

Prepared for

Fruit Design and Build Limited

Prepared by

Ramboll Hong Kong Limited

**PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE
DEVELOPMENT SCHEME TO INCLUDE WETLAND
RESTORATION PROPOSAL AND PROPOSED FILLING OF
PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)"
ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK
ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES**

SEWERAGE IMPACT ASSESSMENT

Date **9 April 2024**

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Project Reference **FDBNPWWREA00**

Document No. **R8934_SIA V7.0.docx**

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1. INTRODUCTION

- 1.1.1 The applicant proposes to develop the Application Site at various lots in DD104, north of Kam Pok Road East, Yuen Long, into a residential development cum wetland restoration area. The zoning of the Application Site is "Other Specified Uses – Comprehensive Development to include Wetland Restoration Area" (OU(CDWRA)) on the approved Nam Sang Wai Outline Zoning Plan S/YL-NSW/8. A S16 application is required for the proposed development.
- 1.1.2 Ramboll Hong Kong Limited has been commissioned by the Project Proponent to conduct this Sewerage Impact Assessment (SIA) for the proposed development under this application. Architectural drawings and technical information of the Application Site were provided respectively by the project architect and other project team members.
- 1.1.3 The Application Site is also the subject of a previous planning application under the application no. A/YL-NSW/290 and a SIA report (R7191) was previously submitted in support of that planning application (Previous SIA). Since then, the layout plan of proposed development has been further reviewed taking into account the concerns of AFCD with respect to the layout of proposed wetland restoration area. Compared to the previous scheme in Previous SIA, the application boundary in current application remains the same. Thus, this SIA serves as an update to the above-mentioned previous submitted SIA report based on the current revised development scheme as requested by AFCD.

1.2 Application Site and its Environs

- 1.2.1 The Application Site is about 51,073 m², and it is immediate southeast of an existing low-rise residential development, Man Yuen Chuen and north of the Kam Pok Road East. The Application Site is currently occupied by abandoned fishponds located at the south-eastern portion of the Application Site.
- 1.2.2 **Figure 1.1** shows the location of the Application Site and the environs.

1.3 Proposed Development

- 1.3.1 The proposed original development scheme will comprise 114 units in 108 housing blocks of 3- to 5-storey high (i.e. 89 in the form of 2- to 4-storey on top of 1-level of communal basement carpark and 25 in 2-storey on top of 1-level of carport), clubhouse, an underground sewage pumping station (SPS) and a proposed wetland restoration area (WRA). To respond to AFCD's comments, amendments to the original MLP are hence required. As a result, a net reduction in total no. of units have been reduced to 90 units in 84 housing blocks varying from 2-storeys to 4-storeys on top of 1-level of carport.
- 1.3.2 The indicative revised MLP and sections of the Proposed Development are included in **Appendix 1.1**.

2. SEWERAGE IMPACT ASSESSMENT ("SIA")

2.1 Introduction

2.1.1 The Proposed Development is a comprehensive development scheme to include wetland restoration proposal. This section gives a brief discussion on the current environmental legislation and standards and assess the impacts arising from the proposed development. Recommendations of mitigation measures have been made if there is any adverse effect induced by the proposed development.

2.2 Existing and Planned Sewerage Infrastructure

2.2.1 The site currently falls within the Yuen Long / Kam Tin sewerage catchment and is classified as an unsewered area under the Yuen Long / Kam Tin Sewerage Master Plan (YLKT SMP). A set of existing 225mm public sewerage system (from feature no. MH540 to MH235) is identified along Kam Pok Road East, which is currently not in use and could serve the Project Site.

2.2.2 The existing Yuen Long Sewage Treatment Works (YLSTW) serves Yuen Long Town, Yuen Long Industrial Estate and Kam Tin areas with a design capacity of 70,000m³/day (ADWF). It provides primary and secondary treatments with effluent discharges to the Shan Pui River and then to Deep Bay.

2.2.3 The public sewerage facility located closest to the Project Site is Nam Sang Wai Sewage Pumping Station (SPS), as shown in **Figure 1.1**.

2.3 Assessment Methodology and Assumptions

2.3.1 An analysis of the capacity of the sewage pipes and the SPS has been carried out to evaluate the adequacy of the proposed sewerage system. The design assumptions and basis are shown in **Table 2-1**.

Table 2-1 Design Assumption and Basis

Items	Values
Design Standard	DSD Sewerage Design Manual, Part 1 & 2
Flow Formula Used	Colebrook White Formula
Unit Flow Factor	EPD Guideline for Estimating Sewerage Flows for Sewerage Infrastructure Planning (GESF) 0.37 m ³ /d/head (Domestic, Private R3) for residents 0.28 m ³ /d/head (Commercial, J11) for clubhouse staff 1.58 m ³ /d/head (Restaurant, J10) for restaurant

2.4 Estimate of Sewage Flow

2.4.1 The sewage flow to be generated from the projected residential population, as well as activities at the clubhouse and the associated facilities has been estimated following "EPD Guideline for Estimating Sewerage Flows for Sewerage Infrastructure Planning". Major contributions of sewage flow from the Proposed Development include projected 270 residents. The estimated sewage flow is shown in **Table 2-2**.

Table 2-2 Estimated Sewage Flow from the Proposed Development

Calculation for Sewerage Generation Rate of the Proposed Development				
1.	Houses			
1a.	Total number of residential units	=	90	Units
1b.	Total number of residents	=	270	people - (Assume Average Household Size ¹ of 3.0)
1c.	Unit flow factor	=	370	litre/person/day - (Private R3 in Table T-1 of GESF)
1d.	Sewerage generation rate	=	99.9	m ³ /day
2.	Clubhouse			
2a.	Total number of employees	=	34	employees
2b.	Unit flow factor	=	280	litre/employee/day - (J11 in Table T-2 of GESF)
2c.	Sewerage generation rate	=	9.5	m ³ /day
3.	Restaurant/ Catering Service			
3a.	Total number of customers	=	10	employees
3b.	Unit flow factor	=	1580	litre/employee/day - (J10 in Table T-2 of GESF)
3c.	Sewerage generation rate	=	15.8	m ³ /day

Total Flow from Proposed Development			
Flow rate	=	125.3	m ³ /day
Contributing population *	=	464	People
Peaking factor	=	8	– (Table T-5 of GESF for population <1,000 incl. stormwater allowance)
Peak flow	=	11.60	litre/sec
<p>Note:</p> <ol style="list-style-type: none"> 1. According to the submitted planning statement for current proposed development, the concerned dwellings will comprise 2-storeys to 4-storeys housing units with an average household size is assumed to be 3 people. 2. * according to the calculation method in GESF for the so-called "Contributing Population" for peaking factor selection. 			

