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21st June 2019

Meriton
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Level 11, 528 Kent Street
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Your Ref:
Our Ref: LT001-01-19-649-Little Bay Services
Direct phone: 02 9439 1777

Attention Matthew Lennartz

Dear Matthew,

SERVICES AND INFRASTRUCTURE REPORT FOR 1408 ANZAC PARADE, LITTLE BAY

Further to recent discussions and correspondence on the proposed planning proposal for 1408 Anzac Parade, Little Bay please find below a summary of the preliminary servicing strategy requirements.

Our investigations of the site were carried out based on a Dial Before You Dig (DBYD) search and conceptual architectural plans prepared by SJB Architects dated 19th June 2019.

The site is located within Randwick City Council Local Government Area (LGA) with a total area of approximately 12.3 Ha, refer to Figure 1 for the site location. The site consists of:

- Lots 1-4 on DP 270775;
- Lot 7-15 on DP 270775;
- Lot 18-19 on DP 270775; and
- Lot 20 on DP 270775 (Roads).

The site excludes the recently constructed structures located at:

- 2 Galaup Street (Residential Flat Building);
- 1-5 Solarch Avenue (Residential Flat Building);
- 23 Solarch Avenue (Single Dwelling); and
- 25 Solarch Avenue (Single Dwelling).

The purpose of this report is to provide preliminary advice with regards to:

- Dial Before you Dig (DBYD) records;
- Locations of existing services and the likely connection points to supply the site;
- Potential service upgrades required to ensure adequate supply to the site;
- Timing of likely service upgrades (if any);
- Indicative works required to upgrade or provide new services; and
- Stormwater infrastructure requirements.

