Appendix G

Sewerage Impact Assessment

ARUP

Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) for Proposed Residential Development at Various Lots in D.D. 32 and Adjoining Government Land, Wong Yi Au, Tai Po, New Territories

Sewerage Impact Assessment Report

Reference

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Job number 292635

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Contents

Appendices

1. Introduction

1.1 Project Background

1.1.1.1 This Sewerage Impact Assessment ("SIA"), appended to the Supporting Planning Statement, is prepared in support of the Planning Application under Section 12A of the Town Planning Ordinance (Cap. 131) for Proposed Residential Development ("Proposed Amendment") at Various Lots in D.D. 32 and Adjoining Government Land, Wong Yi Au, Tai Po, New Territories ("the Application Site").

1.2 Proposed Development

1.2.1.1 The Proposed Development is located at Wong Yi Au. There would be residential buildings and an access road (subject to detailed design) adjoining Yung Yi Road.

1.2.1.2 The Proposed Development comprises private housing and clubhouse. The total site area is approximately 14,879.35 m^2 and the design parameters are shown in **Table 1.1** below.

Table 1.1 Development Parameters

Description	**Site Information**	
District Location	Tai Po	
Site Location	Wong Yi Au	
Application Site Area	About 14,879.35 m^2	
GFA	Domestic: Clubhouse:	35,710.44 m^2 1,606.97 m^2
No. of Units (About)	500	
Anticipated Population	Domestic: Clubhouse [(1)]:	1400 53

[(1)] Community, Social & Personal Services = 3.3 employee per 100m^2 of GFA based on PlanD's Commercial and Industrial Floor Space Utilization Survey "CIFSUS" Table 8.

1.3 Purpose of this Report

1.3.1.1 The aim of this Sewerage Impact Assessment (SIA) Study is to review and update the sewerage network arising from proposed development to assess the impact of the Proposed Development to the existing sewerage network and to propose mitigation measures (if required).

1.3.1.2 The scope of the Project comprises comprehensive development private housing and a clubhouse in Wong Yi Au.

1.3.1.3 SIA Report shall be prepared, which should:

(a) fully satisfy the requirements of this Scope in respect of the prediction and assessment of impacts, the identification of sewerage impact mitigation measures and the associated residual impacts;

(b) provide assessment and evaluation of the sewerage impact and cumulative effects arising from the Project sufficient to identify those issues of key concern during the construction and operation of the Project;

(c) define measurable sewerage parameters and features likely to be affected by the Project;

(d) recommend optimum sewerage scheme for the Project;

(e) prescribe the specification for detailed design, construction and operation requirements of the recommended sewerage scheme;

(f) provide the assessment findings, conclusions, recommendations and a mechanism for implementation; and

(g) g) include any revisions or supplements to the above as might be required by the EPD and DSD.

1.3.1.4 The SIA Report for shall be submitted for approval by EPD and DSD on the methodologies, findings, proposals, recommendations and conclusions of the SIA.

1.3.1.5 This Sewerage Impact Assessment Report is structured as follows:

Section 1 – **Introduction**, introduces the Project Background, Objectives and Scope of the Project.

Section 2 – **Methodology and Design Criteria,** presents the Methodology and Design Criteria.

Section 3 – **Sewerage Impact Assessment**, presents the Sewerage Impact Assessment.

Section 4 – **Construction, Operation and Maintenance of New Sewerage Facilities**, presents Construction, Operation and Maintenance of New Sewerage Facilities.

Section 5 – **Conclusion,** summarises the Conclusions.

2. Methodology and Design Criteria

2.1 Methodology

2.1.1.1 The following methodology is adopted in carrying out the SIA:

- Identify the scope, parameters and programme of the development;
- Estimate the sewage flow generation of the development;
- Identify the existing and planned sewerage systems within and near the proposed development boundary;
- Examine the impact arising from new sewage generation from the proposed development on the existing sewerage network; and
- Identify new and upgrading sewerage works to support the proposed development.

2.1.1.2 The SIA has been carried out in accordance with the following guidelines set out in EPD Report No. EPD/TP1/05 Guidelines for Estimating Sewage Flows (GESF) for Sewerage Infrastructure Planning Version 1.0 and DSD's Sewerage Manual.

2.2 Parameters and Assumptions

2.2.1.1 The key parameters used for flow estimation in this SIA are unit flow factor, the population/ employee density and flow from plumbing and drainage.

Unit Flow Factor – Domestic Flows

2.2.1.2 The Unit flow factors (UFF) for domestic sewage flow due to residential population of the proposed development and the existing sewerage catchment are shown in **Table 2.1** based on the Table T-1 of GESF.

Table 2.1 Unit Flow Factor for Domestic Flows

Residential Type	Unit Flow Factor (m^3/person/day)[1]
Private R1	0.19
Private R3	0.37
Private R4	0.37
Modern Village	0.27
Institutional and special class	0.19

Unit Flow Factor – Commercial Flows

2.2.1.3 The UFFs for commercial sewage flows due to employed population of the proposed development and the existing sewerage catchment are shown in **Table 2.2** based on the Table T-2 of GESF.

2.2.1.4 The total unit flow generated from an employee in a particular trade is the sum of the UFF of the employee and the UFF of commercial activities of a particular trade under consideration.

Table 2.2 Unit Flow Factor for Commercial Flows

Commercial Type	UFF (m^3/employee/day)
Commercial Employee	0.080
Commercial Activities	
(a) Specific trades:	
J11 – Community, Social & Personal Services	0.200
School student	0.040

Peaking Factors

2.2.1.5 The peaking factors to cater for seasonal/diurnal flow variations, and infiltration and inflow due to storm events are referenced to EPD's GESF and shown in **Table 2.3 .3**.

Table 2.3 Peaking Factors for Various Population Ranges

Population Range	Peaking Factor (Including Stormwater Allowance) for Facility with Existing Upstream Sewerage	Peaking Factor (Excluding Stormwater Allowance) for Facility with Existing Upstream Sewerage
Sewers		
< 1,000	8	6
1,000 – 5,000	6	5
5,000 – 10,000	5	4
10,000 – 50,000	4	3
> 50,000	Max ($7.3/N^{0.15}$, 2.4) [1]	Max ($6/N^{0.175}$, 1.6) [1]
Sewage Treatment Works, Preliminary Treatment Works and Pumping Stations		
< 10,000	4	3
10,000 – 25,000	3.5	2.5
25,000 – 50,000	3	2
> 50,000	Max ($3.9/N^{0.065}$, 2.4) [1]	Max ($2.6/N^{0.065}$, 1.6) [1]
Note: [1] N = Contributing population in thousands		

2.2.1.6 With consideration of the reduced hydraulic performance due to the deterioration of sewer pipes with time, peaking factors (including stormwater allowance) is adopted in this Study.

Population Density

2.2.1.7 A person per flat (PPF) ratio of 2.8 is adopted based on the PPF in Tai Po District Council in 2021 Population Census.

2.2.1.8 The employment population density has been referenced to Table 8 of PlanD's Commercial and Industrial Floor Space Utilization Survey "CIFSUS":

- Community, Social & Personal Services: Assume 3.3 employee per $100m^2$ of GFA

Hydraulic Analysis

2.2.1.9 Colebrook-White equation is applied for pipe hydraulic analysis. The design roughness coefficients (Ks) for existing pipeline system are assumed to be 0.6 mm (Slimed sewer slimed to about half depth; velocity when flowing half full approximately 1.2 m/s, clayware, under poor condition). The material adopted for proposed pipes is HDPE; a conservative roughness coefficient of 0.3 mm has been adopted in consideration of its reduced hydraulic performance in future due to degradation of material.

2.2.1.10 For small diameter sewers of diameter less than 300mm, the flow velocity of at least 0.7m/s shall occur daily, or that a gradient of at least 1:DN (i.e. Nominal diameter of the sewer in mm) is provided, provided that a flow of 2 times of Average Dry Weather Flow (ADWF) is assumed to occur at least once daily. For larger diameter sewers of diameter up to 900mm, a self-cleansing velocity of 1.0m/s in full pipe condition shall be achieved. The maximum flow velocity at peak flow shall be 3m/s.

3. Sewerage Impact Assessment

3.1 Existing and Planned Sewerage Infrastructure

Existing Sewerage System

3.1.1.1 Based on the DSD Drainage records, there is an existing sewerage network with sewers with 225mm dia. along Yung Yi Road and 375mm dia. along Tai Po Road which ultimately connects to the Tai Po Sewage Treatment Works (TPSTW) via Tai Po Kau Sewage Pumping Station (TPKSPS). The design daily flow of TPKSPS is 3,600 m^3/day.

3.1.1.2 TPSTW is a primary treatment works facility for Tai Po District. The ADWF received at the facility is approximately 120,000 m^3/day.

Planned Sewerage System

3.1.1.3 TPSTW is under plan for an upgrade in order to cater for the increased demand from projected ultimate population and planned developments in Tai Po and to achieve more stringent effluent quality standards.

3.1.1.4 Under PWP Item No. 4443DS, the followings are included as planned improvement:

(i) The project will increase the treatment capacity of the Existing Tai Po STW from 120 000 m^3/day to 160 000 m^3/day.

3.2 Sewage Generation from the Existing Development

3.2.1.1 The sewage flow generated from the existing development (downstream of proposed development) is about 2005.6 m^3/day (ADWF), while the peak flow is 116.1 L/s (peak factor = 5). The detailed calculations for sewage flow estimation are included in **Appendix A** and summarised in **Table 3.1**.

Table 3.1 Sewage Flow Estimation for the Existing Development

Existing Development	**Estimated ADWF (m^3/day) [(2)]**
Chateau Royale	84.1
Chateau De Mansion	25.2
Marvelous Villa	9.6
Village Houses (South)	68.0
Village Houses (Middle)	349.4
Village Houses (North)	41.0
Tai Po Ling Liang Church	5.6
Ling Liang Church MH Lau Secondary School	48.2
Care Village	249.5
Riverain Bayside	8.5
Tai Po Kau 3987 Tai Po Road - Yuen Chau Tsai	3.3
Redland Garden	62.2

Existing Development	Estimated ADWF (m^3/day) [2]
Trackside Villas	134.1
MTR Tai Po Kau Staff Clubhouse	52.9
Seaview Villas	18.9
Rural Estate Houses	6.3
Southview Villas	10.4
Emerald Palace	47.4
Daisyfield	6.3
Strafford House	55.8
The Kingston Hills	13.7
L'utopie	24.0
Savanna Garden	299.6
Tolo Ridge	30.3
Constellation Cove	344.4
Anchors International Nursery (Constellation Cove Campus)	6.8
Peak Catchment Inflow Factor	1.0[3]
Total ADWF (m^3/day)	**2005.6**
Contributing population	7428
Peaking Factor [1]	5
Peak Flow (L/s)	**116.1**
Additional Flow from Swimming Pool Backwashes	**33.6**

Remarks:

(1) Peaking Factor =5 for contributing population 5,000 – 10,000 based on EPD's GESF Table T-5.

