Attachment B1

Revised SIA Report (Textual Revisions)

Section 16 Planning Application for Proposed Mixed-Use Development (Proposed Flat with Permitted Commercial Uses) in Planning Area 32B, Hung Shui Kiu, New Territories
(Application No.: A/HSK/619)

Sewerage Impact Assessment

August 2026

Delivering a better world

Prepared by:

AECOM Asia Company Limited
19/F, Tower A, 83 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong S.A.R.
aecom.com

© 2026 AECOM Asia Company Limited. All Rights Reserved.

This document has been prepared by AECOM Asia Company Limited (“AECOM”) for sole use of our client (the “Client”) in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

Table of Contents

1. Introduction 1
1.1 Background 1
1.2 Objective of this Submission 1
1.3 Nomenclature 2
2. Development Proposal 3
2.1 The Indicative Development Proposal 3
2.2 Base Case for Area 32B 3
3. Assessment Methodology 5
3.1 Overview of Methodology 5
3.2 Methodology and Assumptions 5
4. Review on Existing and Planned Sewerage System 7
4.2 Base Case Sewage Estimation 7
4.3 Impact on Sewerage System 8
4.4 Sewage Discharge Comparison between Base Case and Proposed Development 8
5. Proposed Sewerage System 9
5.1 Proposed Sewerage Connection 9
6. Maintenance Responsibility 9
7. Conclusion 10

Tables

Table 1 – Nomenclature 2
Table 2 – Key Development Parameters 4
Table 3 – Unit Flow Factors 5
Table 4 – Worker Density 5
Table 5 – Peaking Factor 6
Table 6 – Sewage Estimation for the Base Case Scenario 7
Table 7 – Sewage Estimation for the Proposed Development 8

Figures

AREA 32B/SIA/Figure 1 Location Plan

AREA 32B/SIA/Figure 2 Master Layout Plan

AREA 32B/SIA/Figure 3 Proposed Sewerage Layout

AREA 32B/SIA/Figure 4 Proposed Sewerage Layout by CEDD

Annexes

Annex 1 Proposed Development Sewage Estimation

Annex 2 Swimming Pool Backwash Calculation

Annex 3 Hydraulic Checking

Annex 4 Baseline Sewage Estimation

1. Introduction

1.1 Background

1.1.1 AECOM Asia Company Limited (AECOM) has been commissioned by the project proponent to act as the engineering consultant to conduct a Sewerage Impact Assessment (SIA) for a private mixed-use development in Hung Shui Kiu, New Territories.

1.1.2 The S16 Planning Application involves Area 32B with total area of 13,601 m^2; referred as the "Application Site". The Site is located next to the Kong Sham Western Highway. Location plan of the Application Site refers to figure no. **AREA 32B/SIA/Figure 1**.

1.1.3 The Application Site falls within “C(1)” zone on the Draft Hung Shui Kiu and Ha Tsuen OZP No. S/HSK/3. and lies within Hung Shui Kiu / Ha Tsuen (HSK/HT) New Development Area (NDA). According to the OZP, commercial uses including ‘Hotel’, ‘Office’, ‘Eating Place’, ‘Shop and Services’, etc. are always permitted in “C(1)” zone; while ‘Flat’ use is under Column 2, planning permission is therefore required for the proposed residential use in Site A of the Application Site.

1.1.4 This SIA report reviews the sewerage impact of the proposed development and serves as a supporting document for the S16 Planning Application.

1.2 Objective of this Submission

1.2.1 This report outlines the assessment results of the potential sewerage impacts caused by the Proposed Development at the Application Site. The main objectives of this assessment include the followings:

(i) Identify any increase in sewage flow due to the Proposed Development.

(ii) Review the existing sewerage condition of the Application Site based on available information.

(iii) Outline the methodology adopted in this assessment.

(iv) Assess any potential impact on the existing or planned sewerage facilities nearby due to the Proposed Development.

(v) Propose mitigation measures and/or improvement works to minimize any potential sewerage impact from the Proposed Development.

(vi) Discuss the responsibility of the construction and maintenance aspects of the proposed sewerage system.

1.3 Nomenclature

1.3.1 The following abbreviations and shortened expressions in **Table 1** are adopted in this report.

ADWF	Average Dry Weather Flow
AECOM	AECOM Asia Company Limited
CIF	Catchment Inflow Factor
CIFSUS	Commercial and Industrial Floor Space Utilization Survey (PlanD)
DSD	Drainage Services Department
EIA	Environmental Impact Assessment
EPD	Environmental Protection Department
F&B	Food and Beverage
GESF	Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning Version 1.0 (EPD)
GFA	Gross Floor Area
mPD	Metres above Principal Datum
PlanD	Planning Department
SWSTW	San Wai Sewage Treatment Works
HSKEPP	Hung Shui Kiu Effluent Polishing Plant
SIA	Sewerage Impact Assessment
UFF	Unit Flow Factor

Table 1 – Nomenclature

2. Development Proposal

2.1 The Indicative Development Proposal

2.1.1 The Application Site area is approximately 13,601m^2. Under the Proposed Development, the total plot ratio is not more than 9.5. (i.e. the total GFA is not more than 129,210m^2) The Applicant proposed 71,066m^2 as non-domestic GFA for the permitted commercial use as of right, whereas the remaining 58,144m^2 GFA would be used for the proposed residential development.

