Appendix 3

Sewerage and Drainage Impact Assessment

CONSULTANCY SERVICES FOR TECHNICAL ASSESSMENT AND PLANNING APPLICATION UNDER SECTION 16 OF THE TOWN PLANNING ORDINANCE (CAP 131) FOR RELAXATION OF BUILDING HEIGHT RESTRICTION AND PLOT RATIO FOR THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI

SEWERAGE IMPACT ASSESSMENT

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Project:	CONSULTANCY SERVICES FOR TECHNICAL ASSESSMENT AND PLANNING APPLICATION UNDER SECTION 16 OF THE TOWN PLANNING ORDINANCE (CAP 131) FOR RELAXATION OF BUILDING HEIGHT RESTRICTION AND PLOT RATIO FOR THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI SEWERAGE IMPACT ASSESSMENT
Report No.:	RT26294-SIA-05

Version	Issue Date	Description	Author	Checker	Approver
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04	13/10/2026	Issued for Comment	Various	HM	HM
05	03/11/2026	Issued for Comment	Various	HM	HM

Checked by:

Henry Mak

Director

Approved by:

Henry Mak

Director

Disclaimer:

- This report is prepared and submitted by Beexergy Consulting Limited with all reasonable skill to the best of our knowledge, incorporating our Terms and Conditions and taking account of the resources devoted to it by agreement with the client.
- We disclaim any responsibility to the client and others in respect of any matters outside the project scope.

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1 INTRODUCTION

1.1 PROJECT BACKGROUND

BeeXergy Consulting Limited was commissioned by DeSPACE (International) Limited to conduct a Sewerage Impact Assessment (SIA) for the Proposed Development. Latest architectural drawings and technical information on the Project Site were provided by the Project Architect.

1.2 PROJECT LOCATION

The Project Site is located at Jaffe Road, Wan Chai. It is bounded by International Organization for Mediation to its north, Lee Loy Building and 229-231 Lockhart Road to its east, Lockhart Road Municipal Services Building to its south, V Wanchai and Lap Tak Building to its west. **Figure 1.1** shows the location of Project Site and its environs.

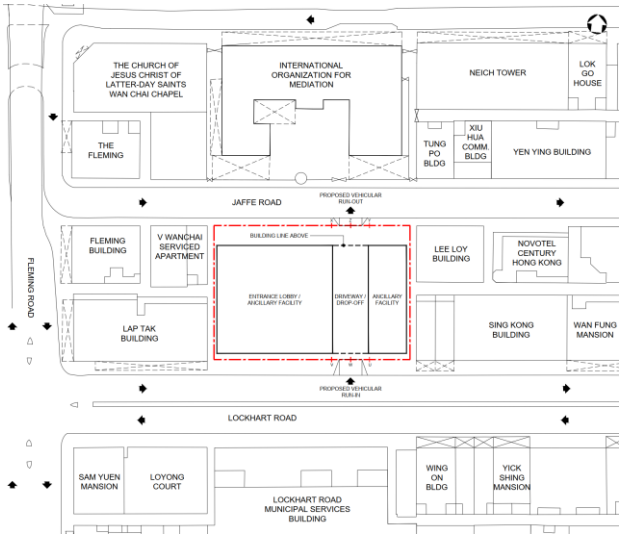


Figure 1.1 Location of the Project Site

1.3 DESCRIPTION OF THE SUBJECT SITE AND PROPOSED DEVELOPMENT

The Project Site covers an area of approximately 1,825m^2. The master layout plan provided by Project Architect is enclosed in **Appendix A**.

2 SEWERAGE IMPACT ASSESSMENT

2.1 SCOPE OF WORKS

The objective of this SIA is to assess whether the existing capacity of the sewerage networking is sufficient to cope with the peak sewage flow arising from the Proposed Development during its operation stage and to recommend appropriate mitigation measure(s) to alleviate unacceptable sewerage impact, if any.

2.2 EXISTING AND PLANNED SEWERAGE FACILITIES

The existing sewerage record from the GeoInfo Map of the Lands Department (LandsD) and Drainage Services Department (DSD) are obtained for this SIA and attached in **Appendix B**.

Existing foul water manholes can be found in the back lane on the eastern sides of the site. FMH7011527 on the eastern side of the site connecting the back lane towards FMH7011542 on Lockhart Road then further to FMH7011547 on Stewart Road.

The Project Proponent would like to construct a foul terminal manhole, namely PTFMH-01, connecting the site to FMH7011527 and further to downstream foul water manhole FMH7011547.

2.3 ASSESSMENT CRITERIA, METHODOLOGY AND ASSUMPTIONS

The Unit Flow Factors and Global Peaking Factor are adopted from the figures in the Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning (Version 1.0)[1] (GESF) issued by the Environmental Protection Department (EPD) in March 2005 to estimate the sewage flows generated from the Subject Site.

The Unit Flow Factors and Catchment Inflow Factors as shown in **Table 2.1** below are adopted in the assessment. Relevant calculation can be found in **Appendix C**.

[1] http://www.epd.gov.hk/epd/sites/default/files/epd/english/environmentinhk/water/guide_ref/files/gesf.pdf

Table 2.1 Estimated Peak Flow and Catchment Inflow Factors extracted from GESF

Parameter	Value	Justification
Population		
Proposed Development (Training and Event Facilities and Auditorium, Arrival Lobbies, Foyer, Security Check & Pre-function Areas)	384 people	GFA based on NOFA as required by project proponent. 2.9 per 100m2 GFA for 'Grade A Offices' and 'Community, Social & Personal Services' based on PlanD's CIFSUS Table 8
Proposed Development (Arbitration, Mediation and Law-related Organisation Facilities)	409 people	GFA based on NOFA as required by project proponent. 2.9 per 100m2 GFA for 'Grade A Offices' and 'Community, Social & Personal Services' based on PlanD's CIFSUS Table 8
Catchment A(Residential) (i.e. A1, A2, A4, A5)	537 people	2.2 Number of persons in average domestic household size for "Wan Chai - Hennessy" based on 2021 Population Census's Main Table D304
Catchment A (Office) (i.e. A3)	258 people	5.5 per 100m2 GFA for 'Financial, Insurance, Real Estate & Business Services' based on PlanD's CIFSUS Table 8
Catchment A (Retail) (i.e. A3)	18 people	3.5 per 100m2 GFA for 'Retail' based on PlanD's CIFSUS Table 8
Catchment A (Hotel) (i.e. A6)	594 people	3.2 per 100m2 GFA for 'Hotels and Boarding Houses ' based on PlanD's CIFSUS Table 8
Catchment A (Restaurants) (i.e. A6)	167 people	5.1 per 100m2 GFA for 'Restaurants' based on PlanD's CIFSUS Table 8
Unit Flow Factors		
Employees and visitors in Community, Social, Service	0.28 m3/day	'J11 Community, Social & Personal Services' based on EPD's GESF Table T-2
Employees in Office	0.08 m3/day	'J12 Public Administration' based on EPD's GESF Table T-2
Residents	0.27 m3/day	"Private R2" based on EPD's GESF Table T-1
Employees in Retail	0.28 m3/day	'J4 Wholesale & Retail' based on EPD's GESF Table T-2
Employees in Hotel & Restaurants	1.58 m3/day	'J10 Restaurants & Hotels ' based on EPD's GESF Table T-2
Catchment Inflow Factor (P_{CIF})		
Discharge from Project Site	1.0	Catchment based on EPD's GESF Table T-4

2.4 RESULTS AND DISCUSSION

The estimated average flow rate and total peak flow of the Proposed Development are 222.29m^3/day and 20.58L/s respectively. Sewage generated from the Proposed Development and surrounding catchment areas will be connected at the downstream of sewage network. Multiple exceedance cumulative flow up to 247.9% are identified at the downstream sewer pipeline as shown in **Appendix D**. Hence, upgrading works on the existing sewerage system are required, which have been summarised in **Table 2.2** and shown in **Appendix E**. After the upgrading works, the cumulative flow for downstream sewer capacity is generally no more than 90.5% of sewer capacity.

Table 2.2 Summary of Upgrading Works

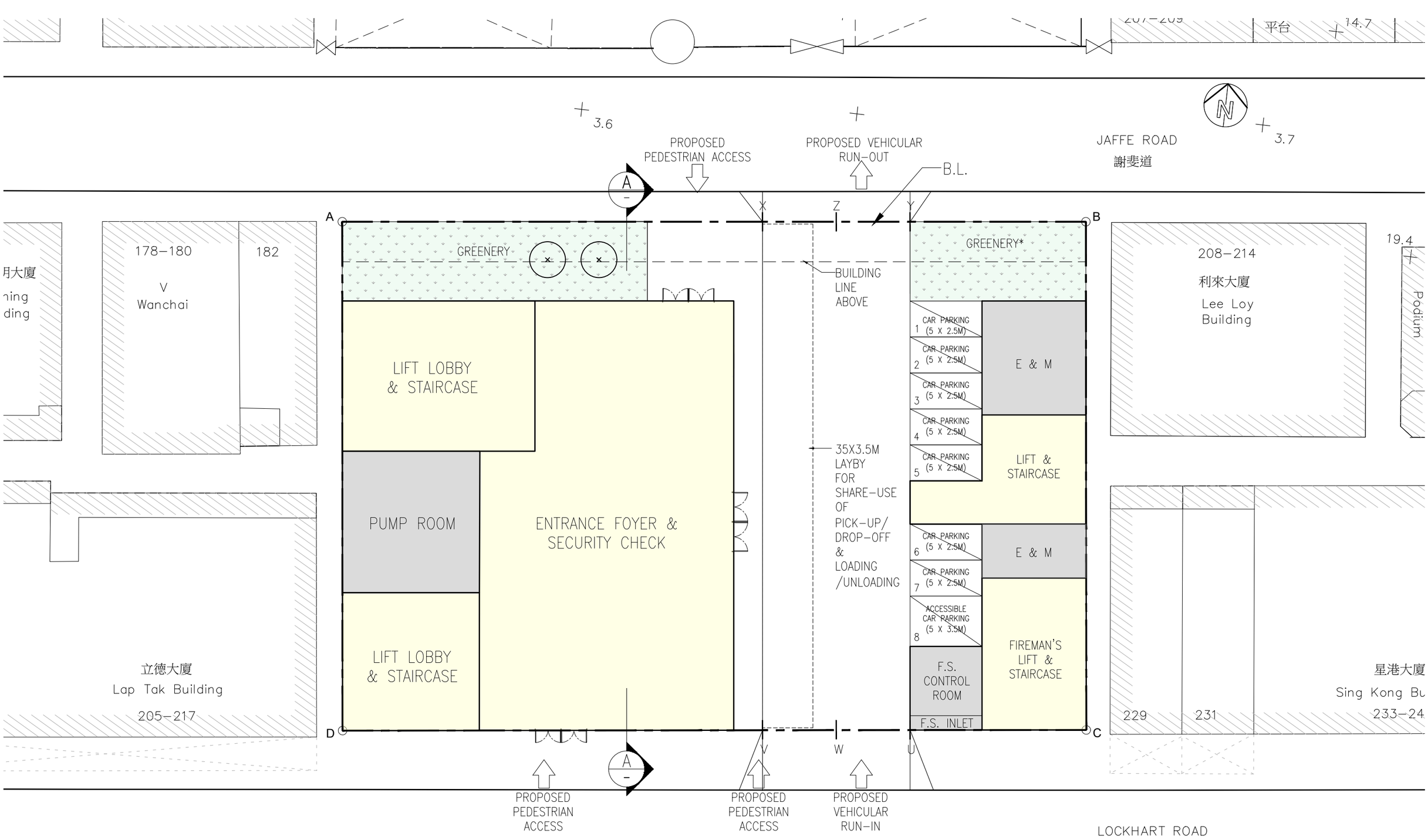
Upstream Manhole	Downstream Manhole	Existing Sewer	Proposed Upgrade Sewer
FMH7011530	FMH7011531	150mm x 1	225mm x 1
FMH7011532	FMH7011533	150mm x 1	225mm x 1
FMH7011533	FMH7011534	150mm x 1	225mm x 1
FMH7011541	FMH7011542	225mm x 1	300mm x 1
FMH7011542	FMH7011543	150mm x 2	300mm x 1
FMH7011543	FMH7011544	300mm x 1	450mm x 1

3 CONCLUSION

This is the SIA to assess whether the existing capacity of the sewerage networking is sufficient to cope with the peak sewage flow arising from the Proposed Development during its operation stage and to recommend appropriate mitigation measure(s) to alleviate unacceptable sewerage impact, if any.

Based on the SIA results, the cumulative flow from multiple sewers exceeded the sewer capacity. Upgrading works are also proposed. After the upgrading works, the cumulative flow is within the sewer capacity and no unacceptable sewerage impact resulting from the Proposed Development is anticipated.

APPENDIX A
MASTER LAYOUT PLAN



G/F LAYOUT PLAN

SCALE 1: 250

3.7

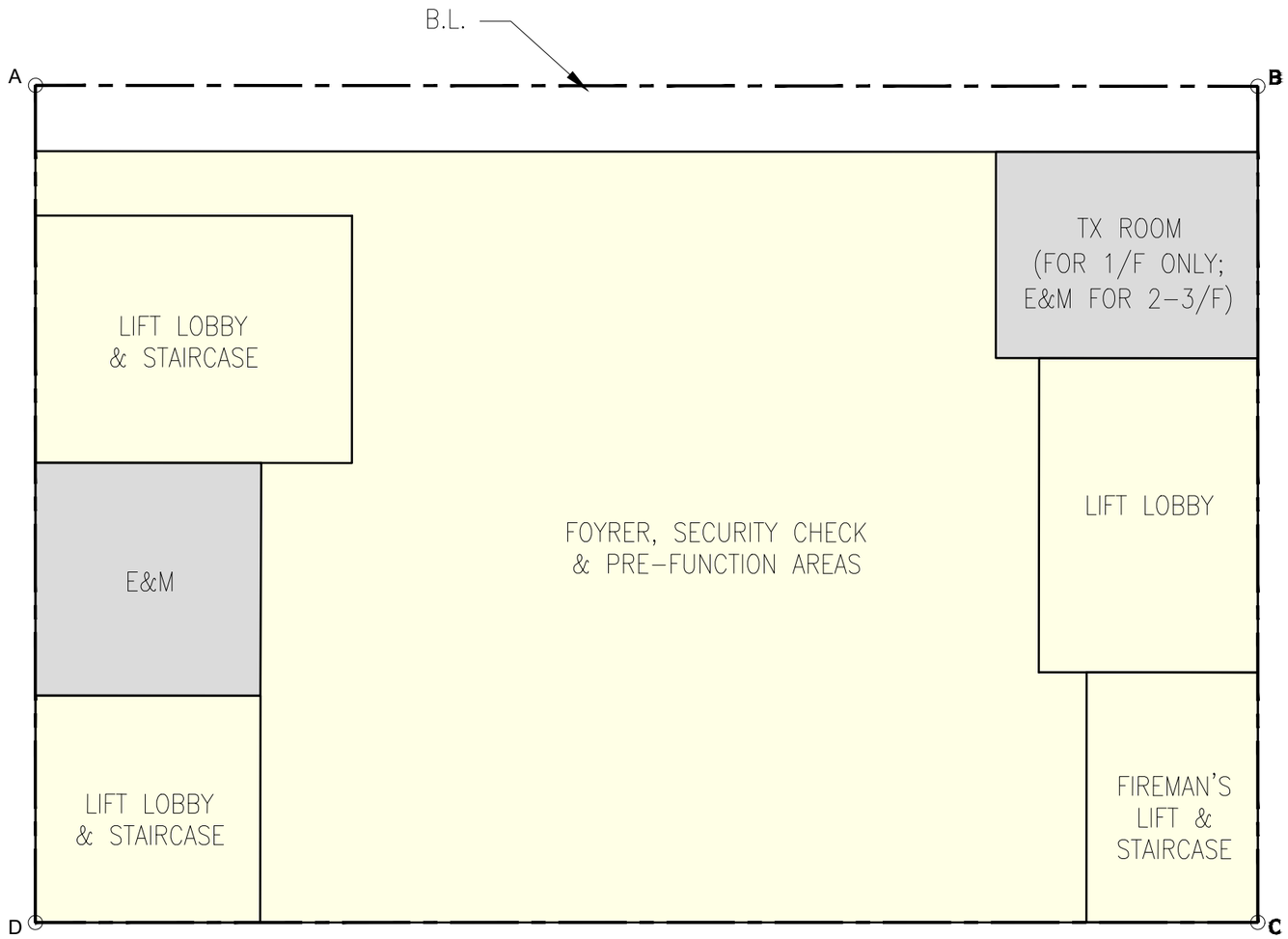
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-	PLANNING STATEMENT	05062026
A	PLANNING STATEMENT	22062026
B	PLANNING STATEMENT	06082026
C	PLANNING STATEMENT	13082026

