Appendix 2

Sewerage impact Assessment

Sewerage Impact Assessment

Prepared by DeSPACE (International) Limited

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CONTENTS

FIGURES

APPENDICES

1. INTRODUCTION

1.1 Project Background

1.1.1 The Proposed Development is located at 107-109 Wai Yip Street (hereafter referred to as the "Application Site"). According to approved Kwun Tong (South) OZP No. S/K14S/26 (OZP), Application Site falls within an area zoned "Other Specified Uses (Business)". DeSPACE (International) Limited has been engaged to prepare a Section 16 planning application to the Town Planning Board (TPB) for proposed minor relaxation of plot ratio and building height restrictions for proposed hotel use (the Proposed Development).

1.1.2 A Sewerage Impact Assessment (SIA) has been conducted to quantitatively assess the potential sewerage impact by comparing the estimated sewage flow from the Proposed Development and the capacity of the existing sewerage system in the vicinity. This SIA confirms the feasibility of the Proposed Development in terms of its sewerage impact.

1.2 Description of the Subject Site and Proposed Development

1.2.1 The Site, with a total area of approximately 1,170.578 square metres, is located at Nos. 107–109 Wai Yip Street, within the northwestern portion of the Kwun Tong Business Area (KTBA) near Kowloon Bay (**Figure 1** – Location Plan) where is characterised by a mix of Industrial-Office and Commercial/Office buildings. The Site area is bounded by Wai Yip Street to the south and a back lane to the north.

1.2.2 The Proposed Development comprises a 31-storey hotel building with 1 level of basement carpark. The development schedule of the proposed development is shown in Table 1.1. It is anticipated that the proposed development will be completed in 2029.

Table 1.1 Development Schedule

	Proposed Scheme
Total Site Area [(1)]	About 1,170.578m^2
Plot Ratio	14.4
Total GFA	About 16,856m^2 [(a)]
No. of Rooms	Guestroom: About 984 rooms
Site Coverage • Below 15m • Above 15m	 Less than 100% 60%
No. of Block	1
Maximum Building Height (Main Roof)	+115mPD
No. of Storey	31 (including 1 levels of basement)

a) On top of the PR/GFA set out above, the applicants have indicated that bonus PR/GFA of about 0.539 and 630m^2 will be claimed subject to approval by the Building Authority (BA) under Building (Planning) Regulations (B(P)R) 22(1) or (2). The bonus PR/GFA has been accounted for in the building bulk for conducting technical assessments and thus a total GFA of 17,487 m^2 has been taken as the basis for the subject SIA.

2. SEWERAGE IMPACT ASSESSMENT

2.1 Scope of Work

2.1.1 The aim of this SIA is to assess whether the capacity of the existing sewerage network serving the Application Site is sufficient to cope with the sewage flow from the Proposed Development during its operation stage and to recommend appropriate mitigation measures to alleviate unacceptable sewerage impact, if any.

2.2 Methodology and Assessment Criteria

2.2.1 The employment population density for various economic activities and planned usage types has been referenced to Table 8 of PlanD's Commercial and Industrial Floor Space Utilization Survey "CIFSUS".

2.2.2 The unit flow factor and global peaking factors have adopted the figures stipulated in the Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning (GESF) (Version 1.0)1 issued by the Environmental Protection Department (EPD) in March 2005 for the purposes of estimating the quantity of the sewage generated from the Proposed Development and the existing catchment area.

2.2.3 According to the GESF, the overall unit flow is composed of flows due to residents, employees and the associated activities. The following unit flow factors have been adopted in the SIA calculation in accordance with Tables T-1, T-2 and T-3 of the GESF:

- Domestic: 0.19 m^3/day (Institutional and Special Class)
- Industrial: 0.53m^3/day (Industrial Employee and J1 Manufacturing in East
- Kowloon)
- Retail Trade: 0.28m^3/day (Commercial Employee and J4 Wholesale & Retail)
- Office: 0.08m^3/day (Commercial Employee and J6 Finance, Insurance, Real
- Estate & Business Services)
- Restaurant: 1.58m^3/day (Commercial Employee and J10 Restaurants & Hotels)
- Social Facilities: 0.28 m^3/day (Commercial Employee and J11 Community,
- Social & Personal Services)
- Storage: 0.18m^3/day (Commercial Employee and J3 Transport, Storage &
- Communication)

2.2.4 The catchment inflow factor, PCIF of 1.1 (East Kowloon), is adopted in catchment calculations.

2.3 Existing and Future Sewerage System

2.3.1 According to the Drainage Record obtained from DSD, there are Ø225mm sewer pipes running along Tai Yip Street and the back lane of the Proposed Development, and Ø225mm and Ø400mm sewer pipes running along Wai Yip Street. The existing sewers in the vicinity of the Application Site are shown in **Figure 2**.

2.3.2 A new terminal manhole FTMH-01 (P1) will be constructed within the Application Site to collect sewage from the Proposed Development. A new Ø225mm polyethylene sewer pipe is proposed to connect the Proposed Development and the existing government manhole FMH4042668(S1) along Wai Yip Street.

2.3.3 Invert levels and pipe size of the proposed terminal manhole and existing manholes are shown in **Appendix 1**.

2.4 Wastewater Generated by the Proposed Development

2.4.1 Wastewater arising from the Proposed Development will be contributed by visitors and employees of the hotel.

2.4.2 Detailed calculation of sewage generation from the Proposed Development is given in **Table 2.1** below.

Table 2.1 Estimated Peak Flow

Hotel		
GFA[1]	17,487	m^2
Assumed floor area per employee	31.3	m^2 per employee -- (refer to Table 8 of CIFSUS - Hotels and Boarding Houses)
Estimated population	560	employees
Unit Flow Factor	1.58	m^3/day/person -- (refer to Table T-2 of GESF - J10 Restaurants & Hotels)
Estimated Dry Weather Flow	**884.2**	m^3/day

