

Felicity Roberts

From: Cornelis Duba <Cornelis.Duba@endeavourenergy.com.au>
Sent: Friday, 1 February 2019 12:33 PM
To: PCC Council
Cc: Felicity Roberts; Jeffrey Smith
Subject: PARRAMATTA CITY COUNCIL PLANNING PROPOSAL RZ/10/2015 RE 20
MACQUARIE STREET, PARRAMATTA NSW 2150
Attachments: Endeavour Energy MDI0044 Easements and Property Tenure.pdf; Endeavour Energy FPJ 6007 Technical Review Request July 2018.pdf; ENA_emf_what_do_we_know_final 20160902.pdf; Work_near_underground_assets_guide.pdf; Safety+on+the+job.pdf; FactSheet_Building_Construction+web.pdf; FactSheet_Plumber_web.pdf

Chief Executive Officer
Parramatta City Council

ATTENTION: Felicity Roberts, Project Officer

Dear Sir or Madam

I refer to Council's letter of 7 December 2019 regarding Planning Proposal RZ/21/2015 at 20 Macquarie Street, PARRAMATTA NSW 2150 (Lot 1 DP 503651, Lot 1 DP 501663) for a Planning Proposal, draft Site-Specific Development Control Plan (DCP) and draft Planning Agreement.

The Planning Proposal seeks to amend the Parramatta Local Environmental Plan (LEP) 2011 to increase the maximum floor space ratio (FSR) from 4:1 to 10:1, increase the maximum building height from 36 metres to 90 metres and add site-specific controls. The Gateway determination issued by the Department of Planning and Environment includes a condition that the Planning Proposal amend Clause 7.4 of the Parramatta LEP 2011 to prohibit overshadowing of the protected area of Parramatta Square between 12pm and 2pm. This amendment has already been made by PLEP 2011 Amendment No. 29, however, the amendment is also contained in this Planning Proposal in order to comply with the conditions of the Gateway determination.

Submissions need to be made to Council by 1 February 2019.

As shown in the below site plan from Endeavour Energy's G/Net master facility model (and extracts from Google Maps Street View) there are:

- No easements over the site benefitting Endeavour Energy (easements are indicated by red hatching).
- Indoor substation no. 2659 to the Marsden Street road frontage with associated low voltage and 11,000 volt / 11 kV high voltage underground cables which are not held under easement.
- Low voltage, 11 kV high voltage and 132,000 volt / 132 kV high voltage underground cables, underground earth cables and underground pilot cables (carrying protection signals or communications between substations) to the Macquarie Street road verge / road way. The extensive electricity infrastructure is associated with Endeavour Energy's West Parramatta Zone Substation located approximately 240 metres to the west at 15-19 Macquarie Street, Parramatta.

Please note the location, extent and type of any electricity infrastructure, boundaries etc. shown on the plan is indicative only. Generally (depending on the scale and/or features selected), low voltage (normally not exceeding 1,000 volts) is indicated by blue lines and high voltage (normally exceeding 1,000 volts but for Endeavour Energy's network not exceeding 132,000 volts / 132 kV) by red lines (these lines can appear as solid or dashed and where there are multiple lines / cables only the higher voltage may be shown). This plan only shows the Endeavour Energy network and does not show electricity infrastructure belonging to other authorities or customers owned electrical equipment beyond the customer connection point / point of supply to the property. This plan is not a 'Dial Before You Dig' plan under the provisions of Part 5E 'Protection of underground electricity power lines' of the Electricity Supply Act 1995 (NSW).

In regards to the indoor substation and underground cables on the site that are not held under an easement, they are protected assets and deemed to be lawful for all purposes under Section 53 'Protection of certain electricity works' of the Electricity Supply Act 1995 (NSW). Essentially this means the owner or occupier of the land cannot take any action in relation to the presence in, on or over the land of electricity works ie. they cannot remove the electricity infrastructure encroachment from their property.

These protected assets are managed on the same basis as if an easement was in existence. In accordance with the attached copy of Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights':

- The low voltage and 11 kV high voltage underground cables' as shown in the following extract of Table 1 – 'Minimum easement widths' (assumed to have no concrete protection unless proven otherwise) requires a 3 metre minimum easement width ie. 1.5 metres to both sides of the centre of the cable ducts.