(2) Numbers are rounded to 1 decimal place.

(3) GESF Table T-4 refer to Tai Po

3.3 Sewage Generation from the Proposed Development

3.3.1.1 The sewage flow generated from the proposed development is about 532.8 m^3/day (ADWF), while the peak flow is 37.0L/s (peak factor = 6). The detailed calculations for sewage flow estimation are included in **Appendix A** and summarised in **Table 3.2.**

Table 3.2 Sewage Flow Estimation for the Proposed Development

Proposed Development	Estimated ADWF (m^3/day) [2]
Residential	518.0
Clubhouse	14.8
Peak Catchment Inflow Factor	1.0[3]
Total ADWF	**532.8**

Proposed Development	**Estimated ADWF (m^3/day) (2)**
Contributing population	1974
Peaking Factor(1)	6
Peak Flow (L/s)	**37.0**

Remarks:
(1) Peaking Factor =6 for contributing population = 1,000 – 5,000 based on EPD's GESF Table T-5.
(2) Numbers are rounded to 1 decimal place

3.4 Proposed Development Sewerage System

Sewerage Connection Proposal

3.4.1.1 To accommodate the sewage generation from Proposed Development, a new 225mm dia. HDPE sewage trunk main is proposed laying along the access road and connect to the existing manhole on Yung Yi Road. The proposed sewers are shown in **Table 3.3**, from the proposed terminal manhole (TMH) to the existing manhole ID (FMH1005820). Proposed connection drawing is in **Appendix B.**

Table 3.3 Proposed Sewage pipe connection from Terminal Manhole to Existing Sewerage Network

Location	Upstream MH	Downstream MH	Sewer size (mm)	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)
Proposed Development	TMH	FMH1005820	225	58.50	24.30

Sewerage Capacity Checking

3.4.1.2 Hydraulic capacity check has been undertaken for the downstream sewerage system and results are presented in **Table 3.4**. The assessed sewers have sufficient capacity to convey the sewage flows under proposed conditions; the maximum utilisation rate is below 93%. No sewers require upgrading works due to the proposed development and the proposed development has no impact to the downstream sewers. Detailed calculations are included in **Appendix A**.

Table 3.4 Sewers Capacity Check

Location option	Upstream (MH)	Downstream (MH)	Sewer size (mm)	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	% of Max. Peak flow to sewer capacity
Existing Scheme	FMH1005820	FMH1005819	225	24.20	22.32	7%
	FMH1005819	FMH1005818	225	22.22	20.56	7%
	FMH1005818	FMH1005817	225	20.46	18.79	7%
	FMH1005817	FMH1005816	225	18.69	17.36	7%
	FMH1005816	FMH1005815	225	17.26	15.92	8%
	FMH1005815	FMH1005837	225	15.82	14.99	12%

Location option	Upstream (MH)	Downstream (MH)	Sewer size (mm)	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	% of Max. Peak flow to sewer capacity
	FMH1005837	FMH1005836	225	14.89	14.12	12%
	FMH1005836	FMH1005835	225	14.02	13.69	22%
	FMH1005835	FMH1005834	225	13.59	13.39	24%
	FMH1005834	FMH1005833	225	13.29	12.73	23%
	FMH1005833	FMH1005832	225	12.63	12.03	28%
	FMH1005832	FMH1005831	225	11.71	10.03	14%
	FMH1005831	FMH1005830	225	10.02	9.35	34%
	FMH1005830	FMH1005824	225	9.32	7.90	26%
	FMH1005824	FMH1005823	225	7.70	7.14	25%
	FMH1005823	FMH1005825	375	7.12	6.67	53%
	FMH1005825	FMH1005826	375	6.66	5.93	33%
	FMH1005826	FMH1005827	375	5.92	5.70	75%
	FMH1005827	FMH1068053	375	5.70	4.72	36%
	FMH1068053	FMH1005828	375	4.72	4.55	37%
	FMH1005828	FMH1005829	375	4.55	4.00	46%
	FMH1005829	FOH1000020	375	4.00	3.20	46%
Proposed Development	FMH1005820	FMH1005819	225	24.20	22.32	27%
	FMH1005819	FMH1005818	225	22.22	20.56	29%
	FMH1005818	FMH1005817	225	20.46	18.79	30%
	FMH1005817	FMH1005816	225	18.69	17.36	29%
	FMH1005816	FMH1005815	225	17.26	15.92	32%
	FMH1005815	FMH1005837	225	15.82	14.99	49%
	FMH1005837	FMH1005836	225	14.89	14.12	48%
	FMH1005836	FMH1005835	225	14.02	13.69	56%
	FMH1005835	FMH1005834	225	13.59	13.39	61%
	FMH1005834	FMH1005833	225	13.29	12.73	53%
	FMH1005833	FMH1005832	225	12.63	12.03	66%
	FMH1005832	FMH1005831	225	11.71	10.03	33%
	FMH1005831	FMH1005830	225	10.02	9.35	61%
	FMH1005830	FMH1005824	225	9.32	7.90	48%
	FMH1005824	FMH1005823	225	7.70	7.14	45%
	FMH1005823	FMH1005825	375	7.12	6.67	64%

Location option	Upstream (MH)	Downstream (MH)	Sewer size (mm)	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	% of Max. Peak flow to sewer capacity
	FMH1005825	FMH1005826	375	6.66	5.93	40%
	FMH1005826	FMH1005827	375	5.92	5.70	90%
	FMH1005827	FMH1068053	375	5.70	4.72	44%
	FMH1068053	FMH1005828	375	4.72	4.55	44%
	FMH1005828	FMH1005829	375	4.55	4.00	55%
	FMH1005829	FOH1000020	375	4.00	3.20	56%

3.5 Potential Sewerage Impact

3.5.1.1 Sewage flow will eventually be discharged into the TPSTW located at Dai Kwai Street via TPKSPS and downstream network. Based on the hydraulic analysis, the increase of sewage flow due Proposed Development is insignificant compared to the upgraded capacity of TPSTW (maximum ~0.33% increase at future capacity), it is expected there will be no adverse impact to the existing sewerage network due to the proposed development. No upgrade of the size of sewage facilities is required.

Table 3.5 TPSTW and TPKSPS Capacity Check

	ADWF (m^3/day)	Peak Flow (L/s)	Existing/ Proposed Sewer Size (mm)	Max. Occupation at Downstream Pipeline	Occupancy of Upgraded TPSTW
Existing Sewage Flow	2,005.6	116.1	225	34.1%	1.25%
			375	74.6%	
Existing Sewage Flow + Proposed Sewage Flow	2,538.5	153.1	225	65.7%	1.59%
			375	90.0%	

3.5.1.2 The TPKSPS and TPSTW are deemed to be designed to cater for the regional sewage generation, thus it is not anticipated for any adverse impact to TPKSPS and TPSTW due to the proposed development.

4. Construction, Operation and Maintenance of New Sewerage Facilities

4.1.1.1 The proposed sewerage works within the development boundary including the construction of new sewers connection and the proposed terminal manhole (TMH) will be constructed, operated and maintained by the future management agent.

4.1.1.2 The proposed sewerage connection mentioned in **Section 3.4** will be undertaken by the project proponent. The portion of sewers downstream of terminal manhole will be handed over to DSD upon completion of construction works for future maintenance as part of the public network.

5. Conclusion

5.1.1.1 A sewerage impact assessment has been carried out for the proposed development at Wong Yi Au.

5.1.1.2 Sewage generated from the existing development (i.e. ADWF 2005.6 m^3/day or peak flow 116.1 L/s (peaking factor = 5)) whilst sewage from the Indicative Scheme (i.e. ADWF 532.8 m^3/day or peak flow 37.0 L/s (peaking factor = 6)). To discharge sewage generated from the proposed location, a new sewerage main is proposed. Sewage from the Proposed Development will be discharged through a 225 mm dia. sewer from a new terminal manhole (i.e. TMH) into the existing sewerage network.

5.1.1.3 The TPKSPS and TPSTW are deemed to be designed to cater for the regional sewage generation, thus it is not anticipated for any adverse impact to TPKSPS and TPSTW due to the proposed development.

Appendix A

Sewage Generation Estimation

ARUP

Job No.	Sheet No.	Rev.
	1	2

Member/Location

Job Title: **Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) for Proposed Residential Development at Various Lots in D.D. 32 and Adjoining Government Land, Wong Yi Au, Tai Po, New Territories**

Drg. Ref.

