CONSTRUCTION TRAFFIC MANAGEMENT PLAN

Construction of Alterations and Additions to Brookvale Public School at 2-8 Old Pittwater Road in Brookvale

Prepared for: Brookvale Public School

A1715696N (Version 1a)

April 2017

1. INTRODUCTION

Motion Traffic Engineers was commissioned by Brookvale Public School for the preparation of a construction traffic management plan (CTMP) for the construction of the school hall and ancillary areas.

- A stage/hall with a Gross Floor Area of 294.4 m^2
  - Store rooms with a Gross Floor Area of 95.6 m^2
  - A patio with a Gross Floor Area of 216.7 m^2
  - OSHC office and kitchenette with a Gross Floor Area of 34.8 m^2
  - An access washroom and shower room with a Gross Floor Area of 6.4 m^2

The school hall is located to the north east of the school near the existing library. The school hall and other areas are well located with the school. The construction site will be created on the existing sporting field in a rectangle shape. A proportion of the construction site will be allocated to construction worker parking.

The sporting field will be reduced in size.

The truck route to the school hall construction areas within the school is presented in Figure 1.

The purpose of this Construction Traffic Management Plan ("CTMP") is to minimise the impacts of the demolition and construction works on the public domain and in this case, the school activity with Brookvale Public School, in particular with respect to temporary interruptions to vehicular and pedestrian traffic and ensure that public safety is maintained at all times.

Implementation and approval of the Construction Traffic Management Plan requires approval from Northern Beaches Council.

The following activities will be undertaken in the public areas:

- Trucks will use the separate entry and exits for the on site school car park area

There will be no works zone (as in a public area) for the construction of the school hall. There will be a construction site restriction zone (restricting children and staff) from entering the construction activity.)

There will be no truck movements when the school zone on Old Pittwater Road is operating.

There will be no trucks moving through the school during the drop off or pick up area, lunch break and morning and afternoon recess (any circumstance where children are outside of the classroom). Staff will inform parents and children (weekly for children) to stay away from construction activity and vehicles.

The following traffic control plans have been prepared for public areas:

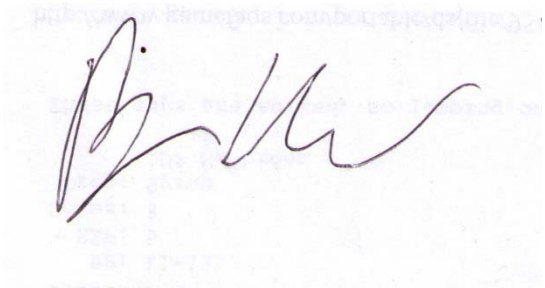
- Pedestrian management plan to ensure that pedestrians are aware of the construction driveway
- Signage advising of truck turning on Old Pitt Water Road

The following traffic control plans have been prepared for truck and car movements within the school:

- Pedestrian management to ensure that there is safe distance of the construction vehicle movement to any possible pedestrians in the truck route path

No works zone is required.

The construction site plan is presented in Appendix B.



Benny Chen
Principal
(NER)

