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Fernhill Estate, Mulgoa Eastern Precinct

Infrastructure Report

October 2013

Cubelic Holdings Pty Ltd


Mott MacDonald

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Infrastructure Report

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Cubelic Holdings Pty Ltd

20 Bonnefin Road
Hunters Hill NSW 2110

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description	Standard
A	25.10.2013	J. Taylor, N. Franklin	G. Lee	C. Avis	DA Submission	

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1 Introduction

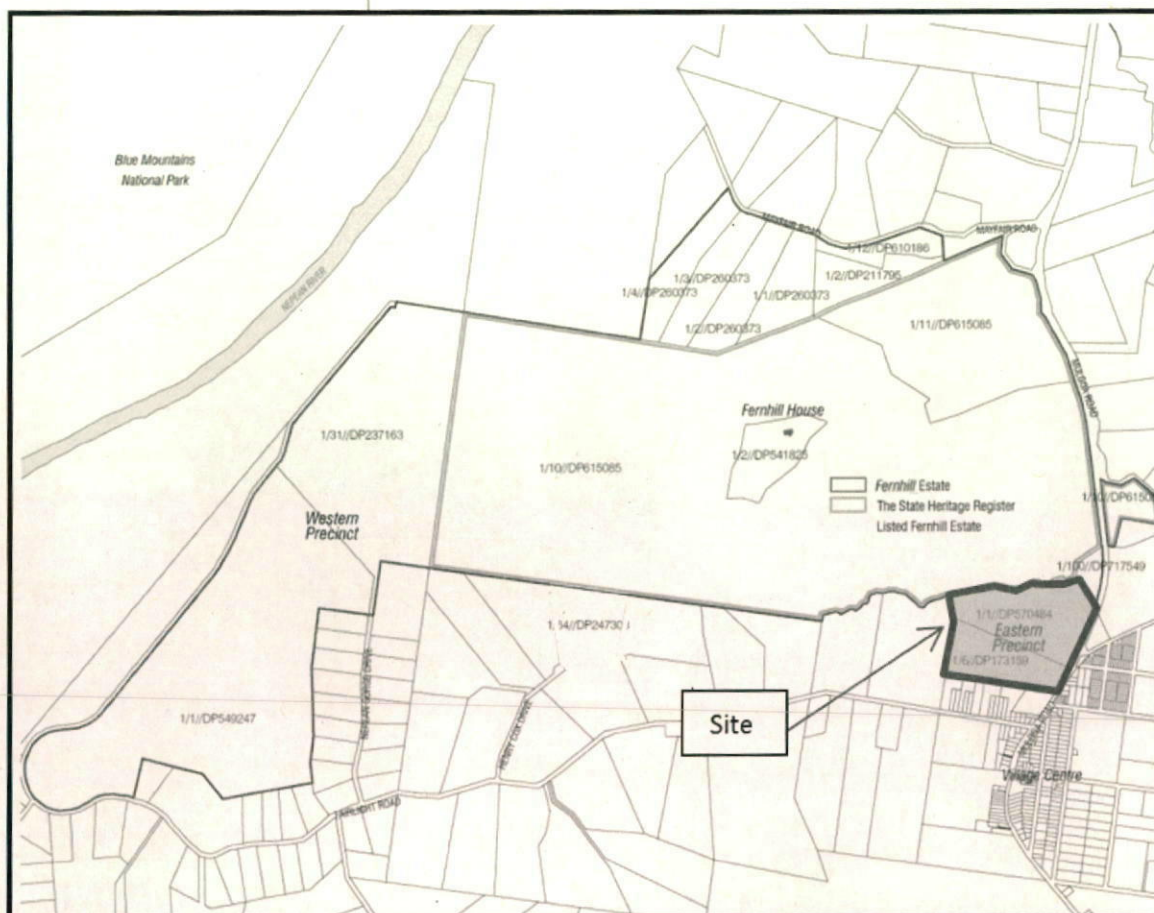
Mott MacDonald has undertaken this Infrastructure Report in support of the Development Application for subdivision and infrastructure works for the proposed residential development located within the Eastern Precinct of the Fernhill Estate, Mulgoa (referred to from this point onward as the 'site').