Table 1 - Minimum easement widths

	Voltage	Asset Type	Construction	Minimum Easement (m)
Underground Assets	400V - 22kV		Underbore / Ducted / Direct buried	3
		Cables	Ducted < 100m and with concrete protection (min 50 mm concrete cover at standard burial depth)	1

- For the indoor substation as shown in the following extract of Clause 5.3.5 'Indoor substations':

5.3.5 Indoor substations

The boundaries of an easement for indoor substation must be defined by the internal face of the walls, ceiling, floor, and cable trenches of the substation room.

An easement for the cables that enter and exit the substation room will also be required if they are not installed within public roads and/or existing Endeavour Energy easements.

A right of access may also be required to give Endeavour Energy employees, vehicles, equipment unrestricted access to the indoor substation at all times.

For the right of access as shown in the following extract of Table 1 – 'Minimum easement widths' requires a 5 metre minimum easement width.

Table 1 - Minimum easement widths

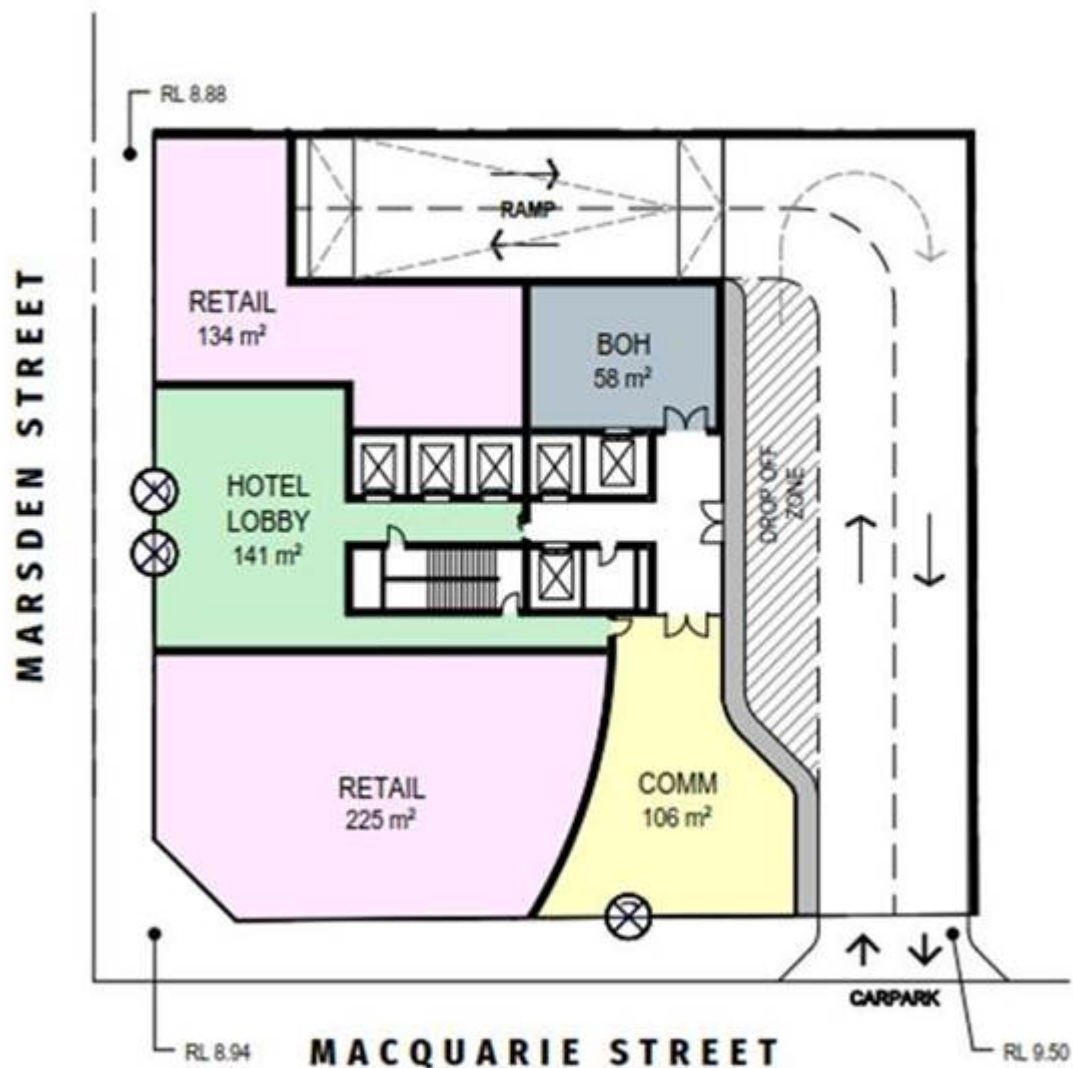
	Voltage	Asset Type	Construction	Minimum Easement (m)
Other	Rights of Access	Vehicle access in urban areas		5 (see Note 5)

