M^CLAREN TRAFFIC ENGINEERING

Address: Shop 7, 720 Old Princes Highway Sutherland NSW 2232
Postal: P.O Box 66 Sutherland NSW 1499

Telephone: +61 2 8355 2440
Fax: +61 2 9521 7199
Web: www.mclarentraffic.com.au
Email: admin@mclarentraffic.com.au

Division of RAMTRANS Australia ABN: 45067491678

Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

25 July 2017 Reference: 16575.01FA

Loreto Kirribilli
C/O Artazan Property Group
Level 8, 210 George St,
Sydney, NSW 2000
Attention: Rachael Keegan

PRELIMINARY CONSTRUCTION TRAFFIC MANAGEMENT PLAN FOR THE PROPOSED STAGED DEVELOPMENT OF THE PRIVATE SCHOOL AT 85 CARABELLA STREET, KIRRIBILLI

Dear Rachael,

Reference is made to your request to provide a Construction Traffic Management Plan (CTMP) for the alterations and additions to the Loreto Kirribilli Private School 85 Carabella Street, Kirribilli. This CTMP specifically addresses Stage 1 (Learning Hub and Connectors) and more broadly the greater Master Plan scope for the Eastern and Southern Precincts.

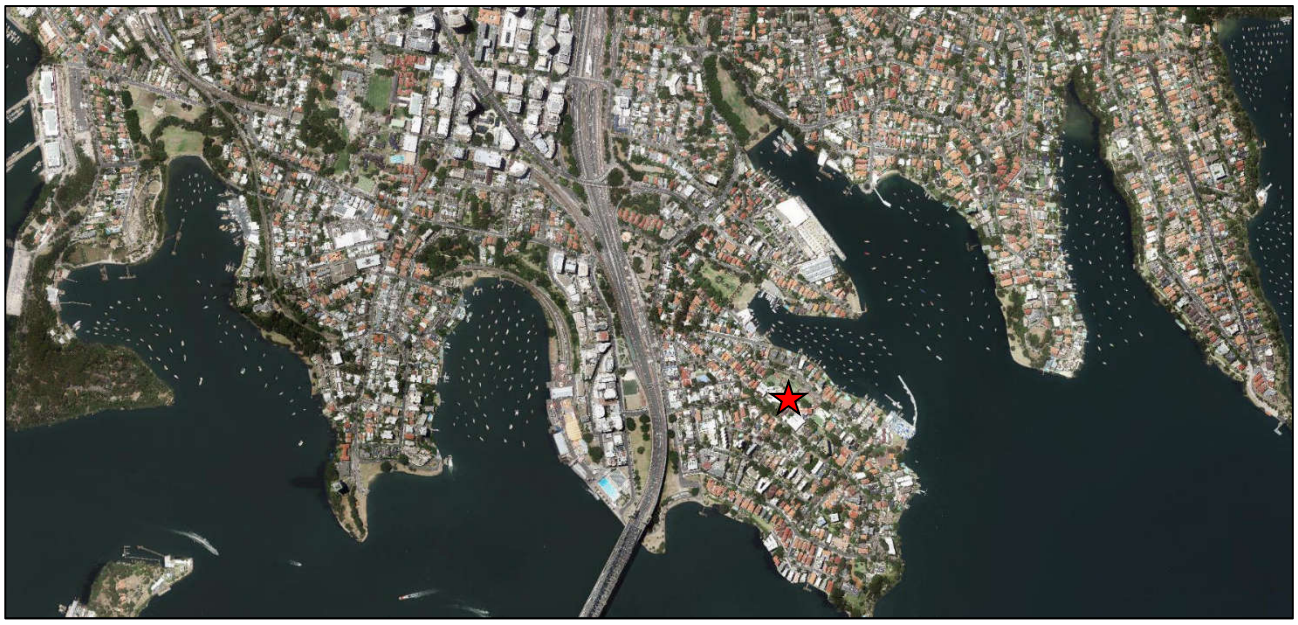
1.1 Site Location

The site has dual street frontages to Elamang Avenue and Carabella Street, with multiple points of access to both roads and is currently occupied by a private school and associated facilities. The site is generally surrounded by low to medium density residential development, with St Aloysius College to the west. The location of the site is shown on an aerial image and a map in **Figure 2** and **Figure 1** respectively.