2.4.2 The average flow and the peak flow from the Application Site will be approximately 125.3 m³/day and 11.60 L/s, respectively.

2.5 Sewerage Impact Assessment

2.5.1 It is proposed that the sewage generated from the Proposed Development will be discharged into the existing 225mm diameter communal sewer at the south of the Application Site for disposal at YLSTW via Nam Sang Wai SPS (**Figure 2.1** refers). Relevant proposed upgrading works and proposed change in invert levels at some of the existing sewers, are also illustrated in **Figure 2.1** such as those between sewer MH540 to MH460, and between MH460 and MH235. The hydraulic checking of existing and proposed sewers starting from the discharge point to Nam Sang Wai SPS is provided in **Appendix 2.1** and it is found to be adequate to serve the Proposed Development with upgrading and modification works on several sewer segments.

2.5.2 There are existing stormwater pipe and box culvert along Pok Wai South Road, which are in vicinity of the proposed sewage system. The indicative cross-sectional drawings of the proposed sewers and the existing utilities are shown in **Figure 2.2 to 2.3**.

2.5.3 It is understood there are other planned development sites in vicinity, however, none of these have a solid development schedule at this moment. It is noted that proposed sewer P1 to E1 as shown in **Figure 2.1** should be communal which will also become public sewers. Manhole P1, P2 and P3 are designed as backdrop manhole to cater for the high velocity flow and to avoid the box culvert located at the outfall at Pok Wai South Road at the same time. In order to ensure there is sufficient capacity reserved, a sensitivity test has also been undertaken and provided in **Appendix 2.2**. It is understood that the gravity sewer P1 to E1 should have sufficient capacity to cater the additional sewage of around 15,000 m³/d due to other nearby developments (**Appendix 4.1** refers). This is considered to be a very conservative approach. It is therefore suggested to provide twin 675 mm to 750 mm gravity sewers for sewer P1 to E1 along the Pok Wai South Road. The design checking of proposed sewage system, considering a capacity of 15,000 m³/d from nearby developments, is provided in

Appendix 2.2. As such, **Figure 2.1** shows the proposed sewerage taking into account other nearby planned development sites.

- 2.5.4 Based on the information provided by the Drainage Services Department (DSD), the design capacity of Nam Sang Wai SPS is 42,921 m³/day. Its design capacity of peak flow is 1,476 L/s as stated in the approved EIA Report for Comprehensive Development and Wetland Protection Near Yau Mei San Tsuen (Register No. AEIAR-189/2015). The sewage generation from the Application Site will take up about 0.30% of the design daily flow of the SPS, while take up 0.18% of YLSTW.
- 2.5.5 Based on the calculation in **Appendix 3.1** including the Proposed Development and other nearby planned development sites, there should be adequate capacity at Nam Sang Wai SPS to cater for the Proposed Development.
- 2.5.6 Subject to further liaison with DSD, the sewerage system proposed within the Application Site and the sewer for connection to existing 225mm diameter sewer at the south of the Application Site (i.e. P0 to M540), will be constructed by the Project Proponent. Manhole P0 to site boundary within private lot is a private property to be managed and maintained by the future management party of the Proposed Development (please refer to Section 2.6 for maintenance responsibility). There will be no population intake until the proposed sewerage system is available. Regular inspection and maintenance will be conducted in accordance with Chapter 8 of DSD's Sewerage Manual in order to ensure normal operation, hence no blockage or overflow, of the proposed sewerage system.
- 2.5.7 For other proposed sewers and upgrading works, the Project Proponent will be responsible for the liaison and coordination with the other interfacing projects for the implementation of the required sewerage works in later stage. Proposed sewer P1 to E1, as discussed above, should be communal sewers. Thus, new connections from the adjacent lots on Government Land to the proposed sewerage system shall be allowed, if any. In case these planned sewers are not available at the time of completion of current proposed development, there will be no population intake until proposed sewerage system becomes available, or otherwise the Project Proponent will, after liaison with DSD and the other future developments near the Application Site, construct the sewers in order to secure discharge during operation of proposed development should a population intake be required.
- 2.5.8 It is also proposed that in later detailed design stage further site survey be carried out to inspect existing sewers at the south of the Application Site (from sewer P0 to MH235) to identify any sewers in poor condition. Should a population intake be required at the time of project completion, the Project Proponent will be responsible for the survey and relevant upgrading/ replacement works at the existing sewers in order to secure discharge during operation of proposed development.
- 2.5.9 The design details, including the alignment, location, diameter, length and invert levels of the proposed sewerage system, and the location and number of the proposed manholes, are still subject to the detailed design stage of the Project later on as well as relevant planning approval condition (if any) should more updated information about other planned developments be available. Since detailed design will only be available in later detailed design stage, the current SIA is prepared to illustrate the approach of sewerage arrangement for the Proposed Development for the purpose of this planning application. Further survey on underground utilities will normally be carried out during detailed design stage and the future design will take into account how to avoid those facilities. If necessary, should there be updated information on planned public sewers to be provided in the area, the Applicant will also consider feasibility of connecting to public sewer through the discharge of planning approval condition stage.

2.6 Maintenance Responsibility

- 2.6.1 Proposed Sewer (within Site) from manhole P0 to site boundary **within private lot** is maintained by the Project Proponent.
- 2.6.2 Those existing sewers along Kam Pok Road East including a section proposed for upgrading **and the proposed change in invert level** under this Project (i.e. MH580 to MH235), are communal sewers **and should be** maintained by others. Thus, these existing sewers including the upgraded ones as well as the proposed sewer from site boundary **within government land** to MH540 is proposed to be maintained by relevant government department. Details of maintenance responsibility will be further liaised/ confirmed with relevant department in later detailed design stage.
- 2.6.3 Proposed Sewer (communal) from P1 to E1 is proposed to be maintained by DSD. Details of maintenance responsibility will be further liaised with relevant department in later detailed design stage.
- 2.6.4 Details of the maintenance responsibility is illustrated in **Figure 2.4**.