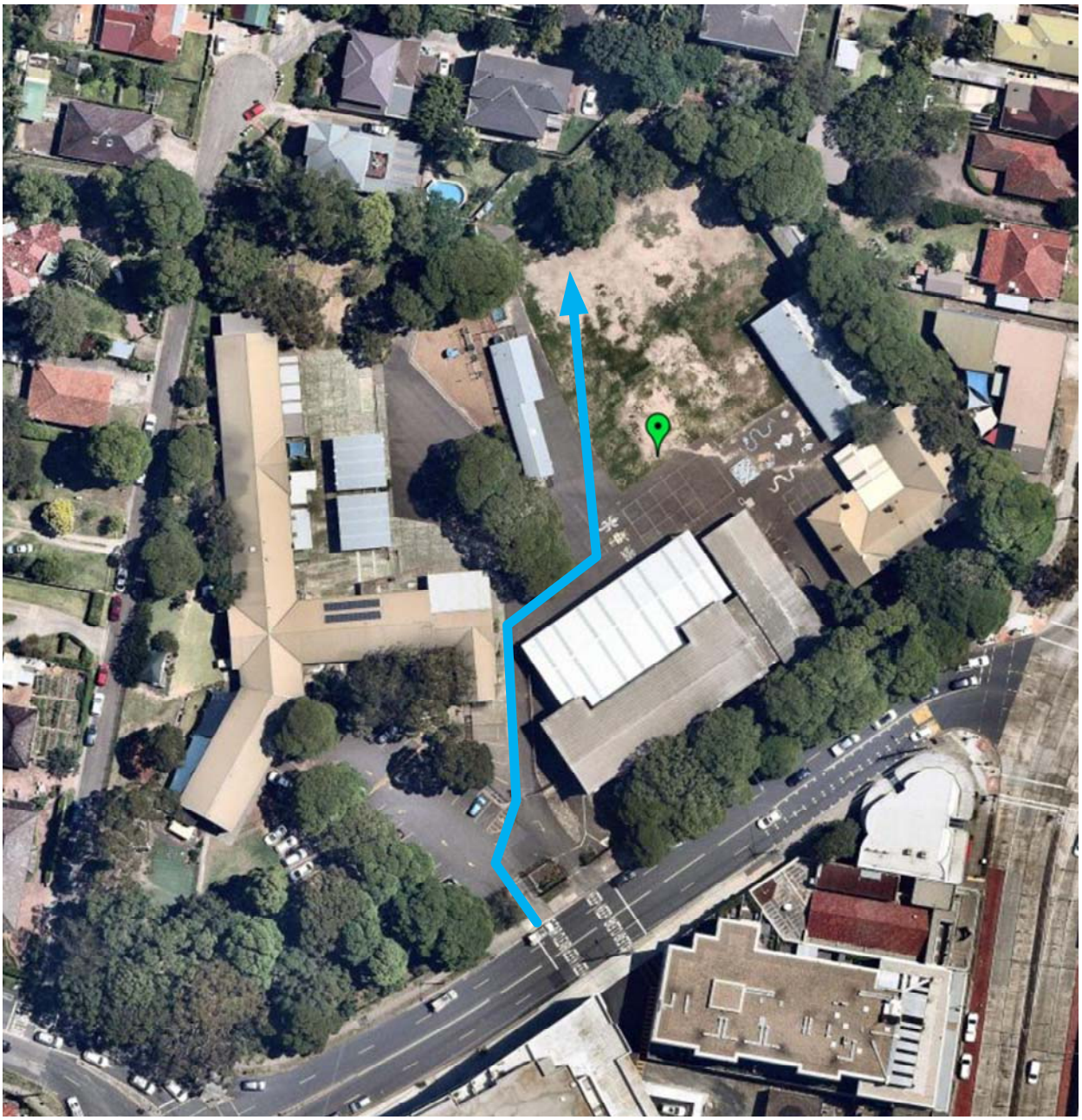


Figure 1: Inbound Truck Route with Brookvale Public School

2. PARKING IMPACT OF WORKS

Construction workers will be able to park their cars in th e existing school car park between 10am to 2pm. The time restriction is the prevent conflict with the school drop off and pick up periods. Some construction vehicles will be permitted to park within the construction site for construction workers as a consequence of the time restrictions to park within the existing school park area.

3. LOADING AND UNLOADING AREA

The loading and unloading area will be within the construction site.

4. TRAFFIC IMPACT OF WORKS

The construction activity will generate car trips (construction workers) and truck movements.

Most construction workers arrive on site before 8am and hence before the AM peak hour. Construction workers end work before 5pm and their return trips are largely outside of the PM peak hour.

Truck arrivals occur throughout the day with no define peak. Truck arrivals are no later than 4pm since the drivers themselves need to return to the depot or/and to make sure they arrive in time before the site closes and any material is unloaded or loaded in time. Table 1 present information on the number of workers and frequency of truck movements.

The vehicle trip generation will not affect the performance of the nearby intersections during the peak hours or throughout the day.