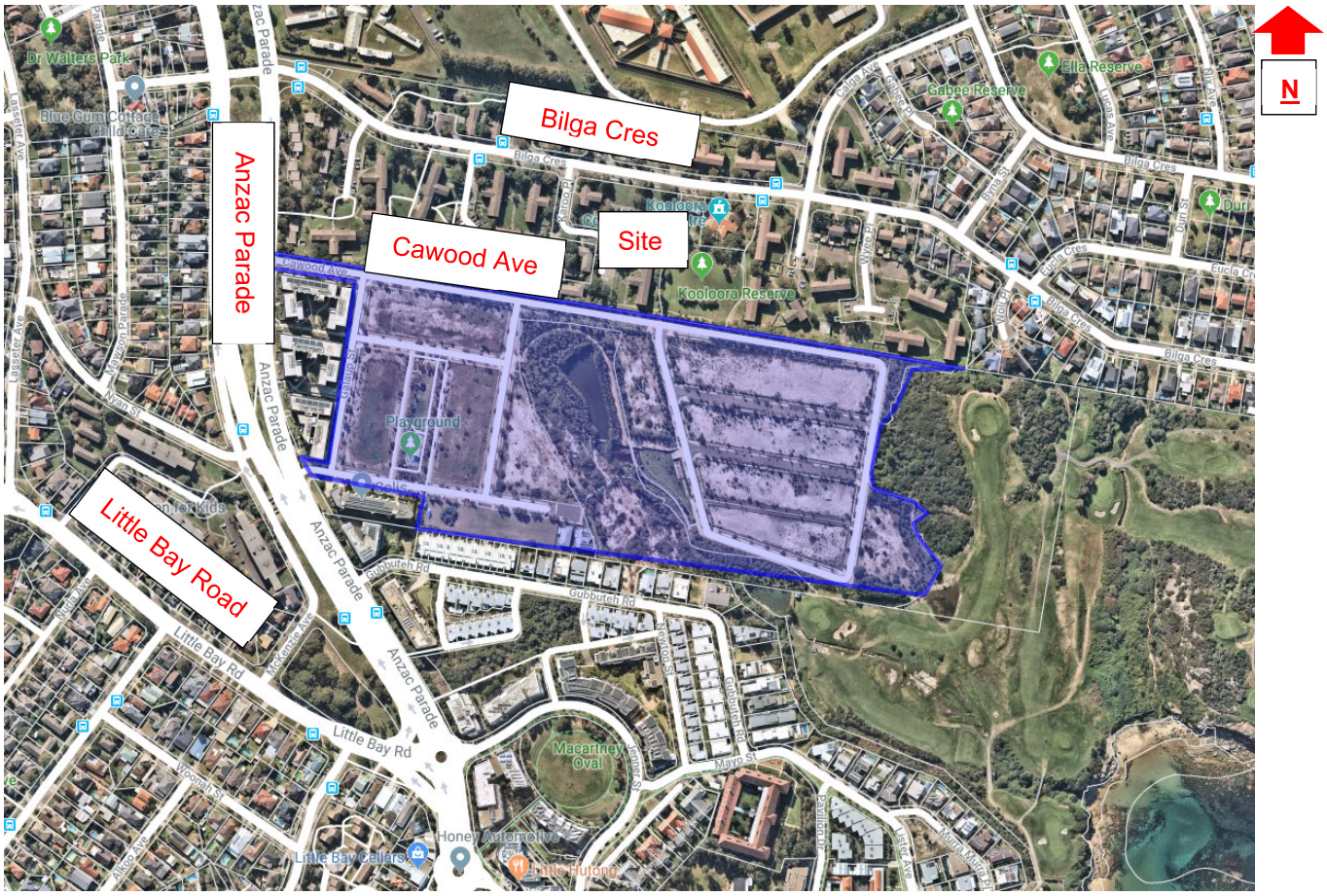

Figure 1 - Site Location (Courtesy of Nearmap)

EXISTING SITE

The existing site was the subject of a Stage 1 Masterplan DA (DA81/2009) which was approved in 2009. The approval consisted of:

- Site remediation;
- Subdivision;
- Building Demolition;
- Road Infrastructure;
- Services; and
- Earthworks Pads

Refer to Figure 1 for existing road layout and site features.

Current zoning and overlays under the provisions of The Randwick Local Environmental Plan (LEP) 2012 are:

- R1 – General Residential; and
- E2 – Environmental Conversation.

The site is bordered by Anzac Parade to the west, Randwick Golf Club to the east, Land and Housing Corporation site to the north and an existing residential subdivision to the south. The site generally falls from the western boundary to the eastern boundary with an existing lagoon with the centre of the site taking the western catchment.

PROPOSED DEVELOPMENT

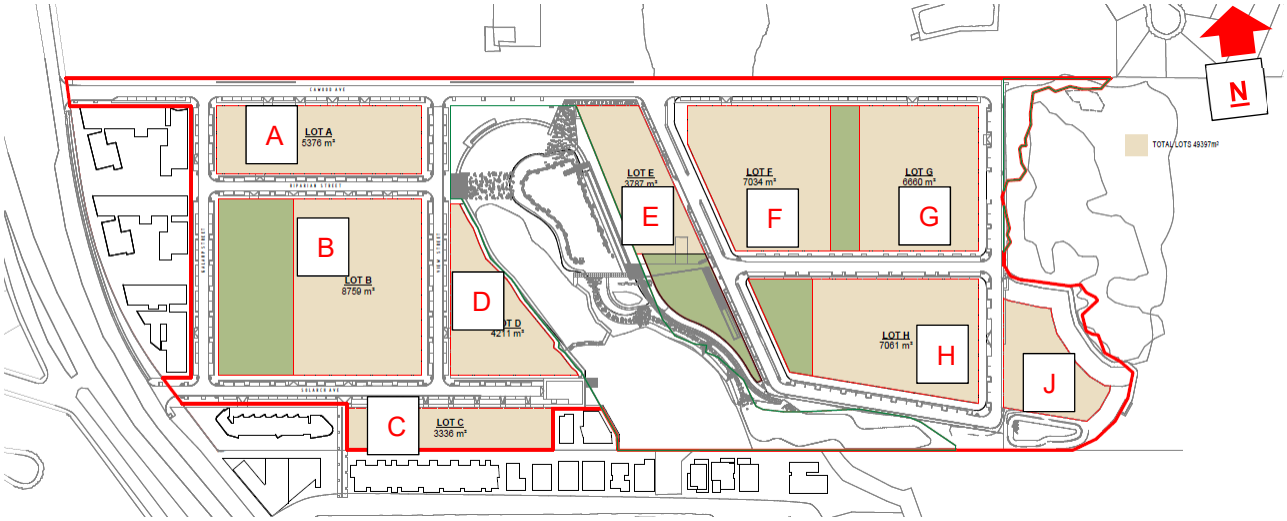

Figure 2 – Proposed Lot Plan (Courtesy of SJB)