3. CONCLUSION

- 3.1.1 The proposed residential development area is located at Kam Pok Road East, Pok Wai, Yuen Long. There is a set of existing 225mm public sewerage system in the vicinity serving the Proposed Development. The Application Site, with a maximum of 270 residents, will generate an average daily sewage flow of 125.3m³/d. It is proposed to be discharged to the existing 225mm public sewers, and further conveyed to existing Nam Sang Wai SPS via proposed sewers.
- 3.1.2 Sewage generation from the Application Site will take up only about 0.30% of the design capacity of Nam Sang Wai SPS. The capacity Nam Sang Wai Sewage Pumping Station is considered adequate to cater for the additional flow from the operation of the Proposed Development. Regular inspection and maintenance will be conducted in accordance with Chapter 8 of DSD's Sewerage Manual in order to ensure normal operation, hence no blockage or overflow, of the proposed sewerage system.
- 3.1.3 Based on the calculation, the existing and proposed sewers would have sufficient capacity to cater the sewage flow from the Proposed Development and other planned developments with proposed upgrading works. For proposed sewer P1 to E1 and existing sewers with upgrading, these should become public sewers to cater for sewage from other planned development sites. There will be no population intake until the planned sewerage system becomes available or otherwise the Project Proponent will construct the sewers and the upgrading works to secure discharge during operation of proposed development should there be a population intake at the proposed development site. No adverse sewerage impact is anticipated from the operation of the Proposed Development. Thus, the Proposed Development is considered technically feasible from sewerage impact point of view. The project proponent will be responsible for implementation of the required sewerage works while the maintenance responsibility has been proposed in this SIA, which will be further liaised with relevant department(s) during detailed design stage.

Figures

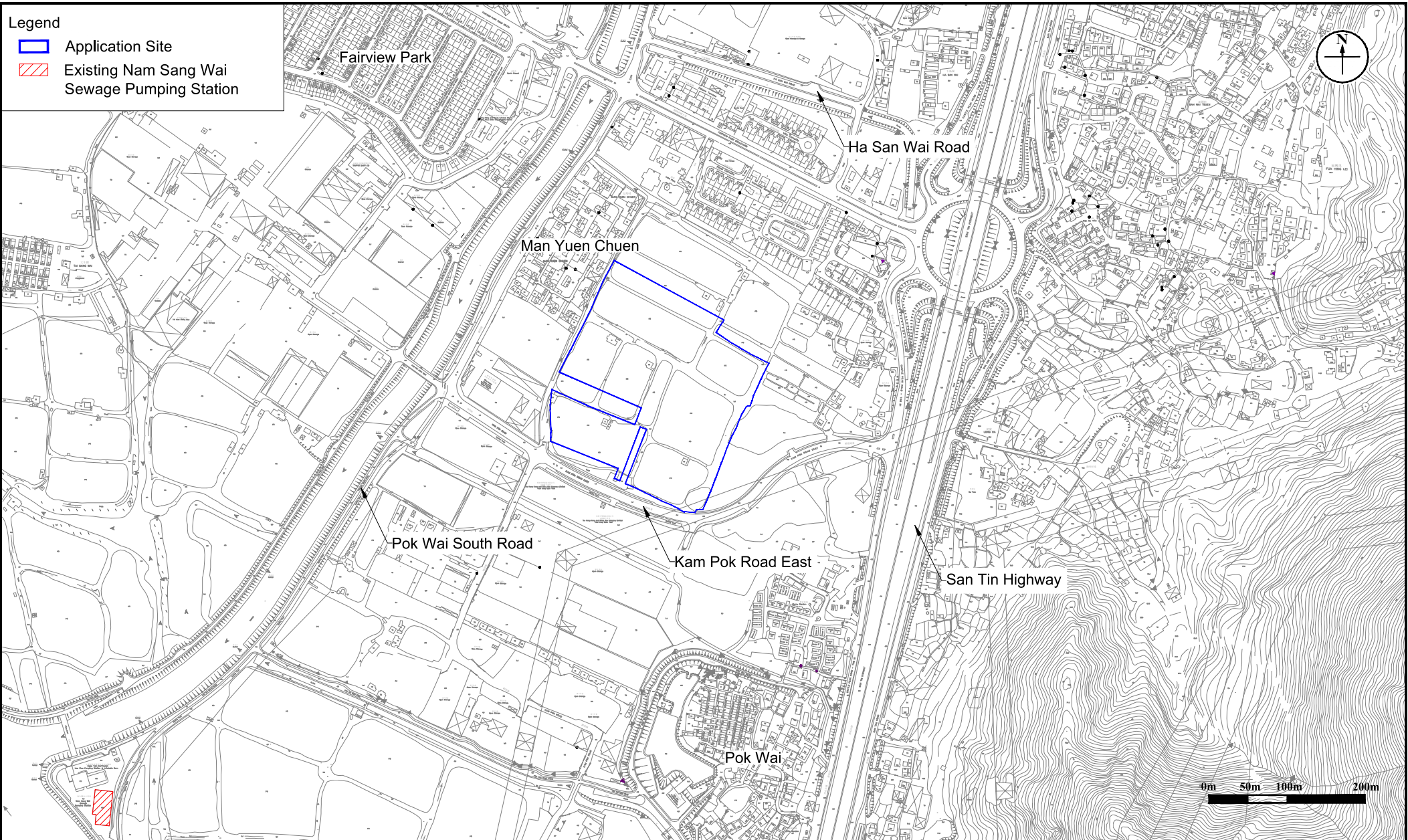


Figure: 1.1

Title: Application Site and Its Environs

Project: Planning Application for Proposed Comprehensive Development Scheme to include Wetland Restoration Proposal and Proposed Filling of Ponds/Land and Excavation of Land in "OU(CDWRA)" Zone at Various Lots in D.D. 104, North of Kam Pok Road East, Pok Wai, Yuen Long, New Territories

