may be present for a few days with a significant intervening period before the activity occurs again.
- The distance between the noise source and the receiver.
- The screening effect provided by any remaining building structure or building shell. In particular, noise from works done on higher level will be substantially screened by the remaining building structure to receivers located on lower levels.

7.2.2 Predicted Noise Levels

Please see tables below for predicted noise levels for each receiver.

Construction Phase	Construction Plant	Plant Noise Level dB	Receiver Location	Predicted Noise Range dB(A) $L_{eq(15\text{-}minute)}$	Noise Criteria dB(A) $L_{eq(15\text{-}minute)}$		Exceedance dB(A) $L_{eq(15\text{-}minute)}$		Management Conditions
					Mon-Fri	Saturday	Mon-Fri	Saturday	
Construction and Fitout	Pneumatic Hammering	123	Receiver 1	78-93	70	70	8	23	Refer to Section 8, 9, 10, 11 and 12.
			Receiver 2	78-93	70	70	8	23	
			Receiver 3	75-91	70	70	5	21	
			Receiver 4	71-84	70	70	1	14	
			Receiver 5	73-84	51	55	22	29	
	Concrete Sawing	115	Receiver 1	46-66	70	70	-24	-4	
			Receiver 2	46-66	70	70	-24	-4	
			Receiver 3	42-66	70	70	-28	-4	
			Receiver 4	39-51	70	70	-31	-19	
			Receiver 5	38-51	51	55	-13	-4	
	Angle Grinders	114	Receiver 1	57-62	70	70	-13	-8	
			Receiver 2	57-62	70	70	-13	-8	
			Receiver 3	47-65	70	70	-23	-5	
			Receiver 4	43-52	70	70	-27	-18	
			Receiver 5	41-51	51	55	-10	-4	

Construction Phase	Construction Plant	Plant Noise Level dB	Receiver Location	Predicted Noise Range dB(A) $L_{eq(15\text{-}minute)}$	Noise Criteria dB(A) $L_{eq(15\text{-}minute)}$		Exceedance dB(A) $L_{eq(15\text{-}minute)}$		Management Conditions
					Mon-Fri	Saturday	Mon-Fri	Saturday	
Construction and Fitout	Impact Drill	110	Receiver 1	41-61	70	70	-29	-9	Refer to Section 8, 9, 10, 11 and 12.
			Receiver 2	41-61	70	70	-29	-9	
			Receiver 3	39-61	70	70	-31	-9	
			Receiver 4	34-46	70	70	-36	-24	
			Receiver 5	33-47	51	55	-18	-8	
	Concrete Pump	107	Receiver 1	38-58	70	70	-32	-12	
			Receiver 2	38-58	70	70	-32	-12	
			Receiver 3	36-58	70	70	-34	-12	
			Receiver 4	31-43	70	70	-39	-27	
			Receiver 5	30-44	51	55	-21	-11	

8 AMELIORATIVE MEASURES

8.1 SITE SPECIFIC RECOMMENDATIONS

Site specific recommendations as follows:

8.1.1 Potential Vibration and Structure Borne Noise Impacts

- Vibration impacts to Receiver 4 and 5 will be mitigated by the distance between the source and receiver.
- Vibration impacts to Receiver 1, 2, 3 and 4 potentially will be affected by vibration intense activities within close proximity to the receiver. Refer to section 11 for the assessment of these activities.

8.1.2 Pneumatic and Jack hammering

Hammering will typically produce the loudest noise levels emanating from the site and have the highest potential for noise impacts on surrounding receivers. On this basis, it is recommended that surrounding receivers are consulted on the processes of the construction phase (particularly rock breaking). Management processes will include:

- Loud activities (such as rock breaking) should be typically undertaken within hours which would be mutually agreeable. For example;
    - Due to the proximity of the adjacent receivers, scheduling of activities will be the most feasible means to mitigate noise impacts. It is recommended that high noise impact works such as hammering, hydraulic hammering and piling be restricted to the hours of
        - **08.00am – 12.00pm and 1.00pm – 5.00pm Monday to Friday**;**
        - **09.00am – 12.00pm and 1.00pm – 2.00pm Saturdays****

          ****Equipment set up prior to this time is acceptable.
- Sawing and then lifting (where practical). It should be noted that sawing will also produce high noise levels but will be typically less in duration.
- All transient plant should be selected to be wheeled (rubber wheels) not tracked where practical.
- All plant/equipment shall be maintained as per noise control methods and procedures outlined in this report.
- Any significant acoustic treatment of breaking, sawing and excavation works is not feasible – as surrounding developments are multi-storey, negating any benefit that could be provided by noise screens. Accordingly, these activities should be managed so as to reduce noise impacts, as is consistent with AS2436 when strict compliance with noise emission goals is not achievable. We therefore recommend that rock breaking and sawing works are scheduled to minimise impacts on surrounding sensitive receivers.

8.1.3 Excavator Noise

Excavators will be typically used for short periods of time during the construction period. For the most part, excavators will only be in a slight exceedance of the criteria unless in close proximity to receivers (i.e. up to boundaries).

Where prolonged excavator use is necessary, excavators should be moved to another part of the site to offer the receiver closest to the excavator some respite. Where practical and feasible, by moving the excavator from working on one part of the site to the opposite side of the site can provide up to a 10dB(A) reduction in noise levels impacting receiver locations.

8.1.4 Vehicle Noise

Vehicle noise will be generally low impact in this instance. Notwithstanding, best practice techniques which will minimise noise include the following:

- Trucks, trailers and concrete trucks must turn off their engines when on site to reduce impacts on adjacent land use (unless truck ignition needs to remain on during concrete pumping).

8.1.5 Respite Periods

Due to the proximity of the adjacent receivers, scheduling of activities will be the most feasible means to mitigate noise and vibration impacts. It is recommended that high noise impact works such as hammering, hydraulic hammering and piling be restricted to the hours of

- **08.00am – 12.00pm and 1.00pm – 5.00pm Monday to Friday**;**
- **09.00am – 12.00pm and 1.00pm – 2.00pm Saturdays****

**Equipment set up prior to this time is acceptable.

8.1.6 Other Activities

- Typically, noise from most construction activities will comply with the construction noise objectives at surrounding receiver locations, with exception when works are being undertaken at the boundary of the receiver. In our experience, the worst periods have already occurred during the demolition and excavation periods when the loudest noise levels are produced.
- In the event of complaint, noise management techniques identified in this report should be employed to minimise the level of noise impact. This may include community consultation and scheduling of loud construction processes.
- Notwithstanding above, general management techniques and acoustic treatments are included below which may be implemented on a case-by-case basis to reduce noise emissions to surrounding receivers.

9 CONTROL OF CONSTRUCTION NOISE AND VIBRATION

The execution of this work will facilitate the formulation of noise control strategies for this project.