Water Feature (outdoor)		
Assumed Area of Landscape Pool	75.0	m^2
Average Depth of Water	1.2	m (ordinary assumption)
Volume of Water Feature	90.0	m^3
Turnover Rate	6	hr
Adopted Surface Loading Rate of Filter	50	$m^3/m^2/hr$
Adopted Filter Area	0.3	m^2
Backwash Duration	3	min/d
Backwash flow rate	30	$m^3/m^2/hr$
Design flow for Water Feature Backwashing	**0.5**	m^3/day
Design flow for Water Feature Backwashing	**2.5**	litre/sec
Total Flow from the Proposed Development		
Flow rate (excluding backwash of water feature)	884.2	m^3/day
Flow rate with Catchment Inflow Factor	972.6	m^3/day (refer to Table T-4 of GESF - East Kowloon - 1.1)
Contributing population	3602	people
Peaking factor	6	(refer to Table T-5 of GESF for a population of 1000 to 5000 incl. stormwater allowance)
Peak flow (excluding backwash of water feature)	**67.5**	litre/sec
Peak flow (including backwash of water feature)	**70.0**	litre/sec

Note:

[1] Including bonus GFA of 630.942 m^2

[2] For job types J10 and J11, the "per-employee" unit flow factor takes into account the flows of customers and/or tenants

2.5 Assessment of Sewerage Impact

2.5.1 Sewage generated from the Application Site will be discharged from the terminal manhole FTMH-01 (P1) via a polyethylene (PE) pipe, to existing manhole FMH4042668 (S1) of the public sewerage system. The proposed P1 and catchments in the vicinity of the Application Site are shown in **Figure 2**.

2.5.2 The estimated sewage flow of the Proposed Development and nearby catchments

with parameters of the planned developments adopted have been compared with the capacity of the existing sewerage system.

2.5.3 According to the calculation results presented in **Tables 4** of **Appendix 1**, the sewage generated from the Application Site and surrounding catchment areas exceed the capacity of the existing sewerage network at segments S1-S2, S6-S7, S7-S8, S8-S9, S9-S10, S10-S11 and S11-S12. Upgrading works on the public sewers S1-S2 and S6-S13 are required. After the proposed upgrading and new pipe works, there would not have any adverse impact on the public sewerage system.

3. OVERALL CONCLUSION

3.1.1 The potential sewerage impact arising from the Application Site has been quantitatively assessed by comparing the estimated sewage flow from the Proposed Development and the capacity of the existing sewerage system in the vicinity.

3.1.2 Based on the assessment findings, the sewage generated from the Application Site and surrounding catchment areas will exceed the capacity of the existing sewerage network at segments S1-S2 and S6-S12 with the approved planned developments accounted for. The existing sewerage network from existing sewer manhole FMH4042668 to existing sewer manhole FMH4042669 are proposed to be upgraded to 400mm dia.; and from existing sewer manhole FMH4042673 to existing sewer manhole FG4003341 are proposed to be upgraded to 525mm dia. to provide sufficient capacity to cater for the proposed additional flow. With the proposed mitigation measure, no unacceptable sewerage impact resulting from the Proposed Development is anticipated.

3.1.3 This SIA confirms the feasibility of the Proposed Development in terms of its sewerage impact. As the proposed scheme is subject to detailed design, it is recommended that an updated SIA to be required at the detailed design stage as an approval condition of the subject town planning permission. For agreements with DSD and EPD, the updated SIA shall further take into account, but not limited to, the updated design of the sewerage arrangement on site, the updated planning parameters, backwater analysis, the requirement and associated extent of condition survey at downstream drains and sewers, and formulate updated appropriate mitigation measure and, any proposed modification / upgrading works if any on the public drainage / sewerage system, to be implemented by the Proposed Development to be handed over to DSD for maintenance.

