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Our Reference: NA231578
Your Reference: MC-25-00004

08/10/2025

Blacktown City Council
PO Box 63
Blacktown NSW 2148

Attention: Mr Alex Kwok

Re: SSD-73761707 – Glendenning Road Data Centre

Response to Engineering Matters Raised by Blacktown City Council

Introduction

We refer to the following Response to Submissions received for the State Significant Development Application *SSD-73761707 – Glendenning Road Data Centre*:

- Blacktown City Council Response to Submission (ref: MC-25-00004 dated 12 June 2025)

This letter has been prepared by ACOR Consultants Pty Ltd (ACOR) to respond to Blacktown City Council engineering items raised within their Response to Submission.

A videoconference consultation meeting with Blacktown City Council Engineers was undertaken on 18 August 2025 to discuss the Engineering Matters raised in their Response to Submission and agree on an acceptable method to address these matters.

The following civil engineering documentation has been updated to address Council Response to Submissions:

- Civil engineering design drawings (ref: GRDC86-ACR-00-XX-DR-SSDA-C-XXXX series of drawings)
- Civil and Stormwater SSDA Design Report, Revision F dated 8 October 2025 (ref: GRDC86-XX-XX-RP-C-0001 - CIVIL AND STORMWATER SSDA DESIGN REPORT)

Engineering Matters

Item 6 – Drainage Issues

Item 6a

a. Supporting documents must be provided in electric copy for assessment:

- *DRAINS model to confirm the internal design of the site.*
- *MUSIC model shall be provided to confirm the Stream Erosion Index (SEI), reduction target and the non-potable reuse target are achieved.*

ACOR Response:

The DRAINS and MUSIC model files have been included with the documentation re-submission.

A pre-development scenario has been created in MUSIC to calculate the SEI for the entire site (including bypass catchments). A SEI of 1.257 has been calculated for the development.

The Civil and Stormwater SSDA Design Report has been updated to include Section 7.3.4.3 Stream Erosion Index (SEI) Analysis.

Item 6b

b. The applicant is required to provide a water quality treatment system to treat the whole site. However, the southern side of the site, which is about 18,000 square metre, is not included in the water quality treatment system. And it is similar to the northern side of the site nears to the drainage channel. If the applicant decided to bypass the area to the system, the areas must be included in the MUSIC model as the bypass areas. And the pollutant reduction target must also be achieved.

ACOR Response:

The MUSIC model for the site has been updated to include the northern and southern bypass catchments as agreed during the meeting with Blacktown Council on 18 August 2025. Due to the size of the southern bypass catchment and the absence of any formal drainage infrastructure to incorporate stormwater quality treatment measures, the bypass catchments will affect compliance to Blacktown City Council WSUD pollutant reduction targets.

Pre-development and post-development MUSIC models have been created to demonstrate that the reduction of impervious area of the southern bypass catchment during the post-development scenario (demolition of the existing building and adjoining hardstand) and inclusion of a diversion buffer swale will provide a net benefit through reduction in pollutant loads leaving the site.

The detailed analysis of the stormwater quality system and results have been included in Section 7 of the revised Civil and Stormwater SSDA design report.

Item 6c

c. The minimum gradient of any pipe shall exceed 0.5%. Please amended the design.

ACOR Response:

The following pipelines have been re-graded to incorporate a minimum 0.5% gradient:

- Pipe between Pit A4 and A3
- Pipe between Pit B13 and B12

- Pipe between Pit B6 and B5

The following pipelines have been maintained at a grade less than 0.5%:

- Pipes between Pits B5, B4, B3, B2, B1 and A4.

The above pipes cannot be increased in grade to the requested 0.5% minimum grade as the invert level of the headwall to connection is fixed at RL30.20 at Pit A1A. The invert level at this location cannot be lowered without the headwall extending further into the north-east corner of the site and the scour protection extending beyond the boundary line and impacting additional existing trees.

The above pipelines connect into Pit A4, which is the pit directly upstream of the water quality splitter pit (Pit A3). The stormwater system from Pit A3 and A2 cannot be lowered to increase the grade of the above pipes as the levels are required for the head drop of the Stormfilter system.

Thus based on the above assessment, the pipes between Pits B5, B4, B3, B2, B1 and A4 are proposed to be maintained at a minimum grade of 0.31%. This is compliant to AS/NZS 3500.3 which allows for grades flatter than 0.5% for pipes greater than 300mm. This is supported by other industry-accepted literature such as Queensland Urban Drainage Manual (QUDM) Section 7.12.