The flow chart presented in Figure 2 illustrates the process that will be followed in assessing construction activities.

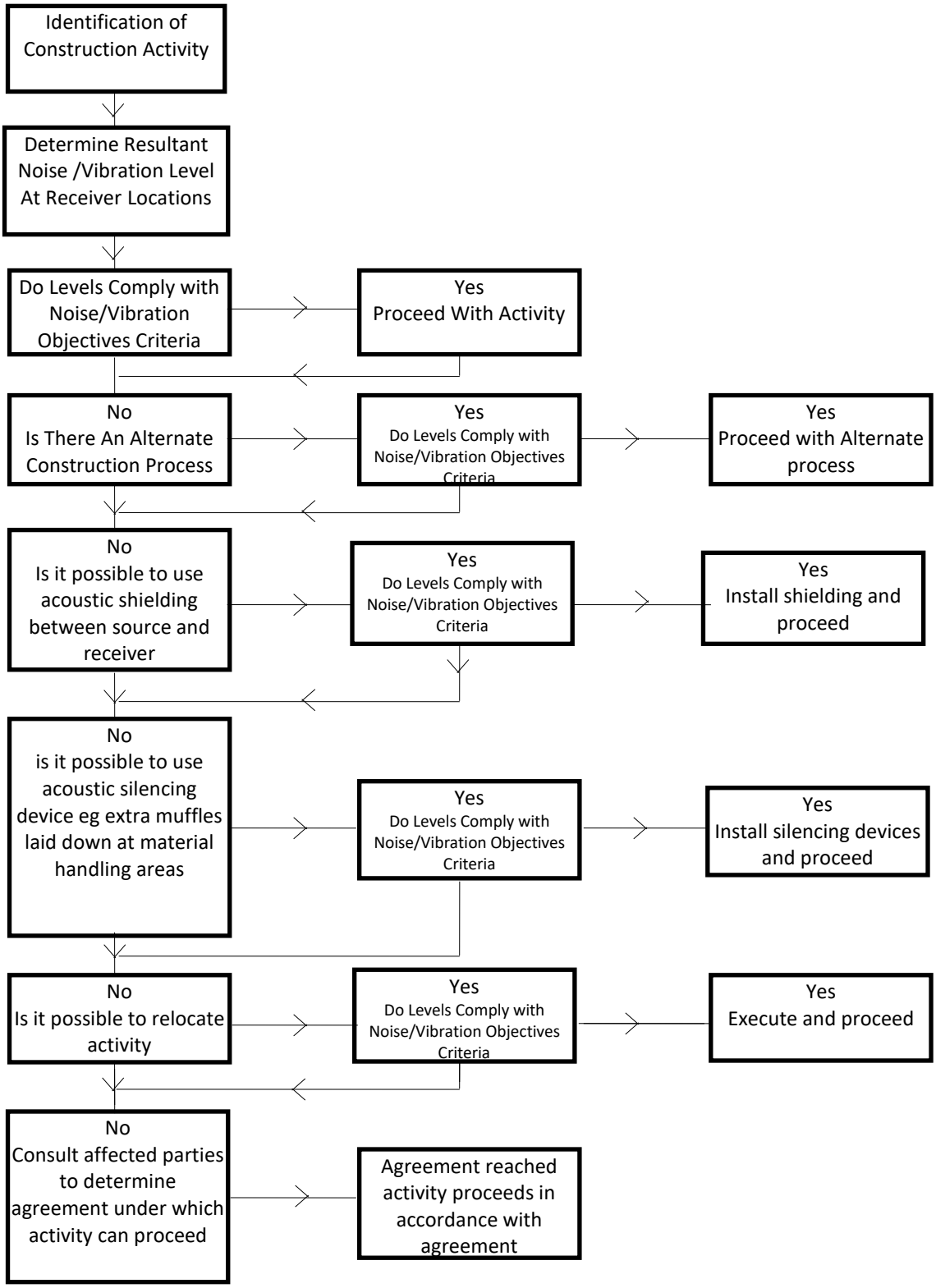


Figure 2 – **Process Flowchart**

10 NOISE CONTROL METHODS

The determination of appropriate noise control measures will be dependent on the particular activities and construction appliances. This section provides an outline of available methods.

10.1 SELECTION OF ALTERNATE APPLIANCE OR PROCESS

Where a particular activity or construction appliance is found to generate excessive noise levels, it may be possible to select an alternative approach or appliance. For example; the use of a hydraulic hammer on certain areas of the site may potentially generate high levels of noise. By carrying this activity by use of sawing, bulldozers ripping and/or milling machines lower levels of noise will result.

It should be noted that pre-drilling, saw cutting and ripping will be incorporated in the excavation/hammering methodology of the demolition component. Based off previous experience and advice provided by the demolition contractor, additional use of drilling, sawing and ripping of masonry or concrete elements will aid in the use of hammering on site. The reduction in hammering required to break down the concrete and masonry elements will entail reduce the amount of noise and vibration levels which are been emitted from the site, affecting the surrounding neighbours.

10.2 ACOUSTIC BARRIER

Barriers or screens can be an effective means of reducing noise. Barriers can be located either at the source or receiver.

- The placement of barriers at the source is generally only effective for static plant (tower cranes). Equipment which is on the move or working in rough or undulating terrain cannot be effectively attenuated by placing barriers at the source.
- Barriers can also be placed between the source and the receiver however this will not beneficial in this instance due to receivers overlooking the site.

The degree of noise reduction provided by barriers is dependent on the amount by which line of sight can be blocked by the barrier. If the receiver is totally shielded from the noise source reductions of up to 15dB(A) can be achieved. Where only partial obstruction of line of sight occurs, noise reductions of 5 to 8dB(A) may be achieved. Where no line of sight is obstructed by the barrier, generally no noise reduction will occur.

As barriers are used to provide shielding and do not act as an enclosure, the material they are constructed from should have a noise reduction performance that is approximately 10dB(A) greater than the maximum reduction provided by the barrier. In this case the use of a material such as 10mm or 15mm thick plywood (radiata plywood) would be acceptable for the barriers.

We do note that the site has surrounding receivers which are multi-storey, in this case the noise benefits of screens will only provide a small reduction to receivers on lower levels.

10.3 SILENCING DEVICES

Where construction process or appliances are noisy, the use of silencing devices may be possible. These may take the form of engine shrouding, or special industrial silencers fitted to exhausts.

10.4 MATERIAL HANDLING

The installation of rubber matting over material handling areas can reduce the sound of impacts due to material being dropped by up to 20dB(A).

10.5 TREATMENT OF SPECIFIC EQUIPMENT

In certain cases, it may be possible to specially treat a piece of equipment to dramatically reduce the sound levels emitted as identified above.

