

# Traffic Impact Assessment

194-198 Lakemba Street, Lakemba

Proposed Change of Use

24009

Prepared for

ES Design

26 March 2024

## Contact Information

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## Document Information

|                  |                                 |
|------------------|---------------------------------|
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| Proposal         | Proposed Change of Use          |
| Architect        | ES Design                       |
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| Council          | Canterbury-Bankstown Council    |
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## Table of Contents

|     |   |    |
|-----|---|----|
| 1   | Introduction                                    | 5  |
| 1.1 | Background                                      | 5  |
| 1.2 | Scope of Works                                  | 5  |
| 1.3 | Reference Documents                             | 6  |
| 2   | Proposed Development                            | 7  |
| 3   | Existing Conditions                             | 9  |
| 3.1 | Site and Surrounding Context                    | 9  |
| 3.2 | Road Network                                    | 10 |
| 3.3 | Traffic Control                                 | 11 |
| 3.4 | Existing Traffic Demand & Operation             | 11 |
| 3.5 | Public Transport Services                       | 12 |
| 4   | Parking Assessment                              | 13 |
| 4.1 | Car Parking Requirement                         | 13 |
| 4.2 | Bicycle Parking Requirement                     | 13 |
| 4.3 | Loading and Servicing Requirement & Arrangement | 14 |
| 4.4 | Car Park Design                                 | 14 |
| 5   | Traffic Assessment                              | 15 |
| 5.1 | Existing Traffic Conditions                     | 15 |
| 5.2 | Existing Traffic Generation                     | 15 |
| 5.3 | Development Traffic Generation                  | 16 |
| 5.4 | Overall Traffic Generation and Distribution     | 16 |
| 6   | Conclusion                                      | 17 |

## Attachments

Attachment 1 Architectural Plan

## Tables

|           |   |    |
|-----------|---|----|
| Table 3-1 | Surrounding Road Network                      | 10 |
| Table 3-2 | Surrounding Traffic Controls                  | 11 |
| Table 3-3 | Road Traffic Demand                           | 11 |
| Table 3-4 | Bus Services Provision                        | 12 |
| Table 4-1 | DCP Car Parking Rates                         | 13 |
| Table 4-2 | Required Car Parking Spaces                   | 13 |
| Table 4-3 | Bicycle Parking Rates                         | 13 |
| Table 5-1 | Peak Traffic Generation Rates – Office Blocks | 15 |
| Table 5-2 | Projected Traffic Generation                  | 16 |