As discussed previously, there will be vehicle movements restrictions to avoid conflict with children and parents

Pedestrian management will be provided at the construction driveway.

The impact on local traffic of construction traffic on the adjacent roads (such as Alfred Street and Consul Road) will be kept to a minimum. The following will be implemented to achieve this:

- The construction trucks travelling to the site will be using major roads that permit trucks and through traffic such as the A8 and A38
- The timing of the truck arrivals and departures will largely be outside of the commuter peak periods
- During the demolition stage, all trucks will enter the construction site and not occupy the nearby roads with a traffic control plan
- Warning signs will be placed warning pedestrians to walk across the construction driveway with care
- During periods of high traffic volume (such as demolition, excavation and concrete pours etc), pedestrians will be guided walking across the construction site entrance and exit by traffic controllers.

- Truck movements will only occur during permitted construction periods on a weekday only
- The cars of the construction workers will park either on site or on the public parking areas away from the site. Where possible, some will use public transport to travel to and from the site and takes into accounts that the Brookvale Train and Bus interchange is a ten-minute walk away
- Vehicle access to neighbouring properties will be retained.

The entire frontage of the construction site will be fenced off with temporary fencing for security and safety in accordance with WorkSafe requirements.

All statutory safety and warning signs to be erected and maintained at all times.

No machinery or material will be stored on the footpath or verges or on public areas.

Pedestrians will be advised to watch their step and on days of truck movements across the construction site driveway.

The loading/unloading of materials will occur within the construction site.

5. SITE CONDITIONS

The site is provided with adequate controls to ensure the safety and security of the construction site and to constrain environmental impacts. The following presents details of the safety, security and environmental controls provided on site.

Fencing

- A 1.8 metre fencing surrounds the site to prevent unauthorized personnel from accessing the site from entering the site. It provides a single entry point for authorised personal. Fencing also provides security and safety to the site and ensures that potential safety hazards are constrained to the site area.

Erosion and Sediment Control Fence

- An erosion and sediment control fence surrounds the site to prevent or minimise erosion while constraining loose soil to the site. The control fences will also aid in minimalizing the environmental impact on the surrounding flora and fauna.

Wooden Mats

- Wooden mats are placed at the site entrance as additional support for heavy vehicles. The mats serve to spread out the weight of the heavy vehicles whilst also aiding in stability on loose unstable ground conditions.

Cattle Grid

- A cattle grid is placed within the site boundary at the site entrance to shake loose dirt and large materials such as, pebbles and rocks, off a vehicle as it drives over the cattle grid. Vehicles exiting the site are simultaneously washed off to capture air born soil particles discharged from the vehicle as a result of driving over the cattle grid.

Silt Arrestors

- Silt arrestors are placed along the gutter adjacent to the site entrance. These catch loose silts and dirt washed of the cattle grid and out of the site entrance.

Bins

- Bins are located adjacent to the site office which allows for easy access by the vehicles on site.
- The bins are used to centralise and contain site waste material such as pallet wrap and broken/damaged materials to reduce site hazards

Emergency Evacuation point

- The emergency evacuation point is located at the front of the site office.

Site Office

- The site office is located adjacent to the entrance and next to the bins. The location allows for convenient access and view of the construction site. First aid is located in the site office. The site office allows for visitors to engage in a site induction before having to travel to far through the site.

Noise

For noise management and control on the construction site, strict work time and periods are to be followed. By following noise management time frames, the impact on the neighbours and surrounding will be reduced. It is recommended to avoid the use of heavy machinery, large delivery vehicles and loud oscillating/ impacting tools like jack hammers in the initial and end of these periods of times where possible to further reduce the impact.

Construction activity will only occur during nominated hours.

A predicted noise level assessment should be undertaken and weighed against surrounding sites and potential sensitive land uses to assess if a Construction Noise Management plan will be required for the site.

This is done by gathering all the noise impacts associated to the site and comparing it to the acceptable levels for the area. Some points to consider are as such:

- Height of noise
- Type of noise (eg. Airborne / vibration etc)
- All noises associated to the construction during all phases
- Existing noises in the area
- Examining proximity to sensitive areas
- Assessing for particularly offensive noises such as “beepers” and jackhammering
- Etc.