Notes:

5. Applies to straight line of access only. If angles or bends are required in the access path, then width to be determined by assessing a truck turning diagram, and gain approval from the relevant Endeavour Energy Operations Manager. .

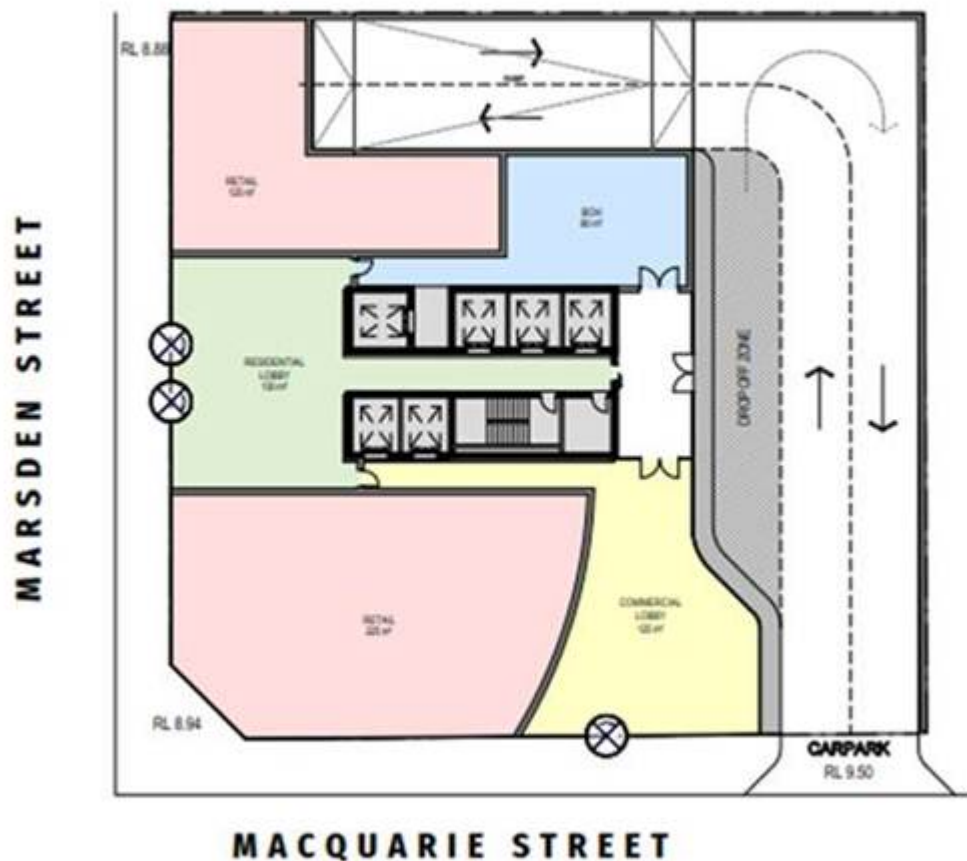
Endeavour Energy has noted that the Planning Proposal document does not appear to address the existing electricity infrastructure or the electricity infrastructure required to facilitate the Planning Proposal / future development of the site. As shown in the following extracts of the Reference Design there is no detail shown of any provision for a substation to the ground floor.

Option A



POTENTIAL GROUND LEVEL RETAIL, HOTEL AND ENTRY LOBBY
APPROX 400SQM RETAIL SPACE

Option B



**POTENTIAL GROUND LEVEL RETAIL AND ENTRY LOBBY
APPROX 350 SQM RETAIL SPACE + 156 SQM ENTRANCES**

Endeavour Energy's Asset Strategy & Planning Branch whilst not having undertaken a detailed analysis of the Planning Proposal have provided the following advice:

The Planning Proposal involves a significant to increase density and height and the resulting new development will represent a significant electrical load and require developers to extend and augment the 11,000 volt / 11 kV high voltage network to facilitate connection as per Endeavour Energy's normal customer connection processes.

