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## **Appendix D**

### **Water Supply Impact Assessment**

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# Section 16 Planning Application for Proposed Mixed-Use Development (Proposed Flat with Permitted Commercial Uses) in Planning Area 32C (Southern Site and Lower Central Site), Hung Shui Kiu, New Territories (Application No.: A/HSK/620)

Water Supply Impact Assessment

August 2026

Prepared by:

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# 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 Water Supply Impact Assessment (WSIA) for a private mixed-use development in Hung Shui Kiu, Yuen Long.
- 1.1.2 The S16 planning application involves Area 32C with total area of 17,503m<sup>2</sup>; referred as the "Application Site". The Application Site is located next to the Kong Sham Western Highway. Location plan of the Application Site refers to **AREA 32C/WSIA/Figure 1**.
- 1.1.3 The site falls within "Commercial (2)" ("C(2)") zone under the current Hung Shui Kiu and Ha Tsuen (HSK & HT) Outline Zoning Plan (OZP) with various types of commercial use (e.g. office, retail, hotel, etc.) permitted as of right within this zone. The Applicant proposes to include 'Flat' use in this zone to form a mixed-use development. As 'Flat' use is a Column 2 use under the OZP requiring planning permission from Town Planning Board (TPB), S.16 planning application is submitted for the proposed inclusion of residential element in the zone.
- 1.1.4 This WSIA report 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 water supply impacts caused by the Proposed Development at the Application Site. The main objectives of this assessment include the followings:
  - (i) Review the existing water supply condition of the Application Site;
  - (ii) Estimate the water demand of the proposed development;
  - (iii) Identify any potential impact on the current water supply system due to the additional water supply demand from the proposed development;
  - (iv) Propose water supply mitigation measures where appropriate to mitigate the potential water supply impact.

## 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                                       |
| CIFSUS     | Commercial and Industrial Floor Space Utilization Survey (PlanD) |
| DSD        | Drainage Services Department                                     |
| EPD        | Environmental Protection Department                              |
| GFA        | Gross Floor Area                                                 |
| PPoF       | People Per Unit                                                  |
| mPD        | Metres above Principal Datum                                     |
| PlanD      | Planning Department                                              |
| UFF        | Unit Flow Factor                                                 |
| TMF        | Temporary Main for Flushing                                      |
| UDD        | Unit Daily Demand                                                |
| WSD        | Water Supplies Department                                        |
| WSIA       | Water Supply Impact Assessment                                   |
| TKTE FWSR  | Tan Kwai Tsuen East Fresh Water Service Reservoir                |
| TKTE ReWSR | Tan Kwai Tsuen East Reclaimed Water Service Reservoir            |

**Table 1 – Nomenclature**

## 2. Development Proposal

### 2.1 The Proposed Development

- 2.1.1 The Application Site area is approximately 17,503m<sup>2</sup>. Under the Proposed Development, the total plot ratio is not more than 8. (i.e. the total GFA is not more than 140,024m<sup>2</sup>) The Applicant proposed 112,019 m<sup>2</sup> as non-domestic GFA for the as-of-right permitted commercial use, whereas the remaining 28,005m<sup>2</sup> as domestic GFA for the proposed residential development.
- 2.1.2 The Proposed Development consists of Site A and Site B. Site A includes 590 residential units and recreational facilities (e.g. clubhouse). Site B contains hotel/office development which provides 1,640 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.
- 2.1.3 The Master Layout Plan (MLP) of the Proposed Development is shown in figure no. **AREA 32C/WSIA/Figure 2**. The proposed development schedule is summarised in **Table 2** below.

