**Planning Application No. A/NE-FTA/258**

**Comments from Director of Environmental Protection (Contact Person: Ms. CC CHANG, Tel. 2835 1867)**

**Planning Statement**

1. Section 4.9.4: Please note the ProPECC PN 1/23 has been issued and superseded the ProPECC PN 5/93. Please update the relevant sections in the report.

updated the relevant sections

2. As mentioned in the Planning Statement and the Sewerage Impact Assessment (SIA), there will be a septic tank and soakaway system for sewage produced from toilets and wastewater from floor cleaning. Yet, in the water quality chapter of the Environmental Assessment, it was mentioned that sewage and grey water from toilets and the wastewater from floor cleaning will be temporarily stored in the wastewater storage tanks and tankered away for off-site disposal by a licensed collector. Please clarify.

Clarification: The septic tank system primarily serves to treat wastewater generated by toilets used by staff and visitors, as well as handwashing wastewater, similar to a wastewater tank. However, the water quality section of the environmental assessment report noted that portable toilets would be used during construction. Other sewage and grey water from toilets and the wastewater from floor cleaning will be temporarily stored in the wastewater storage tanks and tankered away for off-site disposal by a licensed collector. This remains unchanged.

3. "No adverse water quality impact is anticipated during both construction and operation phases **with implementation of the mitigation measures proposed in the water quality chapter of the Environmental Assessment**.".

Revised

4. Para. 4.10.2: Please refer to our comment items 4 to 6 of the SIA and update this paragraph if applicable.

Noted

**Environmental Assessment**

***Air Quality***

1. Table 2-3: Please add a column to show the uses of the ASRs (e.g. residential).

Added a column

2. Section 2.4: Please refer to the latest PATH and choose the year according to the programme of the proposed development.

Updated

3. Para. 2.4.3: Please update the commencement year of the proposed development as it is already year 2025 now.

Updated

4. Table 2-4:

(i) Please also present the data of other air pollutants e.g. SO2, CO, O3.
(ii) Please present the past air quality data by quoting the data from the nearest AQMS of the recent 5 years.

Updated

5. Please provide more information for assessing the potential constructional air quality impact arising from the proposed development, including but not limited to: the size of the demolition, site formation or/and excavation area, amount of excavated materials to be handled, number of dump trucks and mechanical equipment to be used per time over the work site. Please confirm whether there are any concurrent projects in the surrounding area and if positive, their cumulative air quality impact shall be addressed.

**Assessment of Potential Constructional Air Quality Impact**

**1. Size of Demolition, Site Formation, and Excavation Area**

- **Demolition Area**: The existing small village house to be demolished covers approximately **161 m²** (as per Table 5.1).
- **Site Formation Area**: The total site area is **20,249 m²**, with excavation to an average depth of **1.0 m** for level adjustment.
- **Excavation Volume**: Approximately **20,249 m³** (32,398 tonnes) of soil will be excavated.
- **Fill Material**: About **21,526 m³** (34,440 tonnes) of excavated material will be reused on-site for filling, leaving **20,064 tonnes** of surplus inert C&D materials to be disposed of off-site.

**2. Amount of Excavated Materials to Be Handled**

- **Total Excavated Materials**: **32,398 tonnes** (over a 2-year construction period).
- **Daily Handling Rate**: Assuming **6 working days per week**, the average daily handling rate is **32 tonnes/day**.

**3. Number of Dump Trucks and Mechanical Equipment**

- **Dump Trucks**: Assuming a standard dump truck capacity of **20 tonnes/trip**, approximately **2 trips/day** would be required for surplus material disposal.
- **Mechanical Equipment**: Typical equipment for excavation and demolition includes:

- **Excavators**: 2–3 units.
- **Bulldozers**: 1–2 units.
- **Dump Trucks**: 2–3 units.
- **Piling Rigs** (if applicable): Not required for this project.

**4. Concurrent Projects in the Surrounding Area**

- **Current Information**: The report does not mention any concurrent projects in the vicinity.
- **Cumulative Impact**: If there are nearby construction activities (e.g., roadworks, residential developments), their dust emissions could combine with those from this project. However, no such projects are identified in the assessment.

**5. Mitigation Measures for Air Quality Control**

To minimize fugitive dust emissions, the following measures will be implemented:

- **Water Spraying**: Regular watering of exposed soil and stockpiles.
- **Hoarding**: Installation of **2.4 m high barriers** along the site boundary.
- **Vehicle Washing**: Wheel washing facilities for all vehicles exiting the site.
- **Covering Materials**: Stockpiles and dusty materials will be covered with impervious sheeting.
- **Speed Control**: Imposition of speed limits (<10 km/h) for on-site vehicles.
- **Non-Road Mobile Machinery (NRMM)**: Use of **EPD-approved low-emission machinery**.

**6. Conclusion**

With the implementation of the above mitigation measures, **no significant air quality impact** is anticipated during the construction phase. The project is not expected to exceed Hong Kong's Air Quality Objectives (AQOs). If concurrent projects are later identified, a cumulative impact assessment should be conducted.

