

6 August 2019

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Stormwater design for the proposed subdivision at 17 Maretimo Street

Hi Alex

As discussed at the end of May and July, we've put some careful thought into our alternatives for the stormwater disposal at 17 Maretimo Street. I'll outline below the conclusion we've come to and also explain the alternatives we've investigated and why we eliminated them.

Option 1: Use the easement

This was certainly our preferred option at the outset; however, to ensure this could actually be built, the client (Peter) invested a few thousand dollars and some weeks conducting an investigation to find this pipe indicated on the easement.

Attached is a record of the investigation and some of the invoices from the suppliers. The upshot is that the pipe could not be found in the location the title information suggests. And it is certainly not in the location it would need to be to make the drainage work. My guess is that the pipe was part of the original subdivision and will be getting on to be around 80 years old.

We reasonably (I think) conclude the pipe does not exist. At least not in a usable way.

We also briefly considered the possibility of replacing this pipe. But after a walk over of the route, we eliminated this option. It would require extensive excavation, rebuilding and re-landscaping of three or four properties. It simply isn't feasible for a development of this size.

Option 2: Discharge roof and driveway to the kerb

Certainly, we can discharge not only the roofs to the street but some of the other elevated surfaces too. The drainage will be charged to the boundary and can fall by gravity to the kerb.

The deal-breaker with this option is getting much of the driveway to fall back to the street. Getting this to fall has some very drastic impacts on the architectural design:

- A higher driveway would be right up against the ground floor level of the front dwelling. This would affect privacy and separation as cars/access to the rear dwelling will drive right up against the front property.
- It also creates a separate drainage problem where groundwater (and maybe surface water) poses a risk to the ground floor level of the front home. The dwelling cannot be lifted because of separate DCP controls.
- A raised driveway and car space area would affect access to the rear dwelling and mean car spaces to the rear dwelling will be raised significantly above the level of natural ground. This in turn means the garage level must be raised to a level significantly above the habitable floor level of the front dwelling, creating a further drainage risk.
- The raised driveway and parking area with a retaining wall (up to 1.8m high) along the northern boundary introduces significant privacy issues for number 19 Maretimo Street.

We also looked at flipping the driveway arrangement around so that the dwelling is on the northern side of the front lot and the driveway on the south. This concept introduces several other problems:

- It would require extensive excavation along the southern boundary shared with properties on Ethel St.

- It would result in a less than desirable access to the rear property where the front door is on the opposite side.
- The car spaces for the rear property would also clash with the front door/pedestrian access, and also the Sydney Water access chamber.
- It goes against the natural topography that the current proposal tries to follow with the driveway generally following the site topography, having minimal impacts on neighbouring properties.
- It would push the bulk of the proposed dwelling closer to 19 Maretimo St. Whereas the current proposal makes use of the increased north facing separation to provide desirable amenity and building separation, in line with DCP guidelines.
- The current proposal follows the current pattern which enjoys access with the rear dwelling front door visible from the street, which in turn allows for greater natural surveillance down the driveway.

Option 3 (preferred option): Combined charged system and mechanical pump

This option is a slightly modified version of the originally approved DA0219/2016. The changes include:

- The entire driveway and car space areas are pervious (grass pavers or similar). This has better effect on reducing runoff coefficient thus reducing flow velocities and peak discharge flows.
- A charged system is proposed to dispose the onsite stormwater into the street kerb at Maretimo Street instead of the existing drainage easement for reasons discussed in option 1.
- A wet-well will capture flows for the most frequent rain events. It will then be pumped via a rising main to the boundary pit and flow by gravity to the kerb.

To be sure, this is not an ideal solution. The option's main disadvantage is that it relies on a mechanical system which is prone to failure. However, the failure mode is relatively safe, and:

- It has been this way for probably around 80 years without any recorded issues.
- The new peak flows will be significantly lower than the existing ones, and that of approved original DA0219/2016 given the large catchment proposed to be charged to the street.
- The new peak flows will be much lower than state-of-nature (slightly more than half) for all storm events up to the 1%AEP (refer to DR-002).
- In accordance with the driveway design, the proposed driveway is relatively flat between chainages 38,310 and 29,110. This allows the surface water to take advantage of the natural dispersion.

