



HUGHES TRUEMAN PTY LTD
 AS TRUSTEE FOR HTL REINHOLD TRUST
 ABN 53 831 529 091
 QUALITY CERTIFIED AS 9001
 www.hughesrueman.com.au

Level 3, 90 Phillip Street
 PO Box 163
 Parramatta NSW 2150
 Australia
 T 02 9891 5044
 F 02 9891 5386
 parramatta@hughesrueman.com.au

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BOVIS LEND LEASE
7 PARKVIEW DRIVE,
SYDNEY OLYMPIC PARK

INFRASTRUCTURE
REPORT

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ISSUE: Rev B	PREPARED BY: James Gilligan	REVIEWED BY: Steve Chatfield	APPROVED FOR ISSUE BY: Graeme Skoobridge	DATE: 14 th December 2009
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COMMERCIAL IN CONFIDENCE

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1.0 INTRODUCTION

1.1 Scope of Work

Hughes Trueman has been appointed by Bovis Lend Lease to undertake a review of the existing service infrastructure and provide an outline for the constraints associated with the proposed development at 7 Parkview Drive, Sydney Olympic Park.

1.2 Documentation

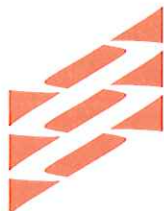
The following documentation has been resourced

- A comprehensive Services Search (DBYD).
- A Sydney Water Hydra search
- A SOPA services diagram indicating all constructed services around the development site Drawing Number 001-P-P-2073 Rev A.
- Detail Survey of the development site prepared by Lawrence Group ref 071435 DETL-001/C in 7 sheets.
- Sydney Water Feasibility Application (Application Number 117186)
- Written correspondence from relevant authorities and service providers (refer Appendix A).

1.3 Drawings

The following road long section and cross section plans have been prepared by Hughes Trueman for the proposed Parkview Drive, Murray Rose Avenue extension and Dawn Fraser Avenue extension in conjunction with this report. The drawings are listed below and have been included in Appendix B of the report:

Drawing No.	Title
SKC101	Road Alignment Plan 1 of 3
SKC102	Road Alignment Plan 2 of 3
SKC103	Road Alignment Plan 3 of 3
SKC110	Road Longitudinal Sections Sheet 1 of 2
SKC111	Road Longitudinal Sections Sheet 2 of 2
SKC120	Road Cross-sections Murray Rose Avenue



2.0 EXISTING SITE DESCRIPTION

2.1 The Site

The site for the proposed development at 7 Parkview Drive, Sydney Olympic Park (SOP) is owned by the GPT Group (GPT) who has been a major stakeholder at SOP since 2001. GPT intend to redevelop and integrate the site into a broader Masterplan currently under development by Sydney Olympic Park Authority (SOPA).

The site comprises of lots 87 and 88 DP 870992. The site covers an area of approximately 3.7 Ha. Surrounding the site are adjacent lot 812 DP 1012563 and lot 70 DP 818981. The site is bounded by:

- Existing brick pit to the north west;
- Bennelong Road to the east; and
- Existing commercial developments to the south and west of the development site.

The buildings on the site are currently occupied by Samsung. The site contains two existing buildings; a metal warehouse and a two storey office building. A car parking area is located to the east of the two storey office building. It is currently utilised to support the warehouse and office building operations. The remaining area consists of open space, paved areas and landscaped areas.

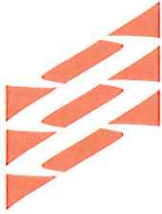
The existing topography of the site falls towards the east from the Samsung buildings. At the eastern boundary the land falls away steeply to Bennelong Road. The site is retained by a substantial gabion retaining structure up to 4.5m high along the boundary.

2.2 Existing Services

2.2.1 EXISTING EASEMENTS

An easement for stormwater detention is currently located near the south-east boundary of the site. The easement for stormwater detention has dimensions of approximately 20 m by 40 m and covers an area of approximately 800 m². An existing 2m wide Electrical easement is located adjacent to and to the south of the stormwater detention easement. It extends from Parkview Drive to Bennelong Road.

Another electrical easement 2m wide also burdens the site and is situated parallel to the south western boundary.



2.2.2 EXISTING STORMWATER

The site drains to the south east parallel to Bennelong Road. At Bennelong Road two headwalls are located at sag points each consisting of two 450mm x 1800mm culverts. These culverts pass under Bennelong road to discharge stormwater flows into Bennelong Creek. It is anticipated that these headwalls collect surface runoff from the existing Samsung warehouse at 7 Parkview Drive and from the adjacent properties.

The existing development at 7 Parkview Drive appears to drain via a 750 mm diameter piped stormwater system which follows the line of the southern electrical easement. The stormwater drainage extends along the length of Parkview Drive. It continues to the existing easement corridor and connects with site discharging stormwater at the easement for stormwater detention. It is unclear from survey information provided and site inspections whether the Parkview Drive Stormwater is detained within the onsite detention system. Stormwater is then directed by a 750 mm diameter pipe towards the main trunk line situated within Bennelong Road before being discharged into Bennelong Creek.

Within the site there exists a reduced size stormwater system, which provides drainage from the two buildings and the bitumen car park. Adjacent to and approximately 5m to the west of the easement for water detention, a gross pollutant trap is located, the exact size and type of gross pollutant trap is unclear from survey information provided and attendance at site.

2.2.3 EXISTING WATER SUPPLY

The existing site is currently serviced by a 200mm diameter water main which extends along Parkview Drive from Australia Avenue. This water main reduces in diameter around the cul-de-sac head of Parkview Drive to a 150mm diameter main. This 150mm dia. main extends from Parkview Drive via the service corridor to connect to a trunk main within Bennelong Road. Information obtained from Sydney Olympic Park Authority (SOPA) indicates a number of disused water reticulation mains located within the adjacent lot near the north boundary of the site.

2.2.4 EXISTING RECYCLED WATER SUPPLY

An existing 100mm recycled water main extends from Australia Avenue to the existing cul-de-sac in Parkview Drive. The existing 100mm diameter recycled water main branches off mid way along Parkview drive to service the adjacent buildings located in Quad 1 and Quad 4. As the recycled water main extends towards the turning head in Parkview Drive the main reduces in diameter to a 50mm main. The existing site is serviced by this 50mm diameter recycled water main which is located within the western verge of Parkview Drive cul-de-sac.

2.2.5 EXISTING SEWER RETICULATION

An existing sewer main extends from the site via the service corridor adjacent to the southern boundary of the site easement for water detention to connect to the trunk sewer main parallel with Bennelong Road. The remainder of existing sewer reticulation located on the site is largely made of disused sewer main including a sand backfilled pipe that traverses the site towards the northern boundary. Further to the west towards Australia Avenue a sewer main traverses the site crossing the path of Parkview Drive, Murray Rose Avenue and the proposed Dawn Fraser Avenue.



2.2.6 EXISTING GAS SUPPLY

There is currently no gas reticulation service within Parkview Drive. The Nearest main is located on the western side of Australia Avenue, approximately 350m from the site. A disused gas main is also located adjacent to the north boundary.

2.2.7 EXISTING ELECTRICAL RETICULATION

The services search (DBYD) indicates high voltage and low voltage electrical reticulation currently servicing the site from Parkview Drive. The majority of electrical reticulation consists of underground electrical cabling with minor branches extending from Parkview Drive into the adjacent lots to service neighbouring properties. A length of high voltage electrical cabling extends from the existing Parkview Drive cul-de-sac to the proposed extension of Murray Rose Avenue. From here the high voltage electrical cabling extends along both sides of Murray Rose Avenue back towards Australia Avenue to connect into the network.

A proportion of overhead electrical cabling exists adjacent to the north boundary in the neighbouring property with a disused low voltage reticulation line branching into the northern corner of the site. An electrical substation is located within the adjacent lot south west of the site with access from Parkview Drive. It should be noted that a number of direct buried transmission lines up to 132Kv exist within Bennelong Road.

2.2.8 EXISTING TELECOMMUNICATIONS RETICULATION

The services search (DBYD) also indicated telecommunications reticulation currently servicing the site. Telecommunication cabling enters the site along Parkview Drive which extends to the end of the cul-de-sac from Australia Avenue. Telecommunications cabling is also present along the length of the existing Murray Rose Avenue adjacent to the north boundary. A telecommunications tower is also located in the adjacent land to the North.

3.0 INFRASTRUCTURE CONSTRAINTS

A number of constraints have been identified during preparation of this report that may have the potential to impact the proposed development of the site.

3.1 Grading

As part of the development, the proposed extension of Murray Rose Avenue is to be formalised from Australia Avenue to the proposed extension of Parkview Drive and then further extended to connect with Bennelong Road. The proposed Dawn Fraser Avenue is to extend from the junction at Australia Avenue to connect with Bennelong Road. The proposed Parkview Drive is to extend in a northerly direction to connect with the proposed Murray Rose Avenue. The cul-de-sac and part of the existing Parkview Drive will be demolished. The major constraint, associated with development of the proposed roads, is the existing change in elevation from Australia Avenue to Bennelong Road (Refer Appendix B for existing and proposed road grades and levels).