Calculation: **Estimation of Sewage Discharge from Existing Development**

Made by: JP Date: 09/2024 Chd.: NP

Exisiting Development along Chuk Yeung Road		
Chateau Royale (Catchment D)		
Number of Houses/ Blocks	68	
Number of Flats	68	Flats
Size of household/flat [1]	2.8	Persons/flat
Population	191	Persons
Per Capita Flow [2] - R4	0.37	m^3/day/person
Clubhouse Area (measured on GeoInfo Map)	1450	m^2
Employee per GFA (in 100 m^2)[7]	3.3	Persons
Employee Population	48	Persons
Per Capita Flow[4] - J11	0.28	m^3/day
Estimated Dry Weather Flow	**84.1**	m^3/day
~~Swimming Pool Flow~~ Assume: - Pool size = 315m^2 with 1.5m water depth. - Pool volume = 315 x 1.5 = 472.5 m^3. - Turnover rate = 6 hours. - Filter loading rate = 50 m^3/m^2/hr. - Filter area required = 472.5 / 6 / 50 = 1.575 m^2. - Assume Filter Diameter = 600mm - Filter Area = 0.2827 m^2 - No. of filter required = 6 [12] - Backwash flow rate = 0.5 m^3/m^2/min. - Back wash flow = 0.2827 x 0.5 = 0.1414 m^3/min =2.4 L/s	2.4	L/s
Chateau De Mansion (Catchment C)		
Number of Houses/ Blocks	8	
Number of Flats	24	Flats
Size of household/flat [1]	2.8	Persons/flat
Population	68	Persons
Per Capita Flow [2] - R4	0.37	m^3/day/person
Estimated Dry Weather Flow	**25.2**	m^3/day
Marvelous Villa (Catchment F)		
Number of Houses/ Blocks	7	
Number of Flats	9	Flats
Size of household/flat [1]	2.8	Persons/flat
Population	26	Persons
Per Capita Flow [2] - R4	0.37	m^3/day/person
Estimated Dry Weather Flow	**9.6**	m^3/day
Residential - Village Houses (South) (Catchment B)		
No. of Village Houses (By Counting)	30	
No. of Flats [10]	90	
Size of household/flat [1]	2.8	Persons
Per Capita Flow [3] - Modern Village	0.27	m3/day
Total Population	252	Persons
Estimated Dry Weather Flow	**68.0**	m3/day
Residential - Village Houses (Middle) (Catchment E)		
No. of Village Houses (By Counting)	154	
No. of Flats [10]	462	
Size of household/flat [1]	2.8	Persons
Per Capita Flow [3] - Modern Village	0.27	m3/day
Total Population	1294	Persons
Estimated Dry Weather Flow	**349.4**	m3/day
Residential - Village Houses (North) (Catchment F)		
No. of Village Houses (By Counting)	18	
No. of Flats [10]	54	
Size of household/flat [1]	2.8	Persons
Per Capita Flow [3] - Modern Village	0.27	m3/day
Total Population	152	Persons
Estimated Dry Weather Flow	**41.0**	m3/day
Tai Po Ling Liang Church (Catchment A)		
Employee Population (Assume 20 extra Staffs for the Church)	20	Persons
Per Capita Flow [4] - J11 (commercial employees + J11)	0.28	m^3/day
Estimated Dry Weather Flow	**5.6**	m^3/day
Ling Liang Church MH Lau Secondary School (Catchment A)		
Class	24	
Students	667	Persons
Employee(only on-list teachers and workers)	77	Persons
Per Capita Flow [5] -Students	0.04	m^3/day
Per Capita Flow [4] -Employee	0.28	m^3/day
Total Population	744	Persons
Estimated Dry Weather Flow	**48.2**	m^3/day
Total Estimate Dry Weather Flow	**631.1**	
Catchment Inflow Factor [6] - Tai Po	1.0	
Total Estimated Dry Weather Flow (including catchment inflow factor)	**631.1**	m3/day
Contributing Population	1016	
Peaking Factor [7]	6	
Total Estimated Peak Flow	**43.8**	**L/s**
Care Village (Catchment G)		
No. of Village Houses (By Counting)	110	
No. of Flats [10]	330	
Size of household/flat [1]	2.8	Persons
Per Capita Flow [3] - Modern Village	0.27	m3/day
Total Population	924	Persons
Estimated Dry Weather Flow	**249.5**	m3/day
Riverain Bayside(Catchment G)		
Number of Houses/ Blocks	8	
Number of Flats	8	Flats
Size of household/flat [1]	2.8	Persons/flat
Population	23	Persons

Ref: http://www.llcmhlau.edu.hk/tc/content.php?wid=37

ARUP

Job No.	Sheet No.	Rev.
	1	2

Member/Location

Job Title: **Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) for Proposed Residential Development at Various Lots in D.D. 32 and Adjoining Government Land, Wong Yi Au, Tai Po, New Territories**

Drg. Ref.

Calculation: **Estimation of Sewage Discharge from Existing Development**

Made by: JP Date: 09/2024 Chd.: NP

Per Capita Flow [2] - R4	0.37	m^3/day/person
Estimated Dry Weather Flow	**8.5**	m^3/day
~~Swimming Pool Flow~~		
Assume:		
- Pool size = 85m^2 with 1.5m water depth.		
- Pool volume = 85 x 1.5 = 127.5 m^3.		
- Turnover rate = 6 hours.		
- Filter loading rate = 50 m^3/m^2/hr.		
- Filter area required = 127.5 / 6 / 50 = 0.425 m^2.		
- Assume Filter Diameter = 500 mm		
- Filter Area = 0.1963 m^2		
- No. of filter required = 3 [12]		
- Backwash flow rate = 0.5 m^3/m^2/min.		
- Back wash flow = 0.1963 x 0.5 = 0.0982 m^3/min = 1.6 L/s	1.6	L/s
Tai Po Kau 3987 Tai Po Road - Yuen Chau Tsai (Catchment G)		
Number of Flats (Assume)	3	Flats
Size of household/flat [1]	2.8	Persons/flat
Population	9	Persons
Per Capita Flow [2] - R4	0.37	m^3/day/person
Estimated Dry Weather Flow	**3.3**	m^3/day
~~Swimming Pool Flow~~		
Assume:		
- Pool size = 55m^2 with 1.5m water depth.		
- Pool volume = 55 x 1.5 = 82.5 m^3.		
- Turnover rate = 6 hours.		
- Filter loading rate = 50 m^3/m^2/hr.		
- Filter area required = 82.5 / 6 / 50 = 0.275 m^2.		
- Assume Filter Diameter = 400mm		
- Filter Area = 0.1257 m^2		
- No. of filter required = 3 [12]		
- Backwash flow rate = 0.5 m^3/m^2/min.		
- Back wash flow = 0.1257 *0.5 = 0.0628 m^3/min = 1.0 L/s	1.0	L/s
Redland Garden (Catchment H)		
Number of Houses/ Blocks	5	
Number of Flats	60	Flats
Size of household/flat [1]	2.8	Persons/flat
Population	168	Persons
Per Capita Flow [2] - R4	0.37	m^3/day/person
Estimated Dry Weather Flow	**62.2**	m^3/day
~~Swimming Pool Flow~~		
Assume:		
- Pool size = 315m^2 with 1.5m water depth.		
- Pool volume = 75 x 1.5 = 112.5 m^3.		
- Turnover rate = 6 hours.		
- Filter loading rate = 50 m^3/m^2/hr.		
- Filter area required = 112.5 / 6 / 50 = 0.375 m^2.		
- Assume Filter Diameter = 400 mm		
- Filter Area = 0.1257 m^2		
- No. of filter required = 3 [12]		
- Backwash flow rate = 0.5 m^3/m^2/min.		
- Back wash flow = 0.1257 *0.5 = 0.0628 m^3/min = 1.0 L/s	1.0	L/s
Trackside Villas (Catchment H)		
Number of Houses/ Blocks	/	
Number of Flats	252	Flats
Size of household/flat [1]	2.8	Persons/flat
Population	706	Persons
Per Capita Flow [9] - R1	0.19	m^3/day/person
Estimated Dry Weather Flow	**134.1**	m^3/day
MTR Tai Po Kau Staff Clubhouse (Catchment H)		
Building Area (measured on GeoInfo Map)	5700	m^2
Employee per GFA (in 100 m^2)[7]	3	Persons
Employee Population - J11 (commercial employrrs + J11)[4]	189	Persons
Per Capita Flow	0.28	m^3/day/person
Estimated Dry Weather Flow	**52.9**	m^3/day
~~Swimming Pool Flow~~		
Assume:		
- Pool size = 220 m^2 with 1.5 m water depth.		
- Pool volume = 220 x 1.5 = 330 m^3.		
- Turnover rate = 6 hours.		
- Filter loading rate = 50 m^3/m^2/hr.		
- Filter area required = 330 / 6 / 50 = 1.100 m^2.		
- Assume Filter Diameter = 600 mm		
- Filter Area = 0.2827 m^2		
- No. of filter required = 4 [12]		
- Backwash flow rate = 0.5 m^3/m^2/min.		
- Back wash flow = 0.2827 *0.5 = 0.1414 m^3/min = 2.4 L/s	2.4	L/s
Seaview Villas (Catchment H)		
Number of Houses/ Blocks	18	
Number of Flats	18	Flats
Size of household/flat [1]	2.8	Persons/flat
Population	51	Persons
Per Capita Flow [2] - R4	0.37	m^3/day/person
Estimated Dry Weather Flow	**18.9**	m^3/day

ARUP

Job No.	Sheet No.	Rev.
	1	2

Member/Location

Job Title: **Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) for Proposed Residential Development at Various Lots in D.D. 32 and Adjoining Government Land, Wong Yi Au, Tai Po, New Territories**

Drg. Ref.