Indoor substation no. 2659 currently has 6 customer connection points servicing 63 premises. As part of the redevelopment of the site arrangements will need to be made for continuation of supply to the other premises serviced by the indoor substation.

With Council's CBD Planning Proposal seeking expansion opportunities in the Parramatta CBD, the design of the building will also have to allow for the expansion of Endeavour Energy's local electricity network. Provision will need to be made for a replacement / upgraded indoor substation as well as possibly an additional separate switching room to house a switching hub to maintain reliability of supply. The switching hub will allow for both

planned or unplanned switching events eg. to provide to back-up feeders in case of failure. The rooms will need to be accessible from the street for operational access.

The replacement and upgrade of the indoor substation whilst not a prerequisite for the Planning Proposal, would be required as a condition for any new development on the site proceeding.

Subject to the foregoing and following recommendations and comments Endeavour Energy has no objection to the Planning Proposal.

- Network Capacity / Connection

In due course the applicant for the future proposed development of the sites within the Precinct will need to submit an application for connection of load via Endeavour Energy's Network Connections Branch to carry out the final load assessment and the method of supply will be determined. Depending on the outcome of the assessment, any required padmount or indoor / chamber substation will need to be located within the property (in a suitable and accessible location) and be protected (including any associated cabling) by an easement and associated restrictions benefiting and gifted to Endeavour Energy. Please refer to Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights'. Further details are available by contacting Endeavour Energy's Network Connections Branch via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm or on Endeavour Energy's website under 'Home > Residential and business > Connecting to our network' via the following link:

<http://www.endeavourenergy.com.au/>.

Advice on the electricity infrastructure required to facilitate the proposed development (including asset relocations) can be obtained by submitting a Technical Review Request to Endeavour Energy's Network Connections Branch, the form for which FPJ6007 is attached and further details (including the applicable charges) are available from Endeavour Energy's website under 'Our connection services'. The response to these enquiries is based upon a desktop review of corporate information systems, and as such does not involve the engagement of various internal stakeholders in order to develop a 'Connection Offer'. It does provide details of preliminary connection requirements which can be considered by the applicant prior to lodging a formal application for connection of load.

Alternatively the applicant should engage a Level 3 Accredited Service Provider (ASP) approved to design distribution network assets, including underground or overhead. The ASP scheme is administered by NSW Trade & Investment and details are available on their website via the following link or telephone 13 77 88:

<https://energysaver.nsw.gov.au/households/you-and-energy-providers/installing-or-altering-your-electricity-service> .

- Flooding and Drainage

Endeavour Energy has noted the following in the planning Proposal:

INTRODUCTION

Background and context

The site is partially affected by the 20 and 100 year Average Recurrence Interval events at the Macquarie Street and Marsden Street frontages. All of the property is inundated in the Probable Maximum Flood (PMF) event.

Endeavour Energy's Mains Construction Instruction MCI 0006 'Underground distribution construction standards manual', Section 7 'Substation and switching stations' provides details of the requirements for flooding in new distribution substation locations.

7.1.6 Flooding and drainage

Substations are to be located such that the risk of flooding or stormwater damage is minimal.

As a minimum the level at the top of the transformer footing, HV and LV switchgear, shall not be lower than the 1:100 year flood level.

All drains within the substation site area or in the vicinity shall be properly maintained to avoid the possibility of water damage to Endeavour Energy's equipment.

In areas where, as determined by the Network Substation Manager, there is a high water table or a heightened risk of flooding, indoor substations will not be permitted.

All materials used in the construction below the substation (ground level) shall be capable of withstanding prolonged immersion in water without swelling or deterioration.



Figure 51 - Example substation raised above 1:100 flood level

Any proposed substation location will require a detailed assessment to consider the flooding impact. Generally it is the Level 3 Accredited Service Provider's (ASP) responsibility (engaged by the developer) to make sure that the substation location and design complies with Endeavour Energy's standards.

