

Application for Planning Permission
Under Section 16 of the Town Planning
Ordinance (Cap. 131) for Proposed
Sewage Treatment Plant and Organic
Waste Co-digestion Facilities at
Government Land in D.D. 117, Yuen
Long, New Territories
Supporting Planning Statement

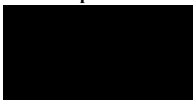
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Job number 303697

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Arup – Binnies Joint Venture

Executive Summary	1
行政摘要	1
1. INTRODUCTION	1
1.1 Purpose of the Application	1
1.2 Application Site	1
1.3 Background and Need for the Indicative Scheme	1
1.4 Structure of this Supporting Planning Statement	2
2. SITE CONTEXT	3
2.1 Site Location	3
2.2 Land Status	3
2.3 Existing Use	3
2.4 Surrounding Land Uses	3
2.5 Accessibility	4
3. PLANNING CONTEXT	5
3.1 Land Use Zoning	5
3.2 Planning History of the Application Site	5
3.3 Supporting as one of the Essential Infrastructure to Take Forward the Yuen Long South Development	5
3.4 Government's Commitment to Accelerate the Development of Northern Metropolis	6
3.5 Enhancing Construction Feasibility Through Reduced Excavation and Optimised Building Height	6
4. THE INDICATIVE SCHEME	8
4.1 General Planning and Design Principles	8
4.2 Indicative Scheme and Key Development Parameters	9
4.3 Landscape Design Framework	10
4.4 Traffic and Transport Arrangements	10
4.5 Proposed Programme	11
5. PLANNING JUSTIFICATIONS	12
5.1 Supporting for Timely Construction of the Proposed Sewage Treatment Plant and Organic Waste Co-digestion Facilities to Minimise Deep Excavation and Enhance Cost-Effectiveness	12
5.2 Responding to the Policy Address Objective of Reducing Construction Costs by Making Better Use of Existing Resources for Overall Cost-Effectiveness of Infrastructure Provision	12
5.3 Ensuring compatibility with the surrounding environment	13
5.4 Demonstrating that the Indicative Scheme would not give rise to any adverse impacts on the surrounding area	13
6. CONCLUSION	16

Figures

Figure 2.1	Location Plan
Figure 2.2	Application Site under Revised Recommended Outline Development Plan
Figure 2.3	Lot Index Plan
Figure 2.4	Existing Conditions of the Application Site
Figure 2.5	Surrounding Context of the Application Site
Figure 3.1	Extracted Covering Notes of Approved Tong Yan San Tsuen Outline Zoning Plan No. S/YL-TYST/14
Figure 3.2	Extracted Explanatory Statement of “Undetermined” Zone of Approved Tong Yan San Tsuen Outline Zoning Plan No. S/YL-TYST/14

Tables

Table 4.1	Key Development Parameters of the Indicative Scheme
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Appendices

Appendix A

Preliminary Development Layout of YLSEPP extracted from the Approved Planning Application No. A/YL-TYST/1181

Appendix B

Master Layout Plan of the Indicative Scheme

Appendix C

Working Paper on Environmental Assessment for the Indicative Scheme of the Application Site

Executive Summary

Pursuant to Section 16 (S16) of the Town Planning Ordinance (TPO) (Cap. 131), this Supporting Planning Statement is submitted to seek approval from the Town Planning Board (TPB) for Proposed Sewage Treatment Plant (STP) and Organic Waste Co-digestion Facilities (OWCF) (the Indicative Scheme) in “Undetermined” (“U”) zone at Government land in D.D. 117, Kung Um Road, Yuen Long (the “Application Site”).

The Application Site, with an area of about 10,244m², is located at the southern end of the existing Kung Um Road. It falls within “U” zone on the Approved Tong Yan San Tsuen Outline Zoning Plan No. S/YL-TYST/14 (the OZP). According to the Covering Notes of the OZP, all uses or developments within the “U” zone except those specified in the Notes require planning permission from the TPB. It also falls within the area designated for the planned ‘Government (Reserve) intended for Government Depots (with Green Building Design)’ (i.e. Site G3.1), as set out in the Revised Recommended Outline Development Plan of Yuen Long South (YLS) Development.

A previous Planning Application No. A/YL-TYST/1181, including the Application Site and the planned STP at its northern portion (i.e. collectively form the Yuen Long South Effluent Polishing Plant (YLSEPP)), was approved with conditions by the Rural and New Town Planning Committee of the TPB in 2022 (the “Approved Scheme”). Since the extent of the proposed changes in maximum Building Height (BH) between the Southern Portion of the Approved Scheme (+38.5mPD) and the Indicative Scheme (+53mPD) under this Planning Application is beyond Class A or Class B amendments as specified in the Town Planning Board Guidelines for Class A and Class B Amendments to the Approved Development Proposals (TPB PG-No. 36C), a fresh S16 Planning Application is required. The Indicative Scheme would follow the committed planning gains and design merits in the Approved Scheme, subject to the detailed design by the future contractor.

The Indicative Scheme comprises 12 structures, with non-domestic Gross Floor Area of about 3,200m² and a maximum BH of +53mPD for processing an average dry weather sewage flow of about 65,000m³ per day and 100 wet tonnes of pre-treated food waste per day. Under the proposed maximum BH, the extent of underground works required will be reduced, which could minimise deep excavation to save associated construction, operational, and maintenance costs, and also support the timely delivery of the proposed YLSEPP for future population intake.

The Indicative Scheme would achieve the following planning merits:

- Supporting the accelerated and efficient development of the Northern Metropolis by facilitating the timely construction of the proposed YLSEPP to meet prevailing and anticipated development needs;
- Responding to the Policy Address objective of reducing construction costs by making better use of existing resources for overall cost-effectiveness of infrastructure provision;
- Ensuring compatibility with the surrounding environment; and
- Demonstrating that the Indicative Scheme would not give rise to any adverse impacts on the surrounding area.

The Application includes an Indicative Scheme, which is non-binding and it would be subject to the detailed design by the future contractor. The Indicative Scheme is adopted for technical assessment purpose to ensure future design flexibility, while confirming that it is technically feasible with no adverse impacts to the surrounding.

In light of the planning merits and justifications put forward in the Supporting Planning Statement, we sincerely seek the favourable consideration from the TPB to grant approval to this well-justified S16 Planning Application.

行政摘要

（內容如有任何差異，應以英文內文為準）

根據《城市規劃條例》（第 131 章）第 16 條，申請人現向城市規劃委員會（城規會）就位處元朗公庵路丈量約份第 117 約政府土地的「未決定用途」地帶（申請地點）擬議污水處理廠及有機資源共消化設施（指示性方案）申請規劃許可。

申請地點面積約為 10,244 平方米，位於現有公庵路的南端，於唐人新村分區計劃大綱核准圖編號 S/YL-TYST/14（大綱圖）內劃為「未決定用途」地帶。根據大綱圖內的《註釋》，在「未決定用途」地帶內，除部分所載的用途或發展外，所有其他用途或發展必須向城規會申請許可。申請地點亦於元朗南發展經修訂的建議發展大綱圖內劃為「政府用地（儲備）計劃用作政府維修中心（綠色建築設計）」地帶（即 G3.1 用地）。

城規會轄下鄉郊及新市鎮規劃小組委員會於 2022 年在有條件下批准一宗先前申請（申請編號 A/YL-TYST/1181），於是次申請地點及其北面的地段擬議污水處理廠及有機資源共消化設施（即共同組成元朗南淨水設施）並略為放寬建築物高度限制（已批准方案）。鑑於已批准方案（主水平基準上 38.5 米）與是次申請的指示性方案（主水平基準上 53 米）之間擬議最高建築物高度的改動幅度已超出城市規劃委員會規劃指引《對核准發展計劃作出 A 類及 B 類修訂》（TPB PG-No. 36C）所界定的 A 類或 B 類修訂範圍，因此須提出一宗新的規劃許可申請。指示性方案會保留已批准方案中的規劃增益及設計優點，並有待未來承建商作詳細設計。

指示性方案設 12 座建築物，其非住用樓面面積為約 3,200 平方米，而最高建築物高度為主水準基準上 53 米。擬議發展能處理每日約 65,000 立方米的平均旱季污水流量，以及約 100 公噸預處理廚餘。在擬議的最高建築物高度下，所需的地庫工程範圍得以縮減，不但減少深開挖工程，節省相關的建造、營運及維修成本外，亦有助及時落成元朗南淨水設施，配合未來人口的接收。

指示性方案具有以下規劃優點：

- 透過促進擬議淨水設施的及時建設，以滿足現時及預期的發展需要，支持北部都會區的加快及高效發展；
- 回應《施政報告》降低建造成本的政策目標，更有效善用現有資源，提升基礎設施的整體成本效益；
- 確保與周邊環境相容；以及
- 展示指示性方案不會對周邊地區造成任何不良影響。

是次申請包括一份指示性方案，擬定為不具約束力，有待未來承建商作詳細設計以確保未來設計的靈活性。同時透過進行各項技術評估，確認指示性方案在技術上是可行，並不會對周邊環境造成不利影響。

基於上述提出的規劃增益和理據，我們懇請城規會批准是次規劃申請。

1. INTRODUCTION

1.1 Purpose of the Application

- 1.1.1 This S16 Planning Application is to seek approval from the Town Planning Board (TPB) under Section 16 (S16) of the Town Planning Ordinance (TPO) for the Proposed Sewage Treatment Plant (STP) and Organic Waste Co-digestion Facilities (OWCF) (i.e. Part of the YLSEPP) in “Undetermined” (“U”) zone of the Approved Tong Yan San Tsuen Outline Zoning Plan No. S/YL-TYST/14 (the OZP) at Government Land in D.D. 117, Kum Um Road, Yuen Long (the “Application Site”).