Calculation: **Estimation of Sewage Discharge from Existing Development**

Made by: JP Date: 09/2024 Chd.: NP

~~Swimming Pool Flow~~ Assume: - Pool size = 60 m^2 with 1.5 m water depth. - Pool volume = 60 x 1.5 = 90 m^3. - Turnover rate = 6 hours. - Filter loading rate = 50 $m^3/m^2/hr$. - Filter area required = 90 / 6 / 50 = 0.300 m^2. - Assume Filter Diameter = 600 mm - Filter Area = 0.1257 m^2 - No. of filter required = 3 (12) - Backwash flow rate = 0.5 $m^3/m^2/min$. - Back wash flow = 0.1257 x 0.5 = 0.0628 m^3/min = 1.0 L/s	2.4	L/s
Rural Estate House (Catchment H)		
Number of Houses/ Blocks	6	
Number of Flats	6	Flats
Size of household/flat (1)	2.8	Persons/flat
Population	17	Persons
Per Capita Flow (2) - R4	0.37	m^3/day/person
Estimated Dry Weather Flow	**6.3**	m^3/day
~~Swimming Pool Flow~~ Assume: - Pool size = 100 m^2 with 1.5 m water depth. - Pool volume = 100 x 1.5 = 150 m^3. - Turnover rate = 6 hours. - Filter loading rate = 50 $m^3/m^2/hr$. - Filter area required = 150 / 6 / 50 = 0.5 m^2. - Assume Filter Diameter = 400 mm - Filter Area = 0.1257 m^2 - No. of filter required = 4 (12) - Backwash flow rate = 0.5 $m^3/m^2/min$. - Back wash flow = 0.1257 x 0.5 = 0.0628 m^3/min = 1.0 L/s	1.0	L/s
Southview Villas (Catchment H)		
Number of Houses/ Blocks	10	
Number of Flats	10	Flats
Size of household/flat (1)	2.8	Persons/flat
Population	28	Persons
Per Capita Flow (2) - R4	0.37	m^3/day/person
Estimated Dry Weather Flow	**10.4**	m^3/day
~~Swimming Pool Flow~~ Assume: - Pool size = 150 m^2 with 1.5 m water depth. - Pool volume = 150 x 1.5 = 225 m^3. - Turnover rate = 6 hours. - Filter loading rate = 50 $m^3/m^2/hr$. - Filter area required = 225 / 6 / 50 = 0.75 m^2. - Assume Filter Diameter = 500 mm - Filter Area = 0.1963 m^2 - No. of filter required = 4 (12) - Backwash flow rate = 0.5 $m^3/m^2/min$. - Back wash flow = 0.1963 x 0.5 = 0.0982 m^3/min = 1.6 L/s	1.6	L/s
Emerald Palace (Catchment H)		
Number of Houses/ Blocks	7	
Number of Flats	42	Flats
Size of household/flat (1)	2.8	Persons/flat
Population	118	Persons
Per Capita Flow (2) - R4	0.37	m^3/day/person
Clubhouse Area (measured on GeoInfo Map) (Assume 2 Storeys)	404	m^2
Employee per GFA (in 100 m^2)(7)	3.3	Persons
Employee Population	13	Persons
Per Capita Flow(4) - J11	0.28	m^3/day
Estimated Dry Weather Flow	**47.4**	m^3/day
~~Swimming Pool Flow~~ Assume: - Pool size = 215 m^2 with 1.5 m water depth. - Pool volume = 215 x 1.5 = 322.5 m^3. - Turnover rate = 6 hours. - Filter loading rate = 50 $m^3/m^2/hr$. - Filter area required = 322.5 / 6 / 50 = 1.075 m^2. - Assume Filter Diameter = 600 mm - Filter Area = 0.2827 m^2 - No. of filter required = 4 (12) - Backwash flow rate = 0.5 $m^3/m^2/min$. - Back wash flow = 0.2827 x 0.5 = 0.1414 m^3/min = 2.4 L/s	2.4	L/s
Daisyfield (Catchment H)		
Number of Houses/ Blocks	1	
Number of Flats	6	Flats
Size of household/flat (1)	2.8	Persons/flat
Population	17	Persons
Per Capita Flow (2) - R4	0.37	m^3/day/person
Estimated Dry Weather Flow	**6.3**	m^3/day

ARUP

Job No.	Sheet No.	Rev.
	1	2

Member/Location

Job Title: **Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) for Proposed Residential Development at Various Lots in D.D. 32 and Adjoining Government Land, Wong Yi Au, Tai Po, New Territories**

Drg. Ref.

Calculation: **Estimation of Sewage Discharge from Existing Development**

Made by: JP Date: 09/2024 Chd.: NP

~~Swimming Pool Flow~~ Assume: - Pool size = 120 m^2 with 1.5 m water depth. - Pool volume = 120 x 1.5 = 180 m^3. - Turnover rate = 6 hours. - Filter loading rate = 50 $m^3/m^2/hr$. - Filter area required = 180 / 6 / 50 = 0.6 m^2. - Assume Filter Diameter = 500 mm - Filter Area = 0.1963 m^2 - No. of filter required = 4 (12) - Backwash flow rate = 0.5 $m^3/m^2/min$. - Back wash flow = 0.1963 x 0.5 = 0.0982 m^3/min = 1.6 L/s	1.6	L/s
Strafford House (Catchment H)		
Building Area (System Controll Centre and Management Training Centre) (measured on GeoInfo Map)	4950	m^2
Employee per GFA (in 100 m^2) (11)	3.4	Persons
Employee Population - J11 (commercial employees + J11) (4)	169	Persons
Per Capita Flow	0.28	m^3/day/person
Number of Flats (by estimation)	**8**	Flats
Size of household/flat (1)	2.8	Persons/flat
Population	23	Persons
Per Capita Flow (2) - R4	0.37	m^3/day/person
Estimated Dry Weather Flow	**55.8**	m^3/day
~~Swimming Pool Flow~~ Assume: - Pool size = 105 m^2 with 1.5 m water depth. - Pool volume = 105 x 1.5 = 157.5 m^3. - Turnover rate = 6 hours. - Filter loading rate = 50 $m^3/m^2/hr$. - Filter area required = 157.5 / 6 / 50 = 0.525 m^2. - Assume Filter Diameter = 500 mm - Filter Area = 0.1963 m^2 - No. of filter required = 3 (12) - Backwash flow rate = 0.5 $m^3/m^2/min$. - Back wash flow = 0.1963 x 0.5 = 0.0982 m^3/min = 1.6 L/s	1.6	L/s
The Kingston Hills (Hampstead) (Catchment H)		
Number of Houses/ Blocks	13	
Number of Flats	13	Flats
Size of household/flat (1)	2.8	Persons/flat
Population	37	Persons
Per Capita Flow (2) - R4	0.37	m^3/day/person
Estimated Dry Weather Flow	**13.7**	m^3/day
~~Swimming Pool Flow~~ Assume: - Pool size = 540 m^2 with 1.5 m water depth. - Pool volume = 540 x 1.5 = 810 m^3. - Turnover rate = 6 hours. - Filter loading rate = 50 $m^3/m^2/hr$. - Filter area required = 810 / 6 / 50 = 2.7 m^2. - Assume Filter Diameter = 700 mm - Filter Area = 0.3848 m^2 - No. of filter required = 8 (12) - Backwash flow rate = 0.5 $m^3/m^2/min$. - Back wash flow = 0.3848 x 0.5 = 0.1924 m^3/min = 3.2 L/s	3.2	L/s
L'utopie (Catchment H)		
Number of Houses/ Blocks	16	
Number of Flats	16	Flats
Size of household/flat (1)	2.8	Persons/flat
Population	45	Persons
Per Capita Flow (2) - R4	0.37	m^3/day/person
Clubhouse Area (Assumed)	800	m^2
Employee per GFA (in 100 m^2) (7)	3.3	Persons
Employee Population	26	Persons
Per Capita Flow (4) - J11	0.28	m^3/day
Estimated Dry Weather Flow	**24.0**	m^3/day
Assume: - Pool size = 450 m^2 with 1.5 m water depth. - Pool volume = 450 x 1.5 = 675 m^3. - Turnover rate = 6 hours. - Filter loading rate = 50 $m^3/m^2/hr$. - Filter area required = 675 / 6 / 50 = 2.25 m^2. - Assume Filter Diameter = 700 mm - Filter Area = 0.3848 m^2 - No. of filter required = 6 (12) - Backwash flow rate = 0.5 $m^3/m^2/min$.	3.2	L/s
Savanna Garden (Catchment H)		
Number of Houses/ Blocks	49	
Number of Flats	284	Flats
Size of household/flat (1)	2.8	Persons/flat
Population	796	Persons
Per Capita Flow (2) - R4	0.37	m^3/day/person
Clubhouse Area (measured on GeoInfo Map)	550	m^2
Employee per GFA (in 100 m^2) (7)	3.3	Persons
Employee Population	18	Persons
Per Capita Flow (4) - J11	0.28	m^3/day
Estimated Dry Weather Flow	**299.6**	m^3/day

ARUP

Job No.	Sheet No.	Rev.
	1	2

Member/Location

Job Title: **Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) for Proposed Residential Development at Various Lots in D.D. 32 and Adjoining Government Land, Wong Yi Au, Tai Po, New Territories**

Drg. Ref.

Calculation: **Estimation of Sewage Discharge from Existing Development**

Made by: JP Date: 09/2024 Chd.: NP

~~Swimming Pool Flow~~ Assume: - Pool size = 685 m^2 with 1.5 m water depth. - Pool volume = 685 x 1.5 = 1027.5 m^3. - Turnover rate = 6 hours. - Filter loading rate = 50 $m^3/m^2/hr$. - Filter area required = 1027.5 / 6 / 50 = 3.425 m^2. - Assume Filter Diameter = 700 mm - Filter Area = 0.3848 m^2 - No. of filter required = 9 (12) - Backwash flow rate = 0.5 $m^3/m^2/min$. - Back wash flow = 0.3848 x 0.5 = 0.1924 m^3/min = 3.2 L/s	3.2	L/s
Tolo Ridge (Catchment H)		
Number of Houses/ Blocks	2	
Number of Flats	24	Flats
Size of household/flat (1)	2.8	Persons/flat
Population	68	Persons
Per Capita Flow (2) - R4	0.37	m^3/day/person
Clubhouse Area (measured on GeoInfo Map)	560	m^2
Employee per GFA (in 100 m^2)(7)	3.3	Persons
Employee Population	18	Persons
Per Capita Flow(4) - J11	0.28	m^3/day
Estimated Dry Weather Flow	**30.3**	m^3/day
~~Swimming Pool Flow~~ Assume: - Pool size = 165 m^2 with 1.5 m water depth. - Pool volume = 165 x 1.5 = 247.5 m^3. - Turnover rate = 6 hours. - Filter loading rate = 50 $m^3/m^2/hr$. - Filter area required = 247.5 / 6 / 50 = 0.825 m^2. - Assume Filter Diameter = 500 mm - Filter Area = 0.1963 m^2 - No. of filter required = 5 (12) - Backwash flow rate = 0.5 $m^3/m^2/min$. - Back wash flow = 0.1963 x 0.5 = 0.0982 m^3/min = 1.6 L/s	1.6	L/s
Constellation Cove (Catchment H)		
Number of Houses/ Blocks	90	
Number of Flats	286	Flats
Size of household/flat (1)	2.8	Persons/flat
Population	801	Persons
Per Capita Flow (2) - R4	0.37	m^3/day/person
Clubhouse Area (measured on GeoInfo Map)	5200	m^2
Employee per GFA (in 100 m^2)(7)	3.3	Persons
Employee Population	172	Persons
Per Capita Flow(4) - J11	0.28	m^3/day
Estimated Dry Weather Flow	**344.4**	m^3/day
~~Swimming Pool Flow~~ Assume: - Pool size = 840 m^2 with 1.5 m water depth. - Pool volume = 840 x 1.5 = 1260 m^3. - Turnover rate = 6 hours. - Filter loading rate = 50 $m^3/m^2/hr$. - Filter area required = 1260 / 6 / 50 = 4.2 m^2. - Assume Filter Diameter = 700 mm - Filter Area = 0.3848 m^2 - No. of filter required = 11 (12) - Backwash flow rate = 0.5 $m^3/m^2/min$. - Back wash flow = 0.3848 x 0.5 = 0.1924 m^3/min = 3.2 L/s	3.2	L/s
Anchors International Nursery (Constellation Cove Campus) (Catchment H)		
Class	7	Ref: https://www.schooland.hk/kg/anchors3
Students	94	Persons
Employee(only on-list teachers and workers)	11	Persons
Per Capita Flow (5) -Students	0.04	m3/day
Per Capita Flow (4) -Employee	0.28	m3/day
Total Population	105	Persons
Estimated Dry Weather Flow	**6.8**	m3/day
Total Estimate Dry Weather Flow	**2005.6**	
Catchment Inflow Factor (6) - Tai Po	1.0	
Total Estimated Dry Weather Flow (including catchment inflow factor)	**2005.6**	m3/day
Contributing Population	7428	
Peaking Factor (8)	5	
Total Estimated Peak Flow	**116.1**	**L/s**
Additional Flow from Swimming Pool Backwashes	**33.6**	**L/s**