The road network servicing the site has the following characteristics:

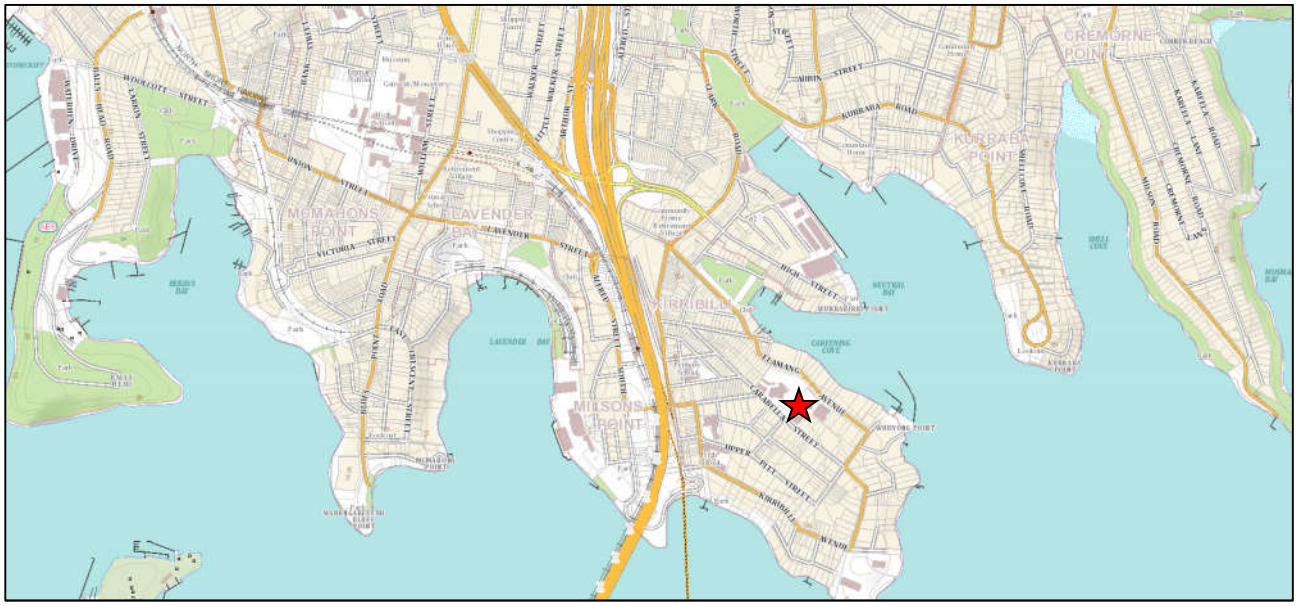
- Carabella Street
  - Unclassified Local Road
  - Varying width of between 10m (to the north) and 7.5m (to the south) facilitating two-way passing;
  - Pedestrian footpath on both sides of the carriageway;
  - Sign-posted 50km/h speed limit and 40km/h school zone;
  - Kerbside parking permitted along both sides of the carriageway where sufficient width is available;
  - No Parking on either side of the carriageway during school drop-off and pick-up.

- Elamang Avenue
    - Unclassified Local Road;
    - Approximately 12m wide 2 lane carriageway (1 lane in each direction);
    - Pedestrian footpath on the northern side of the carriageway;
    - Sign-posted 50km/h speed limit and 40km/h school zone;
    - Kerbside parking permitted both sides of the carriageway.



Site Location

FIGURE 2: SITE CONTEXT – AERIAL IMAGE



Site Location

FIGURE 1: SITE CONTEXT – STREET MAP

1.2 Proposed Development

The development involves the demolition of existing structures and construction of six-level educational building and renovation of the existing lower-ground gymnasium.

