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ENGINEERING SERVICES REPORT

FOR

Commercial Development at

58 - 66 Abbotsford Road

Bowen Hills

Prepared for

Seymour Group

February 2011

Report Number B07195.W.01.Services Report



BROWN CONSULTING

Engineers & Managers

ABN 38 109 428 506

Telephone: 07 3895 3444 Facsimile 07 3895 3400

Level 6/199 Grey Street, South Brisbane Qld 4101

Email: brisbane@brownconsulting.com.au

Web: www.brownconsulting.com.au

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**ENGINEERING SERVICES REPORT
COMMERCIAL DEVELOPMENT AT
58 – 66 ABBOTSFORD ROAD, BOWEN HILLS**

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ATTACHMENT: BIMAP LAYOUT WITH EXISTING SERVICES

ENGINEERING SERVICES REPORT COMMERCIAL DEVELOPMENT AT 58 – 66 ABBOTSFORD ROAD, BOWEN HILLS

1.0 INTRODUCTION

Brown Consulting (QLD) Pty Ltd was commissioned by Seymour Group to investigate the proposed engineering servicing for the development and prepare an Engineering Services Report for inclusion in the Preliminary Approval submission to Brisbane City Council.

The proposed development is for a commercial high rise development occupying 58-66 Abbotsford Road, Bowen Hills, which can also be described as follows:

- Lot 2 on RP133342
- Lot 1 on RP127538
- Lot 1 on RP155441

The subject site is located to the west of the intersection of Abbotsford Road and Folkestone Street, and bound by railway line to the west. The existing land use is for low-rise commercial with similar commercial buildings bound to both north and south of the subject site.

2.0 ROADWORKS

Main vehicular access to the car parking for the proposed development can be provided directly from Abbotsford Road frontage.

No major external roadworks is expected to be required to facilitate the proposed development.

3.0 STORMWATER DRAINAGE

It is revealed from Council's BIMAP that an existing stormwater pipe traverses the south-eastern corner of the subject site. The upstream diameter is 450mm before increasing to a 600mm RCP pipe at a manhole before exiting the site.

The site is currently occupied by low set commercial buildings with roofwater generally discharging to existing on-site drainage system and eventually enters the stormwater trunk main.

Further detailed levels to the existing trunk drainage traversing the site cannot be found from the BIMAP records. Accordingly, detailed survey information to the existing drainage line will be required to be undertaken before detailed design phase.

Building over/near stormwater facilities will need to be complied in accordance with BCC Subdivision and Development Guidelines. Alternatively, diversion may be considered.

It is further argued that the existing land use for the site is office buildings, car parks with other hard standing areas. As such, the proposed commercial development does not envisaged to result in any significant increase in impervious area. Thus, the runoff generated from the subject site is expected to be in similar frequency and intensity. Accordingly, it is believed that the existing drainage capacity is sufficient in itself to service future development. No change to existing drainage infrastructure is proposed.

Best management practice for water quality can be applied to this development, including the applications of water collection, storage and harvesting facilities.

For details of the flooding & stormwater constraints on site, refer to Report B07195.W.01.AMcP.azh.

4.0 SEWERAGE RETICULATION

An existing 675mm un-reinforced concrete sewer pipe traverses the southeastern corner of the site at a grade of 1:500 with invert levels from -5.828m AHD to -5.995m AHD, approximately 10m depth from existing ground level.

The proposed high-rise building comprises 24 levels above ground with two basement car parking level. The lowest basement car parking level is at 0.30m AHD, which is a minimum 6.13m to the invert of the sewer within the site. As such, it is believed that the basement levels can be designed and built in a way to ensure no loading be imposed upon the existing sewer trunk main traversing the site.

Queensland Urban Utilities (QUU) may require existing sewer to be replaced and/or relocated due to its age or current conditions.

Alternatively, a sewer diversion could be opted for, with three new sewer manholes of approximately 10m depth to be located within the site to enable the diversion. The diverted sewer will run in parallel along the southern and eastern site boundaries with standard 1.5m offset on a general grade of 1:630 without drop within manholes. Due to proximity to existing buildings this may not be a suitable solution.

However, as demonstrated above, the building can be designed and constructed so as to maintain the existing condition of the sewer without imposing additional loading during both construction and operational stage, therefore, no relocation of existing sewer is proposed.

Consultation with Principal Engineer Mr. Sebastian Horvath was made to determine the appropriate EP for estimating the water & sewer demand. It is advised that a demand generating rate of 150EP per ha gross floor area (GFA) shall be used. The proposed development has a total GFA of 33736m², thus, the calculated sewer demand for the development is 506EP.

As the proposed development will significantly increase the waste water discharge from the subject site, further discussions are required to be held with QUU regarding servicing options during the approval process.

5.0 WATER RETICULATION

A 150mm water main exists along Abbotsford Road on a 1.6m alignment. A 225mm water main also exist on the other side of Abbotsford Road on a 2.82m alignment.

Internal boost pump may be required to allow for servicing the entire building.

As the proposed development will significantly increase the water demand for the subject site, discussions with QUU is required to ascertain detailed water reticulation configurations to cater for the proposed development.

As discussed previously, based on the total GFA of 33736m², the calculated water demand for the development is 506EP.

The size of the water mains within the development will be subject to a future detailed water network analysis by QUU upon submission of a Development Application.

6.0 CONCLUSION

The subject site is well serviced by existing water, sewer and stormwater infrastructure. Servicing options to cater for the proposed commercial high-rise development has been explored. It is concluded that stormwater from the proposed development will be collected, stored and reused appropriately on site, thus will not impose additional and more frequent flows to the existing drainage network. For sewer, the building structure can be designed and constructed to ensure no loading to be added to existing sewer, thus, no relocation is proposed at this stage. Existing water mains exist at both sides of Abbotsford Road to provide options of servicing the future building. Further advice from QUU is required to determine the necessary water and sewer reticulation service to fully cater for the proposed development.

Signed  _____

Dated 1/3/2011 _____

for and on behalf

Brown Consulting (QLD) Pty Ltd

Attachment: BIMAP showing existing infrastructure

Date : 28/02/2011
User : brownbris#428768

Date: 28/02/2011
User: brownbris#4;

Scale = 1:500

Metres 10 20

Location :

Disclaimer :

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Caution: This map may contain the locations of abandoned underground asbestos pipes. Council gives no warranty to the completeness or accuracy of these records. Appropriate care needs to be taken in all cases.



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