|                                                                             | Overall               | Proposed Development (Site A) | Proposed Development (Site B)        |
|-----------------------------------------------------------------------------|-----------------------|-------------------------------|--------------------------------------|
| <b>Site Area</b>                                                            | 17,503m <sup>2</sup>  | 7,089m <sup>2</sup>           | 10,414m <sup>2</sup>                 |
| <b>Total PR (not more than)</b>                                             | 8                     | 4.0                           | 10.8                                 |
| <b>Total GFA (not more than)</b>                                            | 140,024m <sup>2</sup> | 28,005m <sup>2</sup>          | 112,019m <sup>2</sup> <sup>(3)</sup> |
| <b>Domestic Portion</b>                                                     |                       |                               |                                      |
| <b>Total Domestic GFA (not more than)</b>                                   | 28,005m <sup>2</sup>  | 28,005m <sup>2</sup>          | -                                    |
| <b>No. of Units</b>                                                         | 590                   | 590                           | -                                    |
| <b>Population <sup>(1)</sup></b>                                            | 1,593                 | 1,593                         | -                                    |
| <b>Domestic Portion – Resident’s Recreational Facilities <sup>(2)</sup></b> | 1,260m <sup>2</sup>   | 1,260m <sup>2</sup>           | -                                    |
| <b>Non-Domestic Portion – Hotel (Completed in 2033)</b>                     |                       |                               |                                      |
| <b>Total Non-Domestic GFA</b>                                               | 67,211m <sup>2</sup>  | -                             | 67,211m <sup>2</sup> <sup>(3)</sup>  |
| <b>No. of Hotel Rooms</b>                                                   | 1,640                 | -                             | 1,640                                |
| <b>Non-Domestic Portion – Office (Remaining)</b>                            |                       |                               |                                      |
| <b>Total Non-Domestic GFA</b>                                               | 44,808m <sup>2</sup>  | -                             | 44,808m <sup>2</sup>                 |

**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 32C (i.e. about 67,211m<sup>2</sup>) will be implemented first by the target completion year 2033. The GFA will be situated in Site B.

## 3. Assessment Methodology

### 3.1 Unit Demand

- 3.1.1 Assumptions have been made for the unit daily demand (UDD) for each type of land use, for both fresh water and flushing water. The UDD is used for estimating the total demand of the proposed development and the required water supply capacity to support the development.
- 3.1.2 The water supply demand estimation is presented in **Annex 1**.
- 3.1.3 The unit flow factors adopted for water demand estimation and calculation are summarised in **Table 3**.

| Development Type                   | Flow Type                                           | Fresh Water UDD<br>(L/head/day) | Flushing Water UDD<br>(L/head/day) |
|------------------------------------|-----------------------------------------------------|---------------------------------|------------------------------------|
| Domestic                           | Private Residential                                 | 300                             | 70                                 |
| Resident's Recreational Facilities | Community, Social & Personal Services               | 230                             | 50                                 |
| Hotel                              | Hotel Room                                          | 1 m <sup>3</sup> /room/day      | 0.36 m <sup>3</sup> /room/day      |
| Office                             | Finance, Insurance, Real Estate & Business Services | 30                              | 50                                 |

**Table 3 – Unit Daily Demand adopted in Water Supply Impact Assessment**

### 3.2 Peaking Factors

- 3.2.1 The peaking demand factors below shall be adopted for design:
- Peak flow rate in fresh water distribution mains = 3 x mean daily demand
  - Peak flow in flushing water distribution mains = 2 x mean daily demand
  - Peak flow rate in fresh water trunk mains = 1.5 x mean daily demand
  - Peak flow rate in flushing water trunk mains = 1.2 x mean daily demand

### 3.3 Fire-Fighting

- 3.3.1 In addition to the aforementioned facilities of the Proposed Development, water supply for fire-fighting service has been considered in this WSIA. Fire-fighting requirement for residential zone is 6,000m<sup>3</sup>/day with discharge pressure of 17m head. The fire hydrant should be of standard pattern with minimum output pressure of not less than 25 psi. With multiple hydrants operating at the same time, total output of not less than 4,000L/min shall last for 60 minutes. Table 4 summarizes the fire-fighting requirements.

| Requirements                        | Minimum Values                     |
|-------------------------------------|------------------------------------|
| Minimum fresh water supply          | 6,000 m <sup>3</sup> /day          |
| Discharge pressure                  | 17m                                |
| Minimum output not less than 25 psi | 4,000 L/min<br>to last for an hour |

**Table 4 – Fire-Fighting Requirement**

## 3.4 Residual Heads

3.4.1 The minimum residual heads at extremity of the fresh water and flushing water supply systems for the Proposed Development are adopted as follow:

- Fresh water: 20m
- Flush water: 15m

## 3.5 Design Velocity

3.5.1 The desirable flow velocities for hydraulic checking are as follows:

Maximum velocity (under peak flow condition)