BD. REF. NO.	-
F.S.D. REF. NO.	-
FILE REF.	
PROJECT NAME	SECTION 16 PLANNING APPLICATION FOR THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI
DRAWING TITLE	G/F LAYOUT PLAN
PROJECT NO.	1949
DESIGNED BY	C.P.POON
DRAWN BY	E.T.
APPROVED BY	C.P.POON
DATE	16–10–2026
DRAWING NO	LAY001
REVISION	C
SCALE	1:250



1/F TO 3/F LAYOUT PLAN

SCALE 1: 250

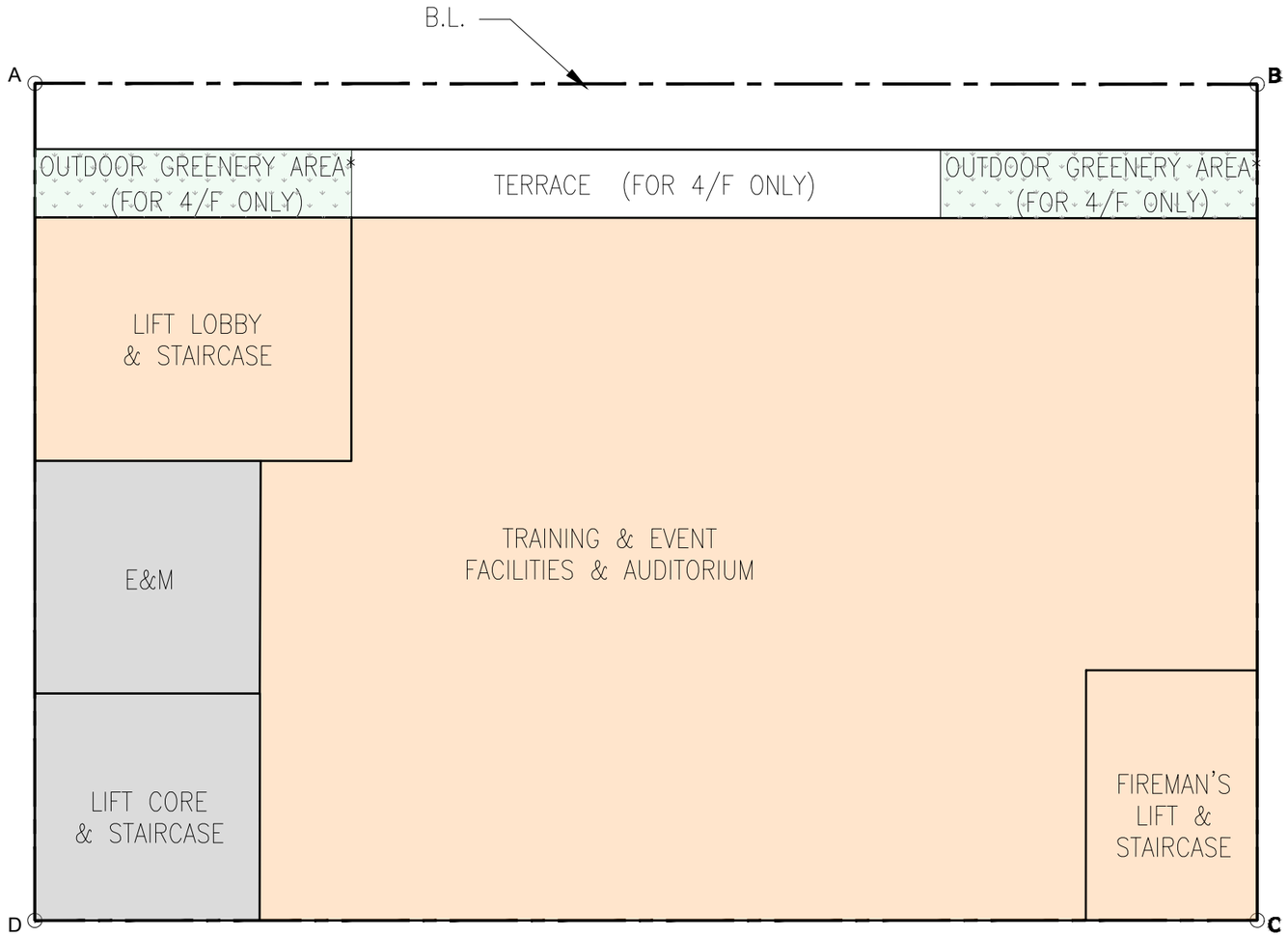
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C	PLANNING STATEMENT	27102026

BD. REF. NO. -	PROJECT NAME SECTION 16 PLANNING APPLICATION FOR THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI	DESIGNED BY C.P.POON	DRAWN BY E.T.
F.S.D. REF. NO. -	DRAWING TITLE 1/F to 3/F LAYOUT PLAN	APPROVED BY C.P.POON	DATE 27–10–2026
FILE REF.	PROJECT NO. 1949	DRAWING NO LAY002	REVISION C / SCALE 1:250



4/F TO 6/F LAYOUT PLAN

SCALE 1: 250

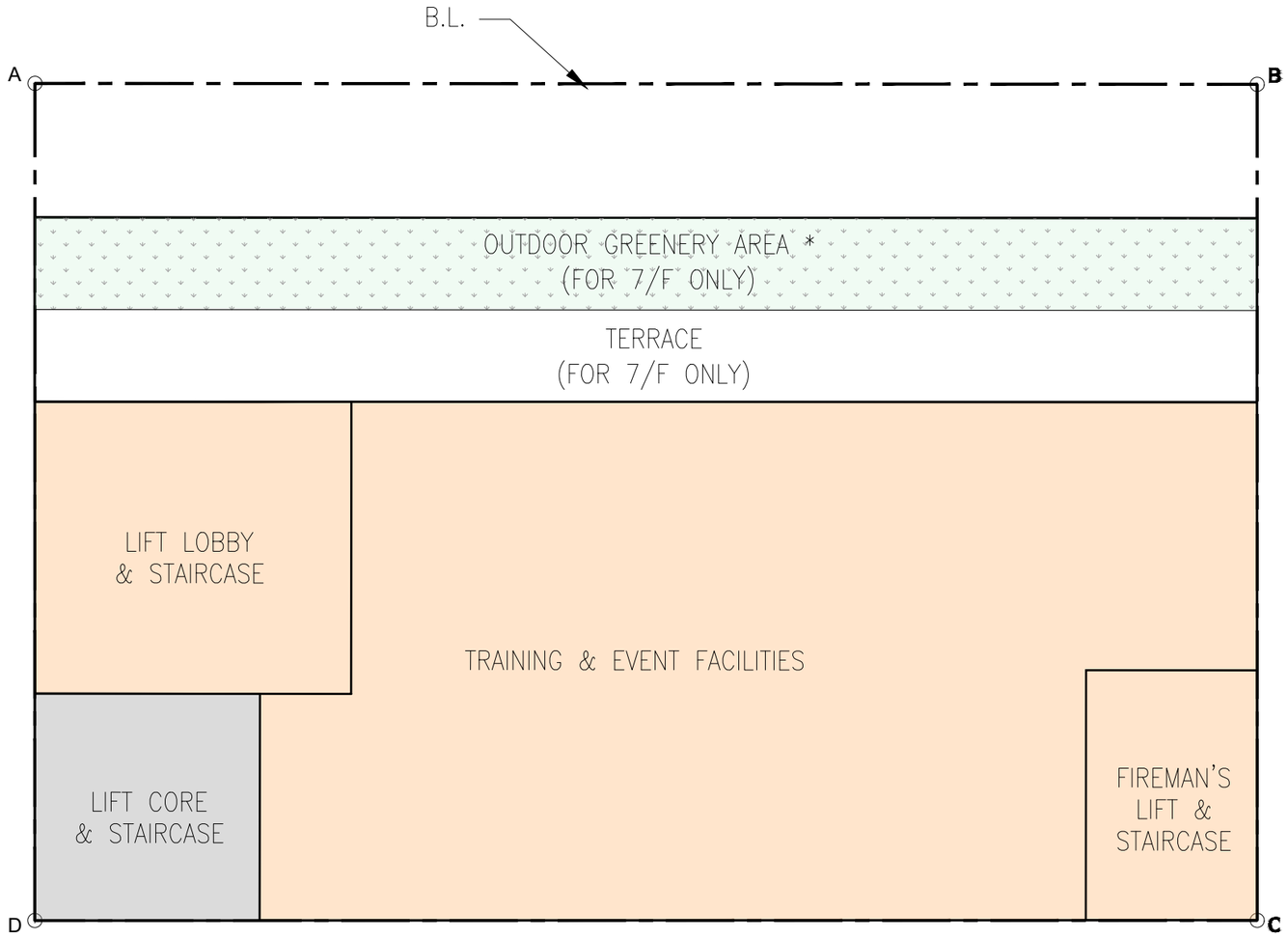
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BD. REF. NO. -	PROJECT NAME SECTION 16 PLANNING APPLICATION FOR THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI	DESIGNED BY C.P.POON	DRAWN BY E.T.
F.S.D. REF. NO. -	DRAWING TITLE 4/F – 6/F LAYOUT PLAN	APPROVED BY C.P.POON	DATE 16-10-2026
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7/F TO 10/F
TYPICAL LAYOUT PLAN
SCALE 1: 250

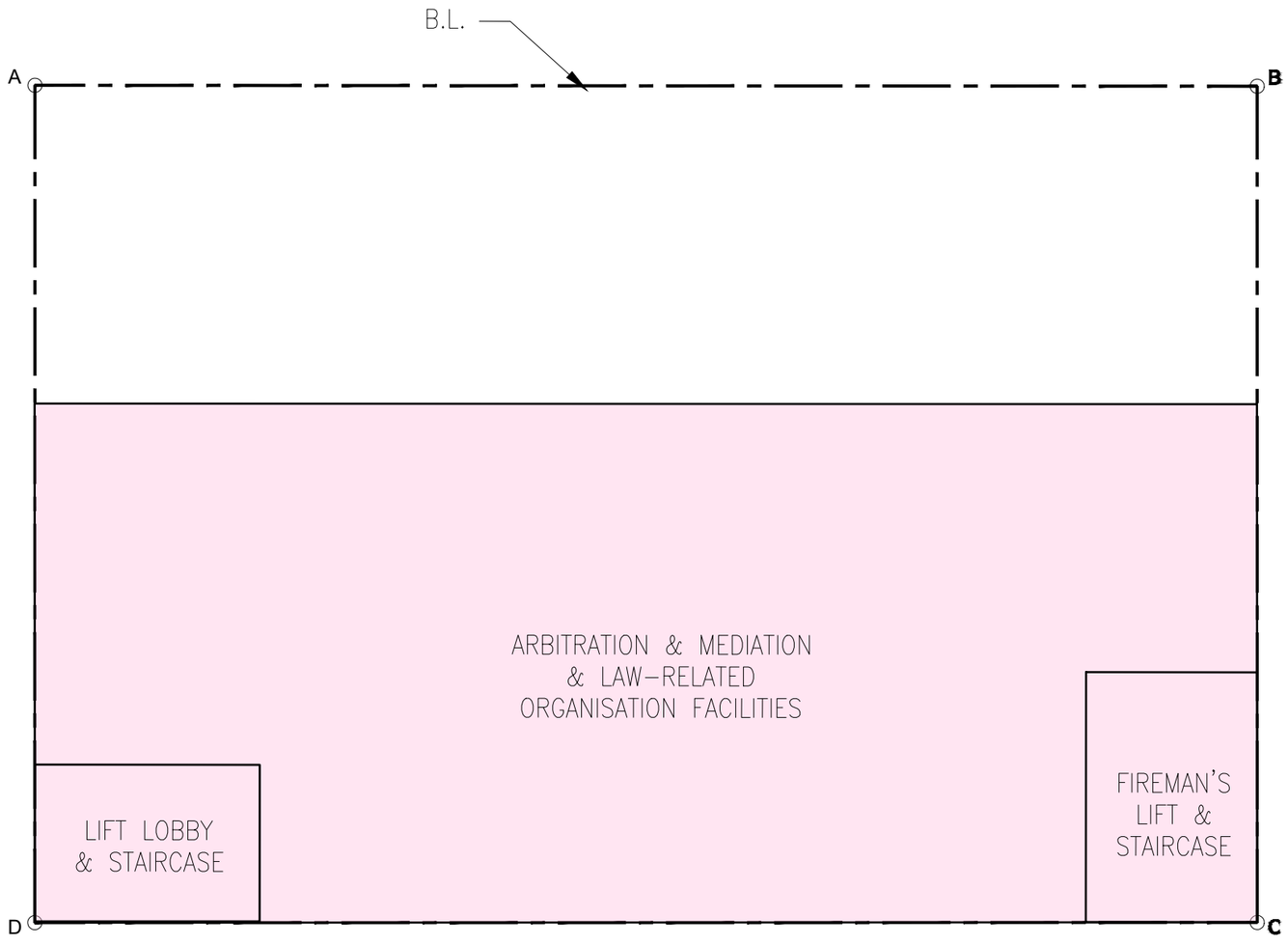
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B	PLANNING STATEMENT	13082026

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F.S.D. REF. NO. -	DRAWING TITLE 7/F – 10/F TYPICAL LAYOUT PLAN	APPROVED BY C.P.POON	DATE 16–10–2026	
FILE REF.	PROJECT NO. 1949	DRAWING NO LAY004	REVISION B	SCALE 1:250



