



### Approach to Estimation of Daily Runoff Volume

It is assumed that only a daily rainfall of greater than 10 mm per day and a rainfall intensity greater than 2 mm/hour(hr) would give rise to runoff. The runoff percentage is calculated using the average rainfall data recorded at the Hong Kong Observatory (HKO) weather station in the period from 2019 to 2023. The daily runoff value and the runoff percentage are calculated as follows:

$$\text{Daily runoff value (mm/day)} = \text{Average daily rainfall of the month (mm/day)} \\ \times \text{Runoff percentage of the month}$$

where

$$\text{Runoff percentage of the month} = \frac{\text{Sum of rainfall for days with total rainfall} > 10 \text{ mm} \\ \text{and with maximum rainfall intensity} > 2 \text{ mm/hr}}{\text{Total rainfall of the month}} \times 100\%$$

The daily volume of runoff generated from the Project development is estimated as follows:

$$\text{Daily volume of runoff (m}^3\text{/day)} = \text{Daily runoff value (mm/day)} \times \text{Impermeable area (km}^2\text{)} \times 1000$$

The storm water catchment area of the Project is expected to comprise both paved and landscaping areas. It is conservatively assumed that 100% of the area would be paved or impermeable.

The daily surface runoff volumes estimated for the I-PARK2 area are summarized in **Table C1**. The average daily runoff value of the month is calculated for each year from 2019 to 2023. The runoff values estimated for different years are averaged and then multiplied by the storm catchment area to estimate the daily runoff volume in each month.

**Table C1 Daily Flow of Surface Runoff**

Month	Year	Runoff %	Average Daily Rainfall (mm/day)	Daily Runoff Value (mm/day)	5-year Average Daily Runoff Value (mm/day)	Storm Catchment Area of I-PARK2 Development Area = 87,000 m <sup>2</sup>
						Daily Runoff Volume (m <sup>3</sup> /day)
January	2019	0.00%	0.255	0.000	0.080	7
	2020	71.14%	0.565	0.402		
	2021	0.00%	0.211	0.000		
	2022	0.00%	0.200	0.000		
	2023	0.00%	0.666	0.000		
February	2019	83.61%	2.659	2.223	2.481	216
	2020	81.79%	2.840	2.322		
	2021	96.36%	2.255	2.173		
	2022	92.77%	6.129	5.686		
	2023	0.00%	0.182	0.000		
March	2019	74.53%	6.205	4.624	1.891	165
	2020	23.59%	1.484	0.350		
	2021	0.00%	0.211	0.000		
	2022	88.82%	3.102	2.755		
	2023	72.07%	2.397	1.727		
April	2019	72.37%	6.297	4.557	1.666	145
	2020	83.82%	2.708	2.270		
	2021	0.00%	1.207	0.000		





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						Daily Runoff Volume (m <sup>3</sup> /day)
	2022	0.00%	0.200	0.000		
	2023	54.96%	2.738	1.505		
May	2019	72.20%	7.769	5.610	7.279	633
	2020	96.24%	11.452	11.021		
	2021	42.35%	2.152	0.911		
	2022	95.66%	14.242	13.624		
	2023	87.67%	5.965	5.229		
June	2019	92.65%	14.415	13.355	14.239	1,239
	2020	93.48%	13.335	12.465		
	2021	91.41%	21.022	19.215		
	2022	94.63%	11.753	11.122		
	2023	91.37%	16.457	15.037		
July	2019	89.83%	10.735	9.644	6.592	574
	2020	62.71%	4.092	2.566		
	2021	91.70%	12.313	11.290		
	2022	93.01%	5.168	4.806		
	2023	81.50%	5.710	4.653		
August	2019	92.38%	19.324	17.852	12.787	1,112
	2020	94.35%	14.539	13.718		
	2021	91.85%	11.381	10.453		
	2022	92.86%	19.895	18.474		
	2023	75.04%	4.581	3.437		
September	2019	87.19%	6.690	5.833	14.239	1,239
	2020	95.39%	23.735	22.640		
	2021	79.29%	4.387	3.478		
	2022	79.32%	5.738	4.552		
	2023	97.34%	35.638	34.692		
October	2019	93.85%	4.850	4.552	9.455	823
	2020	91.89%	4.652	4.274		
	2021	98.02%	20.418	20.013		
	2022	83.40%	1.661	1.385		
	2023	96.36%	17.694	17.050		
November	2019	0.00%	0.007	0.000	0.548	48
	2020	0.00%	0.228	0.000		
	2021	0.00%	0.220	0.000		
	2022	61.24%	4.477	2.742		
	2023	0.00%	0.137	0.000		
December	2019	0.00%	0.506	0.000	0.000	0
	2020	0.00%	0.081	0.000		
	2021	0.00%	0.685	0.000		
	2022	0.00%	0.894	0.000		
	2023	0.00%	0.092	0.000		

