

**Proposed Temporary Warehouse and Open Storage of Construction Machinery & Construction Material for a Period of 3 Years
at
Lots 171 (Part), 172 (Part), 176 (Part) & 177 (Part) in D.D. 87, Ta Kwu Ling, New Territories**

Annex 1 Drainage Proposal

1.1 Existing Situation

A. Site particulars

1.1.1 The application site occupies an area of about 6,800m².

1.1.2 The site is serviced by a vehicular access leading from Ping Che Road. The area adjacent to the proposed development is mainly rural in nature and some open storage yards were found.

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

1.1.3 It has a gradient sloping from the southwest to northeast from about +15.4mPD to +12.4mPD. (**Figure 4**)

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

1.1.4 The land to the north, south, west and east is found lower in level than the application site. As such, no external catchment has been 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 river is found to the immediate north of the application site. The stormwater intercepted by the proposed surface drain at the application site will be dissipated to the said river.

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 catchment is 6,800m²; (**Figure 4**)
- ii. The application site has been fully paved. It is assumed that the value of run-off co-efficient (k) is taken as 1.

$$\text{Difference in Land Datum} = 15.4\text{m} - 12.4\text{ m} = 3\text{m}$$

$$L = 180\text{m}$$

$$\therefore \text{Average fall} = 3\text{m in } 180\text{m} \text{ or } 1\text{m in } 60\text{m}$$

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

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

$$t_c = 0.14465 [180 / 1.67^{0.2} \times 6,800^{0.1}]$$

$$t_c = 9.72 \text{ minutes}$$

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 225 mm/hr

By Rational Method,

$$Q_1 = 1 \times 225 \times 6,800 / 3,600$$

$$\therefore Q_1 = 425 \text{ l/s} = 25,500 \text{ l/min} = 0.43\text{m}^3/\text{s}$$

In accordance with the Chart or the Rapid Design of Channels in “Geotechnical Manual for Slopes”, for an approximate gradient of about 1:67 and 1:73 in order to follow the gradient of the application site, 525mm surface U-channel along the site periphery is considered adequate to dissipate all the stormwater accrued by the application site.

1.3 Proposed Drainage Facilities

- 1.3.1 Subject to the calculations in 1.2 above, it is determined that proposed 525mm concrete surface U-channel 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 directly to the river to the north of the application site.
- 1.3.3 All the proposed drainage facilities will be provided and maintained at the applicant's own expense. Also, sand trap and surface U-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 The provision of the proposed surface channel will follow the gradient of the application site. All the proposed drainage facilities will be constructed and maintained at the expense of the applicant.
- 1.3.5 Prior to the commencement of the drainage works, the applicant will seek consent from District Lands Office/North and relevant land owners for the provision of drainage facilities outside the application site.
- 1.3.6 The proposed development would not affect the existing ditches, drains and obstruct the flow of the flow of surface runoff.
- 1.3.7 The provision of trees and surface channel at site boundary is detailed hereunder:
- (a) Soil excavation at site periphery, is inevitably for the provision of surface channel. The accumulation of excavated soil at the site periphery would obstruct the free flow of the surface runoff from the surroundings. Hence, the soil will be cleared at the soonest possible after the completion of the excavation process.
 - (b) In view of that soil excavation may be continued for several working days, surface channel will be dug in short sections and all soil excavated will be cleared before the excavation of another short section.
 - (c) No leveling work will be carried at the site periphery. The level of the site periphery will be maintained during and after the works. The works at the site periphery would not either alter the flow of surface runoff from adjacent areas.
 - (d) Holes will be provided at the toe of site hoarding to allow unobstructed flow of surface runoff.

