

20171408
16 February, 2018

NSW Public Works
Level 5, 234 Sussex St
SYDNEY NSW 2000

Attention: Darren Hession

Dear Darren

RE: South West Slopes Fire Control Centre and Regional Office - Harden NSW

In response to the Hilltops Council request for additional information dated 02/02/18 we have reviewed items 2 & 3 with our findings and comments detailed below.

Item 2
Stormwater Management

We have reviewed the proposed development design and offer a preliminary layout (attached) for an effective stormwater network onsite. This network will be setup in three parts.

1. One system will capture the various roof areas and direct the runoff to rainwater tanks for onsite reuse. The actual estimated usage is to be determined in conjunction with a hydraulic consultant. The overflow from these tanks is to be directed to the detention zone.
2. The ground water for the site, excluding the hot fire training ground, is to drain to a piped network which will discharge via a GPT to an above ground detention zone.
 - a. The GPT is to be sized to be able to satisfactorily treat the ground level hardstand area for sediment, oils and hydrocarbons.
 - b. A preliminary catchment analysis indicates that the contributing catchment for the development area of the site only is in the region of 0.8120ha with a fraction impervious of 0.74. The predeveloped flow is in the region of 0.093m³/s for the 10% AEP event and 0.22m³/s for the 1% AEP event.
To ensure that the developed runoff does not exceed these values a detention zone is proposed to be constructed by way of a constructed bund, sized with a storage capacity of some 117m³. This will include controlled discharge via a 300 dia pipe to give a post development discharge flow of 0.090m³/s & 0.107m³/s for the 10% & 1 % AEP events respectively. This is below the current predeveloped flows
3. Council has noted that the culvert under the highway may have to be upgraded, if this is currently undersized that may be the case but through the use of the detention zone it is anticipated that this development will not increase the loading on this culvert and therefore may not require upgrading.

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Item 3

Impact on Groundwater

The main concern for this development is identified as being the possibility of hydrocarbons, oils & sediment from the carpark areas and the possibility of chemicals from the hot fire training area impacting the ground water.

Through the use of a GPT that can treat oil, grit, sediment & hydrocarbons it is deemed that the carpark runoff will be satisfactorily treated.

For the hot fire training ground it is understood that firefighting foam is not going to be used so the anticipated pollutant runoff is minimised.

Regardless it is proposed to set up the training area to use recycled water from a rainwater tank that will drain back into the same storage tank, this will minimise the risk of pollutants entering the ground water.

The overflow from this tank will discharge via the GPT prior to discharging from site.

It is believed that by providing the above systems (GPT & Detention) that the impact on the downstream system will be minimised.