Figures

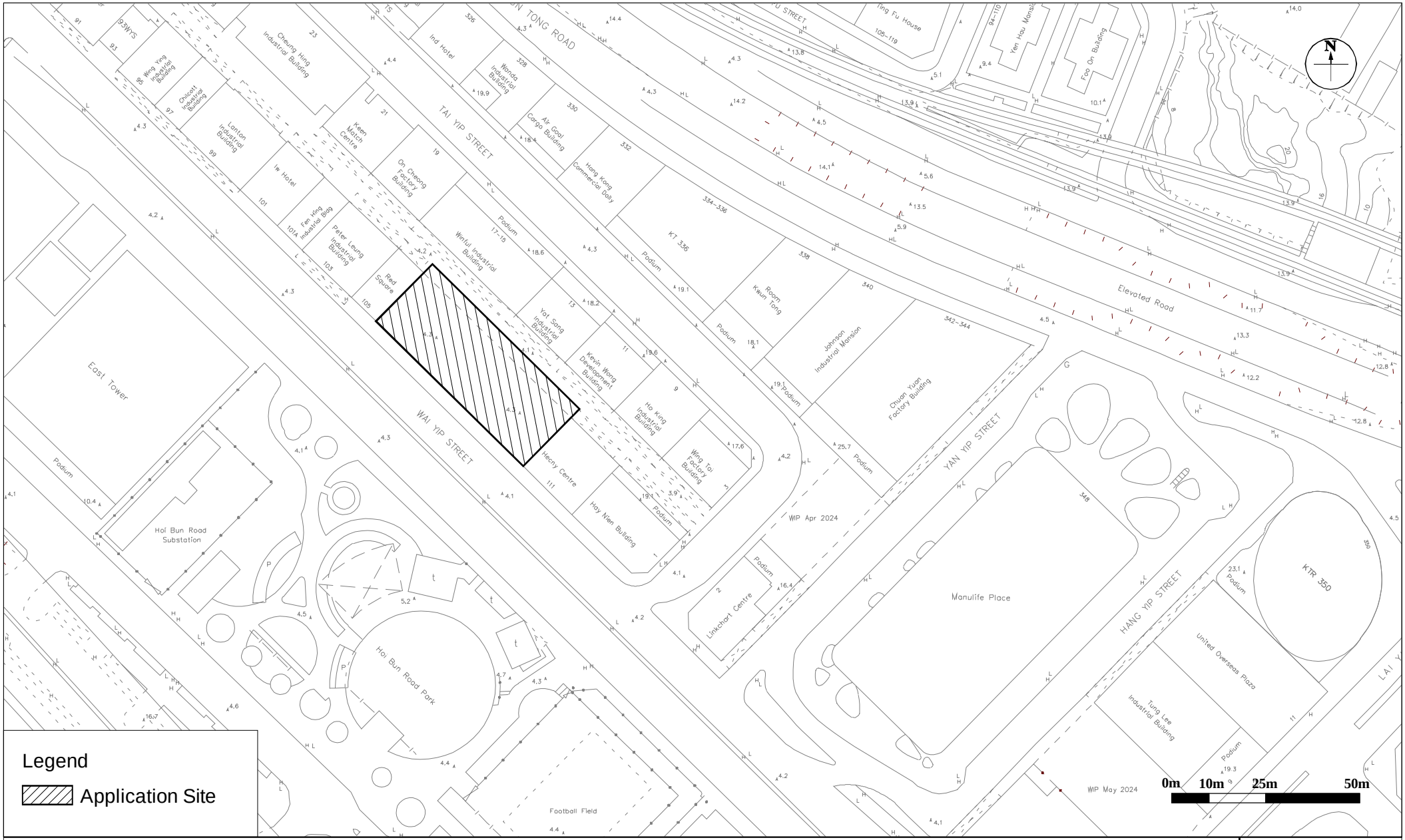

Figure: 1

Title: Location Plan

Project: Proposed Hotel Development t 107-109 Wai Yip Street, Kwun Tong, Kowloon

Rev.: 1.0

Date: Aug 2025

P1
FTMH-01
CL 4.14
X1 2.40-225

S1
FMH4042668
CL 4.12
A1 1.91-225
X1 1.42-225 (400)

S2
FMH4042669
CL 4.04
A1 0.8-225 (400)
A2 0.8-225
X1 0.68-400

S3
FMH4042670
CL 4.06
A1 0.43-400
A2 1.01-225
X1 0.38-400

S4
FMH4042671
CL 4.00
A1 0.30-400
X1 0.26-400

S5
FMH4042672
CL 4.11
A1 -0.09-400
A2 0.137-375
X1 -0.22-400

S6
FMH4042673
CL 4.14
A1 -0.33-400
X1 -0.33-400(525)

S7
FMH4042674
CL 3.98
A1 -0.35-400(525)
X1 -0.37-400(525)

S8
FMH4100299
CL 4.51
A1 -0.42-400(525)
X1 -0.44-400(525)

S9
FMH4042675
CL 3.73
A1 -0.49-400(525)
X1 -0.50-400(525)

S10
FMH4042676
CL 3.74
A1 -0.62-400(525)
X1 -0.62-400(525)

S11
FMH4042677
CL 3.79
A1 -0.73-400(525)
X1 -0.74-400(525)

S12
FMH4042678
CL 3.87
A1 -0.76-400(525)
X1 -0.76-400(525)

S13
FG4003341
CL 3.92
A1 -1.84-400(525)

Legend

- Application Site
- Catchment A (to S2)
- Catchment B (to S3)
- Catchment C (to S5)
- Catchment D (to S12)
- Existing manhole
- Existing sewer
- (400) Proposed Mitigation
- 1 Building ID
- Approved planning applications for Office use

The proposed sizes of pipes shown are internal diameters

N 0 50m 100m

DeSPACE (International) Limited

Figure: 2

Title: Existing Sewerage System and Catchment Area in the Vicinity of the Application Site

Date: Aug 2025

Appendix 1

Detailed Sewerage Impact Assessment Calculations

Table 1 Calculation for Sewage Generation Rate of the Proposed Development

Hotel		
GFA[1]	17487	m^2
Assumed floor area per employee	31.3	m^2 per employee -- (refer to Table 8 of CIFSUS - Hotels and Boarding Houses)
Estimated population	560	employees
Unit Flow Factor	1.58	m^3/day/person -- (refer to Table T-2 of GESF - J10 Restaurants & Hotels)
Estimated Dry Weather Flow	**884.2**	m^3/day
Water Feature (outdoor)		
Assumed Area of Landscape Pool	75.0	m^2
Average Depth of Water	1.2	m (ordinary assumption)
Volume of Water Feature	90.0	m^3
Turnover Rate	6	hr
Adopted Surface Loading Rate of Filter	50	$m^3/m^2/hr$
Adopted Filter Area	0.3	m^2
Backwash Duration	3	min/d
Backwash flow rate	30	$m^3/m^2/hr$
Design flow for Water Feature Backwashing	**0.5**	m^3/day
Design flow for Water Feature Backwashing	**2.5**	litre/sec
Total Flow from the Proposed Development		
Flow rate (excluding backwash of water feature)	884.2	m^3/day
Flow rate with Catchment Inflow Factor	972.6	m^3/day (refer to Table T-4 of GESF - East Kowloon - 1.1)
Contributing population	3602	people (refer to Table T-5 of GESF for a population of 1000 to 5000 incl. stormwater allowance)
Peaking factor	6	
Peak flow (excluding backwash of water feature)	**67.5**	litre/sec
Peak flow (including backwash of water feature)	**70.0**	litre/sec

Note:

[1] Including bonus GFA of 630.942 m^2

[2] For job types J10 and J11, the "per-employee" unit flow factor takes into account the flows of customers and/or tenants