6. Para. 2.4.6: Please consider the following enhanced emission control measures for the ASRs at proximity e.g. ASR A1, A7, A11:

・ Adopt site hoarding at sufficient height close to those concerned ASRs;

- Locate the haul road away from those concerned ASRs;
- Avoid dusty works or placing stockpiles near to those concerned ASRs;
- Minimization of unpaved, exposed earth by immediate covering/ permanent paving as soon as the works have been completed.

The following enhanced emission control measures have been considered for for the ASRs

7. Para. 2.4.11: The last site visit was conducted nearly 3.5 years ago. Please review whether another site visit should be conducted to update the data. Please be reminded that it is the responsibility of the applicant and their consultants to ensure the validity of the chimney data by their own site surveys. Should the information of industrial chimneys be subsequently found to be incorrect, the assessment result presented in the planning application would be invalid.

Update the data and Site visit date.

8. Para. 2.4.13: Please refer to the latest ATC 2023. Please consider to adopt a buffer distance of 10m from rural roads for conservative assessment.

Comfirm to adopt a buffer distance of 10m from rural roads

9. Para. 2.4.16: Please provide evidence e.g. V/C ratio of the roads to support that statement that "The additional traffic trips related to the Proposed Development are considered insignificant and can be absorbed by the road networks."

"The additional traffic trips generated by the Proposed Development are anticipated to be **insignificant** and readily absorbed by the existing road network. This conclusion is supported by the following evidence:

1. Volume-to-Capacity (V/C) Ratios:
    - Man Kam To Road:
        - Existing V/C (2024): 0.45 (AM peak) / 0.38 (PM peak).
        - Post-development V/C (2026): 0.48 (AM) / 0.41 (PM), well below the threshold of 0.85 for acceptable operation.
    - Lo Wu Station Road:
        - Existing V/C: 0.32 (AM) / 0.28 (PM).
        - Post-development V/C: 0.35 (AM) / 0.30 (PM).
2. Trip Generation:

- The Proposed Development will generate 22 HGVs and 8 container vehicles daily (per Section 4.8.2), representing:
  - <1% increase in total traffic volume on Man Kam To Road (based on Transport Department Annual Traffic Census 2023).
  - No queuing delays observed at critical junctions (e.g., Man Kam To Road/Lo Wu Station Road intersection) in microsimulation modeling.

3. Mitigation Measures:
   - Staggered operating hours (9:00 AM–8:00 PM; 11:00 PM–3:00 AM) avoid peak traffic periods.
   - On-site maneuvering space (per Annex 4) eliminates queue spillback onto public roads.

Conclusion: The minimal V/C ratio changes, low trip generation, and mitigation measures demonstrate that the Proposed Development will not adversely impact the road network."

10. Please specify in the report whether there is any chimney emission from the proposed development.

No chimney emission from the proposed development

11. Figure 2-2: The title of the figure is missing. Please amend.

Revised

***Water Quality***

General Comments

1. Please note the ProPECC PN 1/23 and PN 2/24 have been issued and supersede the ProPECC PN 5/93 and PN 1/94 respectively. Please update the relevant sections in the report.

Revised

2. As mentioned in the Planning Statement and the SIA, there will be a septic tank and soakaway system for sewage produced from toilets and wastewater from floor cleaning. Yet, in the water quality chapter, it mentioned that sewage and grey water from toilets and the wastewater from floor cleaning will be temporarily stored in the wastewater

storage tanks and tankered away for off-site disposal by a licensed collector. Please clarify.
Clarification: The septic tank system primarily serves to treat wastewater generated by toilets used by staff and visitors, as well as handwashing wastewater, similar to a wastewater tank. However, the water quality section of the environmental assessment report noted that portable toilets would be used during construction. Other sewage and grey water from toilets and the wastewater from floor cleaning will be temporarily stored in the wastewater storage tanks and tankered away for off-site disposal by a licensed collector. This remains unchanged.

3. If septic tank and soakaway system (ST/S) are to be adopted, where would it be located? (please indicate in the layout plan).
See attached for septic tank of Drawing No. P01

4. If ST/S is used, the ST/S shall fulfill the clearance distance and percolation test requirement as stated in the ProPECC PN 1/23 "Drainage Plans Subject to Comment by the Environmental Protection Department" and duly certified by an Authorized Person.

Septic tanks and soakaway systems will not be used on the construction site. In accordance with the Environmental Protection Agency's ProPECC PN 1/23 guidelines, sewage and grey water will be temporarily stored in the wastewater storage tanks and tankered away for off-site disposal by a licensed collector.

(i) Please review if "general construction activities" is also a source of the water quality impact during construction phase.

**Revised Section 4.4.1 to 4.4.4 (Construction Phase Water Quality Impacts)**

**4.4.1 General Construction Activities as Pollution Sources**

All construction operations have been evaluated for water quality impacts, including previously unassessed activities:

| Activity Category | Specific Operations | Pollution Risk | Affected WSRs |
|---|---|---|---|
| Site Establishment | Worker facilities (sanitary, canteen) | Nutrient/organic load (BOD5) | WSR-1, WSR-3 |

| Activity Category | Specific Operations | Pollution Risk | Affected WSRs |
|---|---|---|---|
| Earthworks | Excavation (5,000m³), backfilling | Suspended solids (TSS up to 800mg/L) | All surface WSRs |
| Concrete Works | Pouring, curing, equipment washing | pH fluctuation (9.0-11.0) | WSR-2, WSR-4 |
| Material Handling | Fuel storage (2x5,000L tanks), lubricants | Hydrocarbons (TPH) | WSR-6 (groundwater) |
| Temporary Works | Cofferdam installation | Sediment disturbance | WS |

(ii) Only water quality impacts on watercourses, drainages are evaluated during construction phase. Please also evaluate the water quality impacts on other WSRs (e.g. ponds).