Fresh water mains:

|               |                        |
|---------------|------------------------|
| >DN700        | $\leq 3 \text{ m/s}$   |
| DN700 – DN525 | $\leq 2.5 \text{ m/s}$ |
| DN450 – DN375 | $\leq 2 \text{ m/s}$   |
| DN300 – DN200 | $\leq 1.5 \text{ m/s}$ |

Flushing water mains:

|               |                        |
|---------------|------------------------|
| $\geq$ DN1000 | $\leq 3 \text{ m/s}$   |
| DN900 – DN800 | $\leq 2.5 \text{ m/s}$ |
| DN700 – DN300 | $\leq 2 \text{ m/s}$   |
| DN450 – DN300 | $\leq 1.5 \text{ m/s}$ |

Minimum velocity (under peak flow condition)

Fresh water mains:  $\geq 0.9 \text{ m/s}$

Flushing water mains:  $\geq 0.9 \text{ m/s}$

3.5.2 The pipeline shall have a minimum gradient of 1:400. Pipes shall be laid at a minimum separation of 300mm away from existing utilities and underground structures.

## 4. Review on Existing Water Supply System

### 4.1 Existing Water Supply System

- 4.1.1 There is existing DN40 and DN 50 fresh water distribution mains running at the east side of the Proposed Development.
- 4.1.2 Refer to WSD information provided, the Proposed Development is under proposed fresh water supply zone of Tan Kwai Tsuen East Fresh Water Service Reservoir (TKTE FWSR) and the proposed flushing water supply zone of Tan Kwai Tsuen East Reclaimed Water Service Reservoir (TKTE ReWSR). The proposed design storage capacity of the TKTE FWSR and TKTE ReWSR is 188,050m<sup>3</sup> and 32,000m<sup>3</sup> respectively. It is currently under contracts of CEDD's project Hung Shui Kiu / Ha Tsuen New Development Area.
- 4.1.3 Currently, there is no salt water supply system at the Application Site and nearby area.

### 4.2 Impact on Existing Water Supply System

- 4.2.1 The estimated daily fresh water demand for Application Site is 2,202 m<sup>3</sup>/day and the estimated daily flushing water demand is 827 m<sup>3</sup>/day. Detailed water demand estimation refers to **Annex 1** and **Annex 2**.
- 4.2.2 The peaking factor adopted for the sizing of fresh water distribution main is 3, such that the required peak flow rate for the Application Site is 0.076 m<sup>3</sup>/s.
- 4.2.3 The peaking factor adopted for the sizing of flushing water distribution main is 2, such that the required peak flow rate for the Application Site is 0.019 m<sup>3</sup>/s.

## 5. Proposed Water Supply System

### 5.1 Fresh Water Supply System

- 5.1.1 Refer to Section 4.1.2, the fresh water supply of the Proposed Development is provided by fresh water from TKTE FWSR. The fresh water demand of Proposed Development will utilize about 1.2% of the proposed design storage capacity of the TKTE FWSR.
- 5.1.2 According to the CEDD information provided, a series of DN450 and DN300 fresh water main is planned and constructed by CEDD in the vicinity of the Application Site to provide fresh water for the future development.
- 5.1.3 DN300 lead-in pipe is proposed to be tee-off from the planned DN450 fresh water main for fresh water supply to the Proposed Development. The indicative planned fresh water main alignment refers to figure no. **AREA 32C/WSIA/Figure 3**. Detailed calculation refers to **Annex 3** and **Annex 4**.
- 5.1.4 According to hydraulic checking result, the fresh water demand of Proposed Development will utilize 24% of the planned DN450 fresh water main constructed by CEDD.

### 5.2 Flushing Water Supply System

- 5.2.1 Currently there is no flushing water supply to the Application Site.
- 5.2.2 Refer to Section 4.1.2, the flushing water supply of the Proposed Development is provided by reclaimed water from TKTE ReWSR. The flushing water demand of Proposed Development will utilize about 2.6% of the proposed design storage capacity of the TKTE ReWSR.