We recommend option 3

The proposed stormwater management plan improves both the current and approved original DA0219/2016 hydrological situations and reduces the total discharge to 19 Maretimo Street. On the basis of significant time and cash investment to investigate the alternatives and given all of the constraints and the small size of the development, we submit that option 3 is the best option available, despite its shortcomings.

We hope you can see we haven't come to this conclusion lightly and trust you'll agree that other avenues are exhausted in this case.

Please give me a call if you'd like to run through anything over the phone.

Kind regards



Ian Warren
Managing Director

Stellen Consulting
Level 1, 27 Belgrave Street, Manly, NSW 2095
T. 0450 460 496
E. ian.warren@stellenconsulting.com.au

The Easement

The following is a background of events that has led to the submission of the amended stormwater design for 17 Maretimo St, Balgowlah 2093.

The property was on the market with council approval for subdivision, which included an approved stormwater drainage plan accessing the easement on the boundary of 19 Maretimo St, Balgowlah.

The main reason we purchased the property was the subdivision DA & the understanding that there was a drainage easement on the title deed aiding 17 Maretimo St, Balgowlah & encumbering 19 Maretimo St, Balgowlah.

With the guidelines of the current DA subdivision, we engaged our architect to design our new home on Lot 1.

We also commenced the task of locating the actual clay stormwater pipe & easement as pertained in the original DA. This was to no avail.



“Existing pit over easement line to be upgraded” dug out easement to rock (no stormwater pipe/access)”

We spoke to the owners of 19 Maretimo St, to whom the easement affects.

They advised that they had no recollection of the drainage easement, which should be located under their densely landscaped front garden. To the best of their knowledge, their current stormwater drainage does not connect to the said easement. The 1st property that links to the easement is 21 Maretimo St, Balgowlah.

The following is a time line of all avenues we undertook to assist in locating this easement:

- 9.10.17 Enquiry to Northern Beaches Council requesting historical stormwater drainage plans (see attached email trail)
- 1.11.17 Engaged Aquatek to undertake CCTV inspection from the inspection pit located at 21 Maretimo St (email attached)
No access to easement leading south in 21 & towards 19 & 17 Maretimo St.



Easement access pit located in 21 Maretimo St, Balgowlah

- 10.2.18 Used above ground pipe locator to follow stormwater pipes to easement – nothing found
- 13.2.18 Suresearch – Camera & Water Jetter to locate & clear stormwater pipes at access pit 21 Maretimo St, Balgowlah – invoice attached
- 12.3.18 TJM Earthworks tried to excavate in the area of easement at 17 Maretimo, but minimal impact was made due to service pipes & rock – invoice attached
- 15.3.18 Manually dug up area to find old pipes & new service pipes laid over a rock bed.
No access past solid rock.

After an expensive & time consuming mission; we had exhausted all possibilities to locate the pipe &/or easement. We came to the conclusion that the 'easement pit' may not be for the stormwater easement, but possibly the access point for the old & new service pipes.

Unfortunately, we had no choice but to amend the stormwater drainage plan. We engaged the original Engineers, Stellen Consulting, to design an alternative plan to submit with the S96.

With our inability to locate the easement, we would appreciate councils understanding of our situation. In conjunction with the option of the level spreader controlling the flow from the surface water, would it be an option to amend the current driveway design and nominate pervious concrete &/or pervious paving?