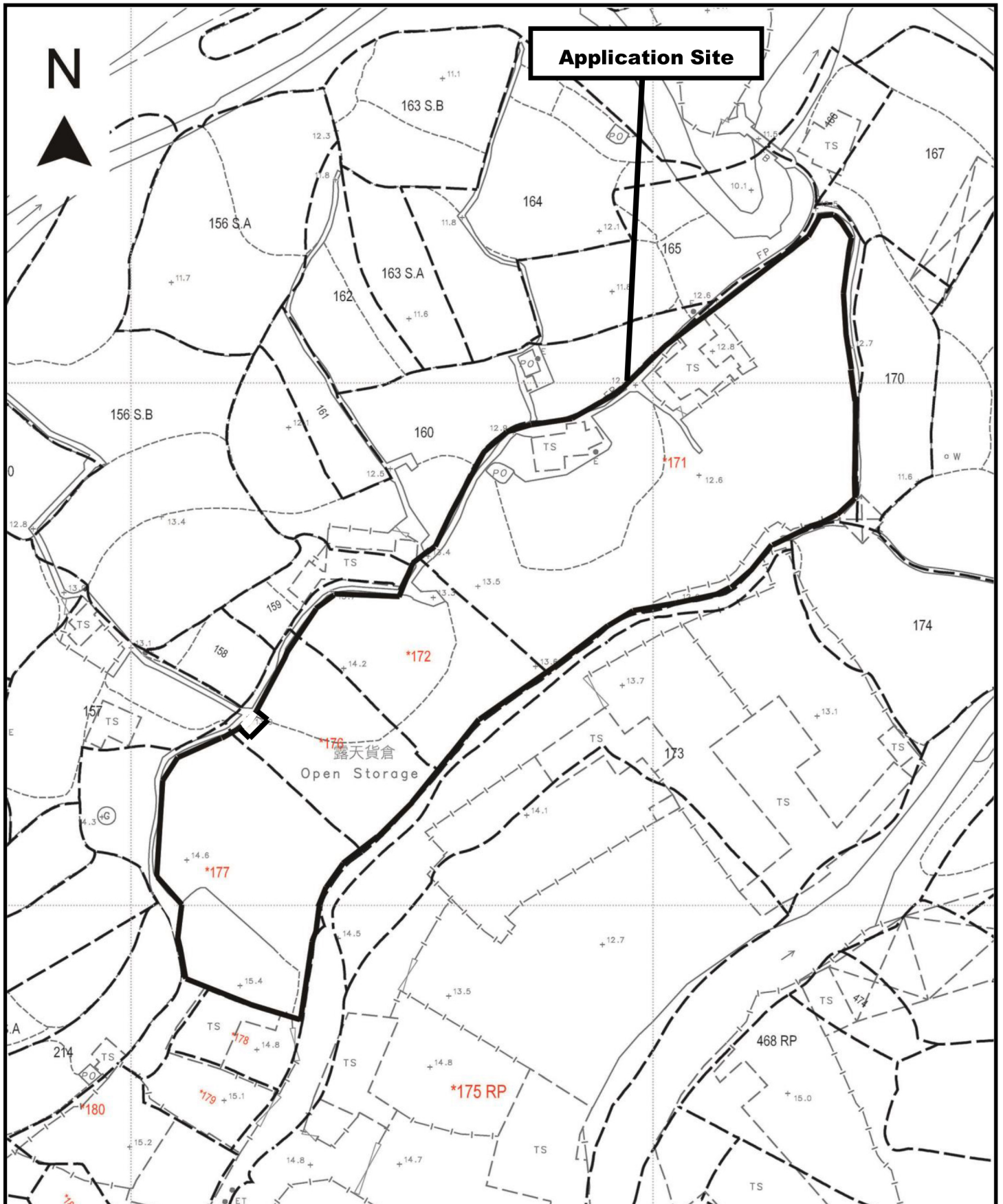
Annex 2 Estimated Traffic Generation

- 2.1 The application site is serviced by a vehicular access leading from Ping Che Road. Having mentioned that the site is intended for open storage and warehouse for storage of construction materials, traffic generated by the proposed development is not significant.
- 2.2 There will be 2 loading/unloading space of 11m x 3.5m for medium/heavy goods vehicle for loading/unloading purpose and 2 parking spaces of 5m x 2.5m for staff use. No visitors are allowed to enter the application site. The estimated traffic generation/attraction rate is shown below:

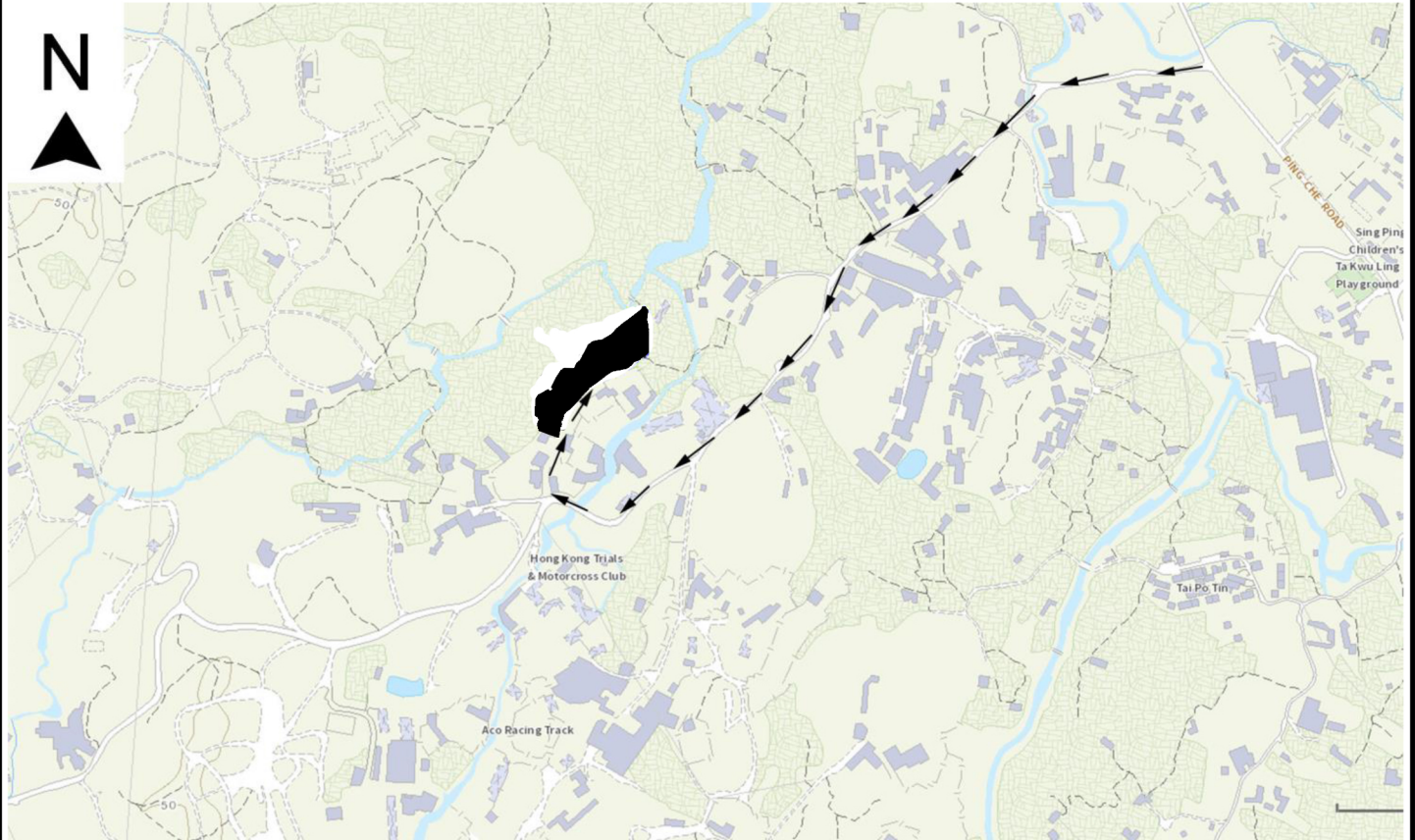
| Type of Vehicle | <u>Average Traffic Generation Rate</u> (pcu/hr) | <u>Average Traffic Attraction Rate</u> (pcu/hr) | <u>Traffic Generation Rate at Peak Hours</u> (pcu/hr) | <u>Traffic Attraction Rate at Peak Hours</u> (pcu/hr) |
|-----------------------------------|--|--|--|--|
| Private car | 0.22 | 0.22 | 1 | 1 |
| Medium/ heavy goods vehicle | 0.89 | 0.89 | 2 | 2 |
| Total | 1.11 | 1.11 | 3 | 3 |

Note:

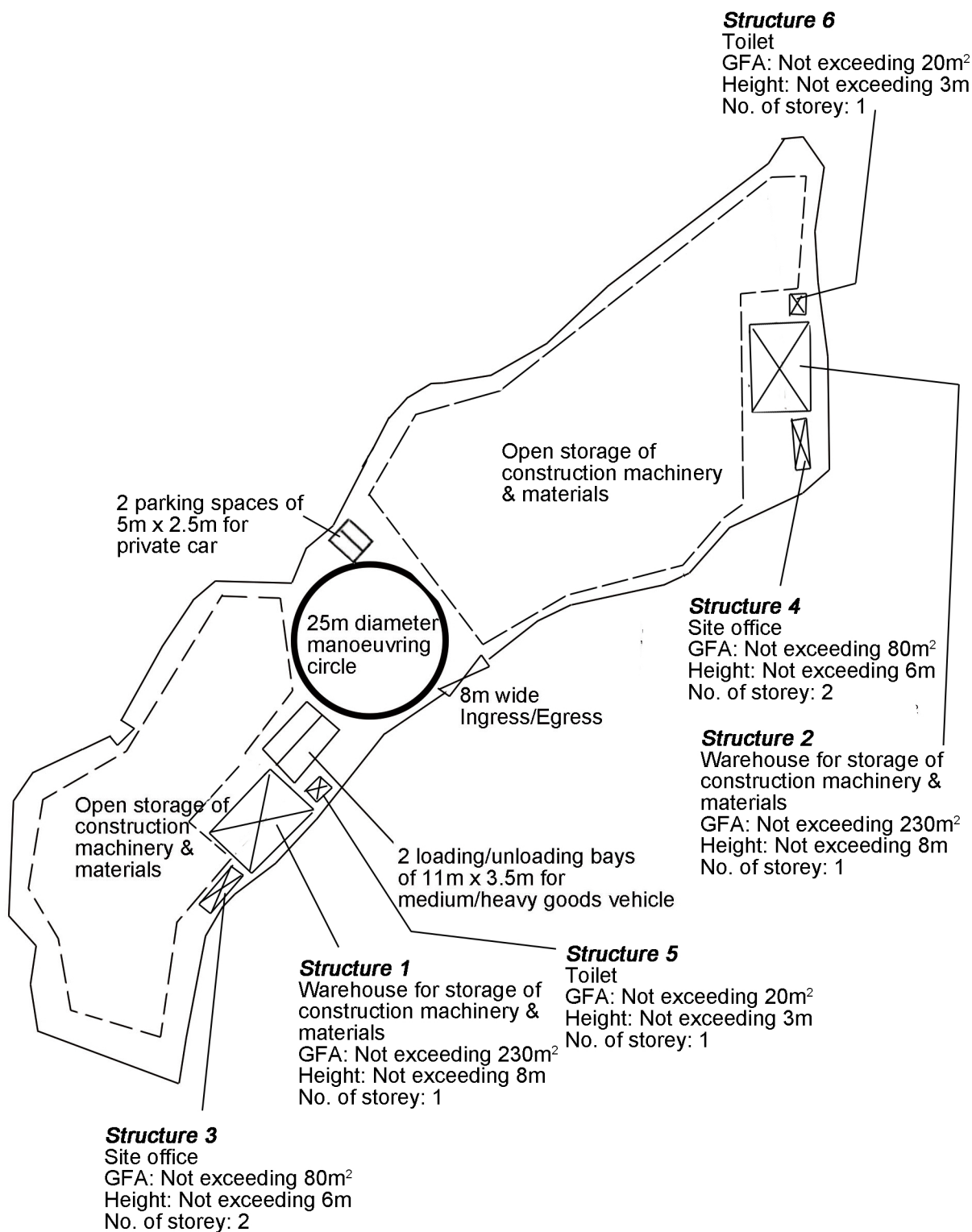
1. The operation hours of the proposed development is from 9:00a.m. to 6:00p.m. from Mondays to Saturdays. No operation will be held on Sundays and public holidays;
 2. The pcu of medium/heavy goods vehicle are taken as 2; &
 3. Morning peak is defined as 7:00a.m. to 9:00a.m. whereas afternoon peak is defined as 5:00p.m. to 7:00p.m.
- 2.3 In association with the intended purpose, adequate space for manoeuvring (25m diameter) would be provided within the application site. Sufficient space within the application site is provided so that no queueing up of vehicle would be occurred outside the application site.



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| | <p>Drawing No. 圖號:</p> <p>Figure 2</p> | <p>Scale 比例:</p> <p>Not to scale</p> |



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