12/F TO 26/F
TYPICAL LAYOUT PLAN
SCALE 1: 250

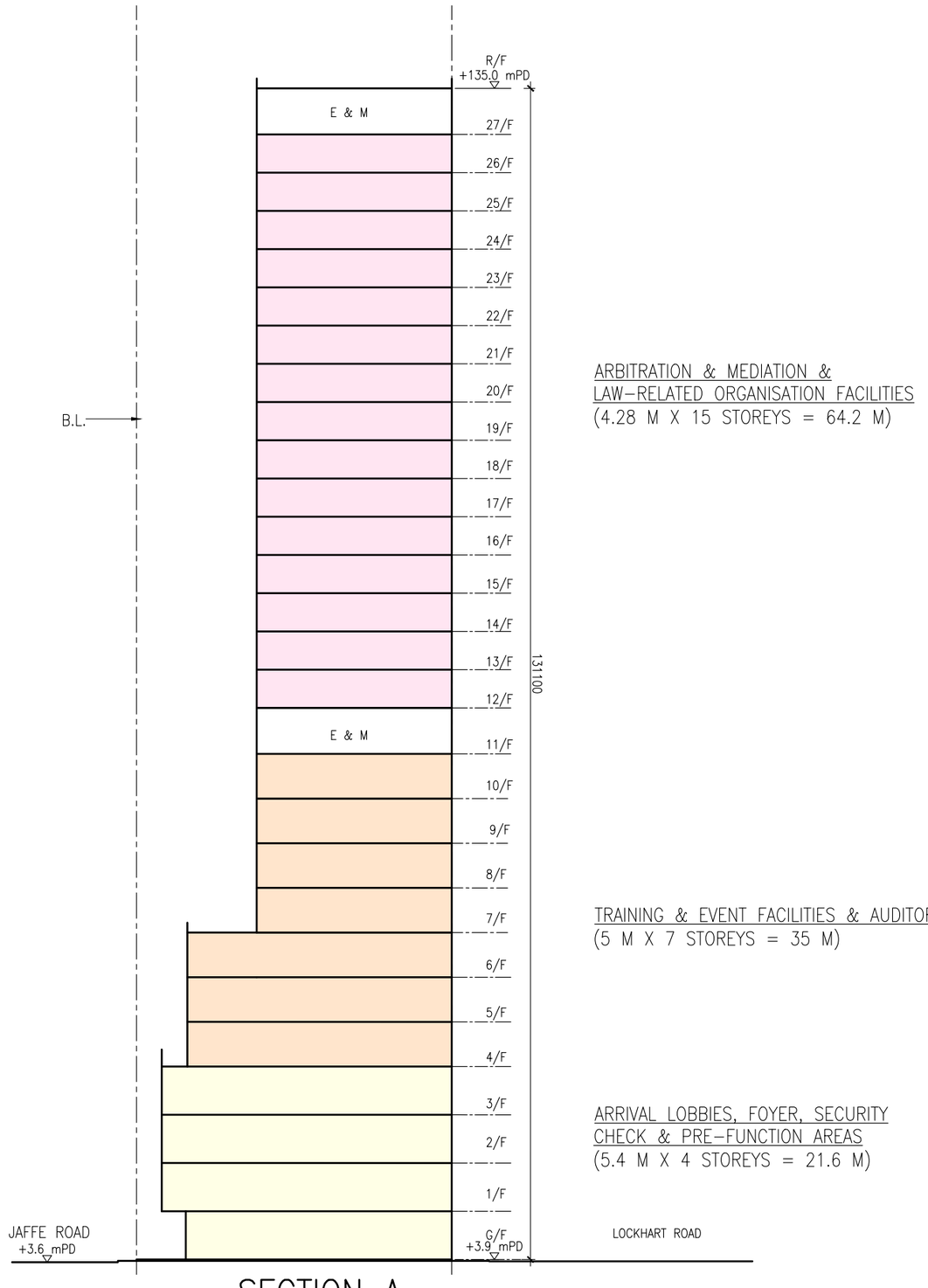
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-	PLANNING STATEMENT	05062026
A	PLANNING STATEMENT	22062026
B	PLANNING STATEMENT	13082026

BD. REF. NO. -	PROJECT NAME SECTION 16 PLANNING APPLICATION FOR THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI	DESIGNED BY C.P.POON	DRAWN BY E.T.
F.S.D. REF. NO. -	DRAWING TITLE 12/F – 26/F TYPICAL LAYOUT PLAN	APPROVED BY C.P.POON	DATE 16-10-2026
FILE REF.	PROJECT NO. 1949	DRAWING NO LAY005	REVISION B / SCALE 1:250



SECTION A

SCALE 1: 600

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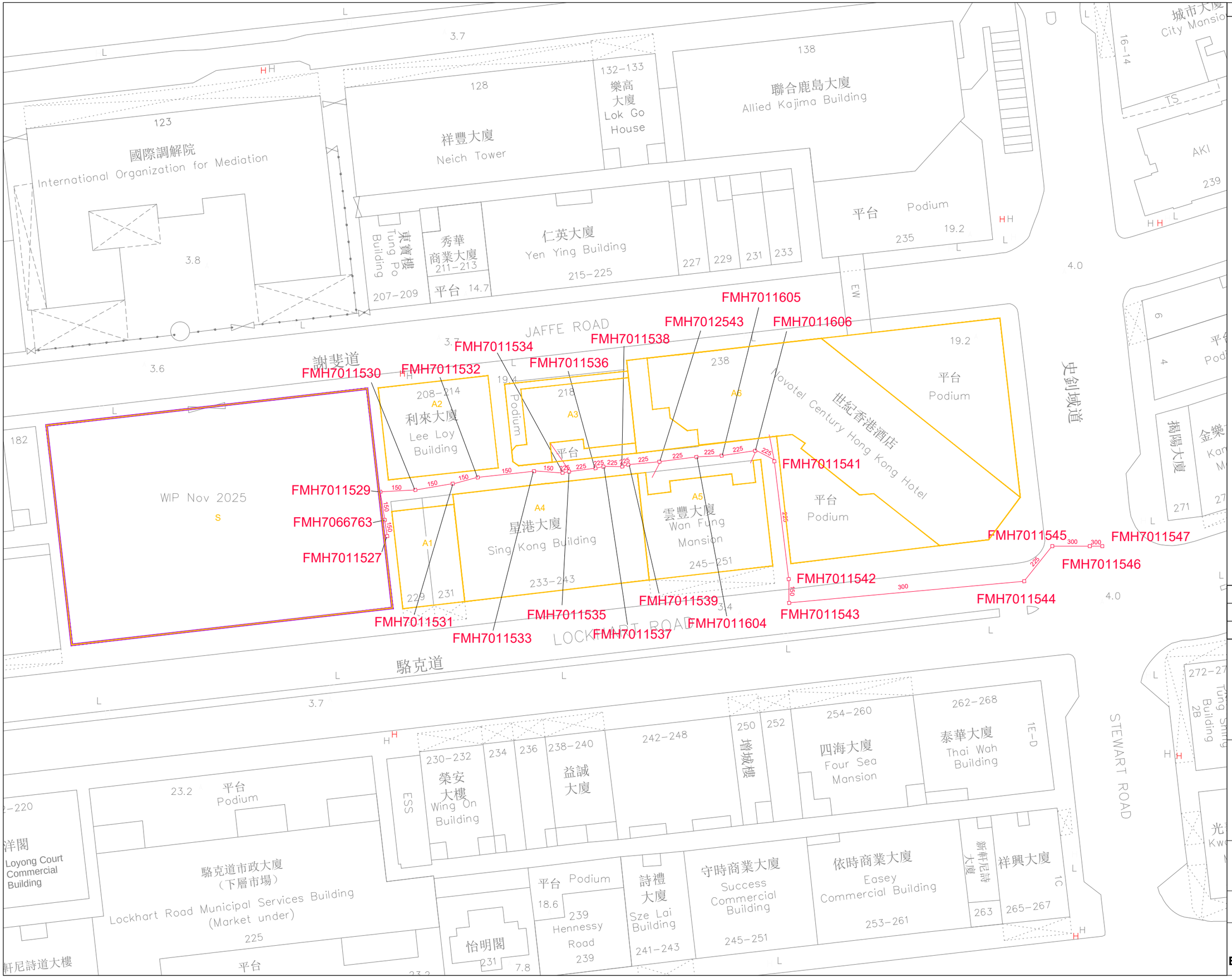
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-	PLANNING STATEMENT	05062026
A	PLANNING STATEMENT	22062026
B	PLANNING STATEMENT	27102026

BD. REF. NO. -	PROJECT NAME SECTION 16 PLANNING APPLICATION FOR THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI	DESIGNED BY C.P.POON	DRAWN BY E.T.
F.S.D. REF. NO. -	DRAWING TITLE SECTION A	APPROVED BY C.P.POON	DATE 27-10-2026
FILE REF.	PROJECT NO. 1949	DRAWING NO SEC001 / REVISION B / SCALE 1:600	

APPENDIX B
EXISTING SEWERAGE CONNECTION



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	Prepared	Checked	Approved
Initial	Various	Various	HM
Date	20260921	20260921	20260921

Project Title

THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI

Drawing Title

Sewage Connection

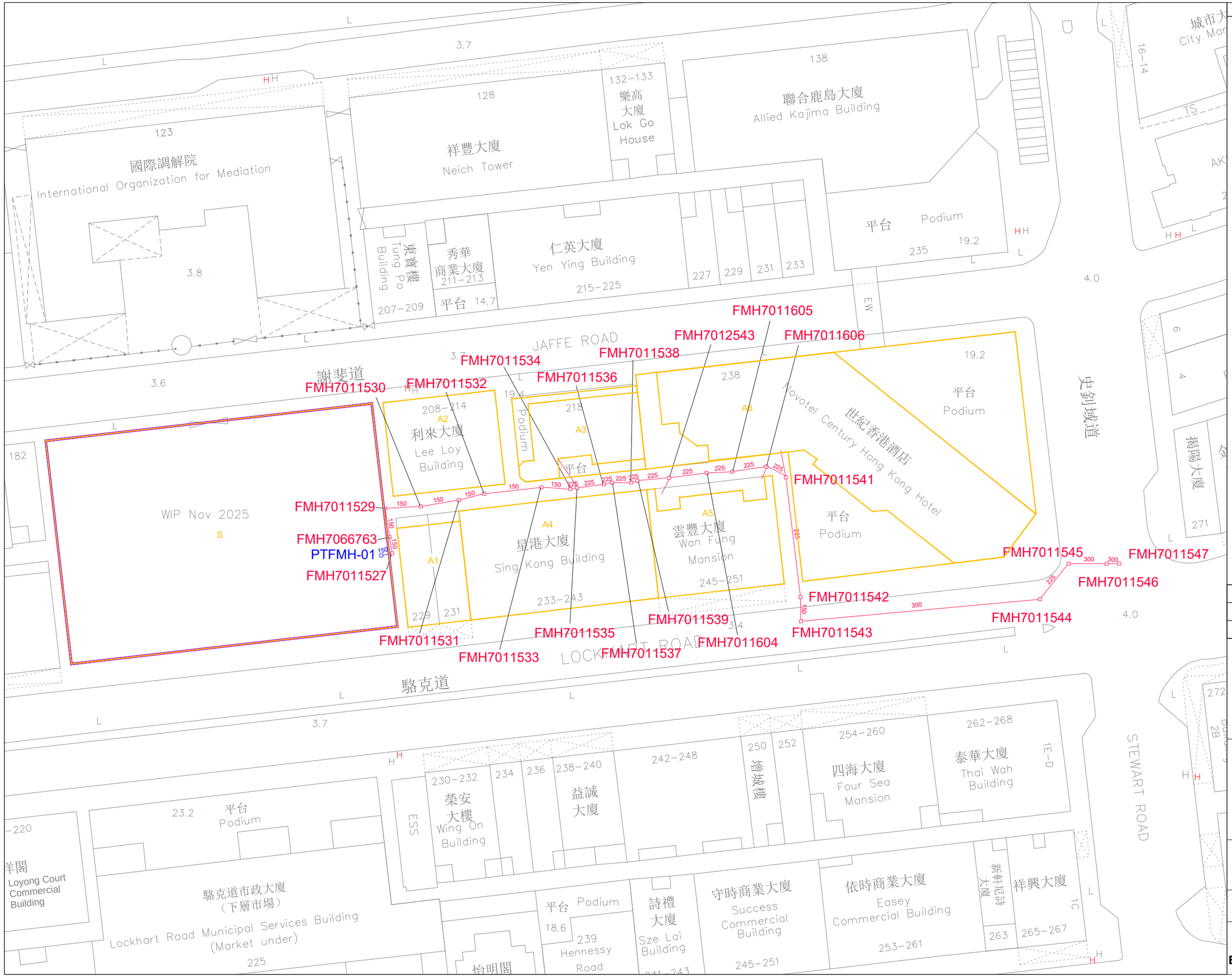
Drawing No.	Rev.
Appendix B	2

Scale: A3

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APPENDIX C

PROPOSED SEWERAGE CONNECTION & CATCHMENT



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- Project Site
- Existing Sewage Connection
- Proposed Sewage Connection without improvement
- Catchment

	Prepared	Checked	Approved
Initial	Various	HM	HM
Date	20260921	20260921	20260921

Project Title

THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI

Drawing Title

Proposed Sewage Connection without improvement & Catchment

Drawing No.	Rev.
Appendix C	2

Scale: A3

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APPENDIX C - CALCULATION OF SEWAGE FLOW

1) Catchment S (Proposed Development)

Development	GFA (m^2)	No. of Flat	Occupancy Density [a] (Number of Persons) (Workers per GFA in $100m^2$)	Estimated Population	Unit Flow Factor (m^3/day)	Estimated Average Dry Weather Flow (m^3/day)	Catchment Inflow Factor	Estimated Average Dry Weather Flow X Catchment Inflow Factor (m^3/day)	Remarks
Proposed Development (Training and Event Facilities and Auditorium, Arrival Lobbies, Foyer, Security Check & Pre-function Areas)	13257	-	2.9	384	0.28	107.647	1.00	107.65	GFA based on NOFA as required by project proponent. Occupancy Density: 2.9 per 100m2 GFA for 'Grade A Offices' and 'Community, Social & Personal Services' based on PlanD's CIFSUS Table 8 UFF: 0.280 m3/day for 'J11 Community, Social & Personal Services' based on EPD's GESF Table T-2
Proposed Development (Arbitration, Mediation and Law-related Organisation Facilities)	14118	-	2.9	409	0.28	114.638	1.00	114.64	GFA based on NOFA as required by project proponent. Occupancy Density: 2.9 per 100m2 GFA for 'Grade A Offices' and 'Community, Social & Personal Services' based on PlanD's CIFSUS Table 8 UFF: 0.280 m3/day for 'J11 Community, Social & Personal Services' based on EPD's GESF Table T-2
Total Average Daily Dry Weather Flow of Catchment S (Proposed Development) (m^3/day)								**222.29**	