2.1.2 The Proposed Development consists of Site A and Site B. Site A will be developed with 1,240 residential units, recreational facilities, and some permitted commercial use (e.g. retail). Site B will be developed with retail and office development, as well as a hotel which provides 924 rooms. The anticipated completion year of the Application Site (except for the remaining non-domestic GFA to be implemented at a later stage under the arrangement of "Pay for What You Build" Pilot Scheme) is 2033. Details refers to **Remark (3)** of **Table 2**.

2.2 Base Case for Area 32B

2.2.1 With reference to the draft Hung Shui Kiu and Ha Tsuen Outline Zoning Plan (HSK/HT OZP) No. S/HSK/3, the allowed maximum plot ratio is PR 9.5 and the total GFA is not more than 129,210m^2. As specified in the Outline Development Plan (ODP) No. D/HSK/1, the development mix for Area 32B is: 45% GFA for office use, 20% GFA for hotel use and 35% for retail use. Based on this mix, a hypothetical base case scenario is formed for sewage generation estimation.

2.2.2 The comparison table of development parameters between the base case and proposed development is summarized in **Table 2** below.

	Base Case	Proposed Development (Site A)	Proposed Development (Site B)
Site Area	13,601m^2	8,967m^2	4,634m^2
Total PR (not more than)	9.5	7.1	14.2
		9.5 (Site A + Site B)	
Total GFA (not more than)	129,210m^2	63,365m^2	65,845m^2
		129,210m^2 (Site A + Site B)	
Domestic Portion			
Total Domestic GFA (not more than)	-	58,144m^2	-
No. of Units	-	1,240	-
Population (1)	-	3,348	-
Domestic Portion – Resident's Recreational Facilities (2)	-	2,325m^2	-
Non-Domestic Portion – Retail			
Total Non-Domestic GFA	45,223.5m^2	5,221m^2 (3)	354m^2 (3)
Non-Domestic Portion – Hotel			
Total Non-Domestic GFA	25,842m^2	-	27,871m^2 (3)
No. of Hotel Rooms	-	-	924
Non-Domestic Portion – Office			
Total Non-Domestic GFA	58,144.5m^2	-	37,620m^2
Non-Domestic Portion – Office (Completed in 2033)			
Total Non-Domestic GFA	-	-	9,290m^2 (3)
Non-Domestic Portion – Office (Remaining)			
Total Non-Domestic GFA	-	-	28,330m^2

Table 2 – Key Development Parameters

Remarks:
(1) A person per flat of 2.7 is assumed.
(2) Or such other areas of clubhouse as may be approved by the Buildings Department based on the total permissible domestic GFA for individual land parcel (site under the Buildings Ordinance) at the future General Building Plans.
(3) Drawing upon the spirit of the "Pay for What You Build" Pilot Scheme, about 60% of the non-domestic GFA in Area 32B (i.e. about 42,736m^2) will be implemented first by the target completion year 2033. The GFA to be distributed in both Site A and Site B are 5,221m^2 and 37,515m^2 respectively.

3. Assessment Methodology

3.1 Overview of Methodology

3.1.1 This assessment is carried out to assess the sewerage impact arising from the Proposed Development on the sewerage system.

3.1.2 The sewage generated from the Proposed Development is estimated according to "Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning" (GESF) published by Environmental Protection Department (EPD). The sewage calculation is in accordance with the Sewerage Manual published by Drainage Services Department (DSD).

3.2 Methodology and Assumptions

3.2.1 The adopted sewage unit flow factors for sewage estimation and calculation are summarized in **Table 3**.

Development Type	Flow Type	Unit Flow Factor (UFF) (m^3/head/day)
Residential	R2	0.27
Retail Trade	J4	0.28
Finance, Insurance, Real Estate & Business Services	J6	0.08
Restaurants & Hotels	J10	1.58
Community, Social & Personal Services (Clubhouse)	J11	0.28

Table 3 – Unit Flow Factors

3.2.2 For the non-domestic population, the worker density adopted for business use is referred to Commercial and Industrial Floor Space Utilization Survey (CIFSUS). The adopted worker density is summarised in **Table 4**.

Commercial Activities	Workers per GFA (in 100 m^2)
Restaurants & Hotels	5.1
Retail Trade	3.5
Financial, Insurance, Real Estate & Business Services	5.5
Community, Social & Personal Services (Clubhouse)	3.3

Table 4 – Worker Density

3.2.3 The peaking factor is referred to Table T-5 of GESF. The adopted worker density are summarized in **Table 5**.

Population Range	Peaking Factor (including stormwater allowance) for facility with existing upstream sewerage)	Peaking Factor (excluding stormwater allowance) for facility with new upstream sewerage
5,000 – 10,000	5	4

Table 5 – Peaking Factor

4. Review on Existing and Planned Sewerage System

4.1 Existing and Planned Sewerage System

4.1.1 The Application Site is currently unsewered and it is within the sewerage catchments for Hong Shui Kiu/ Ha Tsuen New Development Area (HSK/HT NDA). It is noted new sewerage network (including pumping stations) is proposed under CEDD consultancy Agreement No. CE 1/2020(CE) HSK/HT NDA Package A Works for Second Phase Development – Design and Construction to cater for sewage flows due to population intensification of HSK/HT NDA. The Proposed Development will rely on the proposed sewerage infrastructure proposed by CEDD.