- Easement Management / Network Access

The following is a summary of the usual / main terms of Endeavour Energy's electrical easements requiring that the land owner:

- Not install or permit to be installed any services or structures within the easement site.
- Not alter the surface level of the easement site.

- Not do or permit to be done anything that restricts access to the easement site without the prior written permission of Endeavour Energy and in accordance with such conditions as Endeavour Energy may reasonably impose.

Endeavour Energy's preference is for no activities or encroachments to occur within its easement areas. However, if any proposed works (other than those approved / certified by Endeavour Energy's Network Connections Branch as part of an enquiry / application for load) will encroach/affect Endeavour Energy's easements or protected assets, contact must first be made with the Endeavour Energy's Easements Officer, Jeffrey Smith, on direct telephone 9853 7139 or alternately email Jeffrey.Smith@endeavourenergy.com.au or Easements@endeavourenergy.com.au.

It is imperative that the access to the existing electrical infrastructure on and in proximity of the site be maintained at all times. To ensure that supply electricity is available to the community, access to the electricity infrastructure may be required at any time. Restricted access to electricity infrastructure by maintenance workers causes delays in power restoration and may have severe consequences in the event of an emergency.

- Earthing

The construction of any building or structure (including fencing, signage, flag poles, hoardings etc.) whether temporary or permanent that is connected to or in close proximity to Endeavour Energy's electrical network is required to comply with Australian/New Zealand Standard AS/NZS 3000:2018 'Electrical installations' as updated from time to time. This Standard sets out requirements for the design, construction and verification of electrical installations, including ensuring there is adequate connection to the earth. Inadequate connection to the earth to allow a leaking/fault current to flow into the grounding system and be properly dissipated places persons, equipment connected to the network and the electricity network itself at risk from electric shock, fire and physical injury.

- Prudent Avoidance

The electricity network is operational 24/7/365 ie. all day, every day of the year. The electricity industry has adopted a policy of prudent avoidance by doing what can be done without undue inconvenience and at modest expense to avert the possible risk to health from exposure to emissions from electricity infrastructure such as electric and magnetic fields (EMF) and noise which generally increase the higher the voltage ie. Endeavour Energy's network ranges from low voltage (normally not exceeding 1,000 volts) to high voltage (normally exceeding 1,000 volts but not exceeding 132,000 volts / 132 kV).

In practical terms this means that when designing new transmission and distribution facilities, consideration is given to locating them where exposure to the more sensitive uses is reduced and increasing separation distances. Endeavour Energy believes that likewise Council should also adopt a policy of prudent avoidance by the siting of more sensitive uses away from any electricity infrastructure – including any possible future electricity infrastructure required to facilitate the proposed development. Even with less sensitive non-residential development, Endeavour Energy believes that a policy of prudent avoidance should be considered.

Please find attached a copy of Energy Networks Association's 'Electric & Magnetic Fields – What We Know, January 2014' which can also be accessed via their website at <http://www.ena.asn.au/>.

Electric fields are strongest closest to their source, and their strength diminishes rapidly as we move away from the source.

The level of a magnetic field depends on the amount of the current (measured in amps), and decreases rapidly once we move away from the source.

Typical magnetic field measurements associated with Endeavour Energy's activities and assets given the required easement widths, safety clearances etc. and having a maximum voltage of 132,000 volt / 132 kV, will with the observance of these separation distances not exceed the recommended magnetic field public exposure limits.

- Vegetation Management

The planting of large trees in the vicinity of electricity infrastructure is not supported by Endeavour Energy. Suitable planting needs to be undertaken in proximity of electricity infrastructure. Larger trees should be planted well away from electricity infrastructure and even with underground cables, be installed with a root barrier around the root ball of the plant. Landscaping that interferes with electricity infrastructure could become a potential safety risk, restrict access, reduce light levels from streetlights or result in the interruption of supply may become subject to Endeavour Energy's Vegetation Management program and/or the provisions of the Electricity Supply Act 1995 (NSW) Section 48 'Interference with electricity works by trees' by which under certain circumstances the cost of carrying out such work may be recovered.

- Dial Before You Dig

Before commencing any underground activity the applicant is required to obtain advice from the **Dial Before You Dig 1100** service in accordance with the requirements of the Electricity Supply Act 1995 (NSW) and associated Regulations. This should be obtained by the applicant not only to identify the location of any underground electrical or other utility infrastructure across the site, but also to identify them as a hazard and to properly assess the risk.