1.2 Application Site

- 1.2.1 The Application Site, with an area of about 10,244m², is located at the southern end of the existing Kung Um Road. The Application Site is currently occupied by open storage, industrial workshop and warehouse with temporary structures.

1.3 Background and Need for the Indicative Scheme

- 1.3.1 To take forward the implementation of the Yuen Long South Effluent Polishing Plant (YLSEPP) and support the development at Yuen Long South (YLS) and surrounding area, Drainage Services Department (DSD) commenced an Investigation Study under Agreement No. CE 6/2019 (DS) “Hung Shui Kiu Effluent Polishing Plant and Yuen Long South Effluent Polishing Plant - Investigation” to carry out the investigation and preliminary design of YLSEPP. Upon the Investigation Study, the capacity of the YLSEPP has been revised to 65,000m³/day to provide holistic sewage treatment and disposal for the region.
- 1.3.2 Accordingly, a previous Planning Application No. A/YL-TYST/1181, including the Application Site and the planned YLSEPP at its northern portion involving the proposed OWCF and minor relaxation of maximum Building Height (BH), was approved with conditions by the Rural and New Town Planning Committee (RNTPC) of the TPB in 2022 (the “Approved Scheme”).
- 1.3.3 Under the further design development under Agreement No. CE 1/2023(DS) “Yuen Long South Effluent Polishing Plant – Design and Construction” with more geotechnical information obtained, it is noted that the Application Site is underlain by a relatively high rockhead level of about +20mPD. As a result, the extensive deep excavation under the Southern Portion of the Approved Scheme would be required for basement construction, which would involve complex temporary works and structural support systems, and would increase technical demands, construction risks as well as time impact.
- 1.3.4 In light of the refined technical findings, an Indicative Scheme with the proposed maximum BH of +53mPD would reduce reliance on deep underground construction and provide greater design flexibility. By accommodating more facilities above ground, the need for extensive excavation can be minimised, leading to improved construction efficiency and reduced costs associated with basement works, long-term operation, and maintenance.

- 1.3.5 Since the extent of the proposed changes in maximum BH between the Southern Portion of the Approved Scheme (+38.5mPD) and the Indicative Scheme (+53mPD) is beyond Class A or Class B amendments specified in the Town Planning Board Guidelines for Class A and Class B Amendments to the Approved Development Proposals (TPB PG-No. 36C), a fresh S16 Planning Application is required. The Indicative Scheme would follow the committed planning gains and design merits in the Approved Scheme from traffic, environmental, sewerage, drainage, landscape and visual aspects.
- 1.3.6 The YLSEPP is considered necessary and essential in catering the sewage treatment needs of the future development in YLS and surrounding area. The Indicative Scheme represents an efficient approach by making optimal use of existing resources, thereby enabling earlier delivery of infrastructure and enhancing overall cost-effectiveness of public works in accordance with the Policy Address objective of reducing construction costs. Approval of the S16 Planning Application would facilitate timely project delivery, contribute to overall cost savings, and support the expeditious implementation of the YLSEPP in line with the Government's objectives.

1.4 Structure of this Supporting Planning Statement

- 1.4.1 The structure of this Supporting Planning Statement is as below:
- **Section 2** provides information of the Application Site and its site context;
 - **Section 3** explains the planning context of the Application Site;
 - **Section 4** details the Indicative Scheme, key development parameters, and design considerations;
 - **Section 5** illustrates various planning justifications in support of this Planning Application; and
 - **Section 6** concludes the whole Supporting Planning Statement.
- 1.4.2 We sincerely seek favourable consideration from the TPB to grant approval to this well-justified S16 Application.

2. SITE CONTEXT

2.1 Site Location

- 2.1.1 The Application Site, with an area of about 10,244m², is situated at the southern end of YLS Development Area adjacent to the roundabout of Kung Um Road. The Application Site also falls within the planned Government (Reserve) intended for Government Depots (i.e. Site G3.1), as set out in the Revised Recommended Outline Development Plan (RODP) of YLS Development.
- 2.1.2 Please refer to **Figure 2.1** for the location of the Application Site on the OZP (the Application Site boundary is for identification purpose only, subject to change(s) as required by relevant Government department(s)) and **Figure 2.2** for the Revised Recommended Outline Development Plan (RODP) of YLS Development.

2.2 Land Status

- 2.2.1 Private lands with the Application Site were reverted to the Government (Reversion Date: 21 May 2025). The Application Site comprises Government Lands (GL) allocated by the Civil Engineering and Development Department (CEDD) under Simplified Temporary Land Allocation (STLA) TYL No. 885 and STLA-TYL 776 for site formation and infrastructural works under YLS Second Phase Development. Please refer to **Figure 2.3** for the lot index plan of the Application Site.

2.3 Existing Use

- 2.3.1 Please refer to **Figure 2.4** for the existing conditions of the Application Site.

2.4 Surrounding Land Uses

- 2.4.1 Existing developments in the surroundings mainly comprise of brownfield operations with temporary structures, such as warehouses, open storage and industrial workshop spaces.
- 2.4.2 To the **immediate east** of the Application Site is used for brownfield operations in the “Other Specified Uses” annotated “Rural Use” (“OU(Rural Use)”) zone. To the **further east** of the Application Site is an “Agriculture” (“AGR”) zone.
- 2.4.3 To the **immediate south** and **west** of the Application Site are the landscaped foothills of Kung Um Shan, predominated by woodland/shrubland intermixed with graves, paths and a temple within “Conservation Area” (“CA”) and “Green Belt” (“GB”) zones.
- 2.4.4 To the **immediate north** of the Application Site is a permitted STP under Application No. A/YL-TYST/1181 approved by the RNTPC of the TPB on 14.10.2022. To the **further north** is a cluster of brownfield operations in “U” zone.
- 2.4.5 Please refer to **Figure 2.5** for surrounding land uses of the Application Site.

2.5 Accessibility

- 2.5.1 At present, the Application Site is accessible from Kung Um Road via local roads. Kung Um Road is a single two-lane carriageway rural road (two way) connecting Yuen Long South area with Shap Pat Heung Road and Ma Tong Road and is running along the existing Yuen Long Nullah.
- 2.5.2 Along the northbound of Kung Um Road, there is a Green Minibus (GMB) route No. 39 act as the feeder service between Kung Um Road and Yuen Long Station. During the construction and operation stage of the Indicative Scheme, this GMB route service will be maintained at all times.

3. PLANNING CONTEXT

3.1 Land Use Zoning

- 3.1.1 The Application Site falls within an area zoned “U” on the OZP. According to the covering Notes of the OZP, all uses or developments within the “U” zone except those specified in the Notes require planning permission from the TPB. Hence, a S16 application to seek the planning permission from the TPB for the Indicative Scheme is submitted.
- 3.1.2 The planning intention of the “U” zone is elaborated in the Explanatory Statement (ES) of the OZP, which is to “*cater for the continuing demand for open storage which cannot be accommodated in conventional godown premises*”. Yet as mentioned in the ES, “*Kung Um Road is insufficient to cater for the heavy goods vehicular traffic generated from the proposed development*”, and “*under the YLS Study, this area falls within the remaining stages of the YLS Development and the existing operations would be gradually phased out in stages*”. Meanwhile, it is also specified in the ES that “*any proposed developments within the zone should demonstrate that they will not have significant traffic, drainage and environmental impacts on the area and should propose adequate infrastructure for approval by the TPB*”.
- 3.1.3 Please refer to **Figures 3.1 and 3.2** for the extracted Covering Notes and ES of the current OZP in relation to the subject “U” zone respectively.

3.2 Planning History of the Application Site

- 3.2.1 The Application Site under this Section 16 Application (**Appendix A** refers) is part of a previous planning application (No. A/YL-TYST/1181) for proposed STP and OWCF with minor relaxation of building height restriction (BHR) which was approved with conditions by the RNTPC of the TPB on 14 October 2022. It covers a larger land area of about 4.6 hectares for construction and operation of the entire YLSEPP with addition of OWCF. The maximum BHR under the previous planning application was +38.5mPD and +40mPD for the Application Site and the adjacent STP to the north of the Application Site zoned as “OU(STW)” under the same OZP respectively. The permission of the approved planning application is valid until 14 October 2026.