## Figures

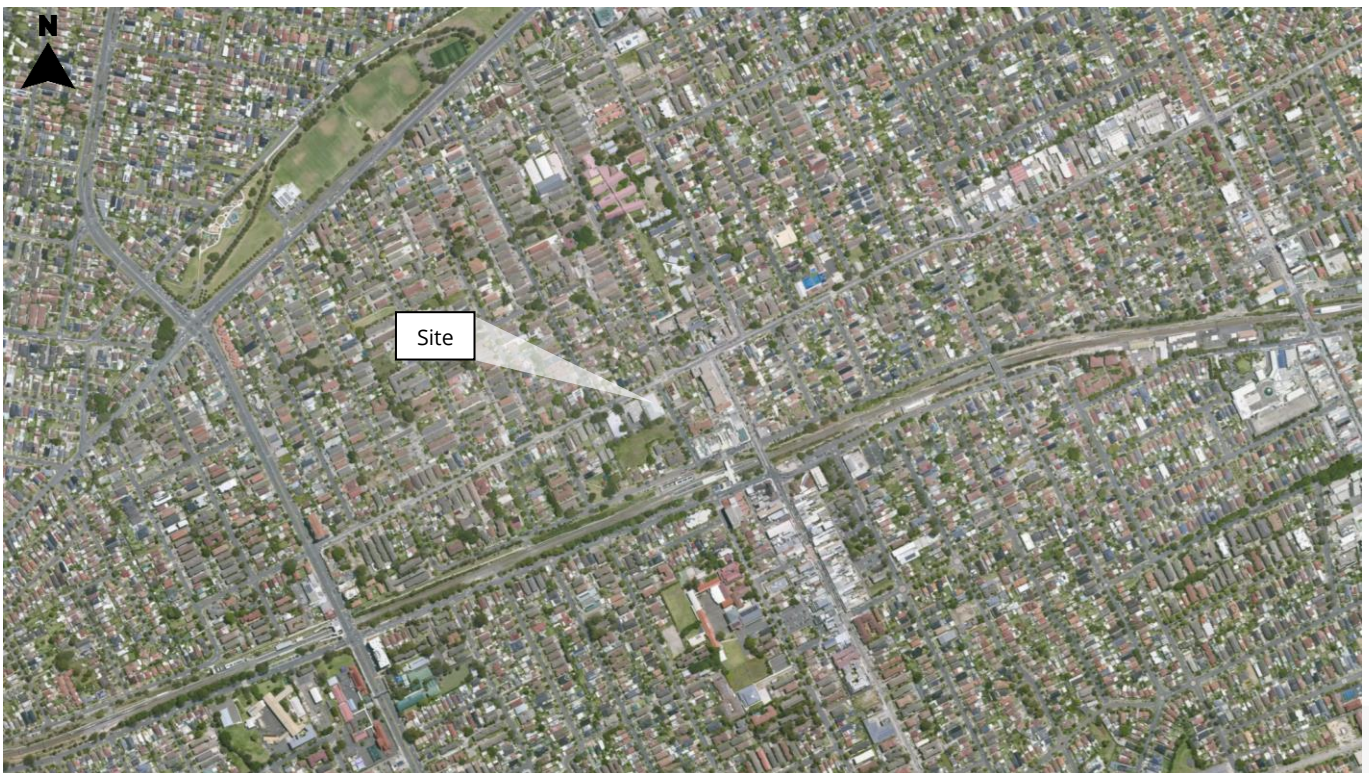
|            |                                  |    |
|------------|----------------------------------|----|
| Figure 1-1 | Site                             | 5  |
| Figure 2-1 | Existing Floor Plan              | 7  |
| Figure 2-2 | Proposed Amended Floor Plan      | 8  |
| Figure 3-1 | Site Context                     | 9  |
| Figure 3-2 | Road Network                     | 10 |
| Figure 3-3 | Local Public Transport Locations | 12 |

# 1 Introduction

## 1.1 Background

This report has been prepared to accompany a Development Application to Canterbury-Bankstown Council for a Proposed Change of Use at 194-198 Lakemba Street, Lakemba (Figure 1-1).

Figure 1-1 Site



Source: Metromap (Modified by Genesis Traffic)

## 1.2 Scope of Works

The purpose of this report is to:

- describe the proposed development scheme
- describe the existing site, road network serving the site and the prevailing traffic conditions
- assess the adequacy of the proposed parking provision
- assess the potential traffic implications
- assess the suitability of the proposed vehicle access, internal circulation and servicing arrangements



## 1.3 Reference Documents

Reference has been made to the following documents when preparing this report:

- Australian Standard Part 1: Off-street Car Parking (AS2890.1:2004)
- Australian Standard Part 2: Off-street Commercial Vehicle Facilities (AS2890.2:2018)
- Australian Standard Part 3: Bicycle Parking (AS2890.3:2015)
- Australian Standard Part 6: Off-street Parking for People with Disabilities (AS2890.6:2022)
- Development Control Plan (Canterbury-Bankstown Council)
- Guide to Traffic Generating Developments, RMS, 2002
- Guide to Traffic Generating Developments, Updated Traffic Surveys, RMS, TDT 2013/14a





## 2 Proposed Development

The proposal concerns a change of use scheme of the ground floor of an existing two-storey commercial building to accommodate an education establishment. The education establishment, which will retain the existing building's ground level Net Lettable Area (NLA) of approximately 1,200m<sup>2</sup>, will accommodate 95 students between Year 10 and Year 12 and staffed by approximately 10 FTE employees. The Education Establishment will have access to 28 parking spaces in the existing car park.

