Appendix 7

SEWERAGE IMPACT ASSESSMENT

URBAN GREEN

Proposed Amendment to the Approved Sha Tin Outline Zoning Plan No. S/ST/40 from "Industrial (1)" zone to "Residential (Group A)10" zone at Nos.8-14 Siu Lek Yuen Road, Sha Tin, New Territories (STTL Nos.196 and 276)

Sewerage Impact Assessment Report

Reference: P161-SIA-I1
Date: August 2026
Confidential

URBAN GREEN

Proposed Amendment to the Approved Sha Tin Outline Zoning Plan No. S/ST/40 from "Industrial (1)" zone to "Residential (Group A)10" zone at Nos.8-14 Siu Lek Yuen Road, Sha Tin, New Territories (STTL Nos.196 and 276)

Sewerage Impact Assessment Report

Checked and Approved by:

Joan Choi
Director

Reference: P161-SIA-I1

Date: 26 August 2026

Issue	Status	Prepared By	Date	Checked by	Date	Approved By	Date
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[redacted]

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1 Introduction

1.1 Background

Urban Green Consultants Limited (UGC) has been appointed to prepare a Sewerage Impact Assessment (SIA) to support the Section 12A ("S12A") Planning Application / Rezoning Request ("RR") to amend the Approved Sha Tin Outline Zoning Plan No. S/ST/40 (the Approved OZP) gazetted on 17 July 2026 at Nos.8-14 Siu Lek Yuen Road, Sha Tin, New Territories (the "Site"/ "Rezoning Site") (Sha Tin Town Lot ("STTL") Nos.196 and 276).

The Rezoning Site has an area of approx. 7,668m^2 and is currently zoned Industrial (1)" ("I(1)") on the Approved OZP. There are no development restrictions on plot ratio ("PR"), building height ("BH"), gross floor area ("GFA") or site coverage ("SC") stipulated on "I(I)" zone. 'Flat' is neither a Column 1 nor Column 2 use under the "I(1)" zone. This RR seeks to rezone the Site from "I(1)" zone to "Residential (Group A)10" ("R(A)10") zone subject to a PR restriction of 6 and BH restriction of 127mPD, as stipulated on the Plan, to facilitate the comprehensive redevelopment of two(2) existing Industrial Buildings ("IBs") into a private residential development with commercial uses ("Proposed Redevelopment"). An Indicative Development Scheme (Appendix 1 of the Planning Statement refers) is prepared to demonstrate the feasibility of the proposed zoning and to illustrate the proposed zoning parameters.

1.2 Objective of the SIA

The objectives of this SIA are to assess the potential sewerage impact arising from the Proposed Redevelopment and recommend mitigation measures, if necessary, to alleviate the impacts.

1.3 Report Structure

The remaining chapters of this report are shown below:

Chapter 2 – Site Description

Chapter 3 – Evaluation of Sewerage Impact

Chapter 4 – Results and Discussion

Chapter 5 – Conclusion

2 Site Description

2.1 Site Location and Its Environs

The Rezoning Site is located on Siu Lek Yuen Road within Sha Tin District, to the southeast of Shing Mun River. In the immediate surroundings are Sha Tin Industrial Centre Block A and B to the west, Siu Lek Yuen Road Playground to the north, the PCCW Yuen Chau Kok Telephone Exchange and Planned Student Hostel to the east, and the KMB Sha Tin Depot to the south. Figure 2.1 shows the Site location and its environs.

2.2 Site characteristics and Proposed Uses

The Proposed Redevelopment comprises of two 32-storey residential towers above a 2-storey Podium (including carpark, retail shops and an eating place), and a 1-storey clubhouse and podium garden, at a proposed BH of 127mPD and with a PR of 6. The Proposed Redevelopment will provide a total of 928 residential flats, with a total gross floor area of 46,008 m^2.

The year of occupancy of the Proposed Redevelopment is expected to be Year 2033.

2.3 Existing Sewerage Condition

Based on the DSD Drainage Records, the existing sewerage system near the Rezoning Site is shown in Figure 3.1. There is an existing 600mm - 1350mm gravity sewer network receiving sewage flow from the existing residential, commercial and industrial developments located from east of Yuen Hong Street to north and northwest of Siu Lek Yuen Road.

According to the latest information, the Rezoning Site will be served by public sewers along Siu Lek Yuen Road. The sewage generated from the Proposed Redevelopment will be discharged to the existing 225mm diameter sewer at Manhole A4 (Manhole no.: FMH4037802 as Figure 3.1 refers).