3.3 Supporting as one of the Essential Infrastructure to Take Forward the Yuen Long South Development

- 3.3.1 To meet the housing land demand, the Chief Executive announced in 2011-2012 Policy Address to explore the possibility of converting about 150 hectares of agricultural land at the North District and Yuen Long into residential use. As the third New Development Area project, the southern portion of the Yuen Long New Town was examined as one of the potential areas in the “Planning and Engineering Study for Housing Sites in Yuen Long South – Investigation” under Agreement No. CE 35/2012 (CE) in November 2012.

- 3.3.2 The RODP with a total planned population of about 88,000 and planned new housing flats of about 28,500 was promulgated under the Study in August 2017. Aiming at optimising the development intensity in response to public views, the RODP was further revised in May 2020 with intensified population of about 101,200 and planned new flats of about 32,850. In this regard, a new local sewage treatment works at the southern end of YLS Development was proposed to accommodate the anticipated rising population with increased sewage flow projection.
- 3.3.3 In response to the evolving planning circumstances and infrastructure capacities, the Application Site has been suitably identified for accommodating an enhanced treatment capacity to meet the projected increase in sewage demand arising from the potential intensification of the YLS Development as well as the proposed OWCF under the previous planning application (No. A/YL-TYST/1181).

3.4 Government's Commitment to Accelerate the Development of Northern Metropolis

- 3.4.1 In response to Hong Kong's growing population, evolving economic structure and long-term land supply needs, the Government promulgated the Northern Metropolis (NM) Development Strategy in the 2021 Policy Address, establishing the NM as a new strategic growth engine for Hong Kong. Building on this foundation, the NM Action Agenda announced in 2023 sets out a clear implementation-oriented framework to accelerate development through enhanced coordination, streamlined processes and capacity-creating infrastructure provision. The NM is envisioned to be a major international innovation and technology city integrated with high-end professional services and cross-boundary economic activities, providing about 3,000 hectares of new development land and accommodating a population of approximately 2.5 million. Consistent with the latest policy direction emphasising expeditious delivery, cost-effectiveness and prudent use of public resources, the Government is committed to advancing the NM through more efficient planning, optimised development parameters and timely provision of essential infrastructure to support the future population intake and economic growth.
- 3.4.2 As one of the key new development areas within the NM, YLS forms an integral part of the "High-end Professional Services and Logistics Hub", strategically connecting with the HSK/HT NDA and the wider NM through planned transport infrastructure, including the Green Transit System. While YLS is primarily planned as a major housing supply to support the NM's target population, its successful and timely development is contingent upon the parallel delivery of essential supporting infrastructure. In line with the policy objectives outlined in the Chief Executive's 2025 Policy Address, a streamlined, efficient and value-for-money approach to infrastructure provision, including the YLSEPP, is critical to facilitate orderly development, optimise land and infrastructure resources, and ensure that YLS can effectively support accelerated development and early population admission within the NM.

3.5 Enhancing Construction Feasibility Through Reduced Excavation and Optimised Building Height

- 3.5.1 Under the Approved Scheme, the prevailing BHR restricted the height of the proposed facilities of the Application site, leading to the need of underground excavation during

construction. As the Study has progressed, more detailed design development, cost estimation, and geotechnical assessments have been undertaken. These assessments have identified that the Application Site is potentially underlain by a relatively high rockhead level of about +20mPD.

- 3.5.2 In this regard, undertaking underground excavation into hard rock to comply with the BHR under the Approved Scheme would involve substantial technical challenges. Such construction works would complex temporary works and structural support systems, thereby significantly increasing construction complexity, risks and overall costs associated with deep excavation in hard rock conditions.
- 3.5.3 Conversely, the presence of competent hard rock strata also presents an opportunity from a structural perspective, as it provides a stable and reliable founding medium. The proposed facilities can be supported by raft foundations bearing directly on the hard rock, thereby avoiding the need for excessive excavation while maintaining structural integrity.
- 3.5.4 In light of the refined technical findings and above considerations, an Indicative Scheme with the proposed maximum BH of +53mPD is put forward to reduce reliance on deep underground construction and allow greater design flexibility. By accommodating more of the development above ground, the extent of excavation can be minimised, resulting in improved construction efficiency and cost-effectiveness, as well as facilitating more practical long-term operation and maintenance.

4. THE INDICATIVE SCHEME

4.1 General Planning and Design Principles

- 4.1.1 **Supporting the Future Developments in Yuen Long South and Surrounding Areas** – In view of the potential population intensification of the YLS Third Phase Development and other nearby interface projects according to Revised RODP, the YLSEPP will serve as an essential infrastructure to meet the projected sewerage demand. The proposed STP and OWCF will supplement the capacity of the northern STP set out in the Approved Scheme, and provide adequate facilities to accommodate holistic sewage treatment, disposal and food waste recycling operations for the YLS area and wider context.
- 4.1.2 **Adopting an Optimal Design for the Indicative Scheme** – Under Southern Portion of the Approved Scheme, the maximum BH for the facilities at the Application Site is set at +38.5mPD with associated underground construction works. However, upon conducting the ground investigation, a high rockhead of about +20mPD and an interfacing retaining wall were estimated, and the site constraints limit the extent of feasible excavation works. Hence, the proposed maximum BH of +53mPD is sought for ensuring accommodation of necessary facilities to manage the projected sewage flow, along with the optimal design of same development footprint and scale designated in the Approved Scheme for minimising nuisances to the surrounding environment.
- 4.1.3 **Ensuring Compatibility with the Surrounding Rural Areas** – The Application Site is situated at the rural fringe area, which is currently occupied by brownfield operations with temporary structures, such as warehouses, open storage and industrial workshop spaces, and vegetated lands. In consideration of respecting the existing and planned low-rise contexts in the area, the BH for the Indicative Scheme is set at not more than +53mPD, which remains below the recommended BH of +55mPD for the area designated for the planned ‘Government (Reserve) intended for Government Depots (with Green Building Design)’ (i.e. Site G3.1) in the Revised RODP and seamlessly blend in with the adjacent existing and planned developments.
- 4.1.4 **Enhancing Safety, Cost-effectiveness and Environmentally-friendliness in Construction** – In light of the site constraints outlined in **Section 4.1.2**, deep excavation works for the proposed STP and OWCF will be reduced under the Indicative Scheme with the maximum BH of +53mPD, which could reduce potential flooding risks during the construction and operational stages. Additionally, less complex excavation procedure could achieve savings in capital, operation and environmental costs, and shorten the overall construction period by approximately 10 months to support the timely completion of YLSEPP to accommodate the future population intake.
- 4.1.5 **Improving the Locality with Visual and Landscape Mitigation Measures** – Various mitigation measures for the Application Site will remain unchanged as committed in the Southern Portion of the Approved Scheme to minimize potential visual and landscape impacts. The measures include provisions of roadside and amenity planting, enhancement of landscape buffer and control of night-time lighting glare.

4.2 Indicative Scheme and Key Development Parameters

- 4.2.1 To allow optimum use of the Application Site and design flexibility, the Indicative Scheme at the Application Site is proposed to be subject to a maximum BHR of +53mPD without changing other key development parameters for proposed OWCF and STP. Based on the general planning and design principles presented above, an Indicative Scheme has been prepared to demonstrate the technical feasibility. The Indicative Scheme would follow the committed planning gains and design merits in the Southern Portion of the Approved Scheme which will be subject to the detailed design by the future contractor. The Indicative Scheme is solely for technical assessment purpose in order to ensure future design flexibility.
- 4.2.3 The Indicative Scheme consists of four sludge digesters, two portals, two biogas holders, one waste gas burner, one biogas pre-treatment facility, one pre-treated food waste reception facility with deodorisation units and one tank facility within the Application Site. An at-grade carpark with 35 private car parking spaces and 12 loading/unloading bays for heavy goods vehicles will be shared with the adjacent STP to the north of the Application Site as committed in the Approved Scheme. The key development parameters of the Indicative Scheme and the comparison with the Southern Portion of the Approved Scheme are summarised in **Table 4.1**.

Table 4.1 Key Development Parameters of the Indicative Scheme

Development Parameters	Southern Portion of the Approved Scheme (a)	Indicative Scheme (b)	Differences (b) - (a)
Site Area (about) ^[1]	10,579m ²	10,244m ²	-335m ² (-3%)
Non-Domestic Gross Floor Area (about)	3,200m ²	3,200m ²	No change
Maximum Building Height (at main roof)	+38.5mPD	+53mPD	+14.5m (+38%)
Design Capacity			
- Sewage Treatment Plant	65,000m ³ /day average dry weather flow	65,000m ³ /day average dry weather flow	No change
- Organic Waste Co-digestion Facilities	100 wet tonnes of pre-treated food waste/day	100 wet tonnes of pre-treated food waste/day	No change
No. of Structures	9	12	+3 (+33%)
Car Parking Spaces			
- Private Car Parking Spaces ^[2]	35	35	No change
Loading/Unloading Bays			
- Heavy Goods Vehicles (HGVs) ^[2]	12	12	No change

Remarks:

- ^[1] The Application Site boundary is for identification purpose only, subject to change(s) as required by relevant Government department(s).
- ^[2] The 35 nos. of car parking spaces and 12 nos. of loading/unloading bays will be provided within the Application Site and the adjacent STP.

