From: Cornelis Duba
To: DPE CSE Information Planning Mailbox
Cc: David Way
Subject: NSW PLANNING, INDUSTRY & ENVIRONMENT STATE SIGNIFICANT DEVELOPMENT SSD-9809 NEW MARSDEN PARK PUBLIC SCHOOL RE NORTHBOURNE DRIVE, MARSDEN PARK
Attachments: image003.png
image004.png
image019.png
image007.png
SW08773 Work near underground assets.pdf
EE Fact Sheet Building Construction.pdf
EE FPJ 6007 Technical Review Request Aug 2019.pdf
EE Guide for Padmount Substations.pdf
EE MDI0044 Easements and Property Tenure.pdf
EE Safety on the job.pdf
EE Safety Plumbing.pdf
ENA EMF What We Know.pdf

The Secretary
NSW Planning, Industry & Environment

ATTENTION: David Way, Senior Planning Officer, School Infrastructure Assessments

Dear Sir or Madam

I refer to the Department's letter of 18 October 2019 regarding State Significant Development SSD-9809 at Northbourne Drive, Marsden Park (Lot 2889 DP 1230906) for the New Marsden Park Public School for the construction of a new public school (to cater for up to 1,000 students from Kindergarten to Year 6) comprising 40 teaching spaces, library, multipurpose hall, canteen, out of hours care, sporting and outdoor play spaces, office and administration space, staff and student amenities, and associated works including landscaping and public domain improvements. Submissions need to be made to the Department by 20 November 2019.

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

- No easements over the site benefitting Endeavour Energy (active easements are indicated by red hatching).
- Low voltage and 11,000 volt / 11 kilovolt (kV) high voltage underground cables and padmount substation no. 36011 (indicated by the symbol) to the opposite side of Beale Street.
- Low voltage underground cables to the opposite side of Enmore Street.
- No existing low voltage service conductor / customer connection point to the site.

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 kilovolts (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).

Subject to the following recommendations and comments Endeavour Energy has no objection to the Development Application.

- Network Capacity / Connection

Endeavour Energy has noted the following in the Request for SEARs

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The following extract of the Services Coordination Plan shows 'Electrical Connection Point to Existing Duct' which as shown in the adjoining extract from Endeavour Energy's G/Net master facility model is a duct coming from padmount substation no. 36011 to the opposite side of Beale Street.

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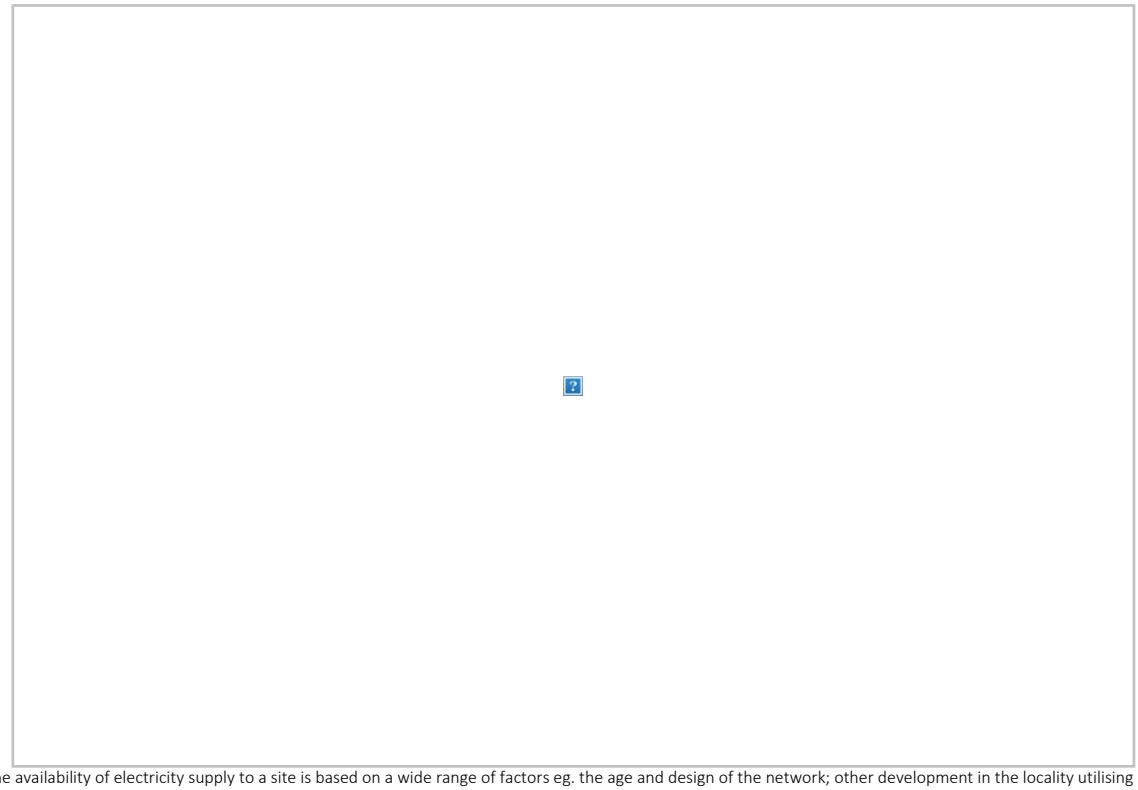
The following site plan from Endeavour Energy's G/Net master facility model shows the site is part of a 'Work Polygon' (depicted by the coloured highlighting and/or hatching of the lot) indicating enquiries and applications for proposed contestable works projects with Endeavour Energy's Network Connections Branch for electricity supply to the development for urban residential subdivision (Endeavour Energy's reference URS17623). As such, Endeavour Energy's Network Connections Branch are managing the conditions of supply with the proponent and their Accredited Service Provider (ASP). However there is no specific 'Work Polygon' for the new school site and applicant will need to contact Endeavour Energy's Network Connections Branch (via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm) if this Development Application:

- Includes any contestable works projects that are outside of the existing approved / certified works.
- Results in an electricity load that is outside of the existing Supply / Connection Offer requiring the incorporation of the additional load for consideration. This is due to load being based on a desktop assessment using an After Diversity Maximum Demand (ADMD) where demand is aggregated over a large number of customers providing an ADMD for the site / per lot. Depending on the actual development proposed for the site, the ADMD provided may not be sufficient ie. the construction of a new public school as opposed to a subdivision for low density single dwellings may result in the creation of additional load and requirement for another distribution substation.



The availability of electricity supply to a site is based on a wide range of factors eg. the age and design of the network; other development in the locality utilising previously spare capacity within the local network; the progress of nearby / surrounding sites including electricity infrastructure works eg. a smaller and isolated development that may not of its own accord require a distribution substation may require a substation to facilitate the development and from which the spare capacity is made available to subsequent nearby development. Areas of the network utilising padmount substations can accommodate loads from 315 kVA up to 1,500 kVA (typically 500 kVA) ie. there is a significant variation in the number and type of premises able to be connected to a substation. Endeavour Energy's G/Net master facility model indicates that padmount substation no. 36011 currently has 76 customer connection points. Accordingly it will not have sufficient spare capacity to provide a significant urban development such as a new school.

Endeavour Energy's Asset Strategy & Planning Branch whilst not having undertaken a detailed analysis of the Development Application have not indicated any concerns regarding the electricity supply to the proposed development and advised that 'Asset Strategy & Planning Branch have not yet received any customer applications for this proposed development via Network Connections Branch. This Development Application will need to follow the standard connection of load process where Endeavour Energy's Asset Strategy & Planning Branch will undertake a detailed review of the electricity supply arrangements for the proposed new school. A new padmount substation will most likely be required for this development and the 11 kV underground feeder extended to provide supply to the substation.

In due course the applicant for the proposed development of the site 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 (also taking into consideration the potential further development / electricity load of the residue allotments). Depending on the outcome of the assessment, any required padmount 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/ .