Item 6d

d. It is unclear how a 11,000 square metre to connect into a 100KL when there is no down pipe is shown in the submitted plan.

ACOR Response:

The roof drainage system will be conveyed via an underground pipe system to the rainwater tank for each building. The details will be designed by the hydraulic consultant as part of the Construction Certificate documentation.

As agreed with Council during the meeting on 18 August 2025, the requirement for 100% of the roof area to drain to the 100kL rainwater tank for each respective building can be conditioned within the Development Consent Conditions.

Item 6e

e. 75 Ocean guard are shown in the print screen of MUSIC model in the Civil Engineering report. However, it is unclear where are they in the submitted plan.

ACOR Response:

The pit schedule on drawing GRDC86-ACR-00-XX-DR-SSDA-C-3103 has been updated to include a column showing which pits include an Ocean Guard filter.

The Overall Stormwater Management Plan GRDC86-ACR-00-XX-DR-SSDA-C-1000 has been updated to provide colour-coding of stormwater pits which have Ocean Guard filters. Pits that have less than 600mm cover to the top of the stormwater pipeline have been identified with a separate colour as discussed and agreed with Council. These pits with reduced pipe cover are located within the trapped courtyard to the buildings.

Item 6f

f. The filter chamber is inconsistent between the report and the submitted plan.

ACOR Response:

The stormwater management report specifies a minimum 84.5m^2 chamber surface area. The plans show an actual chamber surface of 100m^2. The plan complies with the minimum surface area requirements of the report, thus no change is required.

Item 6g

g. Please provide calculation to support the weir level of the splitter pit A3.

ACOR Response:

The splitter pit wall height is based on calculated 2EY flows in the DRAINS model, which has been included in the re-submission documents for Council's review.

Item 6h

h. Please provide the details of proposed headwalls with scour protection in accordance with Council standard drawing

ACOR Response:

Headwall and scour protection details have been included on drawing GRDC86-ACR-00-XX-DR-SSDA-C-3102

Item 6i

i. Please provide the SEI calculation when no OSD is required in the lot.

ACOR Response:

As per Item 6a response, a pre-development scenario has been created in MUSIC to calculate the SEI for the entire site (including bypass catchments). A SEI of 1.257 has been calculated for the development.

The Civil and Stormwater SSDA Design Report has been updated to include Section 7.3.4.3 Stream Erosion Index (SEI) Analysis.

Item 6j

j. A water quality catchment plan must be provided.

ACOR Response:

A water quality catchment plan has already been included in the previously submitted drawing set. Refer to drawing GRDC86-ACR-00-XX-DR-SSDA-C-1121.

The water quality catchment plan has been updated to include the northern and southern bypass catchments as discussed and agreed with Council during the meeting on 18 August 2025.

Item 6k

k. With regards to flooding, the site is affected by an overland flow in both low and medium risk. The development proposed significant cut and fill within the site. The existing overland flow path will be disturbed and it may lead to negative flood impacts to the roadway and surrounding properties. The amended flood risk report must verify the changes. Alternatively, a flood modelling may be required to determine the impact of the development.

ACOR Response:

Review of flood data in the Local Overland Flow Path Study within Existing Urban Areas of Blacktown City Final Report indicates that overland flow in Glendenning Road adjacent to the site does not exceed 0.2 m deep, and assessed not to overtop the road and enter the site in the 5% AEP, 2% AEP or 1% AEP overland flow events. This is supported by flood mapping (Eastern Creek Catchment Development Scenario Hydraulic Assessment (Blacktown City Council, 2016)) that shows 1% AEP and 0.2% AEP flood events do not directly impact the site. This assessment is also supported by Figure E1.5 in Local Overland Flow Path Study within Existing Urban Areas of Blacktown City Final Report. In these events, flood water is contained within the drainage channel to the north of the lot and in Eastern Creek (external to the lot) to the east. The proposed fill will therefore not cause an increase in flood levels on site or neighbouring properties or public areas for the medium risk overland flow event (1% AEP).

The meeting with Blacktown City Council to assess flood impact comments from Council's Engineering department was held on 18 August 2025. It is noted that Council's concerns related to the portion of the site inundated by the 1% AEP flood event adjacent to the Endeavour Energy transmission tower, described as the "medium flood risk precinct". The area of concern is shown in Figure 1 below.