4.2.4 Please refer to **Appendix B** for the Master Layout Plan of the Indicative Scheme.

4.3 Landscape Design Framework

4.3.1 The Application Site is currently held under the STLA-TYL No. 885 and STLA-TYL No. 776 for site formation and infrastructural works associated with the Yuen Long South (YLS) New Development Area (NDA) Second Phase Development by CEDD. All the existing trees within the Application Site will be felled as part of the approved site formation works by YLS NDA Second Phase Development project. Such removal of existing trees will be addressed and compensated separately outside the Application site under the YLS NDA Second Phase Development project¹. For clarity, at the effect of this S16 Application, i.e., upon handover of the Application Site from CEDD, no existing trees would present within the Application Site by that time. Landscape mitigation requirements would not be substantially changed due to this Application and would follow the requirements stipulated in the EIA, unless further revised.

4.3.2 Tree planting will be proposed as mitigation measures, subject to the contractor's detailed design and the requirements stipulated in the relevant Environmental Permit. The landscape design will be guided by the following objectives:

- Provide a quality and sustainable environment with adequate landscape area for the enjoyment of the future users of the Indicative Scheme;
- Provide sufficient landscape treatment along the boundary to minimise the potential visual impact of the built form;
- Incorporate new trees and shrubs to enhance the greenery; and
- Fully integrate the landscape with the architecture where each exterior component draws upon the merits of the corresponding interior/ building component.

4.4 Traffic and Transport Arrangements

4.4.1 **Vehicular and Pedestrian Access** – Based on the Indicative Scheme for the technical assessment purposes, the vehicular ingress/egress will be provided at the northeastern part of the Application Site, connecting to the existing Kung Um Road. In terms of circulation, clear separation between vehicular and pedestrian flows is proposed to ensure safety and operational efficiency. Vehicular access is confined to designated ingress and egress points at the ground level, serving car parking and loading/unloading areas without interfering with pedestrian movement.

4.4.2 **Internal Transport Facilities** – All necessary ancillary traffic facilities, such as car parking and loading/unloading bays will be provided in accordance with the requirement

¹ Based on the latest available information, there is no Old and Valuable Tree (OVT), Trees of Particular Interest (TPI) or trees with individual trunk(s) over 750mm Diameter at Breast Height (DBH) identified within the Application Site.

under the HKPSG. The access roads within the Application Site are designed to provide access to the proposed facilities for operation and maintenance purposes.

4.5 Proposed Programme

- 4.5.1 The Indicative Scheme at the Application Site is anticipated to be completed by Q3 2033, subject to the progress of tendering invitation and construction works. The Government endeavours to commence the tendering works for the YLSEPP in 2026. As such, the timely submission and approval of this S16 Planning Application will facilitate the tendering works and expedite the development of YLSEPP.

5. PLANNING JUSTIFICATIONS

5.1 **Supporting for Timely Construction of the Proposed Sewage Treatment Plant and Organic Waste Co-digestion Facilities to Minimise Deep Excavation and Enhance Cost-Effectiveness**

5.1.1 Ground investigation works during the Study have confirmed that the rockhead level across the Application Site is substantially higher than previously anticipated, at about +20mPD, thereby imposing significant physical constraints on extensive excavation works. The close proximity of the rockhead to existing ground level, coupled with interfacing constraints such as the CEDD-constructed retaining wall, limits the feasibility of deep excavation and associated excavation-and-lateral-support (ELS) works. In response to these site-specific constraints, a minor relaxation of the BHR from the Southern Portion of the Approved Scheme is considered necessary to facilitate an optimised design adopting shallow foundations founded directly on the rockhead. This approach enables more effective utilisation of on-site conditions, eliminates the need for deep excavation, reduces geotechnical and flooding risks, avoids disturbance to adjoining formation works, and ensures a safe and practicable construction methodology.

5.1.2 The omission of major excavation works will deliver clear and substantial programme, safety, and cost benefits. Disposal of excavated materials would otherwise be wholly dependent on the existing Kung Um Road access, which is further affected by the ongoing Yuen Long South NDA road widening works, giving rise to unacceptable logistical constraints and programme risk. By adopting a shallow foundation strategy, these risks are decisively avoided. The Indicative Scheme is estimated to shorten the construction programme by approximately 10 months, obviate the need for complex and high-risk ELS systems, and materially reduce safety hazards during construction. Overall, the Indicative Scheme makes demonstrably better use of existing ground conditions and infrastructure, achieves significant cost savings through the avoidance of unnecessary works, and represents a prudent and responsible use of public resources. Thus, this S16 Planning Application supports the Policy Address objective of reducing construction costs while ensuring timely project delivery to meet the future population intake.

5.2 **Responding to the Policy Address Objective of Reducing Construction Costs by Making Better Use of Existing Resources for Overall Cost-Effectiveness of Infrastructure Provision**

5.2.1 As discussed in **Section 3.4**, the latest Chief Executive's 2025 Policy Address emphasised the need to enhance efficiency and reduce construction costs through innovation, streamlined delivery and better utilisation of resources. In particular, the Policy Address advocated streamlining and expediting development and construction processes for major infrastructure projects, including those projects in the Northern Metropolis, improving project delivery efficiency through modernised construction methods, as well as making better use of land and existing infrastructure resources to ensure value-for-money and prudent use of public finances under tighter fiscal conditions.

- 5.2.2 In response to these policy objectives, the Indicative Scheme, adopting a proposed maximum BH of +53mPD, minimises the extent and depth of underground excavation works, thereby enhancing construction efficiency and facilitating timely project delivery. This approach supports cost-effective infrastructure provision and prudent public expenditure while ensuring that essential facilities can be delivered efficiently to meet development needs.

5.3 Ensuring compatibility with the surrounding environment

- 5.3.1 The Indicative Scheme has been ensured with compatibility with the surroundings, which are characterised by a cluster of brownfields and low-density residential developments. The Indicative Scheme adopts a total of maximum BH of +53mPD which remains below the recommended BH of +55mPD stipulated in the Revised RODP. By respecting the overall development intensity of the YLS area, the Indicative Scheme will integrate seamlessly with the surrounding developments and be fully compatible with the townscape of YLS area.

5.4 Demonstrating that the Indicative Scheme would not give rise to any adverse impacts on the surrounding area

- 5.4.1 Based on the Indicative Scheme formulated for technical assessment purposes with no substantial changes on part of Site OU3.3 of the approved Planning Application No. A/YL-TYST/1181, various assessments have been conducted to ascertain the acceptability of the Indicative Scheme.

Traffic Impact

- 5.4.2 The Indicative Scheme is situated at the southern end of Kung Um Road and its construction works should not require major traffic diversion or affect any existing right-of-way. Traffic generation at construction stage will be temporary and limited to small number of vehicles delivering plant and construction materials. Long-term traffic generation will consist of visits by DSD's maintenance vehicles with an approximate frequency of 10 vehicles per hour for AM / PM peak in general subject to future operation needs based on the design by the DBO contractor.
- 5.4.3 With much smaller YLSEPP traffic flow generation compared and the YLS NDA project by CEDD planned road improvement works, such improvement works adjacent to the site will mitigate the major traffic impact, resulting in the anticipation that the traffic impacts under the Agreement No. CE 1/2023 (DS) on the Kung Um Road during both construction and operation stages of the Indicative Scheme are minimal.

Environmental Impact

- 5.4.4 This Planning Application aims to relax building height restriction from +38.5mPD to +53mPD for greater design flexibility. The Indicative Scheme layout is for indicative purpose only, which is subject to change in the detailed design stage. Referring to **Appendix C**, below outlined key aspects of description on environmental perspective related to this height restriction relaxation.

- 5.4.5 As demonstrated in the Indicative Scheme and considering also no substantial changes in part of Site OU3.3 in the previous approved Planning Application No. A/YL-TYST/1181, potential vehicular emission impact on the Indicative Scheme is not anticipated with the incorporation of appropriate design measures, including sufficient setback from the adjacent roads. With no existing and planned industrial emission identified within 200m from the Indicative Scheme, no adverse air quality impact due to chimney emission under the Agreement No. CE 1/2023 (DS) is anticipated. As demonstrated in the Indicative Scheme, the current planning application focuses solely on building height relaxation and all design details are indicative in nature. During the construction phase, potential noise and dust impacts may arise from typical construction activities. However, the proposed building height relaxation reduces the need for deep excavation works, thereby lowering dust generation potential and associated vehicle movements. With the implementation of mitigation measures proposed in the EIA, including but not limited to dust suppression practices and the use of quieter plant, no adverse environmental impacts during construction are anticipated.
- 5.4.6 The use of powered mechanical equipment during the construction phase is expected to generate noise impacts on the nearby NSRs. However, with the adoption of quieter construction plant and the provision of noise barriers and/or enclosures, the construction noise impacts can be effectively mitigated. No adverse noise impact from fixed plant operation under the Agreement No. CE 1/2023 (DS) is anticipated. During the operational phase, no additional air pollutant emission sources are introduced under this submission, and no adverse air quality impact is anticipated. Any confirmed design, including emission sources and layout that may result in material changes compared with the EIA, will be subject to further environmental review and assessment, including cumulative impacts and the implementation of mitigation measures where necessary, to ensure compliance with relevant requirements.