1. A person per flat (PPF) ratio of 2.8 is adopted based on the PPF in Tai Po District Council in 2021 Population Census.
2. Unit flow factor per resident = 0.37 m3/day for domestic housing population R4 based on EPD's GESF Table T-1
3. Unit flow factor per resident = 0.27 m3/day for modern village based on EPD's GESF Table T-1.
4. Unit Flow Factor per employee = 0.28 m3/day (0.08m3/day for Commercial Employee + 0.20m3/day for J11 specific trades for community, social and personal services) based on EPD's GESF Table T-2
5. Unit Flow Factor per person = 0.04 m3/day for school students based on EPD's GESF Table T-2
6. Catchment Inflow Factor = 1.0, for Tai Po District based on EPD's GESF Table T-4
7. Community, Social & Personal Services = 3.3 employee per 100m2 of GFA based on PlanD's Commercial and Industrial Floor Space Utilization Survey "CIFSUS" Table 8.
8. Peaking Factor = 5, for contributing population >5000 and <10000 (including stormwater allowance) based on EPD's GESF Table T-5
9. Unit flow factor per resident = 0.19 m3/day for domestic housing population R1 based on EPD's GESF Table T-1
10. Village houses have been assumed of 3-floored with one apartment per floor.
11. All Economic Activities = 3.4 employee per 100m2 of GFA based on PlanD's Commercial and Industrial Floor Space Utilization Survey "CIFSUS" Table 8.
12. Assume 1 filter operates at a time. https://www.wateropolis.com/wp-content/uploads/2018/05/Recirculation-and-Filtration-Design-Handout-1-1-2019.pdf

ARUP

Job No.	Sheet No.	Rev.
	2	2

Member/Location

Job Title: **Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) for Proposed Residential Development at Various Lots in D.D. 32 and Adjoining Government Land, Wong Yi Au, Tai Po, New Territories**

Drg. Ref.

Calculation: Estimation of Sewerage Discharge from Proposed Development

Made by: JP | Date: 09/2024 | Chd.: NP

Proposed Site		
Residential - Block T1 and T2		
Domestic GFA	35710.4	m^2
Number of Flats	500	
Size of household/flat (1)	2.8	Persons
Per Capita Flow (3) - R3	0.37	m^3/day
Total Population	1400	Persons
Estimated Dry Weather Flow	**518.0**	m^3/day
Clubhouse		
GFA	1607.0	m^2
Employee per GFA (in 100 m^2)(7)	3.3	Persons
Employee Population	53	Persons
Per Capita Flow(5) - J11	0.28	m^3/day
Estimated Dry Weather Flow	**14.8**	m^3/day
Total Estimate Dry Weather Flow	**532.8**	m^3/day
Catchment Inflow Factor (8) - Tai Po	1.0	
Total Estimated Dry Weather Flow (including catchment inflow factor)	**532.8**	m^3/day
Contributing Population	1974	
Peaking Factor (9)	6	
Total Estimated Peak Flow	**37.0**	**L/s**

Note:

1. A person per flat (PPF) ratio of 2.8 is adopted based on the PPF in Tai Po District Council in 2021 Population Census.
2. Unit flow factor per resident = 0.19 m^3/day for domestic housing population R1 based on EPD's GESF Table T-1.
3. Unit flow factor per resident = 0.37 m^3/day for domestic housing population R3 based on EPD's GESF Table T-1.
4. Unit flow factor per resident = 0.19 m^3/day for insititutional and special class based on EPD's GESF Table T-1.
5. Unit Flow Factor per employee = 0.28 m^3/day (0.08m3/day for Commercial Employee + 0.20m^3/day for J11 specific trades for community, social and personal services) based on EPD's GESF Table T-2.
6. Unit Flow Factor per employee = 0.28 m^3/day (0.08m3/day for Commercial Employee + 0.20m^3/day for J4) based on EPD's GESF Table T-2.
7. Community, Social & Personal Services = 3.3 employee per 100m^2 of GFA based on PlanD's Commercial and Industrial Floor Space Utilization Survey "CIFSUS" Table 8.
8. Catchment Inflow Factor = 1.0, for Tai Po District based on EPD's GESF Table T-4.
9. Peaking Factor = 6, for contributing population >1000 and <5000 (including stormwater allowance) based on EPD's GESF Table T-5.

ARUP

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Job No.	Sheet No.	Rev.
	3	2

Job Title	**Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) for Proposed Residential Development at Various Lots in D.D. 32 and Adjoining Government Land, Wong Yi Au, Tai Po, New Territories**
Calculation	Hydraulic Assessment on Existing and Proposed Sewerage System After Propsoed Development

Member/Location

Drg. Ref.

Made by JP Date 09/2024 Chd. NP

Key Equations and Assumptions

Pipe Design Capacity $Q_\theta = VA$

Pipe Full-bore Velocity

$$V = -\sqrt{32gRS_f}\log\left[\frac{k_s}{14.8R} + \frac{1.255v}{R\sqrt{32gRS_f}}\right]$$

(By Colebrook-White Equation)

Roughness Coeff., Ks = 3 mm (for slimed VC pipe material, poor condition)

Ks= 1.5 mm (for slimed HDPE pipe material, poor condition)

Acceleration due to gravity, g = 9.81 m/s^2

Kinematic Viscosity, v = 0.000001 m^2/s

Key Notes

(*) Peaking factor is extracted from EPD's GESF Table T-5, under the scenario of "including stormwater allowance").
(**) Catchment Inflow Factor is extracted from EPD's GESF Table T-4, under Catchment Central.