Figure 1. Blacktown Council Flood Maps – 1% AEP Extent of Inundation to Subject Site (Medium Flood Risk Precinct) – Existing (Pre-Development) Scenario

The area of 1% AEP inundation is caused by localised sag points in the topography of the existing grass overing, causing isolated ponding in the TUFLOW model map outputs in the Blacktown Overland Flow Path Study. Figure 2 below illustrates the sag point causing isolated ponding of flood water based on the topographic survey data.

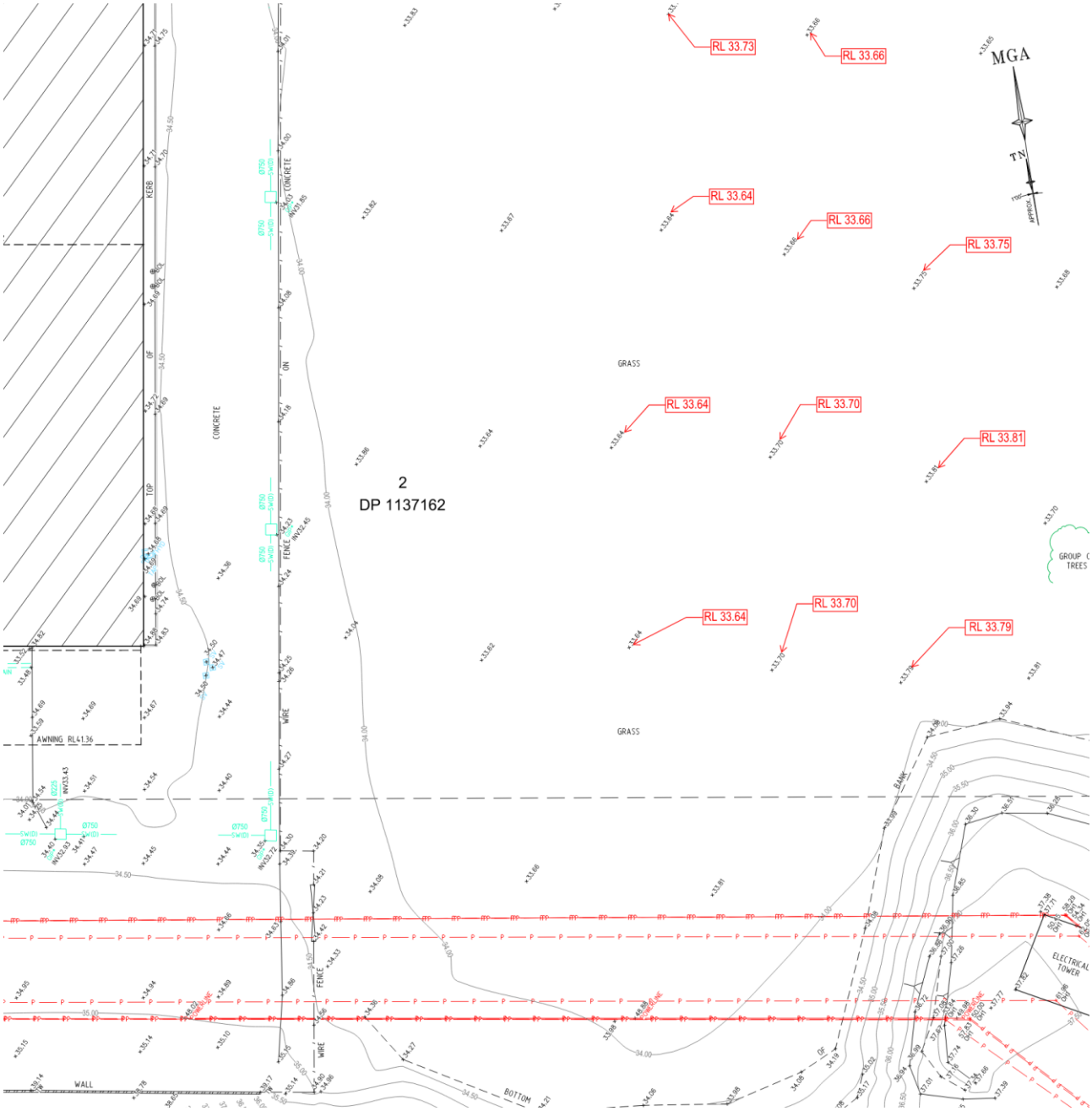

Figure 2. Summary of Existing Topographic Survey Levels at Localised Sag Point

In the post-development scenario when the data centre campus is constructed, a surface swale drain will be constructed to intercept overland flows travelling into the site from the southern catchment at Woodstock Avenue. This swale drain has been graded with a minimum 0.5% longitudinal grade to prevent localised ponding of stormwater / floodwater runoff.