10.6 ESTABLISHMENT OF SITE PRACTICES

This involves the formulation of work practices to reduce noise generation. It is recommended that all available and reasonable treatments and mitigation strategies presented in this report be adopted to minimise noise emissions from the construction activities on site.

10.7 REGULAR NOISE CHECKS OF EQUIPMENT

To determine the requirement for silencing devices on machinery it is proposed to undertake fortnightly noise check. Noise levels of all machines on site will be measured and if they are found to be higher than nominated for that equipment type, items such as mufflers and engine shrouds will be examined to ensure they are in good working order.

A record of these measurements will be kept on a form similar to that shown below.

This measure is expected to maintain noise at constant levels and prevent any increases.

10.8 COMBINATION OF METHODS

In some cases, it may be necessary that two or more control measures be implemented to minimise noise and vibration impacts to surrounding receivers.

11 ASSESSMENT OF VIBRATION

11.1 SENSITIVE RECIEVERS

Nearest vibration receivers for the construction activities associated with the project site are below:

- Receiver 1 – Multi-storey residential building (Block A) located at 180 George Street, Parramatta, which is west of the project site;
- Receiver 2 – Multi storey heritage listed dwelling located at 182 George Street, Parramatta, which is east of the project site;
- Receiver 3 – Multi storey commercial building located at 34 Charles Street, Parramatta, which is north of the project site;
- Receiver 4 – Parramatta Wharf Terminal located on Parramatta River which is to the north of the site;

11.2 VIBRATION PRODUCING ACTIVITIES

Proposed activities that have the potential to produce significant ground vibration include:

- Demolition.
- Shoring and anchoring.
- Hydraulic hammering.
- Excavator working.

It is noted that demolition and excavation works have already been completed. Any minor works will still fall under the same criteria below.

11.3 RECOMMENDED VIBRATION CRITERIA

11.3.1 Residential Criteria

It is recommended to adopt maximum 5mm/s PPV criteria to protect residential buildings adjacent to the project site based on requirements of DIN 4150.

- Alarm Level – 3mm/s PPV at vibration at receiver location, SMS alarm message will be sent to operator, project manager and acoustic engineer if magnitude of vibration events exceed this level. Project manager shall respond immediately by taking courteous work methodology.
- Stop work level -5mm/s PPV at vibration at receiver location, SMS alarm message will be sent to operator, project manager and acoustic engineer if magnitude of vibration events exceed this level. Project manager shall stop the work at amenity of geophone immediately.

11.3.2 Commercial – Heritage Criteria

It is recommended to adopt maximum 3mm/s PPV criteria to protect residential buildings adjacent to the project site based on requirements of DIN 4150.

- Alarm Level – 2mm/s PPV at vibration at receiver location, SMS alarm message will be sent to operator, project manager and acoustic engineer if magnitude of vibration events exceed this level. Project manager shall respond immediately by taking courteous work methodology.
- Stop work level -3mm/s PPV at vibration at receiver location, SMS alarm message will be sent to operator, project manager and acoustic engineer if magnitude of vibration events exceed this level. Project manager shall stop the work at amenity of geophone immediately.

11.3.3 Commercial (General) Criteria

It is recommended to adopt maximum 20mm/s PPV criteria to protect residential buildings adjacent to the project site based on requirements of DIN 4150.

- Alarm Level – 15mm/s PPV at vibration at receiver location, SMS alarm message will be sent to operator, project manager and acoustic engineer if magnitude of vibration events exceed this level. Project manager shall respond immediately by taking courteous work methodology.
- Stop work level - 20mm/s PPV at vibration at receiver location, SMS alarm message will be sent to operator, project manager and acoustic engineer if magnitude of vibration events exceed this level. Project manager shall stop the work at amenity of geophone immediately.

11.4 SAFEGUARDS TO PROTECT SENSITIVE STRUCTURES

It is impossible to predict the vibrations induced by the construction operations on site at potentially affected receivers. This is because vibration level is principally proportional to the energy impact which is unknown nature of terrain in the area (type if soil), drop weight, height etc.

11.5 VIBRATION MONITORING

The proposed vibration monitoring equipment is two Texcel type monitors with externally mounted geophones installed within the locations below:

- Receiver 1 – Commercial shops located along the ground floor of 180 George Street, Parramatta, which is west of the project site;
- Receiver 2 – Multi storey residential dwelling located at 182 George Street, Parramatta, which is east of the project site;

The monitors are proposed to be fitted with GSM modem and audible alarms for vibration exceedance. In addition, the vibration loggers will be down loaded remotely using the GSM modem.

11.5.1 Down Load of vibration logger

Down loading of the vibration logger will be conducted on a regular basis. In the event exceedance of vibration criteria or alarms occurs, down loading of logger will be conducted more frequently. Results obtained from the vibration monitor will be presented in a graph formant and will be forwarded to Karimbla Constructions for review. It is proposed that reports are provided fortnightly with any exceedance in the vibration criteria reported as detailed in this report.

11.5.2 Presentation of Vibration Logger Results

A fortnightly report will be submitted to Karimbla Constructions via email summarising the vibration events. The vibration exceedance of limit is recorded the report shall be submitted within 24 hours. Complete results of the continuous vibration logging will be presented in fortnight reports including graphs of collected data.

11.5.3 Persons to receive alarms

The following personnel will receive GSM alarms:

- Acoustic consultant/advisor (1 person)
- Construction site foreman
- Main builder foreman (where applicable)
- Karimbla Constructions nominated two representatives

12 COMMUNITY INTERACTION AND COMPLAINTS HANDLING

12.1 CITY OF PARRAMATTA – NOTICE OF DETERMINATION – DA/480/2018

Condition 131 states the following:

Complaints Register

131. The applicant must record details of all complaints received during the construction period in an up to date complaints register. The register must record, but not necessarily be limited to:
    i) The date and time of the complaint;
    ii) The means by which the complaint was made;
    iii) Any personal details of the complainants that were provided, or if no details were provided, a note to that affect;
    iv) Nature of the complaints;
    v) Any action(s) taken by the applicant in relation to the complainant, including any follow up contact with the complainant; and
    vi) If no action was taken by the applicant in relation to the complaint, the reason(s) why no action was taken.

    The complaints register must be made available to Council and/or the Principal Certifying Authority upon request.
    Reason: To allow the Principal Certifying Authority to ensure complaints are dealt with appropriately.

12.2 ESTABLISHMENT OF DIRECT COMMUNICATION WITH AFFECTED PARTIES

In order for any construction noise management programme to work effectively, continuous communication is required between all parties, which may be potentially impacted upon, the builder and the regulatory authority. This establishes a dynamic response process which allows for the adjustment of control methods and criteria for the benefit of all parties.