Sewerage Impact

- 5.4.7 The Sewerage Impact Assessment (SIA) conducted to evaluate the potential sewerage impact under the Agreement No. CE 1/2023 (DS) to the sewerage system by comparing the latest projected sewage flow to be received by YLSEPP with its treatment capacity. Considering the capacity of sewage flow increment due to the planned treatment capacity for updated population and land use pattern as per Final Revised RODP, and nearby interface projects entering YLS sewerage system, no adverse sewage impact on the existing sewerage system is anticipated upon the completion of the YLSEPP. For other environmental aspects, no additional impacts are anticipated arising from the proposed building height relaxation. Any subsequent detailed design under the Design-Build-Operate (DBO) arrangement will be subject to further environmental review, where required, to ensure full compliance with applicable legislation, standards, and guidelines. Overall, the proposed building height relaxation will not result in any material change in environmental impacts compared with those assessed in the approved EIA.
- 5.4.8 In light of the above, no adverse sewerage impact on the existing sewerage system is anticipated with reference to those outlined in the accepted SIA under the Approved Scheme.

Drainage Impact

- 5.4.9 An updated Drainage Impact Assessment was conducted to evaluate the potential drainage impact under the Agreement No. CE 1/2023 (DS) based on the latest design parameters as suggested in the Stormwater Design Manual (SDM) to ensure the proposed works not to cause an unacceptable increase in the risk of flooding in areas upstream of, adjacent to or downstream of the proposed works both during construction and at permanent condition. No adverse impacts on the planned drainage systems are anticipated with reference to the updated DIA for the YLS area.

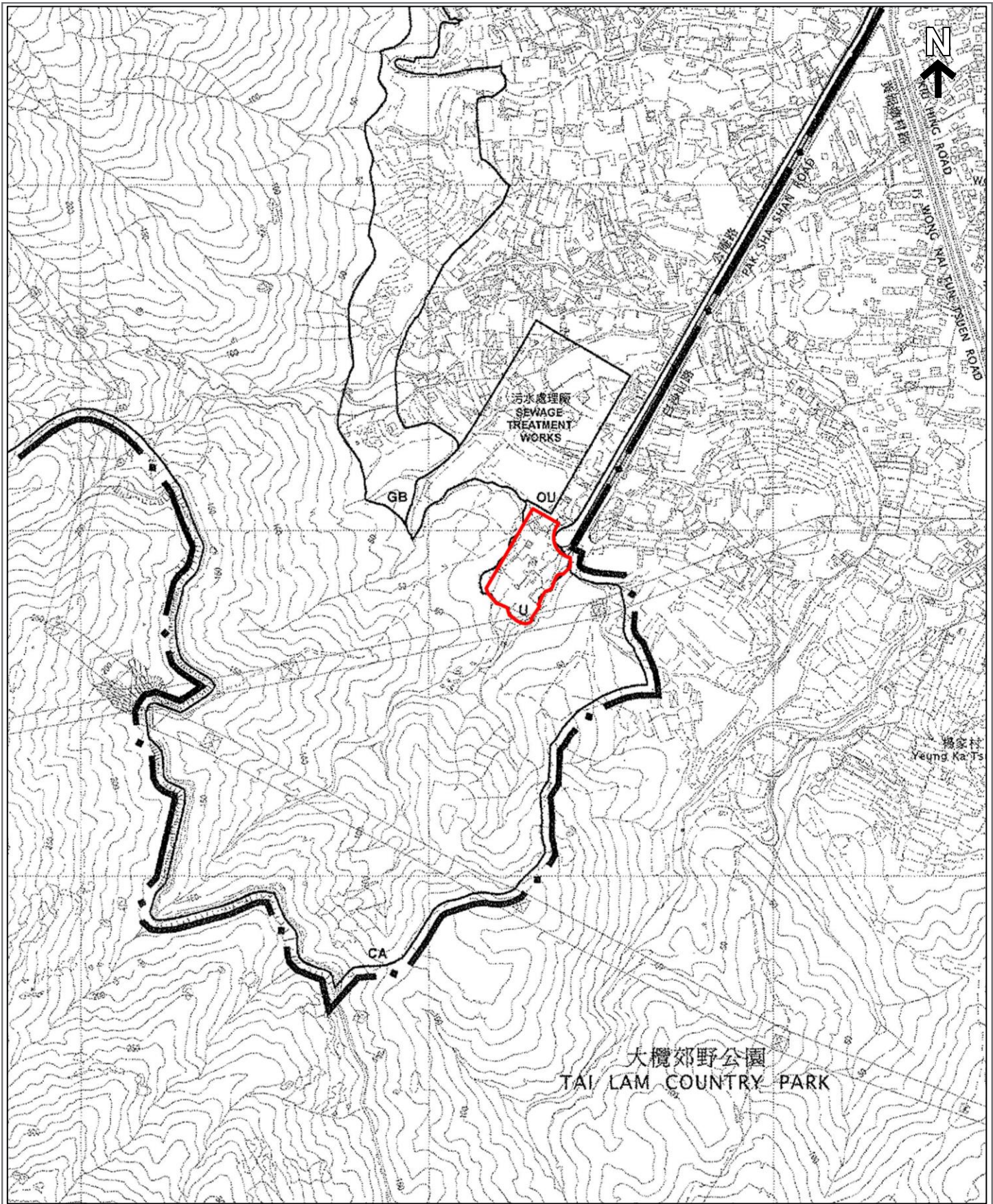
Visual Impact

- 5.4.10 The Indicative Scheme maintains the overall visual character of the surrounding environment, which is shaped primarily by the channel corridor, existing vegetation, the rural fringe setting, and the distant natural backdrop. While the proposed maximum BH of the Indicative Scheme (+53mPD), introduces a modest increase in BH (+14.5mPD) when compared to that of the Southern Portion of the Approved Scheme (+38.5mPD), the built form of the Indicative Scheme remains visually contained and continues to be perceived as a compact development element within the landscape. The incremental height difference results in only minor changes to visual composition and negligible additional obstruction of distant hillside or sky views. Key visual resources, including natural backdrops, vegetation, and open-sky components, are largely preserved, and the overall landscape character remains intact. As such, the Indicative Scheme does not give rise to any material impact in terms of visual composition, visual obstruction, or the retention of key visual elements.
- 5.4.11 Public views are similarly unaffected in any significant manner. The surrounding viewing population generally experiences transient, corridor-based or long-range views, and the minor increase in perceived building scale does not materially alter the visual experience or the development's compatibility with the surrounding rural and natural context. With the implementation of proposed mitigation measures, including strengthened landscape buffers, enhancement of existing vegetation, and strict control of night-time lighting, the limited visual effects would be further softened and effectively managed. Having regard to the modest extent of change and the adequacy of mitigation, the Indicative Scheme is assessed to result in no significant visual impact. Therefore, the Indicative Scheme is fully acceptable in visual terms.
- 5.4.12 Findings of all technical assessments have demonstrated that the Indicative Scheme will NOT bring in any adverse impact on the surroundings nor itself susceptible to unacceptable environmental qualities.

6. CONCLUSION

- 6.1.1 This S16 Planning Application is to seek approval from the TPB under S16 of the TPO (Cap. 131) for Proposed STP and OWCF at “U” zone of the Approved Tong Yan San Tsuen OZP No. S/YL-TYST/14.
- 6.1.2 This Supporting Planning Statement demonstrates the Indicative Scheme as a proactive step taken by Government to expedite the development of sewage and food waste treatment for accommodating the needs of the future population intake of the Development of YLS and surrounding areas. The Indicative Scheme not only responds to the Government’s efforts to save the overall cost, but also takes forward to serve the future population and land use development as per Revised RODP.
- 6.1.3 An Indicative Scheme based on the proposed YLSEPP with a maximum BH of +53mPD is formulated for the purpose of technical assessments. It is intended to be non-binding to ensure future design flexibility, while demonstrating the technical feasibility of the Indicative Scheme. Based on the findings from various technical assessments, it has been confirmed that no adverse impacts in terms of traffic, environmental, sewerage, drainage, landscape and visual is anticipated.
- 6.1.4 In light of the planning merits and justifications put forward in this Supporting Planning Statement, we sincerely seek favourable consideration from the TPB to give support to this S16 Planning Application.