- 5.2.3 According to the approved planning application No. A/HSK/452, a series of DN300 flushing water main is planned and constructed by CEDD in the vicinity of the Application Site to provide flushing water for the future development.
- 5.2.4 DN150 lead-in pipe is proposed to be tee-off from planned DN300 flushing water main to provide flush water supply to the Proposed Development. The indicative planned flushing water main alignment refers to figure no **AREA 32C /WSIA/Figure 4** refers. Detailed calculation refers to **Annex 3** and **Annex 4**.
- 5.2.5 According to hydraulic checking in **Annex 3**, the fresh water demand of Proposed Development will utilize 18% of the planned DN300 flushing water main constructed by CEDD.

## 6. Maintenance Responsibility

- 6.1.1 The Applicant is responsible for the construction and maintenance of all water supply facilities within the Application Site boundary, including all internal watermains and water supply lead-in valves.
- 6.1.2 The proposed fresh water main tee-off from existing fresh water main is proposed to be handed over to the government after construction. The Applicant is responsible for the construction.
- 6.1.3 The proposed flushing water main tee-off from existing flushing water main is proposed to be handed over to the government after construction. The Applicant is responsible for the construction.

## 7. Conclusion

- 7.1.1 The WSIA has been carried out to assess the impact on the existing water supply system due to the proposed development.
- 7.1.2 Refer to WSD information provided, the Proposed Development is under proposed fresh water supply zone of TKTE FWSR and the proposed flushing water supply zone of TKTE ReWSR.
- 7.1.3 The estimated daily fresh water demand for the Proposed Development is 2,202 m<sup>3</sup>/day and the estimated daily flushing water demand is 827 m<sup>3</sup>/day.
- 7.1.4 According to the approved planning application No. A/HSK/452, a series of DN450 fresh water main is planned and constructed by CEDD in the vicinity of the Application Site to provide fresh water for the future development. DN300 lead-in pipe is proposed to be tee-off from the planned DN450 fresh water main for fresh water supply to the Proposed Development.
- 7.1.5 According to the approved planning application No. A/HSK/452, a series of DN300 flushing water main is planned and constructed by CEDD in the vicinity of the Application Site to provide flushing water for the future development. DN150 lead-in pipe is proposed to be tee-off from planned DN300 flushing water main to provide flush water supply to the Proposed Development.
- 7.1.6 The proposed arrangement is acceptable to the proposed water supply system under CEDD's Hung Shui Kiu / Ha Tsuen New Development Area. Therefore, no adverse impact is anticipated.

**End of Report**

# Figures

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SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT IN PLANNING AREA 32C (SOUTHERN SITE AND LOWER CENTRAL SITE), HUNG SHUI KIU, NEW TERRITORIES