The site is a 25.9 ha parcel of land fronting Mulgoa Road comprising Lot 1 DP 570484 and Lot 6 DP 173159. It is proposed to develop this precinct to accommodate 54 residential zoned lots ranging in size from approximately 900-1500 square metres.

Refer to Civil Development Application Plans for the proposed works:

- MMD-322876-C-DR-00-WE-0100 to 0180

Figure 1.1: Eastern Precinct of Fernhill Estate (Site Location)



2 Proposed Development

The site will comprise 54 residential lots (between 900 –1500 square metres) with water and sewerage services provided by conventional means. The existing lake is to be retained as a feature of the development. The existing dam, located to the south of the Pond will also be retained. Electricity and telecommunications services will be provided to the proposed development. Each residence will incorporate BASIX requirements such as low energy devices, energy efficient design and water saving fittings.

At this stage it is not expected that gas will be provided to the proposed development as it is understood that the cost to extend the gas from Regentville (located South-West of Penrith) would be prohibitive and Jemena (gas management & infrastructure company) have no plans to extend the existing gas line to Mulgoa township and the proposed development.

3 Existing Services

3.1 Potable Water

The Fernhill Estate currently is not connected to the town water supply. Supply to the existing Fernhill Homestead is understood to be from onsite dams and rainwater collection. The nearest town water is a 100 mm main in Mulgoa Road and in Fairlight Rd. It is understood that potable water is available but the capacity of the delivery system is limited to Mulgoa. Sydney Water has advised in their previous Feasibility Letter dated 30th March, 2010 that:

"Depending on the final development layout of the subject area amplifications of the existing system will be necessary."

3.2 Sewer

The site is currently not connected to mains sewer. It sits just outside the boundary of the Mulgoa/ Wallacia/ Silverdale (MWS) Sewerage Scheme. Any extension of the MWS Sewerage Scheme to serve the site will require approval from the relevant authority, Sydney Water (SW). SW has advised in their previous Feasibility Letter dated 30th March, 2010 that:

"Strategic level wastewater modelling has indicated that the Eastern Precinct can be accommodated within the existing scheme."

This advice appears to indicate that the current boundary of the MWS Sewerage Scheme can be extended by Sydney Water to include the proposed development without requiring referral to the Department of Planning.

3.3 Electrical

Power supply to the area is provided by Endeavour Energy. Overhead power lines are located along Mulgoa Road and Fairlight Road. The State Heritage Register (SHR) listed Fernhill Estate and various other dwellings on other lots outside of the SHR area as having electrical supply. Recent advice from Endeavour Energy indicates local electricity infrastructure has capacity for the proposed development.

3.4 Telecommunications

The site currently has telecommunication services available. Information from Telstra is that there are telecommunications services located in Mayfair Rd, Fairlight Rd and Mulgoa Rd.

3.5 Gas

Mulgoa does not have natural gas available at this point in time. The nearest gas services are located at Penrith at the corner of the M4 Motorway and Mulgoa Rd.

4 Proposed Servicing

4.1 Potable Water

Water supply to Mulgoa is from the Warragamba Water Supply Scheme which supplies the townships of Warragamba, Silverdale, Wallacia, Luddenham and Mulgoa. The scheme has limited capacity and will need to be augmented to serve the proposed development. It is understood that the supply to Mulgoa is at or nearing capacity and augmentation will be required to allow the extension of the system to serve the site.

4.2 Fire Services

Water for fire fighting for the proposed development will be provided from the town mains via hydrants spaced at 80 metre intervals.

4.3 Sewer

Previous Sydney Water advice indicates that the existing MWS Sewerage System has capacity for approximately 80 additional lots. As the proposed development consists of 54 lots it is proposed to provide a conventional sewerage system for this area which would be taken over by Sydney Water. The sewer from each property would drain via gravity to a pumping station located on the site which would then discharge to the Mulgoa sewerage system via a rising main.