The objective in undertaking a consultation process is to:

- Inform and educate the groups about the project and the noise controls being implemented;
- Increase understanding of all acoustic issues related to the project and options available;
- Identify group concerns generated by the project, so that they can be addressed; and
- Ensure that concerned individuals or groups are aware of and have access to a Constructions Complaints Register which will be used to address any construction noise related problems should they arise.

Community consultation should be undertaken prior to works through the builder. This includes meetings and correspondence with the following affected parties:

- Receiver 1 – Commercial shops located along the ground floor of 180 George Street, Parramatta, which is west of the project site;
- Receiver 2 – Multi storey heritage listed dwelling located at 182 George Street, Parramatta, which is east of the project site;
- Receiver 3 – Multi storey commercial building located at 34 Charles Street, Parramatta, which is north of the project site;
- Receiver 4 – Parramatta Wharf Terminal located on Parramatta River which is to the north of the site;
- Receiver 5 – Multi storey residential dwelling located at 107 George Street, Parramatta, which is south of the project site.

12.3 DEALING WITH COMPLAINTS

Should ongoing complaints of excessive noise or vibration criteria occur immediate measures shall be undertaken to investigate the complaint, the cause of the exceedances and identify the required changes to work practices. In the case of exceedances of the vibration limits all work potentially producing vibration shall cease until the exceedance is investigated.

The effectiveness of any changes shall be verified before continuing. Documentation and training of site staff shall occur to ensure the practices that produced the exceedances are not repeated.

If a noise complaint is received the complaint should be recorded on a Noise Complaint Form. The complaint form should list:

- The name and address of the complainant (if provided);
- The time and date the complaint was received;
- The nature of the complaint and the time and date the noise was heard;
- The name of the employee who received the complaint;
- Actions taken to investigate the complaint, and a summary of the results of the investigation;
- Required remedial action, if required;
- Validation of the remedial action; and
- Summary of feedback to the complainant.

A permanent register of complaints should be held. All complaints received should be fully investigated and reported to management. The complainant should also be notified of the results and actions arising from the investigation.

Where an item of plant is found to be emitting excessive noise, the cause is to be rectified as soon as possible. Where work practices within established guidelines are found to result in excessive noise being generated then the guidelines should be modified so as to reduce noise emissions to acceptable levels. Where guidelines are not being followed, the additional training and counselling of employees should be carried out.

Measurement or other methods shall validate the results of any corrective actions arising from a complaint where applicable.

12.4 REPORTING REQUIREMENTS

The following shall be kept on site:

1. A register of complaints received/communication with the local community shall be maintained and kept on site with information as detailed in this report.
2. Where noise/vibration complaints require noise/vibration monitoring, results from monitoring shall be retained on site at all times.
3. Any noise exceedances occurring including, the actions taken and results of follow up monitoring.
4. A report detailing complaints received and actions taken shall be presented to the construction liaison committee.

12.5 CONTINGENCY PLANS

Where non-compliances or noise complaints are raised the following methodology will be implemented.

1. Determine the offending plant/equipment/process

2. Locate the plant/equipment/process further away from the affected receiver(s) if possible.

3. Implement additional acoustic treatment in the form of localised barriers, silencers etc where practical.

4. Selecting alternative equipment/processes where practical

13 CONCLUSION

This report presents an assessment of noise impacts associated with the construction of proposed construction activity at 180 George Street, Parramatta.

A prediction of noise levels associated with the works have been discussed in this report. The outcomes are as follows:

- There is likely to be exceedances of the construction noise criteria particularly with heavier equipment such as excavators and concrete saws and the like during the construction phase when in close proximity to a receiver. Community consultation and scheduling conditions would be recommended to ensure that noise impacts and exposure are minimised.
- General construction works will have significantly lower impact on surrounding receivers due to the quieter items of plant (concrete pumps, etc). Notwithstanding, in all circumstances noise emissions from the site should be minimised as practically possible during the construction period.

This document presents a noise and vibration management plan for the construction activities associated with the construction activities proposed to take place at 180 George Street, Parramatta. A noise and vibration assessment was conducted by this office, to determine the level of impact on surrounding receivers and develop a management plan accordingly.

Provide that the recommendations, management controls and procedures outlined in this report are implemented, noise and vibration impacts from the proposed works will be minimised.