3 Evaluation of Sewerage Impact

3.1 Assumptions and Methodology

The terminal manhole from the Proposed Redevelopment will be connected to the existing 225mm diameter sewer at Manhole A4 (Manhole no.: FMH4037802) at Siu Lek Yuen Road (refer to Figure 3.1). The adequacy in capacities of the existing sewers along Siu Lek Yuen Road has been checked on the existing downstream flow estimation and estimation of future sewage generated from the Proposed Redevelopment.

Full bore flow is adopted for segments A1 - A2 and C1 - A5 to represent the flow of upstream developments. According to the drainage plans from DSD, manhole A2 (Manhole No.: FMH4037800) will collect sewage from PCCW Yuen Chau Kok Telephone Exchange and Alva Hotel by Royal. The sewage generated by City One Shatin will be discharged into manhole A7 (Manhole No.: FMH4037741).

The unit flow factors as recommended in the Environmental Protection Department's (EPD's) "*Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning*" (hereafter as "GESF") published by EPD in 2005 has been adopted in the assessment.

3.2 Sewage Generation

3.2.1 Sewage Generation

The sewage generation from the Proposed Redevelopment includes the flow contribution for the residents, employees of the clubhouse, the eating place and retail shops, as well as swimming pool backwash. The flow generation from backwashing of the proposed swimming pool is included in the assessment. By assuming a 6-hour turnover rate and a 7-minute backwash duration, it is estimated that the design flow for the proposed swimming pool backwashing is approximately 6.3 m^3/day.

For the sewage flow estimation from the Proposed Redevelopment and the surrounding sources of sewage, the planning unit flow factors as stated in the GESF has been adopted and are summarised in Table 3.1:

Table 3.1 Unit Flow Factor Adopted in the Calculation

Type of People	Unit	Unit Flow Factors (m^3/day)	Reference
Resident (Proposed Redevelopment)	Person	0.37	Domestic - Private R3 in Table T-1 of GESF
Employee (Proposed Redevelopment - Clubhouse and Retail Shops)	Person	0.28	Commercial Employee + J11 - Community, Social & Personal Services in Table T-2 of GESF
Employee (Proposed Redevelopment - Eating Place)	Person	1.58	Commercial Employees + J10 Restaurants & Hotels in Table T-2 of GESF
Customer (Alva Hotel by Royal)	Person	-	Generation from customers has been considered in the generation from employees.
Employee (Alva Hotel by Royal)	Person	1.58	Commercial Employees + J10 - Restaurants & Hotels in Table T-2 of GESF
Employee (PCCW Yuen Chau Kok Telephone Exchange - Office)	Person	0.28	Commercial Employees in Table T-2 of GESF
Employee (PCCW Yuen Chau Kok Telephone Exchange - Kitchen)	Person	1.58	Commercial Employees + J10 Restaurants & Hotels in Table T-2 of GESF

Type of People	Unit	Unit Flow Factors (m^3/day)	Reference
Employee (PCCW Yuen Chau Kok Telephone Exchange - Canteen)	Person	-	Generation from canteen has been considered in the generation from kitchen.
Resident (City One Shatin)	Person	0.37	Domestic - Private R3 in Table T-1 of GESF
Employee (Supermarket, Wet Market and Shops in City One Shatin)	Person	0.28	Commercial Employees + J4 Wholesale & Retail in Table T-2 of GESF

The calculations of sewage generation have been provided in Appendix A for reference.

3.2.2 Sewerage Capacity

According to the "*Sewerage Manual – Key Planning Issues and Gravity Collection System*" published by DSD in 2013, the capacities of respective sewers have been calculated based on Colebrook-White equation for circular pipes:

$$V = -\sqrt{(8gDs)}\log\left(\frac{ks}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

where V = mean velocity (m/s)
g = gravitational acceleration (m/s^2)
D = pipe diameter (m)
k_s = hydraulic pipeline roughness (m)
v = kinematic viscosity of fluid (m^2/s)
s = frictional slope (energy gradient due to frictional loss)

The sewerage impact on various segments of the sewer was evaluated by comparing the estimated peak flow against the capacity of the respective sewer segments. The detailed calculations are provided in Appendix B.

4 Results and Discussion

4.1 Capacity of Sewers

Based on the results, the total estimated flow of the Proposed Redevelopment will be approximately 969.31 m^3/day. The terminal manhole from the Rezoning Site will be connected to the existing 225 mm diameter sewer at Manhole A4 (refer to Figure 3.1).