4.1.2 With reference to Planning Application No.: A/HSK/452, the design capacity of the Sewage Pumping Station No.1 (SPS1) and the Sewage Pumping Station No.2 (SPS2) is 28,874m^3/day and 42,255m^3/day respectively. The sewage would be ultimately conveyed to the planned Hung Shui Kiu Effluent Polishing Plant (HSKEPP). With reference to HSKEPP website, the treatment capacity (i.e. ADWF) of HSKEPP is 90,000m^3/day. It is noted CEDD is currently reviewing the design capacities of the sewage pumping stations. At subsequent stages, the Applicant will submit an updated SIA upon receipt of updated information on the sewerage system via discharge of relevant planning approval condition.

4.1.3 Under DSD project PWP No. 4463DS, the HSKEPP is currently under Phase 1 construction to provide a sewage treatment capacity of 60,000m^3/day and is anticipated to be completed in mid-2031. Under DSD project PWP No. 4428DS, the HSKEPP will increase the sewage treatment capacity from 60 000m^3/day to 90 000 m^3/day. It is currently under planning and design stage.

4.2 Base Case Sewage Estimation

4.2.1 A base case scenario of sewage estimation for Area 32B is calculated based on ODP development mix aforementioned in Para 2.2.1 to predict the sewage estimation under HSK/HT NDA. The total estimated ADWF of Area 32B is approximately 2,389.4m^3/day. Detailed calculation refers to **Annex 4**. **Table 6** below presents the summary of sewage flow estimation of the base case scenario.

Flow Type	Average Dry Weather Flow (ADWF) (m^3/day)
Base Case	
Hotel	730.0
Office	255.8
Retail – Retail Trade	310.2
Retail – Restaurant	1,093.4
Total ADWF	**2,389.4**

Table 6 – Sewage Estimation for the Base Case Scenario

4.3 Impact on Sewerage System

4.3.1 With reference to approved EIA for HSK/HT NDA, the Proposed Development is within the sewerage catchment of proposed SPS1 under HSK/HT NDA.

4.3.2 The estimated ADWF generated from the Proposed Development is about 2088.6m^3/d. The peak flow generated from the Proposed Development including the backwash for swimming pool is 0.135m^3/s. Detailed calculation refers to **Annex 1**. The swimming pool backwash calculation refers to **Annex 2**. **Table 7** below presents the summary of sewage flow estimation of the Proposed Development.

Flow Type	Average Dry Weather Flow (ADWF) (m^3/day)
Site A	
Residential	903.96
Clubhouse	21.56
F&B	211.72
Retail	25.76
Site B	
Hotel	729.96
Office (completed in 2033)	40.88
Office (Remaining)	124.72
F&B	30.02
Total ADWF (excl. Backwash)	**2,088.58**
Outdoor Swimming Pool Backwash	0.046m^3/s
Indoor Swimming Pool Backwash	0.031m^3/s

Table 7 – Sewage Estimation for the Proposed Development

Note:
(1) Swimming pool backwash will last 3 minutes per day

4.4 Sewage Discharge Comparison between Base Case and Proposed Development

4.4.1 Sewage estimation results show that the sewage discharge (i.e. ADWF) from Proposed Development is less than the base case scenario. (i.e. 2088.6m^3/d < 2389.4m^3/d) It is anticipated the planned sewerage infrastructure under HSK/HT NDA is sufficient to cater for the Proposed Development for Area 32B. According to CEDD information provided, the sewage estimation for Area 32B is 1,517m^3/day. In addition, refer to recently published in 2026 Policy Address, the Government will develop 3 University Towns. One of each will be situated in the core area of Hung Shui Kiu New Development Area (i.e. changes in land use and planning information of the commercial sites located in the same sewage catchment of the Subject Site, discharge to HSK sewage pumping station No.1). Furthermore, sewage flow from other planned developments is necessary to be considered within the HSK/HT NDA. It is noted CEDD is currently reviewing the entire sewerage system of HSK/HT NDA. It is noted CEDD is currently reviewing the entire sewerage system of HSK/HT NDA. At subsequent stages, the Applicant will submit an updated

SIA upon receipt of updated information on the sewage flow and sewerage system via discharge of relevant planning approval condition.

5. Proposed Sewerage System

5.1 Proposed Sewerage Connection

5.1.1 The sewage generated from the Application Site would be discharged via internal sewerage network leading to the proposed terminal manhole no. FTMH01 located close to the site boundary and connected to proposed sewer manhole no. FMH01 to be constructed by CEDD under HSK/HT NDA project via CEDD reserved NS500 PE100 sewer. The proposed sewerage layout refers to figure no. **Area 32B/SIA/Figure 3**.