The existing commercial offices on Level 1 will be retained.

For reference the existing floor plan in the proposed amended layout depicted in Figure 2-1 and Figure 2-2 below.

Figure 2-1 Existing Floor Plan





Figure 2-2 Proposed Amended Floor Plan



Source: ES Design

Details of the proposal are indicated in the architectural plans prepared by ES Design which accompany the submission and are reproduced in part in **Attachment 1**.



## 3 Existing Conditions

### 3.1 Site and Surrounding Context

The development site (Figure 3-1) is legally known as Lot 1 DP 839201, located at 194-198 Lakemba Street, Lakemba. The site occupies an area of 2,461m<sup>2</sup> and has frontage(s) to Lakemba Street and Croydon Street.

Figure 3-1 Site Context



Source: Metromap and Google Map (Modified by Genesis Traffic)

The existing site is occupied by a two-storey commercial building (see inset above), with vehicle access point(s) located at Lakemba Street and Croydon Street. Separate entry and exit driveways are located on Lakemba Street while a loading access driveway is provided on Croydon Street. The existing basement car park contains 60 spaces.

The adjoining and surrounding land uses include:

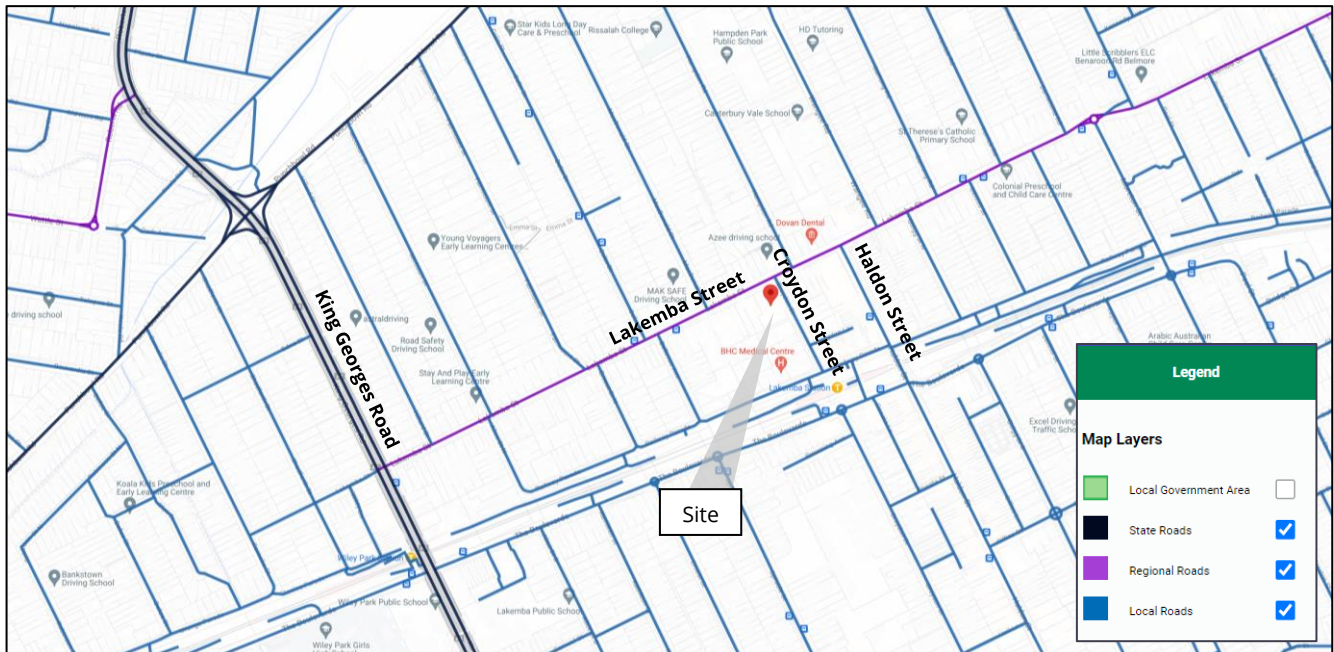
- a Greek Orthodox Community building adjoined to the west and vacant land adjoined to the south
- residential development predominantly
- retail and commercial premises to the east along Lakemba Street and Haldon Street