Table 2 Hydraulic Capacity of Existing and Proposed Sewers - Free Flow Condition

Segment	Manhole Reference	Manhole Reference	Material	Pipe Dia.	Pipe Length	Invert Level 1	Invert Level 2	g	k_s	s	v	V	Area	Q	Estimated Capacity
				mm	m	mPD	mPD	m/s^2	m		m^2/s	m/s	m^2	m^3/s	L/s
P1-S1	FTMH-01	FMH4042668	PE	225	16.37	2.40	1.91	9.81	0.0015	0.030	0.000001	1.99	0.04	0.08	79
S1-S2	FMH4042668	FMH4042669	clayware	225	53.49	1.42	0.80	9.81	0.0006	0.012	0.000001	1.41	0.04	0.06	56
S2-S3	FMH4042669	FMH4042670	clayware	400	34.30	0.68	0.43	9.81	0.0006	0.007	0.000001	1.61	0.13	0.20	202
S3-S4	FMH4042670	FMH4042671	clayware	400	19.14	0.38	0.30	9.81	0.0006	0.004	0.000001	1.22	0.13	0.15	153
S4-S5	FMH4042671	FMH4042672	clayware	400	46.50	0.26	-0.09	9.81	0.0006	0.008	0.000001	1.64	0.13	0.21	206
S5-S6	FMH4042672	FMH4042673	clayware	400	20.50	-0.22	-0.33	9.81	0.0006	0.005	0.000001	1.38	0.13	0.17	173
S6-S7	FMH4042673	FMH4042674	clayware	400	6.40	-0.33	-0.35	9.81	0.0030	0.003	0.000001	0.84	0.13	0.11	106
S7-S8	FMH4042674	FMH4100299	clayware	400	22.76	-0.37	-0.42	9.81	0.0030	0.002	0.000001	0.70	0.13	0.09	89
S8-S9	FMH4100299	FMH4042675	clayware	400	20.80	-0.44	-0.49	9.81	0.0030	0.002	0.000001	0.74	0.13	0.09	93
S9-S10	FMH4042675	FMH4042676	clayware	400	28.23	-0.50	-0.62	9.81	0.0030	0.004	0.000001	0.98	0.13	0.12	123
S10-S11	FMH4042676	FMH4042677	clayware	400	26.36	-0.62	-0.73	9.81	0.0030	0.004	0.000001	0.97	0.13	0.12	122
S11-S12	FMH4042677	FMH4042678	clayware	400	3.59	-0.74	-0.76	9.81	0.0030	0.006	0.000001	1.12	0.13	0.14	141
S12-S13	FMH4042678	FG4003341	clayware	400	10.11	-0.76	-1.84	9.81	0.0006	0.107	0.000001	6.20	0.13	0.78	779

Remarks: (1) g=gravitational acceleration; k_s=equivalent sand roughness; s=gradient; v=kinematic viscosity of water; V=mean velocity

(2) The values of ks = 0.6mm and 3mm are used for the calculation of slimed clayware sewer, poor condition @mean velocity = approximately 1.2m/s and 0.75m/s respectively (based on Table 5: Recommended Roughness Values in Sewerage Manual)

(3) The values of ks = 1.5mm is used for the calculation of proposed polyethylene sewer, poor condition @mean velocity = approximately 0.75m/s (based on Table 5: Recommended Roughness Values in Sewerage Manual)

(4) The value of velocity (V) is referred to the Tables for the hydraulic design of pipes, sewers and channels (8th edition)

(5) Equation used: $V=-\sqrt{(8gDs)}\log\left(\frac{k_s}{3.7D}+\frac{2.51v}{D\sqrt{(2gDs)}}\right)$

Table 3 Calculation for Sewage generation rate of the Surrounding Building (Planned Condition)
Catchment A, discharges to FMH4042669 (S2)

1. On Cheong Factory Building (19 Tai Yip Street)
Industrial - Manufacturing

Assumed area	=	2510	m^2
Assumed floor area per employee	=	43.5	m^2 per employee -- (refer to Table 8 of CIFSUS - Manufacturing)
Total number of employees	=	58	employees
Design flow	=	530	litre/employee/day -- (refer to Table T-3 of GESF - J1 Manufacturing in East Kowloon)
Sewage generation rate	=	**30.6**	m^3/day

2. Winful Industrial Building (15-17 Tai Yip Street)
Industrial - Manufacturing Reference: SIA report under Approved Planning Application A/K14/809

Assumed area	=	5280	m^2
Assumed floor area per employee	=	30.3	m^2 per employee -- (refer to Table 8 of CIFSUS - Manufacturing - I/O Buildings)
Total number of employees	=	174	employees
Design flow	=	530	litre/employee/day -- (refer to Table T-3 of GESF - J1 Manufacturing in East Kowloon)
Sewage generation rate	=	**92.3**	m^3/day

3. Peter Leung Industrial Building (103 Wai Yip Street)
a) Industrial - Manufacturing

Assumed area	=	2827	m^2
Assumed floor area per employee	=	30.3	m^2 per employee -- (refer to Table 8 of CIFSUS - Manufacturing - I/O Buildings)
Total number of employees	=	93	employees
Design flow	=	530	litre/employee/day -- (refer to Table T-3 of GESF - J1 Manufacturing in East Kowloon)
Sewage generation rate	=	**49.4**	m^3/day

b) Express delivery

Assumed area	=	201	m^2
Assumed floor area per employee	=	22.7	m^2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services - I/O Buildings)
Total number of employees	=	9	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**0.7**	m^3/day

4. Red Square (105 Wai Yip Street)
Office

Assumed area	=	1739	m^2
Assumed floor area per employee	=	18.2	m^2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	96	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**7.7**	m^3/day

F&B

Assumed area	=	191	m^2
Assumed floor area per employee	=	19.6	m^2 per employee -- (refer to Table 8 of CIFSUS - Restaurant)
Total number of employees	=	10	employees
Design flow	=	1580	litre/employee/day -- (refer to Table T-2 of GESF - J10 Restaurants and Hotels)
Sewage generation rate	=	**15.4**	m^3/day

Table 3 Calculation for Sewage generation rate of the Surrounding Building (Planned Condition)

5. Yat Sang Industrial Building

Industrial - Manufacturing	Reference: SIA report under Approved Planning Application A/K14/809		
Assumed area	=	2400	m^2
Assumed floor area per employee	=	43.5	m^2 per employee -- (refer to Table 8 of CIFSUS - Manufacturing)
Total number of employees	=	55	employees
Design flow	=	530	litre/employee/day -- (refer to Table T-3 of GESF - J1 Manufacturing in East Kowloon)
Sewage generation rate	=	**29.3**	m^3/day

6. Kevin Wong Development Building (11 Tai Yip Street)

Industrial - Manufacturing	Reference: SIA report under Approved Planning Application A/K14/809		
Assumed area	=	3080	m^2
Assumed floor area per employee	=	30.3	m^2 per employee -- (refer to Table 8 of CIFSUS - Manufacturing - I/O Buildings)
Total number of employees	=	102	employees
Design flow	=	530	litre/employee/day -- (refer to Table T-3 of GESF - J1 Manufacturing in East Kowloon)
Sewage generation rate	=	**53.9**	m^3/day

7. Proposed Commercial Development at 111 Wai Yip Street and 1 Tai Yip Street (Planning Application No. A/K14/809)

	Reference: Approved Planning Application A/K14/809 (https://www.ozp.tpb.gov.hk/api/Perm/Gist?caseNo=A%2fK14%2f809&lang=EN&ext=pdf&d		
Office			
Assumed area	=	13349	m^2
Assumed floor area per employee	=	18.2	m^2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	734	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**58.7**	m^3/day