- Excavation

Applicant should be advised of the following object of Section 49A 'Excavation work affecting electricity works' of the Electricity Supply Act 1995 (NSW) covering the carrying out or proposed carrying out of excavation work in, on or near Endeavour Energy's electrical infrastructure.

Electricity Supply Act 1995 No 94

Current version for 8 January 2016 to date (accessed 30 March 2016 at 08:12)

[Part 5](#) > [Division 2](#) > [Section 49A](#)

49A Excavation work affecting electricity works

- (1) This section applies if a network operator has reasonable cause to believe that the carrying out or proposed carrying out of excavation work:
 - (a) could destroy, damage or interfere with those works, or
 - (b) could make those works become a potential cause of bush fire or a potential risk to public safety.
- (2) In those circumstances, a network operator may serve a written notice on the person carrying out or proposing to carry out the excavation work:
 - (a) to modify the excavation work, or
 - (b) not to carry out the excavation work, but only if the network operator is of the opinion that modifying the excavation work would result in interference with, the electricity works concerned or in preventing those works becoming a potential risk to public safety.

With the increased number of developments incorporating basements often being constructed to the property boundaries, the integrity of the nearby electricity infrastructure can be placed at risk.

If any excavation work affects Endeavour Energy's electricity infrastructure, prior contact must be made to Endeavour Energy's Regional Service North via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm or alternately email Regional.ServicesNorth@endeavourenergy.com.au.

- Demolition

Demolition work is to be carried out in accordance with Australian Standard AS 2601—2001: 'The demolition of structures' as updated from time to time. All electric cables or apparatus which are liable to be a source of danger, other than a cable or apparatus used for the demolition works shall be disconnected ie. the existing

customer service lines will need to be isolated and/or removed during demolition. Appropriate care must be taken to not otherwise interfere with any electrical infrastructure on or in the vicinity of the site eg. streetlight columns, power poles, overhead power lines and underground cables etc.

- Asbestos

Endeavour Energy's G/Net master facility model indicates that the site is in an area identified or suspected of having asbestos or asbestos containing materials (ACM) present in the electricity network. Whilst Endeavour Energy's underground detail is not complete within G/Net in some areas, in older communities, cement piping was regularly used for the electricity distribution system and in some instances containing asbestos to strengthen the pipe; for insulation; lightness and cost saving.

When undertaking works on or in the vicinity of Endeavour Energy's electricity network, asbestos or ACM must be identified by a competent person employed by or contracted to the applicant and an asbestos management plan, including its proper disposal, is required whenever construction works has the potential to impact asbestos or ACM.

The company's potential locations of asbestos to which construction / electricity workers could be exposed include:

- o customer meter boards;
- o conduits in ground;
- o padmount substation culvert end panels; and
- o joint connection boxes and connection pits.

Further details are available by contacting Endeavour Energy's Health, Safety & Environment via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm

- Public Safety

As the proposed development will involve work near electricity infrastructure, workers run the risk of receiving an electric shock and causing substantial damage to plant and equipment. I have attached Endeavour Energy's public safety training resources, which were developed to help general public / workers to understand why you may be at risk and what you can do to work safely. The public safety training resources are also available via Endeavour Energy's website via the following link:

<http://www.endeavourenergy.com.au/wps/wcm/connect/ee/nsw/nsw+homepage/communitynav/safety/safety+brochures> .

If the applicant has any concerns over the proposed works in proximity of the Endeavour Energy's electricity infrastructure within the road verge / roadway, as part of a public safety initiative Endeavour Energy has set up an email account that is accessible by a range of multiple stakeholders across the company in order to provide more effective lines of communication with the general public who may be undertaking construction activities in proximity of electricity infrastructure such as builders, construction industry workers etc. The email address is Construction.Works@endeavourenergy.com.au .

- Emergency Contact

In case of an emergency relating to Endeavour Energy's electrical network, the applicant should note the Emergencies Telephone is 131 003 which can be contacted 24 hours/7 days.