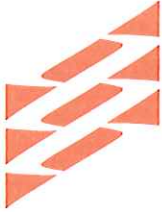
Due to the nature of the development the building works have been separated into 3 stages. As part of the stage 1 works a temporary road is to be constructed to join the existing Parkview Drive with the partial extension of Murray Rose Avenue. This will also involve the demolition of the existing Samsung Warehouse.

For stage 2 works the existing Samsung Office is to be demolished to accommodate the further extension of Murray Rose Avenue to connect with Bennelong Road.

For stage 3, a section of the existing Parkview Drive is to be demolished along with the temporary road. Dawn Fraser Avenue will then be constructed from Australia Avenue to Bennelong Road. Parkview Drive will also be constructed on a new alignment to intersect with Dawn Fraser Avenue and connect with Murray Rose Avenue.

The various changes in elevation indicate that the proposed sections of road would require extensive earthworks to provide such road linkages. A number of constraints have been identified with the construction / extension of the abovementioned roads which include:

- The determination of the best road transition from Australia Avenue to Bennelong Road along the proposed Murray Rose Avenue, and proposed Dawn Fraser Avenue;
- The determination of the most feasible option for setback and stabilisation requirements for extension of Murray Rose Avenue, Dawn Fraser Avenue and the temporary access road;
- Setback for batters at a suitable/specified grade. The construction of batter may encroach upon the proposed building footprints and properties adjacent to the development;
- The use of retaining structures to be implemented including lengths required for anchoring may be significant.
- Level separation between the site and Bennelong Road would require extensive re-location of and adjustment of existing services. This is further discussed in section 3.2.
- Level separation between the proposed Dawn Fraser Avenue and the Quad 4 carpark would require further analysis to determine if access to the Quad 4 carpark is achievable.



-
- Level separation between the Murray Rose Avenue reinstatement and an existing carparking area to the south of Murray Rose Avenue adjacent to Australia Avenue, would require further analysis to determine if access to the carparking area is achievable.
 - Extensive earthworks with expected removal from site of large quantities of spoil. It is expected that a proportion of such quantities may be classified as contaminated material due to the historic use of the site and surrounds.

3.2 Services

A number of constraints have been identified with existing infrastructure services. These constraints may have the potential to delay the proposed development of the site. A major constraint is the extensive relocation and/or removal of services located along the existing Parkview Drive and the extension of Murray Rose Avenue and Dawn Fraser Avenue. This constraint is closely associated with the earthworks for the proposed road layout.

3.2.1 STORMWATER

The proposed concept design is to ensure that the development is drained to council's and SOPA's standards, with each building having a connection point to the proposed drainage system. The proposed development will require a number of new pits and pipes to connect with two existing 1800mm x 450mm culverts adjacent to Bennelong Road. These culverts direct the majority of overland flows from the upstream catchment to the outlet which eventually discharges into Bennelong Creek.

As flows in Bennelong Creek are tidal in nature, the assessment of the provision for OSD has not been determined from a pre-post comparison as indicated in Auburn Council's Development Control Plan. Here flows from the proposed site have been assessed to determine if the existing outlet has capacity to cater for flows up to the 100yr ARI storm event as recommended by Sydney Olympic Park Authority.

The results from the concept hydraulic DRAINS modelling indicate the following:

- An onsite stormwater detention structure may not be required. SOPA have indicated that further investigation will be required to confirm the requirement for OSD as part of the detailed design process.
- The existing culvert configuration adjacent to Bennelong Road has capacity to cater for the 100yr ARI storm event for the proposed development
- The velocity of stormwater flow exiting the culvert into Bennelong Creek is 1.6m/s which is below the velocity to cause scour.
- The construction of new trunk stormwater mains, similar to those shown in the attached concept catchment plan will be required to direct stormwater flows to the existing culvert.
- The provision of drainage easements for each building within the subject site will be required.
- Ensure adequate freeboard is met with existing and proposed floor levels in accordance with Council and SOPA requirements.



It should be noted that the grade of the proposed roads may affect the ability to direct overland flow. If the grade of the road is too steep, the road may direct too much overland flow from the site therefore pits may need to be designed to cater for such conditions. Stormwater discharge and overland flow may not be directed as easily as it does in the existing cul-de-sac configuration.

Confirmation of the proposed platform levels for Buildings D & E will determine the feasibility of connecting the proposed stormwater infrastructure into the two existing 1800mm x 450mm culverts. If the levels are not suitable to connect into the existing culverts stormwater flows may need to be directed into the existing 750mm diameter mains in Bennelong Road.

Further DRAINS analysis indicates that onsite stormwater detention may not be required; however an increase in velocity of water exiting the site was evident during modelling. Results indicate that scour protection may be required at the outlet in Bennelong Creek due to the increased velocity.

Further investigation is required to determine details of the relocation/removal of the existing GPT.

It should also be noted that the development will require the extinguishment of the existing easement for stormwater detention.

3.2.2 WATER SUPPLY

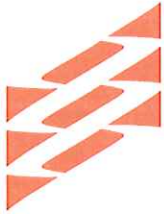
Sydney Water has indicated that the following works will be required to obtain a Section 73 Certificate for the proposed development:

- Water mains must be constructed so that each lot in the proposed subdivision / development has a frontage to the water main. Each lot must also have its own connection to that drinking water main and meter;
- The proposed development will impact on the existing 150mm DICL drinking water main in lots 1 and 2 DP 1122970. This water main will require adjustment to the cost of the developer;
- An easement must be created over the new water main located within Lots 1 and 2 as these lots are no longer public roads; and
- Because these works involve construction on a “live” water main you must enter into a bond agreement with Sydney Water and pay a bond prior to construction commencement.

3.2.7 RECYCLED WATER

Sydney Water has indicated that the following works will be required to obtain a Section 73 Certificate for the proposed development:

- Recycled water mains must be constructed to serve each lot in the proposed subdivision / development;
- The development must have its own connection to that recycled water main and meter
- The new recycled water mains must comply with the standards for Dual Water Reticulation Systems.



3.2.3 SEWER SERVICE

Sydney Water has indicated that the following works will be required to obtain a Section 73 Certificate for the proposed development:

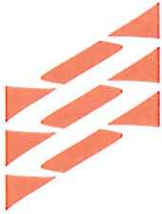
- A sewer main extension will be required to serve each lot in the proposed subdivision / development;
- The proposed development will impact on the existing 225mm VC sewer main located within the development lot and Lots 1 and 2 DP 1122970 and Lot 812 DP 1012563. This main must be adjusted at the developers cost. Please note there is a sewer main vent shaft located within Lot 812, which must be reinstated if adjustment is required. A detailed work method statement for construction of the deviation is to be submitted to Wastewater Operations for review prior to commencement of work. There may be a requirement to deviate flow during construction, in which case the WSC must submit a Flow Management Plan to Wastewater Operations for review and approval prior to construction commencement;
- The 250mm DICL sewer rising main adjacent to Bennelong Parkway will also be impacted by the proposed development and will require adjustment. The developer must supply a full flow management plan for the pumping station and a work method statement for the construction of the works. There may be more requirements when the full extent of the works is known;
- If the site contains contamination where sewer work is to be involved, a remediation report will be required;
- If sheet pile adjoining SWC asset is required, written approval is to be obtained;
- If dewatering is to be involved the impact of groundwater dewatering on the sewer is to be analysed and submitted to SWC prior to dewatering; and
- Because these works involve the construction of “live” sewer mains the developer must enter into a bond agreement with Sydney Water and pay a bond prior to construction commencement.

A preliminary investigation of the existing and proposed sewer main levels has been undertaken to determine any issues with sewer reticulation to the proposed buildings. Due to the layout of the proposed buildings and necessary grading of Murray Rose Avenue and Dawn Fraser Avenue levels of the existing sewer mains suggest it is probable a pumping station and emergency 24hr buffer tank may be required for Building D & Building E. This may be confirmed once final building platform levels have been determined.

3.2.6 GAS SERVICES

Neale Hilton from Jemena has provided the following advice in regards to the provision of gas services as part of the proposed development;

“Should only a short section of the proposed Murray Rose Ave extension be constructed to service Building A, Jemena advise that a 225mm conduit be installed should natural gas infrastructure be required at a later stage. Our standard alignment is approx 1.2 to 1.8m from the BL. It is anticipated that a 110mm P.E. main extension would come from the western side of Australia Ave on the corner of



Murray Rose Ave. A minimum of 300mm separation from other services is required so Jemena can physically connect to mains at a later stage.

Costs associated with the supply of natural gas infrastructure to service Buildings D & E are unknown due to the absence of stated gas loads and field surveys. Should Natural gas only centralised hot water system be installed in both these buildings, Jemena would look favourably at extending this main to supply natural gas."

3.2.4 ELECTRICAL SERVICES

The development at the site may also involve the relocation and removal of existing electrical reticulation. The majority of underground electrical reticulation is live and may involve the disconnection and provision of temporary connections to adjacent properties.

It should be noted that the development will involve the extinguishment of the existing electrical easement located adjacent and to the south of the stormwater detention easement with these services placed within the Dawn Fraser Avenue extension.