Figures



LEGEND

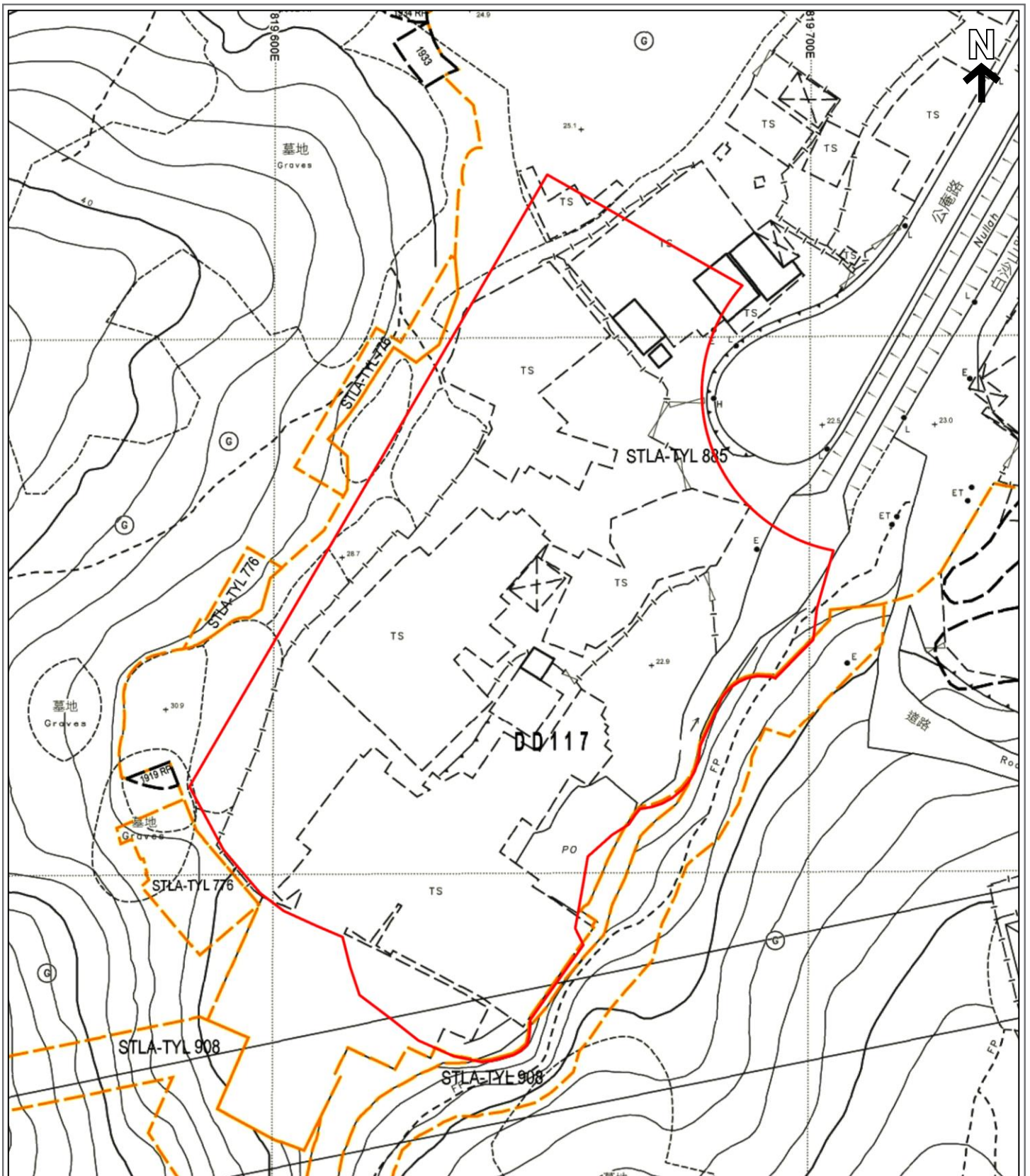


Application Site
(For identification purpose only, subject
to change(s) as required by relevant
Government department(s))

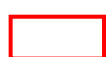
ZONING

OU "Other Specified Uses"
GB "Green Belt"
CA "Conservation Area"
U "Undetermined"

Figure No.	Scale	Figure Title
2.1	1:7,500	Location Plan
ARUP	Date	Source
	July 2026	Extracted from Approved Tong Yan San Tsuen Outline Zoning Plan No. S/YL-TYST/14



LEGEND

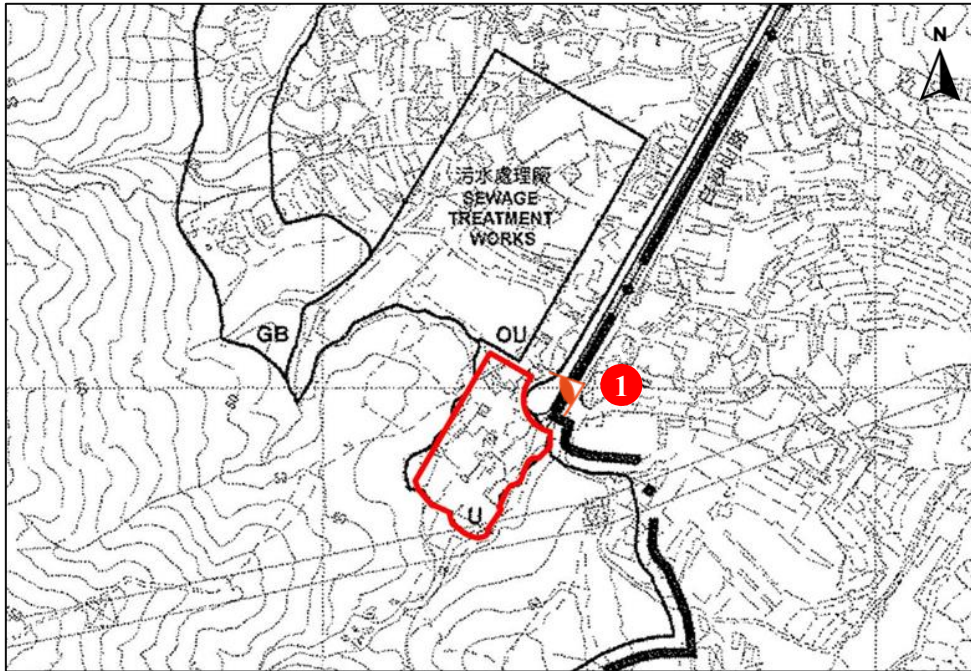


Application Site
(For identification purpose only, subject to change(s) as required by relevant Government department(s))



Short Term Tenancy/Government Land Licence/
Temporary Government Land Allocation

Figure No.	Scale	Figure Title
2.3	1:1,000	Lot Index Plan
ARUP	Date	Source
	July 2026	Adapted from Lot Index Plan No. ags_S00000154511_0001



LEGEND

- Application Site
(For identification purpose only, subject to change(s) as required by relevant Government department(s))
- 1 Viewing Point