2) Catchment A

Development	GFA (m^2)	No. of Flat	Occupancy Density [a] (Number of Persons) (Workers per GFA in $100m^2$)	Estimated Population	Unit Flow Factor (m^3/day)	Estimated Average Dry Weather Flow (m^3/day)	Catchment Inflow Factor	Estimated Average Dry Weather Flow X Catchment Inflow Factor (m^3/day)	Remarks
A1: 229-231 Lockhart Road	-	25	2.2	55	0.27	14.850	1.00	14.85	No. of flat: https://hk.centanet.com/estate/en/229-231-Lockhart-Road/2-TDHIZHZAHT Occupancy Density: 2.2 Number of persons in average domestic household size for "Wan Chai - Hennessy" based on 2021 Population Census's Main Table D304. Unit Flow Factor: 0.270m3/day for 'Private R2' based on EPD's GESF Table T-1
A2: Lee Loy Building	-	87	2.2	191	0.27	51.678	1.00	51.68	No. of flat: https://hk.centanet.com/estate/%E5%88%A9%E4%BE%86%E5%A4%A7%E5%BB%88/2-SADPBPESPS Occupancy Density: 2.2 Number of persons in average domestic household size for "Wan Chai - Hennessy" based on 2021 Population Census's Main Table D304. Unit Flow Factor: 0.270m3/day for 'Private R2' based on EPD's GESF Table T-1
A3: 218 Jaffe Road (Office)	4697.5	-	5.5	258	0.08	20.669	1.00	20.67	GFA = Site Area x 25 Storey (https://oir.centanet.com/en/new-property/golden-resources-tower/18b90bf9-cd88-49d7-b342-e3923b8e2d34/) Occupancy Density: 5.5 per 100m2 GFA for 'All Types' and 'Financial, Insurance, Real Estate & Business Services' based on PlanD's CIFSUS Table 8 UFF: 0.080 m3/day for 'J6 Financial, Insurance, Real Estate & Business Services' based on EPD's GESF Table T-2
A3: 218 Jaffe Road (Retail)	523.3	-	3.5	18	0.28	5.129	1.00	5.13	GFA = Site Area x 2 Storey (https://oir.centanet.com/en/new-property/golden-resources-tower/18b90bf9-cd88-49d7-b342-e3923b8e2d34/) Occupancy Density: 3.5 per 100m2 GFA for 'All Types' and 'Retail' based on PlanD's CIFSUS Table 8 UFF: 0.280 m3/day for 'J4 Wholesale & Retail' based on EPD's GESF Table T-2
A4: Sing Kong Building	\	72	2.2	158	0.27	42.768	1.00	42.77	No. of flat: https://hk.centanet.com/estate/en/Sing-Kong-Building/2-TDNSZHZRHT Occupancy Density: 2.2 Number of persons in average domestic household size for "Wan Chai - Hennessy" based on 2021 Population Census's Main Table D304. Unit Flow Factor: 0.270m3/day for 'Private R2' based on EPD's GESF Table T-1
A5: Wan Fung Mansion	-	60	2.2	132	0.27	35.640	1.00	35.64	No. of flat: https://hk.centanet.com/estate/en/Wan-Fung-Mansion-Building/2-SAYSBPKSPS Occupancy Density: 2.2 Number of persons in average domestic household size for "Wan Chai - Hennessy" based on 2021 Population Census's Main Table D304. Unit Flow Factor: 0.270m3/day for 'Private R2' based on EPD's GESF Table T-1
A6: Novotel Century Hong Kong Hotel (Hotel)	18551.4	-	3.2	594	1.58	937.959	1.00	937.96	GFA = Site Area x 21 Storey (https://www.travelweekly.com/Hotels/Hong-Kong-Hong-Kong/Novotel-Century-Hong-Kong-Hotel-p4069669) Occupancy Density: 3.2 per 100m2 GFA for 'All Types' and 'Hotels and Boarding Houses ' based on PlanD's CIFSUS Table 8 UFF: 1.580 m3/day for 'J10 Restaurants & Hotels' based on EPD's GESF Table T-2
A6: Novotel Century Hong Kong Hotel (Restaurant)	3279.5	-	5.1	167	1.58	264.265	1.00	264.27	GFA = Site Area x 2 Storey (https://www.travelweekly.com/Hotels/Hong-Kong-Hong-Kong/Novotel-Century-Hong-Kong-Hotel-p4069669) Occupancy Density: 5.1 per 100m2 GFA for 'All Types' and 'Restaurants ' based on PlanD's CIFSUS Table 8 UFF: 1.580 m3/day for 'J10 Restaurants & Hotels' based on EPD's GESF Table T-2
Total Average Daily Dry Weather Flow of Catchment A (m^3/day)								**1372.96**	

Development	Area (m2)	Volume (m3)	Turnover Rate (hr)	Filter Loading Rate (m3/m2/hr)	Filter Areas Required (m2)	Backwash Duration (min/d)	Backwash Flow Rate (m3/m2/hr)	Daily Flow for Swimming Pool Backwashing (m3/day)	Remarks
A6: Novotel Century Hong Kong Hotel (Swimming Pool)	191.00	286.50	6.00	50.00	1.0	7.00	30.00	3.34	Swimming pool dimension based on google earth, assumed depth = 1.5m Turnover Rate & Backwash Duration: General Specification for Swimming Pool Water Treatment Installation in Government Buildings of The HKSAR Filter Loading Rate: Swimming Pools: Design and Construction, Fourth Edition By Philip H. Perkins (High-rate filters of 50 m3/m2/hr adopted) Backwash Flow Rate: Technical Paper - Domestic Swimming Pool Filtration by European Union of Swimmingpool and Spa Associations.
Daily Flow for Swimming Pool Backwashing (L/s)								**7.96**	

Note:

(1) "Workers per GFA in $100m^2$" was adopted in the estimation of population for Catchment S, A3, A6.

APPENDIX D

SEWERAGE CALCULATION FOR THE PROPOSED DEVELOPMENT

APPENDIX D - HYDRAULIC CAPACITY OF THE PROPOSED AND DOWNSTREAM SEWERS

Manhole Reference	Manhole Reference	Pipe Dia. (mm)	Number of Pipe	Pipe Length (m)	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	g (1) (m/s^2)	Pipe Material	k_s (1), (3) (m)	s (1)	v (1) (m^2/s)	V (1), (2) (m/s)	A (m^2)	Q (4) (m^3/s)	Estimated Capacity (L/s)	ADWF (m^3/day)	Contributing Population	Peaking Factor	Peak Flow (L/s)	Capacity	Compliance	Remarks
PTFMH-01	FMH7011527	150	1	1.3	+3.30	+3.13	9.81	Clay	0.0006	0.1349	1.306E-06	3.7203	0.0177	0.0657	65.74	222.29	823	8	20.58	31.3%	Yes	Catchment S
FMH7011527	FMH7066763	150	1	2.4	+3.13	+3.06 (5)	9.81	Clay	0.0006	0.0304	1.306E-06	1.7581	0.0177	0.0311	31.07	222.29	823	8	20.58	66.2%	Yes	Catchment S
FMH7066763	FMH7011529	150	1	3.1	+3.06 (5)	+3.00	9.81	Clay	0.0006	0.0182	1.306E-06	1.3543	0.0177	0.0239	23.93	222.29	823	8	20.58	86.0%	Yes	Catchment S
FMH7011529	FMH7011530	150	1	4.9	+3.00	+2.92	9.81	Clay	0.0006	0.0164	1.306E-06	1.2874	0.0177	0.0227	22.75	222.29	823	8	20.58	90.5%	Yes	Catchment S
FMH7011530	FMH7011531	150	1	5.3	+2.92	+2.85 (5)	9.81	Clay	0.0006	0.0131	1.306E-06	1.1494	0.0177	0.0203	20.31	222.29	823	8	20.58	101.3%	No	Catchment S
FMH7011531	FMH7011532	150	1	3.4	+2.85 (5)	+2.70 (5)	9.81	Clay	0.0006	0.0440	1.306E-06	2.1170	0.0177	0.0374	37.41	237.14	878	8	21.96	58.7%	Yes	Catchment S, A1
FMH7011532	FMH7011533	150	1	8.2	+2.70 (5)	+2.63	9.81	Clay	0.0006	0.0085	1.306E-06	0.9242	0.0177	0.0163	16.33	288.81	1070	6	20.06	122.8%	No	Catchment S, A1, A2
FMH7011533	FMH7011534	150	1	3.4	+2.63	+2.60 (5)	9.81	Clay	0.0006	0.0088	1.306E-06	0.9379	0.0177	0.0166	16.57	288.81	1070	6	20.06	121.0%	No	Catchment S, A1, A2
FMH7011534	FMH7011535	225	1	0.5	+2.60 (5)	+2.57	9.81	Clay	0.0006	0.0566	1.306E-06	3.1238	0.0398	0.1242	124.20	288.81	1070	6	20.06	16.1%	Yes	Catchment S, A1, A2
FMH7011535	FMH7011536	225	1	3.7	+2.57	+2.51 (5)	9.81	Clay	0.0006	0.0160	1.306E-06	1.6553	0.0398	0.0658	65.81	314.61	1165	6	21.85	33.2%	Yes	Catchment S, A1, A2, A3
FMH7011536	FMH7011537	225	1	0.5	+2.51 (5)	+2.50 (5)	9.81	Clay	0.0006	0.0196	1.306E-06	1.8317	0.0398	0.0728	72.83	314.61	1165	6	21.85	30.0%	Yes	Catchment S, A1, A2, A3
FMH7011537	FMH7011538	225	1	2.1	+2.50 (5)	+2.47 (5)	9.81	Clay	0.0006	0.0142	1.306E-06	1.5536	0.0398	0.0618	61.77	314.61	1165	6	21.85	35.4%	Yes	Catchment S, A1, A2, A3
FMH7011538	FMH7011539	225	1	0.4	+2.47 (5)	+2.46 (5)	9.81	Clay	0.0006	0.0233	1.306E-06	1.9963	0.0398	0.0794	79.37	314.61	1165	6	21.85	27.5%	Yes	Catchment S, A1, A2, A3
FMH7011539	FMH7012543	225	1	4.1	+2.46 (5)	+2.41	9.81	Clay	0.0006	0.0123	1.306E-06	1.4501	0.0398	0.0577	57.66	357.38	1324	6	24.82	43.0%	Yes	Catchment S, A1, A2, A3, A4
FMH7012543	FMH7011604	225	1	5.3	+2.41	+2.38 (5)	9.81	Clay	0.0006	0.0057	1.306E-06	0.9796	0.0398	0.0389	38.95	375.20	1390	6	26.06	66.9%	Yes	Catchment S, A1, A2, A3, A4, 1/2 A5
FMH7011604	FMH7011605	225	1	3.3	+2.38 (5)	+2.34 (5)	9.81	Clay	0.0006	0.0121	1.306E-06	1.4345	0.0398	0.0570	57.04	375.20	1390	6	26.06	45.7%	Yes	Catchment S, A1, A2, A3, A4, 1/2 A5
FMH7011605	FMH7011606	225	1	4.5	+2.40 (5)	+2.32 (5)	9.81	Clay	0.0006	0.0179	1.306E-06	1.7492	0.0398	0.0696	69.55	375.20	1390	6	26.06	37.5%	Yes	Catchment S, A1, A2, A3, A4, 1/2 A5
FMH7011606	FMH7011541	225	1	2.6	+2.32 (5)	+2.27	9.81	Clay	0.0006	0.0190	1.306E-06	1.8034	0.0398	0.0717	71.70	393.02	1456	6	27.29	38.1%	Yes	Catchment S, A1, A2, A3, A4, A5
FMH7011541	FMH7011542	225	1	18.1	+2.27	+2.05	9.81	Clay	0.0006	0.0122	1.306E-06	1.4403	0.0398	0.0573	57.27	994.13	3682	6	77.00	134.4%	No	Catchment S, A1, A2, A3, A4, A5, 1/2 A6, A6 Swimming Pool Backwash
FMH7011542	FMH7011543	150	2	3.2	+2.05	+2.00	9.81	Clay	0.0006	0.0154	1.306E-06	1.2473	0.0177	0.0220	44.08	994.13	3682	6	77.00	174.7%	No	Catchment S, A1, A2, A3, A4, A5, 1/2 A6, A6 Swimming Pool Backwash
FMH7011543	FMH7011544	300	1	36.4	+2.00	+1.97	9.81	Clay	0.0006	0.0008	1.306E-06	0.4394	0.0707	0.0311	31.06	994.13	3682	6	77.00	247.9%	No	Catchment S, A1, A2, A3, A4, A5, 1/2 A6, A6 Swimming Pool Backwash
FMH7011544	FMH7011545	225	2	5.9	+1.97	+1.90	9.81	Clay	0.0006	0.0119	1.306E-06	1.4249	0.0398	0.0567	113.31	994.13	3682	6	77.00	68.0%	Yes	Catchment S, A1, A2, A3, A4, A5, 1/2 A6, A6 Swimming Pool Backwash
FMH7011545	FMH7011546	300	1	5.2	+1.90	+1.62	9.81	Clay	0.0006	0.0544	1.306E-06	3.6787	0.0707	0.2600	260.03	994.13	3682	6	77.00	29.6%	Yes	Catchment S, A1, A2, A3, A4, A5, 1/2 A6, A6 Swimming Pool Backwash
FMH7011546	FMH7011547	300	1	2.9	+1.62	+1.20	9.81	Clay	0.0006	0.1448	1.306E-06	6.0148	0.0707	0.4252	425.16	994.13	3682	6	77.00	18.1%	Yes	Catchment S, A1, A2, A3, A4, A5, 1/2 A6, A6 Swimming Pool Backwash

Notes:

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

(2) The mean velocity (V) is calculated by the Colebrook-White Equation for circular pipes:

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

where V = mean velocity (m/s)

g = gravitational acceleration (m/s^2)

D = internal pipe diameter (m)

s = slope

ks = roughness coefficient(m)

(3) For roughness value k_s 0.6mm is used for slimed sewers with velocity >1.2m/s and 3mm is used for slimed sewers with velocity <1.2m/s based on DSD's "Sewerage Manual" Table 5: Recommended roughness values.