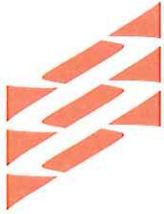
3.2.5 TELECOMMUNICATION SERVICES

An Intent to Develop application was submitted to Telstra for the proposed development to determine if the existing Telstra infrastructure has capacity for the proposed development. Email correspondence received from Soadad Doureih (refer Appendix A) in response to the intent to develop application has indicated that the existing telecommunications infrastructure may require relief to service the proposed development particularly for the residential buildings D and E. Telstra have indicated that fast evolving telecommunications technology may drive new services for customers in the future.

As construction of stage 1 approaches a second application for reticulation will be required to be lodged to Telstra 1-3 months prior. This application is generally submitted to Telstra so they can determine the preferred direction and location of lead-in telecommunications infrastructure to service the proposed development. At that stage the amount of telecommunication reticulation to be relocated or removed can be determined as well as the provision of any temporary connections required to maintain service during construction.

Turner and Associates have indicated that the proposed development will require a broadband connection to each of the buildings. This may require the provision of optical fibre cables to support usage requirements for the proposed development. The services plans from the Sydney Olympic Park Authority do not specify any optical fibre cables located in the surrounding area. Lead-in works for the provision of optical fibre cables to the proposed development may be excessive.

There is currently a telecommunications tower located to the north of the site. For future applications for the residential buildings it is recommended that an electromagnetic survey is undertaken to determine if there will be any impact on the future residents.



4.0 CONCLUSION AND RECOMMENDATIONS

Due to the significant constraints associated with the grading of the site for the provision of the proposed roads intersecting with Bennelong Road it is recommended that Bovis Lend Lease carry out further investigations for future applications to help determine the feasibility of the development. These investigations may include:

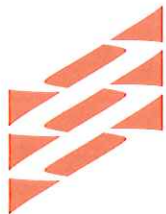
- Electromagnetic survey of the telecommunications tower in the adjacent land to the North;
- Overall bulk earthworks design and associated costing for roads and building excavation; and
- Review of the access arrangements to the Quad 4 carparking area.

For the current application it is recommended that Bovis Lend Lease carry out the following investigations:

- Traffic Investigation to determine likely impacts of the proposed development on the surrounding road network.
- Review of the access arrangement to the carparking area to the south of Murray Rose Avenue adjacent to Australia Avenue.
- Potholing Survey along Bennelong Parkway to determine levels of existing services in the verge to cater for future stormwater services connection.
- Preparation of building works cost estimate, to be integrated with road works / infrastructure cost estimate for the proposed development.

In relation to the proposed masterplan set out by Sydney Olympic Park Authority, the infrastructure feasibility investigation suggests that the proposed road alignment of Parkview Drive and Dawn Fraser Avenue will require extensive service relocation / removal adjacent to the site. This may also involve lowering of services towards the intersections with Bennelong Road. It is anticipated the cost of these service modifications will be significant.

It is recommended that Murray Rose Avenue be reinstated between Australia Avenue and the proposed Parkview Drive extension as part of the stage 1 works. This will allow all proposed services infrastructure, required to lead in from Australia Avenue, to be provided from the onset of the construction phase. Providing temporary services to the proposed buildings from the temporary road would result in additional cost of disconnection after permanent services are provided in Murray Rose Avenue.



APPENDIX A – ENERGY AUSTRALIA

570 George Street
Sydney NSW 2000

Address all mail to
GPO Box 4009 Sydney
NSW 2001 Australia

Telephone +61 13 15 25
Facsimile +61 2 9269 2830



19th November 2009

Hughes Trueman
PO Box 163
PARRAMATTA NSW 2124

Project Number: SC-01010

Attention: James Gilligan

Electricity Network Connection at: 7 Parkview Drive, Sydney Olympic Park.

James,

We have now completed the assessment of our electrical network. This assessment indicates that an alteration of our network will be required to provide the electrical connection you have requested. These works are classified as contestable. Your application for connection will now be processed in accordance with Energy Australia document *ES10: Requirements for Electricity Connections to Developments*.

We anticipate that the developer/customer will be required to contribute to the construction of the following:

- A Surface Chamber substation. In addition to other costs, the developer/customer is responsible for the cost of substation equipment that cannot be recovered or reused. Refer to *ES8: Capital Contributions Guidelines* for details.

The above item(s) will become part of the EnergyAustralia electricity distribution network and remain the property of EnergyAustralia.

This letter is not to be construed as a final offer. Upon submission of further detail or changes to your proposal we reserve the right to alter our design requirements. Any such changes may alter the design information fees payable, particularly where EnergyAustralia needs to undertake additional investigations.

What to Do Next

To advance the arrangements you need to complete the following items and provide the following information to EnergyAustralia: -

Complete and return the enclosed Application for Provision of Electricity Network Connection Services.

Pay the initial fees and charges detailed on the enclosed *Schedule of Payments* and return the form with your payment.

Provide the following (if available):

- Confirmation of preferred supply arrangement (see attached Substation Arrangement Options)
- A complete set of the plans for the development.
- A copy of the local Council's (or other development consent authority's) Development Consent conditions if a Development Application for the site has been considered.
- A copy of the development layout and dimensions in digital DGN, DWG or DXF format.

Should you require any further information please contact EnergyAustralia on the above phone number and quote the project number.

Regards,



Paul Dawson
Contestable Project Co-ordinator
EnergyAustralia

Direct Telephone Number 02 9585 5667
Facsimile: 02 9585 5797
Email: pdawson@energy.com.au

Enclosures: Summary of Charges for Customer Connection Works
Application for Provision of Electricity Network Connection Services
Substation Arrangement Options

SCHEDULE OF PAYMENTS NON-CONTESTABLE FEES AND CHARGES



Date Issued 19/11/2009 ABN: 67 505 337 385
 Last Date for Acceptance * 18/01/2010
 Project Establish New Chamber Substation Project No.
 Project Address 7 Parkview Drive, Sydney Olympic Park SC-01010
 Customer Bovis Lend Lease
 0
 Customer's Address 30 The Bond, 30 Hickson Rd
 Millers Point NSW Australia 2000
 Originating Officer *Paul Dawson*
 Telephone 02 95855667
 Fax 02 95855670

A TAXATION INVOICE WILL BE ISSUED UPON PAYMENT OF THE FOLLOWING FEES AND CHARGES

PAYMENT NOTIFICATION

ITEM	DETAILS	FEE / QUOTATION		
		GST Exclusive	GST	GST Inclusive
1	∞ Non-Contestable Design Information fee	\$3,360.00	\$336.00	\$3,696.00
2	∞ Non-Contestable Administration fee	\$384.00	\$38.40	\$422.40
3	∞ Non-Contestable Certification of Electrical Design fee	\$2,880.00	\$288.00	\$3,168.00
3a				
4				
5				
6				
7				
8				
9				
10				
12				
13				
16				
TOTALS		\$6,624.00	\$662.40	\$7,286.40

Cheques to be made payable to EnergyAustralia and forwarded to our office at 33-45 Judd Street Oatley, NSW, 2223, and marked for the attention of Paul Dawson

- * Charges may be reviewed if payment is not received by the indicated date.
- ∞ The Non-Contestable fees above are outlined in EnergyAustralia's 'ES 5' publication "Network Miscellaneous Connection Charges" and are payable regardless of who the customer selects as the installation designer and /or installer, however the fees may vary depending on the work practices and grading of the Accredited Service Provider chosen. The fees stated above are for EnergyAustralia to complete the works. Should other Accredited Service Providers be engaged, the relevant fees will be advised upon application and may vary from those stated above.
- ▣ The quotation for the Construction of the Electrical Works will be subject to the completion of the Electrical Design.
- ** Information on the Use of Out-of-Service Reticulation Assets is outlined in EnergyAustralia's 'ES 8' publication. The charge for the Use of Idle Assets (Ducts) is payable regardless of who the customer selects as the installation designer and /or installer.

EnergyAustralia Office Use Only:

Cashier: ### Please notify Paul Dawson 02 95855667 before receipting payment ###

Receipt No : Received By : Date :

APPLICATION FOR PROVISION OF SUPPLY OF ELECTRICITY TO A DEVELOPMENT

DETAILS OF THE ANTICIPATED ELECTRICAL DEMAND SHOULD BE PROVIDED ON A SEPARATE ATTACHMENT

(Delete clauses if they are not applicable)

Constituent Council Ref. No.

Development Location Street

Town/Suburb

Type of Development (See Section 5 of ES 10)

Subdivision DP or Title Reference

Torrens/Strata/Community

Nearest Cross Street

Name of Developer

Name of Developer's Representative

Address for all Correspondence

Telephone No Fax No

Is EnergyAustralia requested to prepare the Electrical Reticulation Design? Yes/No

Is EnergyAustralia requested to Digitise the Plans? Yes/No

If No, state the name of the Designer

Name of Accredited Service Provider

Telephone No Fax No

Is EnergyAustralia requested to provide a quotation for installation of all or portion of the Works? Yes/No

Is EnergyAustralia requested to provide a quotation for the trenching? Yes/No

The drawings specified in Section 8 of ES 10 are attached.

Lot Numbers of Residential Building Lots

..... Total

Lot Numbers of Existing Dwellings to be Retained

Lot Numbers of Medium Density Areas - No. of Units

Lot Numbers of Dual Occupancy Lots

Lot Numbers of Special Use Areas (include details if any)

Lot Numbers of Residue Lots

Lot Numbers of Public Reserves, Road Reserves etc.