With Regards

P. Pagliaro

Peter Pagliaro
Home Owner

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 6/18433

SEARCH DATE	TIME	EDITION NO	DATE
22/11/2016	9:57 AM	4	30/6/2010

LAND

LOT 6 IN DEPOSITED PLAN 18433
LOCAL GOVERNMENT AREA NORTHERN BEACHES
PARISH OF MANLY COVE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP18433

FIRST SCHEDULE

SHERIF HASSANEIN
ALISON HASSANEIN
AS JOINT TENANTS (T AF595717)

SECOND SCHEDULE (4 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 C963335 CROSS EASEMENTS (S.181B CONVEYANCING ACT, 1919)
EASEMENT FOR DRAINAGE APPURTENANT TO THE LAND ABOVE
DESCRIBED AFFECTING THE LAND SHOWN SO BURDENED IN VOL
5199 FOL 113
- 3 C963335 COVENANT
- 4 AF595718 MORTGAGE TO WESTPAC BANKING CORPORATION

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Municipality of Manly

Sheet of C657533

of subdivision of the land in C.T. Vol. 4510/61/8

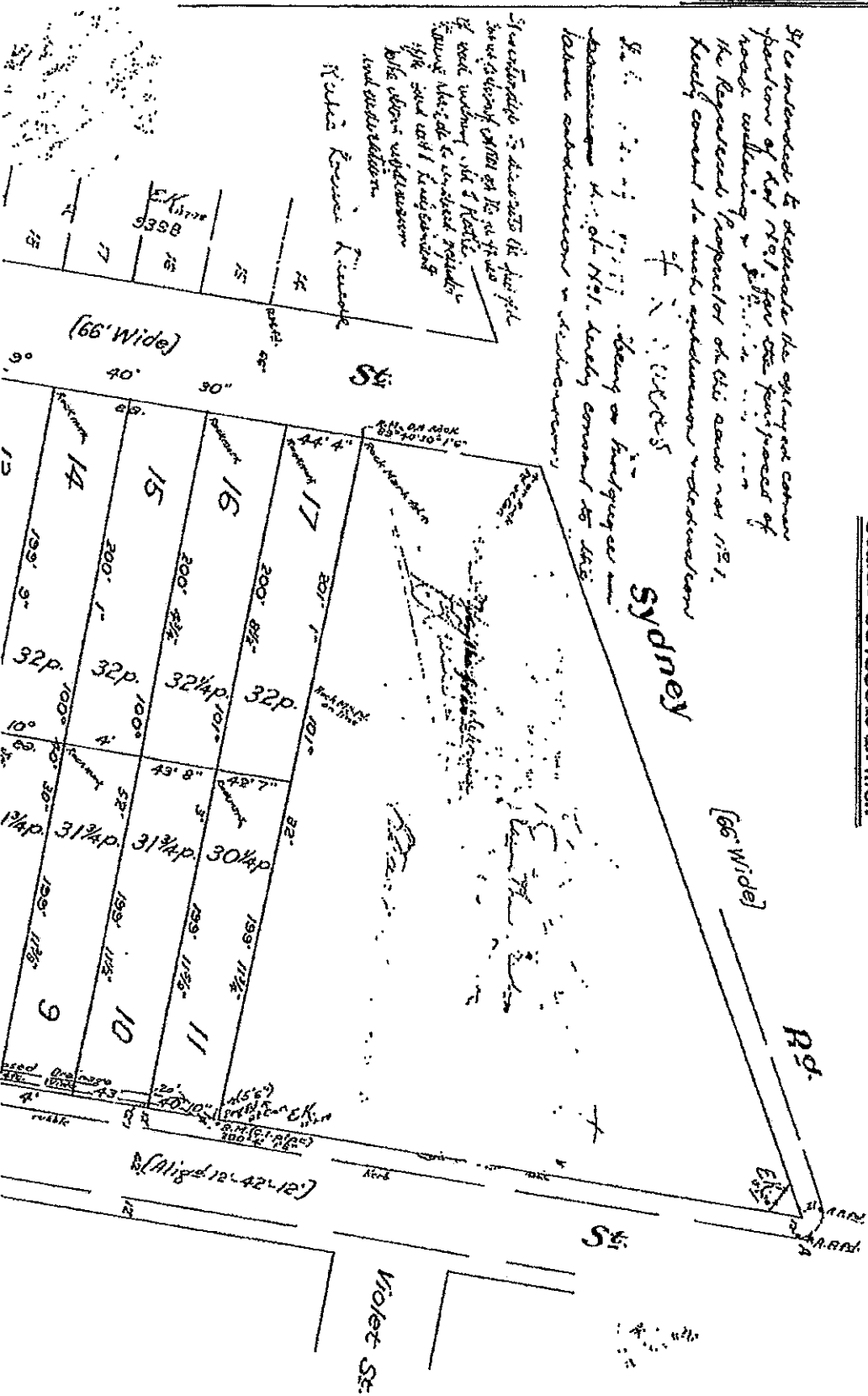
Deposited Plan No 18433③
26th July 38

PLAN

AT BALGOWLAH

PARISH OF MANLY COVE COUNTY OF CUMBERLAND

Scale - 60 feet to an inch





15 Old Prospect Rd
Wentworthville NSW 2145
PO Box 3284
Tuggerah
ACN 156 481 560

Tel. 1300 884 520
Fax. 02 8915 1487
accounts@suresearch.com.au
www.suresearch.com.au
ABN 71 156 481 560

PLEASE PAY BY

AMOUNT

INVOICE DATE

25/01/2018

\$1,391.50

18/01/2018

TAX INVOICE NO. 52714

Property Solutions Consulting
22 Loch St
Freshwater NSW 2096

Job No.: 52714
Order No.: 215
Site: 17 Maretimo Street Balgowlah
Site Address: 17 Maretimo Street
Balgowlah NSW 2093
Site Contact: Julie Campanella
Site Mobile:
Invoice Terms: 7 Days from invoice date

Description

15.1.2018 Steve B REGO: COM802
NDD used to jet/vac stormwater line. No tipping required
7:30am - 1pm Depot to Depot