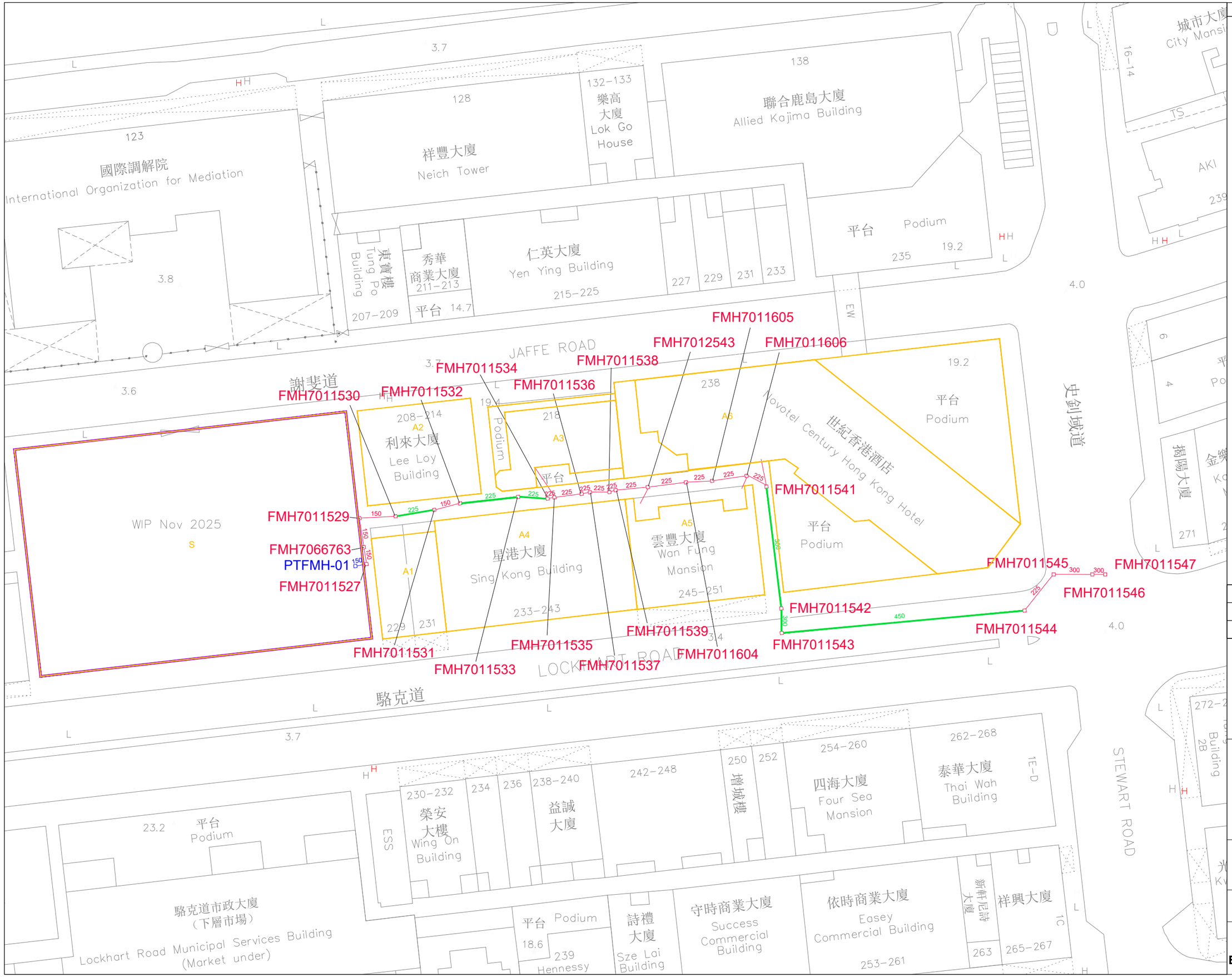
(4) Peak flow (Q) is calculated by Q = V x A

(5) Level is calculated based on assumption and interpolation.

(6) Cover Level is not available in the public information domain.

APPENDIX E

CALCULATION OF SEWAGE FLOW FOR THE PROPOSED DEVELOPMENT AFTER SEWERAGE IMPROVEMENTS



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- Project Site
- Existing Sewage Connection
- Proposed Sewage Connection with improvement
- Catchment
- Proposed Upgrade Sewer

	Prepared	Checked	Approved
Initial	Various	HM	HM
Date	20261013	20261013	20261013

Project Title

THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI

Drawing Title

Proposed Sewage Connection with improvement & Catchment

Drawing No.	Rev.
Appendix E	3

Scale: A3

BeeXergy Consulting Limited

APPENDIX E - CALCULATION OF SEWAGE FLOW FOR THE PROPOSED DEVELOPMENT AFTER SEWERAGE IMPROVEMENTS

Manhole Reference	Manhole Reference	Pipe Dia. (mm)	Number of Pipe	Pipe Length (m)	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	g [1] (m/s^2)	Pipe Material	k_s [1], [3] (m)	s [1]	v [1] (m^2/s)	V [1], [2] (m/s)	A (m^2)	Q [4] (m^3/s)	Estimated Capacity (L/s)	ADWF (m^3/day)	Contributing Population	Peaking Factor	Peak Flow (L/s)	Capacity	Compliance	Remarks
PTFMH-01	FMH7011527	150	1	1.3	+3.30	+3.13	9.81	Clay	0.0006	0.1349	1.306E-06	3.7203	0.0177	0.0657	65.74	222.29	823	8	20.58	31.3%	Yes	Catchment S
FMH7011527	FMH7066763	150	1	2.4	+3.13	+3.06 (5)	9.81	Clay	0.0006	0.0304	1.306E-06	1.7581	0.0177	0.0311	31.07	222.29	823	8	20.58	66.2%	Yes	Catchment S
FMH7066763	FMH7011529	150	1	3.1	+3.06 (5)	+3.00	9.81	Clay	0.0006	0.0182	1.306E-06	1.3543	0.0177	0.0239	23.93	222.29	823	8	20.58	86.0%	Yes	Catchment S
FMH7011529	FMH7011530	150	1	4.9	+3.00	+2.92	9.81	Clay	0.0006	0.0164	1.306E-06	1.2874	0.0177	0.0227	22.75	222.29	823	8	20.58	90.5%	Yes	Catchment S
FMH7011530	FMH7011531	225	1	5.3	+2.92	+2.85 (5)	9.81	Clay	0.0006	0.0131	1.306E-06	1.4961	0.0398	0.0595	59.49	222.29	823	8	20.58	34.6%	Yes	Catchment S
FMH7011531	FMH7011532	150	1	3.4	+2.85 (5)	+2.70 (5)	9.81	Clay	0.0006	0.0440	1.306E-06	2.1170	0.0177	0.0374	37.41	237.14	878	8	21.96	58.7%	Yes	Catchment S, A1
FMH7011532	FMH7011533	225	1	8.2	+2.70 (5)	+2.63	9.81	Clay	0.0006	0.0085	1.306E-06	1.2038	0.0398	0.0479	47.87	288.81	1070	6	20.06	41.9%	Yes	Catchment S, A1, A2
FMH7011533	FMH7011534	225	1	3.4	+2.63	+2.60 (5)	9.81	Clay	0.0006	0.0088	1.306E-06	1.2216	0.0398	0.0486	48.57	288.81	1070	6	20.06	41.3%	Yes	Catchment S, A1, A2
FMH7011534	FMH7011535	225	1	0.5	+2.60 (5)	+2.57	9.81	Clay	0.0006	0.0566	1.306E-06	3.1238	0.0398	0.1242	124.20	288.81	1070	6	20.06	16.1%	Yes	Catchment S, A1, A2
FMH7011535	FMH7011536	225	1	3.7	+2.57	+2.51 (5)	9.81	Clay	0.0006	0.0160	1.306E-06	1.6553	0.0398	0.0658	65.81	314.61	1165	6	21.85	33.2%	Yes	Catchment S, A1, A2, A3
FMH7011536	FMH7011537	225	1	0.5	+2.51 (5)	+2.50 (5)	9.81	Clay	0.0006	0.0196	1.306E-06	1.8317	0.0398	0.0728	72.83	314.61	1165	6	21.85	30.0%	Yes	Catchment S, A1, A2, A3
FMH7011537	FMH7011538	225	1	2.1	+2.50 (5)	+2.47 (5)	9.81	Clay	0.0006	0.0142	1.306E-06	1.5536	0.0398	0.0618	61.77	314.61	1165	6	21.85	35.4%	Yes	Catchment S, A1, A2, A3
FMH7011538	FMH7011539	225	1	0.4	+2.47 (5)	+2.46 (5)	9.81	Clay	0.0006	0.0233	1.306E-06	1.9963	0.0398	0.0794	79.37	314.61	1165	6	21.85	27.5%	Yes	Catchment S, A1, A2, A3
FMH7011539	FMH7012543	225	1	4.1	+2.46 (5)	+2.41	9.81	Clay	0.0006	0.0123	1.306E-06	1.4501	0.0398	0.0577	57.66	357.38	1324	6	24.82	43.0%	Yes	Catchment S, A1, A2, A3, A4
FMH7012543	FMH7011604	225	1	5.3	+2.41	+2.38 (5)	9.81	Clay	0.0006	0.0057	1.306E-06	0.9796	0.0398	0.0389	38.95	375.20	1390	6	26.06	66.9%	Yes	Catchment S, A1, A2, A3, A4, 1/2 A5
FMH7011604	FMH7011605	225	1	3.3	+2.38 (5)	+2.34 (5)	9.81	Clay	0.0006	0.0121	1.306E-06	1.4345	0.0398	0.0570	57.04	375.20	1390	6	26.06	45.7%	Yes	Catchment S, A1, A2, A3, A4, 1/2 A5
FMH7011605	FMH7011606	225	1	4.5	+2.40 (5)	+2.32 (5)	9.81	Clay	0.0006	0.0179	1.306E-06	1.7492	0.0398	0.0696	69.55	375.20	1390	6	26.06	37.5%	Yes	Catchment S, A1, A2, A3, A4, 1/2 A5
FMH7011606	FMH7011541	225	1	2.6	+2.32 (5)	+2.27	9.81	Clay	0.0006	0.0190	1.306E-06	1.8034	0.0398	0.0717	71.70	393.02	1456	6	27.29	38.1%	Yes	Catchment S, A1, A2, A3, A4, A5
FMH7011541	FMH7011542	300	1	18.1	+2.27	+2.05	9.81	Clay	0.0006	0.0122	1.306E-06	1.7325	0.0707	0.1225	122.46	994.13	3682	6	77.00	62.9%	Yes	Catchment S, A1, A2, A3, A4, A5, 1/2 A6, A6 Swimming Pool Backwash
FMH7011542	FMH7011543	300	1	3.2	+2.05	+2.00	9.81	Clay	0.0006	0.0154	1.306E-06	1.9521	0.0707	0.1380	137.98	994.13	3682	6	77.00	55.8%	Yes	Catchment S, A1, A2, A3, A4, A5, 1/2 A6, A6 Swimming Pool Backwash
FMH7011543	FMH7011544	450	1	36.4	+2.00	+1.97	9.81	Clay	0.0006	0.0008	1.306E-06	0.5714	0.1590	0.0909	90.87	994.13	3682	6	77.00	84.7%	Yes	Catchment S, A1, A2, A3, A4, A5, 1/2 A6, A6 Swimming Pool Backwash
FMH7011544	FMH7011545	225	2	5.9	+1.97	+1.90	9.81	Clay	0.0006	0.0119	1.306E-06	1.4249	0.0398	0.0567	113.31	994.13	3682	6	77.00	68.0%	Yes	Catchment S, A1, A2, A3, A4, A5, 1/2 A6, A6 Swimming Pool Backwash
FMH7011545	FMH7011546	300	1	5.2	+1.90	+1.62	9.81	Clay	0.0006	0.0544	1.306E-06	3.6787	0.0707	0.2600	260.03	994.13	3682	6	77.00	29.6%	Yes	Catchment S, A1, A2, A3, A4, A5, 1/2 A6, A6 Swimming Pool Backwash
FMH7011546	FMH7011547	300	1	2.9	+1.62	+1.20	9.81	Clay	0.0006	0.1448	1.306E-06	6.0148	0.0707	0.4252	425.16	994.13	3682	6	77.00	18.1%	Yes	Catchment S, A1, A2, A3, A4, A5, 1/2 A6, A6 Swimming Pool Backwash

Notes:

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

(2) The mean velocity (V) is calculated by the Colebrook-White Equation for circular pipes:

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

where V = mean velocity (m/s)

g = gravitational acceleration (m/s^2)

D = internal pipe diameter (m)

s = slope

ks = roughness coefficient(m)

(3) For roughness value k_s 0.6mm is used for slimed sewers with velocity >1.2m/s and 3mm is used for slimed sewers with velocity <1.2m/s based on DSD's "Sewerage Manual" Table 5: Recommended roughness values.

(4) Peak flow (Q) is calculated by Q = V x A

(5) Level is calculated based on assumption and interpolation.

(6) Cover Level is not available in the public information domain.

CONSULTANCY SERVICES FOR TECHNICAL ASSESSMENT AND PLANNING APPLICATION UNDER SECTION 16 OF THE TOWN PLANNING ORDINANCE (CAP 131) FOR RELAXATION OF BUILDING HEIGHT RESTRICTION AND PLOT RATIO FOR THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI

DRAINAGE IMPACT ASSESSMENT

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Project:	CONSULTANCY SERVICES FOR TECHNICAL ASSESSMENT AND PLANNING APPLICATION UNDER SECTION 16 OF THE TOWN PLANNING ORDINANCE (CAP 131) FOR RELAXATION OF BUILDING HEIGHT RESTRICTION AND PLOT RATIO FOR THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI DRAINAGE IMPACT ASSESSMENT
Report No.:	RT26294-DIA-03

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02	19/08/2026	Issued for Comment	Various	TL	HM
03	03/11/2026	Issued for Comment	Various	TL	HM

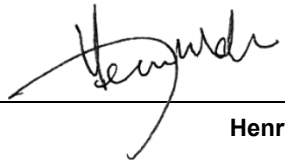
Checked by:



Theo Lai

Senior Consultant

Approved by:



Henry Mak

Director

Disclaimer:

- This report is prepared and submitted by Beexergy Consulting Limited with all reasonable skill to the best of our knowledge, incorporating our Terms and Conditions and taking account of the resources devoted to it by agreement with the client.
- We disclaim any responsibility to the client and others in respect of any matters outside the project scope.

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1 INTRODUCTION

1.1 PROJECT BACKGROUND

BeeXergy Consulting Limited was commissioned by DeSPACE (International) Limited to conduct a Drainage Impact Assessment (DIA) for the Proposed Development. Latest architectural drawings and technical information on the Project Site were provided by the Project Architect.

1.2 PROJECT LOCATION

The Project Site is located at Jaffe Road, Wan Chai. It is bounded by International Organization for Mediation to its north, Lee Loy Building and 229-231 Lockhart Road to its east, Lockhart Road Municipal Services Building to its south, V Wanchai and Lap Tak Building to its west. **Figure 1.1** shows the location of Project Site and its environs.

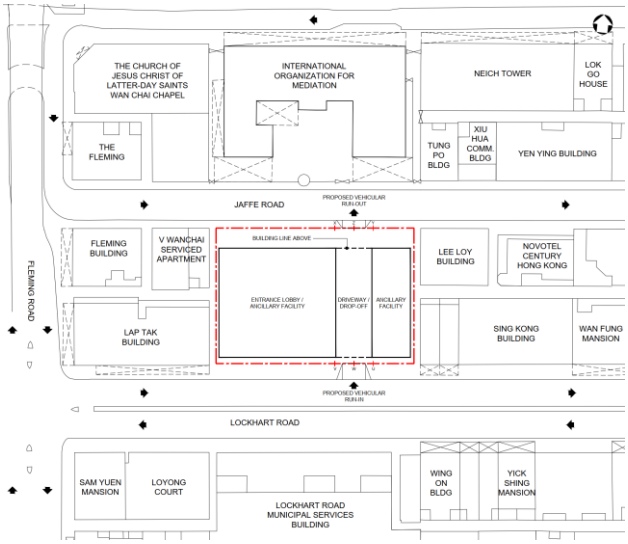


Figure 1.1 Location of the Project Site

1.3 DESCRIPTION OF THE SUBJECT SITE AND PROPOSED DEVELOPMENT

The Project Site covers an area of approximately 1,825m^2. The master layout plan provided by Project Architect is enclosed in **Appendix A**.