The capacities of each segment for the concerned downstream sewers (Segments P1 - A4 and A4 - A10) as shown in Figure 3.1 between each manhole have been evaluated. The percentage of used capacity for the concerned sewers (i.e. Segments P1 - A4 and A4 - A10) ranges from 30% to 100%. Estimation of the flows and capacities are detailed in Appendix A and Appendix B, respectively. Table 4.1 shows the estimation of existing pipe capacities of upstream sewers (Segments A1 - A4) and concerned downstream sewers (Segments P1 - A4 and A4 - A10).

Table 4.1 Estimation of Existing Pipe Capacities

Pipe Segment	Diameter, m	Flow Capacity, m^3/s	Estimated Peak Flow, m^3/s	Used Capacity, %
A1 - A2	0.600	0.362	0.362	100% (Full bore)
A2 - A3	0.600	1.475	0.406	28%
A3 - A4	0.750	0.731	0.406	55%
P1 - A4	0.225	0.126	0.092	73%
A4 - A5	0.750	0.790	0.472	60%
C1 - A5	0.900	0.956	0.956	100% (Full bore)
A5 - A6	1.200	1.849	1.311	71%
A6 - A7	1.200	2.016	1.311	65%
A7 - A8	1.200	1.920	1.397	73%

Pipe Segment	Diameter, m	Flow Capacity, m^3/s	Estimated Peak Flow, m^3/s	Used Capacity, %
A8 - A9	1.350	3.194	1.397	53%
A9 - A10	1.350	4.589	1.397	30%

Based on the assessment results as presented in Appendix B, all segments of sewage pipes will have enough capacity to cater with the peak discharge flows as estimated under the worst-case scenario.

As such, there will be no adverse sewerage impact arising from the Proposed Redevelopment and hence no upgrading works on the existing sewage network will be required.