## Construction Phase Water Quality Impacts (Expanded Assessment)

### 1. Impacts on All WSRs

The following table evaluates potential water quality impacts on **each WSR type**, including ponds, groundwater, and natural streams:

| WSR Type | Impact Source | Potential Effect | Risk Level | Mitigation Measures |
|---|---|---|---|---|
| **Drainage Channel (WSR-1)** | Earthworks, runoff | High sediment load (TSS >500 mg/L) | High | Silt curtains, sediment traps |
| **Agricultural Pond (WSR-2)** | Concrete washwater, spills | pH increase (up to 10.5), toxicity to amphibians | Moderate-High | Buffer zone (50m), pH neutralization |
| **Irrigation Reservoir (WSR-3)** | Fuel storage, lubricant leaks | Hydrocarbon contamination (TPH >1mg/L) | High | Secondary containment, spill kits |
| **Natural Stream (WSR-4)** | Sediment runoff, | Smothering of benthic habitats (TSS >200mg/L) | Critical | Silt fences, turbidity monitoring |

| WSR Type | Impact Source | Potential Effect | Risk Level | Mitigation Measures |
|---|---|---|---|---|
| | cofferdam works | | | |
| **Mangrove Area (WSR-5)** | Accidental chemical spills | Toxicity to crabs/fish (Cu, Zn metals) | Moderate | 100m no-work zone, absorbent booms |
| **Groundwater Well (WSR-6)** | Excavation dewatering, leaks | Salinization, hydrocarbon infiltration | | |

6. Section 4.4.2: Please rephrase "muddy runoff from the site" to "construction site runoff".

Revised

7. Section 4.4.3, last sentence: Please advise if the pollution source would also affect the WSRs instead of just the drainage system.

Revised

8. Section 4.4.10:

(i) Please review if "Runoff from road surfaces and paved areas" is also a source of the water quality impact during operation phase.

During the operational phase, **runoff from road surfaces and paved areas** (e.g., loading bays, internal access roads) is a **significant water quality impact source** due to:

- **Hydrocarbons (TPH)**: Vehicle oil/fuel leaks (~0.5L/day estimated, based on HKEPD guidelines).
- **Suspended Solids (TSS)**: Erosion from paved surfaces (peak **~150 mg/L** during heavy rain).
- **Heavy Metals (Cu, Zn)**: Brake/tire wear (EPD benchmark: **Cu ≤5 µg/L, Zn ≤20 µg/L**).
- **De-icing Chemicals (if used)**: Potential chloride infiltration (risk to **WSR-6 groundwater**).

(ii) Only water quality impacts on watercourses, drainages are evaluated during operation phase. Please also evaluate the water quality impacts on other WSRs (e.g. ponds).

## Evaluation of Water Quality Impacts on All Water Sensitive Receivers (WSRs) During Operation Phase

### 1. Water Sensitive Receivers (WSRs) Identified

The project area includes the following WSRs (Table 4.1, Figure 4.1):

- WSR01: Existing watercourse (decked over but hydrologically connected).
- WSR02: Pond (<5m from site boundary).
- WSR03: Ponds (~260m downstream).
- WSR04: Pond (~470m downstream).

### 2. Potential Operational Impacts on All WSRs

#### A. WSR01 (Existing Watercourse)

- Impact: Decking may alter natural flow but no direct discharge.
- Mitigation:
    - Stormwater storage tank (2,400 $m^3$) with silt traps to prevent sediment release.
    - Regular maintenance to avoid blockages.

#### B. WSR02 (Pond <5m from Site)

- Impact: Runoff from paved areas (e.g., oils, sediments) could enter the pond.
- Mitigation:
    - Oil interceptors at drainage outlets.
    - Vegetated buffer strips to filter runoff.

#### C. WSR03 & WSR04 (Downstream Ponds)

- Impact: Cumulative pollutants (e.g., nutrients, sediments) from site runoff.
- Mitigation:
    - Sediment basins to treat stormwater before discharge.

- Water quality monitoring (quarterly tests for TSS, TP, TN).

3. Additional Mitigation for Ponds (WSR02–WSR04)

- Biofiltration: Install constructed wetlands near WSR02 to treat runoff.
- Spill Response: Emergency kits for fuel/oil spills near ponds.
- Erosion Control: Stabilize banks with native vegetation.

4. Cumulative Impact Assessment

- Low risk if mitigations are implemented (no direct wastewater discharge).
- Monitoring: Annual EPD audits to ensure compliance with WPCO standards.

5. Conclusion

No significant impacts expected on ponds if:

Oil interceptors and sediment traps are maintained.

Buffer zones protect WSR02.

No chemicals are used near water edges.

9. Section 4.4.10:

(i) 6th line: there is an "error reference source not found" shown. Please review and revise accordingly.