1.3 Duration of Construction

Construction is expected to occur over a total duration of 18 to 20 months. The expected milestones and durations are as follows:

Activity	Duration
Demolition	2 months
Construction	8 months
Façade / Fit Out	8 months

This timeframe is indicative only and can possibly change due to delays, weather and construction certification details.

1.4 Construction Hours of Work

The work associated with the construction of the development is expected to be carried out between the general hours of construction as per Consent Condition E10 and in accordance with the Interim Construction Noise Guideline 2009 (*NSW Department of Environment and Climate Change*):

> *E10. Building construction shall be restricted to within the hours of 7.00 am to 6.00 pm Monday to Friday and on Saturday to within the hours of 8.00 am to 1.00 pm inclusive, with no work on Sundays and Public Holidays.*

The enforcement of these hours of work is the responsibility of the site contractor and any other delegated authority. All sub-contractors and associated workmen are to follow the hours of work as instructed by the site contractor. Any works outside of the approved hours of work must be approved by Council prior to carrying out the work.

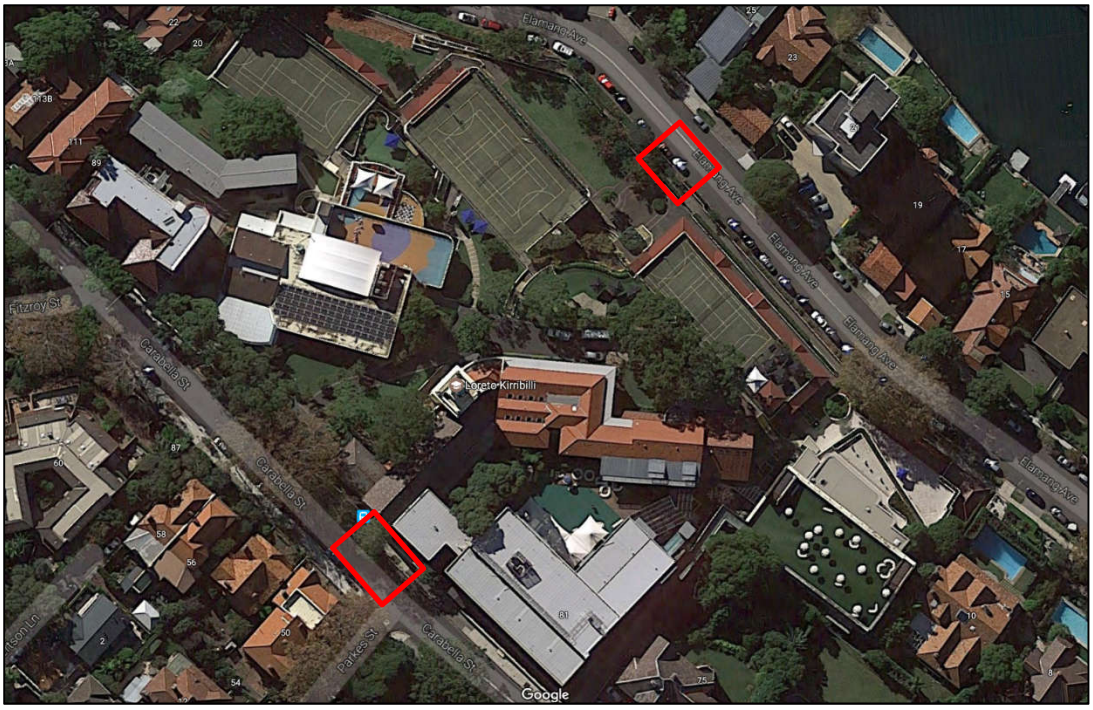
1.5 Construction Site Access

All vehicular access will be made via the existing driveways from Carabella Street and Elamang Ave, on the southern and northern boundaries of the site. The vehicular crossing shall be amended to accommodate the swept paths of a 12.5m Heavy Rigid Vehicle (HRV) for the purpose of deliveries etc. Appropriate traffic control will be employed at the driveway to facilitate safe entry and exit of heavy vehicles to the site.