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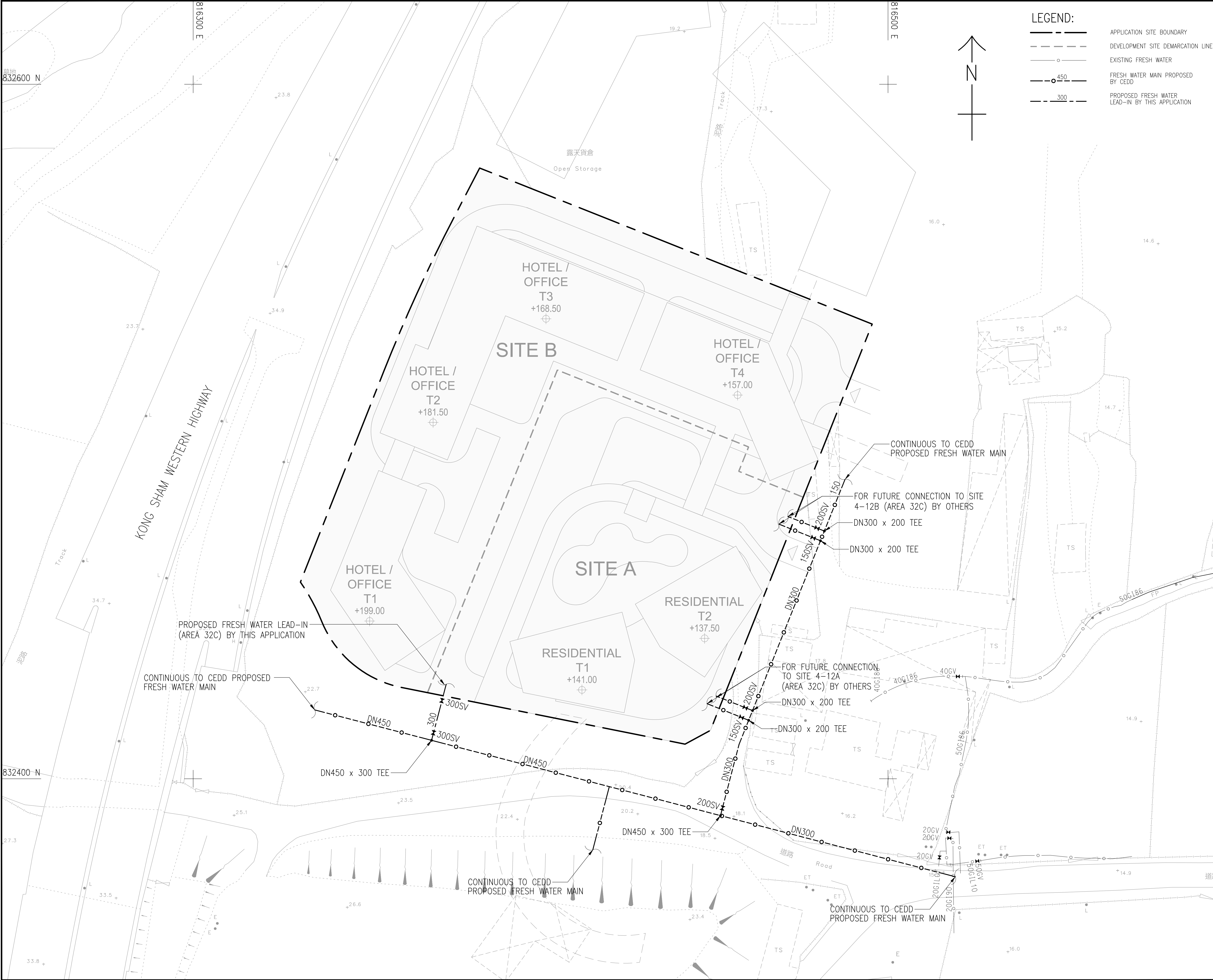
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MASTER LAYOUT PLAN

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AREA 32C/WSIA/FIGURE 2

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- LEGEND:
- APPLICATION SITE BOUNDARY
  - - - DEVELOPMENT SITE DEMARCATION LINE
  - EXISTING FRESH WATER
  - 450 FRESH WATER MAIN PROPOSED BY CEDD
  - 300 PROPOSED FRESH WATER LEAD-IN BY THIS APPLICATION

**PROJECT**  
項目

SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT IN PLANNING AREA 32C (SOUTHERN SITE AND LOWER CENTRAL SITE), HUNG SHUI KIU, NEW TERRITORIES