Anticipated Date of Completion of Subdivision/Development

Lot Numbers affected by Existing Overhead Powerline Easements

(also show on plan)

Programmed Date of Completion of Road Construction

Anticipated Date of Commencement of House/Unit/Building Construction

Is gas Reticulation to be Installed in this Development? Yes/No

Is common trenching with other utilities proposed ? Yes/No - Show on Plan

- a) I/We hereby submit the above information and drawings and wish to be advised of EnergyAustralia's requirements with regard to the provision of electricity to the above development.
- b) I/We agree that, at all times, this application is subject to the conditions of the Agreement for Electricity Supply to Developments (EnergyAustralia publication ES 9) and the Requirements for Electricity Supply to Developments as determined by EnergyAustralia from time to time and detailed in publication ES 10.
- c) In particular I/we agree that notwithstanding the issue of a Notification of Satisfactory Arrangements by EnergyAustralia I/we may be subject to a further Payment as detailed in the Agreement (ES9) and in ES 10.
- d) I/WE ACKNOWLEDGE THAT I/WE HAVE READ THE REQUIREMENTS CONTAINED IN PUBLICATION ES 10 AS IN FORCE AT THE DATE OF THIS APPLICATION AND AM/ARE FAMILIAR WITH ITS CONTENTS.
- e) I am a proper officer of the Developer - Company/Owner, duly authorised to sign this application on behalf of such Company.
- f) I/WE agree to enter into a formal Agreement (refer to ES 9) with regard to reticulation works where required by the above Requirements.

PRIVATE DEVELOPER

Date:/...../.....

Signature of Developer

Position Held

(Manager, Owner)

COMPANY

The Common Seal of)

was hereunto affixed in accordance with)
 the Articles of Association and by)
 authority of the Board in the presence)
 of:)

.....)

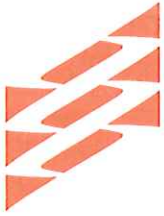
.....
 Director

DEVELOPER'S REPRESENTATIVE

Date:/...../.....

Signature of Developer's Representative

The Company Seal of



APPENDIX B – SYDNEY WATER



Case Number: 117186

11 December 2009

GPT RE Limited
c/- HUGHES TRUEMAN PTY LTD

FEASIBILITY LETTER

Developer: GPT RE Limited
Your reference: 07P750C
Development: 7 (Lot 88 DP 870992) PARKVIEW DR, Homebush
Development Description: Multi Storey Combined Commercial, Retail and Residential Development.
Your application date: 2 October 2009

Dear Applicant

This Feasibility Letter (Letter) is a guide only. It provides general information about what Sydney Water's requirements could be if you applied to us for a Section 73 Certificate (Certificate) for your proposed development. **The information is accurate at today's date only.**

If you obtain development consent for that development from your consent authority (this is usually your local Council) they will require you to apply to us for a Section 73 Certificate. You will need to submit a new application (and pay another application fee) to us for that Certificate by using your current or another Water Servicing Coordinator (Coordinator).

Sydney Water will then send you either a:

- Notice of Requirements (Notice) and Works Agreement (Agreement); or
- Certificate.

These documents will be the definitive statement of Sydney Water's requirements.

There may be changes in Sydney Water's requirements between the issue dates of this Letter and the Notice or Certificate. The changes may be:

1. Developer Charges

- (a) Currently, Sydney Water does not apply Developer Charges for water, wastewater or stormwater services. Developer charges and capital contributions for recycled water continue to apply, in accordance with the Independent Pricing and Regulatory Tribunal's recycled water determination. There are no current charges for this development.
- (b) Adjustments of charges are subject to scheduled reviews by the Independent Pricing and Review Tribunal (IPART). After such reviews and registration of the new charges, Sydney Water has to apply those charges; or

(c) If there is rezoning of any land within the development proposal then new charges may apply.

2. Changing the Proposed Development

If you change your proposed development, e.g. the development description or the plan/site layout, after today, the requirements in this Letter could change when you submit your new application.

Also, if you decide to do your development in stages then you must submit a new application (and pay another application fee) for each stage.

You have made an application for specific information. Sydney Water's possible requirements are:

What You Must Do To Get A Section 73 Certificate in the Future

To get a Section 73 Certificate in the future you must do the following things. You can also find out about this process by visiting www.sydneywater.com.au > Building Developing and Plumbing > Developing Your Land.

1. **Obtain Development Consent from the consent authority for your development proposal.**
2. **Engage a Water Servicing Coordinator (Coordinator).**

You must engage your current or another authorised Coordinator to manage the design and construction of works that you must provide, at your cost, to service your development. If you wish to engage another Coordinator (at any point in this process) you must write and tell Sydney Water.

For a list of authorised Coordinators, either visit www.sydneywater.com.au > Building Developing and Plumbing > Developing Your Land or call **13 20 92**.

The Coordinator will be your point of contact with Sydney Water. They can answer most questions that you might have about the process and developer charges and can give you a quote or information about costs for services/works (including Sydney Water costs).

3. Major Works Agreement

After the Coordinator has submitted your new application, they will receive the Sydney Water Notice and Works Agreement. You will need to sign and lodge **both originals** of that Agreement with your nominated Coordinator.

The agreement sets out for this development:

- your responsibilities;
- Sydney Water's responsibilities; and
- the Coordinator's responsibilities.

You must do all the things that we ask you to do in that Agreement. This is because your development does not have recycled water services and you must construct and pay for the following works extensions under this Agreement to provide these services.

After Sydney Water has signed the documents, one of them will be returned to your Coordinator.

Note: The Coordinator must be fully authorised by us for the whole time of the agreement.

4. Drinking Water, Recycled Water and Sewer Works

4.1 Drinking Water

Each lot in your subdivision must have a frontage to a water main that is the right size and can be used for connection.

Sydney Water has assessed your application and found that:

- You must construct a water main so that each lot in your proposed subdivision has a frontage to a water main. Each lot must also have its own connection to that drinking water main and meter.
- Your proposed subdivision/development will impact on the existing 150mm DICL drinking water main in Lots 1 and 2 DP 1122970. You must adjust this water main at your cost.
- An easement must be created over the new water main located within Lots 1 and 2 as these lots are no longer public roads.
- Because these works involve construction on a “live” water main you must enter into a bond agreement with Sydney Water and pay a bond prior to construction commencement.

The new mains must comply with the standards for Dual Water Reticulation Systems talked about in section 4.2.1 below.

4.2 Recycled Water

Your development must have a frontage to a recycled water main that is the right size and can be used for connection.

Sydney Water has assessed your application and found that:

- You must construct a recycled water main extension to serve each lot in your subdivision.
- Your development must also have its own connection to that recycled water main and meter.

The new mains must comply with the standards for Dual Water Reticulation Systems talked about in section 4.2.1 below.

4.2.1 Sydney Water’s Standards for Dual Water Reticulation

This development is in an area where both drinking and recycled water systems are to be provided. The drinking and recycled water works required above must comply with the standards for Dual Water Reticulation Systems that are set down in the Water Supply Code of Australia (Sydney Water Edition) (the Code).

Service connections and property services be provided for both drinking and recycled water for your development. The installation of the service connection must be carried out by a Sydney Water listed Driller and the property service must either be carried out or supervised by a licensed plumber. It must meet the:

- (a) Administrative requirements of the New South Wales Code of Practice for Plumbing and Drainage; and

(b) Sydney Water Property Service (Main to Meter) Installations Technical Requirements.

4.3 Sewer

Each lot in your subdivision must have a sewer main that is the right size and can be used for connection. That sewer must also have a connection point within each lot's boundaries.

Sydney Water has assessed your application and found that:

- You must construct a sewer main extension to serve each new lot in the subdivision.
- As advised by your Water Servicing Coordinator, your proposed development will impact on the existing 225mm VC sewer main located within the development lot and in Lots 1 and 2 DP 1122970 and Lot 812 DP 1012563. You must adjust this sewer main at your cost. Please note there is a sewer vent shaft located within Lot 812, which must be reinstated if adjustment is required. A detailed work method statement for construction of the deviation is to be submitted to Wastewater Operations for review prior to commencement of work. There may be a requirement to deviate flow during construction, in which case the WSC must submit a Flow Management Plan to Wastewater Operations for review and approval prior to construction commencement.
- As advised by your Water Servicing Coordinator, the 250 mm DICL sewer rising main adjacent to Bennelong Parkway will also be impacted by your development and will require adjustment. You must supply a full flow management plan for the pumping station and a work method statement for the construction of the works. There may be more requirements when the full extent of the works is known.
- If the site contains contamination where sewer work is to be involved, a remediation report is required.
- If sheet pile adjoining SWC asset is required, written approval is to be obtained.
- If dewatering is to be involved the impact of groundwater dewatering on the sewer is to be analysed and submitted to SWC prior to dewatering.
- Because these works involve construction on "live" sewer mains you must enter into a bond agreement with Sydney Water and pay a bond prior to construction commencement.