Sydney Water have verbally advised that under their public service provider mandate, that Sydney Water through a Commercial Agreement mechanism would ultimately take ownership of the required pumping station and rising main.

4.4 Electrical

Endeavour Energy has previously advised that there is sufficient capacity in the existing network to cater for approximately 80 new lots, and that upgrades to the network may be required to supply any lots in excess of this.

A revised Feasibility Enquiry has been lodged with Endeavour Energy to confirm what, if any, modifications to the existing network are required to supply the 54 proposed lots.

It is envisaged that a new branch from the existing overhead power lines along Mulgoa Road will be grounded to deliver power to the

proposed development. The supply configuration for the site will be confirmed at the detailed design stage including anticipated substation kiosks.

Refer Appendix A for advice received from Endeavour Energy on servicing.

4.5 Telecommunications

Telecommunication services are currently available to the Fernhill Estate. Above ground telephone services are located along Mulgoa Road and Fairlight Road to Park River Close. Telstra has previously advised that these services can be upgraded and extended to the proposed development. Refer Appendix C for Existing Services Plans. It is anticipated that the telecommunications connections to the site will be similar to that of the electrical connections (this being grounded lines from Mulgoa Road to supply the proposed development).

4.6 Gas

Gas services in this area are provided by Jemena. They have advised that the nearest gas services to Mulgoa are located at Regentville at the corner of the M4 Motorway and Mulgoa Rd. Jemena currently have no plans to extend gas to Mulgoa. If the developer wishes to extend gas to the proposed subdivisions it is understood that they would need to fund a steel lead-in gas main from Regentville to Mulgoa Village (a distance of approximately 8kms) and then extend the plastic reticulation lines throughout the development.

If gas is to be provided, Jemena require the lead-in gas main to have capacity for all future development in the Mulgoa, Wallacia, Silverdale, Warragamba and Luddenham areas. The cost of this is expected to be prohibitive in the vicinity of \$ 4 M. The above figure does not include reticulation throughout the subdivision.

Refer Appendix B for advice received from Jemena on servicing.

5 Roads and Transport

A separate Traffic Impact and Parking Assessment (TIPA) has been prepared by Mott MacDonald in support of the proposed development.

Refer to Civil Development Application Plans for typical road cross sections and Road Hierarchy.

6 Stormwater Management

6.1 Water Quantity and Quality

Preliminary water quantity and quality modelling of the proposed development has been undertaken by Mott MacDonald.

The Stormwater Management investigations include following items:

- Management of the increase in stormwater discharge from the site;
- Possible treatment measures required to reduce the volume of pollutants that are able to enter the downstream stormwater network; and
- Hydrological investigations of the proposed development to determine the flooding extents.

Outcomes from these investigations can be found within the Fernhill Estate, Mulgoa, Eastern Precinct Stormwater Management Report by Mott MacDonald dated 25/10/2013.

Appendices

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Appendix A. Endeavour Energy Advice

From: David Ho [mailto:David.Ho@endeavourenergy.com.au]

Sent: 21 June 2013 4:09 PM

To: Lee, Greg A

Subject: FW: ENL2054 - Fernhill Estate Eastern Precinct | Lot 1 DP 570484, Fairlight Road MULGOA

Dear Greg,

Thank you for your enquiry regarding electricity supply to proposed development at above location. This enquiry has been registered under Customer Application Process (CAP) Number ENL2054; please quote this number for all future correspondence.

Endeavour Energy acknowledges that Development scope as described in previous ENL1250 is now reduced to Eastern & Western Precinct. The Eastern Precinct comprising Lot 1 DP 570181 and Lot 6 D P173159 is 27.57Ha with parcel of land fronting Mulgoa Road. It is proposed to develop this precinct to accommodate 54 residential zoned lots ranging from approximately 900 to 1500sqm sized lots. Supply will be required in June 2014 or after.

Endeavour Energy has assessed the anticipated load required for the proposed development and would confirm that at present existing 11kV feeder A095 has sufficient capacity to supply the required load. To get supply connections, a new sub must be established on the property and cut into this feeder.