8. Ho King Industrial Building (9 Tai Yip Street)

Industrial - Manufacturing			
Assumed area	=	2044	m^2
Assumed floor area per employee	=	43.5	m^2 per employee -- (refer to Table 8 of CIFSUS - Manufacturing)
Total number of employees	=	47	employees
Design flow	=	530	litre/employee/day -- (refer to Table T-3 of GESF - J1 Manufacturing in East Kowloon)
Sewage generation rate	=	**24.9**	m^3/day

9. Wing Tai Factory Building (3 Tai Yip Street)

Industrial - Manufacturing			
Assumed area	=	3144	m^2
Assumed floor area per employee	=	30.3	m^2 per employee -- (refer to Table 8 of CIFSUS - Manufacturing - I/O Buildings)
Total number of employees	=	104	employees
Design flow	=	530	litre/employee/day -- (refer to Table T-3 of GESF - J1 Manufacturing in East Kowloon)
Sewage generation rate	=	**55.0**	m^3/day
Storage			
Assumed area	=	147	m^2
Assumed floor area per employee	=	250.0	m^2 per employee -- (refer to Table 8 of CIFSUS - Storage)
Total number of employees	=	1	employees
Design flow	=	180	litre/employee/day -- (refer to Table T-2 of GESF - Transport, Storage & Communication)
Sewage generation rate	=	**0.1**	m^3/day

Table 3 Calculation for Sewage generation rate of the Surrounding Building (Planned Condition)

11. Air Goal Cargo Building (330 Kwun Tong Road)
Industrial - Manufacturing

Assumed area	=	2309	m^2
Assumed floor area per employee	=	43.5	m^2 per employee -- (refer to Table 8 of CIFSUS - Manufacturing)
Total number of employees	=	53	employees
Design flow	=	530	litre/employee/day -- (refer to Table T-3 of GESF - J1 Manufacturing in East Kowloon)
Sewage generation rate	=	**28.2**	m^3/day

12. Hong Kong Commercial Daily (332 Kwun Tong Road)
Office

Assumed area	=	2304	m^2
Assumed floor area per employee	=	18.2	m^2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	127	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**10.1**	m^3/day

13. Planned Development (334-336 & 338 Kwun Tong Road)
Office

Reference: Approved Planning Application A/K14/804 (https://www.ozp.tpb.gov.hk/api/Perm/Gist?caseNo=A%2fK14%2f804&lang=EN&ext=pdf&d

Assumed area	=	23211	m^2
Assumed floor area per employee	=	18.2	m^2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	1277	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**102.1**	m^3/day

15. Johnson Industrial Mansion (340 Kwun Tong Road)
Industrial - Manufacturing

Assumed area	=	5772	m^2
Assumed floor area per employee	=	30.3	m^2 per employee -- (refer to Table 8 of CIFSUS - Manufacturing - I/O Buildings)
Total number of employees	=	190	employees
Design flow	=	530	litre/employee/day -- (refer to Table T-3 of GESF - J1 Manufacturing in East Kowloon)
Sewage generation rate	=	**101.0**	m^3/day

Total Flow of Catchment A, discharges to FMH4042669 (S2)	**=**	**659.4**	**m^3/day**

Table 3 Calculation for Sewage generation rate of the Surrounding Building (Planned Condition)
Catchment B, discharges to FMH4042670 (S3)

16. Chuan Yuan Factory Building (342-344 Kwun Tong Road)			
Industrial - Manufacturing			
Assumed area	=	13344	m^2
Assumed floor area per employee	=	43.5	m^2 per employee -- (refer to Table 8 of CIFSUS - Manufacturing)
Total number of employees	=	307	employees
Design flow	=	530	litre/employee/day -- (refer to Table T-3 of GESF - J1 Manufacturing in East Kowloon)
Sewage generation rate	=	**162.7**	m^3/day
17. Hong Kong Baptist Hospital (4 Tai Yip Street)		Reference: SIA report under Approved Planning Application A/K14/782	
Sewage generation rate	=	**181.6**	m^3/day
18. Linkchart Centre (2 Tai Yip Street)		Reference: Online building profile (https://www.interasia.com.hk/en/Kowloon-Building/Kwun-Tong/1563/Linkchart-Centre)	
Office			
Assumed area	=	9109	m^2
Assumed floor area per employee	=	18.2	m^2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	501	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**40.1**	m^3/day
24a. KTR 350 (65% of total discharge capacity)		Reference: SIA report under Approved Planning Application A/K14/763	
a) Office			
Assumed area	=	19223	m^2
Assumed floor area per employee	=	18.2	m^2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	1057	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**84.6**	m^3/day
b) F&B			
Assumed area	=	1201	m^2
Assumed floor area per employee	=	19.6	m^2 per employee -- (refer to Table 8 of CIFSUS - Restaurants)
Total number of employees	=	61	employees
Design flow	=	1580	litre/employee/day -- (refer to Table T-2 of GESF - J10 Restaurants and Hotels)
Sewage generation rate	=	**96.8**	m^3/day
b) Retail			
Assumed area	=	1646	m^2
Assumed floor area per employee	=	28.6	m^2 per employee -- (refer to Table 8 of CIFSUS - Retail Trade)
Total number of employees	=	58	employees
Design flow	=	280	litre/employee/day -- (refer to Table T-2 of GESF - J4 Wholesale & Retail)
Sewage generation rate	=	**16.1**	m^3/day
65% of Total sewage generation rate		**128.4**	m^3/day
Total Flow of Catchment B, discharges to FMH4042670 (S3)	**=**	**512.7**	**m^3/day**

Table 3 Calculation for Sewage generation rate of the Surrounding Building (Planned Condition)
Catchment C, discharges to FMH4042672 (S5)

19. Manulife Place

a) Office

Assumed area	=	42693	m^2
Assumed floor area per employee	=	18.2	m2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	2348	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**187.8**	m^3/day

b) F&B

Total number of employees	=	28	employees
Design flow	=	1580	litre/employee/day -- (refer to Table T-2 of GESF - J10 Restaurants and Hotels)
Sewage generation rate	=	**44.2**	m^3/day

b) Retail

Total number of employees	=	1	employees
Design flow	=	280	litre/employee/day -- (refer to Table T-2 of GESF - J4 Wholesale & Retail)
Sewage generation rate	=	**0.3**	m^3/day