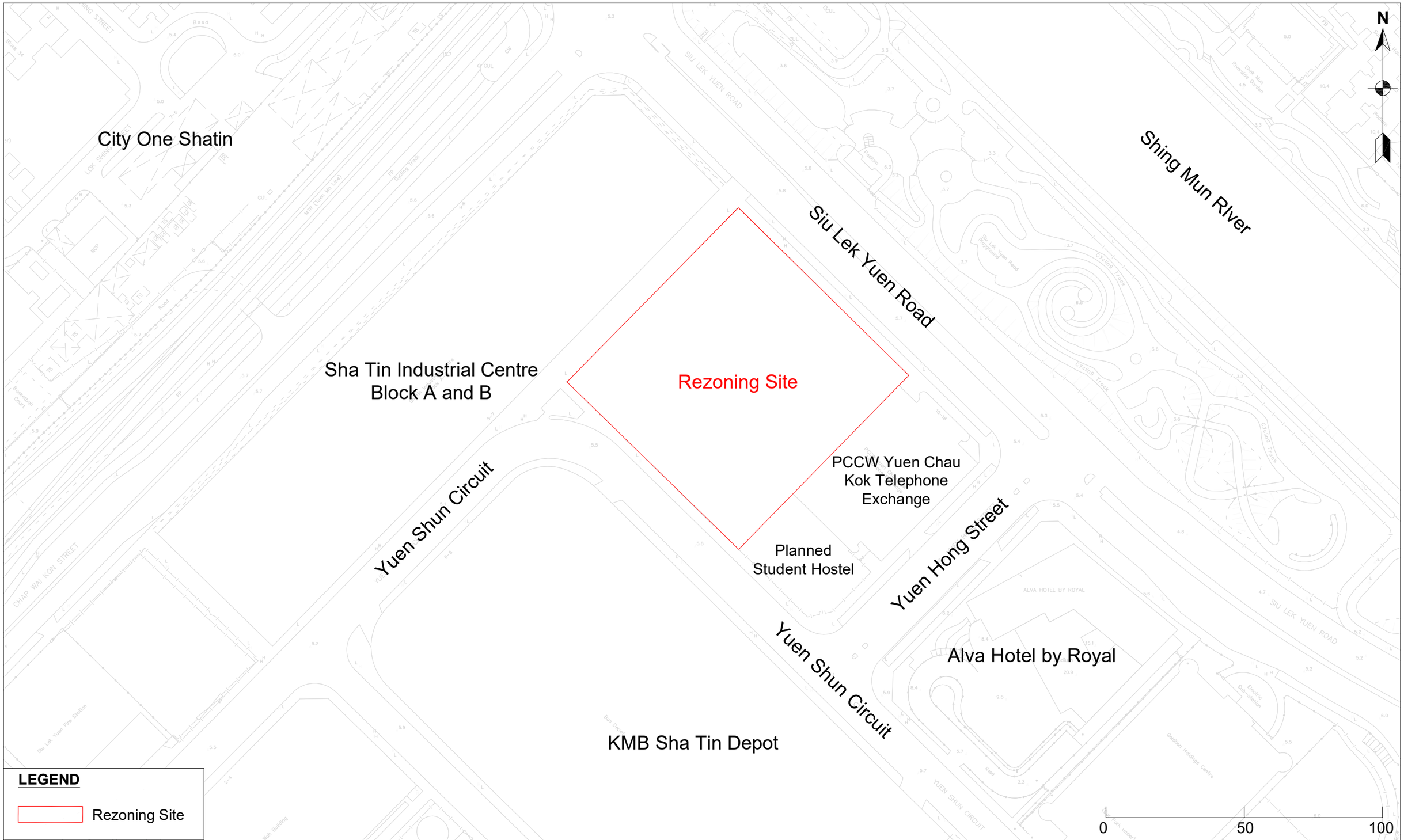
5 Conclusion

A Sewerage Impact Assessment (SIA) has been conducted to evaluate the possible impacts on the local sewerage network due to the operation of the Proposed Redevelopment.

The assessment findings demonstrated and confirmed that there should be sufficient sewage capacity for public sewers along Siu Lek Yuen Road to handle sewage generation from the Proposed Redevelopment.