2 DRAINAGE IMPACT ASSESSMENT

2.1 SCOPE OF WORKS

The objectives of this DIA are to assess whether the Proposed Development may cause adverse impacts on drainage and flooding or not and to recommend appropriate mitigation measures to alleviate unacceptable drainage impact, if any.

2.2 EXISTING SITE CONDITION AND DRAINAGE FACILITIES

The existing drainage record from the GeoInfo Map of the Lands Department (LandsD) and Drainage Service Department (DSD) are obtained and attached in **Appendix B**.

Existing stormwater manholes, namely SMH7071384, connecting the upstream drainage pipe at the back lane on the eastern side of the site to downstream Lockhart Road and further to the existing box culvert at Fleming Road.

The Project Proponent would like to construct a stormwater terminal manhole (PTSMH-01) connecting the Project Site (S) to the stormwater manhole (SMH7071384) at Lockhart Road and further to the box culvert (SBB7000502) via a 225mm drainage pipe. The location of terminal manhole, proposed drainage connection and catchments are shown in **Appendix C**.

2.3 DRAINAGE ANALYSIS

Peak instantaneous runoff before and after the Proposed Development is calculated based on the Rational Method. The recommended physical parameters, including runoff coefficient (C) and storm constants (a, b, c) for different return periods, are referred to the Drainage Services Department (DSD)'s Stormwater Drainage Manual Fifth Edition, January 2018 and its Corrigendum No. 1/2022 and 1/2024.

The Rational Method (Equation 1) has been adopted for hydraulic analysis and the peak runoff is given by the following expression:

$$Q_p = 0.278CiA \qquad \text{(Equation 1)}$$

Where:

Q_p = peak runoff in m^3/s

C = runoff coefficient

i = rainfall intensity in mm/hr

A = catchment area in km^2

Rainfall intensity is calculated using the following expression (Equation 2):

$$i = \frac{a}{(t_d+b)^c} \qquad \text{(Equation 2)}$$

Where:

i = rainfall intensity in mm/hr

t_d = duration in minutes ($t_d \leq 240$)

a, b, c = storm constants given in Table 3a and Figure 3 of the SDM with return period of 50 years of the HKO Headquarters

For a single catchment, duration (t_d) can be assumed to be the time of concentration (t_c) which is calculated as follows (Equation 3):

$$t_c = t_0 + t_f \qquad \text{(Equation 3)}$$

Where:

t_c = time of concentration (time needed for water to flow overland from the most remote point in a catchment to its outlet)

t_0 = inlet time

t_f = flow time

Generally, t_0 is much smaller than t_f. As shown in Equation 2 above, t_d is the divisor. Therefore, the larger t_d will result in the smaller rain intensity (i) as well as a smaller Q_p. For the worst-case scenario (Equation 4 and Equation 5), t_0 is assumed to be negligible and so:

$$t_d = t_c = t_0 \qquad \text{(Equation 4)}$$

$$t_c = \frac{0.14465L}{H^{0.2}A^{0.1}} \qquad \text{(Equation 5)}$$

Where:

A = catchment area (m^2)

H = average slope (m per 100m), measured along the line of natural flow, from the summit of the catchment to the point under consideration

L = distance (on plan) measured on the line of natural flow between the summit and the point under consideration (m)

The capacities of the drainage pipes have been calculated using the Colebrook-White Equation (Equation 6), assuming full bore flow with no surcharge, as follows,

incorporate 10% sedimentation in the calculation of drainage flow capacity in accordance with the SDM:

$$V = -\sqrt{32gRs} \times \log\left(\frac{k_s}{14.8R} + \frac{1.25v}{R\sqrt{32gRs}}\right) \qquad \text{(Equation 6)}$$

Where:

V = mean velocity (m/s)

g = gravitation acceleration (m/s^2)

R = hydraulic radius (m)

k_s = hydraulic pipeline roughness (m)

V = kinematic viscosity of fluid (m^2/s)

S = hydraulic gradient (energy loss per unit length due to friction)

2.4 CHANGES IN SURFACE CHARACTERISTICS

Although greenery will be provided in the Proposed Development, the Project Site is assumed to be fully paved in a conservative approach. No change in surface characteristics of the Project Site is expected as shown in **Table 2.1.**

Table 2.1 Changes in Surface Characteristics of the Project Site

Scenario of Project	Surface Characteristics (Paved)	Surface Characteristics (Unpaved)
Before & After Development	100%	0%

2.5 CUMULATIVE RUNOFF

As the existing drainage system collects runoff from the Site and the surrounding catchments, runoff from the surrounding catchments shall be considered. Catchments that contributed to the cumulative runoff have been identified as catchments A and B as shown in **Appendix F**. The changes in cumulative runoff at SCP1010840 are summarized in **Table 2.2.**

Table 2.2 Changes of Cumulative Runoff

Catchment	Before Development		After Development	
	Unpaved Area	Paved Area	Unpaved Area	Paved Area
Catchment S	$0m^2$	$1,825m^2$	$0m^2$	$1,825m^2$
Catchment A1	$0m^2$	$341m^2$	$0m^2$	$341m^2$

Catchment	Before Development		After Development	
	Unpaved Area	Paved Area	Unpaved Area	Paved Area
Catchment A2	0m^2	262m^2	0m^2	262m^2
Catchment A3	0m^2	512m^2	0m^2	512m^2
Catchment A4	0m^2	263m^2	0m^2	263m^2
Catchment A5	0m^2	172m^2	0m^2	172m^2
Catchment B1	0m^2	1,639m^2	0m^2	1,639m^2
Catchment B2	0m^2	350m^2	0m^2	350m^2

2.6 ESTIMATED EXISTING AND FUTURE RUNOFF

Peak Runoff

Based on the cumulative runoff shown in **Table 2.2**, the runoff at SMH7071384 before and after the development was estimated based on the return periods of 50 years.

The estimated peak runoff discharged to SMH7071384 before and after Development (Catchment S) will be 0.122m^3/s. The detailed calculations of runoff discharge to SMH7071384 under the assessed return periods of 50 years are provided in **Appendix D**.

Assessment of Drainage Capacity

Calculation of drainage capacity of the runoff from the Project Site (Catchment S) is provided in **Appendix E**. Calculation of drainage capacity of all runoff from the Project Site (Catchment S), its associated upstream (Catchment A) and its associated downstream (Catchment B) is provided in **Appendix F**.

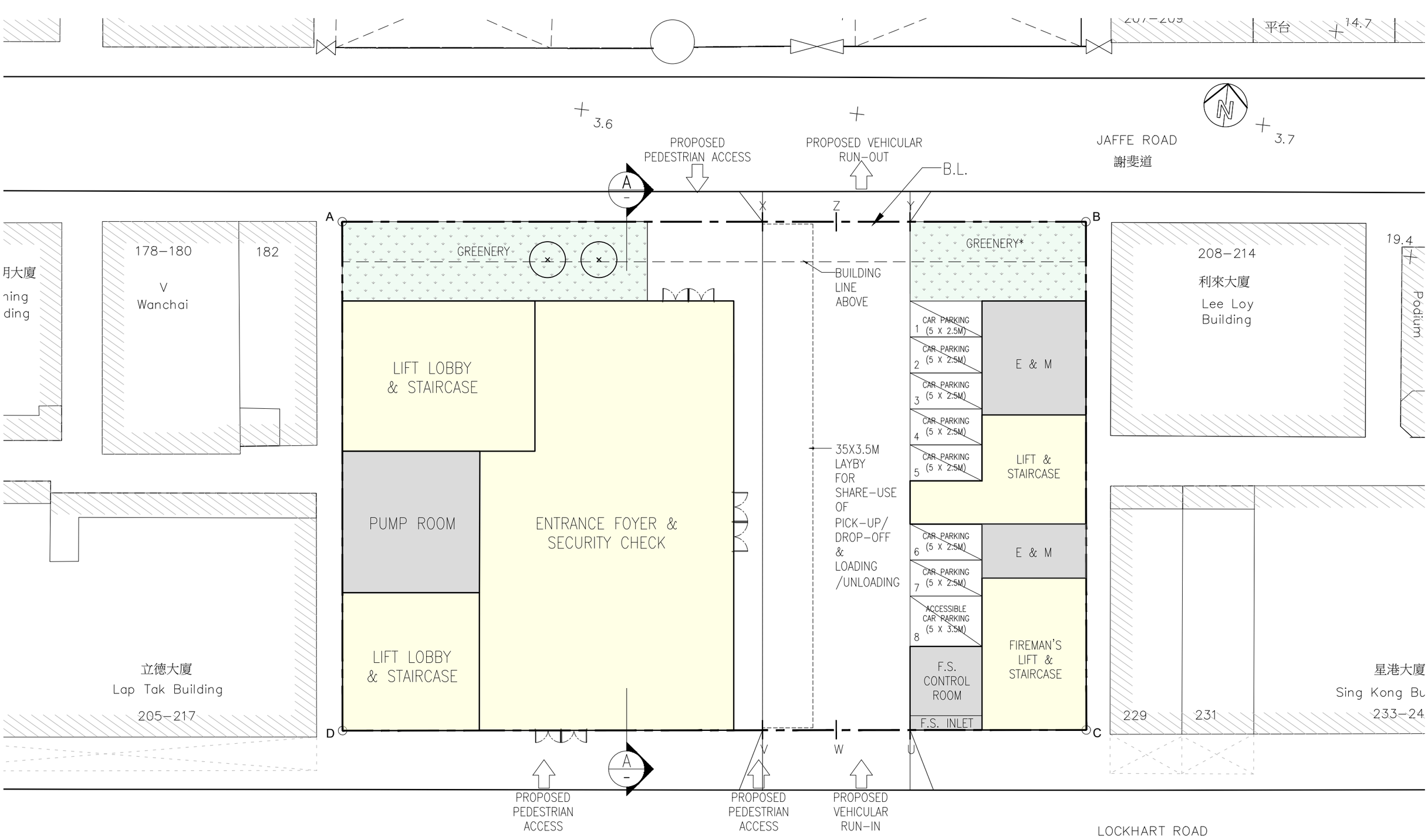
The results suggested that the estimated peak runoff will not be higher than 89% capacity of the drainage systems, and it is anticipated that the proposed drainage system will have sufficient capacity to cater to the surface runoff from the Proposed Development. Given the surface characteristics of the Project Site and surrounding catchments remain unchanged before and after the Proposed Development, no additional runoff or hydraulic capacity will be inducted due to the Proposed Development and no adverse drainage impact is anticipated.

3 CONCLUSION

An international legal service building is proposed at Wan Chai. This is the DIA to assess whether the capacity of the drainage networking is sufficient to cope with the peak drainage flow arising from the Proposed Development during its operation stage or not and to recommend appropriate mitigation measures to alleviate unacceptable drainage impact, if any.

Based on the DIA results, it is found that the proposed and existing drainage system serving the area has sufficient capacity to cater for the drainage generation from the Proposed Development and the surrounding catchment areas. Adverse drainage impact is not anticipated, and thus no upgrading or improvement works for existing drainage system are required.

APPENDIX A
MASTER LAYOUT PLAN



G/F LAYOUT PLAN

SCALE 1: 250

3.7

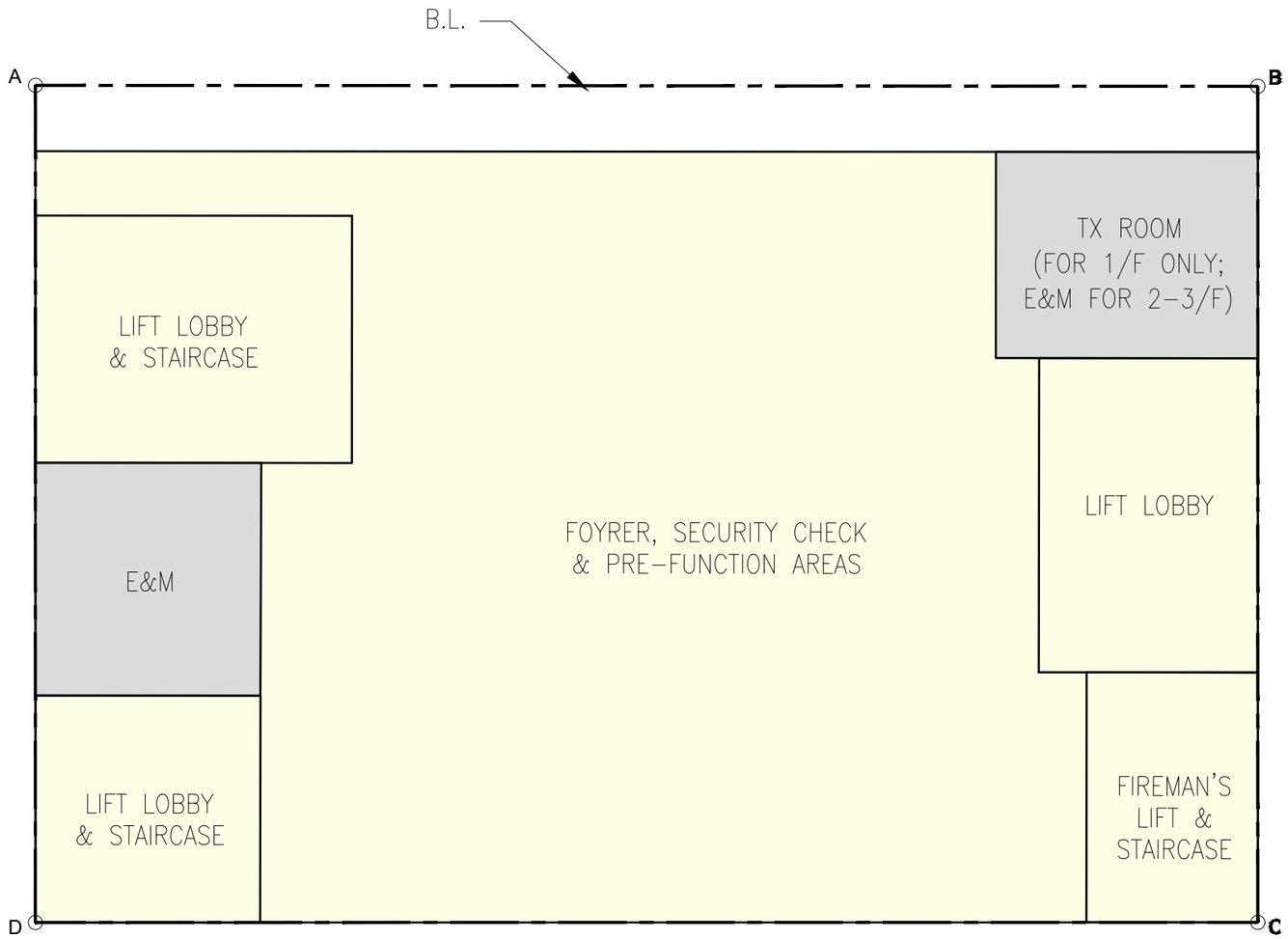
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B	PLANNING STATEMENT	06082026
C	PLANNING STATEMENT	13082026

