Appendix B

Revised Traffic Review

1. Introduction

1.1 Objective

1.1.1 The Application Site is located in Planning Area 32C within the Hung Shui Kiu New Development Area (HSK NDA). The site falls within "Commercial (2)" ("C(2)") under the current Hung Shui Kiu & Ha Tsuen (HSK & HT) Outline Zoning Plan (OZP) with various types of commercial use (e.g. office, retail, hotel, etc.) permitted as of right within this zone.

1.1.2 Under the current development proposal, the Applicant proposes to include 'Flat' use in this zone to form a mixed-use development (i.e. **Proposed Scheme**). As 'Flat' use is a Column 2 use under the OZP requiring planning permission from Town Planning Board (TPB), S.16 planning application is submitted for the proposed inclusion of residential element in the zone. This Traffic Review Report is prepared in support of the S.16 planning application by reviewing the vehicular access arrangement and internal transport provisions of the Proposed Scheme, and comparing the Proposed Scheme with the as-of-right permitted commercial scheme to assess the potential traffic impact (if any) of the project.

2. PROPOSED DEVELOPMENT

2.1 Development Schedule

2.1.1 For the purpose of assessment, the as-of-right permitted commercial scheme (or known as **Hypothetical Development Scheme**) is formulated based on the commercial mix suggested in the previous version of the HSK & HT Outline Development Plan (ODP) (i.e. No. D/HSK/1) for the Application Site. The relevant information is provided in **Table 2-1**.

Table 2-1 - Hypothetical Development Schedule

Area 32C	
Retail (~20%)	28,005 m^2 GFA
Office (~50%)	70,012 m^2 GFA
Hotel (~30%)	42,007 m^2 GFA (~1,025 rooms) (1)
Total	*140,024 m^2 GFA*

Remark:
(1) Based on 40.98 m^2 for each hotel room

2.1.2 Under the **Proposed Scheme**, majority (80%) of the total PR / GFA permissible for the site would be designated for the as-of-right permitted commercial use (i.e. 112,019 m² NGFA), whereas the remaining (20%) permissible PR / GFA would be used for the proposed residential development (i.e. 28,005 m² DGFA). The proposed residential use would be clustered in the south-eastern portion of the site (Site A), whereas the remaining portion of the site (Site B) would be used for commercial purpose (e.g. office and hotel) without any residential element. The development schedule of the Proposed Scheme is shown in **Table 2-2**.

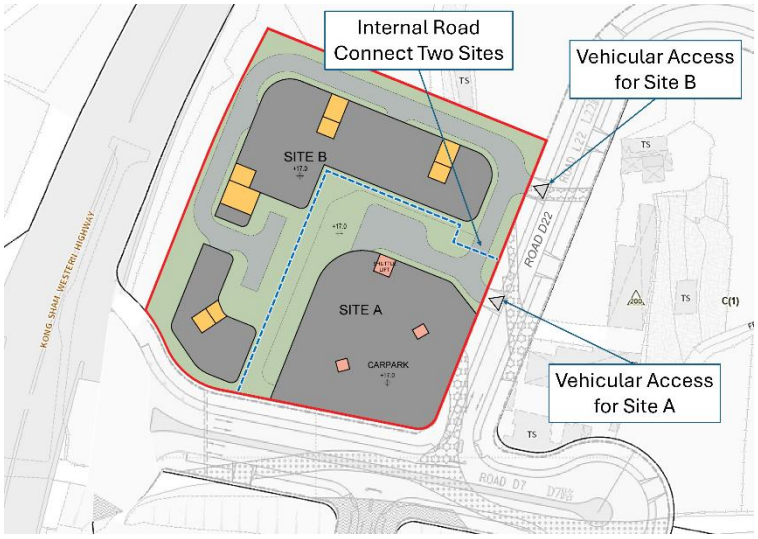
Table 2-2 - Proposed Development Schedule

Development Parameters	Area 32C Site A	Area 32C Site B
Site Area	7,089 m^2	10,414 m^2
Domestic Portion		
Domestic GFA	28,005 m^2	-
No. of Residential Towers	2	-
No. of Units	590	-
Average Flat Size	~47 m^2	-
Non-domestic Portion		
Non-Domestic GFA	-	Hotel – 67,211 m^2 (~ 1,640 rooms) (1) Office – 44,808 m^2 (2)

Remark:
(1) Based on 40.98 m^2 for each hotel room
(2) Around 40% of the total non-domestic GFA in Area 32C will be implemented at the later stage

2.2 Development Access

2.2.1 As indicated in the Outline Development Plan and the Road Gazette Plan, two vehicular access would be provided to serve Area 32C. As shown in **Drawing 2.1**, both the development access for Site A and Site B would be located at Road L22. The internal road on the two sites would be connected to ger allow more flexibility.