Based on the above, it is concluded that the sewerage impact arising from the Proposed Redevelopment should be acceptable.

Figures



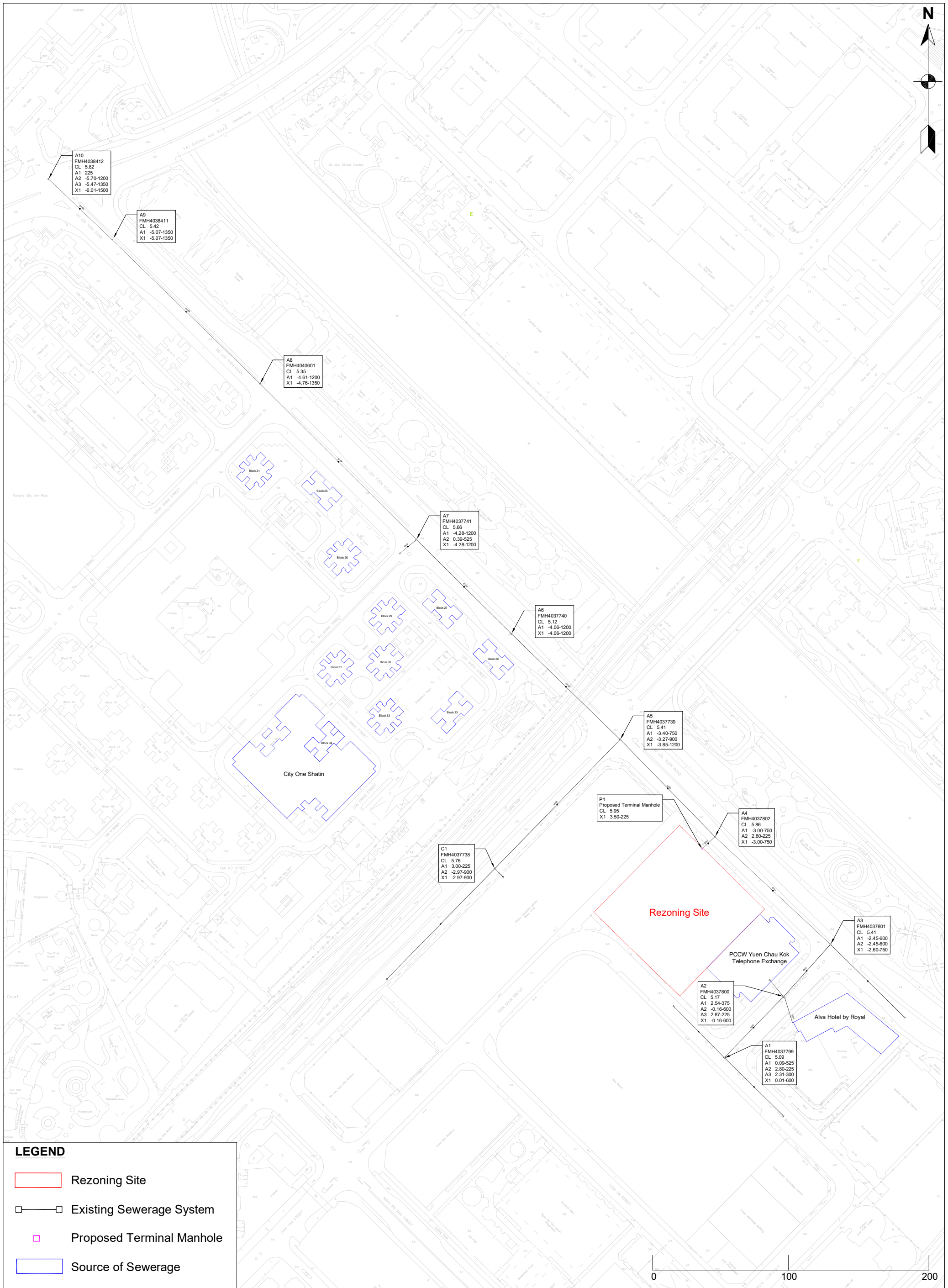
Proposed Amendment to the Approved Sha Tin Outline Zoning Plan No. S/ST/40 from "Industrial (1)" zone to "Residential (Group A)10" zone at Nos.8-14 Siu Lek Yuen Road, Sha Tin, New Territories (STTL Nos.196 and 276)