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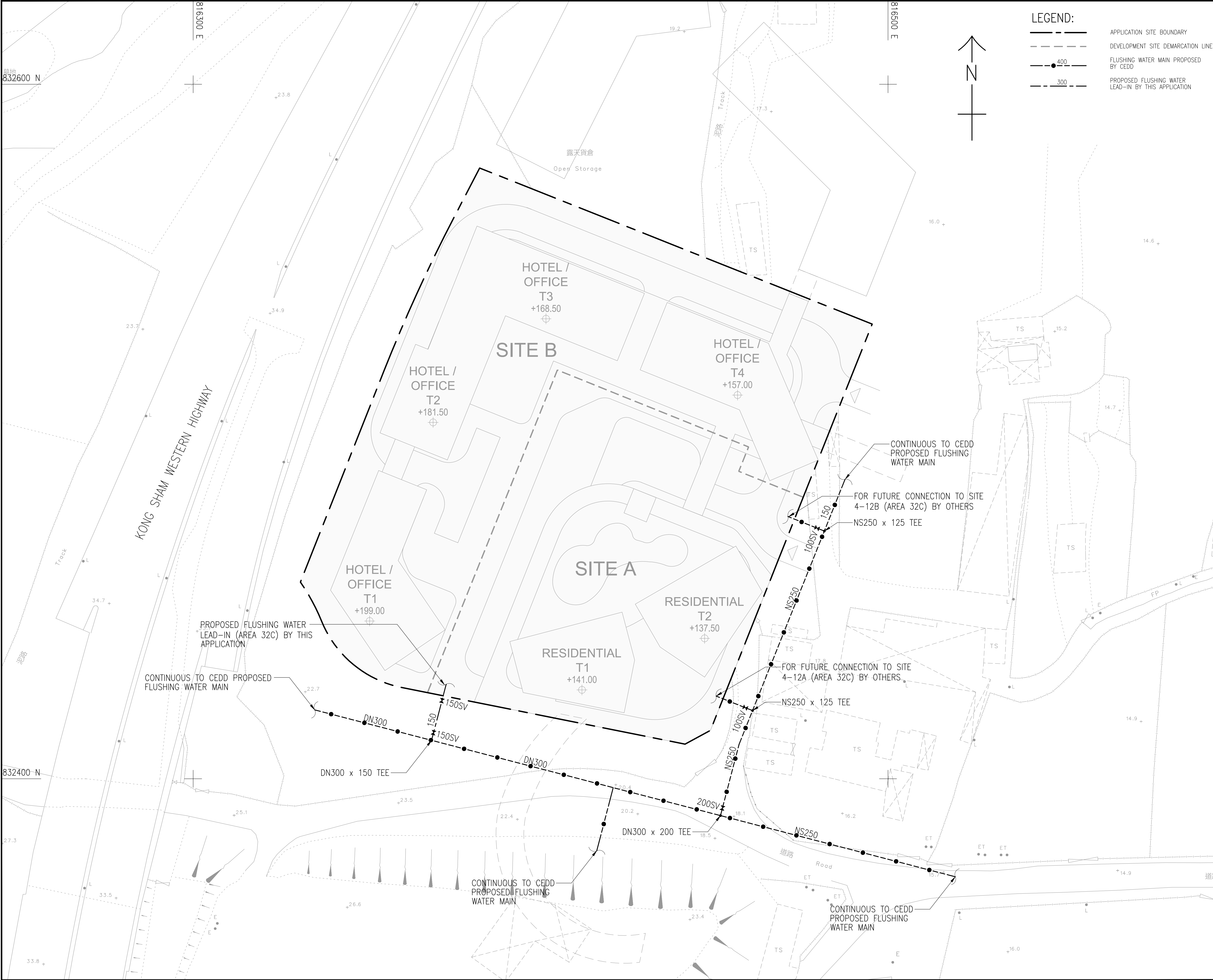
PROPOSED FRESH WATER SUPPLY LAYOUT

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AREA 32C/WSIA/FIGURE 3

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HUNG SHUI KIU

**SHEET TITLE**  
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PROPOSED FLUSHING WATER  
SUPPLY LAYOUT

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AREA 32C/WSIA/FIGURE 4

# Annex 1

## Proposed Development Population

**Current Scheme**

| Site A                              |                            |                                             |                                                             |                   |
|-------------------------------------|----------------------------|---------------------------------------------|-------------------------------------------------------------|-------------------|
| <b>Residential</b>                  |                            |                                             |                                                             |                   |
| No. of Units                        | 590                        |                                             |                                                             |                   |
| <b>PPoF <sup>(1)</sup></b>          |                            | <b>Development Type</b>                     |                                                             | <b>Population</b> |
| 2.7                                 |                            | Private R2                                  |                                                             | 1,593             |
| <b>Workers</b>                      | <b>GFA (m<sup>2</sup>)</b> | <b>Worker's Type</b>                        | <b>Workers per GFA (in 100m<sup>2</sup>) <sup>(2)</sup></b> | <b>Employee</b>   |
| GFA for Clubhouse (m <sup>2</sup> ) | 1,260                      | Community, Social & Personal Services (J11) | 3.3                                                         | 42                |