5. Ancillary Matters

5.1 Asset adjustments

If any Sydney Water drinking water main, recycled water main, sewer or stormwater asset constructed or under construction is found, after the issue of this Notice, to require adjustment or deviation as a result of your development; then this work must be undertaken in conjunction with the abovementioned recycled water extension. If this happens, you will need to do this work as well as the extension we have detailed above at your cost. The work must meet the conditions of this Notice and you will need to complete it **before we can**

issue the Certificate. Sydney Water will need to see the completed designs for the work and we will require you to lodge a security. The security will be refunded once the work is completed.

5.2 Entry onto neighbouring property

If you need to enter a neighbouring property, you must have the written permission of the relevant property owners and tenants. You must use Sydney Water's **Permission to Enter** form(s) for this. You can get copies of these forms from your Coordinator or the Sydney Water website. Your Coordinator can also negotiate on your behalf. Please make sure that you address all the items on the form(s) including payment of compensation and whether there are other ways of designing and constructing that could avoid or reduce their impacts. You will be responsible for all costs of mediation involved in resolving any disputes. Please allow enough time for entry issues to be resolved.

5.3 Costs

Construction of these **future** works will require you to pay project management, survey, design and construction costs **directly to your suppliers**. Additional costs payable to Sydney Water may include:

- water main shutdown and disinfection;
- connection of new water mains to Sydney Water system(s);
- design and construction audit fees;
- contract administration, Operations Area Charge & Customer Redress prior to project finalisation;
- creation or alteration of easements etc; and
- water usage charges where water has been supplied for building activity purposes prior to disinfection of a newly constructed water main.

Note: Payment for any Goods and Services (including Customer Redress) provided by Sydney Water will be required prior to the issue of the Section 73 Certificate or release of the Bank Guarantee or Cash Bond.

Your Coordinator can tell you about these costs.

6. Stamping and Approval of your Building Plans

You must have your building plans stamped and approved **before the Certificate can be issued**. **Building construction work MUST NOT commence until Sydney Water has granted approval**. Approval is needed because construction/building works may affect Sydney Water's assets (e.g. water and sewer mains).

Your Coordinator can tell you about the approval process including:

Your provision, if required, of a "Services Protection Report" (also known as a "pegout"). This is needed to check whether the building and engineering plans show accurately where Sydney Water's assets are located in relation to your proposed building work. Your Coordinator will then either approve the plans or make requirements to protect

those assets before approving the plans;

Possible requirements;

Costs; and

Timeframes.

You can also find information about this process (including technical specifications) if you either:

Visit www.sydneywater.com.au Ø Building and Developing Ø Building and Renovating. Here you can find Sydney Water's *Guidelines for Building Over/Adjacent to Sydney Water Assets*; or

Call 13 20 92.

Notes:

The Certificate will not be issued until the plans have been approved and, if required, Sydney Water's assets are altered or deviated;

You can only remove, deviate or replace any of Sydney Water's pipes using temporary pipework if you have written approval from Sydney Water's Development Operations Branch. You must engage your Coordinator to arrange this approval; and

You must obtain our written approval before you do any work on Sydney Water's systems. Sydney Water will take action to have work stopped on the site if you do not have that approval. We will apply Section 44 of the *Sydney Water Act 1994*.

7. Special Requirements

Water Mains Not in Dedicated Public Roads

Sydney Water and SOPA have an agreement regarding water mains located in public roads within this area whereby easements are not required over the water mains located in private roads. In this case, an easement will be required over the adjusted water main located within Lots 1 and 2 DP 1122970 since these lots are no longer part of a road as per road closure plan DP 1122970.

Therefore, you have to pay to create an easement in favour of Sydney Water. The easement will also have to include conditions about adequate drainage. (See condition (b) below.)

Your Design Consultant must take this requirement into account when designing the works.

You will not be given a **Section 73 Certificate** until:

(a) the water main(s) have been constructed: **and**

(b) the main can be flushed by Sydney Water without the discharge of water onto private

property. This condition must be incorporated in the easement documentation; **and**

- (c) you have paid to have a survey and the survey has been completed, **before the trenches are backfilled**, to define the centreline of each water main; **and**
- (d) all plans and documents relating to the easement have been approved by Sydney Water; **and**
- (e) you have paid our related costs; **and**
- (f) you have paid the security we require for each easement until it is registered.

You can get all the easement details from Sydney Water's Group Property, 1 Smith Street, Parramatta 2150. Ph: (02) 8849 5240 or (02) 8849 5647.

OTHER THINGS YOU NEED TO DO:

Shown below are other things you need to do that are NOT a requirement for the Certificate. They may well be a requirement of Sydney Water in the future because of the impact of your development on our assets. You must read them before you go any further.

Disused Sewerage Service Sealing

Please do not forget that you must pay to disconnect all disused private sewerage services and seal them at the point of connection to a Sydney Water sewer main. This work must meet Sydney Water's standards in the NSW Code of Practice for Plumbing and Drainage (the Code) and be done by a licensed drainer. The licensed drainer must arrange for an inspection of the work by a Sydney Water plumbing and draining inspector. After Sydney Water's inspector has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Soffit Requirements

Please be aware that floor levels must be able to meet Sydney Water's soffit requirements for property connection and drainage.

Trade Waste Information

Should this development generate trade wastewater, this notice of requirements does not guarantee the applicant that Sydney Water will accept the trade wastewater to its sewerage system. In the event trade wastewater is generated, the property owner is required to submit an application for permission to discharge trade wastewater to the sewerage system before business activities commence. A boundary trap will be required for all developments that discharge trade wastewater where arrestors and special units are installed for trade waste pre-treatment.

Prospective Purchasers should be made aware of the above situation under the requirements of vendor disclosure.

For further information please visit the Sydney Water website at: <http://www.sydneywater.com.au/OurSystemsAndOperations/Tradewaste/>

To contact a Trade Waste Customer Service Representative the contact number is (02) 8805 5550.

Backflow Prevention Information

All properties with a connection to the water supply, must install a backflow prevention containment device. All containment devices must be installed on the outlet side of each master water meter/s supplying the property. In circumstances where there is no master meter/s the backflow prevention containment device shall be installed on the water supply where it enters the property boundary.

Separate hydrant and sprinkler fire services, require the installation of a testable double check detector assembly. The device must be installed close to where the water service crosses the property boundary, upstream of any component of the fire service.

The backflow prevention containment device must be installed as a condition of continued use of the water supply. Failure to install and maintain the device may result in disconnection of the water service. A copy of Sydney Water's Backflow Prevention Policy is available on the Sydney Water Website at:

<http://www.sydneywater.com.au/Plumbing/BackflowPrevention/>

Fire Fighting

Your firefighting service must be drawn from the recycled water system.

Definition of fire fighting systems is the responsibility of the developer and is not part of the Section 73 process. It is recommended that a consultant should advise the developer regarding the fire fighting flow of the development and the ability of Sydney Water's system to provide that flow in an emergency. Sydney Water's Operating Licence directs that Sydney Water's mains are only required to provide domestic supply at a minimum pressure of 15 m head.

A report supplying modelled pressures called the Statement of Available pressure can be purchased through any Quickcheck agent and may be of some assistance when defining the fire fighting system. The Statement of Available pressure, may advise flow limits that relate to system capacity or diameter of the main and pressure limits according to pressure management initiatives. If mains are required for fire fighting purposes, the mains shall be arranged through the water main extension process and not the Section 73 process.

Large Water Service Connections (Dual Water)

A drinking water main and a recycled water main will be available, once you have completed your potable and recycled water mains construction to serve your subdivision/development. The size of your development means that you will need dual water connections larger than the standard domestic 20 mm size.

To get approval for your connection, you will need to lodge an application with a Quick Check Agent or at a Sydney Water Customer Centre. You, or your hydraulic consultant, may need to supply the following:

- A plan of the hydraulic layout;
- A list of all the fixtures/fittings within the property;
- A copy of the fireflow pressure inquiry issued by Sydney Water;
- A pump application form (if a pump is required);
- All pump details (if a pump is required).

You will have to pay an application fee.

The service connection will need to meet with:

- Administrative requirements of the New South Wales Code of Practice for Plumbing and Drainage; and
- Technical requirements of the Dual Water Drawings Set within the Code.

Sydney Water does not consider whether a water main is adequate for fire fighting purposes for your development. We cannot guarantee that this water supply will meet your Council's fire fighting requirements. The Council and your hydraulic consultant can help.

Private Water Services Connection and Metering

To provide domestic water to the total development you will need to connect to the Sydney Water main. This connection must comply with the *National Plumbing and Drainage Code AS 3500* and *NSW Code of Practice for Plumbing and Drainage*. You may have to include isolation valves on either side of the connection(s) to the Sydney Water main.

For example, a single meter on:

- (a) each vertical block of residential units whether subdivided or unsubdivided (e.g. if your development has tower buildings, you must provide a meter for each building off one or more connections to the main);
- (b) each mixed development use type whether subdivided or unsubdivided (e.g. if your mixed development has both a residential and a commercial area, you must provide a meter for each area usually off one connection to the main). Note that if there is more than one commercial area, you must provide a separate meter for each commercial area off that connection; and
- (c) each non-residential Strata, Stratum or Torrens (within a Community) Title subdivided lot with a demand for water. You will need a separate private water service for each lot.