Please note that the advice provided is in response to an enquiry only and does not constitute a formal method of supply. Only once a application is received and subsequent designs have been certified or approvals granted will Endeavour Energy reserve capacity on the network.

If you have any questions regarding this matter, please contact me.

Regards,

David Ho

Contestable Projects Manager | Network Connections | Network Operations

☎ Direct: (02) 9853 7901 | 📠 Fax: (02) 9853 7903

✉ Email: david.ho@endeavourenergy.com.au

490 Hoxton Park Road, Hoxton Park NSW 2171





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Think before you print. This message is intended for the addressee named and may contain confidential information. If you are not the intended recipient, please delete it and notify the sender. Views expressed in this message are those of the individual sender and not necessarily the views of the business.
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Appendix B. Jemena Advice

Peter Wiggan

From: Hilton, Neale [Neale.Hilton@jemena.com.au]
Sent: Tuesday, 11 May 2010 1:00 PM
To: pwiggan@hughestrueman.com.au
Subject: RE: Gas Services to Fernhill Estate Mulgoa

Peter,

- > The closest suitable network currently terminates at Jemena's Secondary Receiving Station on Mulgoa Rd, adjacent to the M4 off ramp.
- > There are no current plans to extend our network into the Mulgoa/ Wallacia town ships at present.
- > Costs associated with the supply of Natural Gas infrastructure as based on a case by case basis. Jemena evaluates the potential yield based on the development timeframes and costs to supply. At this point Jemena does not seek to recover full Capital costs however due to a low expected yield a substantial contribution would be required. A brief analysis to provide a Natural gas main to the entrance of the Mulgoa town ship reveals an approximate \$3.9million contribution. This does not include local reticulation into the proposed estates due to the absence of road layouts.

Neale Hilton
Network Dev. Manager

Jemena

Level 14, 1 O'Connell Street , SYDNEY NSW 2000
Locked Box 2/159 Ridgecrop Drv, CASTLE HILL NSW 2154
M: 0402 060 151 | F: (02) 9899 3571
E: neale.hilton@jemena.com.au
W: www.thenaturalchoice.com.au

From: Peter Wiggan [mailto:pwiggan@hughestrueman.com.au]
Sent: Wednesday, 5 May 2010 3:00 PM
To: Hilton, Neale
Subject: Gas Services to Fernhill Estate Mulgoa

Neale,

Thanks for your time this morning. We are acting on behalf of the owners of the Fernhill Estate (Owsten Nominees) which is located just north of the village of Mulgoa. Refer attached map. There is currently a proposal before Penrith Council to rezone part of the property for development. The Eastern Precinct would comprise 80 lots and the Western Precinct 90 lots. The likely timeframe for the development of the Eastern Precinct is 2011/12.

The purpose of my inquiry is find out if it is feasible to extend gas to the proposed development. The information that would assist our investigation is as follows;

- Where are the nearest gas services to Mulgoa?
- Does Jemena have any plans in the foreseeable future to extend gas services to the Mulgoa/Wallacia area?
- If the developers of the property wanted gas to be put onto the development, how do they make application and how would it be funded?
- Can Jemena provide a ball park estimate of the cost per metre to extend gas to Mulgoa?

Thanks again for your help. A short email response to each of the above questions would be most appreciated.

Regards,

Peter Wiggan

Legend

- ee — Existing electricity (underground)
- eo — Existing electricity (overhead)
- ecw — Existing stormwater drainage
- es — Existing sewer
- ew — Existing water
- ei — Existing telecommunications
- ⊕ Existing electricity pit, pole, pole with light and light pole
- ⊙ Existing sewer pit and maintenance hole
- ⊙ Existing water hydrant, stop valve and valve
- ⊙ Existing telecommunications pit and pillar

Approximate location of services assets acquired from DBYD.



Notes																									
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Key to symbols																									
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	New reserve																								
Reference drawings																									
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<p>Fernhill Estate Proposed Eastern Precinct Existing Services Plan</p>																									
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Appendix C. Existing Services Plans