Site Location and its Environs

Figure 2.1

Rev.1

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LEGEND

- Rezoning Site
- Existing Sewerage System
- Proposed Terminal Manhole
- Source of Sewerage

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Proposed Amendment to the Approved Sha Tin Outline Zoning Plan No. S/ST/40 from "Industrial (1)" zone to "Residential (Group A)10" zone at Nos.8-14 Siu Lek Yuen Road, Sha Tin, New Territories (STTL Nos.196 and 276)

Existing and Proposed Sewerage System

Figure 3.1

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Appendix A

Calculations of Daily Flow

Redevelopment of Chiaphua Industrial Building

Sewerage Impact Assessment
Calculation for Sewage Generation

					Remark
	Generation from the Proposed Redevelopment				
1a	**Residential Use**				
	Total number of residential units	928	units		Provided by Project Proponent.
	Average domestic household size	2.70	people		Refer to Table 130-06806 : Average household size and median monthly household income of households in Shatin district by District Council district.
	Total number of residents	2,506	people		
	Unit flow	0.37	m^3/person/day		Refer to the planning unit flow for Domestic Flow - Private - R3 in Table T-1 of GESF[(a)].
	Estimated daily flow	927.07	m^3/day		
1b	**Clubhouse and Shops**				
	Gross Floor Area	3,438	m^2		
	Worker density	3.30	people/100 m^2 GFA		Refer to worker density for Community, Social & Personal Services in Table 8 of CIFSUS[(b)].
	Estimated number of staff	113	people		
	Unit flow	0.28	m^3/person/day		Refer to the planning unit flow for Commercial Employee + J11 - Community, Social & Personal Services in Table T-2 of GESF[(a)].
	Estimated daily flow	31.77	m^3/day		
1c	**Kitchen**				
	Gross Floor Area	130	m^2		
	Worker density	5.10	people/100 m^2 GFA		Refer to worker density for Restaurant in Table 8 of CIFSUS[(b)].
	Estimated number of staff	7	people		
	Unit flow	1.58	m^3/person/day		Refer to the planning unit flow for Commercial Employees + J10 Restaurants & Hotels in Table T-2 of GESF[(a)].
	Estimated daily flow	10.48	m^3/day		
1d	**Swimming Pool**				
	Pool Area	360	m^2		Advised by architect.
	Pool Depth	1.50	m		
	Pool Volume	539.64	m^3		Estimation relative to pool size is referenced to EPD-approved EIA report (Appendix 6.3 of Sewerage Impact Assessment for Section 16 Planning Application for Proposed E-sports Complex in Inland Lot 9041 (Part), 88 Caroline Hill Road, Wong Nai Chung).
	Tunover rate	6.00	hr		General Specification for Swimming Pool Water Treatment Installation in Government Buildings of The Hong Kong Special Administrative Region.
	Surface loading rate of filter	50	m^3/m^2/hr		Swimming Pools: Design and Construction, Fourth Edition By Philip H. Perkins (50 m^3/m^2/hr adopted).
	Filters areas required	1.80	m^2		
	Backwash duration	7.00	mins		With reference to Section B8.5.5 of General Specification for Swimming Pool Water Treatment Installation in Government Buildings of the HKSAR published by the ArchSD, "the water velocity chosen shall be effective in cleaning the filter in duration of 7 minutes for sand filter".
	Backwash flow rate	30.00	m^3/m^2/hr		Technical Paper - Domestic Swimming Pool Filtration by European Union of Swimming pool and Spa Associations.
	Design Flow for swimming pool backwash	6.30	m^3/day		
	Peak backwash flow	53.96	m^3/hr		
	Instantaneous peak backwash flow	14.99	L/s		
	Estimated Total Daily Flow Rate from the Proposed Redevelopment	**969.31**	m^3/day		The total daily flow does not include the flow from swimming pool.
	Estimation of Daily Flow from Alva Hotel by Royal				
2a	**Generation from Customers**				
	Estimated number of customers	1,400	people		Refer to the approved SIA of Alva Hotel by Royal. Approved Town Planning Application No.: A/ST/649. Refer to Table E4 - Estimated Population of Proposed Development.
	Unit Flow	-	m^3/person/day		Refer to the notes of Table T-2 of GESF[(a)], the flow of customers for job types J10 has been take into account in the "per-employee" unit flow factor. Therefore, generation from customers has been included in part 2b.
	Estimated Daily Flow	-	m^3/day		
2b	**Generation from Employees**				
	Customers per-employee	5	people		Refer to the approved SIA of Alva Hotel by Royal. Approved Town Planning Application No.: A/ST/649. Refer to Table E4 - Estimated Population of Proposed Development.
	Estimated number of staffs	280	people		Refer to the approved SIA of Alva Hotel by Royal. Approved Town Planning Application No.: A/ST/649. Refer to Table E4 - Estimated Population of Proposed Development.
	Unit Flow	1.58	m^3/person/day		Refer to the planning unit flow for Commercial Employees + J10 Restaurants & Hotels in Table T-2 of GESF[(a)].
	Estimated Daily Flow	442	m^3/day		
	Estimated Total Daily Flow Rate from Alva Hotel by Royal	**442**	m^3/day		
	Estimation of Daily Flow from PCCW Yuen Chau Kok Telephone Exchange				
3a	**Generation from Office**				
	Estimated number of employees	1,192	people		Refer to Schedule of Sanitary Fittings in the Approved Plan of PCCW Yuen Chau Kok Telephone Exchange. File reference no.: 2/9364/80/(P).
	Unit Flow	0.28	m^3/person/day		Refer to the planning unit flow for Commercial Employees in Table T-2 of GESF[(a)].
	Estimated Daily Flow	334	m^3/day		
3b	**Generation from Kitchen**				
	Estimated number of employees	22	people		Refer to Schedule of Sanitary Fittings in the Approved Plan of PCCW Yuen Chau Kok Telephone Exchange. File reference no.: 2/9364/80/(P).
	Unit Flow	1.58	m^3/person/day		Refer to the planning unit flow for Commercial Employees + J10 Restaurants & Hotels in Table T-2 of GESF[(a)].
	Estimated Daily Flow	35	m^3/day		
3c	**Generation from Canteen**				
	Estimated number of employees	196	people		Refer to Schedule of Sanitary Fittings in the Approved Plan of PCCW Yuen Chau Kok Telephone Exchange. File reference no.: 2/9364/80/(P).
	Unit Flow	-	m^3/person/day		Refer to the notes of Table T-2 of GESF[(a)], the flow of customers for job types J10 has been take into account in the "per-employee" unit flow factor. Therefore, generation from customers has been included in part 3b.
	Estimated Daily Flow	-	m^3/day		
	Estimated Total Daily Flow Rate from PCCW Yuen Chau Kok Telephone Exchange	**369**	m^3/day		
	Estimation of Daily Flow from City One Shatin				
4a	**Generation from Residents**				
	Block 24	240	units		Information of the number of flats of City One Shatin has been obtained from Centa Map. Please refer to Appendix D.
	Block 25	120	units		
	Block 26	240	units		
	Block 27	112	units		
	Block 28	112	units		
	Block 29	240	units		
	Block 30	240	units		
	Block 31	240	units		
	Block 32	240	units		
	Block 33	108	units		
	Block 34	136	units		
	Total number of residential units	2,028	units		
	Average domestic household size	2.70	people		Refer to Table 130-06806 : Average household size and median monthly household income of households in Shatin district by District Council district.
	Total number of residents	5,476	people		
	Unit flow	0.37	m^3/person/day		Refer to the planning unit flow for Domestic Flow - Private - R3 in Table T-1 of GESF[(a)].
	Estimated daily flow	2,026	m^3/day		
4b	**Generation from Supermarket, Wet Market and Shops**				
	Estimated Gross Floor Area	5,806	m^2		Refer to Gross Floor Area Calculations in the Approved Plan of City One Shatin. File reference no.: 2/9148/76.
	Worker Density	3.5	persons/100m^2 GFA		Refer to worker density for Retail Trade in Table 8 of CIFSUS[(b)].
	Estimated number of staff	203	people		
	Unit Flow	0.28	m^3/person/day		Refer to the planning unit flow for Commercial Employees + J4 Wholesale & Retail in Table T-2 of GESF[(a)].
	Estimated Daily Flow	57	m^3/day		
	Estimated Total Daily Flow Rate from City One Shatin	**2,083**	m^3/day		