I appreciate that not all the foregoing issues may be directly relevant or significant to the Planning Proposal. However, Endeavour Energy's preference is to alert proponents / applicants of the potential matters that may arise should development within closer proximity of the existing and/or proposed electricity infrastructure required to facilitate the proposed development on or in the vicinity of the site occur.

Could you please pass on a copy of this submission and the attached resources to the applicant? Should you wish to discuss this matter, or have any questions, please do not hesitate to contact me or the contacts identified above in relation to the various matters. Due to the high number of development application / planning proposal notifications submitted to Endeavour Energy, to ensure a response contact by email to property.development@endeavourenergy.com.au is preferred.

Yours faithfully

Cornelis Duba

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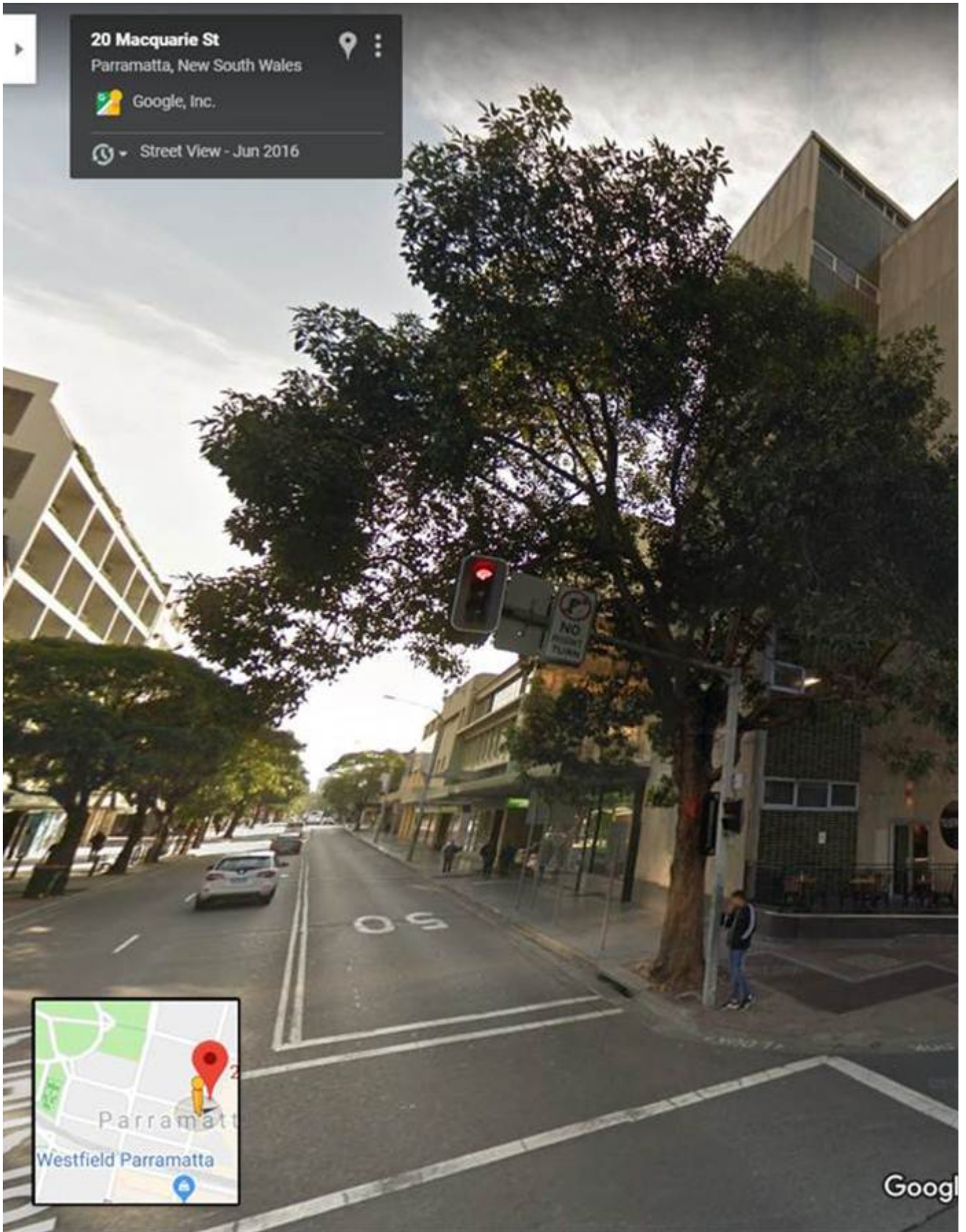