Note:

Where a number of non-residential units are not subdivided, separate services and metering to each unit is not required as Sydney Water will look to the owner for payment of all rates and charges. For example, a shopping centre where all shops remain in one ownership.

To meet the preceding guidelines, either:

- a single connection to the Sydney Water main may be branched; or

- if you would rather separate connections for each use type/area, you can apply to us for that.

A vertical building may be plumbed with a common riser, with either:

- a ring main on each floor with tee off-takes at each unit; **or**
- individual metered services to each unit that will allow housing of individually tagged meters in the one location.

The location of the meter servicing a residential vertical building generally must be in the commercial area after all commercial off-takes.

Sydney Water will supply enough meters to meet the above guidelines but we will not provide any check meters. All meters **must** be placed in an accessible area that should be either:

- no more than one metre inside the property boundary; **or**
- in a location acceptable to Sydney Water, e.g. in the commercial area after all commercial off-takes.

Disused Water Service Sealing

You must pay to disconnect all disused private water services and seal them at the point of connection to a Sydney Water water main. This work must meet Sydney Water's standards in the NSW Code of Practice for Plumbing and Drainage (the Code) and be done by a licensed plumber. The licensed plumber must arrange for an inspection of the work by a Sydney Water plumbing and draining inspector. After Sydney Water's inspector has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

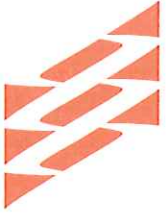
Other fees and requirements

The requirements in this Advice Letter relate to your future Certificate application only. Sydney Water may be involved with other aspects of your development and there may be other fees or requirements. These include:

- construction/building plan stamping fees;
- plumbing and drainage inspection costs;
- the installation of backflow prevention devices;
- trade waste requirements;
- large water connections and
- council fire fighting requirements. (It will help you to know what the fire fighting requirements are for your development as soon as possible. Your hydraulic consultant can help you here.)

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

END



APPENDIX C - JEMENA

James Gilligan

From: Steve Chatfield [schatfield@hughestrueman.com.au]
Sent: Thursday, 29 October 2009 11:30 AM
To: James Gilligan
Subject: FW: Parkview Drive Sydney Olympic Park
Attachments: Natural Gas Requirements For Developer Provided Trench (MIS 004884).pdf

From: Hilton, Neale [mailto:Neale.Hilton@jemena.com.au]
Sent: Thursday, 29 October 2009 11:07 AM
To: schatfield@hughestrueman.com.au
Subject: RE: Parkview Drive Sydney Olympic Park

Steve,

Should only a short section of the proposed Murray Rose Ave extension be constructed to service Building A, Jemena advise that a 225mm conduit be installed should natural gas infrastructure be required at a later stage. Our standard alignment is approx 1.2 to 1.8m from the BL. It is anticipated that a 110mm P.E. main extension would come from the western side of Australia Ave on the corner of Murray Rose Ave. A minimum of 300mm separation from other services is required so Jemena can physically connect to mains at a later stage.

Costs associated with the supply of natural gas infrastructure to service Buildings D & E are unknown due to the absence of stated gas loads and field surveys. Should Natural gas only centralised hot water system be installed in both these buildings, Jemena would look favourably at extending this main to supply natural gas.

Neale Hilton

Network Dev. Manager

Jemena

Level 14, 1 O'Connell Street , SYDNEY NSW 2000
Locked Box 2/159 Ridgeway 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: Steve Chatfield [mailto:schatfield@hughestrueman.com.au]
Sent: Wednesday, 28 October 2009 2:57 PM
To: Hilton, Neale
Cc: James Gilligan
Subject: Parkview Drive Sydney Olympic Park

Neale,

As discussed, please see attached development proposal for the development at Parkview Drive, as part of this development a link has to be constructed extending Murray Rose Avenue to Australia Avenue, I have attached a google image showing this link. Please review and I will call to discuss on Thursday morning.

Regards

Steve Chatfield

Project Manager

Hughes Trueman

Ph: 02 9891 5044

Fax: 02 9891 5386

E-mail: schatfield@hughestrueman.com.au

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~~ Following Files were attached ~~
091028 Parkview proposal building location.pdf
parkview.jpg

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~~ Following Files were attached ~~
Natural Gas Requirements For Developer Provided Trench (MIS 004884).pdf

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Jemena

NATURAL GAS REQUIREMENTS FOR DEVELOPER PROVIDED TRENCH

NATURAL GAS REQUIREMENTS FOR DEVELOPER PROVIDED TRENCH



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**NATURAL GAS REQUIREMENTS FOR
DEVELOPER PROVIDED TRENCH**



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NATURAL GAS REQUIREMENTS FOR DEVELOPER PROVIDED TRENCH



1. Purpose

The purpose of this document is to provide assistance to the Developer / Trench Provider and Jemena on the specifications and technical requirements in the reticulation of Natural Gas in a Developer Provided Trench (*A single service trench to accommodate two or more Authority Assets*).

2. Scope

Ensure that the principles of Developer Provided Trench and the responsibilities of all Authorities technical specifications are met. While this document is primarily designed for new residential developments, it may also be applied in other similar situations.

3. Related Documents

The application of the ***Developer Provided Trench*** is to be carried out in conjunction with the following documents and references:

Streets Opening Conference (SOC) – Guide to Codes & Practices for Streets Opening 2007

AUS-SPEC # 2 SPECIFICATION 303- Service Conduits

3.1 Definitions

Jemena	Natural Gas Authority
Authorities	Any Service Authority and or other Government / Regulatory Body
Backfill	A specified material used to fill the “Developer Provided Trench” and or excavation
Bedding	A specified material used to pad, to ensure the protection of all plant and equipment.
Developer	The person, party or corporation / agents requiring the provision of services (ie) Natural Gas to be reticulated throughout a subdivision and or development.
Trench Provider	Any person or corporation engaged by the developer to excavate a “Developer Provided Trench”.
Exclusive Trenching	A Trench and or excavation that accommodates only one authorities plant or equipment.
Protective Measures	May include but not limited to combined warning tapes, conduits, PE (polyethylene) strips and kerb marking for road crossings.

NATURAL GAS REQUIREMENTS FOR DEVELOPER PROVIDED TRENCH



4. Responsibilities

This section outlines the responsibilities of all parties involved in the servicing of Land via the use of a Developer Provided Trench.

4.1 *Responsibilities of the Developer/Consultant:*

- Contact Jemena for Natural Gas availability and supply a layout of the proposed subdivision in DWG format.
- Provide Jemena with a final electrical layout in electronic format for the subdivision.
- Co-ordinate joint Authority requirements.
- Arrange Trench Civil works.
- Advise Jemena of the Civil Contractor and or Trench Provider's Name and details to arrange scheduling of the programmed works.
- Request Certificates of Operational Acceptance, after Jemena have completed works.

4.2 *Responsibilities of the Civil Works Contractor /Trench Provider:*

- Organise a pre-construction site meeting with a Jemena Representative.
- Supply & install road-crossing conduits as required.
- Program & Co-ordinate the Developer Provided Trench & the Utilities.
- Provide 48 hours notice prior to trench being ready for Jemena's contractor.
- Supply and install all Protective Measures (ie) Warning tape relevant to the plant in the Developer Provided Trench.
- Excavate/backfill and compact to suit Developer Provided Trench specifications.
- Ensure manageable portions of the trench are provided. (ie) A minimum length of 200mtrs of open trench is required before contacting Jemena to lay mains.
- Co-ordinate and manage the Developer Provided Trench "Accept and Release" process, as required.
- Supply and place all specified bedding and backfill materials to meet Jemena's specifications.
- Ensure that The Developer Provided Trench is within the correct alignment and accordance with the Streets Opening Conference (SOC) – Guide to Codes & Practices for Street Opening.
- Monitor quality and the timing of the Developer Provided Trench.

NATURAL GAS REQUIREMENTS FOR DEVELOPER PROVIDED TRENCH



- Co-ordinate with the Jemena, to resolve any design changes that may be required on site during construction.

4.3 *Responsibilities of Jemena:*

- Provide Design input at the planning stage to optimise Developer Provided Trench Opportunities and enable correct set out of plant.
- Issue relevant Developer Provided Trench plan prior to construction.
- Attend a pre Construction site meeting as required.
- Commit adequate resources to carry out work within an agreed time frame.
- Carry out, in progress Audits and Post Audits as required.
- Supply and deliver pipe and fittings to Site
- Manage the installation and commissioning of Natural Gas asset.

5. **Natural Gas Plant**

The following is typical of a Plant, which is used in reticulation of Natural Gas within Land developments. Varying quantities and combinations of such Plant is to be accommodated by the Developer.

- **High Pressure Gas Main:** Steel gas main not exceeding 1,050 kPa used for bulk Supply to development sites.
- **High Pressure Gas Service.** Steel service pipe not exceeding 1,050 kPa for provision of supply to customer premises.
- **Medium Pressure Gas Main:** Polyethylene and/or nylon main not exceeding 400 kPa used for bulk supply and reticulation of development sites.
- **Medium Pressure Gas Service:** Polyethylene and/or nylon service pipe not Exceeding 400 kPa for provision of supply to customer premises.
- **Trace Wire:** Main and service location wire, copper wire for purpose of detecting Polyethylene / Nylon Gas Mains and Services.
- **Combined Warning Tapes:** A durable plastic tape, placed above Service Authorities Plant to indicate their presence in a Developer Provided Trench.
- **Warning Tape:** A durable plastic tape, yellow in colour placed above gas plant to Indicate their presence. (Exclusive trench only)
- **Marker Plate:** Concrete / cast iron square plate, with directional arrows to indicate Location and direction of gas plant below ground.