Local neighbours and those most affected should be notified early on in the process of the construction times and expected times of high noise levels. Complaints to the site regarding noise levels and other noise related issues should be compiled and analysed regularly with attempts to rectify issues made.

6. TRUCK AND CAR MOVEMENTS

The details and frequency of the truck movements and the corresponding Traffic Control Plan are as follows in the following Table1 and the appropriate traffic control plan in use and the frequency.

Phase	Duration	Workers Onsite	Largest Vehicle	Loading / Unloading Location	Truck Movements	TCPs Used & Frequency
Excavation	2 weeks	5	10 m rigid truck	Construction site within the school	6 / day	TCP 1: Pedestrian Management on Old Pittwater Road (all day) TCP 2: Truck Turning signage on Old Pittwater Road (all day) TCP 3: Managing truck movements within the school (all vehicle movements)
Construction	52 weeks	15	10 m rigid truck	Construction site within the school	4 / day	TCP 1: Pedestrian Management on Old Pittwater Road (all day) TCP 2: Truck Turning signage on Old Pittwater Road (all day) TCP 3: Managing truck movements within the school (all vehicle movements)

Table 1: Summary of Truck Usage by Construction Phase and Traffic Control Plan Used

The number of truck movements on a daily basis is relatively low over a working day.

The inbound truck routes are as follows to the Old Pittwater Road construction driveway:

North

- Truck drivers coming from the North will travel on A8 and Old Pittwater Road

South

- Drivers from the South will travel on A8 and Old Pittwater Road

East

- Drivers are unlikely to come from the East since the Pacific Ocean is 3 km to the east

West

- Truck drivers coming from the West will travel on A28, Beacon Hill Road,
- and Old Pittwater Road

The outbound movement is to turn left toward the A8, or travel on the A28 by turning right into Old Pittwater Road, turn right into Beacon Hill Road and turn left into A28.

7. PARKING AND QUEUING AREAS

All trucks will be queued within the site. To minimise queuing on Old Pittwater Road, and the school car park and the nearby roads, a schedule of construction vehicle deliveries will be prepared by the main contractor. This will minimise queuing into and out of the site and to ensure that once the construction vehicles arrive, the traffic controllers will be ready to manage the construction vehicles and the through traffic on Old Pittwater Road.

The expected frequency of construction vehicles are presented in Table 1. Most arrivals are pre-planned to within a time frame of 20 minutes.

Trucks are not to park in nearby streets while waiting to travel to the construction site.

8. TRAFFIC MANAGEMENT PLAN CHECKLIST

This section responds to the checklist in the document titled "Procedures for Use In the Preparation of a Traffic Management Plan (TMP)" prepared by the NSW RTA (now RMS) with the document dated 2001. The checklist is in Section C of the document.

	Traffic Management Plan Issues	Response
A	Description or detailed plan of proposed measures	Yes - see report
B	Identification and assessment of impacts of proposed measures	Yes -see report
C	Measures to ameliorate the impact of re-assigned traffic	Yes- alternative vehicle routes are available. See report
D	Assessment of public transport services affected	No - public transport not affected
E	Details of provisions made for emergency vehicles, heavy vehicles, cyclists and pedestrians	No change. Emergency vehicles and trucks have alternative access
F	Assessment of effect on existing and future developments with transport implications in the vicinity of the proposed measures	Construction works are short term
G	Assessment of effect on traffic movements in adjoining areas	No. The impacts are local
H	Public Consultation Process	Notices will be delivered by a letter drop

Table 2: Traffic Management Checklist

9. TRAFFIC CONTROL PLANS

This section discusses the preparation of traffic control plan managing both pedestrians and trucks entering and leaving the construction site and the occupancy of the kerbside lane.

The preparation of the Traffic Control Plans have been in accordance with Australian Standards AS1742.3 and the RTA Traffic Control at Work Sites (now the RMS).