## 3.2 Road Network

The existing road network serving the site area (Figure 3-2) are detailed in Table 3-1:

Figure 3-2 Road Network



Source: TfNSW (modified by Genesis Traffic)

Table 3-1 Surrounding Road Network

| Road Name                | Descriptions   |
|--------------------------|--|
| <b>King Georges Road</b> | <ul style="list-style-type: none"> <li>State Road</li> <li>Speed limit 60 km/h</li> <li>3 lane(s) in each direction</li> <li>No Parking restriction and Clearway Restriction between 6am to 7pm on Monday to Friday and 9am to 6pm on Saturday, Sunday and Public Holidays along both sides of the street</li> </ul> |
| <b>Lakemba Street</b>    | <ul style="list-style-type: none"> <li>Regional Road</li> <li>Speed limit 50 km/h</li> <li>1 lane(s) in each direction</li> <li>Unrestricted on-street parking along both sides of the street</li> </ul>   |
| <b>Croydon Street</b>    | <ul style="list-style-type: none"> <li>Local Road</li> <li>Speed limit 50 km/h</li> <li>1 lane(s) in each direction</li> <li>Time restricted on-street parking along both sides of the street</li> </ul>   |



### 3.3 Traffic Control

The traffic controls on the road system in the vicinity of the site comprise (Table 3-2):

Table 3-2 Surrounding Traffic Controls

| Traffic Control                | Location  |
|--------------------------------|---|
| <b>Traffic Signal</b>          | <ul style="list-style-type: none"> <li>Intersection(s) of: <ul style="list-style-type: none"> <li>Lakemba Street and Haldon Street</li> <li>Lakemba Street and King Georges Road</li> </ul> </li> </ul> |
| <b>Give-way / Stop Control</b> | <ul style="list-style-type: none"> <li>Intersection(s) of: <ul style="list-style-type: none"> <li>Lakemba Street and Croydon Street</li> </ul> </li> </ul>  |
| <b>School Zone</b>             | <ul style="list-style-type: none"> <li>Along part(s) of <ul style="list-style-type: none"> <li>Lakemba Street</li> </ul> </li> </ul>  |
| <b>Pedestrian Crossing</b>     | <ul style="list-style-type: none"> <li>Along part(s) of <ul style="list-style-type: none"> <li>Lakemba Street near the retail and commercial premises</li> </ul> </li> </ul>                            |

### 3.4 Existing Traffic Demand & Operation

As part of this assessment, a site inspection was carried out and the peak traffic along Haldon Street and Lakemba Street recorded during the morning and afternoon peak hours (Table 3-3):

Table 3-3 Road Traffic Demand

| Road                  | Direction  | AM Peak | PM Peak |
|-----------------------|------------|---------|---------|
| <b>Lakemba Street</b> | Eastbound  | 240     | 320     |
|                       | Westbound  | 310     | 300     |
| <b>Haldon Street</b>  | Northbound | 140     | 280     |
|                       | Southbound | 170     | 300     |

Note: Counts undertaken by standing onsite and are subject to minor discrepancies.

The observed traffic demands on both streets fall within the one-way mid-block lane capacity as defined in the Guide to Traffic Generating Developments (i.e. 900 vehicles per hour). It indicates that Lakemba Street and Haldon Street operate with an average mid-block level of service (LOS) of B under existing traffic demand. Note that LOS B accommodates up to 380 vehicles per hour per lane and beyond that the road is projected to operate with LOS C.



### 3.5 Public Transport Services

The local public transport services are illustrated in Figure 3-3.

Figure 3-3 Local Public Transport Locations



Source: Metromap (Modified by Genesis Traffic)

#### Train/Metro

The site is located within 200m of Lakemba Station providing connections (T2 and T3) to the Sydney Central Business District (CBD) via the Sydney Trains/Metro rail network.