USMH	DSMH	USGL(mPD)	DSGL(mPD)	USIL(mPD)	DSIL(mPD)	US Cover (m)	DS Cover (m)	Length (m)	Gradient	Gradient (1 in)	Pipe size (mm)	Area (m^2)	Siltation	Reduced Area (m2)	sqrt(32gRs)	Perimeter (m)	R (m)	Pipe Material	ks (mm)	Pipe Full-bore Velocity, V (m/s)	Pipe Design Capacity, Q_θ (m^3/s)	Additional ADWF (m^3/day) (1)	Accumulated ADWF (m^3/day)	Contributing Population	Peaking Factor (2)	Catchment Inflow Factor (3)	Peak Flow (m^3/s)	Swimming Pool Flow (m^3/s)	Capacity Check
Existing Sewerage System Checking																													
FMH1005820	FMH1005819	27.83	24.20	24.20	22.32	3.41	1.66	17.5	0.107	9.3	225	0.040	5%	0.038	1.377	0.707	0.056	Clayware	0.600	4.315	0.172	121.9	121.9	451.41	8	1.00	0.01	0.0000	7%
FMH1005819	FMH1005818	24.20	22.00	22.22	20.56	1.76	1.22	18.7	0.089	11.3	225	0.040	5%	0.038	1.252	0.707	0.056	Clayware	0.600	3.921	0.156	0.0	121.9	451.41	8	1.00	0.01	0.0000	7%
FMH1005818	FMH1005817	22.00	20.00	20.46	18.79	1.32	0.99	19.4	0.086	11.6	225	0.040	5%	0.038	1.233	0.707	0.056	Clayware	0.600	3.861	0.154	0.0	121.9	451.41	8	1.00	0.01	0.0000	7%
FMH1005817	FMH1005816	20.00	18.80	18.69	17.36	1.09	1.22	15.1	0.088	11.4	225	0.040	5%	0.038	1.247	0.707	0.056	Clayware	0.600	3.905	0.155	0.0	121.9	451.41	8	1.00	0.01	0.0000	7%
FMH1005816	FMH1005815	18.80	17.60	17.26	15.92	1.32	1.46	18.2	0.074	13.6	225	0.040	5%	0.038	1.140	0.707	0.056	Clayware	0.600	3.570	0.142	0.0	121.9	451.41	8	1.00	0.01	0.0000	8%
FMH1005815	FMH1005837	17.60	16.70	15.82	14.99	1.56	1.49	26.0	0.032	31.3	225	0.040	10%	0.036	0.751	0.707	0.056	Clayware	0.600	2.346	0.093	0.0	121.9	451.41	8	1.00	0.01	0.0000	12%
FMH1005837	FMH1005836	16.70	16.00	14.89	14.12	1.59	1.66	23.8	0.032	30.9	225	0.040	10%	0.036	0.756	0.707	0.056	Clayware	0.600	2.362	0.094	0.0	121.9	451.41	8	1.00	0.01	0.0000	12%
FMH1005836	FMH1005835	16.00	15.40	14.02	13.69	1.76	1.49	9.8	0.034	29.7	225	0.040	10%	0.036	0.771	0.707	0.056	Clayware	0.600	2.410	0.096	84.1	205.9	762.77	8	1.00	0.02	0.0024	22%
FMH1005835	FMH1005834	15.40	15.35	13.59	13.39	1.59	1.74	7.1	0.028	35.5	225	0.040	10%	0.036	0.705	0.707	0.056	Clayware	0.600	2.203	0.088	0.0	205.9	762.77	8	1.00	0.02	0.0024	24%
FMH1005834	FMH1005833	15.35	15.00	13.29	12.73	1.84	2.05	14.0	0.040	25.0	225	0.040	10%	0.036	0.840	0.707	0.056	Clayware	0.600	2.628	0.104	25.2	231.1	855.96	8	1.00	0.02	0.0024	23%
FMH1005833	FMH1005832	15.00	13.80	12.63	12.03	2.15	1.55	23.0	0.026	38.3	225	0.040	10%	0.036	0.679	0.707	0.056	Clayware	0.600	2.120	0.084	0.0	231.1	855.96	8	1.00	0.02	0.0024	28%
FMH1005832	FMH1005831	13.80	11.96	11.71	10.03	1.87	1.71	16.1	0.104	9.6	225	0.040	5%	0.038	1.357	0.707	0.056	Clayware	0.600	4.252	0.169	0.0	231.1	855.96	8	1.00	0.02	0.0024	14%
FMH1005831	FMH1005830	11.96	10.86	10.02	9.35	1.72	1.29	10.0	0.067	14.9	225	0.040	5%	0.038	1.088	0.707	0.056	Clayware	0.600	3.405	0.135	400.0	631.1	2,337.59	6	1.00	0.04	0.0024	34%
FMH1005830	FMH1005824	10.86	9.88	9.32	7.90	1.32	1.76	12.8	0.111	9.0	225	0.040	5%	0.038	1.400	0.707	0.056	Clayware	0.600	4.385	0.174	0.0	631.1	2,337.59	6	1.00	0.04	0.0024	26%
FMH1005824	FMH1005823	9.88	9.49	7.70	7.14	1.96	2.13	4.4	0.127	7.9	225	0.040	5%	0.038	1.499	0.707	0.056	Clayware	0.600	4.697	0.187	0.0	631.1	2,337.59	6	1.00	0.04	0.0024	25%
FMH1005823	FMH1005825	9.49	9.11	7.12	6.67	2.00	2.07	22.7	0.020	50.4	375	0.110	10%	0.099	0.764	1.178	0.094	Clayware	0.600	2.556	0.282	1374.5	2005.6	7,428.32	5	1.00	0.12	0.0336	53%
FMH1005825	FMH1005826	9.11	9.32	6.66	5.93	2.08	3.02	14.4	0.051	19.7	375	0.110	5%	0.105	1.221	1.178	0.094	Clayware	0.600	4.096	0.452	0.0	2005.6	7,428.32	5	1.00	0.12	0.0336	33%
FMH1005826	FMH1005827	9.32	7.54	5.92	5.70	3.03	1.47	21.9	0.010	99.5	375	0.110	10%	0.099	0.544	1.178	0.094	Clayware	0.600	1.816	0.201	0.0	2005.6	7,428.32	5	1.00	0.12	0.0336	75%
FMH1005827	FMH1068053	7.54	6.63	5.70	4.72	1.47	1.54	23.2	0.042	23.7	375	0.110	5%	0.105	1.115	1.178	0.094	Clayware	0.600	3.738	0.413	0.0	2005.6	7,428.32	5	1.00	0.12	0.0336	36%
FMH1068053	FMH1005828	6.63	6.59	4.72	4.55	1.54	1.67	4.1	0.041	24.1	375	0.110	5%	0.105	1.105	1.178	0.094	Clayware	0.600	3.703	0.409	0.0	2005.6	7,428.32	5	1.00	0.12	0.0336	37%
FMH1005828	FMH1005829	6.63	5.91	4.55	4.00	1.71	1.54	20.5	0.027	37.3	375	0.110	10%	0.099	0.889	1.178	0.094	Clayware	0.600	2.976	0.329	0.0	2005.6	7,428.32	5	1.00	0.12	0.0336	46%
FMH1005829	FOH1000020	5.91	5.38	4.00	3.20	1.54	1.81	30.6	0.026	38.3	375	0.110	10%	0.099	0.877	1.178	0.094	Clayware	0.600	2.938	0.324	0.0	2005.6	7,428.32	5	1.00	0.12	0.0336	46%
Proposed Sewerage System Checking																													
TMH	FMH1005820	60.00	27.83	58.50	24.30	1.28	3.31	365.0	0.094	10.7	225	0.040	5%	0.038	1.286	0.707	0.056	HDPE	0.300	4.403	0.175	532.8	532.8	1,973.51	6	1.00	0.037	0.0000	21%
FMH1005820	FMH1005819	27.83	24.20	24.20	22.32	3.41	1.66	17.5	0.107	9.3	225	0.040	5%	0.038	1.377	0.707	0.056	Clayware	0.600	4.315	0.172	121.9	654.7	2,424.92	6	1.00	0.045	0.0000	27%
FMH1005819	FMH1005818	24.20	22.00	22.22	20.56	1.76	1.22	18.7	0.089	11.3	225	0.040	5%	0.038	1.252	0.707	0.056	Clayware	0.600	3.921	0.156	0.0	654.7	2,424.92	6	1.00	0.045	0.0000	29%
FMH1005818	FMH1005817	22.00	20.00	20.46	18.79	1.32	0.99	19.4	0.086	11.6	225	0.040	5%	0.038	1.233	0.707	0.056	Clayware	0.600	3.861	0.154	0.0	654.7	2,424.92	6	1.00	0.045	0.0000	30%
FMH1005817	FMH1005816	20.00	18.80	18.69	17.36	1.09	1.22	15.1	0.088	11.4	225	0.040	5%	0.038	1.247	0.707	0.056	Clayware	0.600	3.905	0.155	0.0	654.7	2,424.92	6	1.00	0.045	0.0000	29%
FMH1005816	FMH1005815	18.80	17.60	17.26	15.92	1.32	1.46	18.2	0.074	13.6	225	0.040	5%	0.038	1.140	0.707	0.056	Clayware	0.600	3.570	0.142	0.0	654.7	2,424.92	6	1.00	0.045	0.0000	32%
FMH1005815	FMH1005837	17.60	16.70	15.82	14.99	1.56	1.49	26.0	0.032	31.3	225	0.040	10%	0.036	0.751	0.707	0.056	Clayware	0.600	2.346	0.093	0.0	654.7	2,424.92	6	1.00	0.045	0.0000	49%
FMH1005837	FMH1005836	16.70	16.00	14.89	14.12	1.59	1.66	23.8	0.032	30.9	225	0.040	10%	0.036	0.756	0.707	0.056	Clayware	0.600	2.362	0.094	0.0	654.7	2,424.92	6	1.00	0.045	0.0000	48%
FMH1005836	FMH1005835	16.00	15.40	14.02	13.69	1.76	1.49	9.8	0.034	29.7	225	0.040	10%	0.036	0.771	0.707	0.056	Clayware	0.600	2.410	0.096	84.1	738.8	2,736.28	6	1.00	0.051	0.0024	56%
FMH1005835	FMH1005834	15.40	15.35	13.59	13.39	1.59	1.74	7.1	0.028	35.5	225	0.040	10%	0.036	0.705	0.707	0.056	Clayware	0.600	2.203	0.088	0.0	738.8	2,736.28	6	1.00	0.051	0.0024	61%
FMH1005834	FMH1005833	15.35	15.00	13.29	12.73	1.84	2.05	14.0	0.040	25.0	225	0.040	10%	0.036	0.840	0.707	0.056	Clayware	0.600	2.628	0.104	25.2	764.0	2,829.47	6	1.00	0.053	0.0024	53%
FMH1005833	FMH1005832	15.00	13.80	12.63	12.03	2.15	1.55	23.0	0.026	38.3	225	0.040	10%	0.036	0.679	0.707	0.056	Clayware	0.600	2.120	0.084	0.0	764.0	2,829.47	6	1.00	0.053	0.0024	66%
FMH1005832	FMH1005831	13.80	11.96	11.71	10.03	1.87	1.71	16.1	0.104	9.6	225	0.040	5%	0.038	1.357	0.707	0.056	Clayware	0.600	4.252	0.169	0.0	764.0	2,829.47	6	1.00	0.053	0.0024	33%
FMH1005831	FMH1005830	11.96	10.86	10.02	9.35	1.72	1.29	10.0	0.067	14.9	225	0.040	5%	0.038	1.088	0.707	0.056	Clayware	0.600	3.405	0.135	400.0	1164.0	4,311.10	6	1.00	0.081	0.0024	61%
FMH1005830	FMH1005824	10.86	9.88	9.32	7.90	1.32	1.76	12.8	0.111	9.0	225	0.040	5%	0.038	1.400	0.707	0.056	Clayware	0.600	4.385	0.174	0.0	1164.0	4,311.10	6	1.00	0.081	0.0024	48%
FMH1005824	FMH1005823	9.88	9.49	7.70	7.14	1.96	2.13	4.4	0.127	7.9	225	0.040	5%	0.038	1.499	0.707	0.056	Clayware	0.600	4.697	0.187	0.0	1164.0	4,311.10	6	1.00	0.081	0.0024	45%
FMH1005823	FMH1005825	9.49	9.11	7.12	6.67	2.00	2.07	22.7	0.020	50.4	375	0.110	10%	0.099	0.764	1.178	0.094	Clayware	0.600	2.556	0.282	1374.5	2538.5	9,401.84	5	1.00	0.147	0.0336	64%
FMH1005825	FMH1005826	9.11	9.32	6.66	5.93	2.08	3.02	14.4	0.051	19.7	375	0.110	5%	0.105	1.221	1.178	0.094	Clayware	0.600	4.096	0.452	0.0	2538.5	9,401.84	5	1.00	0.147	0.0336	40%
FMH1005826	FMH1005827	9.32	7.54	5.92	5.70	3.03	1.47	21.9	0.010	99.5	375	0.110	10%	0.099	0.544	1.178	0.094	Clayware	0.600	1.816	0.201	0.0	2538.5	9,401.84	5	1.00	0.147	0.0336	90%
FMH1005827	FMH1068053	7.54	6.63	5.70	4.72	1.47	1.54	23.2	0.042	23.7	375	0.110	5%	0.105	1.115	1.178	0.094	Clayware	0.600	3.738	0.413	0.0	2538.5	9,401.84	5	1.00	0.147	0.0336	44%
FMH1068053	FMH1005828	6.63	6.59	4.72	4.55	1.54	1.67	4.1	0.041	24.1	375	0.110	5%	0.105	1.105	1.178	0.094	Clayware	0.600	3.703	0.409	0.0	2538.5	9,401.84	5	1.00	0.147	0.0336	44%
FMH1005828	FMH1005829	6.63	5.91	4.55	4.00	1.71	1.54	20.5	0.027	37.3	375	0.110	10%	0.099	0.889	1.178	0.094	Clayware	0.600	2.976	0.329	0.0	2538.5	9,401.84	5	1.00	0.147	0.0336	55%
FMH1005829	FOH1000020	5.91	5.38	4.00	3.20	1.54	1.81	30.6	0.026	38.3	375	0.110	10%	0.099	0.877	1.178	0.094	Clayware	0.600	2.938	0.324	0.0	2538.5	9,401.84	5	1.00	0.147	0.0336	56%

Notes:
(1) Refer to Appendix B1 for the Street Name.
(2) Peaking Factor based on EPD's GESF Table T-5
(3) Catchment Inflow Factor for Central based on EPD's GESF Table T-4

ARUP

Job No.	Sheet No.	Rev.
	4	2

Member/Location

Job Title: **Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) for Proposed Residential Development at Various Lots in D.D. 32 and Adjoining Government Land, Wong Yi Au, Tai Po, New Territories**

Drg. Ref.