Notes:
(a) GESF – "Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning" published by Environmental Protection Department (EPD) in 2005.
(b) CIFSUS - Commercial and Industrial Floor Space Utilization Survey conducted by the Planning Department during November 2004 to March 2005.

Appendix B

Flow Capacity Calculations

Sewerage Impact Assessment
Flow Capacity Calculations

A. Estimated Pipe Capacity and Adequacy Check for the Existing Sewerage Discharge

Upstream Manhole	Downstream Manhole	Pipe Segment	Length m	Level (out) mPD	Level (in) mPD	d m	A_w m^2	k_s [1] m	v m^2/s	s -	g m/s^2	V m/s	Q_C m^3/s	Q_d m^3/day	PF[2]	P_{CIF}[3]	Q_p m^3/s	Is $Q_c > Q_p$? Y/N	% of capacity %	Remarks
FMH4037799	FMH4037800	**A1 - A2**	60.78	0.01	-0.16	0.600	0.283	0.0006	1E-06	0.003	9.810	1.282	0.362	NA	NA	NA	0.362	Y	100%	Qd = full bore flow from segment A1 - A2
FMH4037800	FMH4037801	**A2 - A3**	50.19	-0.16	-2.45	0.600	0.283	0.0006	1E-06	0.046	9.810	5.217	1.475	7619.5	4	1.15	0.406	Y	28%	Qd = total flow from the former segment A1 - A2, Alva Hotel by Royal and PCCW Yuen Chau Kok Telephone Exchange. Full bore flow of segment A1 - A2 represents upstream sewerage generation. Therefore, the cumulative daily flow received by segment A1 - A2 is estimated as 0.362 x 24 x 60 x 60 / 1.15 (PCIF) / 4 (PF) = 6808.62 m^3/day based on the capacity of the segment.
FMH4037801	FMH4037802	**A3 - A4**	113.57	-2.60	-3.00	0.750	0.442	0.0006	1E-06	0.004	9.810	1.656	0.731	7619.5	4	1.15	0.406	Y	55%	Qd = total flow from the former segment A2 - A3.
Proposed Terminal Manhole	FMH4037802	**P1 - A4**	12.08	3.50	2.80	0.225	0.040	0.0006	1E-06	0.058	9.810	3.165	0.126	969.3	6	1.15	0.092	Y	73%	Qd = total flow from the Proposed Redevelopment. Qp = Qd*PF*P_{CIF}+instantaneous peak flow of swimming pool.
FMH4037802	FMH4037739	**A4 - A5**	97.49	-3.00	-3.40	0.750	0.442	0.0006	1E-06	0.004	9.810	1.788	0.790	8588.9	4	1.15	0.472	Y	60%	Qd = total flow from the former segments A3 - A4 and P1 - A4.
FMH4037738	FMH4037739	**C1 - A5**	129.43	-2.97	-3.27	0.900	0.636	0.0006	1E-06	0.002	9.810	1.502	0.956	NA	NA	NA	0.956	Y	100%	Qd = full bore flow from segment C1 - A5
FMH4037739	FMH4037740	**A5 - A6**	109.09	-3.85	-4.06	1.200	1.131	0.0006	1E-06	0.002	9.810	1.634	1.849	26536.7	3.7	1.15	1.311	Y	71%	Qd = total flow from the former segments A4 - A5 and C1 - A5. Full bore flow of segment C1 - A5 represents upstream sewerage generation. Therefore, the cumulative daily flow received by segment C1 - A5 is estimated as 0.956 x 24 x 60 x 60 / 1.15 (PCIF) / 4 (PF) = 17947.83 m^3/day based on the capacity of the segment.
FMH4037740	FMH4037741	**A6 - A7**	96.16	-4.06	-4.28	1.200	1.131	0.0006	1E-06	0.002	9.810	1.783	2.016	26536.7	3.7	1.15	1.311	Y	65%	Qd = total flow from the former segment A5 - A6.
FMH4037741	FMH4040601	**A7 - A8**	159.02	-4.28	-4.61	1.200	1.131	0.0006	1E-06	0.002	9.810	1.698	1.920	28619.6	3.6	1.15	1.397	Y	73%	Qd = total flow from the former segment A6 - A7 and City One.
FMH4040601	FMH4038411	**A8 - A9**	148.72	-4.76	-5.07	1.350	1.431	0.0006	1E-06	0.002	9.810	1.829	2.618	28619.6	3.6	1.15	1.397	Y	53%	Qd = total flow from the former segment A7 - A8.
FMH4038411	FMH4038412	**A9 - A10**	62.84	-5.07	-5.47	1.350	1.431	0.0006	1E-06	0.006	9.810	3.206	4.589	28619.6	3.6	1.15	1.397	Y	30%	Qd = total flow from the former segment A8 - A9.