Drawing 2.1 - Vehicular Accesses

2.3 Internal Transport Facilities

2.3.1 The parking and loading / unloading facilities of the proposed development will be provided in accordance with the requirements as stipulated in the latest Hong Kong Planning Standards and Guidelines (HKPSG). The respective requirements are summarized in **Table 2-3**.

Table 2-3 - HKPSG Parking and Servicing Facilities Provision Requirements

	HKPSG Requirements
Private Car Parking Spaces	
Private Housing – Private Car Parking Spaces	GPS x R1 (1) x R2 (2) x R3 (3) For 40 m^2 < flat size ≤ 70 m^2 = 1 space per 4 – 7 flats x 1.2 x 0.75 x 1 = 0.9 spaces per 4 – 7 flats
Private Housing – Visitor Private Car Parking Spaces	5 spaces per block
Hotel – Private Car Parking Spaces	1 car space per 100 rooms
Office – Private Car Parking Spaces	For the first 15,000m^2 GFA, 1 car space per 150 – 200 m^2 GFA. Above 15,000 m^2 GFA, 1 car space per 200 – 300 m^2 GFA
Motorcycle Parking Spaces	
Private Housing – Motorcycle Parking Spaces	1 space per 100 – 150 flats
Hotel – Motorcycle Parking Spaces	5% – 10% total provision for private cars
Office – Motorcycle Parking Spaces	5% – 10% total provision for private cars
Loading and Unloading Bays	
Private Housing – Loading and Unloading Bay	1 space for every 800 flats subject to min. 1 bay per block
Hotel – Loading and Unloading Bay	0.5 – 1 loading / unloading bays for goods vehicles per 100 rooms
Office – Loading and Unloading Bay	1 loading / unloading bay for goods vehicles for every 2,000 to 3,000 m^2 or part thereof, GFA
Lay-bys	
Hotel – Taxi / Private Cars Lay-by	4 lay-bys for taxis and private cars for ≥ 600 rooms
Hotel – Single-Deck Tour Buses Lay-by	3 lay-bys for single-deck tour buses for ≥ 900 rooms
Office – Taxi / Private Cars Lay-by	1 lay-by for taxis and private cars for every 20,000 m^2 or part thereof, GFA

	HKPSG Requirements
Bicycle Parking Spaces	
Private Housing – Bicycle Parking Spaces	1 space per 5 flats for residents

Remark:
(1) For 40 m^2 < flat size ≤ 70 m^2, and R1 of 1.2 is adopted
(2) An accessibility adjustment ratio (R2) of 0.75 has been adopted with the site falling into the 500 m radius of future Hung Shui Kiu MTR Station.
(3) The site area of Site A is 7,089 m^2. With domestic GFA of 28,005 m^2 provided with equivalent domestic plot ratio of 3.95 for the Site A, a development intensity adjustment ratio (R3) of 1 is adopted.

2.3.2 Taken into consideration the proximity / convenience for access to public transport services (excluding rail) and the availability of public car-parking spaces, a Global Parking Standard (GPS) of 6 is proposed for the residential development. In light of the HKPSG requirements given in **Table 2-3**, the proposed provisions for the Area 32C Site A and Site B (before the implementation of 44,808 m^2 office GFA) are summarized in **Table 2-4**. The proposed provisions for the Area 32C Site A and Site B (after the implementation of 44,808 m^2 office GFA at the later stage) are summarized in **Table 2-5**.