Yours faithfully,

Acoustic Logic Consultancy Pty Ltd
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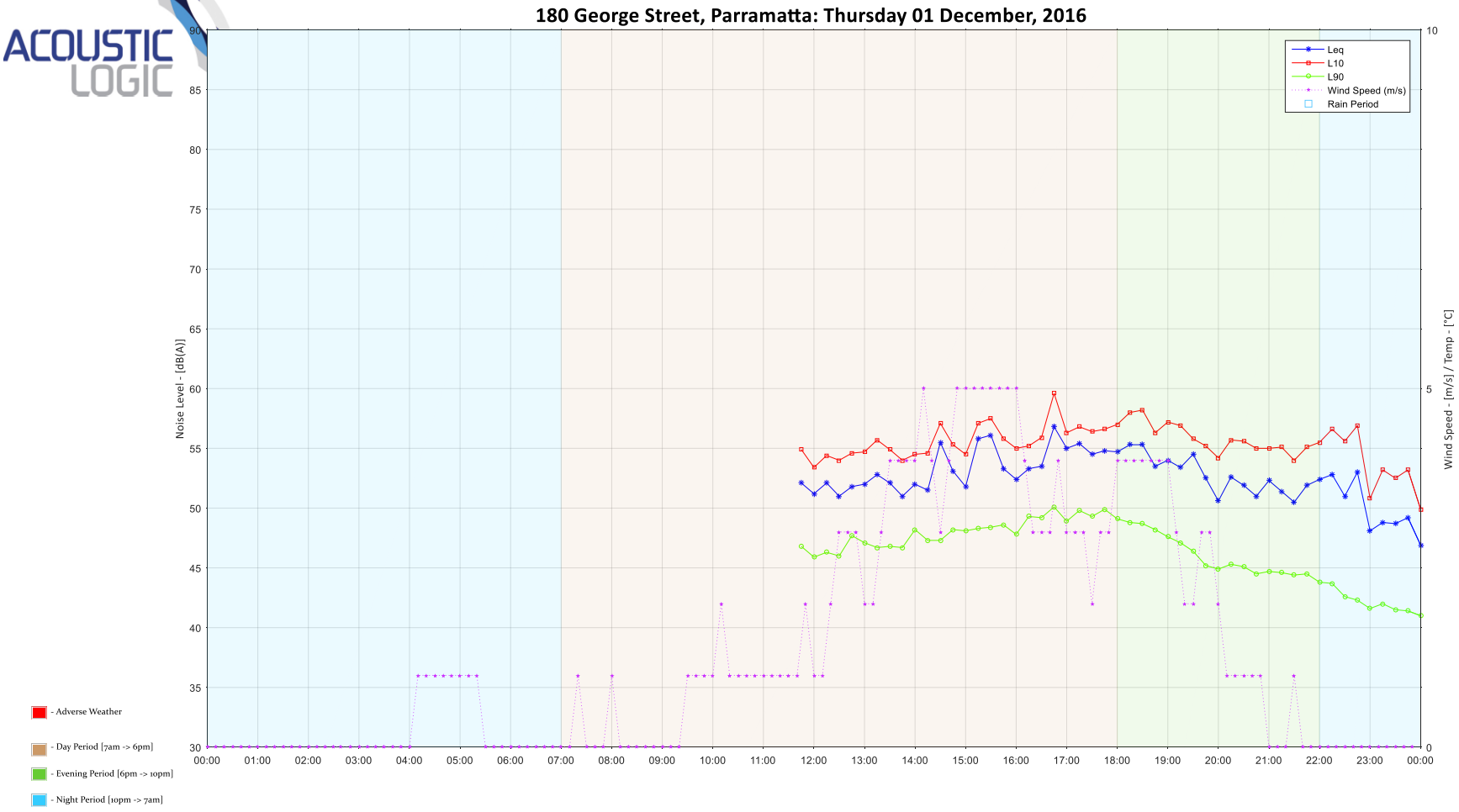
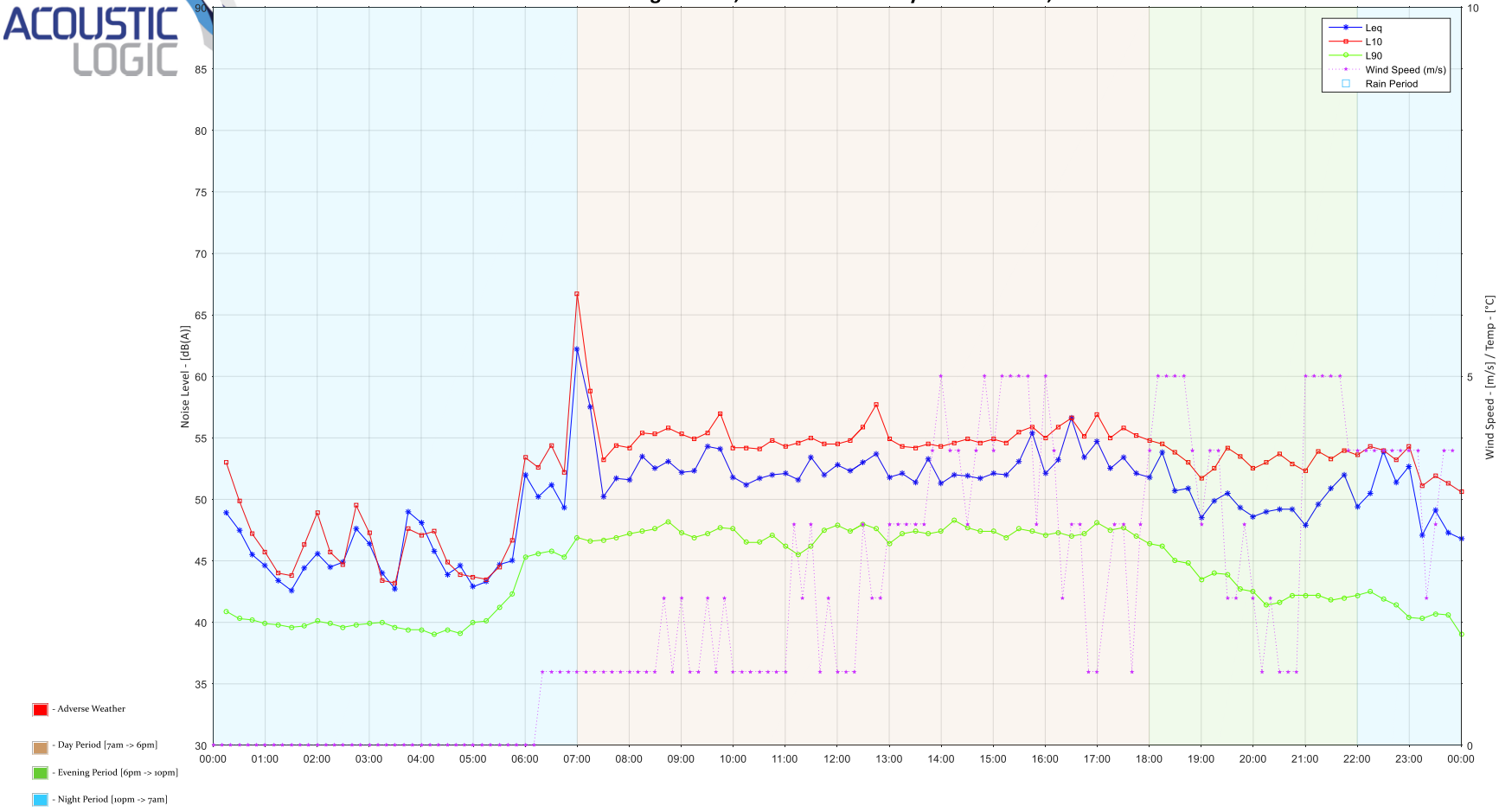
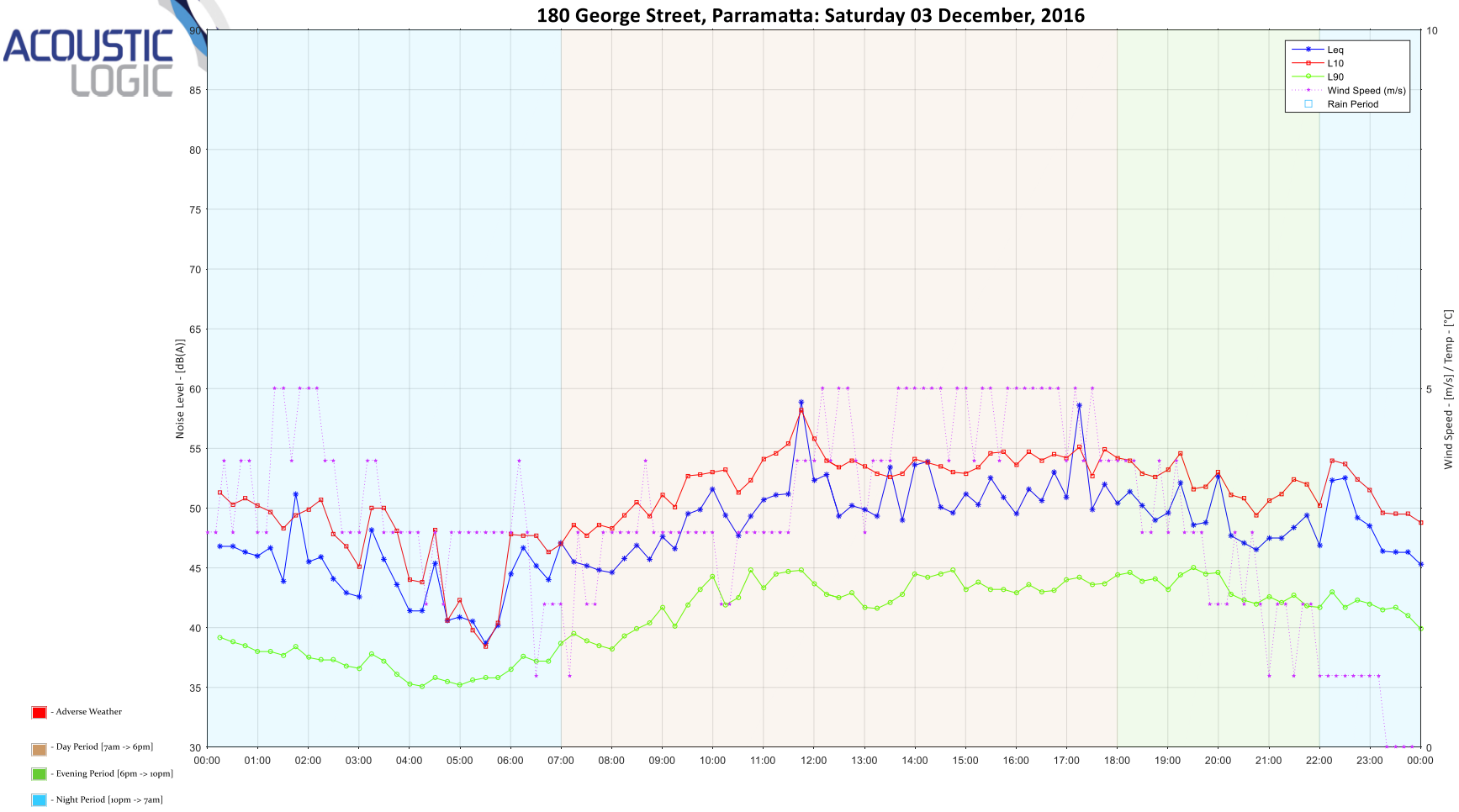
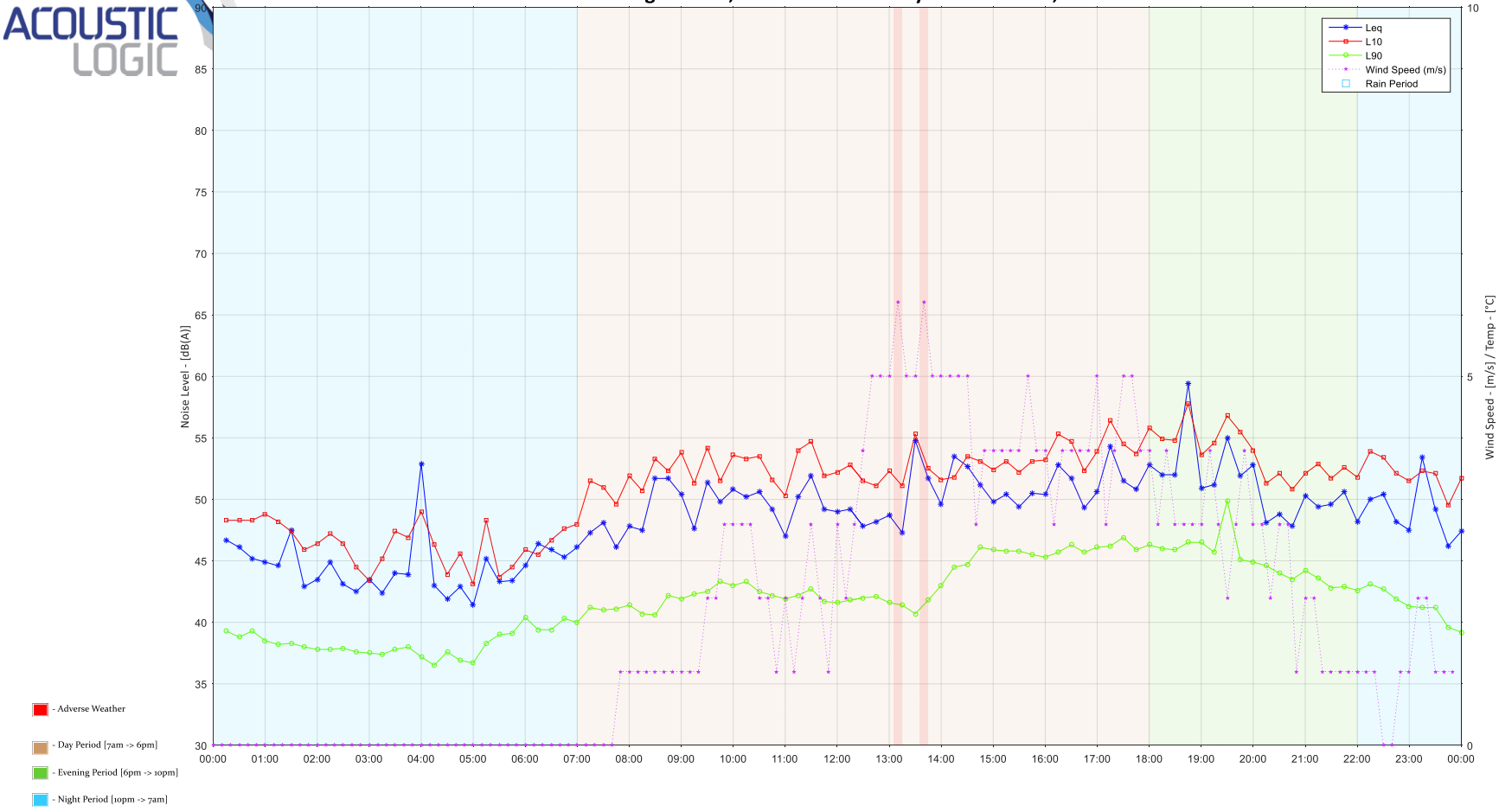
APPENDIX 1
UNATTENDED NOISE MONITORING DATA