Furthermore, we note that the site will be re-graded to remove the above isolated sag points in the topography, effectively also removing the 1% AEP extent of inundation to the site. Figure 3 below shows the post-development re-grading, swale drain and site stormwater system.

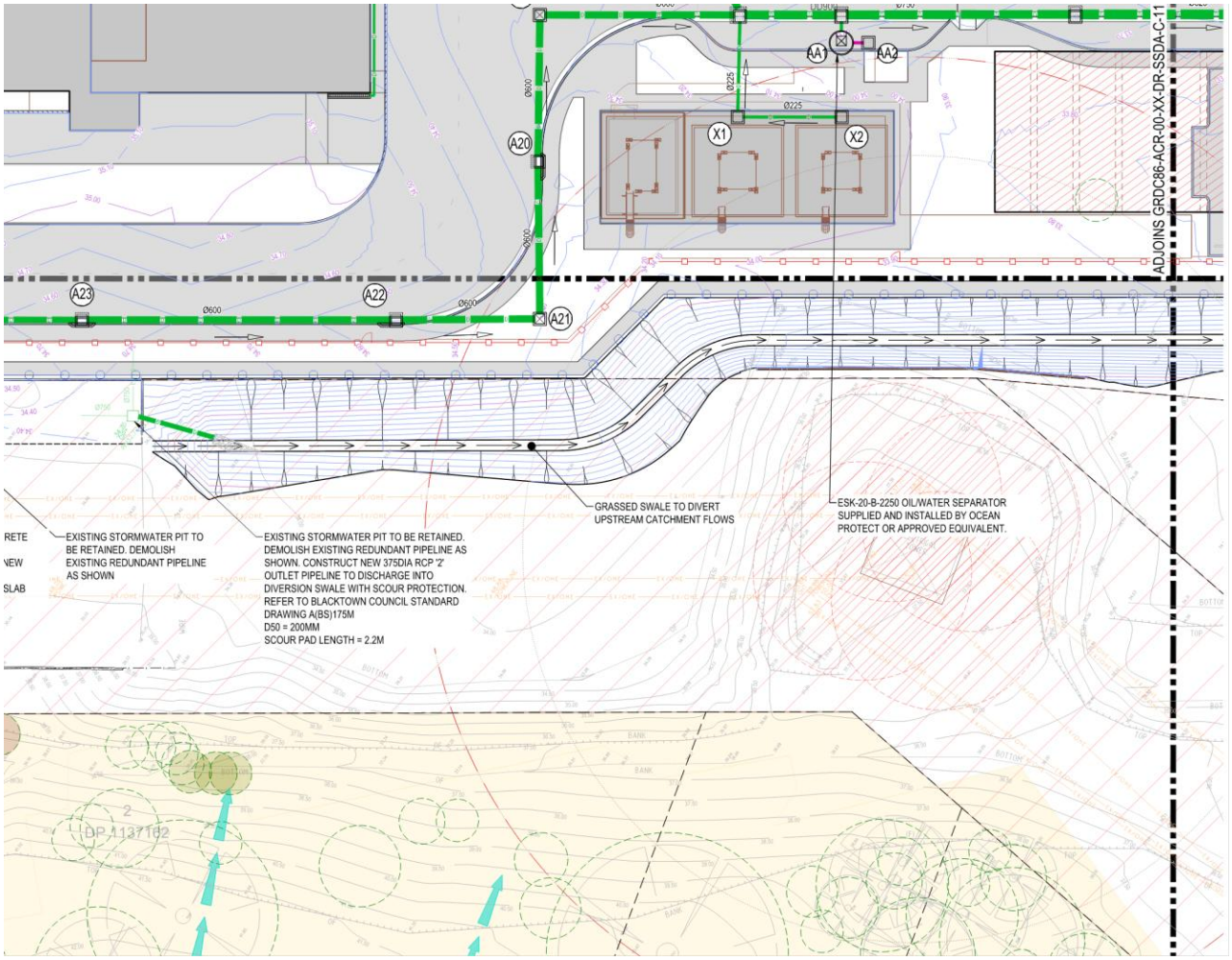

Figure 3. Post-Development Scenario – Swale Drain and Site Stormwater System

In regards to the flood events greater than the 1% AEP (up to and including the Probable Maximum Flood (PMF) event), we note that review of flood data in the Blacktown Overland Flow Path Study indicates that the most frequent simulated overland flow event that first exceeds 0.2 m deep in Glendenning Road adjacent to the site (and deemed to overtop the road and enter the site) is the 0.5% AEP (1 in 200 AEP) event.