NATURAL GAS REQUIREMENTS FOR DEVELOPER PROVIDED TRENCH



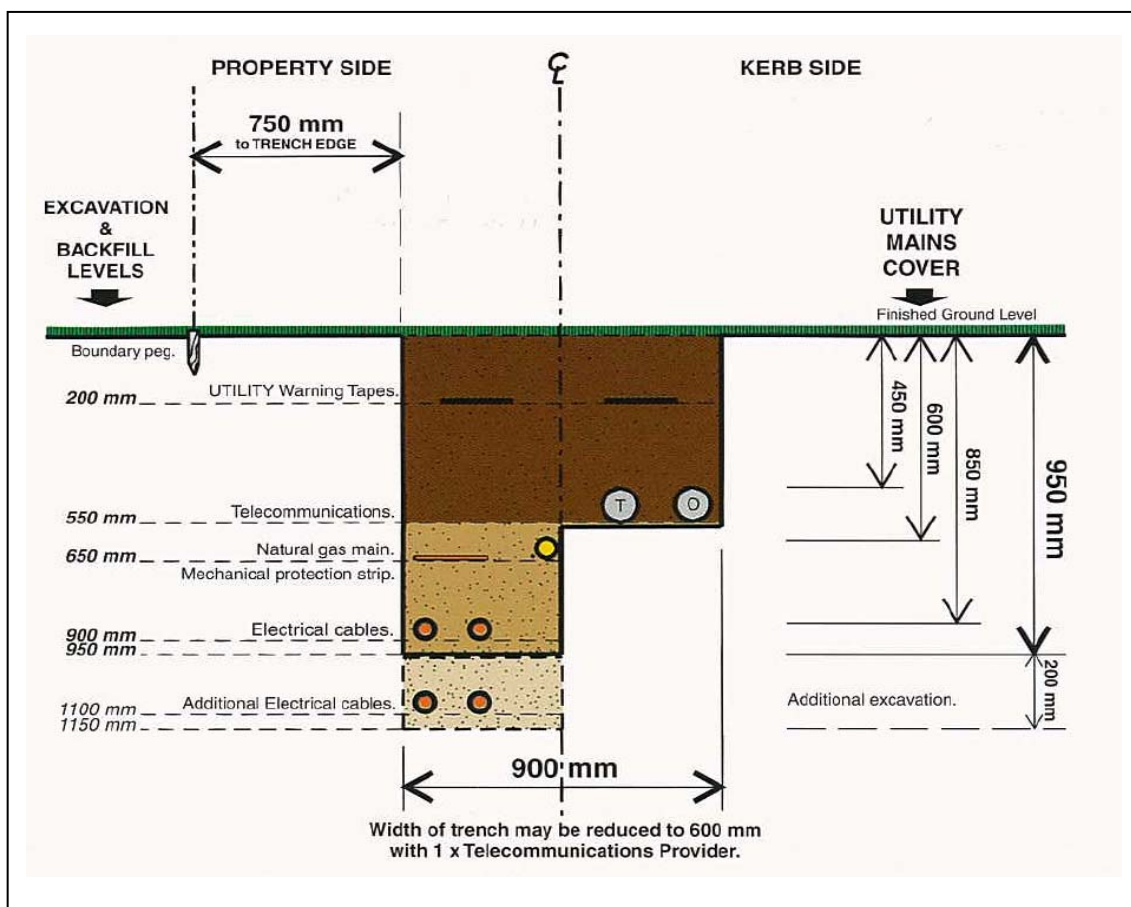
- **Isolation Valve:** An in-line control valve for the purpose of isolating specific Natural Gas Mains and Services.
- **Cathodic Upstands:** A galvanized steel pipe with internal testing equipment for the monitoring of induced current levels on steel Gas Mains.
- **District Regulator:** A pressure regulator set for the control of Natural Gas distribution pressures.
- **Paddock Markers:** An above ground Natural Gas location marker.

6. Trench Specifications

The diagram below (Figure 1.0) outlines the requirements for the provision of a Developer Provided Trench specifications and constructions requirements.

Any party wishing to vary the layout of the Services within the Developer Provided Trench will require approval from all *Authorities* involved in the Developer Provided Trench prior to construction.

(Figure 1.0)



NATURAL GAS REQUIREMENTS FOR DEVELOPER PROVIDED TRENCH



7. Alignment of Trenches

The alignment of the Developer Provided Trench shall be determined only after completion of detailed site investigations and design analysis, to ensure that due consideration is given to the following:

- Proximity and impact of the *Developer Provided Trench* to all other existing and proposed underground services.
- Proximity and impact of the *Developer Provided Trench* to all other existing and proposed structures.
- Proximity and impact of the *Developer Provided Trench* on existing sensitive features such as heritage and cultural features.
- Proximity and impact of the *Developer Provided Trench* on existing flora (ie) -special consideration must be given to the protection of existing trees.
- Proximity and impact of the *Shared Trench*, in order not to degrade the environment (ie) soil erosion, water pollution etc.

7.1 Preferred Alignment of 3 Way Trenches

Incorporating Electricity, Natural Gas, & Telecommunication Providers
(750mm off property Line)

7.2 Preferred Alignment of 2 Way Trenches

Incorporating either Electricity, Natural Gas, or Telecommunication Providers
(750mm off property Line)

7.3 Alignment of Exclusive Trenches

Where one Service Authority requires trench provision for their sole use, the alignment of this trench will be as above, or whatever is mutually agreed.

7.4 Positioning of Services Structures

This section outlines the requirements for the provision of the Developer Provided Trench, its Specifications and construction requirements, in conjunction with the standard Drawing in Figure 1.0

NATURAL GAS REQUIREMENTS FOR DEVELOPER PROVIDED TRENCH



8. Minimum Separations between Services and Natural Gas Mains

(Table 1.0)

Nylon or Polyethylene Gas Mains	Telecommunication cables and/or conduits	Protected (2) Low Voltage electricity cables	Protected (2) High Voltage electricity cables
Gas Mains up to 75mm diameter	150mm	150mm	300mm
Gas Mains of 110mm diameter or larger	300mm	300mm	300mm

The above Table 1.0 refers to the minimum separation requirements between services as per **AUS-SPEC #2 Specification 303 – Service Conduits.**

Note:

- Separations relate to distances between conduits/cables peripheries.
- “**Protected**” refers to mechanical protection over the cables, which usually takes the form of either polymeric strips (at least 3mm thick) or clay brick.
- The above tables are considered to provide desirable minimum separations. Consideration should also be given for the need to access for future maintenance of Services when determining the required separations.

9. Trench Dimensions

This section outlines the requirements for the provision of the *Developer Provided Trench*, its Specifications and construction requirements, in conjunction with the standard drawing in Figure 1.0

10. Width of Trench

- The width of trench shall be determined by the plant to be installed, and Their relevant dimensions, including horizontal separation between Services.
- Provision is to be made for the placement where required of suitable Bedding/Backfill materials as specified by the relevant Service Authorities.
- Provision is to be made for the inclusion of Protective Measures and Associated equipment.
- Provision is to be made for the installation of Service Authorities associated Structures as required, (ie) pit, pillars, valves etc.
- In the case of abnormal site conditions existing, i.e.; substantial amounts of rock, confined verge corridors etc, a site specific Shared Trench arrangement may be utilized upon approval by all Authorities.

11. Depth of Trench

- Jemena specified "depth of cover" is only relative to finished surface level. Developer Provided Trench and Services plant depth is to be determined from final verged property surface profiles.

NATURAL GAS REQUIREMENTS FOR DEVELOPER PROVIDED TRENCH



- The depth of the *Developer Provided Trench* is to be determined by the plant to be installed, their relevant dimensions and clearances, including vertical separations between *Services*.
- Provision is to be made for the placement where required of suitable Bedding/Backfill materials as specified by Jemena.
- Provision is to be made for the inclusion of *Protective Measures* and associated equipment.
- Provision is to be made for the installation of all Jemena associated structures as required, i.e. pits, marker plates and valves etc.
- In the case of abnormal site conditions existing, i.e. substantial amounts of rock, confined verge corridors etc, a site specific *Developer Provided Trench* arrangement may be utilized upon approval by all Authorities.

12. Trench Bedding, Backfill & Landscaping

This section outlines the requirements for the provision of the *Developer Provided Trench*, its specifications and construction requirements, in conjunction with the standard drawing 1.0.

13. Bedding & Backfill Material

Where *Services* are to be protected via the use of Bedding materials, the material is to be as specified by the relevant *Service Authorities* and/or the Authorities responsible for management of that land, and is to be laid in accordance with their specifications.

The Backfill material used within the *Developer Provided Trench* is to meet the requirements of each (*Service Authority*), incorporated in the *Developer Provided Trench*.

