Temporary Warehouse and Open Storage of Vehicles and Vehicle Parts for a Period of 3 Years
at
Lots 1005 S.A (Part), 1005 S.B (Part), 1019 (Part), 1020 RP (Part) & 1021 (Part) in D.D. 118, Yuen Long, N.T.

Annex 1 DRAINAGE PROPOSAL

1.1 Existing Situation

A. Site particulars

1.1.1 The application site had been paved and occupied an area of about 827m^2.

1.1.2 The application site will be occupied for open storage and warehouse. 300mm U-channel has been provided at the application site for previous planning permission No. A/YL-TT/507.

B. Level and gradient of the application site & proposed surface channel

1.1.3 The lowest point of the site is at the northwestern part which is about +15.0mPD. The highest point of the site is at the southeastern part which is about +15.2mPD.

C. Catchment area of the proposed drainage provision at the application site

1.1.4 According to **Figure 4**, it is noted that the land to surrounding the application site commands a lower level or about the same level as the application site. As such, no external catchment is identified.

D. Particulars of the existing drainage facilities to accept the surface runoff collected at the application site

1.1.5 As shown in **Figure 4,** a public drainage channel is found to the north of the application site.

1.2 Runoff Estimation

1.2.1 Rational method is adopted for estimating the designed run-off

$$Q = k \times i \times A/3,600$$

Assuming that:
i. The area of the entire catchment is approximately 827m^2; (**Figure 4**)
ii. Though the catchment is predominant rural in character, it is assumed that the value of run-off co-efficient (k) is taken as 1.

Difference in Land Datum = 15.2m – 15.0m = 0.2m

$$L = 54m$$

$$\therefore \text{ Average fall } = 0.2m \text{ in } 54m \text{ or } 1m \text{ in } 108m$$

According to the Brandsby-Williams Equation adopted from the "Stormwater Drainage Manual – Planning, Design and Management" published by the Drainage Services Department (DSD),

$$\text{Time of Concentration } (t_c) = 0.14465 \, [\, L/(H^{0.2} \times A^{0.1}) \,]$$

$$t_c = 0.14465 \, [54/ \, (0.37^{0.2} \times 827^{0.1}) \,]$$

$$t_c = 4.87 \text{ minutes}$$

With reference to the Intensity-Duration-Frequency Curves provided in the abovementioned manual, the mean rainfall intensity (i) for 1 in 50 recurrent flooding period is found to be 280 mm/hr

$$\textbf{\textit{By Rational Method}}, \; Q_1 = 1 \times 280 \times 827 / 3{,}600$$

$$\therefore Q_1 = 64.32 \text{ l/s} = 3{,}859.33 \text{ l/min} = 0.064 m^3/s$$

In accordance with the Chart or the Rapid Design of Channels in "Geotechnical Manual for Slopes", 300mm surface U-channel at 1:100 and 1:250 gradient is considered adequate to dissipate all the stormwater accrued by the application site and adjacent land.

1.3 Proposed Drainage Facilities

1.3.1 Subject to the calculations in 1.2 above, it is determined that as-built 300mm concrete surface U-channel at gradient of about 1:100 and 1:250 along the site periphery is adequate to intercept storm water passing through and generated at the application site (**Figure 4**).

1.3.2 The collected stormwater will then be discharged to the existing public drainage channel to the north of the application site via the as-built 375mm surface U-channel outside the application site.

1.3.3 All the as-built drainage facilities will be maintained at the applicant's own expense. Also, surface channel will be cleaned at regular interval to avoid the accumulation of rubbish/debris which would affect the dissipation of storm water.

1.3.4 Sand trap or alike has been provided at the terminal catchpit to avoid the addition of load into public drainage.

1.3.5 The development would neither obstruct overland flow nor adversely affect existing natural streams, village drains, ditches and the adjacent areas, etc.

1.3.6 100mm openings has been provided at the toe of site hoarding so as to allow unobstructed flow of surface runoff from adjacent area.