

01 February 2019

Cadence Property
Attention: Mr Mitchell Kent
Suite 2.02
785 Toorak Road
HAWTHORN EAST VIC 3123

Dear Sir

**Re: DA18/1114 - Lot 128 Andrews Road, Penrith
Response to Penrith City Council Letter dated 9 January 2019**

Further to your request we are pleased to provide our response to the engineering items raised by Penrith City Council in their letter dated 9 January 2019 (Ref: DA18/1114).

We provide this letter, updated drawings and report and specific confirmation of response to the engineering items in the letter noted above as follows.

Item 2a) The flood assessment (Appendix F of the Civil Engineering Report) is to also include the full length of the access road from the site through to Andrews Road. Council's flood mapping indicates that the site of the proposed access road is a conveyance area for the 1% ARI and 0.5% AEP flood. The design of the access road is to consider conveyance of both the 1% AEP and 0.5% AEP flows. Additional drainage infrastructure may be required along the access road so as to ensure conveyance of flood waters, no adverse impact upon adjoining properties and provision of flood safe access in a 1% AEP flood event from the site to a public road.

Response

The flood mapping in **Appendix F** has been adjusted to show the full extent of the access handle. It is noted that the 1% and 0.5% AEP flood events are able to be conveyed across the access handle without adverse impact on adjoining properties or the wetland.

Item 2b) A long section of the access road is to be provided showing existing surface levels and design surface levels along with existing and proposed 1% AEP flood levels for the pre-development and post development scenario.

Response

Please refer to drawing **Co13620.00-DA52** which shows the requested driveway long section.

Item 2c) The typical cross section of the access road is to be amended showing the

approximate location of the Sydney Water pressure sewer main, any existing utility services , easement boundaries and lot boundaries. DP 1216618 shows the access handle to be approximately 18m wide with the 6m wide sewer easement located within the access handle along the western side. The access handle is burdened by an 18m wide easement for services

Response

Please refer to drawing **Co13620.00-DA51** which shows the amended cross section which includes the approximate location of the Sydney Water pressure sewer main and associated service easements.

Item 2d) The detail survey by Landpartners (sheet 3 of 9) does not appear to include details and levels for the whole of the proposed access road - additional survey information maybe required in this area.

Response

The provided survey file from Landpartners is missing information along the proposed access road. Despite this, there is sufficient survey information for the purposes of a concept design for this DA submission. Additional survey is to be provided at detail design stage..

Item 2e) Stormwater runoff from the northern fire access trail is to be captured - details are to be provided on plans

Response

The northern fire trail area acts as a major overland flow path during the 0.5% AEP event, and matches existing levels. The design of the northern fire trail in relation to drainage has been completed such that the fire trail “pavement” is formed of a fully pervious turf cell. This means that the pre and post development conditions in relation to drainage are maintained. The discharge inverts for this area, given it needs to remain low for flood conveyance, do not allow inground systems to be installed as they will not drain by gravity hence an alternate solution has been presented. The overall runoff from the area would be substantially reduced due to the building drainage conveying flows via syphonic, and non- concentrated permeable runoff (matching pre-development or less) will ensure no adverse effect on adjoining properties.

The runoff from the fire trail has been considered and drainage details in relation to the permeable pavement have been provided in the document package

Item 4a) Revised drainage plans / MUSIC modelling which are consistent with each other.

Response

Plans have been updated to address a drafting error which showed the western bio-retention system (Treatment Basin 1) as 250m², not 200m².

Refer updated drawing **Co13620.00-DA40**.

Item 4b) The drainage plans are to show the location of all treatment measures.

Response

The drainage plans shows all proposed treatment measures including pit inserts, bio-retention systems and rainwater tanks. Refer to the pit schedule for pit insert locations.

Refer drawings **Co13620.00-DA40 and DA41**

Item 4c) Additonal details on how water conservation measures will be met.

Response

Refer updated **Section 6.4** in report which confirms water demand allowances, consistent with those used in the MUSIC modelling.

Item 4d) Additional information / discussion on the impacts to wetland 158 as a result on the altered hydraulic regime.

Response

Refer new **Section 4.6** in our report which provides additional information and discussion on the proposed discharge and negligible effect on Wetland 158.

This letter is provided by Costin Roe Consulting Pty Ltd. Please contact the undersigned if clarification of any of the above items are required.

Yours faithfully,

COSTIN ROE CONSULTING PTY LTD



MARK WILSON MIEAust CPEng NER
Director

Encl.