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Checked by: HN

Rev.: 4.0

Date: Sep 2021

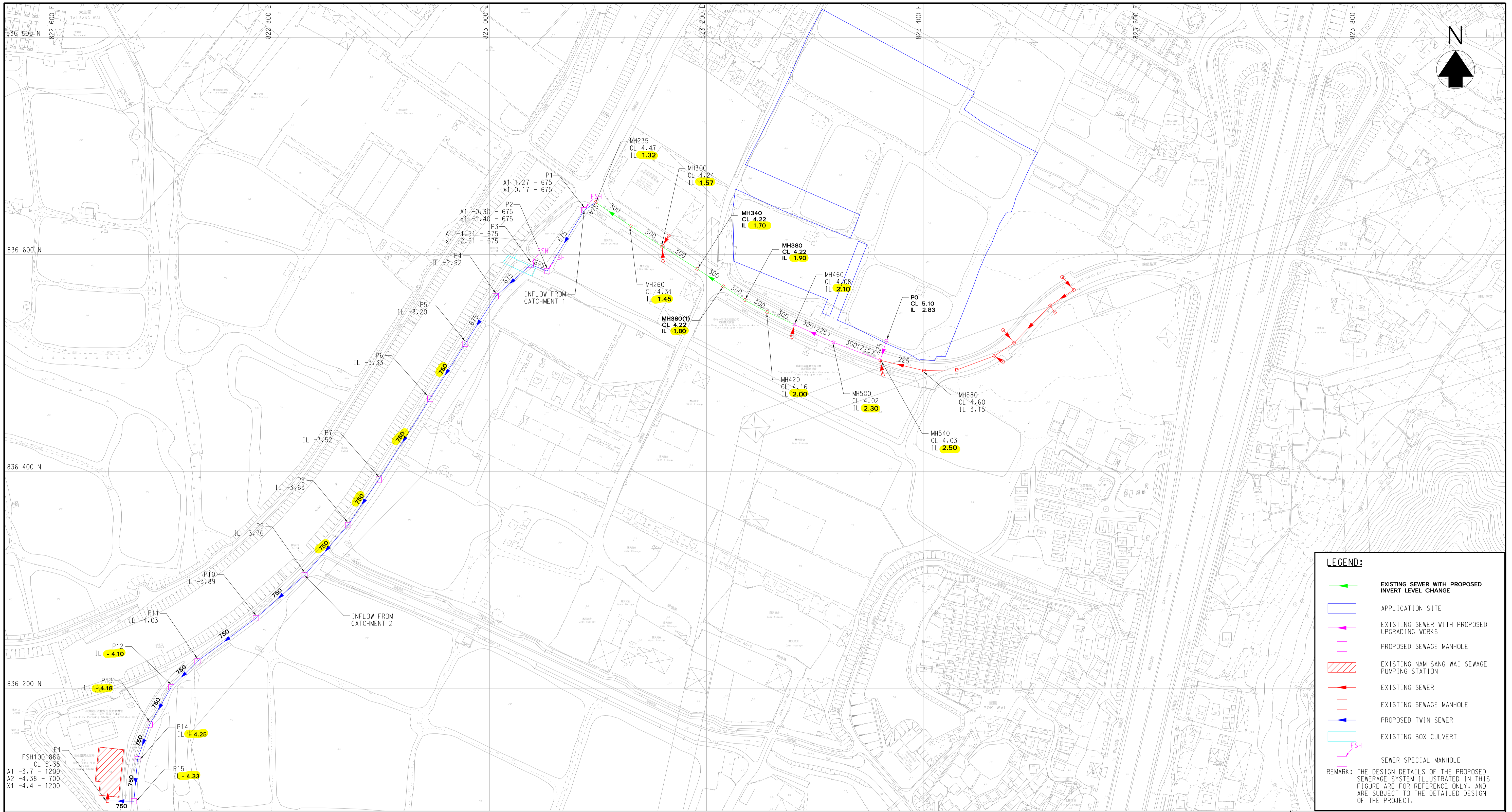


Figure: 2.1

Title: PROPOSED SEWERAGE SYSTEM FOR THE APPLICATION SITE

Project: PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES



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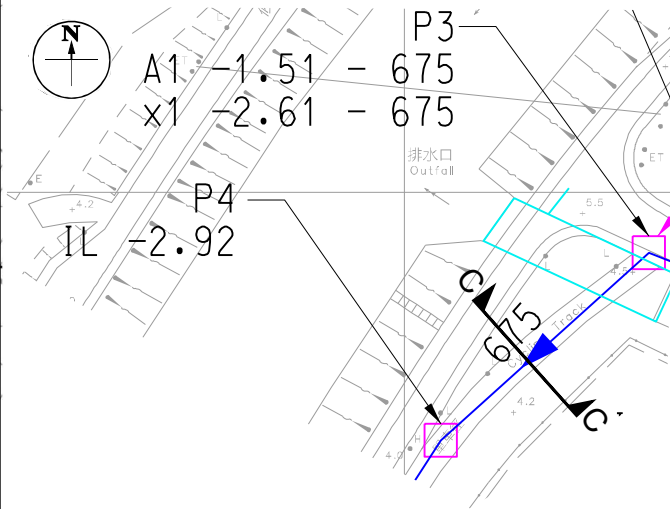
Date: Aug 2023

User : Che15680
Plot date : 2023/11/16

Legend

- Application Site
- Proposed Twin Sewer
- Proposed Sewage Manhole
- Existing Stormwater Pipe
- Existing Stormwater Manhole / Catchpit / Outfall
- Existing Box Culvert

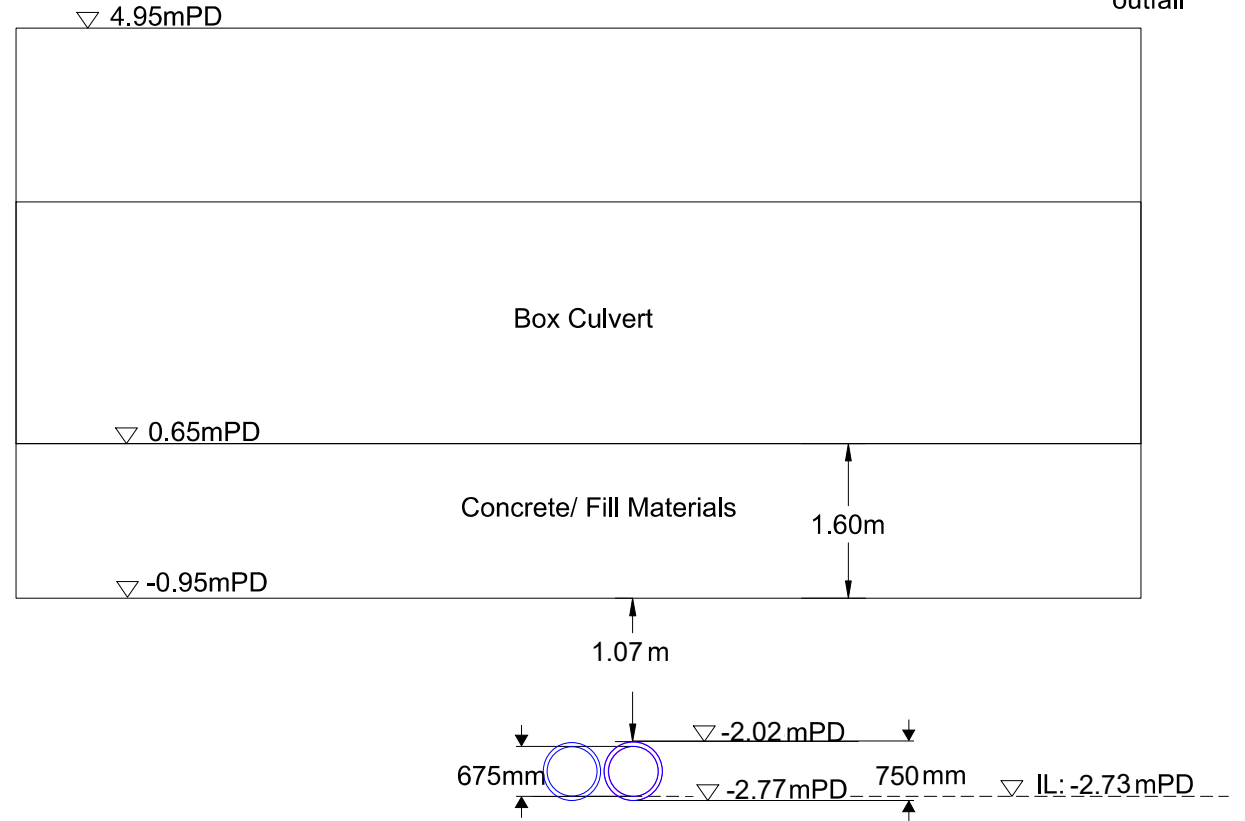
Remark: The design details of the proposed sewerage system illustrated in this figure are for reference only, and are subject to the detailed design of the Project.