Total: 5.5hrs

Drain Cleaning

Item	Quantity	Unit Price	Total
T3 Combination Jet Vac (Minimum 4 hours)	5.50 hrs	\$230.00	\$1,265.00
Total			\$1,391.50
Incl. GST of			\$126.50

Thank you for using us here at Utility Locating Pty Ltd t/as
Suresearch

We appreciate your Business.

Sub-Total ex GST	\$1,265.00
GST	\$126.50
Total inc GST	\$1,391.50
Amount Applied	\$0.00
Balance Due	\$1,391.50



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25/01/2018

AMOUNT

\$1,391.50

INVOICE DATE

18/01/2018

TAX INVOICE NO. 52714

Should you wish to view our terms and conditions and current insurances, please follow the link below
<https://drive.google.com/drive/folders/0By3qOS6LPigadDFCdIY3MWNPVkk?usp=sharing>

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Utility Locating Pty Ltd T/as SureSearch
PO Box 3284
Tuggerah



Credit Card (MasterCard or Visa)

Please call 1300 884 520 to pay over the phone.

Credit Card No.

Card Holder's Name: _____

Expiry Date: / Signature: _____



Direct Deposit

Bank **Westpac**
Acc. Name **Utility Locating Pty Ltd**
BSB **032 526**
Acc. No. **234166**

INVOICE NO. 52714

DUE DATE: 25/01/2018 **AMOUNT DUE:** \$1,391.50



TAX INVOICE

PETER PAGLIARO

Invoice Date
20 Mar 2018

Invoice Number
INV-0479

Reference
17 MARETIMO ST,
BALGAWLAH

ABN
60 961 172 819

TJM EARTHWORKS P/L
5 RAYNER AVE
NARRAWEENA NSW 2099
AUSTRALIA

Description	Quantity	Unit Price	GST	Amount AUD
12/03/18 DOCKET- 8897 3.5T EXCAVATOR	8.00	95.00	10%	760.00
3.5T EXCAVATOR 2WAY FLOAT	2.00	150.00	10%	300.00
			Subtotal	1,060.00
			TOTAL GST 10%	106.00
			TOTAL AUD	1,166.00

Due Date: 19 Apr 2018
30 DAYS FROM INVOICE ISSUE

BSB: 062-205
ACCOUNT: 1043-9587
PLEASE EMAIL REMITTANCE ADVICE TO admin@tjmeearthworks.com