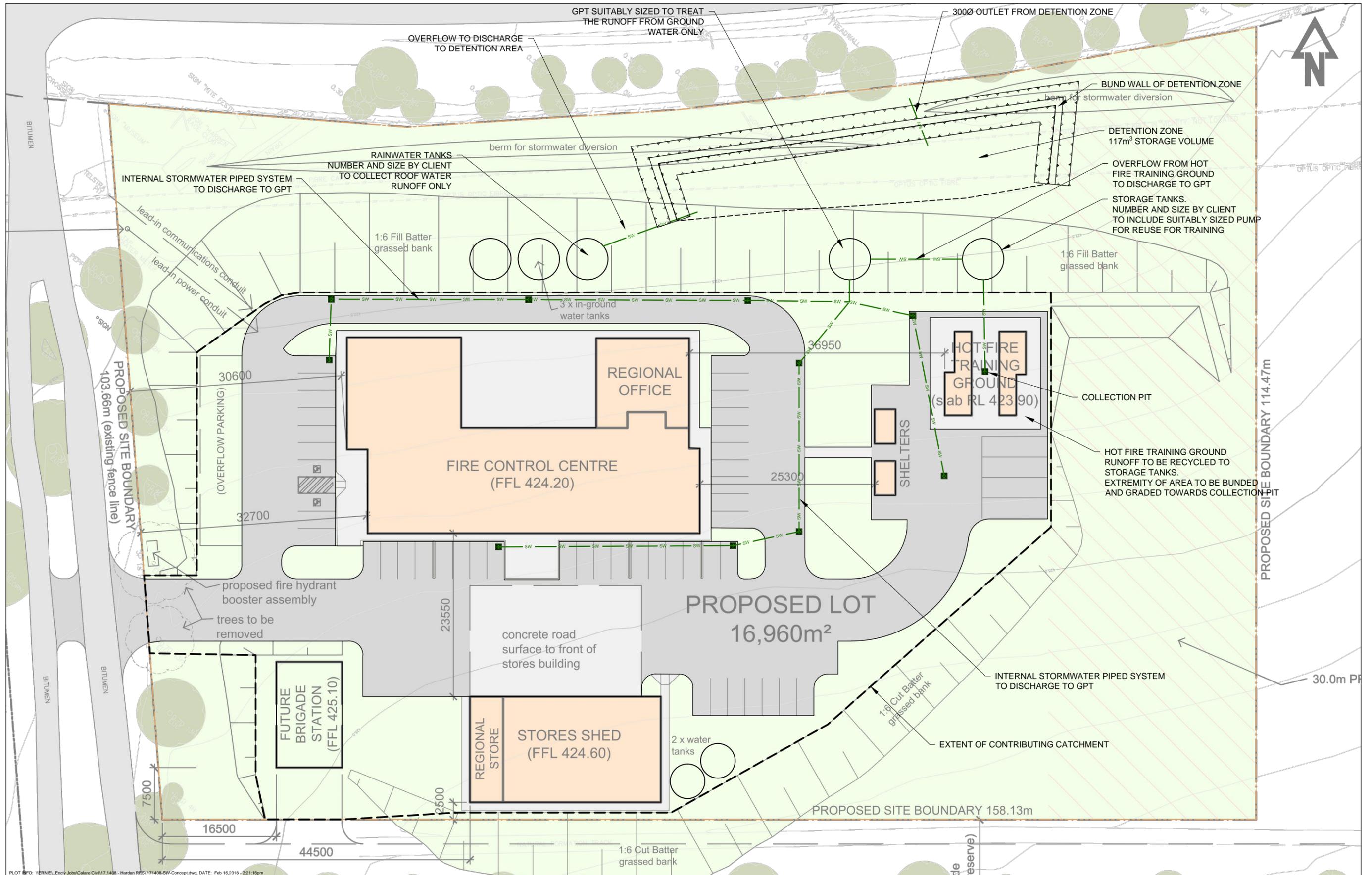
Full design details will be submitted to Council as part of the Construction Certificate application, included with this letter is a preliminary concept stormwater treatment train.

Yours faithfully,
CALARE CIVIL PTY LTD

Grant Lyons
for and on behalf of;



Garth Dean
B.E M.I.E. Aust. NPER-3, GDSTT, RBT (Vic.)



PLOT INFO: IERNIEL_Envoy\Jobs\Calare Civil\17.1408 - Harden RPS\171408-SW-Concept.dwg, DATE: Feb 16, 2018 - 2:21:16pm

Amend	Date	Description	By	Amend	Date	Description	By	Amend	Date	Description
P1	16/02/18	ORIGINAL ISSUE								

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Drawn: G LYONS Designed: G LYONS
 CCQP No: CCQP Checked:
 CAD Ref: /171408-SW CONCEPT Approved for Construction:
 Scale: 1:250 (A1 SIZE)
 Date: 16/02/18

PROPOSED RURAL FIRE STATION
 BURLEY GRIFFIN WAY
 HARDEN

PRELIMINARY TREATMENT TRAIN

NSW PUBLIC WORKS ADVISORY

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 CONSULTING ENGINEERS

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