Benny Chen is licensed and registered by the NSW Roads and Maritime Services to design and inspect traffic control plans (Certificate No. 2893016010).

Table 1 presents the use of Traffic Control Plans according to each construction phase and the expected frequency of use per day.

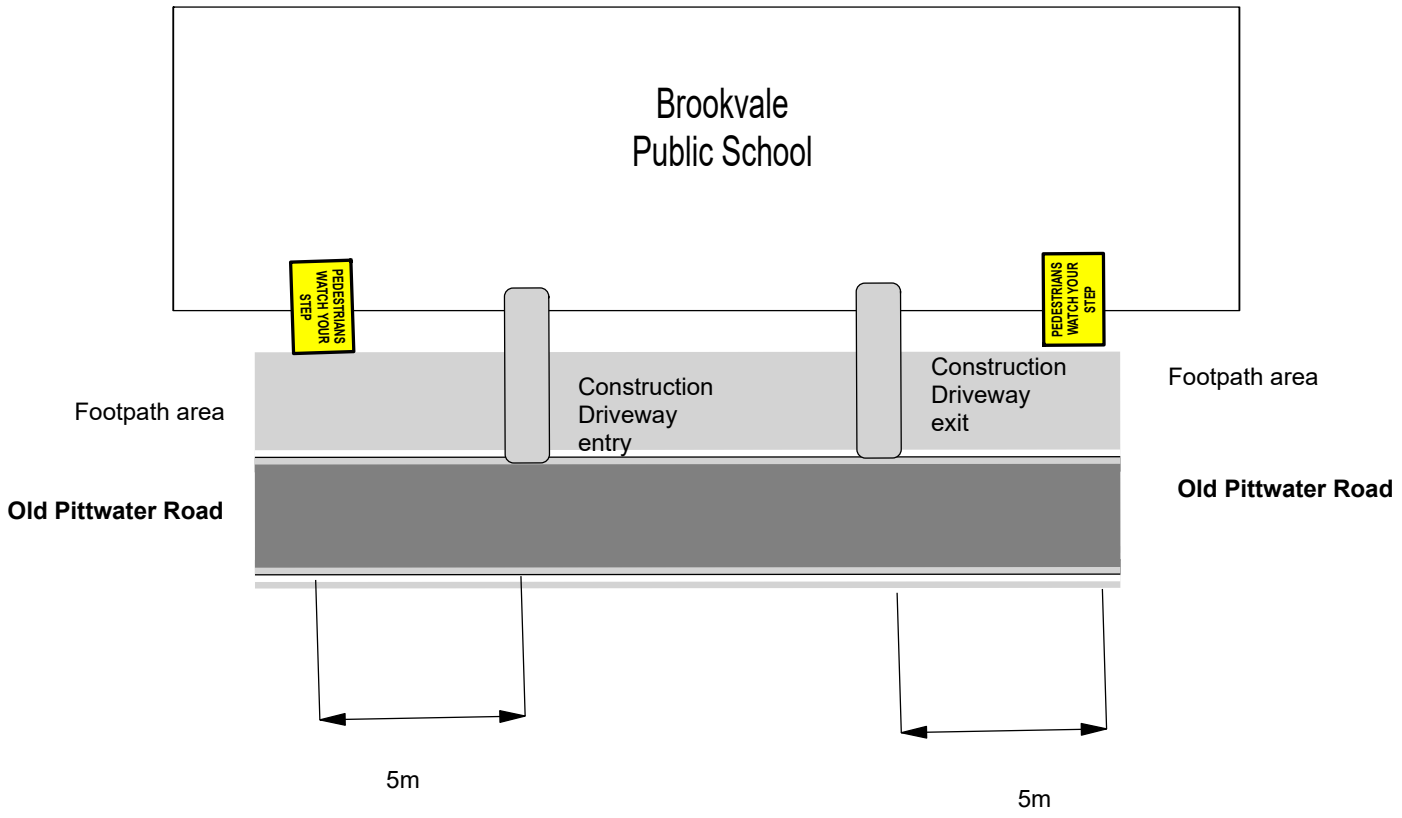
The Traffic Control Plan is presented in a clear manner to allow for the plan to be implemented by the works supervisor. The placement of the signs is from a key identifier. The works supervisor will need to be RMS accredited. The Traffic Control Plans are presented in Appendix A.