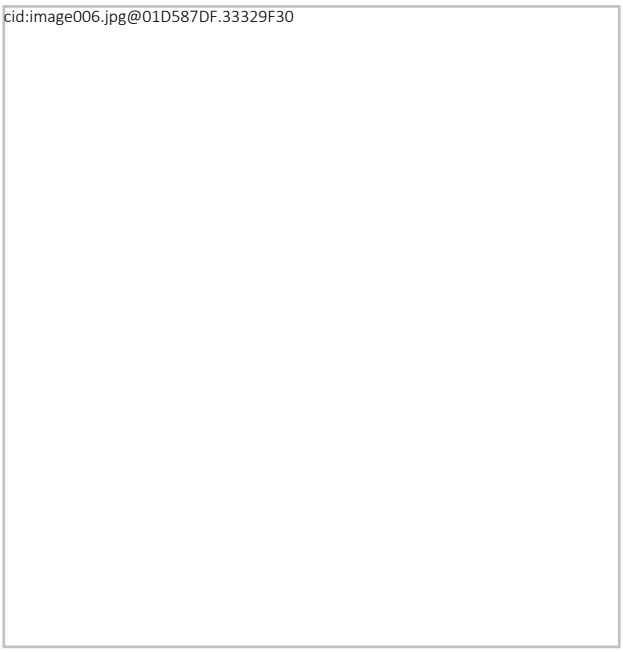
Advice on the electricity infrastructure required to facilitate the proposed development can be obtained by submitting a Technical Review Request to Endeavour Energy's Network Connections Branch, the form for which FPJ6007 is attached and further details (including the applicable charges) are available 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 Energy and details are available on their website via the following link or telephone 13 77 88:

https://energy.nsw.gov.au/government-and-regulation/legislative-and-regulatory-requirements/asp-scheme-and-contestable-works .

- Urban Network Design

Endeavour Energy's Company Policy 9.2.5 'Network Asset Design', includes the following requirements for electricity connections to new urban subdivision / development:



- 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.
Under Endeavour Energy's 'Design certification checklist for ASP L3' the design of the padmount substation must comply with Endeavour Energy's 'Earthing Design Instruction EDI 001 – Earthing design risk assessment' in which schools are regarded as a 'special location' – please see the following extract of EDI 001.

As the school will require a padmount substation, the applicant should check with their ASP who responsible for the network connection to the site that any padmount substation earthing has been designed to comply with the 'special location' requirements under EDI 100.

- 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 form 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 reducing exposure and increasing separation distances to more sensitive uses such as residential or schools, pre-schools, day care centres or where potentially a greater number of people are regularly exposed for extended periods of time.

These emissions are usually not an issue but with Council's permitting or encouraging development with higher density, reduced setbacks and increased building heights, but as the electricity network operates 24/7/365 (all day, every day of the year), the level of exposure can increase.

Endeavour Energy believes that irrespective of the zoning or land use, applicants (and the Department) should also adopt a policy of prudent avoidance by the siting of more sensitive uses eg. the office component of an industrial building, away from and less susceptible uses such as garages, non-habitable or rooms not regularly occupied eg. storage areas in a commercial building, towards any electricity infrastructure – including any possible future electricity infrastructure required to facilitate the proposed development.

Where development is proposed in the vicinity of electricity infrastructure, Endeavour Energy is not responsible for any amelioration measures for such emissions that may impact on the nearby proposed development.

Please find attached a copy of Energy Networks Association's 'Electric & Magnetic Fields – What We Know' which can also be accessed via their website at https://www.energynetworks.com.au/electric-and-magnetic-fields and provides the following advice:

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.
In regard to a school which is considered a 'sensitive' use, Endeavour Energy's Network Environment Assessment Section has previously provided the following advice for another child care centre proposed in proximity of Endeavour Energy's electricity network:

Endeavour Energy's Network Environment Assessment Section has provided the following general advice in regard to schools, pre-schools, day care centres which are regarded as a 'sensitive use' being located in proximity of electricity infrastructure:

As far as I know there are no restrictions in legislation that stop schools, pre-schools, day care centres being placed next to electricity infrastructure.

Prudent avoidance measures must however be implemented. Prudent avoidance was a policy recommended by former Chief Justice of the High Court of Australia, Sir Harry Gibbs, as a result of an inquiry he conducted into community needs and high voltage transmission lines including issues in relation to EMF back in 1991. The findings in the Gibbs report are consistent with subsequent inquiries and are still relevant today.

Prudent avoidance is defined as doing what can be done without undue inconvenience and at modest expense to avert the possible risk to health from exposure to new high voltage transmission facilities. In practical terms, this means designing new transmission and distribution facilities having regard to their capacity to produce EMFs, and siting them having regard to the proximity of houses, schools and the like.

Although the Gibbs report was particularly aimed at electricity distributers to consider when placing their infrastructure, and bearing in mind that there are schools, pre-schools, day care centres adjacent to our infrastructure in various locations right across our franchise area, it is nonetheless Endeavour Energy's

recommendation it that such 'sensitive uses' not be built adjacent to major electricity infrastructure.

