

Flooding

Our Ref LJ2629: RST

Contact Rhys Thomson



18 June 2010

Catylis Properties Pty Ltd
Level 15, 124 Walker Street
NORTH SYDNEY NSW 2060

Attention: Mr Christian Babet

cc David Paton – Leichhardt Council

Cardno (NSW/ACT) Pty Ltd
ABN 95 001 145 035

Level 3
910 Pacific Highway
Gordon New South Wales
2072 Australia

Telephone: 02 9496 7700
Facsimile: 02 9499 3902
International: +61 2 9496 7700

Web: www.cardno.com.au

Dear Christian

EXTRACTION OF FLOOD INFORMATION FOR 14-28 GEORGE STREET LEICHHARDT NSW

In accordance with our proposal dated 10th June 2010, this letter provides flooding information for the area in the vicinity of 14-28 George Street, Leichhardt. This information can be used to assist in understanding the extent of flooding affecting this property.

Background

Cardno Lawson Treloar has undertaken the Leichhardt Flood Study, which involves the establishment of a detailed 1D/2D hydraulic model across the entire Leichhardt LGA. This includes all of the pits and pipes within the LGA, together with a detailed 1 metre terrain grid. More details are available in our report, Cardno Lawson Treloar (2010). It is expected that this will be placed on public exhibition in the next few weeks.

Data

A number of data sources were collected as part of the Leichhardt Flood Study. The Geographic Information System (GIS) data was provided by Council as a part of the Leichhardt Flood Study. The aerial photo on the attached figures was taken by AAM Hatch and is dated at 2006. Pit and pipe data is based on survey that was undertaken as a part of the flood study.

Flood Information

The flood information provided is based on available information in the *Leichhardt Flood Study* (Cardno Lawson Treloar, 2010) prepared for Leichhardt City Council. The flood information include flood extents, peak water levels, depths and flow rates for the 5 year, 20 year, 100 year ARI events and for the Probable Maximum Flood (PMF) event.

This information may be used to determine the Flood Planning Level for the property. It is noted that the Flood Planning Level is determined by adding a freeboard to the 100 year ARI extent. This freeboard can be determined through reference to Section A3a.0 (Sustainable Water and Risk Management) of Council's Development Control Plan (DCP2000).

Australia • Belgium • Indonesia • Kenya • New Zealand • Papua New Guinea
United Kingdom • United Arab Emirates • United States • Operations in 60 countries

J:\WRWJ2629-Leichhardt\Flood Certificates\Certificates\14-28 George Street, Leichhardt\100618 14-28 George St, Leichhardt.doc



Quality
ISO 9001

SAI GLOBAL

The 100yr ARI flood extent shown on the attached figures is the area of land expected to be inundated by either overland flow or mainstream flooding during a 100 year ARI flood event.

The peak water levels and depths at George Street, Upward Street, Flood Street, McAleer Street and Parramatta Road in the vicinity of Flood and George Streets and reported in **Table 1**. The Reference Locations are shown in **Figure 1**.

The depths reported are indicative only. They do not necessarily represent the maximum depth in the area. For example, where a point is located on the centreline of a road, the depths will be higher within the road gutter. All flood levels and depths are provided to the nearest 0.05 metres.

The ground levels reported are based on aerial survey data undertaken by AAM Hatch on behalf of Council. It is recommended that all ground levels be verified by a suitably qualified surveyor.

Table 1: Peak Depths and Water Levels

Peak Flood Depth (m) and Peak Flood Level (m AHD)									
Location ID	Grid Elevation	5 yr ARI Depth	5 yr ARI WL	20 yr ARI Depth	20 yr ARI WL	100 yr ARI Depth	100 yr ARI WL	PMF Depth	PMF WL
A	11.94	N/A	N/A	0.40	12.30	0.55	12.50	2.20	14.15
B	11.10	1.00	12.05	1.20	12.30	1.40	12.50	3.05	14.15
C	11.35	0.40	11.70	0.70	12.05	0.90	12.25	2.45	13.80
D	9.98	0.90	10.85	1.20	11.20	1.50	11.50	2.90	12.90
E	10.22	0.65	10.85	1.00	11.25	1.25	11.45	2.70	12.90
F	11.16	N/A	N/A	N/A	N/A	0.30	11.50	1.80	12.95
G	9.50	1.30	10.80	1.60	11.10	1.80	11.30	2.95	12.50
H	9.88	N/A	N/A	0.20	10.05	0.40	10.25	1.05	10.95
I	8.04	0.65	8.70	1.15	9.20	1.40	9.50	2.70	10.75
J	7.74	1.00	8.75	1.45	9.20	1.75	9.50	3.10	10.90
K	8.78	N/A	N/A	0.50	9.25	0.80	9.60	2.30	11.05

N/A – Flood Depths Less than 150mm

The peak flows along the flowpath which extends from Flood Street and down to Hawthorne Canal are reported in **Table 2**. The measurement lines report the discharge perpendicular to the location of the line as shown in **Figure 2**.

The Locations F and G do not encompass the entire flowpath in a PMF, and therefore may not be representative of the entire PMF flow at this location. Similarly, location G, near Hawthorne Canal, does not encompass the full flood extent, even in a 100 year ARI event, and as such should be used with caution. All discharges are provided to the nearest 0.1m³/s.

Table 2: Overland Flow

Peak Discharge (m ³ /s)				
Location ID	5 yr ARI	20 yr ARI	100 yr ARI	PMF
A	8.1	16.3	20.1	57.5
B	1.0	3.4	5.0	20.0
C	6.5	12.4	16.1	45.0
D	5.2	12.5	18.4	65.0
E	5.4	11.9	18.2	65.0
F	2.7	9.6	15.5	54.5
G	1.8	5.1	8.6	43.5

The peak discharges within the pipes from Parramatta Road through to Hawthorne Canal are provided in **Table 3**. The location of any stormwater infrastructure such as pipes shown on the **Figure 3** is based on survey undertaken by Cardno Lawson Treloar, and is detailed in the *Leichhardt Flood Study* (Cardno Lawson Treloar, 2010). It is recommended that the location of all pits and pipes be verified by a suitably qualified surveyor.

Table 3: Pipe Flow

Peak Discharge (m ³ /s)				
Location ID	5 yr ARI	20 yr ARI	100 yr ARI	PMF
A (1200mm)	4.3	4.3	4.3	4.3
B (1200mm)	4.4	4.4	4.4	4.4
C (1200mm)	5.4	5.4	5.4	5.4
D (1700mm)	6.8	6.8	6.8	6.8
E (1800mm)	8.1	8.4	8.4	8.4
F (1800mm)	8.1	8.7	8.7	8.7

It is important to note that the above information is representative of existing conditions, and does not incorporate any proposed modifications to the site.

Should you have any questions, please feel free to contact either Bala Kilaparty or myself on 02 9499 3000.

Yours faithfully



Rhys Thomson
Senior Engineer
for Cardno (NSW/ACT) Pty Ltd

References

Cardno Lawson Treloar (2010). *Leichhardt Flood Study*, prepared for Leichhardt Council.

Enclosures

Flood Information Figures – 3 Sheets