Dec., 2023

Key Plan

Near outfall Away from outfall



Proposed sewer between P3 and P4 (mid-way between P3 and P4)

Section C-C

Figure: 2.2

Title: Indicative Cross Section Diagrams (Sheet 1 of 2)

Project: Planning Application for Proposed Comprehensive Development Scheme to include Wetland Restoration Proposal and Proposed Filling of Ponds/Land and Excavation of Land in "OU(CDWRA)" Zone at Various Lots in D.D. 104, North of Kam Pok Road East, Pok Wai, Yuen Long, New Territories

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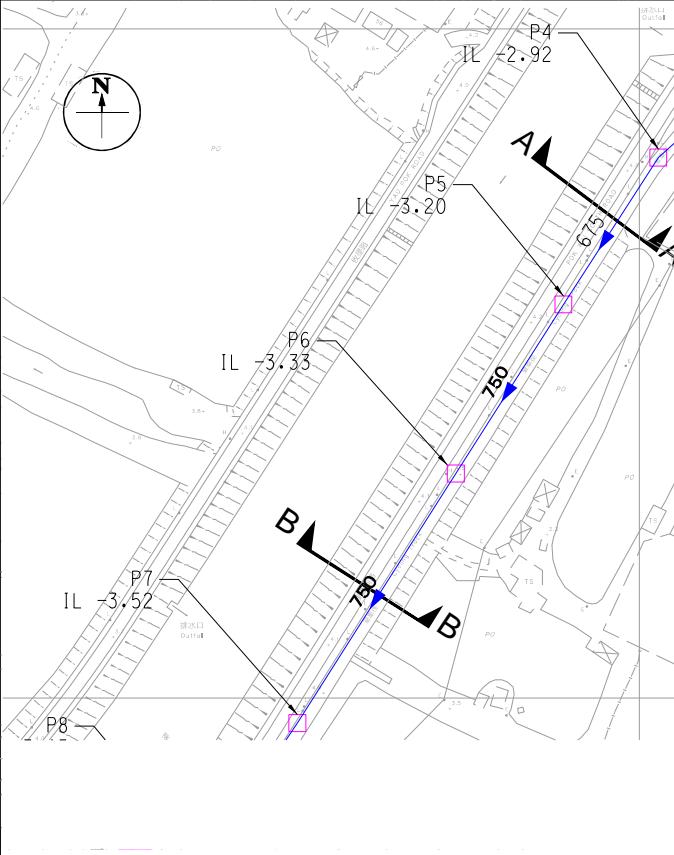
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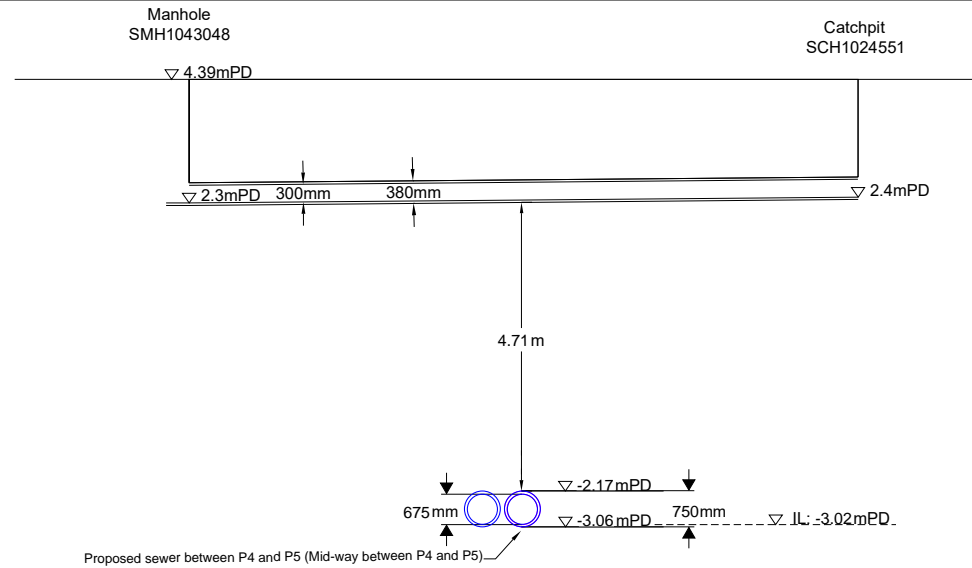
Legend

- ▭ Application Site
- Proposed Twin Sewer
- ▭ Proposed Sewage Manhole
- Existing Stormwater Pipe
- Existing Stormwater Manhole / Catchpit / Outfall