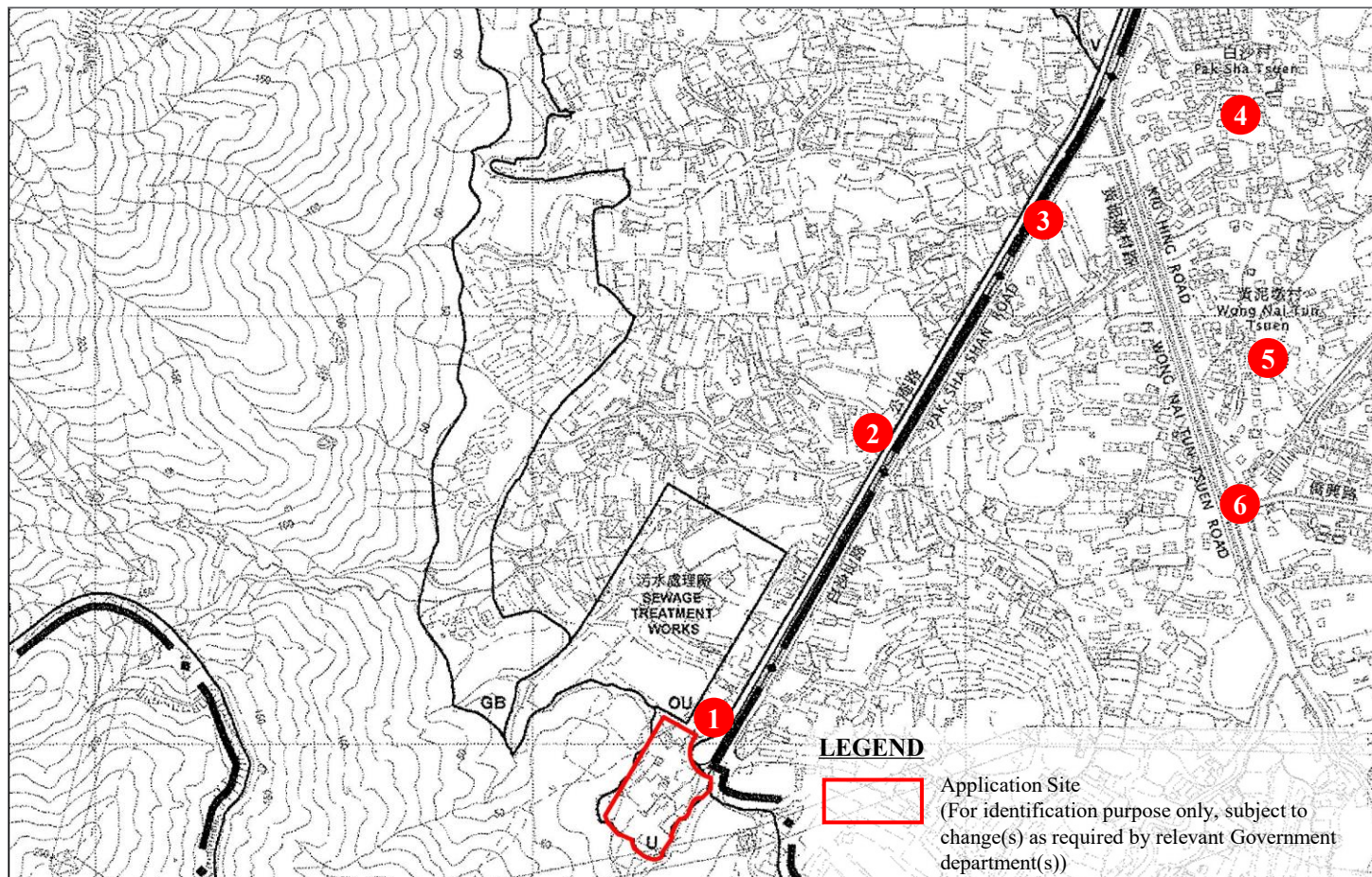


LEGEND

- Application Site



Figure No.	Scale	Figure Title
2.4	-	Existing Condition of the Application Site
ARUP	Date	Source
	July 2026	GeoInfo Map and Site Photo taken on 16 Jan 2026



1 Permitted STP under Approved Application (to be constructed)



2 Kung Um Road



3 Pak Sha Shan Road



4 Pak Sha Tsuen



5 Wong Nai Tan Tsuen



6 Kiu Hing Road



Figure No.	Scale	Figure Title
2.5	-	Surrounding Context of the Application Site
ARUP	Date	Source
	July 2026	Site Photos taken on 16 Jan 2026

- (10) In any area shown as 'Road', all uses or developments except those specified in paragraphs (8)(a) to (8)(d) and (8)(g) above and those specified below require permission from the Town Planning Board:

road, toll plaza, on-street vehicle park, railway station and railway track.

- (11) (a) Except in areas zoned "Conservation Area", temporary use or development of any land or building not exceeding a period of two months is always permitted provided that no site formation (filling or excavation) is carried out and that the use or development is a use or development specified below:

structures for carnivals, fairs, film shooting on locations, festival celebrations, religious functions or sports events.

- (b) Except as otherwise provided in paragraph (11)(a), and subject to temporary uses for open storage and port back-up purposes which are prohibited in areas zoned "Conservation Area", temporary use or development of any land or building not exceeding a period of three years requires permission from the Town Planning Board. Notwithstanding that the use or development is not provided for in terms of the Plan, the Town Planning Board may grant permission, with or without conditions, for a maximum period of three years, or refuse to grant permission.

- (c) Temporary use or development of land or building exceeding three years requires permission from the Town Planning Board in accordance with the terms of the Plan.

- (12) Unless otherwise specified, all building, engineering and other operations incidental to and all uses directly related and ancillary to the permitted uses and developments within the same zone are always permitted and no separate permission is required.

- (13) In the "Undetermined" zone, all uses or developments except those specified in paragraphs (8) and (11)(a) above require permission from the Town Planning Board.

- (14) In these Notes, unless the context otherwise requires or unless as expressly provided below, terms used in the Notes shall have the meanings as assigned under section 1A of the Town Planning Ordinance.

"Existing building" means a building, including a structure, which is physically existing and is in compliance with any relevant legislation and the conditions of the Government lease concerned.

"New Territories Exempted House" means a domestic building other than a guesthouse or a hotel; or a building primarily used for habitation, other than a guesthouse or a hotel, the ground floor of which may be used as 'Shop and Services' or 'Eating Place', the building works in respect of which are exempted by a certificate of exemption under Part III of the Buildings Ordinance (Application to the New Territories) Ordinance (Cap. 121).

Figure No.	Scale	Figure Title	Extracted Covering Notes of Approved Tong Yan San Tsuen Outline Zoning Plan No. S/YL-TYST/14
3.1	-		
ARUP	Date	Source	Extracted Covering Notes of Approved Tong Yan San Tsuen Outline Zoning Plan No. S/YL-TYST/14
	July 2026		

“Good Practices on Pumping System Noise Control” and “Good Practices on Ventilation System Noise Control” from the Environmental Protection Department, noise reduction up to 30dB(A) is possible with the application of silencer installation and special acoustic enclosure. Noise sources within the MSBs should be controlled by suitable noise mitigation designs such as sound insulating building structures, façade sound insulation and acoustic doors, etc. For uses that might induce adverse noise impact on surrounding noise sensitive receiver(s), further environmental assessment(s) may be required.

Sewage Treatment Works

- 10.11.6 A site of about 4.17 ha to the southern end of Kung Um Road is zoned “OU(STW)” primarily for the provision of a sewage treatment/screening plant, also known as the YLS Effluent Polishing Plant. The primary aim of this tertiary sewage treatment works is to treat the sewage collected from the YLS Development and adjacent areas. Organic wastes co-digestion facilities may be installed to this plant to enhance the efficiency of the waste treatment operation. Development in this site is subject to a maximum building height of 35mPD, or the height of the existing building, whichever is the greater. Minor relaxation of the above restriction may be considered by the Board through the planning permission system. Each proposal will be considered on its individual planning merits.

10.12 Undetermined (“U”) : Total Area : 59.7 ha

- 10.12.1 A large piece of land to the west of Kung Um Road is zoned “U”. The planning intention of the “U” zone for this area is to cater for the continuing demand for open storage which cannot be accommodated in conventional godown premises. However, Kung Um Road is insufficient to cater for the heavy goods vehicular traffic generated from the proposed development. Under the YLS Study, this area falls within the remaining stages of the YLS Development and the existing operations would be gradually phased out in stages.
- 10.12.2 Any proposed developments within the zone should demonstrate that they will not have significant traffic, drainage and environmental impacts on the area and should propose adequate infrastructure for approval by the Board.

10.13 Green Belt (“GB”) : Total Area : 120.81 ha

- 10.13.1 The planning intention of this zone is primarily for defining the limits of urban and sub-urban development areas by natural features and to contain urban sprawl as well as to provide passive recreational outlets. Area zoned “GB” may include foothills, lower hill slopes, spurs, isolated knolls, woodland, traditional burial ground or vegetated land which are found at the urban fringe. There is a general presumption against development within this zone. However, limited

Figure No.	Scale	Figure Title	Extracted Explanatory Statement of “U” Zone of Approved Tong Yan San Tsuen Outline Zoning Plan No. S/YL-TYST/14
3.2	-		
ARUP	Date	Source	Extracted Explanatory Statement of “U” Zone of Approved Tong Yan San Tsuen Outline Zoning Plan No. S/YL-TYST/14
	July 2026		

Appendix A

Preliminary Development Layout of YLSEPP extracted from the Approved Planning Application No. A/YL-TYST/1181

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:
Plot File by: mky.xia1
2021/11/18
PATH: P:\PROJECTS\60631936\Drawing\REPORT\EA\EA_712.dgn

*NOTES: THE LAYOUT OF YLSEPP IS INDICATIVE IN NATURE AND WILL BE SUBJECT TO FURTHER CHANGE AT THE DETAILED DESIGN STAGE

EXTRACTED FROM APPROVED APPLICATION NO. A/YL-TYST/1181 FOR INFORMATION

LEGEND:



BOUNDARY OF YUEN LONG SOUTH EFFLUENT POLISHING PLANT



INDICATIVE LOCATION OF WATER RECLAMATION PLANT

Application Site, Part of Site OU 3.3

Application Site, Site G3.1

The Location of Application Site under this S16 Application

AECOM

PROJECT

HUNG SHUI KIU
EFFLUENT POLISHING
PLANT AND
YUEN LONG SOUTH
EFFLUENT POLISHING
PLANT - INVESTIGATION

CLIENT

渠務署
Drainage Services Department

CONSULTANT

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

分判工程顧問公司

ISSUE/REVISION

IR	DATE	DESCRIPTION	CHK.

STATUS

SCALE

A1 1: 1000

DIMENSION UNIT

METRES

KEY PLAN

PROJECT NO.

60631936

CONTRACT NO.

CE 6/2019 (DS)

SHEET TITLE

Preliminary Master Layout
Plan of YLSEPP

SHEET NUMBER

60631936/Figure 1.2

Appendix B

Master Layout Plan of the Indicative Scheme

DO NOT SCALE DRAWING. CHECK ALL DIMENSIONS ON SITE.
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墓地
Graves

*NOTES: THE LAYOUT OF YLSEPP IS INDICATIVE IN NATURE AND WILL BE SUBJECT TO FURTHER CHANGE AT THE DETAILED DESIGN STAGE.