20. Proposed Commercial Development at 5 Lai Yip Street (Planning Application No. A/K14/810)

Assumed area	=	14787	m^2
Assumed floor area per employee	=	18.2	m2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	813	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**65.1**	m^3/day

21. Proposed Commercial Development at 7 Lai Yip Street (Planning Application No. A/K14/774)

a) Office

Assumed area	=	12375	m^2
Assumed floor area per employee	=	18.2	m^2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	681	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**54.5**	m^3/day

b) F&B

Assumed area	=	1200	m^2
Assumed floor area per employee	=	19.6	m^2 per employee -- (refer to Table 8 of CIFSUS - Restaurants)
Total number of employees	=	61	employees
Design flow	=	1580	litre/employee/day -- (refer to Table T-2 of GESF - J10 Restaurants and Hotels)
Sewage generation rate	=	**96.7**	m^3/day

c) Retail

Assumed area	=	1200	m^2
Assumed floor area per employee	=	28.6	m^2 per employee -- (refer to Table 8 of CIFSUS - Retail Trade)
Total number of employees	=	42	employees
Design flow	=	280	litre/employee/day -- (refer to Table T-2 of GESF - J4 Wholesale & Retail)
Sewage generation rate	=	**11.8**	m^3/day

Table 3 Calculation for Sewage generation rate of the Surrounding Building (Planned Condition)

22. Proposed Commercial Development at 9 Lai Yip Street (Planning Application No. A/K14/748)
Office

Assumed area	=	9524	m^2
Assumed floor area per employee	=	18.2	m^2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	524	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**89.0**	m^3/day

23. Proposed Commercial Development at 11 Lai Yip Street (Planning Application No. A/K14/806)
Office

Assumed area	=	15050	m^2
Assumed floor area per employee	=	18.2	m^2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	828	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**66.2**	m^3/day

24b. KTR 350 (35% of total discharge capacity) Reference: SIA report under Approved Planning Application A/K14/763
a) Office

Assumed area	=	19223	m^2
Assumed floor area per employee	=	18.2	m^2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	1057	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**84.6**	m^3/day

b) F&B

Assumed area	=	1201	m^2
Assumed floor area per employee	=	19.6	m^2 per employee -- (refer to Table 8 of CIFSUS - Restaurants)
Total number of employees	=	61	employees
Design flow	=	1580	litre/employee/day -- (refer to Table T-2 of GESF - J10 Restaurants and Hotels)
Sewage generation rate	=	**96.8**	m^3/day

b) Retail

Assumed area	=	1646	m^2
Assumed floor area per employee	=	28.6	m^2 per employee -- (refer to Table 8 of CIFSUS - Retail Trade)
Total number of employees	=	58	employees
Design flow	=	280	litre/employee/day -- (refer to Table T-2 of GESF - J4 Wholesale & Retail)
Sewage generation rate	=	**16.1**	m^3/day
35% of Total sewage generation rate		**69.1**	m^3/day

Total Flow of Catchment C, discharges to FMH4042672 (S5)	**=**	**576.3**	**m^3/day**

Table 3 Calculation for Sewage generation rate of the Surrounding Building (Planned Condition)
Catchment D, discharges to FMH4042678 (S12)

25. Neo
Office

Assumed area	=	55390	m^2
Assumed floor area per employee	=	18.2	m^2 per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	3046	employees
Design flow	=	80	litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	**243.7**	m^3/day

26. Cooked Food Stall

Assumed area	=	385	m^2
Assumed floor area per employee	=	19.6	m^2 per employee -- (refer to Table 8 of CIFSUS - Restaurants)
Total number of employees	=	20	employees
Design flow	=	1580	litre/employee/day -- (refer to Table T-2 of GESF - J10 Restaurants and Hotels)
Sewage generation rate	=	**31.0**	m^3/day

27. Lai Yip Street Public Toilet

Discharge from WC (Qty * DU)	=	**19.8**	L/s
Discharge from Basin (Qty * DU)	=	**3.0**	L/s
Discharge from Single Urinal with Cistern (Qty * DU)	=	**2.4**	L/s
Sum of DUs	=	**25.2**	L/s
Wastewater Flow Rate ($K\sqrt{\sum DU}$)	=	**5.0**	L/s

Frequency of use, K = 1, extracted from Table 6 of Plumbing Engineering Services Design Guide (PESDG)
Discharge Unit (DU) of WC = 1.8 L/s; DU of Basin = 0.3 L/s, DU of Single Urinal with Cistern = 0.4L/s, extracted from Table 5 of PESDG
Total number of WC = 11; Total number of Basin = 10; Total number of Single Urinal with Cistern = 6 (Site observation)

28. Hoi Bun Road Park Public Restroom

Discharge from WC (Qty * DU)	=	**21.6**	L/s
Discharge from Basin (Qty * DU)	=	**2.7**	L/s
Discharge from Single Urinal with Cistern (Qty * DU)	=	**1.2**	L/s
Discharge from Shower without Plug (Qty * DU)	=	**2.4**	L/s
Sum of DUs	=	**27.9**	L/s
Wastewater Flow Rate ($K\sqrt{\sum DU}$)	=	**5.3**	L/s

Frequency of use, K = 1, extracted from Table 6 of Plumbing Engineering Services Design Guide (PESDG)
Discharge Unit (DU) of WC = 1.8 L/s; DU of Basin = 0.3 L/s, DU of Single Urinal with Cistern = 0.4L/s, DU of Shower without Plug = 0.4L/s, extracted from Table 5 of PESDG
Total number of WC = 12; Total number of Basin = 9; Total number of Single Urinal with Cistern = 3; Total number of Shower without plug = 6 (Site observation)

29. Lai Yip Street Refuse Collection Point

Assumed area	**=**	125.0	m^2--(measured from basemap)
Assumed depth of wash water	**=**	0.05	m
Volume of wastewater due to station cleaning	**=**	6,250.00	L
Assumed duration of cleaning	**=**	10	minutes
Frequency of cleaning per day	**=**	1	times per day
Wastewater flow rate	**=**	**10.417**	L/s