The depth of flood water increases within the site to 0.4m depth in the PMF event. We note the following regarding these flood events:

- The proposed building floor levels provide sufficient freeboard to the flood events up to and including the PMF event. Each building has greater than 500mm freeboard to the circulation roadways which would convey flood water in extreme flood events.
- Glendenning Road has an existing sag point adjacent to the trunk drainage channel along the northern site boundary. In the event of minor post-development flood behaviour changes within the site, the

Glendenning Road sag point would overtop into the northern drainage channel. This is shown in Figure 4 below.

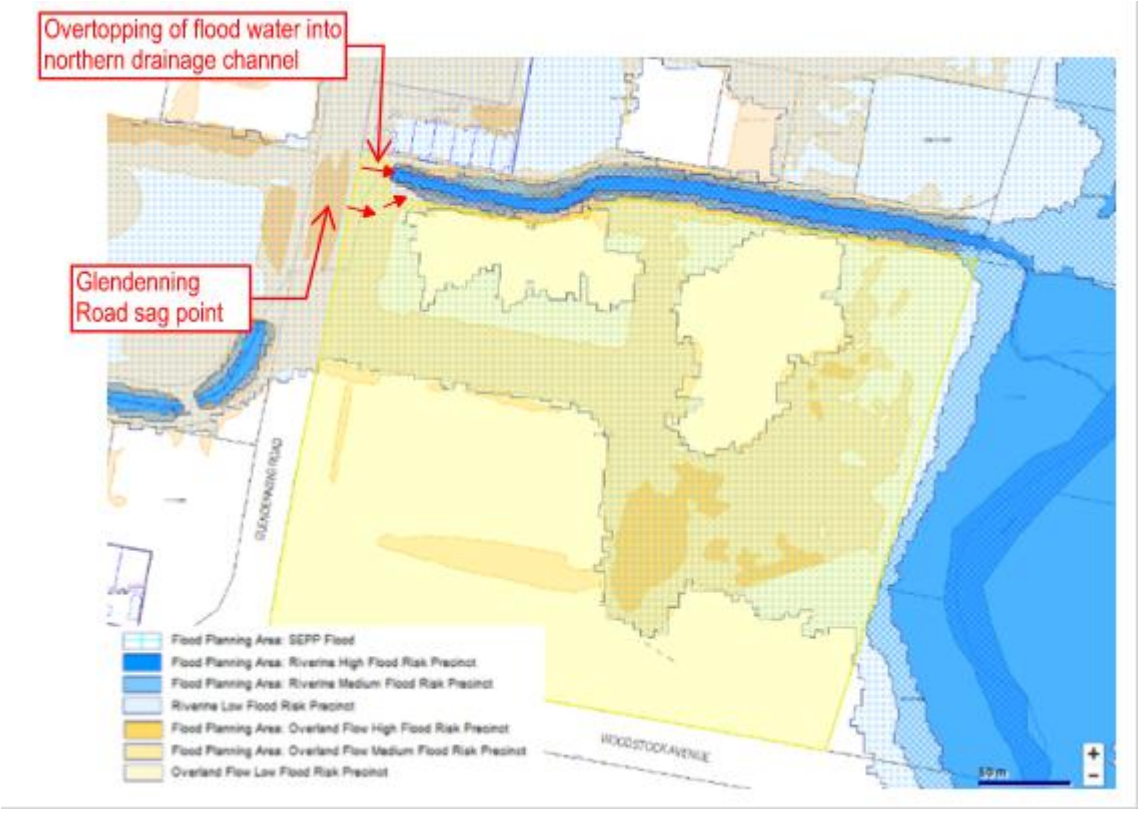

Figure 4. Glendenning Road Sag Point – Flood Water Overtopping into Northern Drainage Channel

- Notwithstanding the above, the site accommodates overland flow through circulation roadways, as shown in Figure 5 below. Post-development flood modelling of the 0.5% AEP, 0.2% AEP and PMF events is expected to yield similar results based on the catchment topography.