The proposed residential development consists of:

- Lot A:
  - Building Height: 5 – 16 storeys; and
  - 264 total dwellings.
- Lot B:
  - Building Height: 6 – 15 storeys; and
  - 332 total dwellings.
- Lot C:
  - Building Height: 2 storeys; and
  - 23 total dwellings.
- Lot D:
  - Building Height: 6-12 storeys; and
  - 121 total dwellings.
- Lot E:
  - Building Height: 8-20 storeys; and
  - 191 total dwellings.
- Lot F:
  - Building Height: 6-21 storeys; and
  - 323 total dwellings.
- Lot G:
  - Building Height: 6-22 storeys; and
  - 321 total dwellings.
- Lot H:
  - Building Height: 6-15 storeys; and
  - 248 total dwellings.
- Lot J:
  - Building Height: 6-8 storeys; and
  - 87 total dwellings.
- Open Space
  - 10,411m^2
- Road realignment/widening to suit development extents

Refer to Figure 3 for the current development scheme.

The existing/new roads and parklands within the precinct will be dedicated at no cost to Council.

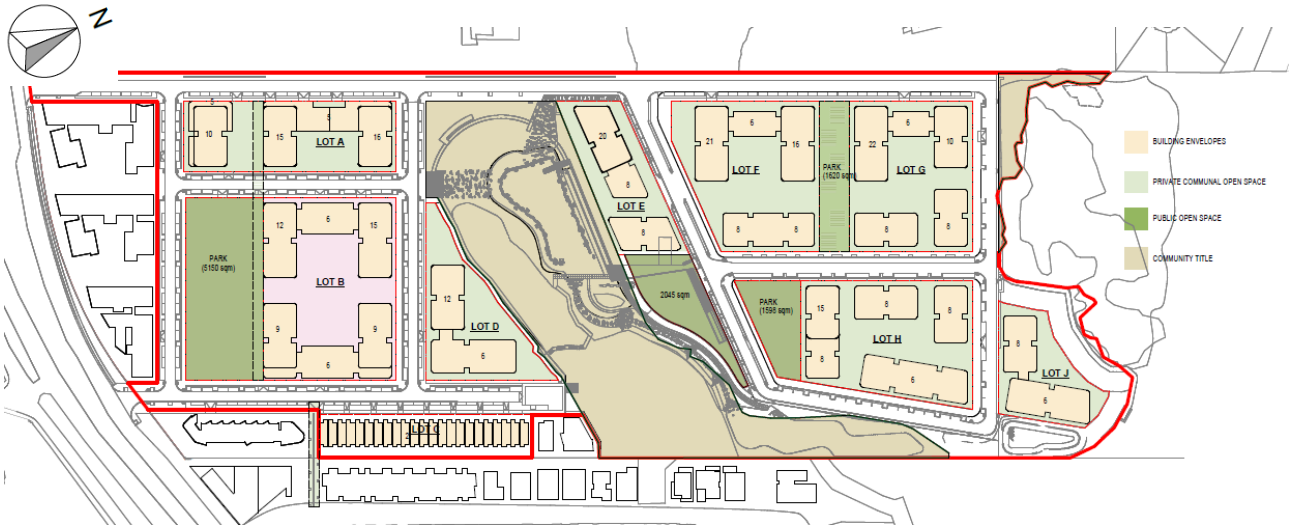

Figure 3 – Development Proposal (Courtesy of SJB)

Stormwater management is required to be in accordance with Randwick City Council for:

- On-site Stormwater Detention (OSD); and
- Water Sensitive Urban Design (WSUD).

PLANNING CONTROLS

The Randwick Local Environmental Plan (LEP) 2012 is the applicable control for this proposed development.

EXISTING SERVICES

The following asset owners are located within the vicinity of the site:

- Sewer – Sydney Water Corporation;
- Water – Sydney Water Corporation;
- Stormwater Drainage – Randwick City Council;
- Roads and verges – Randwick City Council;
- Electrical – Ausgrid;
- Gas – Jemena; and
- Telecommunications – NBN, Optus and Telstra.