#### Bus

Local bus service(s) is within walking distance (400m) of the site, as follows (Table 3-4).

Table 3-4 Bus Services Provision

| Bus Line   | Bus Route                                      | Frequency |
|------------|--|-----------|
| <b>450</b> | Strathfield to Hurstville                      |           |
| <b>942</b> | Lugarno to Campsie                             |           |
| <b>946</b> | Roselands to Bankstown via Lakemba & Greenacre |           |
| <b>S14</b> | Lakemba to Mount Lewis via Roselands           |           |



## 4 Parking Assessment

### 4.1 Car Parking Requirement

The applicable car parking rates (Table 4-1) are provided in Section 2, Chapter 3.2.

Table 4-1 DCP Car Parking Rates

| Land Use                       | Parking Rates  |
|--------------------------------|--|
| <b>Education Establishment</b> | 1 car space per employee or classroom, whichever is the greater, and 1 car space per 8 students in Year 12 |

Application of the proposal using the above criteria would indicate the following requirement(s) in Table 4-2.

Table 4-2 Required Car Parking Spaces

| Element             |                   | Requirement      | Provision        |
|---------------------|-------------------|------------------|------------------|
| No. of FTE Employee | 10                | 10               | 28               |
| No. of Classroom    | 10                | 10               |                  |
| Students            | 95 (30 x Year-12) | 4                |                  |
| <b>Total</b>        |                   | <b>20 spaces</b> | <b>28 spaces</b> |

Up to 28 parking spaces in the basement car park have been allocated for the proponent to comply with the DCP criteria. This will include 4 set down/pick up spaces.

### 4.2 Bicycle Parking Requirement

The applicable bicycle parking rates (Table 4-3) are provided in Section 2, Chapter 3.2.

Table 4-3 Bicycle Parking Rates

| Land Use                       | Parking Rates   |
|--------------------------------|---|
| <b>Education Establishment</b> | 1 car space per 10 employee, and adequate provision of bicycle parking for students |

Accordingly, the requirement is 1 space for employee. The proposal will accommodate 1 secured bicycle storage facility onsite while another 10 bicycle racks will be installed on the basement level to accommodate the needs of students. The provision for staff complies with the DCP criteria while the supply for students at a rate of 1 rack per 10 students is adequate.





### 4.3 Loading and Servicing Requirement & Arrangement

Waste and servicing will be undertaken via the existing loading area along the Croydon Street frontage. Regular deliveries involving courier vans will rely on the set down/pick up spaces as these deliveries do not coincide with parents set down and pick up times.

### 4.4 Car Park Design

The existing car parking layout, including accesses, will be retained.





## 5 Traffic Assessment

### 5.1 Existing Traffic Conditions

Observations in the site's locality reveal minor delays on Lakemba Street during peak periods due to its proximity to the train station and town centre. Nonetheless, there is no apparent capacity constraint on Lakemba Street and Croydon Street.

### 5.2 Existing Traffic Generation

The RMS Guide to Traffic Generating Development specifies a peak hour traffic generation rate of 2 vtpm per 100m<sup>2</sup> for commercial offices.

Applying the above rates to the existing ground floor space of 1,200m<sup>2</sup> GFA indicates the following traffic generation outcome (Table 5-1).

Table 5-1 Peak Traffic Generation Rates – Office Blocks

| Period  | Projected Current Land Use Traffic Generation |
|---------|---|
| AM Peak | 24 vtpm                                       |
| PM Peak | 24 vtpm                                       |



### 5.3 Development Traffic Generation

The Traffic Generation Guide does not provide an indicative guide to the traffic generation of education establishments, particularly independent/private institutions.

The site being within immediate proximity (3 - 4 minutes' walk) of Lakemba railway station provides a highly viable alternative for active travel, particularly amongst school aged students. On this basis, the assessment assumes the following as a basis for consideration:

- 80% of the staff will arrive/depart during the road network AM and PM peak periods (with the remaining proportion of staff working shorter days or having early start and early finish, e.g. job share)
- 40% of the students will be dropped off by vehicles during the road network AM peak hour (8-9am)
- 20% of the students will be picked up by vehicles during the road network PM peak (others picked up at 3pm)

A further relevant consideration is the higher proportion of multiple-sibling enrolments amongst families who drop off and pick up their children by vehicle. Anecdotal observations suggest some 20-30% of vehicles undertaking drop off and pick up at schools contain more than 1 child. It is appropriate to assume an average vehicle occupancy rate of 1.2 children per vehicle.

