Responses to Comments on
Draft Sewerage Impact Assessment Report for S16 Planning Application (Intensification Scheme) (Issue 3)

1. Environmental Protection Department, Environmental Assessment Division, Territory North Group, Yuen Long [from Mr. KONG Cheuk Wing via email dated 18 May 2023]

Comments	Responses
1. Table 2.2 note (1): please state that the average household size of 2.7 was agreed between HD and PlanD.	Noted and revised accordingly.
2. Table 4.1 note (1): SSF should be classified as Domestic Private R2 instead.	Noted and revised accordingly.
3. Drawings 199086/BIN/SE/104: the invert level A1 of FMH-0021 to FMH-0019 in Appendix A2. Please check.	Noted and revised accordingly.

Agreement No. CE 92/2017 (CE)

Site Formation and Infrastructure Works for Public Housing Development near Tan Kwai Tsuen, Yuen Long – Investigation, Design and Construction

DRAFT SEWERAGE IMPACT ASSESSMENT REPORT FOR S16 PLANNING APPLICATION (INTENSIFICATION SCHEME)

199086/BIN/090/Issue 4

MARCH 2023

CEDD 土木工程拓展署
Civil Engineering and Development Department

binnies

Agreement No. CE 92/2017 (CE)

Site Formation and Infrastructure Works for Public Housing Development near Tan Kwai Tsuen, Yuen Long - Investigation, Design and Construction

Draft Sewerage Impact Assessment Report for S16 Planning Application (Intensification Scheme)

199086/BIN/090/Issue 4

March 2023

	Name	Signature	Date
Prepared	John Tong		March 2023
Reviewed	Tommy Chung		March 2023
Authorized	Edwin Lo		March 2023

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1.3 Purposes of this Report

1.3.1 As mentioned in Section 1.1.3, due to the update on the PR and number of flats to be provided of the Project, Binnies is responsible to update the Sewerage Impact Assessment before the construction stage of the Project.

1.4 Structure of this Report

1.4.1 This report comprises the following sections after this introduction:

- Section 2 discusses the latest development layout and parameters of the Development;
- Section 3 provides the descriptions of the existing and planned sewerage infrastructure in the vicinity of the Development;
- Section 4 sets out the methodology and approach to carry out the SIA for the Development;
- Section 5 assesses the potential sewerage impacts arising from the Development; proposes appropriate mitigation measures and the optimal sewerage scheme for the Development; and
- Section 6 summarises the findings and recommendations of this report.

2 LATEST DEVELOPMENT PROPOSAL

2.1 Development Parameters

2.1.1 The latest development parameters including but not limited to the flat productions, provisions of non-domestic facilities and design populations of the Development are summarised in ***Table 2.1*** and ***Table 2.2***.

Table 2.1 – Major Development Parameters

Domestic	
Total No. of Flats	7,420
Non-domestic	
GFA for Welfare Facilities (m^2)	15,849
GFA for Retail Complex (m^2)	5,912
GFA for Car Parking (m^2)	36,850
GFA for Other Facilities(1) (m^2)	1,098
Total GFA (m^2)	59,709
Primary School	
No. of classrooms	30
Public Transport Interchange (PTI)	
GFA for PTI (m^2)	6340

Notes:
(1) Other Facilities include ancillary offices for domestic.
(2) The Primary School is located to the west of the public housing site outside the application site boundary.
(3) The average household size of 2.7 was agreed between Housing Department and Plan Department.

Table 2.2 – Design Populations

Domestic	
No. of Population	20,034(1)
Retail, Welfare and Other Facilities	
No. of Employees (2)	800
Primary School and Kindergarten	
No. of students (3)	1,215
No. of teachers (4)	109

Notes:
(1) Person per flat = 2.7
(2) Worker densities of 3.5 workers (Retail Trade) and 3.3 workers (Community, Social & Personal Services) per $100m^2$ GFA are adopted based on Table 8 of Commercial and Industrial Floor Space Utilization Survey published by Planning Department for the estimation of employees in retail and welfare / other facilities, respectively. No sewage generation at carpark is assumed. 30 no. of employees for the PTI is assumed.
(3) 180 students per 6 classrooms kindergarten and 25.5 students per class for primary school are assumed based on Chapter 3 of Hong Kong Planning Standards and Guidelines.
(4) Pupil-Teacher ratios of 8.6:1 (kindergarten) and 13.8:1 (primary school) are assumed based on Education Bureau's 2017/18 figures and statistics available on Education Bureau's website.