Calculation: Estimation of Sewerage Discharge from Proposed Development

Made by: JP Date: 09/2024 Chd.: JP

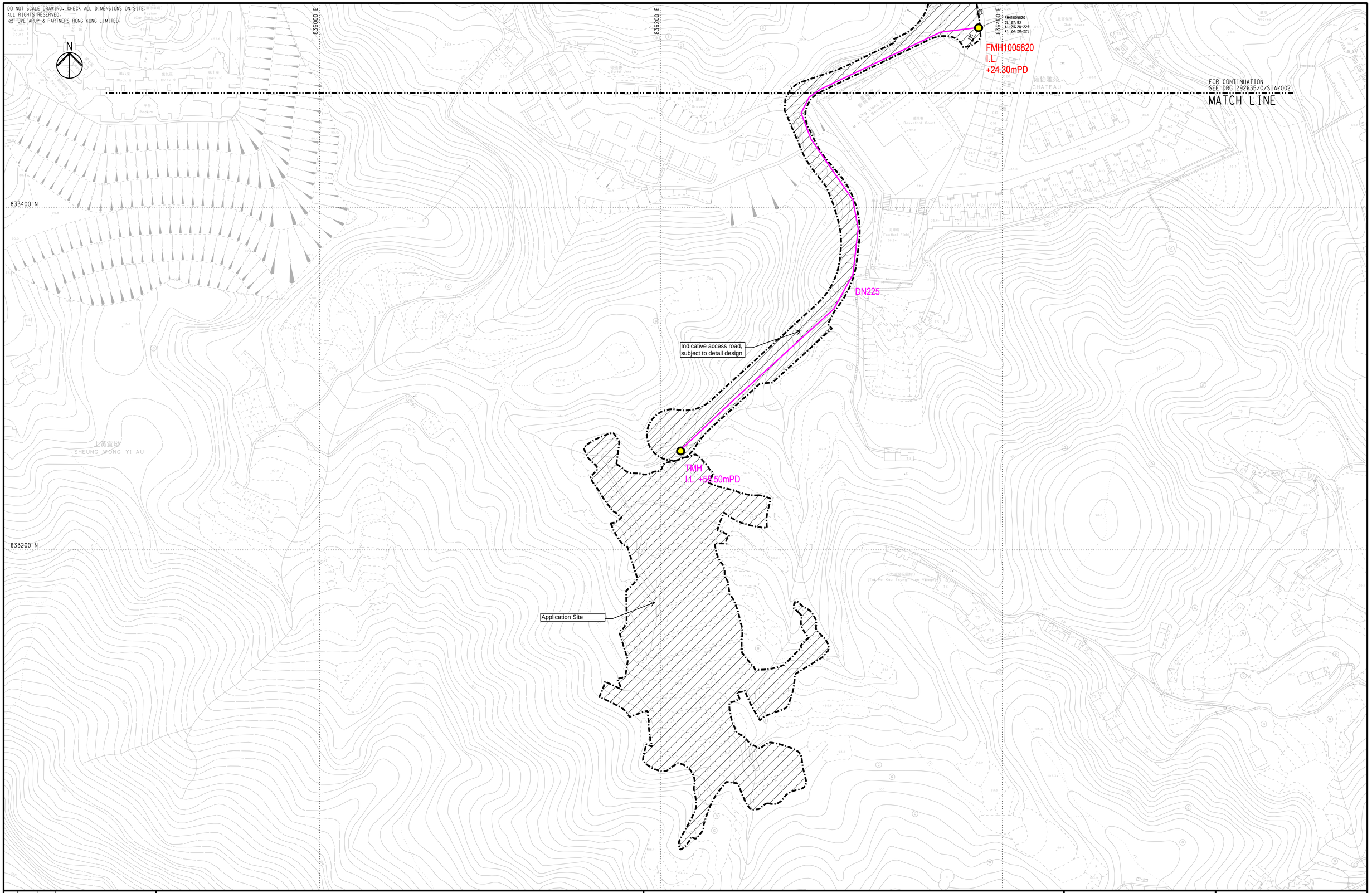
Proposed downstream sewage facilities capacity check:

	ADWF (m^3/day)	Peak Flow (L/s)	Peak Flow Increase (L/s)	Existing/Proposed Sewer Size (mm)	Max. Occupation at Downstream Pipeline	Occupancy of TPKSPS	Increase of TPKSPS Occupancy	Occupancy of Upgraded TPSTW	Increase of Upgraded TPSTW
Existing Sewage Flow	2,005.6	116.1	-	225	34.1%	56%	-	1.25%	-
				375	74.6%				
Existing Sewage Flow + Proposed Sewage Flow	2,538.5	153.1	37.0	225	65.7%	71%	15%	1.59%	0.33%
				375	90.0%				

TPKSPS	3600 m^3/day
Upgraded TPSTW	160000 m^3/day

Appendix B

Existing and Proposed Sewerage Network



Mark	Date	By	Rev.
C	03/25	JP	THIRD ISSUE
B	04/24	JP	SECOND ISSUE
A	02/23	AH	FIRST ISSUE

LEGEND

PROPOSED DEVELOPMENT

PROPOSED SEWER

EXISTING SEWER AND MANHOLE

Job Title
APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 32 AND ADJOINING GOVERNMENT LAND, WONG YI AU, TAI PO, NEW TERRITORIES

Drawing Title
PROPOSED SEWERAGE NETWORK
(SHEET 1 OF 2)

Drawing Status
SUBMISSION

ARUP

Scale 1:1000 @ A1
Drn. RY Date 02/23 Chd. JW Passed KK
Job No. 292635
Drawing No. C/SIA/001
Rev. C

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Filename : V:\#292635\ARUP\#civil\#292635_C_SIA_001.dgn
6/27/2025

N

836000 E

836200 E

836400 E

833800 N

833600 N

NEW TERRITORIES CIRCULAR ROAD

MTR (EAST RAIL LINE)

TOLO HIGHWAY

TAI PO ROAD (TAI PO KAU)

FGJ1001184

FGJ1012280
IL 3.29

FMH1006080
CL 8.65
A1 3.03-250
X1 2.90-250

FDH1000020
CL 5.38
A1 3.20-375
X1 3.20-375
X2 4.14-375

XPS1000323
Tai Po Kau SPS
Sewage Pumping Station

FMH1005829
CL 5.91
A1 4.00-375
X1 4.00-375

FMH1005828
CL 6.59
A1 4.55-375
X1 4.55-375

FMH1005827
CL 7.54
A1 5.70-375
X1 5.70-375

FMH1005826
CL 9.32
A1 5.93-375
X1 5.92-375

FMH1005825
CL 9.11
A1 6.67-375
A2 6.71-225
X1 6.66-375

FTH1001605
X1 225

FMH1005823
CL 9.49
A1 8.49-375
A2 7.14-225
X1 7.12-375

FMH1005824
CL 9.88
A1 7.30-225
X1 9.70-225

FGJ1004280

FMH1005814
CL 13.07
A1 11.18-225
A2 11.18-375
X1 11.18-375

FTH1001604
X1 225

FMH1005813
CL 15.29
A1 13.18-375
X1 13.18-375

FMH1005812
CL 17.98
A1 15.23-375
X1 15.23-375

FMH1005811
CL 19.92
A1 17.83-375
X1 17.83-375

FMH1005810
CL 21.42
A1 18.90-375
X1 18.90-375

FMH1005809
CL 23.80
A1 22.43-375
X1 22.43-375

FMH1005808
CL 24.12
A1 22.93-375
X1 22.93-375

FMH1005807
CL 26.19
A1 24.43-375
X1 24.43-375

FMH1023321
CL 18.10
A1 16.82-225
X1 16.75-225

FMH1023320
CL 18.30
X1 17.30-225

FMH1023322
CL 18.00
A1 16.70-225
A2 16.70-150
A3 16.70-150
A4 16.51-225
A5 16.68-225
X1 16.46-225

FMH1023323
CL 19.41
A1 16.26-225
X1 16.20-225

FMH1023324
CL 21.10
A1 16.01-225
X1 16.03-225

FMH1032641
CL 23.59
A1 22.93-225
X1 22.93-225

FMH1032652
CL 23.47
A1 22.78-225
X1 22.78-225

FMH1032656
CL 21.95
A1 21.15-225
X1 21.15-225

FMH1032658
CL 21.15
A1 20.85-225
X1 20.85-225

FMH1023325
CL 21.00
A1 15.79-225
A2 15.84-225
X1 15.79-225

FMH1023326
CL 20.00
A1 15.59-225
X1 15.34-225

FMH1023328
CL 19.45
A1 15.27-225
X1 15.21-225

FMH1023329
CL 16.84
A1 15.58-225
A2 15.05-225
X1 14.98-225

FMH1023330
CL 15.48
A1 14.54-225
X1 13.99-225

FMH1023331
CL 20.00
X1 16.46-225

FMH1023332
CL 14.15
A1 13.35-225
X1 12.88-225

FMH1023333
CL 13.40
A1 12.47-225
X1 12.04-225

FMH1023340
CL 12.50
A1 11.59-225
X1 11.02-225

FMH1005830
CL 10.86
A1 9.35-225
X1 9.32-225

FMH1005831
CL 11.86
A1 10.03-225
A2 225
X1 10.02-225

FMH1005832
CL 13.80
A1 12.03-225
X1 11.71-225

FMH1005833
CL 15.00
A1 225
A2 12.73-225
X1 12.63-225

FMH1005834
CL 15.35
A1 13.39-225
X1 13.29-225

FMH1005835
CL 15.40
A1 13.69-225
X1 13.59-225

FGJ1013554

FGJ1013958

FMH1005836
CL 16.00
A2 14.12-225
X1 14.02-225

FMH1005837
CL 16.70
A1 14.99-225
X1 14.89-225

FMH1005822
CL 11.18
A1 9.91-375
A2 9.92-225
X1 9.90-375

FMH1035041
CL 11.85
A1 9.95-225
X1 9.94-225

FMH1035040
CL 12.80
A1 10.04-225
X1 10.03-225

FMH1005815
CL 17.60
A1 15.92-225
X1 15.82-225

FMH1005816
CL 18.80
A1 17.36-225
X1 17.26-225

FMH1005817
CL 20.00
A1 18.79-225
X1 18.69-225

FMH1005818
CL 22.00
A1 20.56-225
X1 20.46-225

FMH1005819
CL 24.20
A1 22.32-225
X1 22.22-225

FMH1005820
CL 27.83
A1 24.28-225
X1 24.20-225

Indicative access road,
subject to detail design

DN225

FMH1005820
I.L. +24.30mPD

MATCH LINE
FOR CONTINUATION
SEE DRG 292635/C/SIA/001

LEGEND

PROPOSED DEVELOPMENT

EXISTING SEWER AND MANHOLE

PROPOSED SEWER

Mark	Date	By	Rev.
C	03/25	JP	THIRD ISSUE
B	04/24	JP	SECOND ISSUE
A	02/23	AH	FIRST ISSUE

Job Title

APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 32 AND ADJOINING GOVERNMENT LAND, WONG YI AU, TAI PO, NEW TERRITORIES