| Site B                           |                               |              |                                                          |                                                        |                |      |
|----------------------------------|-------------------------------|--------------|----------------------------------------------------------|--------------------------------------------------------|----------------|------|
| <u>Hotel</u>                     |                               | No. of Rooms |                                                          |                                                        |                |      |
| No. of Rooms                     | <u>Phase 1</u>                | 1,640        |                                                          |                                                        |                |      |
|                                  | <u>Phase 2</u>                | -            |                                                          |                                                        |                |      |
| <u>Workers</u>                   |                               |              | Worker's Type                                            |                                                        | Employee       |      |
| Rooms per employee = 2           |                               |              | Restaurants & Hotels (J10)                               |                                                        | <u>Phase 1</u> | 820  |
|                                  |                               |              |                                                          |                                                        | <u>Phase 2</u> | -    |
| GFA for Office (m <sup>2</sup> ) | GFA (m <sup>2</sup> )         |              | Finance, Insurance, Real Estate & Business Services (J6) | Workers per GFA (in 100m <sup>2</sup> ) <sup>(3)</sup> |                |      |
|                                  | <u>Phase 1</u>                | -            |                                                          | 5.5                                                    | <u>Phase 1</u> | -    |
|                                  | <u>Phase 2</u> <sup>(3)</sup> | 44,808       |                                                          |                                                        | <u>Phase 2</u> | 2465 |

Remarks:

<sup>(1)</sup> A person per flat of 2.7 is assumed.

<sup>(2)</sup> Worker Density is in GFA per worker according to T-8 CIFSUS are assumed.

<sup>(3)</sup> Office is assumed to be developed under Phase 2 and contribute 40% of the total Non-domestic GFA for Site B

# Annex 2

## Water Demand Estimation of the Proposed Development

## Annex 2 - Water Demand Estimation of the Proposed Development

7/22/2026

| Population                        | No. of Rooms | Supply         | Type                               | Unit Demand (L/h/d) |        |                     |             |            |                                      | Fresh Water Demand (m³/d) | Flush Water Demand (m³/d) |
|-----------------------------------|--------------|----------------|------------------------------------|---------------------|--------|---------------------|-------------|------------|--------------------------------------|---------------------------|---------------------------|
|                                   |              |                |                                    | Domestic            | School | Hotel (m³/room/day) | Restaurants | Commercial | Resident's Recreational Facilities ( |                           |                           |
| 1,593<br>(Private Housing Site A) | -            | Fresh Water    | Residents                          | 300                 | -      | -                   | -           | -          | -                                    | 478                       | -                         |
|                                   | -            | Flushing Water |                                    | 70                  | -      | -                   | -           | -          | -                                    | -                         | 112                       |
| 42                                | -            | Fresh Water    | Resident's Recreational Facilities | -                   | -      | -                   | -           | -          | 230                                  | 10                        | -                         |
|                                   | -            | -              |                                    | -                   | -      | -                   | -           | -          | -                                    | -                         |                           |
|                                   | -            | Flushing Water |                                    | -                   | -      | -                   | -           | 50         | -                                    | 2                         |                           |
| -                                 | 1,640        | Fresh Water    | Hotel                              | -                   | -      | 1                   | -           | -          | -                                    | 1,640                     | -                         |
| -                                 |              | Flushing Water |                                    | -                   | -      | 0.36                | -           | -          | -                                    | -                         | 590                       |
| 2,465                             | -            | Fresh Water    | Office                             | -                   | -      | -                   | -           | 30         | -                                    | 74                        | -                         |
|                                   | -            | Flushing Water |                                    | -                   | -      | -                   | -           | 50         | -                                    | -                         | 123                       |
|                                   |              |                |                                    |                     |        |                     | Total       |            |                                      | 2,202                     | 827                       |

**Note:**

(1) Fresh and Flushing water demand estimation is referenced to DI1309.

(2) For flushing water unit water demands not provided in DI1309, GESF App III and V are referred.

(3) The fresh unit demand is assumed with reference to the fresh water consumption record according to GESF App V, which the adopted fresh water consumption for resident recreational facilities employee (J11) is 230 L/h/day, and for the office employee (J6) is 30L/h/day.