Table 4.1 – Adopted Unit Flow Factors

Type	Recommended Unit Flow Factor (m^3/unit/day)	Unit	Remarks
Residential			
Public Rental Housing (PRH)/ Subsidized Sale Flats (SSF) (1)	0.27	Person	Table T-1, EPD's GESF
Retail, Welfare and Other Facilities			
Job Type J11 (Community, Social & Personal Services)	0.28	Employee	Table T-2, EPD's GESF
Job Types J4 (Wholesale and Retail)	0.28	Employee	Table T-2, EPD's GESF
School			
Student	0.04	Person	Table T-2, EPD's GESF
Job Type J11 (Community, Social & Personal Services) for Teacher	0.28	Employee	Table T-2, EPD's GESF
PTI			
Job Type J3 (Transport, Storage & Communication)	0.18	Employee	Table T-2, EPD's GESF

Note:
(1) The development is classified as Domestic Private R2.

4.4 Average Dry Weather Flow

4.4.1 The Average Dry Weather Flow (ADWF) and Peak Flow generated from the development sites is provided in ***Table 4.2***, and the detailed breakdown is provided in **Appendix A1**.

Table 4.2 – Average Dry Weather Flow and Peak Flow of Sewage from the Development

	Flow Type	ADWF (m^3/day)	Contributing Population	Total ADWF (1) (m^3/day)	Peak Flow (1) (m^3/day)
The Development (Tan Kwai Tsuen)	Residential	5409.18	21,146	5,709.3	17,127.9
	Retail, Welfare and Other Facilities	248.44			
	School	46.28			
	PTI	5.40			

Note:
(1) Peak factor is assumed to be 3.

4.4.2 Under the Sewerage Impact Assessment conducted under Investigation stage, the total ADWF generated of the previous development scenario was 4,960.4m^3/day. Due to the update on the development parameters of Section 16 (S16) planning application, the total ADWF generated from the Development is 5,709.3m^3/day, as shown in **Table 4.2**.

5 SEWERAGE IMPACT ASSESSMENT

5.1 Proposed Sewerage Arrangements

5.1.1 The Site is presently unsewered. It is proposed to provide new sewers to collect and convey the sewage generated from the Site and discharge the sewage to the existing sewerage. According to the feasibility study, the sewage generated from the Site will be conveyed to SWSTW for treatment.

5.1.2 As the existing sewers along Shun Tat Street, Castle Peak Road (Hung Shui Kiu), Hung Shui Kiu Main Street and Shek Po Road has no spare capacity to cater for the additional sewage arising from the Development, new gravity sewers are required to cater for the additional sewage flow from the Development.

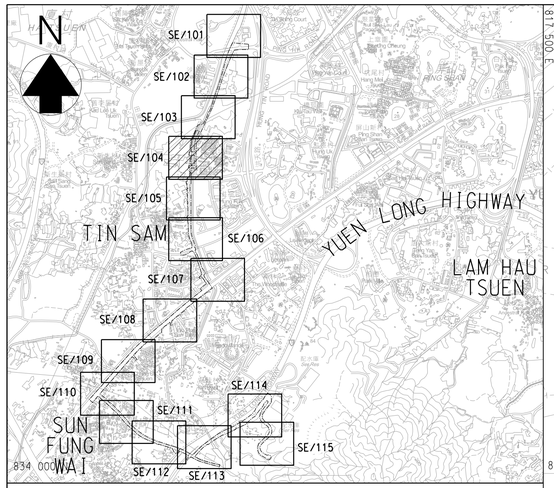
5.1.3 With liaison with the concurrent housing developments in Ping Shan South (PSS) and Lam Tei North (LTN) under Agreement No. CE11/2020(CE), the sewage generated from PSS and LTN is planned to discharge to the proposed sewer under this Development. The ADWF generated from the interface sites estimated under CE11/2020(CE) were extracted in ***Table 5.1***. While the sewerage impact assessment of PSS and LTN developments will be carried out separately under CE11/2020 (CE), the new sewer proposed under this development will cater for the sewage generated from PSS and LTN development.