5.1.2 The sewage will be conveyed to the proposed SPS1 through planned gravity sewers, and then to the proposed SPS2 through planned rising mains and gravity sewers constructed by CEDD under HSK/HT NDA. The sewage will subsequently be discharged to the CEDD planned HSKEPP. The location of the proposed sewerage facilities and indicative sewerage alignment constructed by CEDD refers to figure no. **Area 32B/SIA/Figure 4.**

5.1.3 Hydraulic calculation as shown in **Annex 3** shows that sewage discharged from the Proposed Development utilises about 76% of the capacity of the CEDD reserved NS500 PE100 sewer connected from FTMH01 to CEDD proposed sewer manhole FMH01.

5.1.4 Sewage discharged from the Application Site contribute to about 7.2% of the capacity of the SPS1. Hence, the sewerage impact is considered insignificant.

5.1.5 It is understood that the entire sewerage system (including the pumping stations and sewage treatment facilities) for the HSK / NT NDA will be subject to further reviewed and upgrading where necessary by the Government in light of the latest developments. At subsequent stages, the Applicant will submit an updated SIA via discharge of relevant planning approval condition. The sewerage impact would be further assessed based on the final sewage disposal scheme and subject to any updates on the design parameters (e.g. the projected population, sewage estimates, sewer connection arrangements) of the proposed development in the planning or lease stage. Any necessary upgrading works for connecting sewers and associated manholes for the Subject Site will be carried out accordingly. The Applicant will keep close liaison with respective Government department(s) and seek confirmation from all relevant Government authorities on this submission and implementation approach at subsequent detailed design stages.

6. Maintenance Responsibility

6.1.1 The development will be responsible for construction of the internal sewer and sewerage manholes within the Application Site. The development will be responsible for the maintenance of the internal sewer and manholes within the Application Site.

6.1.2 The Proposed Development will be responsible for construction of all necessary sewerage connection works to the public sewerage system. The sewerage systems outside the site boundary are proposed to be handed over to relevant government department for future maintenance.

7. Conclusion

7.1.1 This SIA report serves as a supporting document for proposing a mixed-use development with residential and commercial uses. The SIA has been carried out to assess the potential sewerage impact due to the Proposed Development.

7.1.2 The ADWF generated from the Application Site is about 2088.6m^3/d (excluding the backwash for swimming pool). The peak flow generated from the Proposed Development including the backwash for swimming pool is 0.174 m^3/s.

7.1.3 The sewage will be conveyed to the proposed SPS1 and then to the proposed SPS2. The sewage will subsequently be discharged to the planned HSKEPP. With the implementation of the proposed sewerage arrangement, no adverse impact from sewerage aspect is anticipated.

7.1.4 The entire sewerage system (including the pumping stations and sewage treatment facilities) for the HSK / NT NDA will be subject to further reviewed and upgrading where necessary by the Government in light of the latest developments. At subsequent stages, the Applicant will submit an updated SIA via discharge of relevant planning approval condition. The sewerage impact would be further assessed based on the final sewage disposal scheme and subject to any updates on the design parameters (e.g. the projected population, sewage estimates, sewer connection arrangements) of the proposed development in the planning or lease stage. Any necessary upgrading works for connecting sewers and associated manholes for the Subject Site will be carried out accordingly.