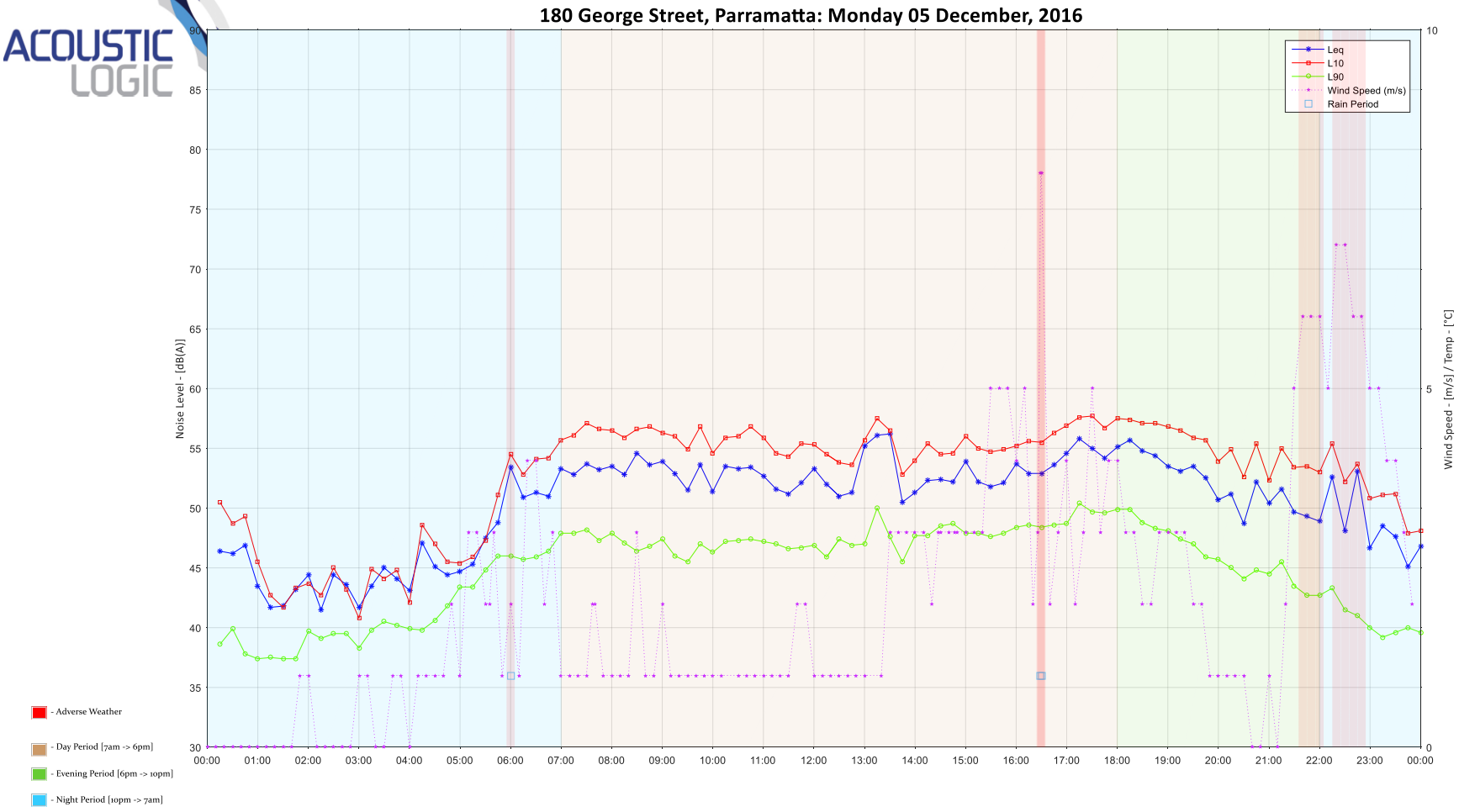
Periods excluded from the assessment for inclement weather