Based on the above reasonings, the proposal's potential traffic generation can be projected as follows:

Table 5-2 Projected Traffic Generation

| Category             | AM Peak              | PM Peak        |
|----------------------|----------------------|----------------|
| <b>Staff (10)</b>    | 8 vtpH               | 8 vtpH         |
| <b>Students (95)</b> | 32 vtpH <sup>1</sup> | 16 vtpH        |
| <b>Total</b>         | <b>40 vtpH</b>       | <b>24 vtpH</b> |

### 5.4 Overall Traffic Generation and Distribution

Having regard to the above, the additional traffic generation outcome is calculated as follows:

$$\text{Additional Traffic Generation} = \text{Development Traffic Generation} - \text{Existing Traffic Generation}$$

Based on the above, the proposal will likely result in the addition of 16 vehicle movements per hour during the busier AM peak period. In the PM peak, the assessment's forecast of 24 vtpH will be largely consistent with the existing land use traffic activities.

Having reference to Section 3.4 of this assessment, the above findings confirms that the additional traffic (of 16 vtpH) will not degrade the existing frontage road capacity and Level of Service, therefore there will not be an adverse development-induced traffic impact on the local road network.

<sup>1</sup> Having factored in an average vehicle occupancy rate of 1.2 children per vehicle.



## 6 Conclusion

The traffic and parking assessment undertaken for the Proposed Change of Use at 194-198 Lakemba Street, Lakemba has concluded that:

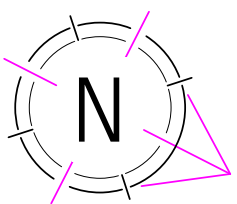
- the traffic generation of the proposed development will not present any adverse traffic implications
- the proposed parking provision will comply with the Council's DCP criteria and will adequately serve the development



# Attachment 1

## Architectural Plans





| LEGEND            |        |
|-------------------|--------|
| ITEM              | SYMBOL |
| EXISTING BUILDING |        |
| PROPOSED WORKS    |        |
| OUT OF SCOPE      |        |

KEY

LAKEMBA STREET

CROYDON STREET

## PROPOSED BASEMENT FLOOR PLAN

### NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. VERIFY ALL DIMENSIONS ON SITE
3. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY
4. VERIFY ALL DISCREPANCIES WITH THE DESIGNER
5. ALL WORKS TO COMPLY WITH THE NATIONAL CONSTRUCTION CODE (B.C.A) & AUSTRALIAN STANDARDS

