

GEC Consulting Pty Ltd

PH: (02) 9790 1600

Office: Level 1

58 Restwell St

Bankstown NSW 2200

Fax: (02) 9790 1622

Postal: PO Box 3163

Centro Bankstown NSW 2200

P & C Consulting Pty Ltd

245 Marion Street

Leichhardt NSW

3 November, 2014

Attention: Mr Vince Pizzata

RE: REZONING OF 245 MARION ST, LEICHHARDT FOR COMMERCIAL AND RESIDENTIAL USE

This letter and the attached diagrams demonstrate how any commercial residential development on this site can meet Council's sustainable water and risk management objectives.

The key issues of Council's objectives are to manage the conservation of town water, to manage the stormwater runoff generated from the site to provide stormwater detention and treatment to ensure that the runoff has been attenuated and the water quality would not impact on the downstream environment.

This parcel of land is identified as one of Council's flood control lots in Appendix E of the DCP and as such recommendations are required on how the flood risk can be managed in the event of a 100 year ARI and the PMF floods.

SITE LOCATION AND LOCAL FLOODING

The site is located adjacent to the Leichhardt light rail to the west and Marion Nursing Home on the east, with Marion Street being the south boundary and Walter Street being the north boundary. The site falls approximately 900mm from Marion Street to Walter Street.

In 2010, Cardno Lawson Treloar completed their flood study for Leichhardt Council and determined the flood depths, velocities and hazards for Marion and Walter Streets. The flood depths in Marion Street vary between 300mm and 1m for the 100 year ARI and PMF and similarly in Walter Street. There are two flow paths that link Marion and Walter Street. The eastern flow path adjacent to the nursing home is 1.7m wide and the western flow path on the light rail land is approximately 5.4m wide.

Any future development that proceeds on this site should not interfere with these existing flow paths. The site levels should be selected such that flows in Marion Street are prevented from flowing north to Walter Street. This ensures there are no adverse flooding effects in downstream and upstream catchments.

STORMWATER MANAGEMENT AND WATER CONSERVATION

- **ON-SITE STORMWATER DETENTION**

The Council stormwater drain is located at the west end of Walter Street. Future on-site stormwater detention and stormwater treatment can be provided in the north-western corner of the site. The performance of the detention and treatment need to comply with Council's DCP.

- **RAINWATER HARVESTING**
Clean rainwater from roofs should be directed to storage tanks adjacent to the on-site detention and then reticulated around for toilet flushing, car wash and landscape irrigation, these measures will reduce town water consumption.
- **TOWN WATER CONSERVATION**
Water efficient valve and tap ware must be included in any future commercial /residential development to conserve town water.

FLOOD RISK MANAGEMENT

Cardo Lawson Treloar, Leichhardt *Flood Study Report* (2010) identified flood depths, velocities and hazards refer:-

Flood Depths 100Yr & PMF	Fig 8.2 and Fig 8.3	CLT
" " " "	Sheets 3 and 4	GEC
Peak Velocity 100Yr & PMF	Fig 8.5 and Fig 8.6	CLT
" " " "	Not shown	GEC

The critical storm duration for this catchment is in the order of 25 minutes which means there is no warning to the people that would be affected. For both the 100Yr ARI and the PMF the water would rise to its peak levels and people would be trapped on site for approximately 25 mins for the 100Yr to approximately 45 mins for the PMF until the water subsides. As there are no flows through pedestrian accessible areas, there is no velocity hazards presented to the occupants.

For the ground floor, the acceptable flood planning levels for the Marion Street frontage can be set between a minimum of RL 4.65 for the 100Yr and RL 4.95 for the PMF. If the RL 4.65 is adopted, provision must be made on site for a refuge area above the PMF RL 4.95. Any pathways to the refuge areas must be sign posted. Refuge areas that can be made available would be the covered area adjacent to the building service rooms and the covered childcare area at Walter Street.

The flood levels in Walter Street vary between RL 3.02 at the west boundary and RL 3.87 at the east boundary. The PMF flood levels are between RL 3.81 at the west boundary and RL 4.07 at the east boundary. The adopted flood planning levels for Walter St frontage are RL 4.3 outdoor covered childcare area and RL 4.4 for the child care building. These levels are above the PMF.

Yours faithfully,

Boris Lysenko, BSc(Eng)
GEC Consulting Pty Ltd