Should such a development proceed, the design of the schools, pre-schools, day care centres should also consider prudent avoidance measures such as any rooms which the children will occupy (class rooms, play areas, sleeping rooms, eating areas) be arranged such that they are on the side of the site/building which is furthest away from the electricity infrastructure.

There is scientific consensus that health effects have not been established but that the possibility cannot be ruled out. Accordingly, if there are any concerns regarding the location of the schools, pre-schools, day care centres in proximity to the electricity infrastructure, in order to make an informed conclusion, the applicant may need to commission an independent review to provide an overall assessment including electric and magnetic field measurement and advice. Applying a precautionary approach early on in the design process will hopefully result in the adoption of prudent avoidance principles benefitting the eventual development of the site.

- 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 (including any new electricity infrastructure required to facilitate the proposed development). 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.
In regard to the future padmount substation site required to facilitate the proposed development, please find attached for the applicant's reference a copy Endeavour Energy's 'Guide to Fencing, Retaining Walls and Maintenance Around Padmount Substations'.

- 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 and other utility infrastructure across the site, but also to identify them as a hazard and to properly assess the risk.

- Public Safety

Workers involved in work near electricity infrastructure 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 to 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 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. Endeavour Energy's contact details should be included in the any risk or safety management plan. Endeavour Energy's contact details should be included in any relevant risk and safety management plan.

I appreciate that not all the foregoing issues may be directly or immediately relevant or significant to the Development Application. 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