Where there are two controllers require, radios will be used to communicate the implementation of the traffic control plan between controllers.

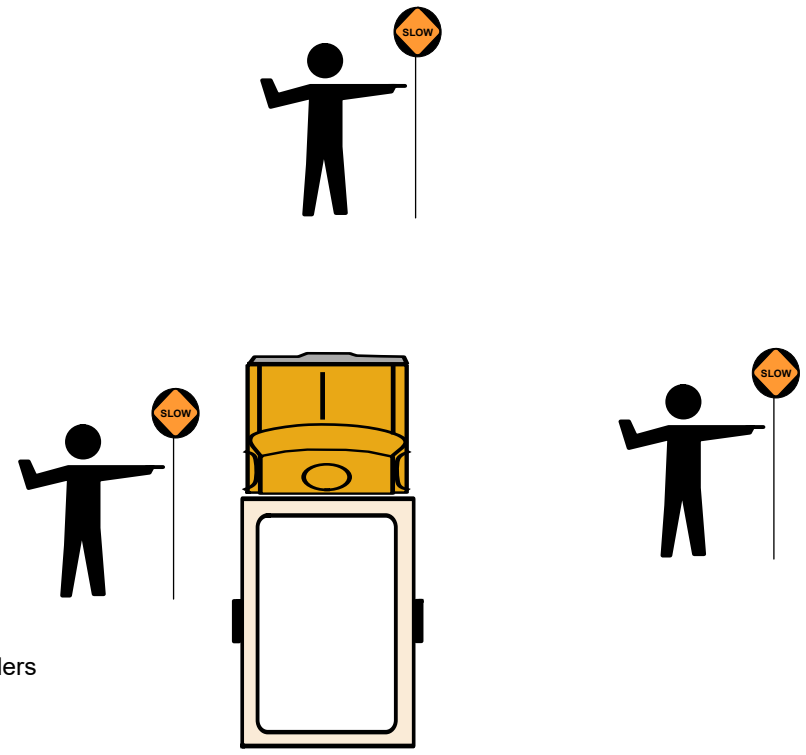
All barriers used in traffic control will need to be compliant with Australian Standards.