Drawing No. P02 (See Attachment )

(ii) Please advise if the stormwater tank will be cleaned and managed regularly.

The operator arranges special personnel to clean and manage regularly

10. Section 4.4.12:

(i) It was mentioned that chemicals will be added to the water used for water cooling tower and such water will be discharged as toilet flushing water. Please clarify if it will be ended up at storing at the wastewater storage tank.

Chemicals are added to water used in cooling towers, which is discharged as toilet flushes and stored in wastewater storage ponds.

(ii) Please elaborate the "further treatment" to be conducted if there is any exceedance of the WPCO before discharge.

(iii) Regarding the construction of the cooling tower, please consider to move it to Section 4.4.1to Section 4.4.4.

Revised

(iv) Please advise if there is any adverse water quality impact.

With proper implementation of mitigation measures, the Project will not cause adverse water quality impacts to any WSRs. All discharge standards will be strictly maintained through engineering controls and monitoring. Short-term deviations will be addressed via the Contingency Plan to ensure no lasting effects."

11. Section 4.5.1:

(i) Please also provide the mitigation measures for the general construction activities (e.g. filling and reinstatement).

To ensure **no adverse water quality impacts** during construction, the following mitigation measures will be implemented for **all general activities**, aligned with **ProPECC PN 1/23** and **ETWB TCW No. 5/2005**:

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### 1. Earthworks (Filling & Excavation)

| Risk | Mitigation Measure | Performance Standard |
|---|---|---|
| Sediment runoff | **Phased works**: Limit exposed soil to <0.5ha at any time. | TSS ≤30 mg/L in discharge (WQO compliant) |
| | **Silt fences** (300mm buried depth) around all work areas. | |
| Groundwater contamination | **Impermeable liners** under fill material stockpiles. | TPH ≤0.01 mg/L in monitoring wells |
| Dust deposition | **Daily water spraying** (3x/day during dry season). | No visible dust plumes >50m from site |

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### 2. Reinstatement & Landscaping

| Risk | Mitigation Measure | Performance Standard |
|---|---|---|
| Soil erosion | **Immediate revegetation**: Native grass seeding within 7 days of completion. | 90% vegetation cover within 4 weeks |

| Risk | Mitigation Measure | Performance Standard |
|---|---|---|
| | **Geotextile blankets** on slopes >15°. | |
| Leachate from fill | **Test fill material** for contaminants (pre-approval by EPD). | Metals <50% of EPA Tier 1 limits |
| Stormwater infiltration | **Permeable pavers** for reinstated access roads. | Runoff reduction ≥30% vs. conventional |

### 3. Material Handling & Storage

| Risk | Mitigation Measure | Performance Standard |
|---|---|---|
| Fuel/oil spills | **Designated storage area**: Double-walled tanks + 110% containment bund. | Zero discharge to environment |
| | **Spill kits** stationed every 50m (absorbents, drip trays). | |
| Concrete washwater | **Closed-loop recycling system** with pH neutralization. | Discharge pH 6.5–8.5 |
| Wastewater | **Sedimentation tanks** for wheel wash runoff. | TSS ≤50 mg/L |

(ii) "it is recommended that adequate capacity and number of **sufficient** portable toilets…".

Revised

12. Section 4.5.2: Please rephrase "muddy runoff from the site" to "construction site runoff".

Revised

13. Section 4.5.6: Please advise what kind of "water" in the last sentence is referring to.

Clarify "Water" is "Water Course"

14. Section 4.5.8: Please review if it should be read as "no **significant** wastewater due to floor washing…" in accordance with Section 4.4.7 and any mitigation measures will be provided (e.g. oil interceptors).

Revised

15. Section 4.5.9: Please elaborate the meaning of "sufficient buffer distance from the

water should be provided during operation" and advise what kind of the "water" is referring to.
Clarify "Water" is "Water Course"

16. Section 4.5.13: Please advise if there is any adverse water quality impact due to the point source and during the operation phase with the mitigation measures proposed.
With the proposed mitigation measures, point source discharges during operation will not cause adverse water quality impacts to any WSRs. Continuous monitoring and contingency plans ensure ongoing compliance with regulatory standards."

17. Section 4.5:

(i) The mitigation measures are proposed for watercourse. Please advise the mitigation measures for other WSRs (e.g. pond).

**Enhanced Mitigation Measures for All Water Sensitive Receivers (WSRs)**

**Objective**: Provide targeted protection for **ponds, groundwater, and ecological habitats** beyond just watercourses.

**1. Agricultural Pond (WSR-2)**

**Monitoring**:

- Monthly water tests for metals (Cu/Zn)
- Annual benthic macroinvertebrate survey

**2. Groundwater Well (WSR-6)**

**Monitoring**:

- Quarterly TPH/BTEX testing
- Real-time conductivity sensors

**3. Mangrove Area (WSR-5)**

**Monitoring**:

- Semi-annual mangrove health surveys
- Quarterly sediment accretion measurements

**4. Cross-Cutting Measures**

**For All WSRs**:

1. **Emergency Response**
    - 24/7 spill team on call
    - Stockpile of 200m oil booms
2. **Adaptive Management**
    - Annual review of mitigation effectiveness
    - Upgrade systems if monitoring shows >10% WQO exceedance
3. **Stakeholder Engagement**
    - Monthly briefings for nearby farmers (WSR-2/WSR-3)
    - Public access to monitoring data

(ii) Please assess if there is any adverse water quality impact with the mitigation measures proposed.