Water

From Dial Before You Dig (DBYD) information, the following water assets are located within the vicinity of the site:

- 600 CICL (Cast Iron Cement Lined) main in the Western Verge of Anzac Parade;
- 200 DICL (Ductile Iron Cement Lined) main in the Eastern Verge of Anzac Parade (intersection of Anzac Parade and Solarch Avenue);
- 150 DICL (Ductile Iron Cement Lined) main in the Eastern Verge of Anzac Parade (intersection of Anzac Parade and Cawood Avenue); and
- Internal reticulation mains ranging in size from 150-200 DICL within the existing street network.

Refer to Appendix A for DBYD Details.

Based of initial discussions with a Water Services Coordinator (WSC) the existing network should have sufficient capacity to cater for the proposed development. Due to the proposed height of the buildings generally being above 7 storeys in height, all 150mm diameter water mains within the internal streets will need to be upgraded to 200mm diameter. New

watermains will be required to be laid to ensure full hydrant coverage is maintained. Total length of new and upgraded watermain is approximate 930 lineal metres. This will be confirmed either through a feasibility application prior to DA approval or the formal Section 73 process post-DA approval.

Summary

A feasibility application will need to be submitted to Sydney Water to determine Sydney Water's requirements and if lead in works are required. This will dictate the likely points for connection and confirm if an upgrade is required to service the development. A feasibility study can take between 4-6 weeks to complete however for the sake of this servicing report it is assumed the development can be serviced with water.

ESTIMATE OF COST

Based on preliminary investigations:

- **Watermain upgrades within existing internal road network is $465,000.00**

Sewer

From Dial Before You Dig (DBYD) information, the existing site is draining to a 225mm diameter PVC sewer main, connecting into the 400mm VC sewer main within Randwick Golf Club to the east. Refer to figure 4 and Appendix A for DBYD details.