APPENDIX A – TRAFFIC CONTROL PLANS

APPENDIX B – CONSTRUCTION SITE PLAN

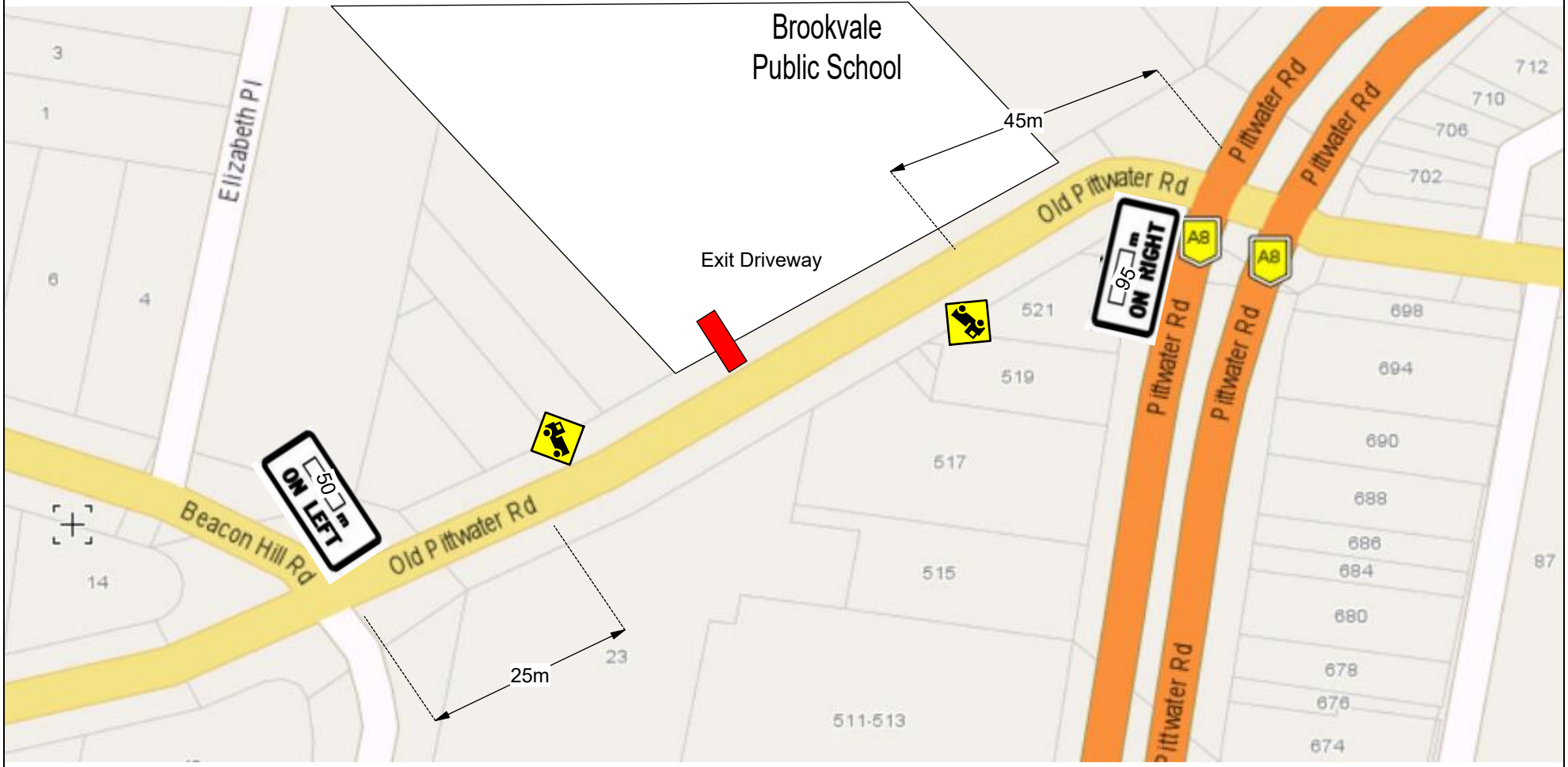


MOTION TRAFFIC ENGINEERS	**Date:** 5/4/2019 **Author:** Benny Chen **Project:** Brookvale Public School
	Comments: Traffic Control Plan for Pedestrian Management on the driveways on Old Pittwater Road Benny Chen (Certificate Number 2273010105)



Traffic controllers

MOTION TRAFFIC ENGINEERS	**Date:** 5/4/2019 **Author:** Benny Chen **Project:** Brookvale Public School
	Comments: Traffic Control Plan for Truck Management with traffic controllers managing vehicle movements with Brookvale Public school Benny Chen (Certificate Number 2273010105)



MOTION TRAFFIC ENGINEERS	**Date:** 5/4/2019 **Author:** Benny Chen **Project:** Brookvale Public School
	Comments: Traffic Control Plan for Truck Management on Old Pittwater Road Benny Chen (Certificate Number 2273010105)

Site Office

Waste

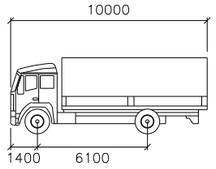
Material Stockpile

Proposed Building

Loading/Unloading Area

Car Parking Area

Fencing and Gate



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Width	: 2500
Track	: 2470
Lock to Lock Time	: 6.0
Steering Angle	: 37.6