End of Report

Figure

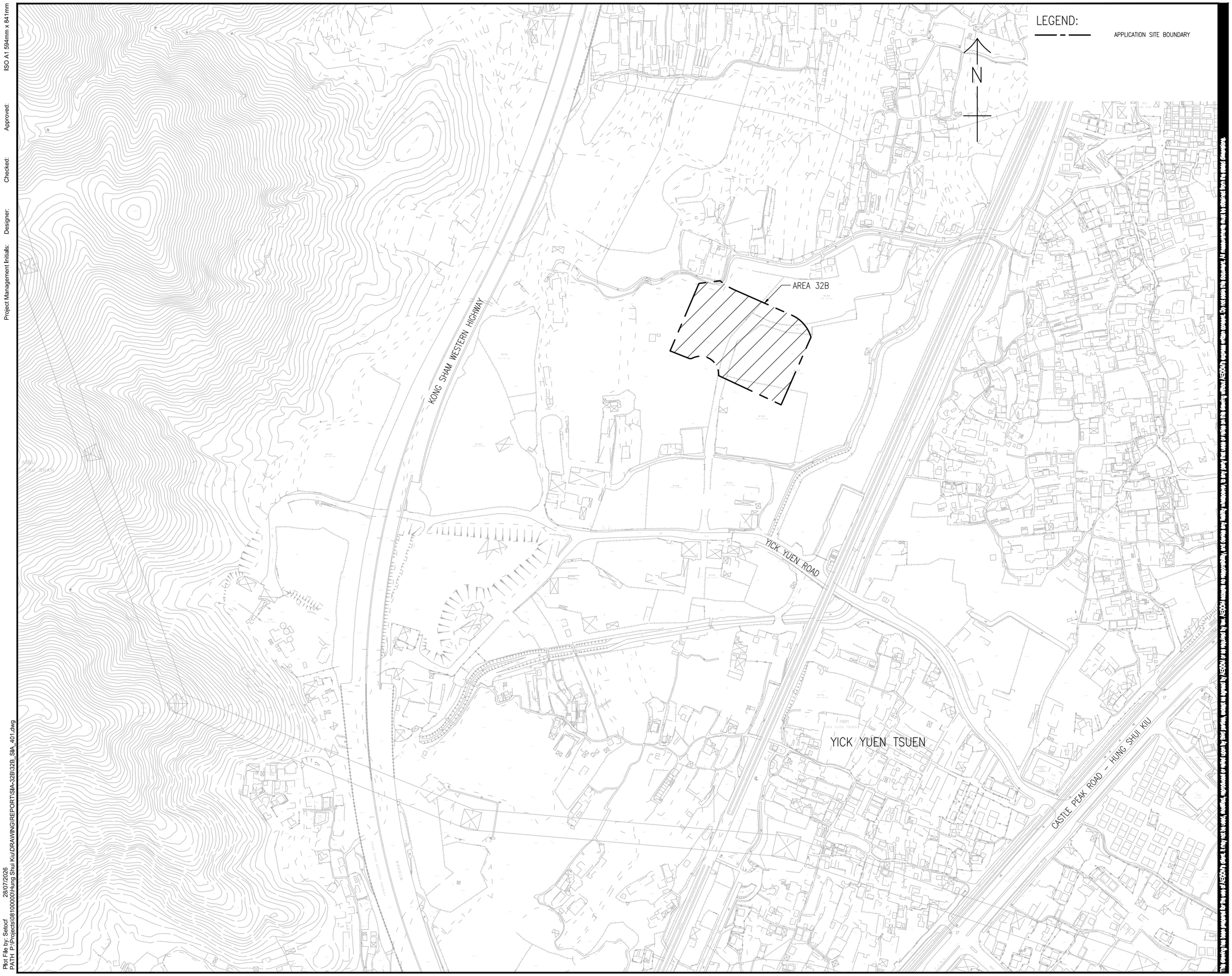
ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:



Plot File by: Setocf 28/07/2026
PATH: P:\Projects\08100000\Hung Shui Kiu\DRAWING\REPORT\SIA-32B\32B_SIA_401.dwg

AECOM

PROJECT

SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITH PERMITTED COMMERCIAL USES IN PLANNING AREA 32B, HUNG SHUI KIU, NEW TERRITORIES

CLIENT

SUN HUNG KAI REAL ESTATE AGENCY LTD.

CONSULTANT

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK.

STATUS

SCALE

A1 1 : 1000

DIMENSION UNIT

METRES

KEY PLAN

PROJECT NO.

AGREEMENT NO.

HUNG SHUI KIU

SHEET TITLE

LOCATION PLAN

SHEET NUMBER

AREA 32B/SIA/FIGURE 1

This drawing is copyright reserved. Do not scale this drawing without AECOM's approval. Any discrepancies must be reported to AECOM immediately. All dimensions to be checked on site by the contractor. AECOM accepts no liability for any amendments made to this drawing by other parties.

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

816500 E

816750 E

832700 N

832500 N

LEGEND:

APPLICATION SITE BOUNDARY

DEVELOPMENT SITE DEMARCATION LINE

RUN-IN / OUT

RESIDENTIAL

HOTEL / OFFICE

LANDSCAPE AREA / PODIUM DECK

CLUBHOUSE

SWIMMING POOL

HOTEL / OFFICE
T1
+152.0

SITE B

SHUTTLE LIFT

RESIDENTIAL
T3
+181.5

HOTEL / OFFICE
T2
+190.0

SITE A

RESIDENTIAL
T2
+185.0

VEHICULAR ACCESS / EVA

RESIDENTIAL
T1
+192.0

Nullah

Track

露天貨倉
Open Storage

貨倉
Storage

Plot File by: Selcof
PATH : P:\Projects\60810000\Hung Shui Kiu\DRAWING\REPORT\SIA-32B\32B_SIA_402.dwg

11/08/2026

The copyright and other intellectual property rights in this drawing and design vest in AECOM and may not be reproduced or used for any other purpose without the prior written permission of AECOM.

AECOM

PROJECT

SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITH PERMITTED COMMERCIAL USES IN PLANNING AREA 32B, HUNG SHUI KIU, NEW TERRITORIES

CLIENT

SUN HUNG KAI REAL ESTATE AGENCY LTD.

CONSULTANT

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK

STATUS

SCALE

A1 1 : 500

DIMENSION UNIT

METRES

KEY PLAN

PROJECT NO.

AGREEMENT NO.