1.6 Work Zones

It is expected that loading / unloading of deliveries / materials will be undertaken on-street and will require 5 work zones at different times of the staged development for construction work along Carabella Street and Elamang Avenue. The construction work zones required along these roadways is subject to a separate application and approval by Council and amendment of this TMP if necessary.

The work zone locations currently occupy 3 GoGet cars, 1 on Elamang Ave and 2 on Carabella St in the locations shown in **Figure 3**. GoGet should be notified in advance of the establishment of the work zone such that the cars can be appropriately relocated.



GoGet Car Locations

FIGURE 3: GO GET CAR LOCATIONS

1.7 Construction Staff & Parking Requirements

Construction staff numbers will vary day to day depending on the phase of construction. It is expected that a peak of 100 construction staff will be on-site at any one time during construction works and finishes.

The contractor shall encourage carpooling amongst construction staff as well as the use of public transport where possible to minimise private vehicle use. Given its restricted location and good access to the public transport network use of public transport and utilisation of carpooling is considered reasonable and should be utilised by all construction staff who do not require the explicit use of their own vehicle. It is considered that the constrained parking surrounding the site will act to self-enforce the use of public transport.

1.8 Construction Traffic

Construction traffic generated by the development is moderately high, the project will produce approximately:

- Demolition: An average of eight articulated vehicles per day translating to 16 movements per day. Smaller vehicles at this stage would increase the frequency of vehicular movements. For the first 25% of the demolition period, the articulated vehicles would be required to reverse down the school's laneway. Following this period, it is anticipated that enough room should have been cleared to allow vehicles to enter in the forward direction and turn around on site.
- Earthworks, Excavation & Shoring: A peak of 15 to 20 articulated vehicles per day. Smaller vehicles at this stage would increase the frequency of vehicular movements as well as reduce productivity and extend timeframes.
- Remainder of Construction: An average of eight heavy rigid vehicles per day. There will be need for occasional articulated vehicles.

Staff traffic will generally occur early in the morning (7am) and finish in the afternoon from 3-5pm. Given the average staff to be on-site at any one time it is likely less than 100 movements will occur during the morning and afternoon period.

Similar impacts are anticipated for each phase of works with regards to the Eastern & Southern Precinct Envelopes. The Connector works for the Eastern, Southern and Northern Precincts will have similar phases and impacts to what is outlined above, except for smaller durations, with each connector anticipated to take between 10 to 16 weeks.

Construction traffic should be minimised during school start and finish times, however, when a conflict between construction and school drop-off/pick-up times is unavoidable appropriate traffic and pedestrian control will be implemented in proximity to the relevant work zones and/or driveways.

1.9 Construction Vehicle Haulage

Construction vehicles for all stages will utilise the existing road network from Cahill Expressway / Clark Road / Broughton Street / Willoughby Street. The vehicles can then continue down Carabella Street or Elamang Avenue to arrive at the work zones. The vehicles can then utilise Peel Street to connect Elamang Ave and Carabella Street to allow the vehicles to loop around. This route is illustrated in **Figure 4**.

The route indicated is based on a preliminary examination of the road network surrounding the site. Consultation should be undertaken with North Sydney Council to determine the best route and methods of traffic control to facilitate access for construction vehicles in the narrow streets servicing the site. It may be necessary and desirable to utilise smaller vehicles (with a higher frequency) to minimise impacts on the road network.

FIGURE 4: CONSTRUCTION VEHICLE HAULAGE ROUTE

1.10 Pedestrian Management

The site's frontages to both Carabella Street and Elamang Ave include pedestrian footpaths which must be kept free of any waste, construction material or trip hazards associated with the development. Where a pedestrian path is within a work zone, pedestrians should be directed by signage to the footpath on the opposite side of the road at an appropriate crossing location.

Only authorised personnel are permitted on-site and must be inducted by the site manager / OH&S officer. Site fencing along the frontages should also be regularly inspected for potential trip hazards or encroachment onto the verge.
If necessary during construction, the site foreman/manager must install appropriate type A or type B hoarding to allow free access to pedestrians at all times.