Table 5.1 – Average Dry Weather Flow from Interface Projects

	ADWF (m^3/day)	**Contributing Population**	**Peak Flow (1) (m3/day)**
Ping Shan South (PSS)	6,782	25,118	20,346
Lam Tei North (LTN)	4,152	15,378	12,456

Note:
(1) Peak factor is assumed to be 3.

5.1.4 The proposed sewerage works are shown on ***Figure nos. 199086/BIN/SE/101 to 115***. The design of the sewerage works is shown in ***Appendix A2***.



LOCATION PLAN
SCALE 1:20000

817 500 E

817 600 E

817 700 E

FOR CONTINUATION REFER TO DRAWING REFERENCE NO. 199086/BIN/SE/103

MATCH LINE

Shek Po Tsuen Playground

FMH-0015
C.L.: +5.57mPD
A1: -1.44mPD
X1: -1.44mPD

FMH-0016
C.L.: +5.55mPD
A1: -1.38mPD
X1: -1.40mPD

FMH-0019
C.L.: +6.32mPD
A1: -1.02mPD
X1: -1.19mPD

TWINS 600 PIPE

FMH-0018
C.L.: +6.14mPD
A1: -1.26mPD
X1: -1.26mPD

833 500 N

833 400 N

833 300 N

SHEK PO ROAD

Nullah

Track

Road

HUNG CHI ROAD

525

900

1675

251

露天貨倉
Open Storage

Blk A
Blk B
Blk C
Blk D
富柏居
Choza Rico

Blk A11
Blk A10
Blk A9
Blk A8
Blk A7
Blk A6
Blk A5
Blk A3
Blk A2
Blk A1

NOTES:

1. ALL CO-ORDINATES REFER TO HONG KONG GEODETIC DATUM 1980 AND IN METRES.
2. DIMENSIONS IN MILLIMETERS.
3. ALL LEVELS REFER TO PRINCIPAL DATUM AND IN METRES.
4. LOCATIONS OF PROPOSED SEWERAGE MANHOLES AND SEWERS ARE INDICATIVE ONLY. EXACT LOCATIONS SHALL BE AGREED WITH THE PROJECT MANAGER ON SITE.
5. UNLESS OTHERWISE STATED ON THE DRAWINGS OR AS INSTRUCTED BY THE PROJECT MANAGER. ALL PROPOSED SEWERAGE WORKS ARE TO BE CONSTRUCTED BY OPEN TRENCH METHOD.

LEGEND:

- LIMIT OF WORKS AREA
- PROPOSED SEWER
- PROPOSED SEWER MANHOLE
- EXISTING SEWER
- EXISTING SEWER MANHOLE
- PROPOSED SEWAGE PIPE CONSTRUCTED BY TRENCHLESS METHOD

Revision	Date	Description		Initial
	Designed	Checked	Drawn	Checked
Initial	TCL	WLC	SZ	LCH
Date	04/22	04/22	04/22	04/22

Approved

Agreement no.
CE 92/2017 (CE)

Title
SITE FORMATION AND INFRASTRUCTURE WORKS FOR PUBLIC HOUSING DEVELOPMENT NEAR TAN KWAI TSUEN, YUEN LONG - INVESTIGATION, DESIGN AND CONSTRUCTION

Drawing Title
GENERAL LAYOUT PLAN FOR SEWERAGE WORKS

(SHEET 4 OF 15)

Drawing No.
199086/BIN/SE/104

Scale
1 : 500 (A1)
1 : 1000 (A3)

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CEDD Civil Engineering and Development Department

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賓尼斯工程顧問有限公司

Plot File by = qiu5947 2023/5/23

CAD Filename = Y:\Daily Work\02 From other HK Projects\199086 -TKT_Design\dgn\199086-BIN-SE-104.dgn