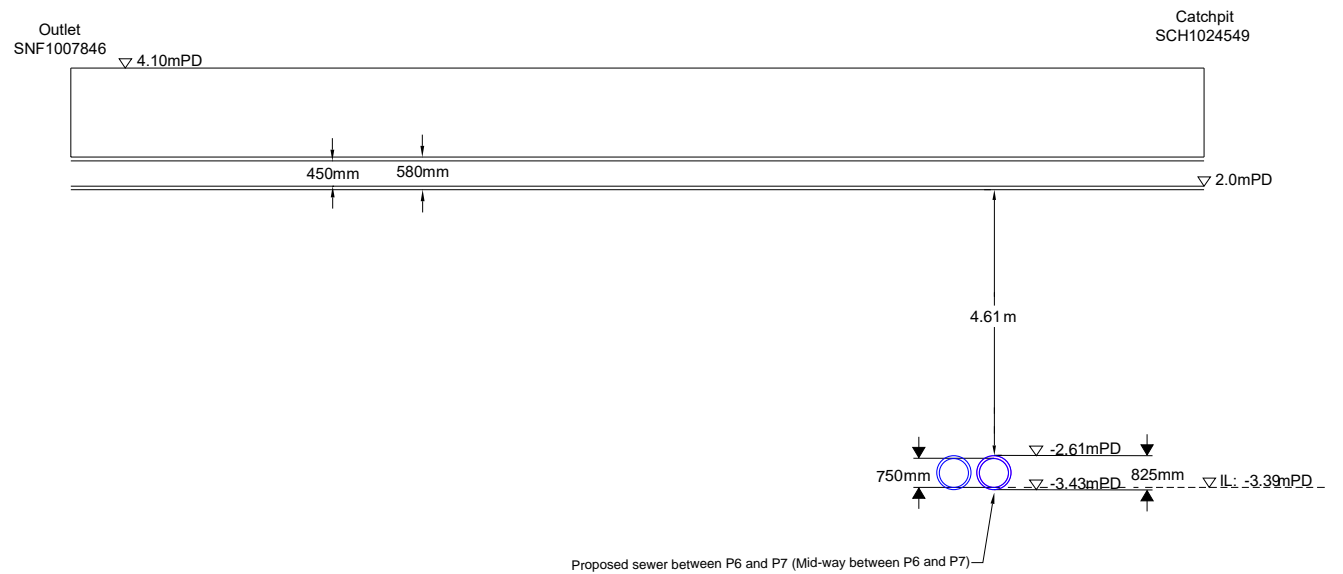
Remark: The design details of the proposed sewerage system illustrated in this figure are for reference only, and are subject to the detailed design of the Project.



Key Plan



Section A-A



Section B-B

Figure: 2.3

Title: Indicative Cross Section Diagrams (Sheet 2 of 2)

Project: Planning Application for Proposed Comprehensive Development Scheme to include Wetland Restoration Proposal and Proposed Filling of Ponds/Land and Excavation of Land in "OU(CDWRA)" Zone at Various Lots in D.D. 104, North of Kam Pok Road East, Pok Wai, Yuen Long, New Territories



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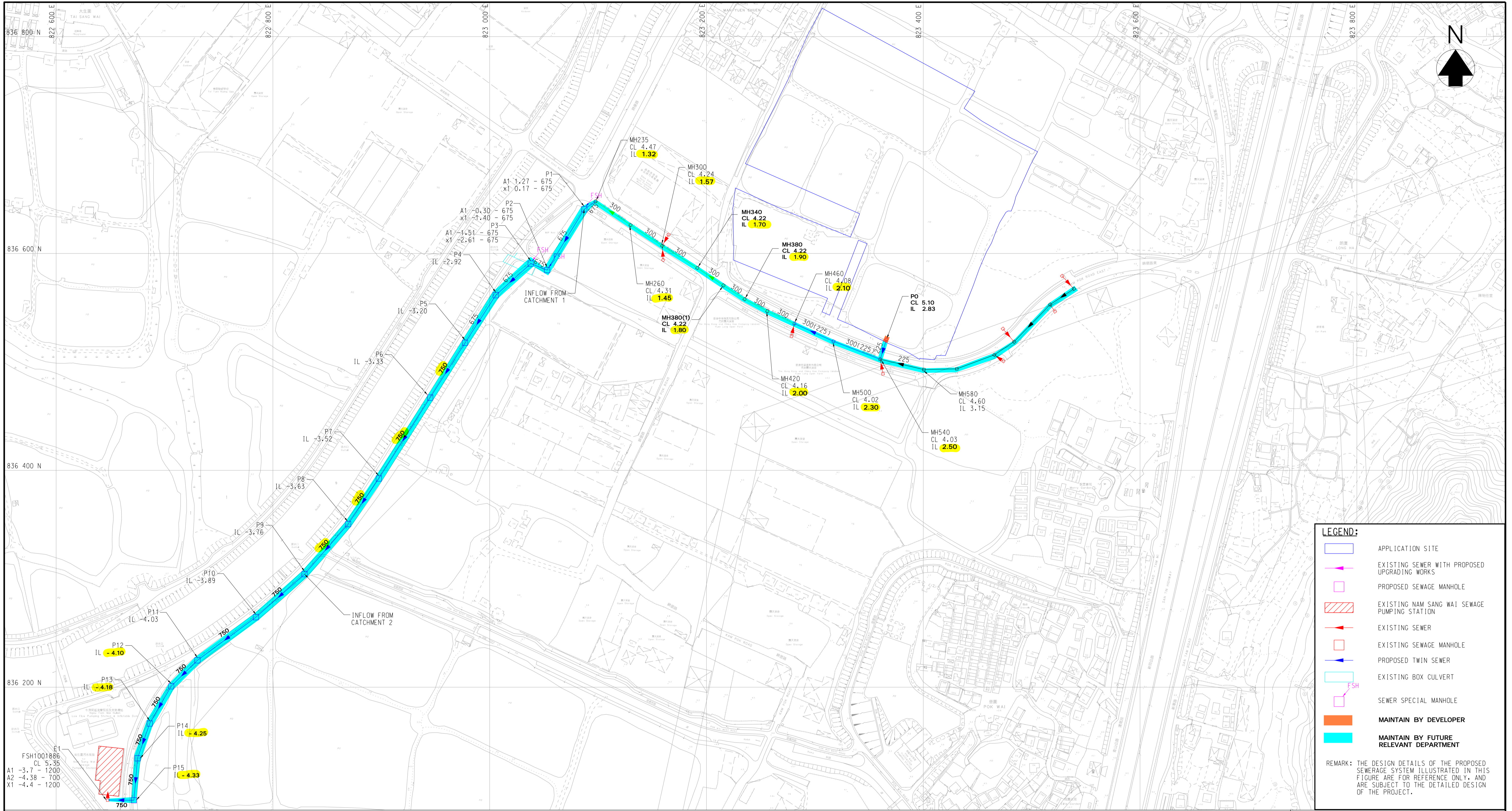


Figure: 2.4

Title: MAINTENANCE RESPONSIBILITY

Project: PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE DEVELOPMENT SCHEME TO INCLUDE WETLAND RESTORATION PROPOSAL AND PROPOSED FILLING OF PONDS/LAND AND EXCAVATION OF LAND IN "OU(CDWRA)" ZONE AT VARIOUS LOTS IN D.D. 104, NORTH OF KAM POK ROAD EAST, POK WAI, YUEN LONG, NEW TERRITORIES



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Checked by: NH

Rev: 6.1

Date: Aug 2023

User : Che15680
Plot date : 2023/11/16

Appendix 1.1 Indicative Master Layout Plan

Please refer to the Planning Statement

Appendix 2.1 Hydraulic Calculation of the Proposed Sewers for the Application Site

Appendix 2.1 Hydraulic Calculation of the Proposed Sewers for the Application Site

Note:

1) Colebrook-White's equation is adopted for full-bore pipe velocity calculation.