BD. REF. NO.	-
F.S.D. REF. NO.	-
FILE REF.	
PROJECT NAME	SECTION 16 PLANNING APPLICATION FOR THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI
DRAWING TITLE	G/F LAYOUT PLAN
PROJECT NO.	1949
DESIGNED BY	C.P.POON
DRAWN BY	E.T.
APPROVED BY	C.P.POON
DATE	16–10–2026
DRAWING NO	LAY001
REVISION	C
SCALE	1:250



1/F TO 3/F LAYOUT PLAN

SCALE 1: 250

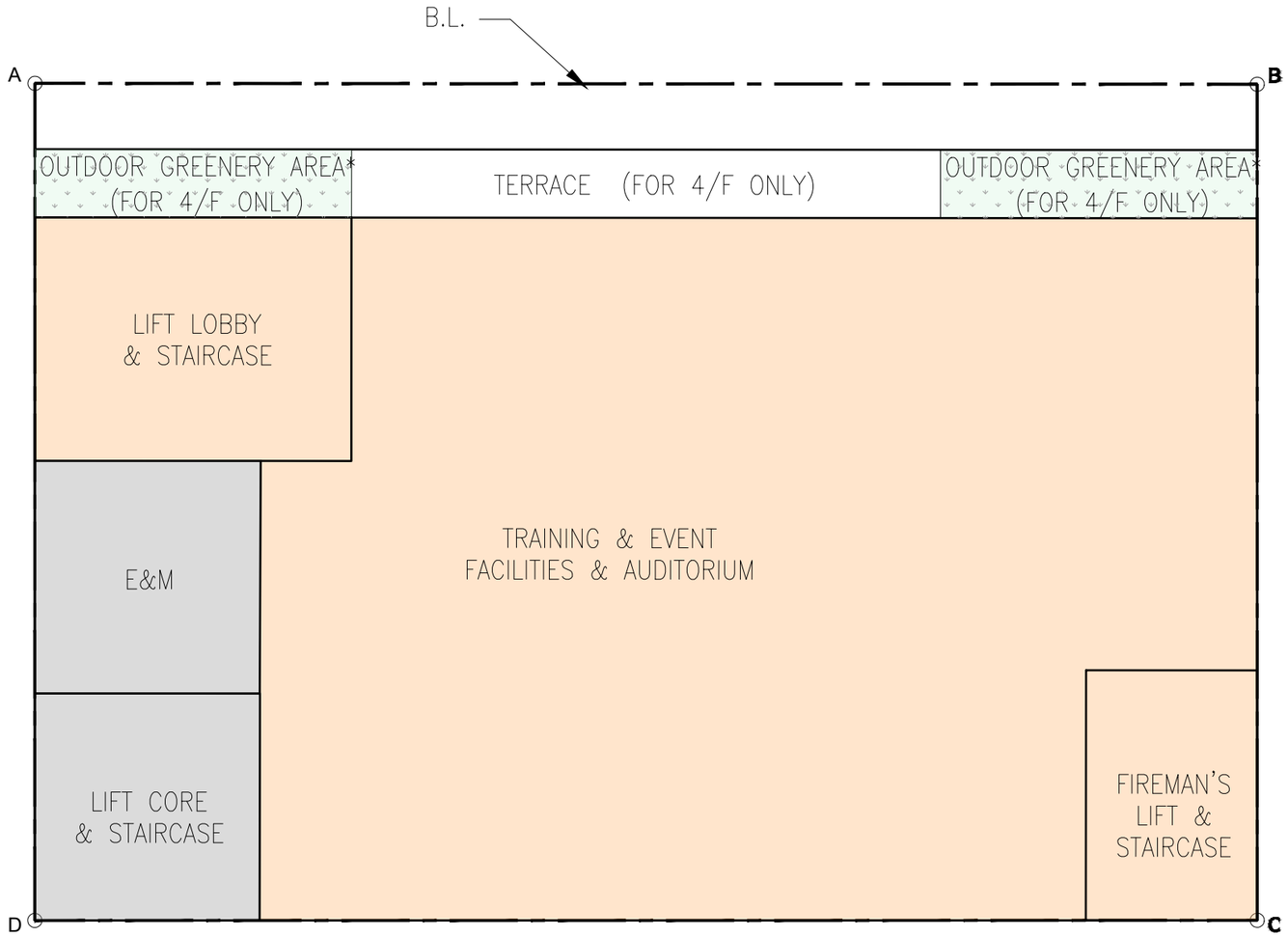
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F.S.D. REF. NO. -	DRAWING TITLE 1/F to 3/F LAYOUT PLAN	APPROVED BY C.P.POON	DATE 27–10–2026
FILE REF.	PROJECT NO. 1949	DRAWING NO LAY002	REVISION C / SCALE 1:250



4/F TO 6/F LAYOUT PLAN

SCALE 1: 250

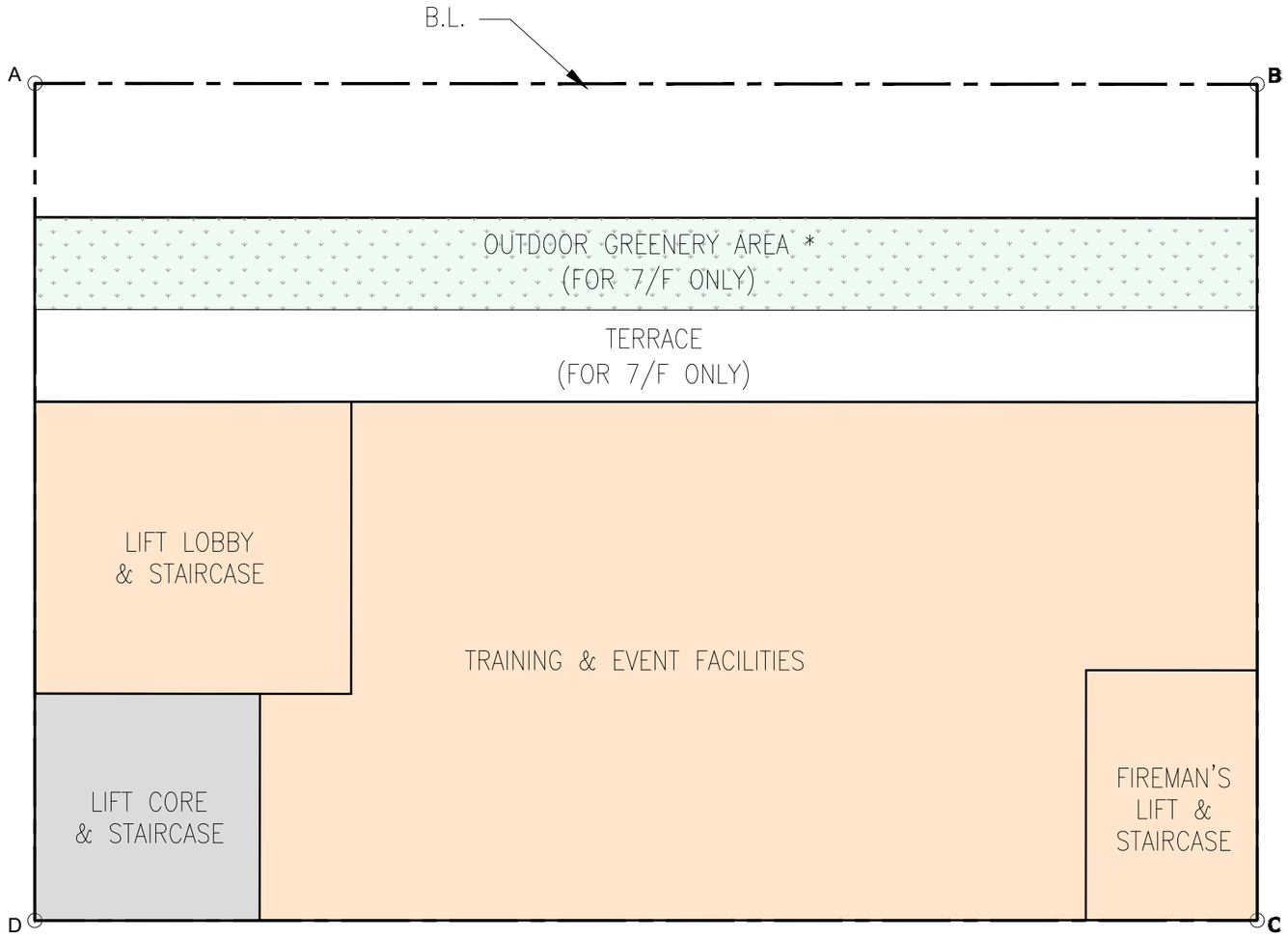
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7/F TO 10/F
TYPICAL LAYOUT PLAN
SCALE 1: 250

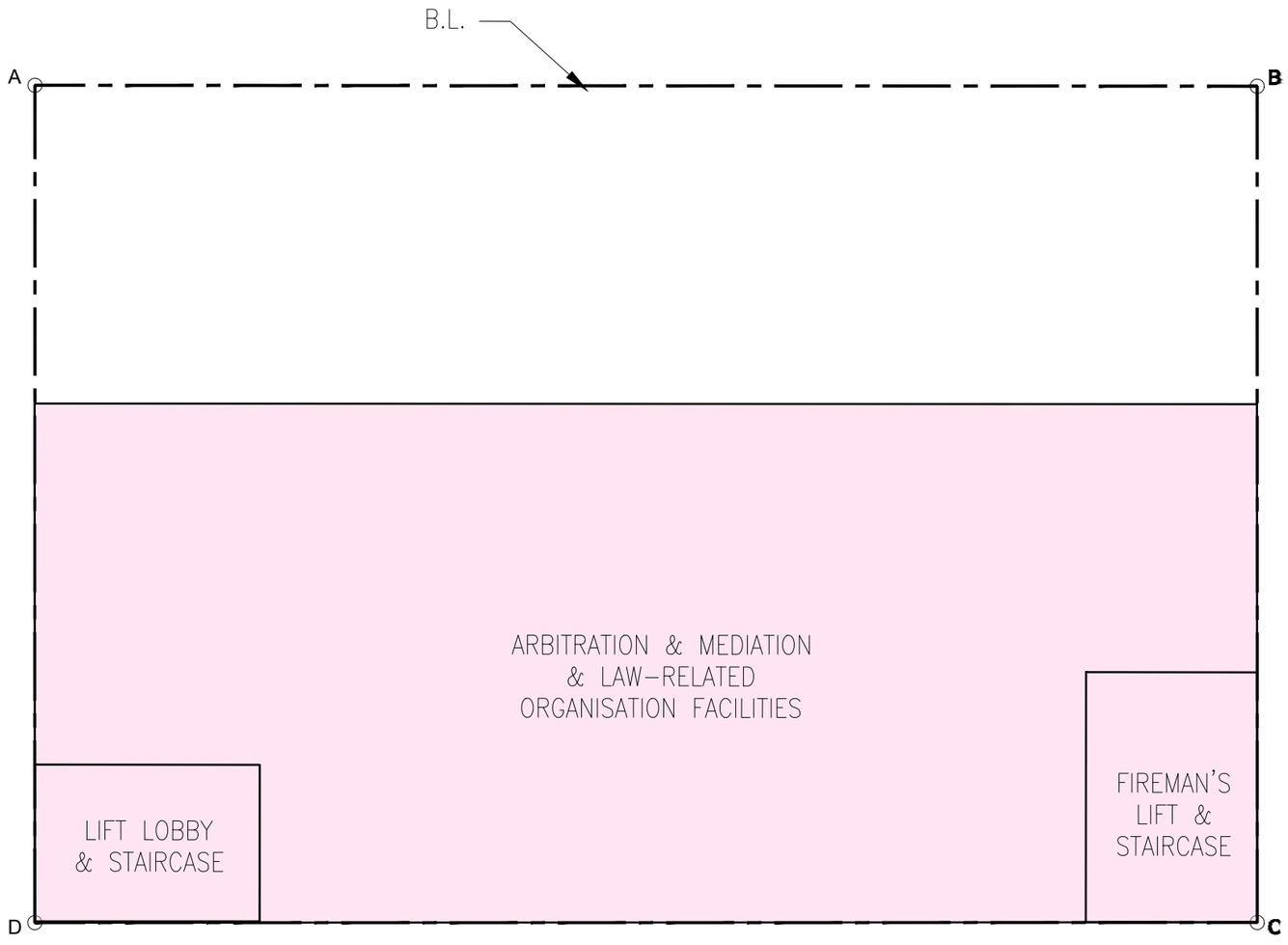
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F.S.D. REF. NO. -	DRAWING TITLE 7/F – 10/F TYPICAL LAYOUT PLAN	APPROVED BY C.P.POON	DATE 16–10–2026	
FILE REF.	PROJECT NO. 1949	DRAWING NO LAY004	REVISION B	SCALE 1:250



12/F TO 26/F
TYPICAL LAYOUT PLAN
SCALE 1: 250

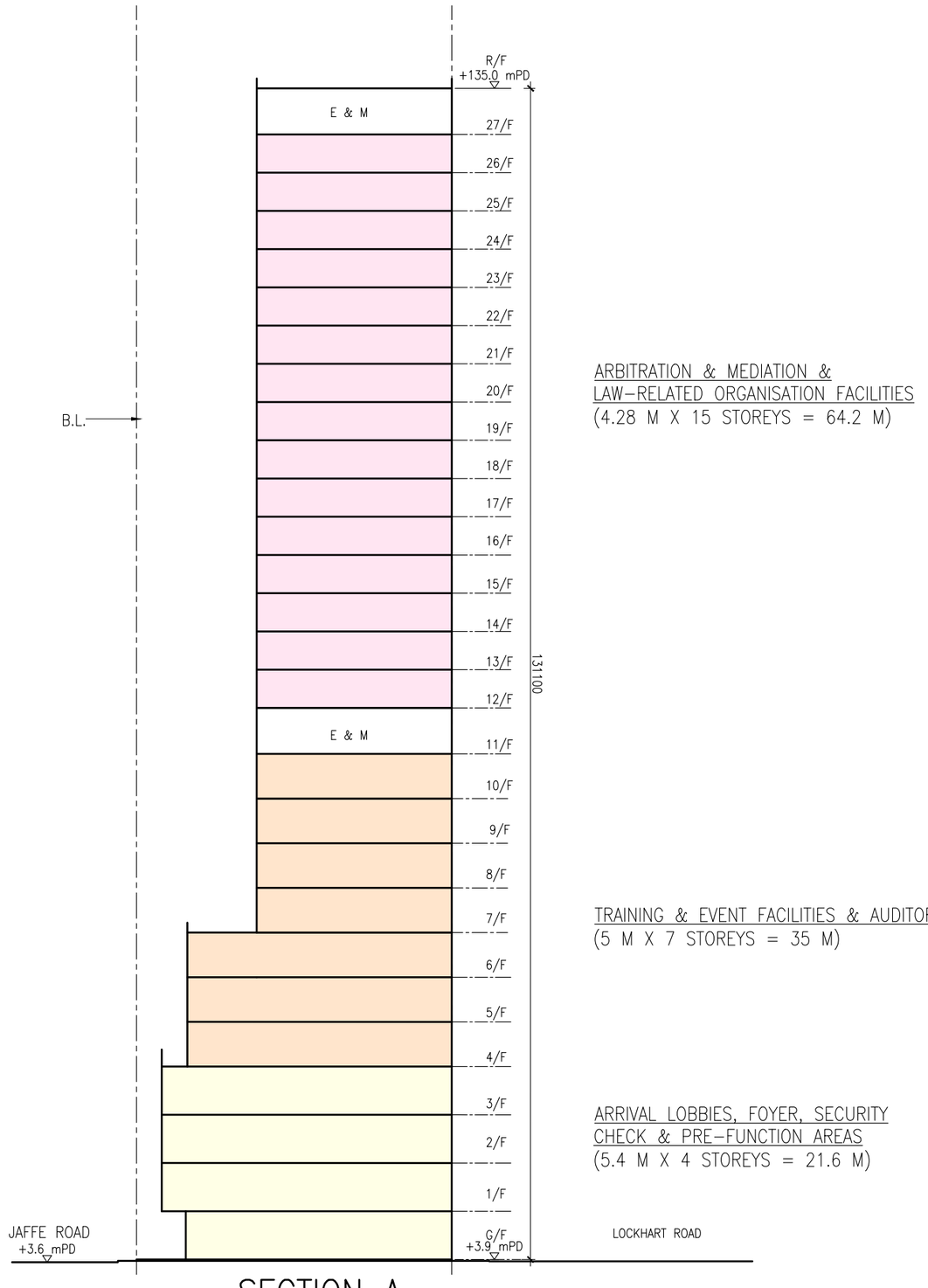
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A	PLANNING STATEMENT	22062026
B	PLANNING STATEMENT	13082026