The proposed access driveway across the existing footpath should be inspected to ensure deterioration does not lead to trip hazards and that appropriate transition to the existing footpath has been achieved.

1.11 Traffic Control Plans

Detailed and specific traffic control plans (TCPs) will be developed for each stage of construction to be undertaken. TCPs will show control measures, turning manoeuvres and traffic controller positions.

1.12 Traffic Management Plan Checklist

Reference is made to the RMS (previously RTA) *Procedures for Use in the Preparation of a Traffic Management Plan*, version 2.0 December 2001. The following list addresses the required TMP details.

Description or detailed plan of proposed measures

Is the detailed plan of the proposed measures necessary?

Yes

Identification and assessment of impact of proposed measures

Is a detailed assessment required?

No – The expected generated construction traffic is relatively low and is not expected to measurably increase expected delays or impacts on surrounding road network performance.

The use of narrow streets by large vehicles should be discussed with North Sydney Council to identify the best routes to and from the site.

Measures to ameliorate the impact of re-assigned traffic

Is an assessment required?

No – The expected generated construction traffic is relatively low and is not expected to measurably increase expected delays or impact on surrounding road network performance. No detours are necessary as part of the work and no traffic will be redirected.

Assessment of public transport services affected

Is an assessment required?

No – there are no existing bus stops which will be affected by the proposed works. The required staff levels are also not expected to add loading above what the surrounding public transport network can cater for with its current services and frequency and as such, public transport will not be affected.

Details of provision made for emergency vehicles, heavy vehicles, cyclists and pedestrians

Are these details required?

No – the proposed works will not adversely impact the current on-street conditions, including access around the site for pedestrians.

Assessment of effect on existing and future developments with transport implications in the vicinity of the proposed measures

Is an assessment required?

No – there are no existing bus stops which will be affected by the proposed works. The required staff levels are also not expected to add loading above what the surrounding public transport network can cater for with its current services and frequency and as such, public transport will not be affected.

Assessment of effect of proposed measures on traffic movements in adjoining Council areas

Is an assessment required?

No – The expected generated construction traffic is relatively low and is not expected to measurably increase expected delays or impacts on surrounding network performance. The site is located close to the Cahill Expressway therefore minimising and infiltration to local streets and impacts on residential amenity.

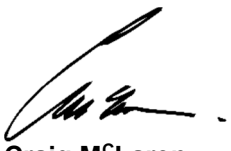
Public consultation process

Is a public consultation process required?

No – the current traffic flow conditions will remain unaltered and therefore no impact on existing traffic flows along local and arterial roads. However, it is good practice and recommended that nearby residents and school parents / staff / students be informed of the works and the associated traffic and parking implications.