Table 2-4 - Proposed Internal Transport Facilities Provisions (Before the implementation of 44,808 m^2 office GFA in Site B)

Area	Land Use	Parameter	Type	Required Provision	Proposed Provision (GPS = 6)
32C (Site A)	Residential	590 units	Residential Parking Space 40<Flat Size≤70	76 - 133	89
		590 units	Visitors' Parking Space	10	10
			Motorcycle Parking Space	4 - 6	6 (1)
			Loading / Unloading Bay	2	2
			Bicycle Parking Space	118	118
32C (Site B)	Hotel	1,640 rooms	Car Parking Space	17	17
			Motorcycle Parking Space	1 - 2	2 (2)
			Loading / Unloading Bay for Goods Vehicle	9 - 17	9 (3)
			Lay-by for taxi and private car	4	4
			Lay-by for single-deck tour buses	3	3

Remark:
(1) Based on 1 motorcycle space per 100 flats
(2) Based on 10% total provision for private car
(3) Based on 0.5 loading bay per 100 rooms

Table 2-5 - Proposed Internal Transport Facilities Provisions (After the implementation of 44,808 m² office GFA at the later stage)

Area	Land Use	Parameter	Type	Required Provision	Proposed Provision (GPS = 6)
32C (Site A)	Residential	590 units	Residential Parking Space 40<Flat Size≤70	76 - 133	89
		590 units	Visitors' Parking Space	10	10
			Motorcycle Parking Space	4 - 6	6 (1)
			Loading / Unloading Bay	2	2
			Bicycle Parking Space	118	118
32C (Site B)	Hotel	1,640 rooms	Car Parking Space	17	17
			Motorcycle Parking Space	1 - 2	2 (2)
			Loading / Unloading Bay for Goods Vehicle	9 - 17	9 (3)
			Lay-by for taxi and private car	4	4
			Lay-by for single-deck tour buses	3	3
	Office	44,808 m²	Car Parking Space	175 - 250	206 (4)
			Motorcycle Parking Space	9 - 25	21 (2)
			Loading / Unloading Bay	15 - 23	15 (5)
			Lay-by for taxi and private car	3	3

Remark:
(1) Based on 1 motorcycle space per 100 flats
(2) Based on 10% total provision for private car
(3) Based on 0.5 loading bay per 100 rooms
(4) For the first 15,000 m² GFA, based on 1 car space per 175 m² GFA. Above 15,000 m² GFA, based 1 car space per 250 m² GFA
(5) Based on 1 loading bay per 3,000 m² GFA

3. Traffic Impact

3.1 Trip Generation

3.1.1 To compare the development traffic generations between the Proposed Scheme and the Hypothetical Scheme, references were made to the trip generation and attraction rates as stipulated in Annex C of Transport Planning and Design Manual (TPDM) Volume 1 Chapter 3 published by Transport Department. The adopted trip rates are presented in **Table 3-1**.

Table 3-1 - Trip Generation and Attraction

Land Use	Unit	Trip Rate			
		AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
Private Housing (Flat Size = 60 m^2)	pcu/hr/flat	0.0718	0.0425	0.0286	0.037
Retail	pcu/hr/100 sqm GFA	0.2296	0.2434	0.31	0.3563
Office	pcu/hr/100 sqm GFA	0.1703	0.2452	0.1573	0.1175
Hotel	pcu/hr/guest room	0.1329	0.1457	0.129	0.1546

3.1.2 Based on the proposed development schedule as given in **Table 2-2** and the hypothetical development schedule as given in **Table 2-1**, the estimated trips are presented in **Table 3-2**.

Table 3-2 - Trip Generation and Attraction

Land Use	Parameters	Trip Generation / Attraction (pcus/hr)			
		AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
Proposed Scheme (A)					
Area 32C (Site A)					
Private Housing	590 units	42	25	17	22
Area 32C (Site B)					
Office	44,808 m^2	76	110	70	53
Hotel	1,640 rooms	218	239	212	254
Total (A) (two-way)		*710*		*628*	
Hypothetical Scheme (B)					
Area 32C (Sites A and B)					
Retail	28,005 m^2	64	68	87	100
Office	70,012 m^2	119	172	110	82
Hotel	1,025 rooms	136	149	132	158
Total (B) (two-way)		*708*		*669*	
Total (A) – Total (B) (two-way)		***2***		***-41***	

3.1.3 As shown in **Table 3-2**, the traffic generations under the Proposed Scheme would be similar to the Hypothetical Scheme in AM Peak and much lesser than the Hypothetical Scheme in PM Peak. Hence the traffic impacts imposed on the local road network under the Proposed Scheme would be similar / lesser and there should not be any insurmountable traffic impact imposed on the surrounding road network.

4. Conclusion

4.1.1 In light of findings of this traffic review, it is concluded that there is no insurmountable traffic impact imposed on the surrounding road network due to the proposed development. With all the transport facilities provided within the development sites in place, the proposed development under the Proposed Scheme is technically feasible in traffic terms.