# Annex 3

## Hydraulic Review of Planned Water Main

**Annex 3 - Hydraulic Review of Planned Water Main****Fresh Water Demand**

|                                 |        |                     |
|---------------------------------|--------|---------------------|
| Estimated Flushing Water Demand | 2201.5 | m <sup>3</sup> /day |
|                                 | 0.0255 | m <sup>3</sup> /s   |

**Flushing Water Demand**

|                              |        |                     |
|------------------------------|--------|---------------------|
| Estimated Fresh Water Demand | 827.3  | m <sup>3</sup> /day |
|                              | 0.0096 | m <sup>3</sup> /s   |

**Hydraulic Review for Proposed DN450 Fresh Water Main by CEDD**

|                                              |        |                     |
|----------------------------------------------|--------|---------------------|
| Total water demand                           | 2201.5 | m <sup>3</sup> /day |
| Peak factor <sup>(1)</sup>                   | 3.0    |                     |
| Peak flow rate from development site         | 0.076  | m <sup>3</sup> /s   |
| Size of proposed water main                  | 450    | mm                  |
| Cross section area                           | 0.159  | m <sup>2</sup>      |
| Flow velocity limit for DN450 <sup>(2)</sup> | 2      | m/s                 |
| Flow capacity for DN450                      | 0.318  | m <sup>3</sup> /s   |
| Capacity checking                            | 24     | %                   |

**Hydraulic Review for Proposed DN300 Flushing Water Main by CEDD**

|                                              |       |                     |
|----------------------------------------------|-------|---------------------|
| Total water demand                           | 827.3 | m <sup>3</sup> /day |
| Peak factor <sup>(1)</sup>                   | 2.0   |                     |
| Peak flow rate from development site         | 0.019 | m <sup>3</sup> /s   |
| Size of proposed water main                  | 300   | mm                  |
| Cross section area                           | 0.071 | m <sup>2</sup>      |
| Flow velocity limit for DN300 <sup>(2)</sup> | 1.5   | m/s                 |
| Flow capacity for DN300                      | 0.107 | m <sup>3</sup> /s   |
| Capacity checking                            | 18    | %                   |

Remark:

(1) Peak factor for distribution main refers to Departmental Instruction No. 1309 from Water Supplies Department

(2) Velocity limit of water main refers to Departmental Instruction No. 1309 from Water Supplies Department

# Annex 4

## Hydraulic Review of Proposed Lead-in Pipe

**Annex 4 - Hydraulic Review of Proposed Lead-in Pipe****Fresh Water Demand**

|                              |        |                     |
|------------------------------|--------|---------------------|
| Estimated Fresh Water Demand | 2201.5 | m <sup>3</sup> /day |
|                              | 0.0255 | m <sup>3</sup> /s   |

**Flushing Water Demand**

|                                 |        |                     |
|---------------------------------|--------|---------------------|
| Estimated Flushing Water Demand | 827.3  | m <sup>3</sup> /day |
|                                 | 0.0096 | m <sup>3</sup> /s   |

**Hydraulic Review for Proposed DN300 Fresh Water Lead-in**

|                                              |        |                     |
|----------------------------------------------|--------|---------------------|
| Total water demand                           | 2201.5 | m <sup>3</sup> /day |
| Peak factor <sup>(1)</sup>                   | 3.0    |                     |
| Peak flow rate from development site         | 0.0764 | m <sup>3</sup> /s   |
| Size of proposed fresh water lead-in         | 300    | mm                  |
| Cross section area                           | 0.071  | m <sup>2</sup>      |
| Flow velocity for DN150                      | 1.08   | m/s                 |
| Flow velocity limit for DN150 <sup>(2)</sup> | 1.5    | m/s                 |

**Hydraulic Review for Proposed DN150 Flushing Water Lead-in**

|                                             |        |                     |
|---------------------------------------------|--------|---------------------|
| Total water demand                          | 827.3  | m <sup>3</sup> /day |
| Peak factor <sup>(1)</sup>                  | 2.0    |                     |
| Peak flow rate from development site        | 0.0191 | m <sup>3</sup> /s   |
| Size of proposed flushing water lead-in     | 150    | mm                  |
| Cross section area                          | 0.018  | m <sup>2</sup>      |
| Flow velocity for DN50                      | 1.06   | m/s                 |
| Flow velocity limit for DN50 <sup>(2)</sup> | 1.5    | m/s                 |

Remark:

(1) Peak factor for distribution main refers to Departmental Instruction No. 1309 from Water Supplies Department

(2) Velocity limit of water main refers to Departmental Instruction No. 1309 from Water Supplies Department