Pipe	Diameter (mm)	Diameter for calculation	Orginal Diameter	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	Pipe Length (m)	Gradient (1 in)	Roughness (mm)	No. of Pipes	Inflow	ADWF (m ³ /s)	Contributing Population	Peak Factor	Design Peak Flowrate (m ³ /s)	Design Peak Flowrate with pool (m ³ /s)	Full Bore Velocity (m/s)	Full Bore Capacity (m ³ /s)	Utilization (%)
P0 to MH540	225	225	225	2.83	2.50	18.910	57	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.012	1.354	0.054	21.6%
MH540 to MH500	300	300	300	2.50	2.30	46.020	230	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.012	0.819	0.058	20.0%
MH500 to MH460	300	300	300	2.30	2.10	39.640	198	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.012	0.882	0.062	18.6%
MH460 to MH420	300	300	300	2.10	2.00	27.370	274	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.012	0.751	0.053	21.9%
MH420 to MH380	300	300	300	2.00	1.90	23.630	236	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.012	0.808	0.057	20.3%
MH380 to MH380(1)	300	300	300	1.90	1.80	23.230	232	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.012	0.815	0.058	20.1%
MH380(1) to MH340	300	300	300	1.80	1.70	28.910	289	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.012	0.730	0.052	22.5%
MH340 to MH300	300	300	300	1.70	1.57	38.240	294	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.012	0.724	0.051	22.7%
MH300 to MH260	300	300	300	1.57	1.45	34.900	291	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.012	0.728	0.051	22.5%
MH260 to MH235	300	300	300	1.45	1.32	38.840	299	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.012	0.718	0.051	22.9%
MH235 to P1	300	300	300	1.32	1.27	12.590	252	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.012	0.783	0.055	21.0%
P1 to P2	675	675	675	0.17	-0.30	65.790	140	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.794	1.284	0.9%
P2 to P3	675	675	675	-1.40	-1.51	16.250	148	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.746	1.250	0.9%
P3 to P4	675	675	675	-2.61	-2.92	43.380	140	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.794	1.284	0.9%
P4 to P5	675	675	675	-2.92	-3.20	52.150	186	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.555	1.113	1.0%
P5 to P6	750	750	750	-3.20	-3.33	59.790	460	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.058	0.935	1.2%
P6 to P7	750	750	750	-3.33	-3.52	88.210	464	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.053	0.931	1.2%
P7 to P8	750	750	750	-3.52	-3.63	50.460	459	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.060	0.936	1.2%
P8 to P9	750	750	750	-3.63	-3.76	61.240	471	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.046	0.924	1.3%
P9 to P10	750	750	750	-3.76	-3.89	59.460	457	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.061	0.938	1.2%
P10 to P11	750	750	750	-3.89	-4.03	67.200	480	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.036	0.915	1.3%
P11 to P12	750	750	750	-4.03	-4.10	34.060	487	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.029	0.909	1.3%
P12 to P13	750	750	750	-4.10	-4.18	39.540	494	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.021	0.902	1.3%
P13 to P14	750	750	750	-4.18	-4.25	33.830	483	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.032	0.912	1.3%
P14 to P15	750	750	750	-4.25	-4.33	38.830	485	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.030	0.910	1.3%
P15 to E1	750	750	750	-4.33	-4.38	23.630	473	3.000	2	Proposed Deve.	0.0015	464	8	0.012	0.012	1.044	0.923	1.3%

Appendix 2.2 Hydraulic Calculation of the Proposed Sewers for the Application Site (Sensitivity Test)

Appendix 2.2 Hydraulic Calculation of the Proposed Sewers for the Application Site (Sensitivity Analysis)

Note:

- 1) Colebrook-White's equation is adopted for full-bore pipe velocity calculation.
- 2) Backwash Flowrate generated by swimming pool from developments, if any, has been included in the Design Peak Flowrate.
- 3) Catchment 1 is the planned development in the upstream
- 4) Catchment 2 is the application Y/YL-NSW/7, the ADWF is obtained from the approved SIA Report at October 2023

Catchment 1, ADWF	=	13435	m3/day	Proposed Deve. ADWF	=	125.3	m3/day	Catchment 2, ADWF	=	1565	m3/day
	=	13435/3600/24			=	125.3/3600/24			=	1565/3600/24	
	=	0.1555	m3/s		=	0.0015	m3/s		=	0.0181	m3/s