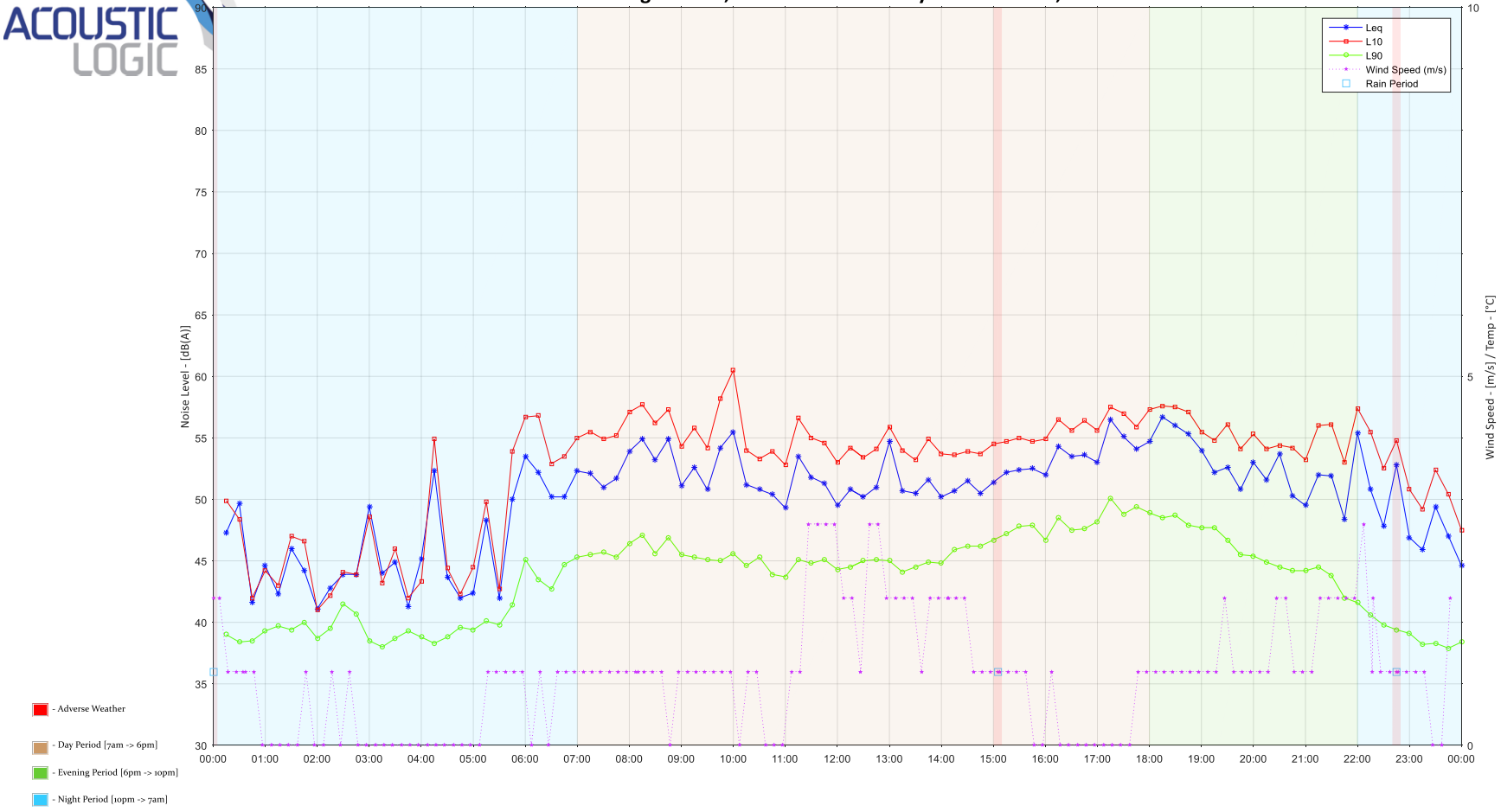

180 George Street, Parramatta: Thursday 01 December, 2016
Leq
L10
L90
Wind Speed (m/s)
Rain Period
Noise Level - [dB(A)]
Wind Speed - [m/s] / Temp - [°C]
- Adverse Weather
- Day Period [7am -> 6pm]
- Evening Period [6pm -> 10pm]
- Night Period [10pm -> 7am]