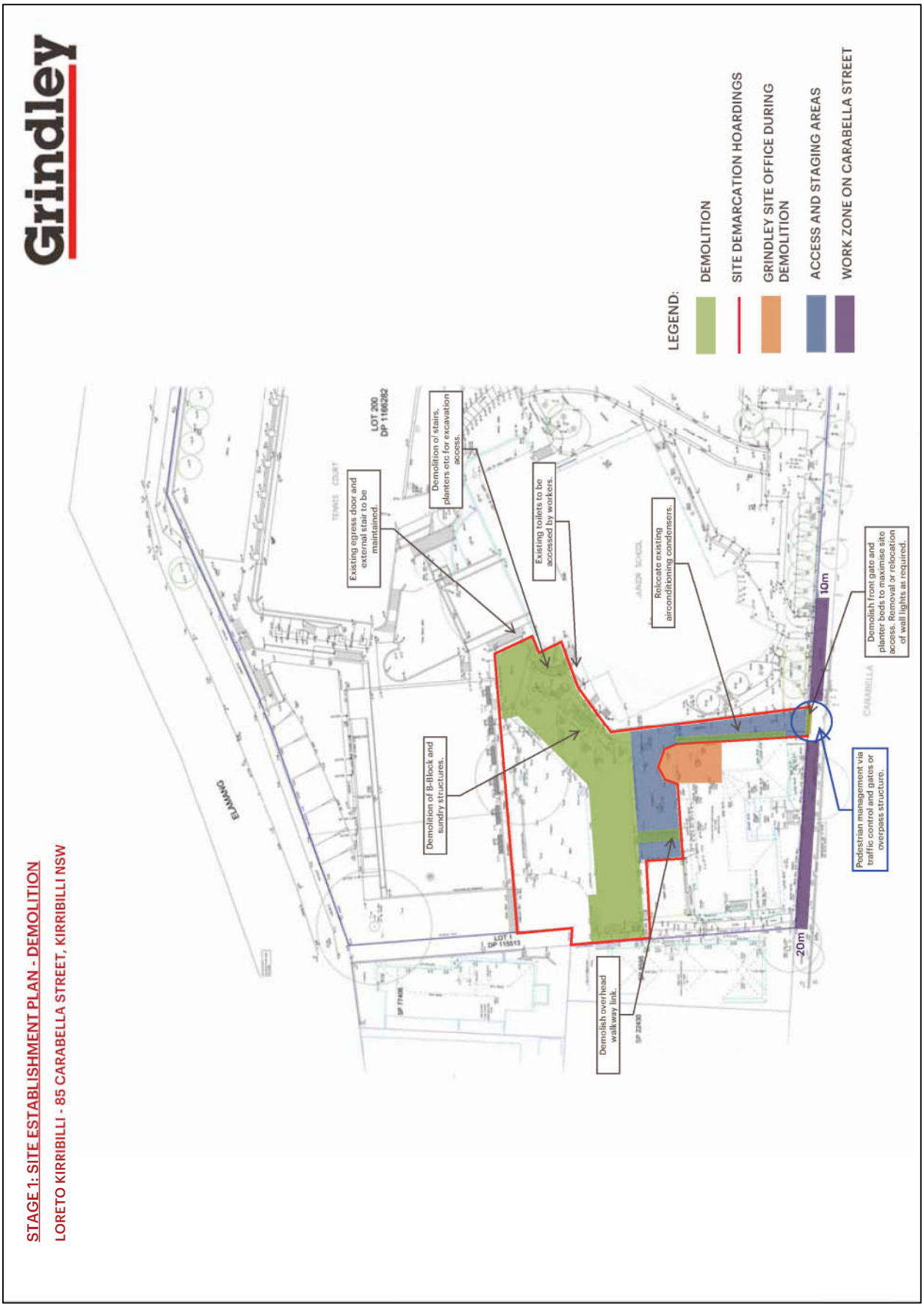
Please contact the undersigned should you require further information or assistance.