10 Metre Truck Inbound Movement

Site Office

Waste

Material Stockpile

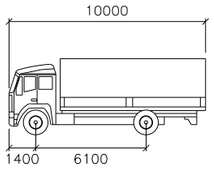
Proposed Building

Loading/Unloading Area

Car Parking Area

Fencing and Gate

10 Metre Truck Outbound Movement



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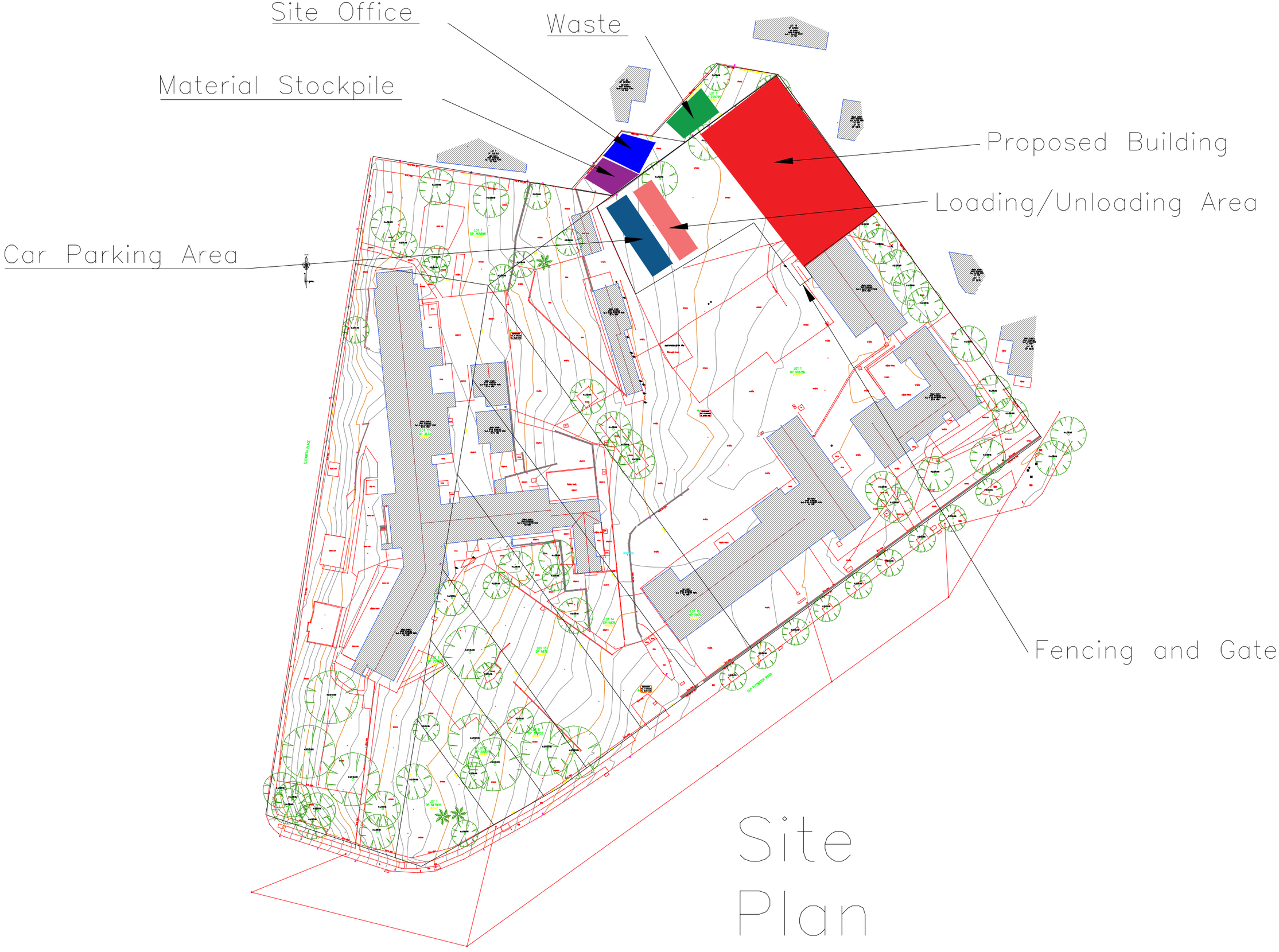
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Site Plan