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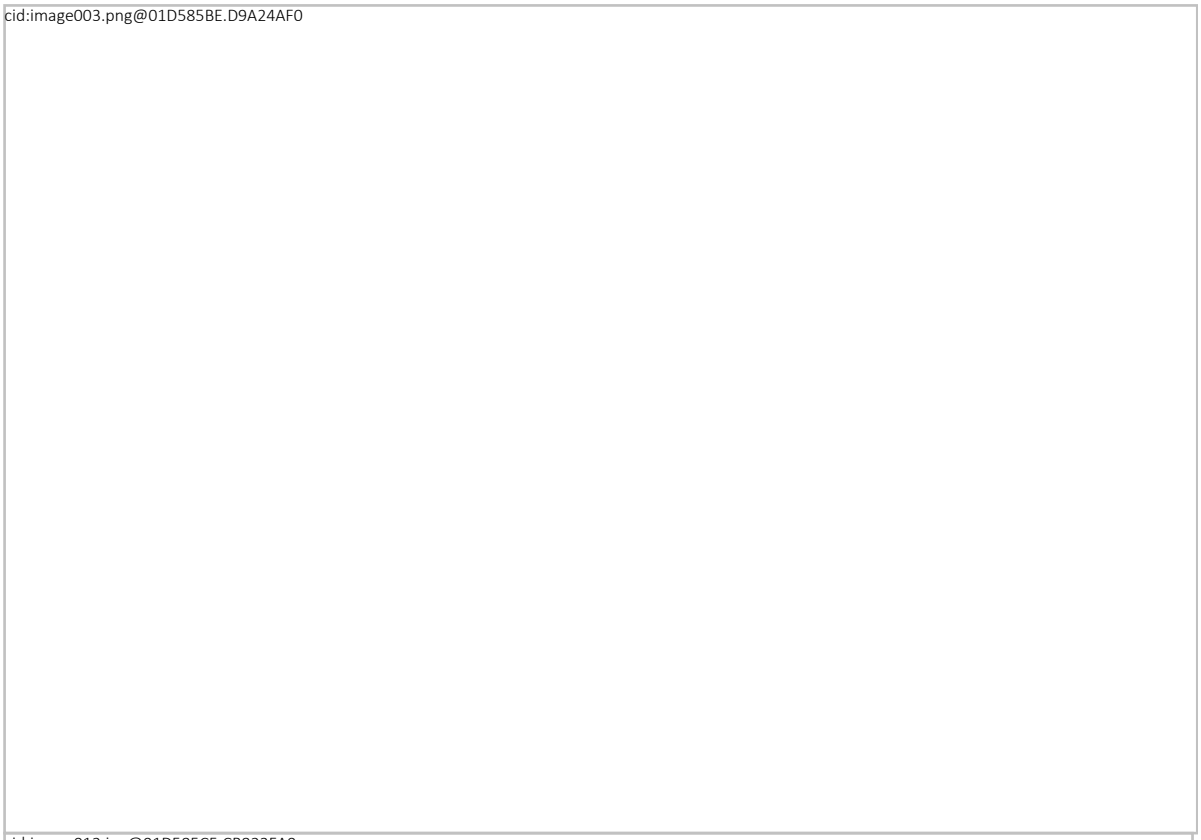
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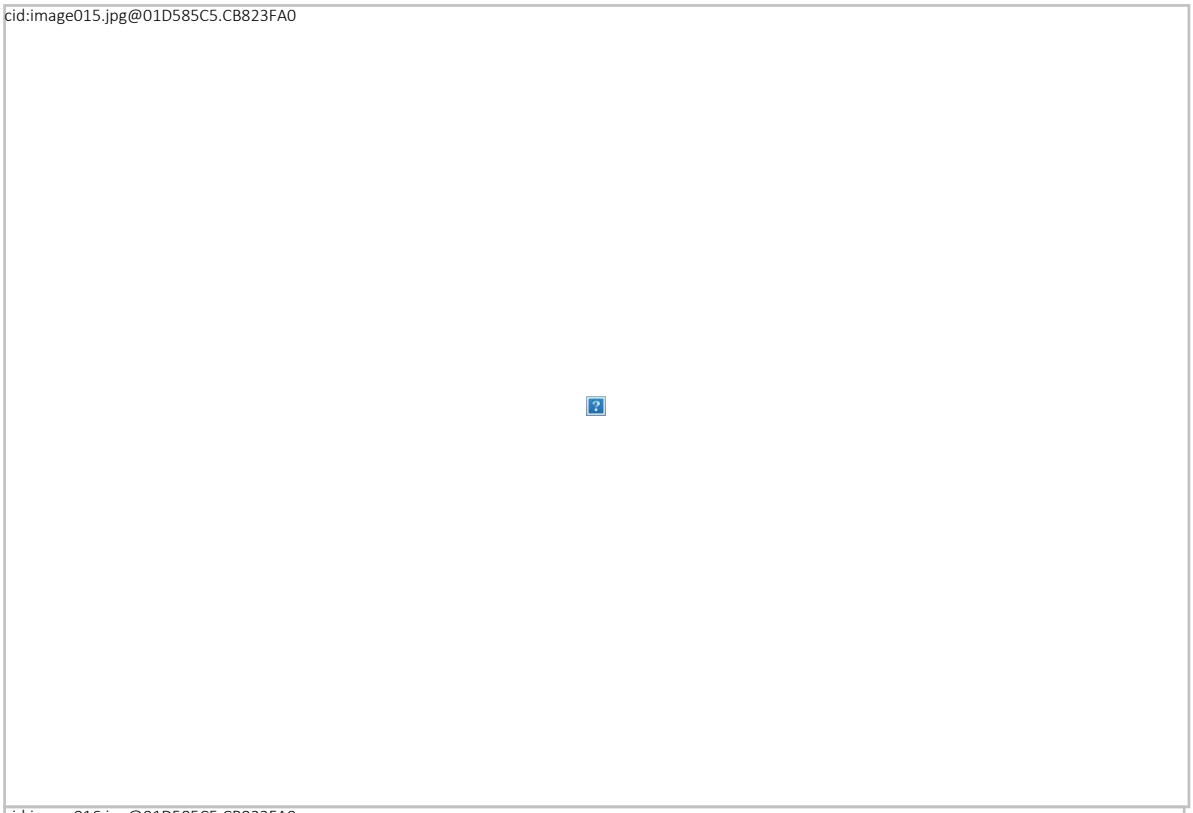

From: David Way <David.Way@ipcn.nsw.gov.au>
Sent: Friday, 18 October 2019 1:17 PM
To: Property Development <Property.Development@endeavourenergy.com.au>
Subject: Notice of Exhibition - New Marsden Park Public School (SSD-9809) - Endeavour Energy

Good afternoon Ms Woodbury

Please find attached correspondence regarding the New Marsden Park Public School (SSD 9809) - Northbourne Drive, Marsden Park in the Blacktown City Council Local Government Area.

Further information can be found on the Department's website at: https://www.planningportal.nsw.gov.au/major-projects/project/9681.

You are invited to comment by **Wednesday 20 November 2019**.

If you have any enquiries please feel free to contact me at David.way@planning.nsw.gov.au.

Kind regards

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