All Backfill materials are to comply to requirements of Authorities responsible for the road reservation.

14. Staging of Backfill

All Bedding and Backfill is to be carried out in stages so as to ensure the requirements of the respective *Service Authorities* plan are met.

Staging of Backfill is to facilitate all plant and associated equipment including *Services*, structures and *Protective Measures*.

15. Subsequent work in trenches

The subsequent maintenance renewal or re-arrangement of the plant of any *Service Authority* shall be the responsibility of the *Service Authority* owning it.

No *Service Authority* shall alter the position of its plant in the *Shared Trench*, nor add to it without consultation with the other *Service Authorities*.

NATURAL GAS REQUIREMENTS FOR DEVELOPER PROVIDED TRENCH



The *Service Authority* that re-opens a *Developer Provided Trench* shall take precautions to avoid damage to or interference with the plant of the other *Service Authorities*. The costs of repair to plant of any party damaged/disturbed during such subsequent work shall be the responsibility of the *Service Authority* causing the damage.

The *Service Authority* that subsequently works in a *Shared Trench* shall be responsible for the restoration of the Developer Provided Trench.

The Civil Contractor / Trench Provider subsequent to the initial installation of the Shared Trench, must ensure that all alignments are correct.

In the event that the service authorities Asset has been laid outside of the correct alignment, the cost of relocation to the correct alignment will be borne by the Civil Contractor / Trench Provider.

16. Conduit and Padding Specifications

16.1 Natural Gas Conduits

- Under the terms and conditions outlined in the “Underground Services in a Shared Trench” agreements, the Developer’s Contractor shall supply and install Jemena specified conduits for gas mains. They are to be installed at specified locations and depths, and sealed with end caps or other Utility approved seals.

Specification for Jemena Conduits is as follows:

Pipe Sizes (OD mm)	Conduit Diameter (OD mm)	Depth of Cover (mm)	Type (for all sizes)
Nylon Pipe 32, 50 & 75 Polyethylene Pipe (PE) 40 & 63	100	750	Rigid PVC Pipe Smooth or Ribbed Exterior, Smooth bore Blue/Grey in colour
110 Nylon 110 Polyethylene Pipe (PE)	150	750	
160 Polyethylene Pipe (PE)	225	750	

(Table 1.1)

- Prior to installing conduits, the Developer’s Contractor shall notify Jemena and arrange a Pre-Construction site meeting to confirm all conduit requirements.
- All roads under construction are to have a natural gas conduit installed beneath. Access through all bridge structures, bebo arches, flood-ways, and culverts, etc, is also via specified conduits during construction.
- The Developer’s Civil Contractor shall install conduits on an alignment to suit an exclusive trench or a Developer Provided Trench with the correct horizontal and vertical separations as detailed.

NATURAL GAS REQUIREMENTS FOR DEVELOPER PROVIDED TRENCH



- All conduits shall extend 1000 mm beyond kerb, roadway edge or any other obstruction with marker tape installed above.
- The Developers Contractor shall be responsible for clearly and accurately identifying the location of road crossings by marking the kerb face with the letters “G” where relevant.

17. Padding for Nylon and Polyethylene Pipe

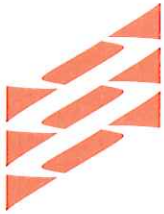
17.1 *Padding material for nylon pipe*

Spoil from the excavation may be used for bedding nylon pipe in unsealed surfaces as long as it fulfils the following requirements:

- the material shall be fine and loose
- trencher soil, recycled spoil or sand may be used
- particles are to be ≤ 25 mm
- material to be compactable by hand

17.2 *Padding material for Polyethylene pipe*

- padding for polyethylene pipe shall be sand



APPENDIX D - TELSTRA

James Gilligan

From: Doureih, Soadad [Soadad.Doureih@team.telstra.com]
Sent: Monday, 19 October 2009 2:07 PM
To: jgilligan@hughestrueman.com.au
Cc: Velasco, Marcelo
Subject: RE: *EARLY NOTICE*HOME DA53 RED 21:30384 ITD 12032236 7 Parkview Place, Sydney Olympic Park - Residential/Commercial/Retail

James,

Thank you for your inquiry about telecommunications services along Parkview Dr Homebush Bay.

At present, Telstra does have some infrastructure in the vicinity of the proposed development site however it is envisaged that additional relief would be required in the future to service up to 300 living units. Furthermore, because your development is not proposed to be completed for some years, it may also be possible that fast-evolving telecommunications technology may drive new and innovative services for your customers in the future.

The main issue at hand is to ensure that Telstra (and other utility services) are notified in advance of construction and completion dates. Doing this will ensure that any construction works or services are completed/connected in a timely manner.

Kind Regards

Soadad Doureih

NSW Forecasting and Area Planning
Integrated Network Planning
Network and Technology
TELSTRA NETWORKS & SERVICES
Ph: (02) 9397 2051
Fax: (02) 9397 2030

From: Velasco, Marcelo
Sent: Monday, 19 October 2009 1:47 PM
To: Doureih, Soadad
Subject: FW: *EARLY NOTICE*HOME DA53 RED 21:30384 ITD 12032236 7 Parkview Place, Sydney Olympic Park - Residential/Commercial/Retail

Soadad,

Do you know anything about the above development?

Can you please provide some feedback on the below question from the developer and if you can can you answer back to him and CC it to me.

Thanks

Regards

Marcelo Velasco
NSW South

*Access Network Design National AND Home
Network & Construction Design*

TN&S

Phone: (02) 9397 2156

Fax: (02) 9397 2770

Email: marcelo.velasco@team.telstra.com

Web: <http://www.in.telstra.com.au/ism/neac72/index.asp>

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From: Kandan, Esra **On Behalf Of** ! dev4syd
Sent: Monday, 19 October 2009 11:05 AM
To: ! FPA NSW Metro South; ! AND NSW DEVFORE; Moore, Brett A; Keogh, Jeffrey L
Cc: Murcott, Shelley M
Subject: *EARLY NOTICE*HOME DA53 RED 21:30384 ITD 12032236 7 Parkview Place, Sydney Olympic Park - Residential/Commercial/Retail

[This is not a trigger.](#) An ITD has been submitted to build up to 300 residential units & 36695sqm of commercial/retail in 5 stages. The customer, James Gilligan from Hughes Trueman (98915044) has submitted the following question:

Notes: A services search (DBYD) has indicated a significant amount of telecommunications reticulation currently servicing the site. Telecommunication cabling enters the site along Parkview Drive that extends to the cul-de-sac. Telecommunications cabling also extends from the cul-de-sac through the site in a north westerly direction to service neighbouring properties.

As part of the proposed development the culdesac and existing samsung warehouse is to be demolished. We would like to enquire if the existing existing telecommunication infrastructure has capacity to serve the proposed development as per the attached plans

*Kind Regards,
Esra Kandan
Land Development Information Team
Integrated Network Planning
Ph: (02) 9397 2046 Fax: (02) 9397 2030*

From: administrator@telstrasmartcommunity.com [mailto:administrator@telstrasmartcommunity.com]
Sent: Monday, 19 October 2009 10:02 AM
To: ! dev4syd
Subject: ITD 12032236 - GPT Parkview Place, Sydney Olympic Park

The text file attached contains the details of the Intent to Develop that was submitted for GPT Parkview Place, Sydney Olympic Park.

The details of the files attached with this development are as follows:

File Name, File Type, File Size

1: Stage 03 OPTION1.PDF,Adobe PDF files,1.1Mb

The attachments that were included with the submission can be viewed within the [Smart Community developer's administration](#) for this development.

These details have been inputted via telstrasmartcommunity.com by:

Applicant: James Gilligan
Phone: 0298915044

To access and process the task for this submission, you will need to log onto the On-Site application
<https://web02foh.telstra.com/staff/consumers>.

If this email has been directed to you in error. Please forward to the relevant person/s and contact [! TSC Administrator@team.telstra.com](mailto:TSCAdministrator@team.telstra.com) to avoid further errors.

This message was auto generated from telstrasmartcommunity.com

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APPENDIX E – DESIGN PLANS

300mm A1 SHEET

200mm

100mm



LEGEND

- PROPOSED PITS
- PROPOSED PIPES
- SUB CATCHMENT BOUNDARY
- IMPERVIOUS AREA

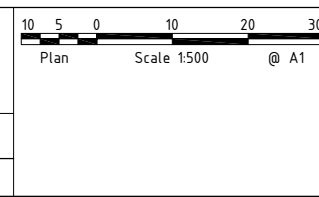
FOR INFORMATION

Rev	Amendment / Reason For Issue	Date	Drawing Completed by	Designed & Checked by	Verified by	Issue Authorised (*)
A	FOR INFORMATION	02/10/09	JG	JG		

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Project
7 PARKVIEW DRIVE

Client
GPT
 Architect/Project Manager
BOVIS LEND LEASE

Drawing Title
CONCEPT STORMWATER CATCHMENT PLAN

Drawing No.
07P750 - SK01

Sheet	Rev
1 of 1	A

Date: 02-10-09 Time: 9:15am Printed By: jgigan File name: P:\Parramatta\07P750\07P750\Depos_Civil\Sheet\07P750 - SK01.dwg