Yours faithfully
McLaren Traffic Engineering

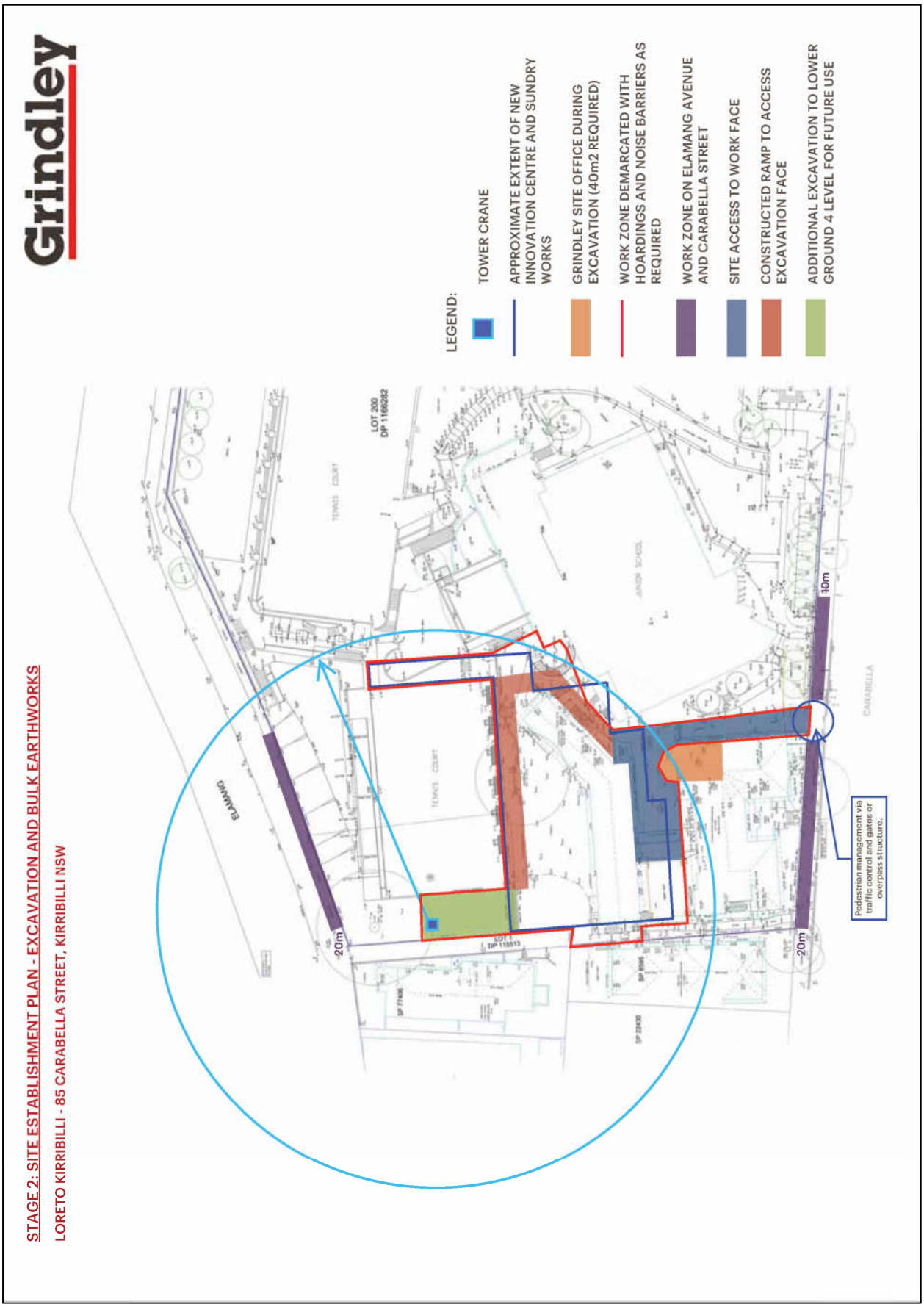


Craig McLaren
Director
BE Civil. Graduate Diploma (Transport Eng) MAITPM MITE [1985]
RMS Accredited Level 3 Road Safety Auditor
RMS Accredited Traffic Control Planner, Auditor & Certifier (Orange Card)