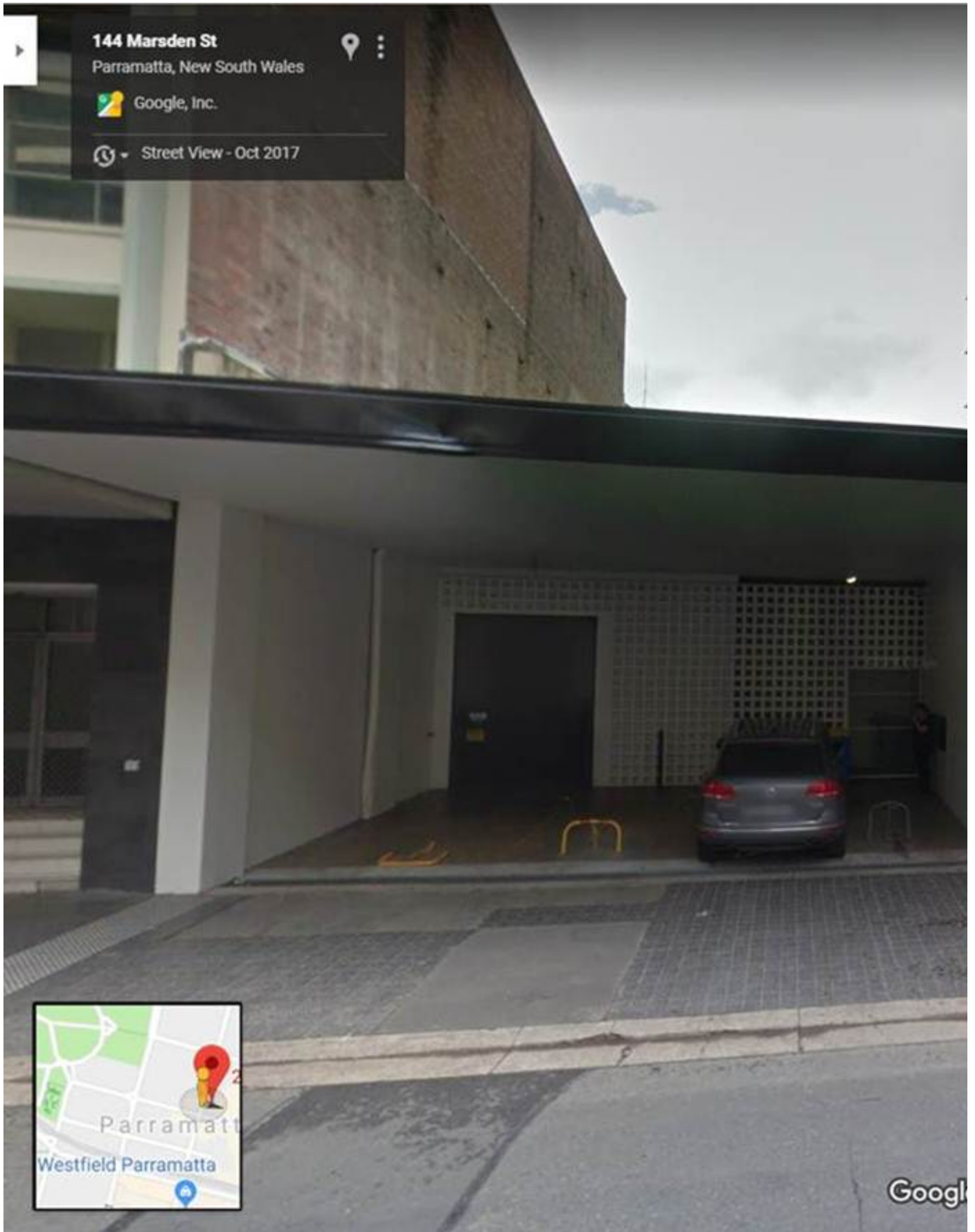


20 Macquarie St
Parramatta, New South Wales

Google, Inc.

Street View - Jun 2016





144 Marsden St
Parramatta, New South Wales

Google, Inc.

Street View - Oct 2017