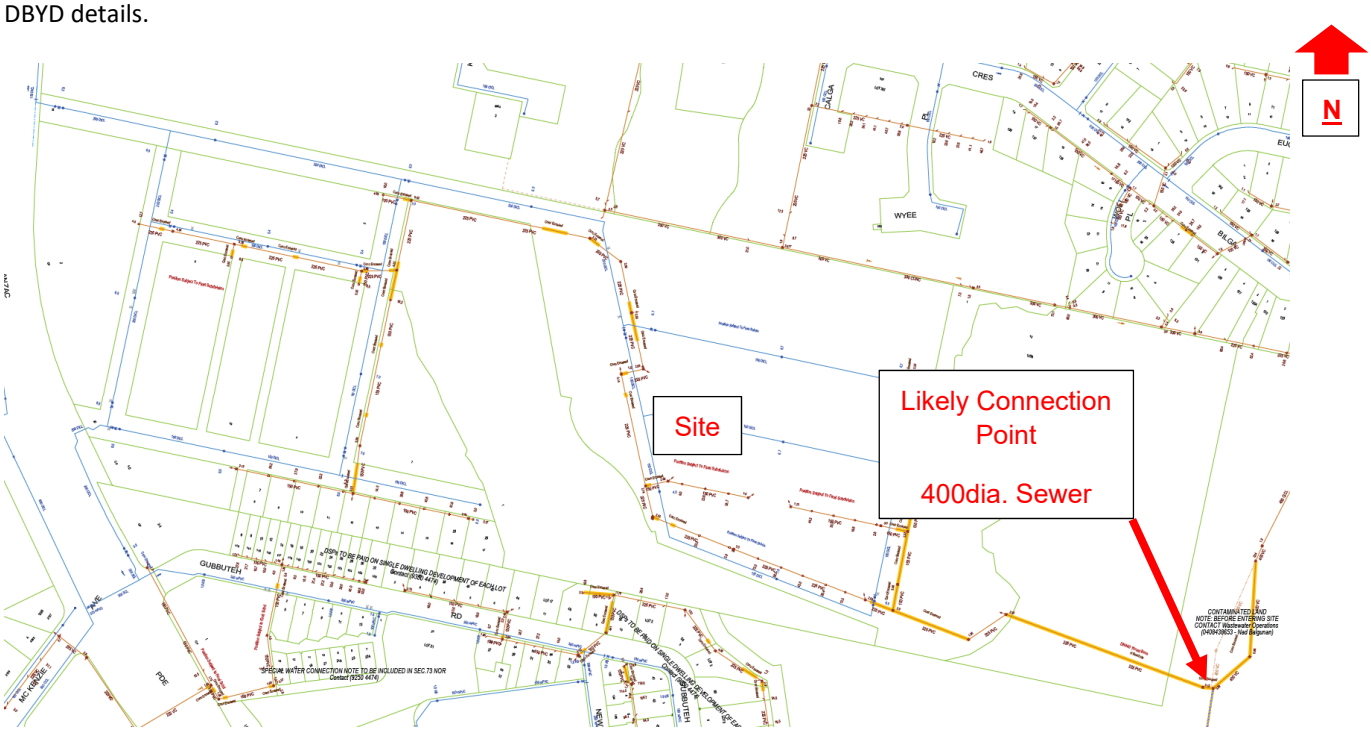

Figure 4 – Sewer Plan (Courtesy of Sydney Water)

ESTIMATE OF COST Based on preliminary investigations, an upgrade to the existing 225mm diameter sewer will be required. It is anticipated this main will need to be increased to 400mm diameter and under bored approximately 150m to the existing connection point. Due to the number of dwellings proposed upgrades to the existing reticulation network within the site maybe required.

ESTIMATE OF COST

From our preliminary investigations:

- **400mm diameter (with 600 diameter under bore) Sewer lead-in upgrade $500,000.00; and**
- **Reticulation network upgrade $200,000.00**

A feasibility application will need to be submitted to Sydney Water to determine Sydney Water's requirements and to confirm if lead in works are not required. This will dictate the likely points for connection and confirm whether an

upgrade is required to service the development. A feasibility study can take between 4-6 weeks to complete however for the sake of this servicing report it is assumed the development can be serviced with water.

Power

From DBYD records there are underground high-voltage 11kV cables within the intersection of Anzac Parade and existing high-voltage conduits supplying the 3 padmount substations within the development site . Refer to Appendix A for Ausgrid Electrical Services Map.

The preliminary electrical advice is as follows and will require confirmation from Ausgrid:

Existing Electricity supply

The subject site is currently a low density non-urban residential site supplied from an existing underground and 11,000-volt feeder cable from Matraville Substation (approximately 1.8km from the site). Refer to Figure 5 which displays the location of the two zone substations in relation to the site.