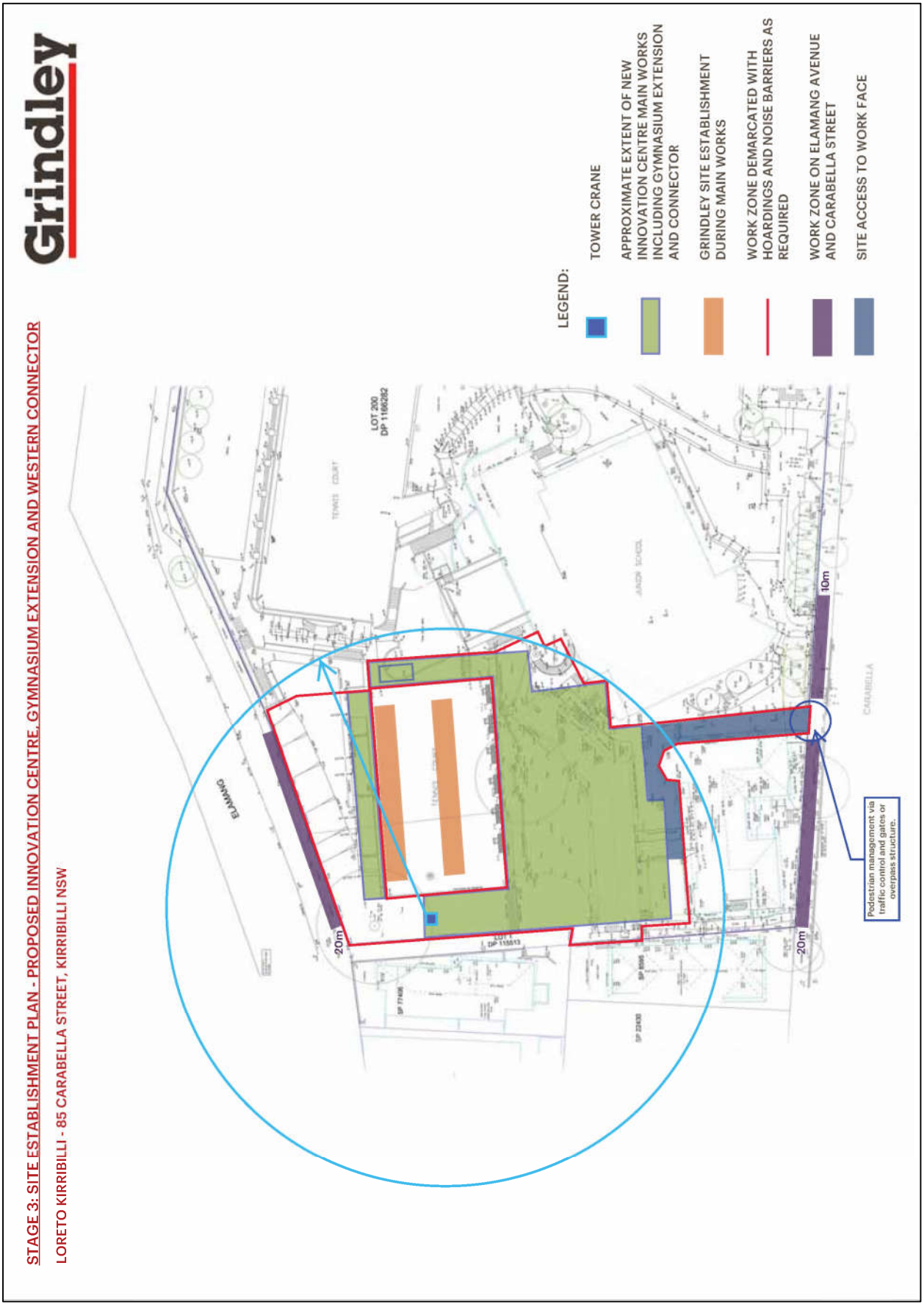
ANNEXURE A: CONCEPT STAGING PLAN
(SHEET 1 OF 6



ANNEXURE A: CONCEPT STAGING PLAN
(SHEET 2 OF 6)



ANNEXURE A: CONCEPT STAGING PLAN
(SHEET 3 OF 6)



ANNEXURE A: CONCEPT STAGING PLAN
(SHEET 4 OF 6)

ANNEXURE A: CONCEPT STAGING PLAN
(SHEET 5 OF 6)

ANNEXURE A: CONCEPT STAGING PLAN
(SHEET 6 OF 6)

Grindley

STAGE 6: SITE ESTABLISHMENT PLAN - SOUTHERN PRECINCT CONNECTOR AND ASSOCIATED WORKS

LORETO KIRRIBILLI - 85 CARABELLA STREET, KIRRIBILLI NSW

LEGEND:

APPROXIMATE EXTENT OF WORKS. WORK ZONE DEMARCATED WITH HOARDINGS (ACOUSTIC WHERE REQUIRED).

20M WORK ZONE ON CARABELLA STREET.