Total Flow of Catchment D, excluding public toilet/restroom/RCP, discharges to FMH4042678 (S12)	**=**	**274.7**	**m^3/day**

Table 3 Calculation for Sewage generation rate of the Surrounding Building (Planned Condition)

Sub-total

Total Flow at S0 (including Proposed Development)	=	**884.2**	m^3/day
Total Flow at S1 (including Proposed Development)	=	**884.2**	m^3/day
Total Flow at S2 (including Proposed and Planned Development + Catchment A)	=	**1,543.5**	m^3/day
Total Flow at S3 (including Proposed and Planned Development + Catchment A & B)	=	**2,056.2**	m^3/day
Total Flow at S4 (including Proposed and Planned Development + Catchment A & B)	=	**2,056.2**	m^3/day
Total Flow at S5 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,632.5**	m^3/day
Total Flow at S6 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,632.5**	m^3/day
Total Flow at S7 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,632.5**	m^3/day
Total Flow at S8 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,632.5**	m^3/day
Total Flow at S9 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,632.5**	m^3/day
Total Flow at S10 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,632.5**	m^3/day
Total Flow at S11 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,632.5**	m^3/day
Total Flow at S12 (including Proposed and Planned Development + Catchment A & B & C & D)	=	**2,907.2**	m^3/day
Total Flow at S13 (including Proposed and Planned Development + Catchment A & B & C & D)	=	**2,907.2**	m^3/day

Sub-total with Catchment Inflow Factor - East Kowloon = 1.1

Total Flow at S0 (including Proposed Development)	=	**972.6**	m^3/day
Total Flow at S1 (including Proposed Development)	=	**972.6**	m^3/day
Total Flow at S2 (including Proposed and Planned Development + Catchment A)	=	**1,697.9**	m^3/day
Total Flow at S3 (including Proposed and Planned Development + Catchment A & B)	=	**2,261.9**	m^3/day
Total Flow at S4 (including Proposed and Planned Development + Catchment A & B)	=	**2,261.9**	m^3/day
Total Flow at S5 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,895.7**	m^3/day
Total Flow at S6 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,895.7**	m^3/day
Total Flow at S7 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,895.7**	m^3/day
Total Flow at S8 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,895.7**	m^3/day
Total Flow at S9 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,895.7**	m^3/day
Total Flow at S10 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,895.7**	m^3/day
Total Flow at S11 (including Proposed and Planned Development + Catchment A & B & C)	=	**2,895.7**	m^3/day
Total Flow at S12 (including Proposed and Planned Development + Catchment A & B & C & D)	=	**3,198.0**	m^3/day
Total Flow at S13 (including Proposed and Planned Development + Catchment A & B & C & D)	=	**3,198.0**	m^3/day

Table 4 Comparision of the Hydraulic Capacity of Existing Sewers for Sewerage generated from the Proposed Development and Surrounding Catchment Areas

Hydraulic Capacity of Existing Sewers

Segment	Manhole Reference	Manhole Reference	Pipe Dia. (mm)	Pipe Length (m)	Gradient	Estimated Capacity (L/s)	Peak Flow from the Proposed Development only (L/s)	Contribution from the Proposed Development only (%)	Status	Included Catchment	Daily Flow (m^3/day)	Contributing Population	Peaking Factor	Public Toilet/ Restroom/ RCP (L/s)	Peak Flow from the Proposed Development and Catchment Areas (Without Water Feature Backwash) (L/s)	Water Feature Backwash (L/s)	Peak Flow from the Proposed Development and Catchment Areas (With Water Feature Backwash) (L/s)	Contribution from the Proposed Development and the Surrounding Catchment Areas (%)	Status
P1-S1	FTMH-01	FMH4042668	225	16.4	0.030	79	67.5	85.4%	OK	-	972.6	3,602	6	-	67.5	2.5	70.0	88.5%	OK
S1-S2	FMH4042668	FMH4042669	225	53.5	0.012	56	67.5	120.6%	Spill	-	972.6	3,602	6	-	67.5	2.5	70.0	125.1%	Spill
S2-S3	FMH4042669	FMH4042670	400	34.3	0.007	202	67.5	33.4%	OK	A	1697.9	6,288	5	-	98.3	2.5	100.8	49.8%	OK
S3-S4	FMH4042670	FMH4042671	400	19.1	0.004	153	67.5	44.2%	OK	A + B	2261.9	8,377	5	-	130.9	2.5	133.4	87.3%	OK
S4-S5	FMH4042671	FMH4042672	400	46.5	0.008	206	67.5	32.9%	OK	A + B	2261.9	8,377	5	-	130.9	2.5	133.4	64.9%	OK
S5-S6	FMH4042672	FMH4042673	400	20.5	0.005	173	67.5	39.0%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	78.8%	OK
S6-S7	FMH4042673	FMH4042674	400	6.4	0.003	106	67.5	63.9%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	129.2%	Spill
S7-S8	FMH4042674	FMH4100299	400	22.8	0.002	89	67.5	76.3%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	154.2%	Spill
S8-S9	FMH4100299	FMH4042675	400	20.8	0.002	93	67.5	72.9%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	147.4%	Spill
S9-S10	FMH4042675	FMH4042676	400	28.2	0.004	123	67.5	54.8%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	110.8%	Spill
S10-S11	FMH4042676	FMH4042677	400	26.4	0.004	122	67.5	55.3%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	111.8%	Spill
S11-S12	FMH4042677	FMH4042678	400	3.6	0.006	141	67.5	47.9%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	96.8%	Spill
S12-S13	FMH4042678	FG4003341	400	10.1	0.107	779	67.5	8.7%	OK	A + B + C + D	3198.0	11,844	4	20.7	168.8	2.5	171.3	22.0%	OK

Table 5 - Hydraulic Capacity of Existing and Proposed Sewers - Free Flow Condition (Proposed Mitigation)