HUNG SHUI KIU

SHEET TITLE

MASTER LAYOUT PLAN

SHEET NUMBER

AREA 32B/SIA/FIGURE 2

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

816500 E

816750 E

832700 N

832500 N

LEGEND:

APPLICATION SITE BOUNDARY

DEVELOPMENT SITE DEMARCATION LINE

RUN-IN / OUT

RESIDENTIAL

HOTEL / OFFICE

LANDSCAPE AREA / PODIUM DECK

CLUBHOUSE

SWIMMING POOL

HOTEL / OFFICE
T1
+152.0

SITE B

HOTEL / OFFICE
T2
+190.0

SHUTTLE LIFT

RESIDENTIAL
T3
+181.5

SITE A

RESIDENTIAL
T2
+185.0

RESIDENTIAL
T1
+192.0

VEHICULAR ACCESS / EVA

FTMH01

FMH01

REFER TO FIGURE "AREA 32B/SIA/FIGURE 4" FOR INDICATIVE SEWERAGE ALIGNMENT CONNECTED TO SPS1

Nullah

Track

露天貨倉
Open Storage

貨倉
Storage

Plot File by: Selcof
PATH: P:\Projects\60810000\Hung Shui Kiu\DRAWING\REPORT\SIA-32B\32B_SIA_403.dwg
11/08/2026

AECOM

PROJECT

SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITH PERMITTED COMMERCIAL USES IN PLANNING AREA 32B, HUNG SHUI KIU, NEW TERRITORIES

CLIENT

SUN HUNG KAI REAL ESTATE AGENCY LTD.

CONSULTANT

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK

STATUS

SCALE: A1 1 : 500

DIMENSION UNIT: METRES

KEY PLAN

PROJECT NO.: HUNG SHUI KIU

AGREEMENT NO.:

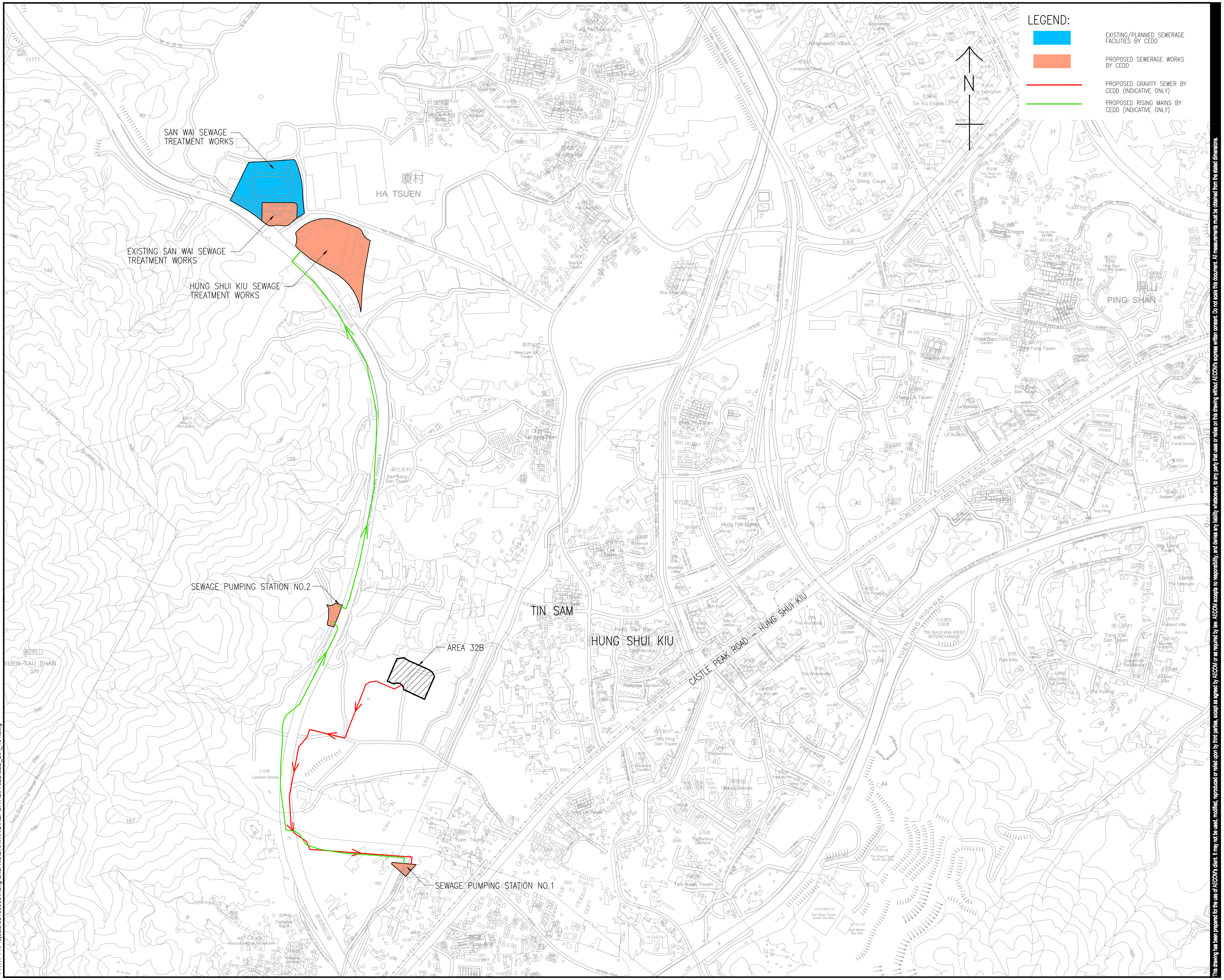
SHEET TITLE

PROPOSED SEWERAGE LAYOUT

SHEET NUMBER

AREA 32B/SIA/FIGURE 3

This drawing has been prepared by and is the copyright of AECOM Limited. All rights reserved. No part of this drawing may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior written permission of AECOM Limited. Any unauthorized use of this drawing will be at the user's sole risk and without liability to AECOM Limited. Do not scale this drawing. All dimensions to be checked on site by the contractor. AECOM Limited will not be responsible for any discrepancies between this drawing and the actual site conditions.



AECOM

PROJECT
項目

SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITH PERMITTED COMMERCIAL USES IN PLANNING AREA 32B, HUNG SHUI KIU, NEW TERRITORIES

CLIENT
業主

SUN HUNG KAI REAL ESTATE AGENCY LTD.
新鴻基

CONSULTANT
工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 審核

STATUS
階段

SCALE
比例

A1 1 : 6000

DIMENSION UNIT
尺寸單位

METRES

KEY PLAN
索引圖

PROJECT NO.
項目編號

HUNG SHUI KIU

AGREEMENT NO.
協議編號

SHEET TITLE
圖紙名稱

PROPOSED SEWERAGE LAYOUT BY CEDD

SHEET NUMBER
圖紙編號

AREA 32B/SIA/FIGURE 4

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.

Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm

Plot File by: Setocf 11/08/2026
PATH P:\Projects\08100000\Hung Shui Kiu\DRAWING\REPORT\SIA-32B\32B_SIA_404.dwg

Annex 1

Proposed Development Sewage Estimation

AECOM **Annex 1 - Proposed Development Sewage Estimation**

Proposed Development

Site A						
Residential						
No. of Units	1,240					
PPoF [1]		**Development Type**		**Population**	**Unit Flow Factor**	**ADWF (m^3/d)**
2.7		Private R2		3,348	0.27	903.96
Workers	**GFA (m^2)**	**Worker's Type**	**Workers per GFA (in 100m^2)** [3]	**Employee**	**Unit Flow Factor**	**ADWF (m^3/d)**
GFA for Clubhouse (m^2)	2,325	J11 Community, Social & Personal Services	3.3	77	0.28	21.56
					Sub-total	925.52
Retail						
Workers	**GFA (m^2)**	**Worker's Type**	**Workers per GFA (in 100m^2)** [3]	**Employee**	**Unit Flow Factor**	**ADWF (m^3/d)**
GFA for Restaurant (m^2) [2]	2,611	Restaurants J10 Restaurants & Hotels	5.1	134	1.58	211.72
GFA for Retail Trade (m^2) [3]	2,611	Retail Trade J4 Wholesale & Retail	3.5	92	0.28	25.76
					Sub-total	237.48

.

Site B							
Hotel							
No. of Rooms	**No. of Rooms** 924						
Workers		**Worker's Type**		**Employee**		**Unit Flow Factor**	**ADWF (m^3/d)**
1 employee serves 2 rooms		J10 Restaurants & Hotels		462		1.58	729.96
Office							
GFA for Office (m^2)	**Completed in 2033** 9,290	J6 Finance, Insurance, Real Estate & Business Services	**Workers per GFA (in 100m^2)** [4]	**Completed in 2033**	511	0.08	40.88
	Remaining[10] 28,330		5.5	**Remaining**[10]	1559		124.72
GFA for Restaurant (m^2)(5)	354	Restaurants J10 Restaurants & Hotels	5.1	19		1.58	30.02
						Sub-total	925.58

Total ADWF from the Proposed Development (Site A + Site B) (m^3/day)	2,088.58
Contributing Population [7]	7,735.48
Peaking Factor[9]	4.00
Total Peak Flow from the Proposed Development (m^3/s)	0.097
Total Peak Flow from the Proposed Development including swimming pools(m^3/s)[8]	0.174

Remarks:

[1] A person per flat of 2.7 is assumed.

[2] Assume 50% of the Retail GFA at Site A is for restaurant use

[3] Assume 50% of the Retail GFA at Site A is for retail use

[4] Worker Density is in GFA per worker according to T-8 CIFSUS are assumed.

[5] Assume all Retail GFA at Site B is for restaurant use

[6] Catchment Inflow Factor P_{CIF} = 1 is based on the catchment area in Yuen Long.

[7] Contributing population = Projected Flow (ADWF in m^3/day) / 0.27 (m^3/person/day)

[8] Worst case scenario (all swimming pools will undergo backwash at the same time) is assumed.

[9] Peaking factor excluding stormwater allowance is adopted for hydraulic checking for proposed new constructed sewer.