Drawing Title

PROPOSED SEWERAGE NETWORK (SHEET 2 OF 2)

Drawing Status

SUBMISSION

ARUP

Scale	1:1000 @ A1		
Drn. RY	Date 02/23	Chd. JW	Passed KK
Job No. 292635	Drawing No. C/SIA/002		Rev. C

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Filename : V:\292635\ARUP\Civil\292635_C_SIA_002.dgn
6/27/2025

N

836000 E

836200 E

836400 E

FMH1005820
CL 27.83
A1 24.28-225
A1 24.20-225

FOR CONTINUATION
SEE DRG 292635/C/SIA/002
MATCH LINE

833400 N

833200 N

Indicative access road, subject to detail design

Application Site

上黃宜坳
SHEUNG WONG YI AU

雍怡雅苑
CHATEAU

Mark	Date	By	Rev.
C	03/25	JP	THIRD ISSUE
B	04/24	JP	SECOND ISSUE
A	02/23	AH	FIRST ISSUE

LEGEND

PROPOSED DEVELOPMENT

EXISTING SEWER AND MANHOLE

Job Title
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Drawing Title
EXISTING SEWERAGE NETWORK
(SHEET 1 OF 2)

Drawing Status
SUBMISSION

ARUP

Scale 1:1000 @ A1
Drn. RY Date 02/23 Chd. JW Passed KK
Job No. 292635
Drawing No. C/SIA/003
Rev. C

Printed by : reman.yick 6/27/2025
Filename : V:\#292635\ARUP\civil\292635_C_SIA_001.dgn

N

836000 E

836200 E

836400 E

833800 N

833600 N

NEW TERRITORIES CIRCULAR ROAD

MTR (EAST RAIL LINE)

TOLO HIGHWAY

TAI PO ROAD (TAI PO KAU)

FGJ1001184

FGJ1012280
IL 3.29

FMH1006080
CL 8.65
A1 3.03-250
X1 2.90-250

FDH1000020
CL 5.38
A1 3.20-375
X1 3.20-375
X2 4.14-375

XPS1000323
Tai Po Kau SPS
Sewage Pumping Station

FMH1005829
CL 5.91
A1 4.00-375
X1 4.00-375

FMH1005828
CL 6.59
A1 4.55-375
X1 4.55-375

FMH1005827
CL 7.54
A1 5.70-375
X1 5.70-375

FMH1005826
CL 9.32
A1 5.93-375
X1 5.92-375

FMH1005825
CL 9.11
A1 6.67-375
A2 6.71-225
X1 6.66-375

FTH1001605
X1 225

FMH1005824
CL 9.88
A1 7.30-225
X1 9.70-225

FMH1005823
CL 9.49
A1 8.49-375
A2 7.14-225
X1 7.12-375

FGJ1004280

FMH1005814
CL 13.07
A1 11.18-225
A2 11.18-375
X1 11.18-375

FTH1001604
X1 225

FMH1005813
CL 15.29
A1 13.18-375
X1 13.18-375

FMH1005812
CL 17.98
A1 15.23-375
X1 15.23-375

FMH1005811
CL 19.92
A1 17.83-375
X1 17.83-375

FMH1005810
CL 21.42
A1 18.90-375
X1 18.90-375

FMH1005809
CL 23.80
A1 22.43-375
X1 22.43-375

FMH1005808
CL 24.12
A1 22.93-375
X1 22.93-375

FMH1005807
CL 26.19
A1 24.43-375
X1 24.43-375

FMH1005830
CL 10.86
A1 9.35-225
X1 9.32-225

FMH1005822
CL 11.18
A1 9.91-375
A2 9.92-225
X1 9.90-375

FMH1005831
CL 11.96
A1 10.03-225
A2 225
X1 10.02-225

FMH1035041
CL 11.85
A1 9.95-225
X1 9.94-225

FMH1035040
CL 12.80
A1 10.04-225
X1 10.03-225

FMH1005832
CL 13.80
A1 12.03-225
X1 11.71-225

FMH1005835
CL 15.40
A1 13.69-225
X1 13.59-225

FGJ1013554

FMH1005833
CL 15.00
A1 225
A2 12.73-225
X1 12.63-225

FMH1005834
CL 15.35
A1 13.39-225
X1 13.29-225

FGJ1013958

FMH1005836
CL 16.00
A2 14.12-225
X1 14.02-225

FMH1005837
CL 16.70
A1 14.99-225
X1 14.89-225

FMH1005815
CL 17.60
A1 15.92-225
X1 15.82-225

FMH1005816
CL 18.80
A1 17.36-225
X1 17.26-225

FMH1005817
CL 20.00
A1 18.79-225
X1 18.69-225

FMH1005818
CL 22.00
A1 20.56-225
X1 20.46-225

FMH1005819
CL 24.20
A1 22.32-225
X1 22.22-225

FMH1005820
CL 27.83
A1 24.28-225
X1 24.20-225

FMH1023321
CL 18.10
A1 16.82-225
X1 16.75-225

FMH1023320
CL 18.30
X1 17.30-225

FMH1023322
CL 18.00
A1 16.70-225
A2 16.70-150
A3 16.70-150
A4 16.51-225
A5 16.68-225
X1 16.46-225

FMH1023323
CL 19.41
A1 16.26-225
X1 16.20-225

FMH1023324
CL 21.10
A1 16.01-225
X1 16.03-225

FMH1032641
CL 23.59
A1 22.33-225
X1 22.93-225

FMH1032652
CL 23.47
A1 22.78-225
X1 22.78-225

FMH1032656
CL 21.95
A1 21.15-225
X1 21.15-225

FMH1032658
CL 21.15
A1 20.85-225
X1 20.85-225

FMH1023325
CL 21.00
A1 15.79-225
A2 15.84-225
X1 15.79-225

FMH1023326
CL 20.00
A1 15.59-225
X1 15.34-225

FMH1023328
CL 19.45
A1 15.27-225
X1 15.21-225

FMH1023329
CL 16.84
A1 15.58-225
A2 15.05-225
X1 14.98-225

FMH1023330
CL 15.48
A1 14.54-225
X1 13.99-225

FMH1023331
CL 20.00
X1 16.46-225

FMH1023333
CL 13.40
A1 12.47-225
X1 12.04-225

FMH1023332
CL 14.15
A1 13.35-225
X1 12.88-225

FMH1023340
CL 12.50
A1 11.59-225
X1 11.02-225

Indicative access road, subject to detail design

MATCH LINE
FOR CONTINUATION
SEE DRG 292635/C/SIA/001

LEGEND

PROPOSED DEVELOPMENT

EXISTING SEWER AND MANHOLE

Mark	Date	By	Rev.
C	03/25	JP	THIRD ISSUE
B	04/24	JP	SECOND ISSUE
A	02/23	AH	FIRST ISSUE

Job Title

APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 32 AND ADJOINING GOVERNMENT LAND, WONG YI AU, TAI PO, NEW TERRITORIES

Drawing Title

EXISTING SEWERAGE NETWORK (SHEET 2 OF 2)

Drawing Status

SUBMISSION

ARUP

Scale	1:1000 @ A1		
Drn. RY	Date 02/23	Chd. JW	Passed KK
Job No. 292635	Drawing No. C/SIA/004		Rev. C

Printed by : reman.yick
Filename : V:\292635\ARUP\Civil\292635_C_SIA_002.dgn 6/27/2025

N

836000 E
836500 E
837000 E
833500 N
833000 N

NEW TERRITORIES CIRCULAR ROAD
SHAN YIN ROAD
YUNG YI ROAD
TOLO HIGHWAY
MTR (EAST RAIL LINE)
TAI PO ROAD (TAI PO KAU)
TOLO HARBOUR
TAI PO KAU

CATCHMENT A
CATCHMENT B
CATCHMENT C
CATCHMENT D
CATCHMENT E
CATCHMENT F
CATCHMENT G
CATCHMENT H

Indicative access road, subject to detail design

Application Site

Catchment ID	Manhole Discharge to
A, B	FMH1005820
C	FMH1005834
D	FMH1005836
E, F	FMH1005831
G, H	FMH1005823

Mark	Date	By	Rev.
C	02/25	JP	THIRD ISSUE
B	04/24	JP	SECOND ISSUE
A	02/23	AH	FIRST ISSUE

LEGEND

PROPOSED DEVELOPMENT

SEWERAGE CATCHMENT

Job Title
APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 32 AND ADJOINING GOVERNMENT LAND, WONG YI AU, TAI PO, NEW TERRITORIES

Drawing Title
SEWERAGE CATCHMENT PLAN

Drawing Status
SUBMISSION

ARUP

Scale 1:2500 @ A1
Drn. RY Date 02/23 Chd. JW Passed KK
Job No. 292635
Drawing No. C/SIA/005
Rev. C

Printed by : remon.yick 6/27/2025
Filename : V:\292635\ARUP\Civil\292635_C_001.dgn