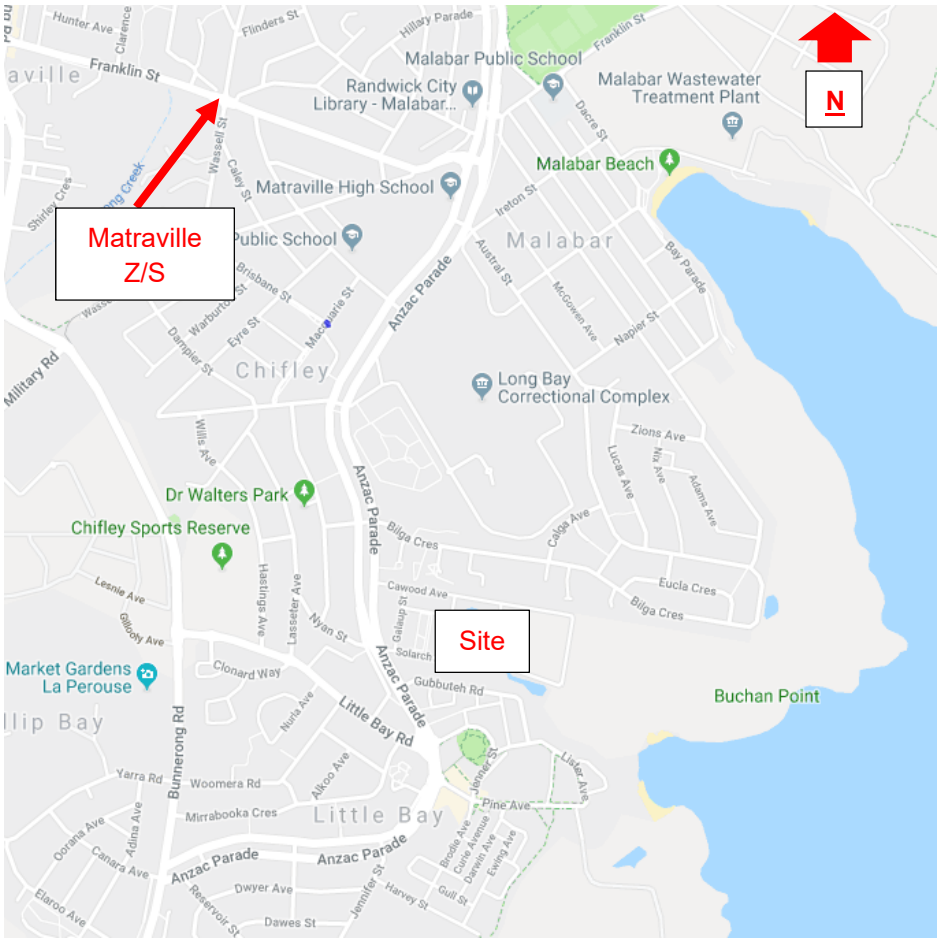

Figure 5 – Existing Electrical Zone Substation

Proposed load

The anticipated load for the proposed 1900 apartments and minor retail would be in the order of 7.5-8.0 MVA. This figure has been calculated using an after diversity maximum demand of 4.5kVA per residential unit (based on gas hot water, gas cooktops and a single split system air conditioner in each unit).

Method of supply

Ausgrid typically allows their network 11kV feeders for shared use to be loaded up to a maximum of 4.5 to 4.7 MVA. The anticipated load of 7.5-8.0 MVA equates to 180% of a feeder which most likely will not trigger the need for 2 x new feeders from a Zone substation. Typically Ausgrid would likely supply a load of this size by either of the following options:

1. Connecting the site to the nearest 11kV feeder cable where the spare capacity is available. **Indicative developer cost NIL;**
2. Offloading customers onto other feeders by switching to free up capacity on the nearest feeder. **Indicative developer cost NIL;**
3. Augmenting feeders: **Indicative developer cost up to $500k; and**
4. New feeder cables from a Zone substation. **Indicative developer costs up to $2M**.

At this stage, for feasibility purposes, it should be assumed the worst-case option will be required (option 4). Upon submission of a formal application for load or an enquiry to Ausgrid, they will model the network to determine the point of connection and which of the above options or possibly another option will be required to allow connection.

Reticulation and Street Lighting

Internal street lighting has already been installed in accordance with the original Stage 1 DA for the site, and no upgrades are proposed.

The existing site contains 3 padmount substations installed as part of the original Stage 1 DA, based upon the anticipated MVa, an extra 7 substations will be required to service the development. The existing substations will most likely be adjusted to suit the future architectural design of the lots.

ESTIMATE OF COST From our preliminary investigations:

- **Lead-in infrastructure: Up to $2 Million ex. GST; and**
- **Internal Reticulation (including 7 single distribution transformer substations): $1.4 Million ex. GST**

Gas

From DBYD information, there is an existing reticulation network contained within the existing road network for the site. Refer to Appendix A for Jemena Gas Network map.

Should the development proceed, Jemena has confirmed that the proposed development can be adequately serviced. Confirmation will need to be sought from Jemena during the infrastructure DA stage.

ESTIMATE OF COST From our preliminary investigations:

- **Cost to connect proposed development would be paid by service authority**

Communications

DBYD records indicate that there is existing Telecommunications (Telstra, Optus and NBN) Anazac Parade and a reticulation network within the existing street network of the site.

Refer to DBYD records within Appendix A for details.

Confirmation will need to be sought with the telecommunications authorities for all connections, with discussions to commence during the DA stage.

ESTIMATE OF COST From our preliminary investigations:

- **Cost to connect proposed development would be paid by service authority**

Stormwater

On Site Detention (OSD) and Water Sensitive Urban Design (WSUD) will be required for within each lot and sized in accordance with the Randwick Stormwater Code and the existing site work constraints, subject to individual lot Development Applications.

Conclusion

Based on our preliminary investigations and discussions with the relevant authorities, it is our recommendation that this site can be adequately serviced with all required utilities and that the most appropriate options for providing each utility are coordinated with the relevant service providers.

Please feel free to discuss if you have any queries.

Yours sincerely

Glen James BEng Civil MIEAust
Senior Civil Engineer
02 9439 1777

Appendices

Appendix A

Dial Before you Dig

Appendix B

Current Scheme