[10] Remaining indicates the non-domestic GFA to be implemented at a later stage under the arrangement of "Pay for What You Build"Pilot Scheme.

Annex 2

Swimming Pool Backwash Calculation

AECOM

Annex 2 - Swimming Pool Backwash Calculation

Estimation of Outdoor Pool Backwash

Pool area	=	438	m^2
Pool depth	=	1.5	m
Pool volume	=	657	m^3
Turnover rate	=	6	hrs
Flow rate	=	109.50	m^3/hr
Surface loading rate of filter	=	20	$m^3/m^2/hr$
Filter Areas Required	=	5.48	m^2
Assume backwash duration	=	3	min/day
Assume backwash flow rate	=	30	$m^3/m^2/hr$
Volume of backwash	=	8.21	m^3/day
Peak flow	=	0.046	m^3/s

Note
(1)Swimming pool backwash will last for 3 minutes per day.

AECOM

Annex 2 - Swimming Pool Backwash Calculation

Estimation of Indoor Pool Backwash

Pool area	=	200	m^2
Pool depth	=	1.5	m
Pool volume	=	300	m^3
Turnover rate	=	4	hrs
Flow rate	=	75.00	m^3/hr
Surface loading rate of filter	=	20	$m^3/m^2/hr$
Filter Areas Required	=	3.75	m^2
Assume backwash duration	=	3	min/day
Assume backwash flow rate	=	30	$m^3/m^2/hr$
Volume of backwash	=	5.63	m^3/day
Peak flow	=	0.031	m^3/s

Note
(1)Swimming pool backwash will last for 3 minutes per day.

Annex 3

Hydraulic Checking

Annex 3 - Hydraulic Check of Proposed Sewer

V of water = 0.000001

Manhle No.		Pipe													
U/S	D/S	Size (NS internal)	Size (NS)	Hydraulic Radius	Flow Area	Pipe Gradient	Pipe Velocity	Capacity	Roughness	Accumulated ADWF	Contributing Population	Peaking Factor	Estimated Peak Discharge	Capacity Check	Remark
		mm	mm	m	m^2	(1 in)	m/s	m^3/s	mm	m^3/d			m^3/s	%	
FTMH01	FMH01	439.2	500	0.096	0.15	196	1.52	0.23	0.15 (2)	2,088.58	7,736	4.00	0.174	76	

Note
(1) Assume the pipe flows under full-bore capacity.
(2) Assumed proposed PE100 sewer by CEDD is at normal condition with 0.15mm roughness.
(3) Peaking factor excluding stormwater allowance is adopted for hydraulic checking for proposed sewer.
(4) FMH01 indicates CEDD proposed sewer manhole

Annex 4

Baseline Sewage Estimation

Appendix 4 Baseline for Area 32B

Estimated Sewage Flow from 32B Baseline Commercial Development			
Site Area	=	13,601.00	
Plot Ratio	=	9.50	
Non-domestic GFA(m2)	=	129,210	
Retail Ratio	=	35%	
Hotel Ratio	=	20%	
Office Ratio	=	45%	
Retail GFA (m^2)	=	45,223.5	(1)
Retail GFA (m^2)	=	31,656	(7)
Occupation Density (person/100m2 or person/room)	=	3.5	(2)
Retail staff (no.)	=	1,108	
Unit Flow Factor (m^3/d/head)	=	0.28	
DWF (m^3/day)	=	**310.2**	
Retail GFA (m^2)	=	13,567	(7)
Occupation Density (person/100m2 or person/room)	=	5.1	(4)
Restaurant staff (no.)	=	692	
Unit Flow Factor (m^3/d/head)	=	1.58	
DWF (m^3/day)	=	**1093.4**	
Hotel GFA (m^2)	=	25,842	(1)
Occupation Density (no. of rooms)	=	924	
Hotel staff (no.)	=	462	(5)
Unit Flow Factor (m^3/d/head)	=	1.58	
DWF (m^3/day)	=	**730.0**	
Office GFA (m^2)	=	58,144.5	(1)
Occupation Density (person/100m2 or person/room)	=	5.5	(3)
Office Staff (no.)	=	3,198	
Unit Flow Factor (m3/d/head)	=	0.08	
DWF (m^3/day)	=	**255.8**	
Total ADWF (m3/day)	=	**2389.4**	

Notes:

1. Adopt retail = 35% of non-domestic GFA, hotel = 20% of non-domestic GFA, office = 45% of non-domestic GFA
2. According to CIFSUS, the worker density for retail trade is assumed as 3.5 workers per GFA (in 100 m^2)
3. According to CIFSUS, the worker density for office is assumed as 5.5 workers per GFA (in 100 m^2)
4. According to CIFSUS, the worker density for restaurants is assumed as 5.1 workers per GFA (in 100 m^2)
5. Assumed 1 hotel staff serves 2 rooms
6. Catchment Inflow Factors (PCIF): Yuen Long = 1.00 is adopted.
7. For retail GFA, it is assumed 30% for F&B and 70% for retail trade usage.