Note:
[1] k_s = 0.0006m is adopted for the "poor" condition of slimed clayware sewer at A1-A10, with reference to Table 6 of Sewerage Manual - Key Planning Issues and Gravity Collection System published by DSD in 2013
[2] As the contributing population of the proposed development between 1000 and 5000 people, peaking factor of 6 is adopted based on Table T-5 (including stormwater allowance) of GESF.
As the contributing population of the segment is between 10,000 and 50,000 people, peaking factor of 4 is adopted based on Table T-5 (including stormwater allowance) of GESF.
As the contributing population of the segment is more than 50,000 people, peaking factor is caclulated by the formula: Max(7.3 / $N^{0.15}$, 2.4), where N is the contributing population in thousands, based on Table T-5 (including stormwater allowance) of GESF.
[3] Catchment Inflow factors, PCIF is referred to Table T-4 of Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning (GESF)" published by EPD in 2005.

Legend

A_w = Wetted Area, m^2
V = Velocity of flow, m/s
g = gravitational acceleration, m/s2
d = internal pipe diameter, m
k_s = hydraulic pipeline roughness, m
v = kinematic viscosity of fluid, m2/s
s = hydraulic gradient, energy loss per unit length due to friction

Q_c = Flow Capacity, m^3/s
Q_d = Estimated cumulative daily flow, m^3/s
PF = Peaking Factor
P_{CIF} = Catchment Inflow Factor
Q_p = Estimated cumulative peak flow, m^3/s

Colebrook-White Equation (for circular pipes flowing full):

$$V = -\sqrt{(8gDs)}\,\log\left(\frac{ks}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

Appendix C

Extract from Centa Map


地圖面資訊
樓齡
單位數目
樓層
結束資料查詢
地圖
實景圖
實景地圖
Google街道圖
列印地圖
City One Shatin
第10座
240個
216個
第11座
198個
第24座
240個
沙田第一城
City One Shatin
第25座
120個
第26座
240個
網球場
Tennis Court
小瀝源路遊樂場
Siu Lek Yuen Road Playground
第27座
112個
第29座
240個
置富第一城
Fortune City One
平台
Podium
花園
Garden
RCP
FP
Stand
Covered Walkway
有蓋行人路
NGAN SHING STREET
TAK LEE STREET
銀城街
長城街
行人路
CHEUNG SHING STREET
SIU LEK YUEN ROAD
小瀝源路
PO SHING STREET
樂城街
Cycle Track
10 20 30 40 m
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地圖面資訊
樓齡
單位數目
樓層
結束資料查詢
地圖
實景圖
實景地圖
Google街道圖
列印地圖
平台
Podium
花園
Garden
置富第一城
Fortune City One
沙田第一城
City One Shatin
第26座
Block 26
240個
第27座
Block 27
112個
第28座
Block 28
112個
第29座
Block 29
240個
第30座
Block 30
240個
第31座
Block 31
240個
第32座
Block 32
240個
第33座
Block 33
108個
第34座
Block 34
136個
第35座
Block 35
136個
PO SHING STREET
LOK SHING STREET
HANG SHING STREET
SIU LEK YUEN ROAD
小瀝源路
Covered Walkway
有蓋行人路
行人路 Walkway
RCP
籃球場
Basketball Court
油站
Petrol Station
寶城街
樂城街
恒城街
西得街
平台（下層停車場）
odium (Car Park under)
10 20 30 40 m
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