Pipe	Diameter (mm)	Diameter for calculation	Orginal Diameter	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	Pipe Length (m)	Gradient (1 in)	Roughness (mm)	No. of Pipes	Inflow	ADWF (m ³ /s)	Contributing Population	Peak Factor	Design Peak Flowrate (m ³ /s)	Full Bore Velocity (m/s)	Full Bore Capacity (m ³ /s)	Utilization (%)
P0 to MH540	225	225	225	2.83	2.50	18.910	57	3.000	1	Proposed Deve.	0.0015	464	8	0.012	1.354	0.054	21.6%
MH540 to MH500	300	300	300	2.50	2.30	46.020	230	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.819	0.058	20.0%
MH500 to MH460	300	300	300	2.30	2.10	39.640	198	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.882	0.062	18.6%
MH460 to MH420	300	300	300	2.10	2.00	27.370	274	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.751	0.053	21.9%
MH420 to MH380	300	300	300	2.00	1.90	23.630	236	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.808	0.057	20.3%
MH380 to MH380(1)	300	300	300	1.90	1.80	23.230	232	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.815	0.058	20.1%
MH380(1) to MH340	300	300	300	1.80	1.70	28.910	289	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.730	0.052	22.5%
MH340 to MH300	300	300	300	1.70	1.57	38.240	294	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.724	0.051	22.7%
MH300 to MH260	300	300	300	1.57	1.45	34.900	291	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.728	0.051	22.5%
MH260 to MH235	300	300	300	1.45	1.32	38.840	299	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.718	0.051	22.9%
MH235 to P1	300	300	300	1.32	1.27	12.590	252	3.000	1	Proposed Deve.	0.0015	464	8	0.012	0.783	0.055	21.0%
P1 to P2	675	675	675	0.17	-0.30	65.790	140	3.000	2	Catchment 1, Proposed Deve.	0.1569	50,223	4.05684	0.637	1.794	1.284	49.6%
P2 to P3	675	675	675	-1.40	-1.51	16.250	148	3.000	2	Catchment 1, Proposed Deve.	0.1569	50,223	4.05684	0.637	1.746	1.250	50.9%
P3 to P4	675	675	675	-2.61	-2.92	43.380	140	3.000	2	Catchment 1, Proposed Deve.	0.1569	50,223	4.05684	0.637	1.794	1.284	49.6%
P4 to P5	675	675	675	-2.92	-3.20	52.150	186	3.000	2	Catchment 1, Proposed Deve.	0.1569	50,223	4.05684	0.637	1.555	1.113	57.2%
P5 to P6	750	750	750	-3.20	-3.33	59.790	460	3.000	2	Catchment 1, Proposed Deve.	0.1569	50,223	4.05684	0.637	1.058	0.935	68.1%
P6 to P7	750	750	750	-3.33	-3.52	88.210	464	3.000	2	Catchment 1, Proposed Deve.	0.1569	50,223	4.05684	0.637	1.053	0.931	68.4%
P7 to P8	750	750	750	-3.52	-3.63	50.460	459	3.000	2	Catchment 1, Proposed Deve.	0.1569	50,223	4.05684	0.637	1.060	0.936	68.0%
P8 to P9	750	750	750	-3.63	-3.76	61.240	471	3.000	2	Catchment 1, Proposed Deve.	0.1569	50,223	4.05684	0.637	1.046	0.924	68.9%
P9 to P10	750	750	750	-3.76	-3.89	59.460	457	3.000	2	Catchment 1, Catchment 2, Proposed Deve.	0.1751	56,020	3.991	0.699	1.061	0.938	74.5%
P10 to P11	750	750	750	-3.89	-4.03	67.200	480	3.000	2	Catchment 1, Catchment 2, Proposed Deve.	0.1751	56,020	3.991	0.699	1.036	0.915	76.3%
P11 to P12	750	750	750	-4.03	-4.10	34.060	487	3.000	2	Catchment 1, Catchment 2, Proposed Deve.	0.1751	56,020	3.991	0.699	1.029	0.909	76.8%
P12 to P13	750	750	750	-4.10	-4.18	39.540	494	3.000	2	Catchment 1, Catchment 2, Proposed Deve.	0.1751	56,020	3.991	0.699	1.021	0.902	77.5%
P13 to P14	750	750	750	-4.18	-4.25	33.830	483	3.000	2	Catchment 1, Catchment 2, Proposed Deve.	0.1751	56,020	3.991	0.699	1.032	0.912	76.6%
P14 to P15	750	750	750	-4.25	-4.33	38.830	485	3.000	2	Catchment 1, Catchment 2, Proposed Deve.	0.1751	56,020	3.991	0.699	1.030	0.910	76.7%
P15 to E1	750	750	750	-4.33	-4.38	23.630	473	3.000	2	Catchment 1, Catchment 2, Proposed Deve.	0.1751	56,020	3.991	0.699	1.044	0.923	75.7%

Appendix 3.1 Capacity Checking of Nam Sang Wai Sewage Pumping Station

Project Planning Application for Proposed Comprehensive Development Scheme to include Wetland Restoration Proposal in "OU(CDWRA)" Zone at North of Kam Pok Road East, Pok Wai, Yuen Long, New Territories

Subject Appendix 3.1 Capacity Checking of Nam Sang Wai Sewage Pumping Station (Daily Flow)

Information of Nam Sang Wai Sewage Pumping Station (SPS)

Design daily flow for Nam Sang Wai SPS, F_{cap} = 41921.0 m³/d

Existing Situation

Average Daily Flow = 3900 m³/d

Average Daily Flow, F_1 = 3900 m³/d

Capacity Checking of Nam Sang Wai SPS

Proposed Development, F_{pro} = 125.3 m³/d

Planned Development, F_{pl} = 15000.0 m³/d

Total Sewage Generation, F_{est} = $F_1 + F_{pro} + F_{pl}$
 = 19025.3 m³/d

Catchment Inflow Factor (Yuen Long) = 1.0

Total Daily Flow to Nam Sang Wai SPS, F_{total} = $F_{est} * 1.0$
 = 19025.3 m³/d
 < F_{cap} usage **OK**
 45.4%

Appendix 4.1 Correspondence of Sewage Capacity of Nearby Planned Development sites

Cheong, Kathy

寄件者: sftsang@epd.gov.hk
寄件日期: 2023年6月6日星期二 16:33
收件者: Leung, Kar Kim
副本: jackson@epd.gov.hk; cwkong@epd.gov.hk; Cheong, Kathy; Crystal Lui; Henry Ng; Lo, Edwin
主旨: Re: Planning Application A/YL-NSW/314 - Requestion Information for Cumulative Impact in SIA

Dear Mr. Leung

As spoken, the gravity sewer P1 to P15 should have sufficient capacity to cater the sewage of around 15,000 m³/d from nearby developments. We suggest to provide twin 675 mm gravity sewers for sewer P1 to P15 along the Pok Wai Road.

Regards

Matthew TSANG
E(SI)42
SIG/EPD
3107 8417

From: "Leung, Kar Kim" <leungkk@binnies.com>
To: "sftsang@epd.gov.hk" <sftsang@epd.gov.hk>
Cc: Henry Ng <hng@ramboll.com>, Crystal Lui <CRYSTALLUI@ramboll.com>, "Lo, Edwin" <LoCH@binnies.com>, "Cheong, Kathy" <CheongKy@binnies.com>
Date: 02/06/2023 17:46
Subject: Planning Application A/YL-NSW/314 - Requestion Information for Cumulative Impact in SIA

Dear Mr. Tsang,

Further to our phone discussion earlier today and referring to your comment 3.ii. on our SIA; advising that the sewer between P1 to P15 would become a public sewer that should provide sufficient capacity for other planned developments in the vicinity, we would like to request the relevant information/capacity requirements for our incorporation into our SIA and proposed preliminary sewerage scheme.

Also, seems like I don't have the contact information for the colleague you mentioned is the normal contact for the captioned planning application, please feel free to include him/her in the email circulation with your reply email.

Should you have any queries, please feel free to contact me.

Best Regards,

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