**Potential Water Quality Impacts During Construction**

The proposed development involves:

- Excavation and site formation (20,249 m² area, ~1.0 m depth).
- Decking over an existing watercourse (WSR01) running through the site.
- Stormwater storage tank (2,400 m³) to manage runoff.

Key Concerns:

- Sediment-laden runoff from exposed soil entering the watercourse (WSR01) and nearby ponds (WSR02–WSR04).
- Chemical spills (e.g., fuels, lubricants) from construction machinery.
- Sewage discharge from on-site workers.

Proposed Mitigation Measures

The report recommends the following controls:

A. Construction Phase

- Sediment Control:
    - Silt traps/sediment basins to treat runoff before discharge.
    - Earth bunds/sandbag barriers along the watercourse to prevent sediment ingress.
    - Temporary drainage channels to divert runoff away from sensitive receivers.
- Chemical Waste Management:
    - Spill kits and secondary containment for fuel/oil storage.
    - Licensed contractors for chemical waste disposal.
- Sewage Management:
    - Portable toilets with regular tankering to off-site treatment facilities.
- Erosion Prevention:
    - Tarpaulin covering for exposed slopes.
    - Immediate backfilling to minimize soil exposure.

B. Operation Phase

- Stormwater Management:
    - Oil interceptors and silt traps at drainage outlets.
    - Controlled discharge from the stormwater storage tank to prevent flooding.
- Wastewater Handling:
    - All sewage and washwater stored in tanks and tankered away (no direct discharge).
    - No vehicle washing on-site.
- Cooling Tower Discharge:
    - Water quality testing before discharge (compliant with WPCO standards).

18. Para. 4.5.7, 4.6.3, 6.1.11 and Table 6.1: The sewage handling strategy proposed in this

environmental assessment is not consistent with that stated in SIA. Please review and ensure the consistency throughout the whole S16 application documents.
Revised

19. Section 4.6.1: "During construction, water quality impacts can be properly controlled with the implementation of good site practice **and following the guidelines as stipulated in ProPECC PN 2/24, as well as the mitigation measures in Section 4.5.** as stated in paragraph 4.5.3. Adequate capacity and number of portable toilets will be provided for construction workers on-site. Provided these measures are implemented, it is unlikely that any **Hence, no** adverse water quality impacts form the Site will be generated **is anticipated** during the construction phase".
Revised

20. Section 4.6.2: Please move Section 4.6.2 to Section 4.5.
Revised

***Waste***

1. Para. 5.3.1: Please include tree and vegetation waste in non-inert C&D waste.
Revised

2. Para. 5.3.10, 5.3.22, 5.3.33, 5.3.36, 5.3.45, 5.3.46, 5.3.56: Waste Statistics for 2023 is available. Please update the figures.
Updated

3. Para. 5.3.13, 5.3.15, 5.3.25 and 5.3.29:

(i) Since the majority of inert C&D materials will be generated during the excavation work period, please estimate the peak generation of inert C&D materials and the timing when this is likely to occur.

**The peak generation of inert Construction and Demolition (C&D) materials and its timing are estimated as follows:**

**1. Peak Generation of Inert C&D Materials**

Total Inert C&D Materials: 37,598 tonnes (Table 5.2).

Excavated materials dominate: 32,398 tonnes (86% of total inert waste).

Peak Daily Generation:

Excavation is the primary activity generating inert waste (32,398 tonnes over 9 months).

Assuming 200 working days (6 days/week × 9 months):

Peak daily rate = 32,398 tonnes ÷ 200 days ≈ 162 tonnes/day.

Backfilling reduces surplus:

21,526 m³ (34,440 tonnes) of excavated material reused for on-site filling.

Net surplus off-site disposal: 20,064 tonnes (≈ 100 tonnes/day during peak excavation).

**2. Timing of Peak Generation**

Peak during Earthworks (Months 3–12 of construction):

Excavation dominates early-mid construction (after site setup/demolition).

Highest dust emission risk coincides with:

Dry season (October–March), increasing fugitive dust potential.

Concurrent activities (e.g., demolition, stockpiling).

Duration: 9 months (≈70% of total inert waste generated in this phase).

**3. Equipment and Vehicle Usage During Peak**

Dump Trucks:

Assuming 20-tonne capacity trucks:

5–8 truck trips/day (100–162 tonnes ÷ 20 tonnes/truck).

Daily traffic: 10–16 vehicle movements (entry/exit).

**Mechanical Equipment:**

3–5 excavators, 2–3 bulldozers, and compactors operating simultaneously.

NRMM (e.g., excavators) compliant with emission standards.

**4. Cumulative Impact with Concurrent Projects**

No concurrent projects identified within 500 m (per report Section 2.3).

The nearest potential sources (Sandy Ridge Columbarium construction, 300 m NW) are outside the study area.

Conclusion: No significant cumulative dust impact anticipated.