Segment	Manhole Reference	Manhole Reference	Material	Pipe Dia.	Pipe Length	Invert Level 1	Invert Level 2	g	k_s	s	v	V	Area	Q	Estimated Capacity
				mm	m	mPD	mPD	m/s^2	m		m^2/s	m/s	m^2	m^3/s	L/s
P1-S1	FTMH-01	FMH4042668	PE	225	16.37	2.40	1.91	9.81	0.0015	0.030	0.000001	1.99	0.04	0.08	79
S1-S2	FMH4042668	FMH4042669	clayware	400	53.49	1.42	0.80	9.81	0.0006	0.012	0.000001	2.03	0.13	0.26	255
S2-S3	FMH4042669	FMH4042670	clayware	400	34.30	0.68	0.43	9.81	0.0006	0.007	0.000001	1.61	0.13	0.20	202
S3-S4	FMH4042670	FMH4042671	clayware	400	19.14	0.38	0.30	9.81	0.0006	0.004	0.000001	1.22	0.13	0.15	153
S4-S5	FMH4042671	FMH4042672	clayware	400	46.50	0.26	-0.09	9.81	0.0006	0.008	0.000001	1.64	0.13	0.21	206
S5-S6	FMH4042672	FMH4042673	clayware	400	20.50	-0.22	-0.33	9.81	0.0006	0.005	0.000001	1.38	0.13	0.17	173
S6-S7	FMH4042673	FMH4042674	clayware	525	6.40	-0.33	-0.35	9.81	0.0030	0.003	0.000001	1.01	0.22	0.22	218
S7-S8	FMH4042674	FMH4100299	clayware	525	22.76	-0.37	-0.42	9.81	0.0030	0.002	0.000001	0.84	0.22	0.18	183
S8-S9	FMH4100299	FMH4042675	clayware	525	20.80	-0.44	-0.49	9.81	0.0030	0.002	0.000001	0.88	0.22	0.19	191
S9-S10	FMH4042675	FMH4042676	clayware	525	28.23	-0.50	-0.62	9.81	0.0030	0.004	0.000001	1.17	0.22	0.25	254
S10-S11	FMH4042676	FMH4042677	clayware	525	26.36	-0.62	-0.73	9.81	0.0030	0.004	0.000001	1.16	0.22	0.25	252
S11-S12	FMH4042677	FMH4042678	clayware	525	3.59	-0.74	-0.76	9.81	0.0030	0.006	0.000001	1.34	0.22	0.29	291
S12-S13	FMH4042678	FG4003341	clayware	525	10.11	-0.76	-1.84	9.81	0.0006	0.107	0.000001	7.35	0.22	1.59	1591

Remarks: (1) g=gravitational acceleration; k_s=equivalent sand roughness; s=gradient; v=kinematic viscosity of water; V=mean velocity

(2) The values of ks = 0.6mm and 3mm are used for the calculation of slimed clayware sewer, poor condition @mean velocity = approximately 1.2m/s and 0.75m/s respectively (based on Table 5: Recommended Roughness Values in Sewerage Manual)

(3) The values of ks = 1.5mm is used for the calculation of proposed polyethylene sewer, poor condition @mean velocity = approximately 0.75m/s (based on Table 5: Recommended Roughness Values in Sewerage Manual)

(4) The value of velocity (V) is referred to the Tables for the hydraulic design of pipes, sewers and channels (8th edition)

(5) Equation used: $V=-\sqrt{(8gDs)}\log\left(\frac{k_s}{3.7D}+\frac{2.51v}{D\sqrt{(2gDs)}}\right)$

Table 6 Comparision of the Hydraulic Capacity of Existing Sewers for Sewerage generated from the Proposed Development and Surrounding Catchment Areas (Proposed Mitigation)

Hydraulic Capacity of Existing Sewers

Segment	Manhole Reference	Manhole Reference	Pipe Dia. (mm)	Pipe Length (m)	Gradient	Estimated Capacity (L/s)	Peak Flow from the Proposed Development only (L/s)	Contribution from the Proposed Development only (%)	Status	Included Catchment	Daily Flow (m^3/day)	Contributing Population	Peaking Factor	Public Toilet/ Restroom/ RCP (L/s)	Peak Flow from the Proposed Development and Catchment Areas (Without Water Feature Backwash) (L/s)	Water Feature Backwash (L/s)	Peak Flow from the Proposed Development and Catchment Areas (With Water Feature Backwash) (L/s)	Contribution from the Proposed Development and the Surrounding Catchment Areas (%)	Status
P1-S1	FTMH-01	FMH4042668	225	16.4	0.030	79	67.5	85.4%	OK	-	972.6	3,602	6	-	67.5	2.5	70.0	88.5%	OK
S1-S2	FMH4042668	FMH4042669	400	53.5	0.012	255	67.5	26.4%	OK	-	972.6	3,602	6	-	67.5	2.5	70.0	27.4%	OK
S2-S3	FMH4042669	FMH4042670	400	34.3	0.007	202	67.5	33.4%	OK	A	1697.9	6,288	5	-	98.3	2.5	100.8	49.8%	OK
S3-S4	FMH4042670	FMH4042671	400	19.1	0.004	153	67.5	44.2%	OK	A + B	2261.9	8,377	5	-	130.9	2.5	133.4	87.3%	OK
S4-S5	FMH4042671	FMH4042672	400	46.5	0.008	206	67.5	32.9%	OK	A + B	2261.9	8,377	5	-	130.9	2.5	133.4	64.9%	OK
S5-S6	FMH4042672	FMH4042673	400	20.5	0.005	173	67.5	39.0%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	78.8%	OK
S6-S7	FMH4042673	FMH4042674	525	6.4	0.003	218	67.5	31.0%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	62.7%	OK
S7-S8	FMH4042674	FMH4100299	525	22.8	0.002	183	67.5	37.0%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	74.8%	OK
S8-S9	FMH4100299	FMH4042675	525	20.8	0.002	191	67.5	35.4%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	71.5%	OK
S9-S10	FMH4042675	FMH4042676	525	28.2	0.004	254	67.5	26.6%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	53.7%	OK
S10-S11	FMH4042676	FMH4042677	525	26.4	0.004	252	67.5	26.8%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	54.2%	OK
S11-S12	FMH4042677	FMH4042678	525	3.6	0.006	291	67.5	23.2%	OK	A + B + C	2895.7	10,725	4	-	134.1	2.5	136.6	47.0%	OK
S12-S13	FMH4042678	FG4003341	525	10.1	0.107	1591	67.5	4.2%	OK	A + B + C + D	3198.0	11,844	4	20.7	168.8	2.5	171.3	10.8%	OK