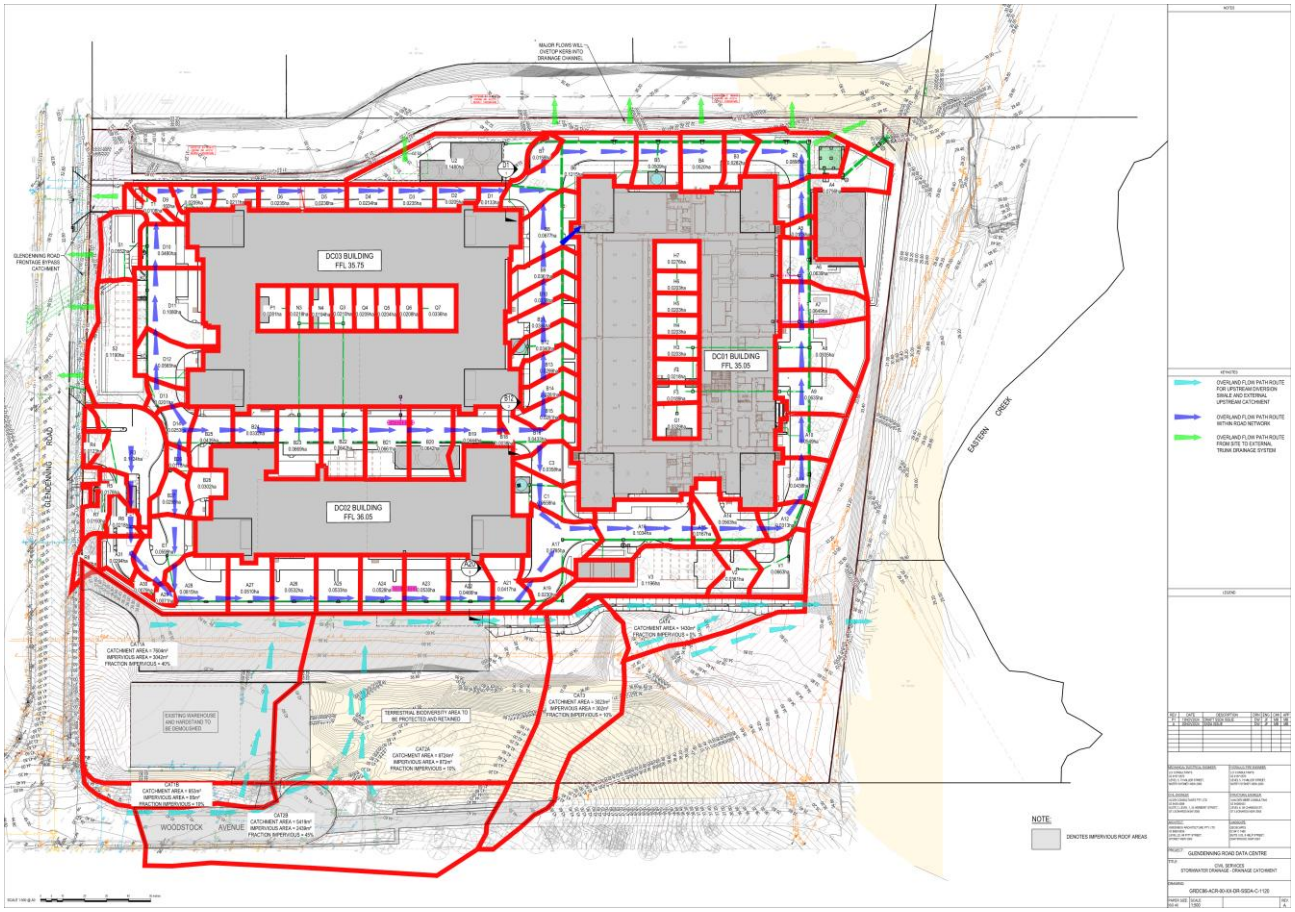

Figure 5. Site Catchment and Overland Flow Path Plan

We trust the above meet your requirements at present. Please contact the undersigned if you require any further clarification.

Yours faithfully,
ACOR CONSULTANTS PTY LTD

Matthew Buttarelli
Project Director