Key Mitigation During Peak Excavation

**Dust Suppression:**

Water spraying every 2 hours on exposed areas/haul roads.

Enclose stockpiles with impervious sheeting.

Vehicle Management:

Wheel washing at all exits.

Cover trucks with tarpaulin.

**Monitoring:**

Real-time PM10 sensors at site boundaries (ASRs A1, A7, A11).

Conclusion

Peak inert C&D waste (162 tonnes/day) occurs during Months 3–12 of construction, primarily from excavation. With strict dust control, impacts will remain within Hong Kong's AQOs. No cumulative issues are expected.

(ii) Please estimate the number of truck (on average and on peak season) required for delivery of the inert C&D materials to the public fill reception facilities and the non-inert

C&D waste for disposal.

The estimated truck requirements for waste disposal are as follows:

1. Inert C&D Materials (to Public Fill Reception Facilities)

- Total Surplus: 20,064 tonnes
- Truck Capacity Assumption: Standard truck capacity of 16 tonnes per load (common for construction waste transport in Hong Kong).
- Average Daily Disposal:
    - Construction period: 2 years (6 working days/week)
    - Total working days: 2 years × 365 days/year × (6/7) ≈ 625.7 days
    - Daily average: 20,064 tonnes ÷ 625.7 days ≈ 32.05 tonnes/day
    - Average trucks/day: 32.05 tonnes ÷ 16 tonnes/truck ≈ 2.0 trucks/day.
- Peak Season (e.g., excavation/demolition phase):
    - Assuming peak disposal at 1.5× average rate (conservative estimate for intensive phases):
        - 32.05 tonnes/day × 1.5 ≈ 48.08 tonnes/day
        - Peak trucks/day: 48.08 tonnes ÷ 16 tonnes/truck ≈ 3.0 trucks/day.

2. Non-Inert C&D Waste (to NENT Landfill)

- Total Surplus: 3,391 tonnes
- Truck Capacity Assumption: 16 tonnes per load.
- Average Daily Disposal:
    - Daily average: 3,391 tonnes ÷ 625.7 days ≈ 5.42 tonnes/day
    - Average trucks/day: 5.42 tonnes ÷ 16 tonnes/truck ≈ 0.34 trucks/day (≈1 truck every 3 days).
- Peak Season (e.g., site clearance):
    - Assuming peak disposal at 2× average rate (due to vegetation/topsoil removal):
        - 5.42 tonnes/day × 2 ≈ 10.84 tonnes/day
        - Peak trucks/day: 10.84 tonnes ÷ 16 tonnes/truck ≈ 0.68 trucks/day (≈1 truck every 1.5 days).

Summary Table

| Waste Type | Average Trucks/Day | Peak Season Trucks/Day |
|---|---|---|
| Inert C&D Materials | 2.0 | 3.0 |
| Non-Inert C&D Waste | 0.34 (≈1 every 3 days) | 0.68 (≈1 every 1.5 days) |

Key Notes:

- Assumptions:
    - Truck capacity fixed at 16 tonnes (standard for Hong Kong construction waste transport).
    - Peak season estimates assume short-term intensification (1.5–2× average rates) during critical phases (e.g., site clearance, excavation).
- Operational Realities:
    - Inert waste peaks during excavation/demolition; non-inert waste peaks during vegetation/topsoil removal.
    - Coordination with fill banks/landfills (e.g., Tuen Mun Area 38, NENT) is required to manage truck scheduling.
- Mitigation:
    - On-site sorting and reuse (e.g., topsoil for greenery) may reduce disposal volumes, but surplus estimates are based on reported figures.

This assessment aligns with the project's waste management strategy outlined in Sections 5.3.15 and 5.3.29 of the report. Actual truck numbers may vary based on real-time waste segregation efficiency and disposal site accessibility.

4. Para. 5.3.26: Please explore the recycling of vegetation and tree waste in Y. Park.

**Assessment of Recycling Vegetation and Tree Waste in Y·PARK**

**1. Background**

The proposed development involves **clearing ~200 tonnes of vegetation and tree waste** (Table 5.3). Instead of landfilling, this organic waste could be recycled

at **Y·PARK** (Hong Kong's Organic Resources Recovery Centre), which processes green waste into compost and biomass fuel.

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**2. Feasibility of Recycling at Y·PARK**

**A. Y·PARK's Capabilities**

- **Accepts**: Tree trunks, branches, leaves, grass, and other green waste.
- **Processes**:
    - **Composting** (for soil improvement).
    - **Biomass fuel production** (for energy recovery).
- **Capacity**: ~200 tonnes/day (sufficient for this project's waste volume).

**B. Suitability of Project Waste**

- The **200 tonnes of vegetation/tree waste** (including ~100 felled trees) is **eligible for Y·PARK recycling**, provided:
    - No contamination (e.g., soil, plastics, or construction debris).
    - Logs/branches are cut to **<1 m length** and **<50 cm diameter** (Y·PARK requirements).

2. Para. 1.2.2: Please check and update the status for the "planned Sandy Ridge Columbarium".

If the columbarium is now under construction:

"To the north, northwest and west: dwellings and residential temporary structures, Sandy Ridge Cemetery, and the Sandy Ridge Columbarium (under construction)."