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SECTION A

SCALE 1: 600

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BD. REF. NO. -	PROJECT NAME SECTION 16 PLANNING APPLICATION FOR THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI	DESIGNED BY C.P.POON	DRAWN BY E.T.
F.S.D. REF. NO. -	DRAWING TITLE SECTION A	APPROVED BY C.P.POON	DATE 27-10-2026
FILE REF.	PROJECT NO. 1949	DRAWING NO SEC001 / REVISION B / SCALE 1:600	

APPENDIX B
EXISTING DRAINAGE SYSTEM

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Project Site

Existing Drainage Connection

Existing Box Culvert

WIP Nov 2025

SMH7011842

SMH7011843

SMH7071384

SMH7011849

SMH7011851

SMH7011820

SMH7011854

SMH7071382

SMH7071383

SMH7071381

SBB7000502

	Prepared	Checked	Approved
Initial	Various	TL	HM
Date	20260602	20260602	20260602

Project Title

THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI

Drawing Title

Existing Drainage Connection

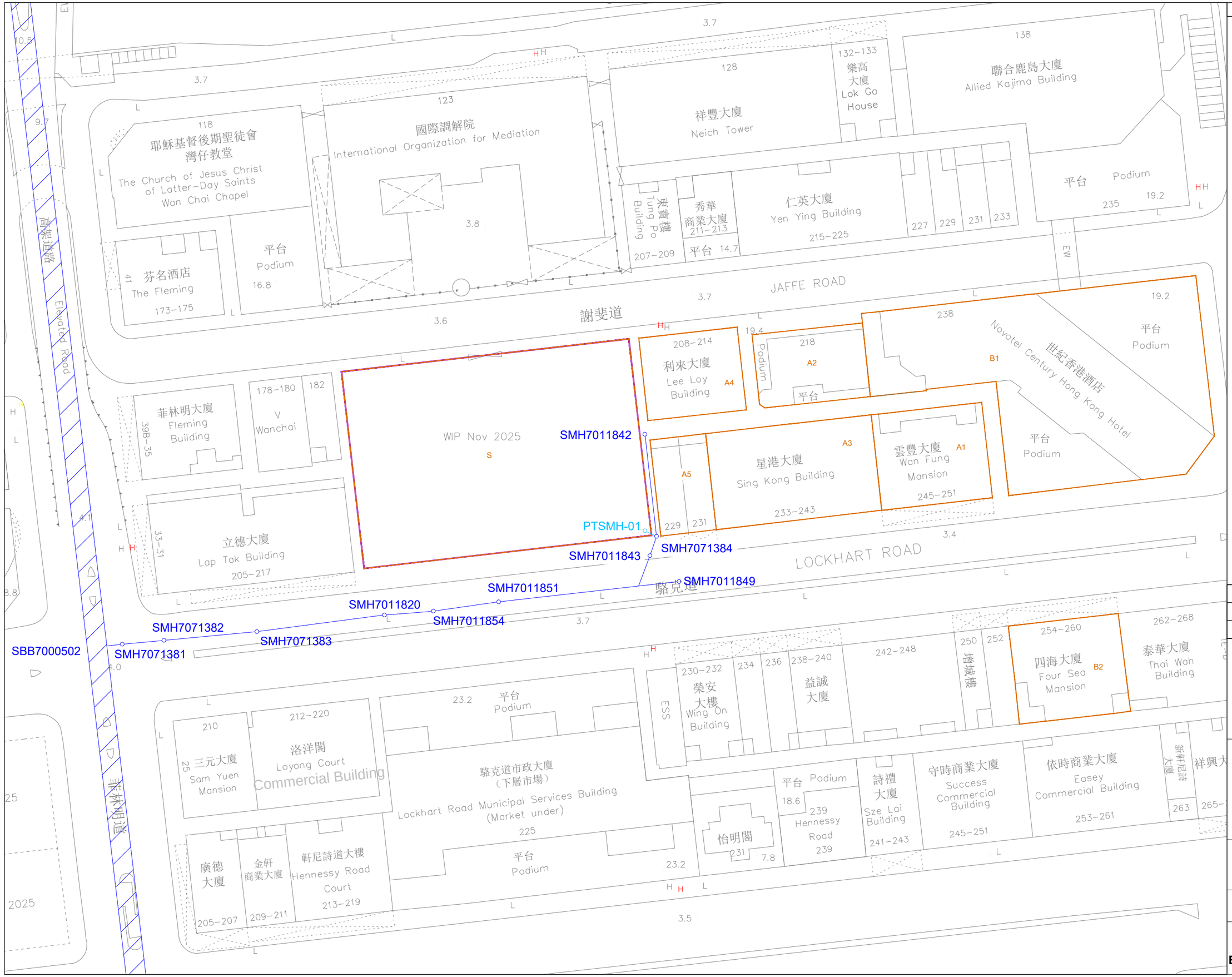
Drawing No.	Rev.
Appendix B	0

Scale: A3

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APPENDIX C
PROPOSED DRAINAGE CONNECTION AND CATCHMENT AREA

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	Prepared	Checked	Approved
Initial	Various	TL	HM
Date	20260602	20260602	20260602

Project Title

THE HONG KONG INTERNATIONAL LEGAL SERVICE BUILDING AT WAN CHAI

Drawing Title

Proposed Drainage Connection and Drainage Catchment

Drawing No.	Rev.
Appendix C	0

Scale: A3

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APPENDIX D
CALCULATION OF RUNOFF FOR RETURN PERIOD OF 50 YEARS

Appendix D

Calculation of Runoff for the Return Period of 50 Years

Catchment ID	Unpaved Catchment Area (km^2)	Paved Catchment Area (km^2)	Catchment Area (A), km^2	Average slope (H), m/100m	Flow path length (L), m	Inlet time (t_o), min	Duration (t_d), min	(50 years) Storm Constants*			Runoff intensity (i) with climate change factor & design allowance, mm/hr*	Runoff coefficient for unpaved area (C_{up})	Runoff coefficient for paved area (C_p)	C x A	Peak runoff (Q_p) m^3/s
								a	b	c					
Catchment S	0.000000	0.001826	0.001826	0.01	63	10.73	10.73	505.5	3.29	0.355	253.59	0.25	0.95	0.00173	0.122
Catchment A1	0.000000	0.000341	0.000341	0.01	26	5.21	5.21	505.5	3.29	0.355	302.89	0.25	0.95	0.00032	0.027
Catchment A2	0.000000	0.000262	0.000262	0.01	23	4.82	4.82	505.5	3.29	0.355	308.03	0.25	0.95	0.00025	0.021
Catchment A3	0.000000	0.000512	0.000512	0.01	34	6.68	6.68	505.5	3.29	0.355	286.27	0.25	0.95	0.00049	0.039
Catchment A4	0.000000	0.000263	0.000263	0.01	23	4.81	4.81	505.5	3.29	0.355	308.19	0.25	0.95	0.00025	0.021
Catchment A5	0.000000	0.000172	0.000172	0.01	20	4.32	4.32	505.5	3.29	0.355	315.04	0.25	0.95	0.00016	0.014
Catchment B1	0.000000	0.001639	0.001639	0.01	45	7.83	7.83	505.5	3.29	0.355	275.37	0.25	0.95	0.00156	0.119
Catchment B2	0.000000	0.000350	0.000350	0.01	27	5.36	5.36	505.5	3.29	0.355	301.04	0.25	0.95	0.00033	0.028
														Total	**0.392**

Remark:

1. According to Stormwater Drainage Manual CORRIGENDUM No. 1/2022 - Table 28, the rainfall increases due to Climate Change will be 16.0% for end of 21st Century.
2. According to Stormwater Drainage Manual CORRIGENDUM No. 1/2022 - Table 31, the design allowance in the rainfall increases will be 12.1% for end of 21st Century.
3. 50 years storm constants according to SDM - Corrigendum No. 1/2024.
4. To present worst case scenario, it is assumed that no change of surface characteristic before the after the Proposed Development for the Project Site (Catchment S) its associated upstream catchment A & B.

APPENDIX E

CALCULATION OF DRAINAGE CAPACITY OF ALL RUNOFF FROM THE PROJECT SITE (CATCHMENT S)

Appendix E

Calculation of drainage capacity of the runoff from the Project Site (Catchment S)

SECTION		Pipe	Catchment	Length	Upstream Invert Level	Downstream Invert Level	d	r	A_w	P_w	R	s	k_s	V	Q_c	Total Runoff in 50 Years	% of capacity	Remark
From	To			m	mPD	mPD	m	m	m^2	m	m	-	mm	m/s	m^3/s	m^3/s	%	
PTSMH-01	SMH7071384	1 x 300mm circular pipe	S	1.6	+3.00	+2.50	0.225	0.11	0.040	0.707	0.06	0.321	0.06	9.7284	0.387	0.122	32%	OK

Legend

d = pipe diameter, m

r = pipe radius (m) = 0.5d

A_w = wetted area (m^2) = πr^2 (circular) ; $\pi r^2/2$ (U-channel) ; WH (Box Culvert)

P_w = wetted perimeter (m) = $2\pi r$ (circular) ; πr (U-channel) ; 2W+2H (Box Culvert)

R = Hydraulic radius (m) = A_w / P_w

s = Slope of the total energy line

k_s = equivalent sand roughness, mm

V = Velocity of flow calculated based on Colebrook White Equation, m/s

Q_c = Flow Capacity (10% sedimentation incorporated), m^3/s

Q_p = Estimated total peak flow from the Site during peak season, m^3/s

APPENDIX F

CALCULATION OF DRAINAGE CAPACITY OF ALL RUNOFF FROM THE PROJECT SITE (CATCHMENT S) AND ITS ASSOCIATED UPSTREAM AND DOWNSTREAM CATCHMENTS (CATCHMENTS A, B)

Appendix F

Calculation of drainage capacity of the runoff from the Project Site (Catchment S, A & B)

SECTION		Pipe	Catchment	Length	Upstream Invert Level	Downstream Invert Level	d	r	A_w	P_w	R	s	k_s	V	Q_c	Total Runoff in 50 Years	% of capacity	Remark
From	To			m	mPD	mPD	m	m	m^2	m	m	-	mm	m/s	m^3/s	m^3/s	%	
SMH7011842	SMH7071384	1 x 300mm circular pipe	A	17.0	[1] +3.00	+2.50	0.3	0.15	0.071	0.942	0.08	0.029	0.06	3.4380	0.243	0.123	51%	OK
SMH7071384	SMH7011843	2 x 225mm circular pipe	A, S	2.9	[1] +2.70	[1] +2.50	0.225	0.11	0.040	0.707	0.06	0.069	0.06	4.4530	0.354	0.245	69%	OK
SMH7011843	SGJ7002716	1 x 300mm circular pipe	A, S	5.3	+2.50	[1] +2.30	0.3	0.15	0.071	0.942	0.08	0.038	0.06	3.9101	0.276	0.245	89%	OK
SMH7011849	SGJ7002716	1 x 450mm circular pipe	B	6.5	[1] +2.50	[1] +2.30	0.45	0.23	0.159	1.414	0.11	0.031	0.06	4.5109	0.717	0.147	20%	OK
SGJ7002716	SMH7011851	1 x 450mm circular pipe	A, S, B	21.5	[1] +2.60	+2.27	0.45	0.23	0.159	1.414	0.11	0.015	0.06	3.1610	0.503	0.392	78%	OK
SMH7011851	SMH7011854	1 x 450mm circular pipe	A, S, B	14.4	+2.26	[1] +2.03	0.45	0.23	0.159	1.414	0.11	0.016	0.06	3.2307	0.514	0.392	76%	OK
SMH7011854	SMH7011820	1 x 450mm circular pipe	A, S, B	8.2	[1] +2.03	[1] +1.90	0.45	0.23	0.159	1.414	0.11	0.016	0.06	3.2126	0.511	0.392	77%	OK
SMH7011820	SMH7071383	1 x 450mm circular pipe	A, S, B	21.5	[1] +1.90	[1] +1.50	0.45	0.23	0.159	1.414	0.11	0.019	0.06	3.4848	0.554	0.392	71%	OK
SMH7071383	SMH7071382	1 x 450mm circular pipe	A, S, B	16.4	[1] +1.50	[1] +1.20	0.45	0.23	0.159	1.414	0.11	0.018	0.06	3.4590	0.550	0.392	71%	OK
SMH7071382	SMH7071381	1 x 450mm circular pipe	A, S, B	6.5	[1] +1.20	[1] +1.10	0.45	0.23	0.159	1.414	0.11	0.015	0.06	3.1658	0.503	0.392	78%	OK
SMH7071381	SBB7000502	1 x 450mm circular pipe	A, S, B	2.2	[1] +1.10	[1] +1.00	0.45	0.23	0.159	1.414	0.11	0.046	0.06	5.5225	0.878	0.392	45%	OK

Legend

d = pipe diameter, m

r = pipe radius (m) = 0.5d

A_w = wetted area (m^2) = πr^2 (circular) ; $\pi r^2/2$ (U-channel) ; WH (Box Culvert)

P_w = wetted perimeter (m) = $2\pi r$ (circular) ; πr (U-channel) ; 2W+2H (Box Culvert)

R = Hydraulic radius (m) = A_w / P_w

s = Slope of the total energy line

k_s = equivalent sand roughness, mm

V = Velocity of flow calculated based on Colebrook White Equation, m/s

Q_c = Flow Capacity (10% sedimentation incorporated), m^3/s

Q_p = Estimated total peak flow from the Site during peak season, m^3/s

Remarks

[1] Level is calculated based on assumption and interpolation.