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### COMMERCIAL DEVELOPMENT

194-198 LAKEMBA STREET, LAKEMBA NSW 2195

DESIGN MICHEL TOUBIA  
DRAFTED JOYCE RAFFOUL

### DRAWING

EXISTING BASEMENT FLOOR PLAN

SCALE 1:100 / A1  
ISSUE A 14.03.2024

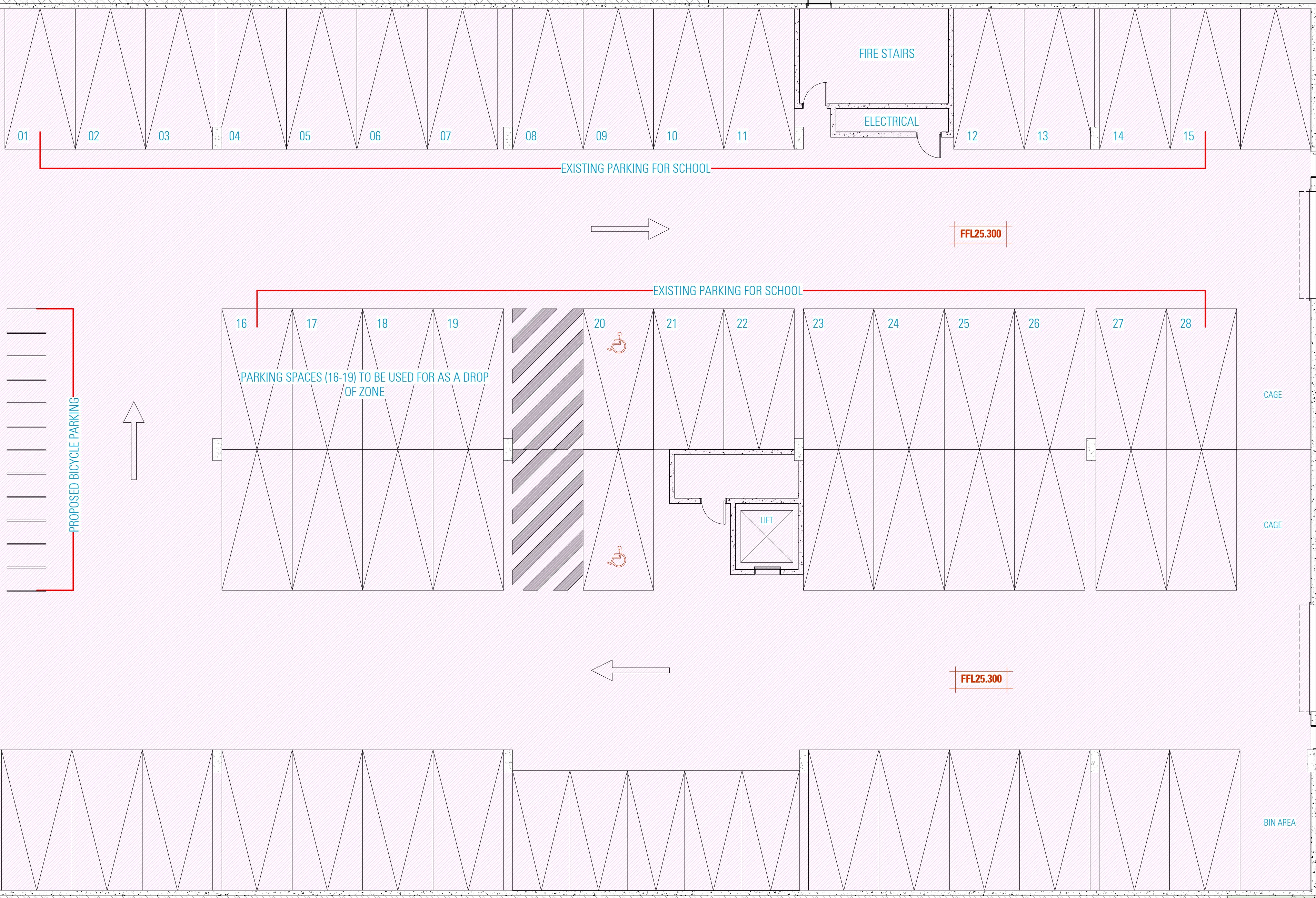
DWG No. 24012 - 100

NOT FOR CONSTRUCTION

LOT 01  
D.P. 839201  
2461 sqm (BY TITLE)  
2461 sqm (BY CALC)

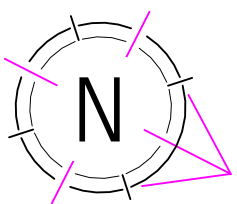
LOT 01  
D.P. 9727

No.206  
TWO STOREY BUILDING  
METAL ROOF



LOT B  
D.P. 357959  
VACANT LOT





| LEGEND       |                   |        |
|--------------|-------------------|--------|
| KEY          | ITEM              | SYMBOL |
|              | EXISTING BUILDING |        |
|              | PROPOSED WORKS    |        |
| OUT OF SCOPE |                   |        |



# PROPOSED GROUND FLOOR PLAN

**NOTES**

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DRAWING

PROPOSED GROUND FLOOR PLAN

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