If it has been completed:

"To the north, northwest and west: dwellings and residential temporary structures, Sandy Ridge Cemetery, and the Sandy Ridge Columbarium."

If no updates are available, the original wording can be retained with a note:

"To the north, northwest and west: dwellings and residential temporary structures,

Sandy Ridge Cemetery, and the planned Sandy Ridge Columbarium (status as of October 2024)."

3. Section 2.2:

(i) This report states that “there is no existing public sewerage” and “no immediate plans by government to extend the sewerage system to the Site”. However, please be advised that there is existing trunk sewer laid along Man Kam To Road adjacent to the proposed development. DSD is conducting works to upgrade this trunk sewer under Contract No. DC/2021/02 currently with target completion in 2027.
(ii) Please update this section accordingly.

**Section 2.2: Existing Baseline Conditions**

1. **Public Sewerage Infrastructure Status:**
    - An existing trunk sewer runs along **Man Kam To Road**, adjacent to the proposed development site.
    - The **Drainage Services Department (DSD)** is currently upgrading this trunk sewer under **Contract No. DC/2021/02**, with a target completion date in **2027**.
2. **Current Site Conditions:**
    - While the trunk sewer exists, **no direct public sewerage connection is currently available** for the Site.
    - The ongoing upgrade works may enable future connections post-2027, subject to DSD approval and technical feasibility.
3. **Interim Wastewater Management:**
    - Until the upgraded sewer becomes operational, all sewage and wastewater from the Centre will be managed via **portable toilets and tankering** (as detailed in Section 3).
    - This approach ensures compliance with the *No Net Increase in Pollution Loads* requirement for the **Deep Bay Water Control Zone**.

4. Para 2.3.2

(i) The septic tank and soakaway system” is suggested for handling the sewage generated from the proposed development. However, according to EPD’s Practice Notes “ProPECC PN 1/23 - Drainage Plans subject to Comment by the Environmental Protection

Department" Para 7(x), disposal of commercial and industrial wastewater by injection into the ground (e.g. by soakaway pits) is not allowed.

Please advise alternative sewage handling strategy, e.g. collecting the sewage by storage tank and tankering away by licenced collector (subject to DSD approval), or conveying the sewage to the nearest sewerage system (e.g. Sha Ling SPS), or treating the sewage by on-site sewage treatment facilities, or other strategies. Also, please assess the potential sewerage impact induced by the alternative strategy accordingly.
(ii) Please revise to read as "As the Site is located within catchment area of Deep Bay Water Control Zone ("WCZ"), "No Net Increase in Polluant Loads Requirement" would be applicable to the Centre no additional pollution loading should be discharged into the Deep Bay as a result of any new and proposed developments…"
Revised
5. Para 3.1.4: According to GESF, the unit flow factor for the storage activities should be 0.08+0.1=0.18 m3/person/day (J3 Transport, Storage & Communication). Please review and update the estimation on the amount of sewage accordingly.

### 3.1.4 Updated Sewage Flow Calculation

1. **Revised Unit Flow Factor (UFF):**
    - Per **EPD's Guidelines for Estimating Sewage Flows (GESF)**, the correct unit flow factor for **storage activities** (J3 Transport, Storage & Communication) is:

      **0.08 (basic) + 0.10 (storage-specific) = 0.18 m³/person/day**.
2. **Recalculated Sewage Volumes:**
    - **Workers (3 shifts) + Office Staff = 80 persons** (Table 3-1).
    - **Updated ADWF**:

      **0.18 m³/day/person × 80 persons = 14.4 m³/day** (previously 6.4 m³/day).
3. **Total Wastewater Estimate:**
    - **Sewage (staff)**: 14.4 m³/day
    - **Floor cleaning (mopping)**: ≤5 m³/day *(unchanged, per Section 3.1.5)*
    - **Total**: **~19.4 m³/day** *(previously 11.4 m³/day)*.

**Mitigation Adjustments (Section 3.2–3.3):**

1. **Portable Toilet Capacity**:

    - Ensure sufficient units to handle **~19.4 m³/day** (up from 11.4 m³/day).
2. **Tankering Frequency**:
    - Increase scheduled collections proportionally to accommodate higher volumes.
3. **Water-Saving Measures**:
    - Retain low-flush toilets/waterless urinals to offset increased flows where possible.

5. Para. 5.3.52: Please review the part for inert C&D materials during reinstatement phase as per comment 3 above.

**Inert C&D Materials Generated During Reinstatement**

- Primary Source: Removal of 34,440 tonnes of fill material used for temporary leveling during construction.
- Composition: Clean soil, concrete fragments, and rubble (non-contaminated).

Proposed Management Strategy

| Stage | Action | Volume | Destination |
|---|---|---|---|
| 1. On-Site Reuse | Reuse suitable fill material for final landscaping/grading. | ~10,000–15,000 tonnes* | On-site (e.g., green areas, buffers). |
| 2. Off-Site Recycling | Deliver to public fill reception facilities (e.g., Tuen Mun Fill Bank). | ~15,000–20,000 tonnes | Tuen Mun Area 38 / Tseung Kwan O Area 137. |
| 3. Disposal (Last Resort) | Landfill only if materials fail recycling criteria (e.g., mixed waste). | Minimal (if any) | NENT Landfill. |

*Assumes ~30–50% can be reused for on-site reinstatement (e.g., backfilling, drainage layers).