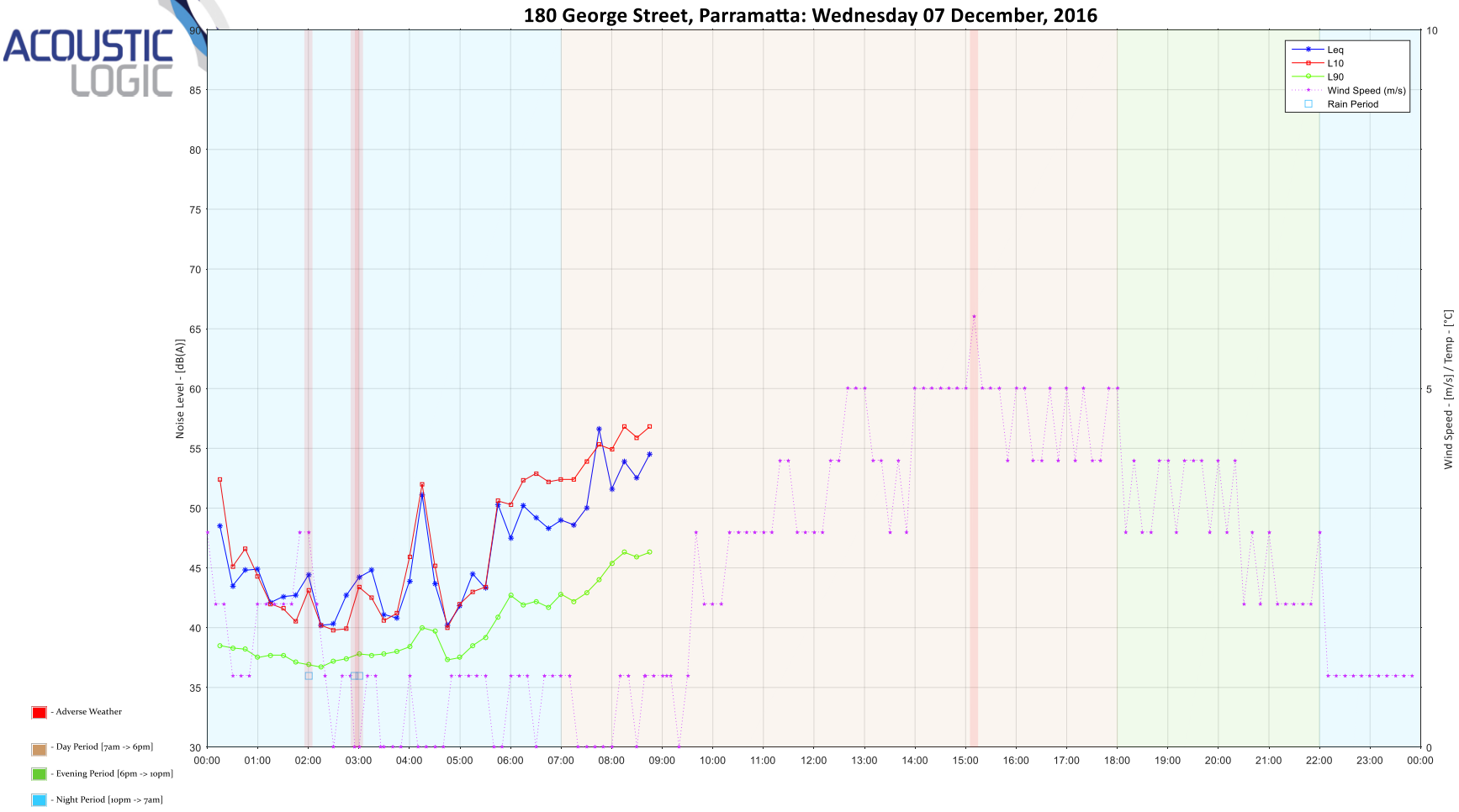

180 George Street, Parramatta: Friday 02 December, 2016
Leq
L10
L90
Wind Speed (m/s)
Rain Period
Noise Level - [dB(A)]
Wind Speed - [m/s] / Temp - [°C]
- Adverse Weather
- Day Period [7am -> 6pm]
- Evening Period [6pm -> 10pm]
- Night Period [10pm -> 7am]


180 George Street, Parramatta: Saturday 03 December, 2016
Leq
L10
L90
Wind Speed (m/s)
Rain Period
Noise Level - [dB(A)]
Wind Speed - [m/s] / Temp - [°C]
- Adverse Weather
- Day Period [7am -> 6pm]
- Evening Period [6pm -> 10pm]
- Night Period [10pm -> 7am]


180 George Street, Parramatta: Sunday 04 December, 2016
Leq
L10
L90
Wind Speed (m/s)
Rain Period
Noise Level - [dB(A)]
Wind Speed - [m/s] / Temp - [°C]
- Adverse Weather
- Day Period [7am -> 6pm]
- Evening Period [6pm -> 10pm]
- Night Period [10pm -> 7am]


180 George Street, Parramatta: Monday 05 December, 2016
Noise Level - [dB(A)]
Wind Speed - [m/s] / Temp - [°C]
Leq
L10
L90
Wind Speed (m/s)
Rain Period
- Adverse Weather
- Day Period [7am -> 6pm]
- Evening Period [6pm -> 10pm]
- Night Period [10pm -> 7am]


180 George Street, Parramatta: Tuesday 06 December, 2016
Noise Level - [dB(A)]
Wind Speed - [m/s] / Temp - [°C]
Leq
L10
L90
Wind Speed (m/s)
Rain Period
- Adverse Weather
- Day Period [7am -> 6pm]
- Evening Period [6pm -> 10pm]
- Night Period [10pm -> 7am]


180 George Street, Parramatta: Wednesday 07 December, 2016
Noise Level - [dB(A)]
Wind Speed - [m/s] / Temp - [°C]
Leq
L10
L90
Wind Speed (m/s)
Rain Period
- Adverse Weather
- Day Period [7am -> 6pm]
- Evening Period [6pm -> 10pm]
- Night Period [10pm -> 7am]