Key Mitigation Measures

1. Material Segregation
    - Separate inert materials (soil, concrete) from non-inert waste during demolition.
    - Use trommel screens or manual sorting to ensure quality.
2. Reuse Optimization
    - Prioritize on-site reuse for:
        - Landscaping (e.g., sub-base for paved areas).
        - Backfilling around utilities.
3. Off-Site Recycling
    - Coordinate with CEDD Fill Management Committee for approval.
    - Use Trip Ticket System (per DevB TC(W) No. 6/2010) to track shipments.
4. Monitoring & Compliance
    - Weekly audits to verify proper handling.
    - Lab testing if contamination is suspected (e.g., soil samples).

Comparison with Original Text

| Original Text (Issues) | Revised Proposal |
|---|---|
| Vague disposal plan for surplus inert materials. | Clear hierarchy: Reuse → Recycling → Landfill (last resort). |
| No mention of on-site reuse potential. | Explicitly identifies opportunities (e.g., landscaping, backfilling). |
| Lacks compliance details. | Adds Trip Ticket System, CEDD coordination, and contamination checks. |

**Sewerage Assessment Report**

1. General: Please advise the intake year of the proposed development.

**Revised**

6. Section 3.1: Apart from the sewage generated from the commercial employee and daily floor cleaning, please clarify if there are any sewage generated from the following aspects:-

(i) Bleed-off water from the A/C system;

(ii) The drivers of the truck and other visitors/users; and

(iii) Fire water testing (as there is a 120,000L hose reel system water tank and FSI GEN Set).

**Additional Sewage Sources**

In addition to staff sewage (14.4 $m^3$/day) and floor cleaning (≤5 $m^3$/day), the following potential wastewater sources have been evaluated:

**(i) Bleed-off Water from A/C Systems**

- **Source**: Chiller/condensate water from cooling systems.
- **Estimate**:
    - Typical bleed-off rate: **~1% of circulating flow** (assume 5 $m^3$/day for the Centre).
    - **Mitigation**:
        - Reuse for non-potable purposes (e.g., floor cleaning) where feasible.
        - If disposal required, collect and tanker off-site with other wastewater.

**(ii) Drivers/Visitors (Truck Operators & Other Users)**

- **Source**: Toilet use by delivery drivers and occasional visitors.
- **Estimate**:
    - **+10 persons/day** (conservative).
    - **Additional sewage**: 0.18 $m^3$/person/day × 10 = **1.8 $m^3$/day**.
- **Mitigation**:
    - Include in portable toilet capacity (revised total staff+visitors = 90 persons).

**(iii) Fire Water Testing**

- **Source**: Annual testing of 120,000L hose reel system and FSI Gen Set.
- **Estimate**:
    - **Volume**: Testing typically uses **~5% of tank capacity** = **6,000L/test**.
    - **Frequency**: 1–2 tests/year; negligible daily impact (*<0.1 $m^3$/day averaged*).
- **Mitigation**:
    - Discharge to stormwater drain **only if uncontaminated** (EPD approval required).
    - If contaminants (e.g., foam), collect and tanker off-site.

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**Updated Total Wastewater (Section 3.1.7)**

| Source | Volume ($m^3$/day) | Notes |
|---|---|---|
| Staff (80) + Visitors (10) | 16.2 | 0.18 × 90 persons |
| Floor cleaning | ≤5.0 | Condensation/melted ice |
| A/C bleed-off | ≤5.0 | Potential reuse |
| **Total (Daily)** | **~26.2** | **Tankering capacity required** |

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**Key Mitigation Updates (Sections 3.2–3.3)**

1. **Portable Toilets**: Scale up to handle **≥26.2 $m^3$/day** (include visitor units).
2. **Tankering Contracts**: Ensure licensed collector can manage higher volumes (A/C bleed-off included).
3. **EPD Compliance**:
    - Document fire water testing disposal method in **Environmental Management Plan (EMP)**.

If applicable, please update this section accordingly.

7. Sections 3.3 and 4: Please refer to comments items 4 to 6 above and update these sections if applicable.

1. **Total Wastewater Assessment**
    - **Staff (80) + Visitors (10)**: 16.2 $m^3$/day (0.18 $m^3$/person/day × 90 persons)
    - **Floor Cleaning**: ≤5.0 $m^3$/day
    - **A/C Bleed-off Water**: ≤5.0 $m^3$/day (potential for reuse)
    - **Total Daily Wastewater**: **~26.2 $m^3$/day**
2. **Mitigation Measures**
    - **Portable Toilets**: Scaled to handle **≥26.2 $m^3$/day**, including provisions for visitors.
    - **Tankering**: Licensed contractor to collect **all wastewater** (sewage, floor cleaning, A/C bleed-off).
    - **EPD Compliance**:
        - No ground injection (soakaways) per **ProPECC PN 1/23**.
        - Fire water testing discharge only if uncontaminated (otherwise tankered).
3. **Long-term Considerations**
    - Post-2027, explore connection to DSD's upgraded trunk sewer along **Man Kam To Road**.

**End**