APPROVED SCHEME UNDER PLANNING PERMISSION NO. A/YL-TYST/1181, SUBJECT TO DETAILED DESIGN

LEGEND:

- APPLICATION SITE BOUNDARY
- PROPOSED LEVEL OF GROUND
- PROPOSED HEIGHT LEVEL
- BURIED UTILITIES BETWEEN SITE OU3.3 AND THE APPLICATION SITE (NOT PART OF THIS SECTION 16 APPLICATION)
- SITE OU 3.3 (NOT PART OF THIS SECTION 16 APPLICATION)
- POTENTIAL AREA FOR NEW TREES PLANTING
- CAR PARKING SPACE
- LOADING/UNLOADING BAY

NOTE:

1. CAR PARKING SPACES AND LOADING/UNLOADING BAYS AND TREE PLANTING PROVISION WILL BE SHARED WITH SITE OU3.3 (NOT PART OF THIS SECTION 16 APPLICATION) AS MENTIONED IN THE APPROVED PLANNING PERMISSION NO. A/YL-TYST/1181.

-	FIRST ISSUE		06/25
Rev	Description	By	Date
Consultant			
ARUPbinnies Arup - Binnies Joint Venture			
Project Title			
Agreement No. CE 1/2023 (DS) Yuen Long South Effluent Polishing Plant – Design and Construction			
Drawing title			
MASTER LAYOUT PLAN - APPLICATION FOR PLANNING PERMISSION UNDER SECTION 16 OF THE TOWN PLANNING ORDINANCE (CAP. 131) FOR PROPOSED SEWAGE TREATMENT PLANT AND ORGANIC WASTE CO-DIGESTION FACILITIES AT GOVERNMENT LAND IN D.D. 117, YUEN LONG, NEW TERRITORIES			
Drawing no.			Rev.
Drawn	Date	Checked	Approved
Scale	N.T.S		Status

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香港特別行政區政府渠務署
DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION

Appendix C

Working Paper on Environmental Assessment for the Indicative Scheme of the Application Site



渠務署
Drainage Services Department

污水處理服務科 Sewage Services Branch
淨化海港計劃部 Harbour Area Treatment Scheme Division

Application for Planning Permission Under Section 16 of the Town Planning Ordinance (Cap. 131) for Proposed Sewage Treatment Plant and Organic Waste Co-digestion Facilities at Government Land in D.D. 117, Yuen Long, New Territories

Working Paper on Environmental Assessment for the Application Site

Reference: Document

Reference

v.1 | 08 July 2026

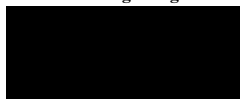
This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 303697

Ove Arup & Partners Hong Kong Limited



Binnies Hong Kong Limited



Arup – Binnies Joint Venture

Contents

1.	Introduction	1
1.1	Background	1
1.2	Objectives of the Report	2
1.3	Report Structure	2
2.	Description of Application Site	3
2.1	Site Location	3
2.2	Proposed changes and rationale	3
3.	Review of EIA Findings	4
3.1	Overview	4
3.2	Air Quality	4
3.3	Noise	4
3.4	Water Quality	4
3.5	Waste Management Implication	5
3.6	Land Contamination	5
4.	Air Quality	6
4.1	Introduction	6
4.2	Environmental Legislation and Criteria	6
4.3	Description of Environment	8
4.4	Review of Air Sensitive Receivers (ASR)	9
4.5	Review of Air Quality Impacts during Construction Phase	10
4.6	Review of Air Quality Impacts during Operation Phase	10
4.7	Review of Environmental Monitoring and Audit Requirements	11
4.8	Conclusion	11
5.	Noise Impact Review	12
5.1	Introduction	12
5.2	Environmental Legislation and Criteria	12
5.3	Description of the Noise Environment	15
5.4	Review of Noise Sensitive Receivers	16
5.5	Review of Construction Noise Impacts	16
5.6	Review of Environmental Monitoring and Audit Requirements	16
5.7	Conclusion	16
6.	Water Quality	17
6.1	Introduction	17
6.2	Environmental Legislation and Criteria	17
6.3	Description of the Environment	25
6.4	Review of Water Sensitive Receivers	28
6.5	Review of Water Quality Impact during Construction Phase and Operational Phase	29
6.6	Review of Environmental Monitoring and Audit Requirements	30
6.7	Conclusion	30
7.	Waste Management Implication	31

7.1	Introduction	31
7.2	Environmental Legislation and Criteria	31
7.3	Assessment Methodology	31
7.4	Evaluation of Waste Implication during Construction Phase	32
7.5	Evaluation of Waste Implication during Operation Phase	32
7.6	Review of Environmental Monitoring and Audit Requirements	32
7.7	Conclusion	33
8.	Land Contamination	34
8.1	Introduction	34
8.2	Environmental Legislation and Criteria	34
8.3	Review of Land Contamination Potential	34
8.4	Review of Environmental Monitoring and Audit Requirements	35
8.5	Conclusion	35
9.	Conclusion	36
9.1	Introduction	36
9.2	Air Quality	36
9.3	Noise	36
9.4	Water Quality	36
9.5	Waste Management	36
9.6	Land Contamination	37

Tables

Table 4-1 Hong Kong Air Quality Objectives	6
Table 4-2 Air Quality Standards for Non-AQO Criteria Pollutants	7
Table 4-3 Air Quality Monitoring Data (Yuen Long AQMS, 2021-2025)	8
Table 4-4 Background Air Pollutants in Year 2027 Extracted from the PATH v3.0 Model (Level 0-17m)	9
Table 4-5 Identified Air Sensitive Receivers in the Vicinity of the Application Site	9
Table 4-6 DO5 Odour Extraction Rates, Emission Rate and Removal Efficiencies of Approved EIA and the Application Site	11
Table 5-1 EIAO-TM Day-time Construction Noise Standards	12
Table 5-2 Area Sensitivity Ratings	13
Table 5-3 Acceptable Noise Levels (ANLs) for General Construction Works to be carried out during Restricted Hours (GW-TM) ^(a)	14
Table 5-4 ANLs to be used as Operational Noise Criteria	15
Table 5-5 Identified Noise Sensitive Receivers in the Vicinity of the Application Site	16
Table 5-6 Identified Noise Assessment Points in the Vicinity of the Application Site	16
Table 6-1 Summary of Water Quality Objectives for Deep Bay WCZ	17
Table 6-2 Summary of Water Quality Objectives for North Western WCZ-	19
Table 6-3 Standards for effluents discharged into Group B Inland Waters	21
Table 6-4 Standards for effluents discharged into Group C Inland Waters	21
Table 6-5 Standards for effluents discharged into Group D Inland Waters	22
Table 6-6 Standards for effluents discharged into Foul Sewers leading into Government Sewage Treatment Plants	23

Table 6-7 Standards for effluents discharged into Foul Sewers leading into Government Sewage Treatment Plants with Microbial Treatment	23
Table 6-8 Reclaimed Water Quality Standards for Non-Potable Uses	24
Table 6-9 Summary EPD's Routine Marine Water Quality Data for Deep Bay WCZ in Year 2025	25
Table 6-10 Summary EPD's Routine Marine Water Quality Data for North Western WCZ in Year 2025	26
Table 6-11 Summary Statistic of 2025 River Water Quality of Yuen Long Nullah	27
Table 6-12 Ponds and other WSRs within Assessment Area	29
Table 7-1 Other relevant documents and guidelines	31

Appendices

Appendix A	A-1
Figures A-1	

1. Introduction

1.1 Background

- 1.1.1 To take forward the implementation of the Yuen Long South Effluent Polishing Plant (YLSEPP) and support the development at Yuen Long South (YLS) and surrounding area, Drainage Services Department (DSD) commenced an Investigation Study under Agreement No. CE 6/2019 (DS) “Hung Shui Kiu Effluent Polishing Plant and Yuen Long South Effluent Polishing Plant - Investigation” to carry out the investigation and preliminary design of YLSEPP. Upon the Investigation Study, the capacity of the YLSEPP has been revised to 65,000m³/day to provide holistic sewage treatment and disposal for the region.
- 1.1.2 Accordingly, a previous Planning Application No. A/YL-TYST/1181, including the Application Site and the planned YLSEPP at its northern portion involving the proposed Organic Waste Co-digestion Facilities (OWCF) and minor relaxation of maximum Building Height (BH), was approved with conditions by the Rural and New Town Planning Committee (RNTPC) of the TPB in 2022 (the “Approved Scheme”).
- 1.1.3 Under the further design development under Agreement No. CE 1/2023(DS) “Yuen Long South Effluent Polishing Plant – Design and Construction” with more geotechnical information obtained, it is noted that the Application Site is underlain by a relatively high rockhead level of about +20mPD. As a result, extensive deep excavation under the Southern Portion of the Approved Scheme would be required for basement construction, which would involve complex temporary works and structural support systems, and would increase technical demands, construction risks as well as time impact.
- 1.1.4 In light of the refined technical findings, an Indicative Scheme with proposed maximum BH of +53mPD would reduce reliance on deep underground construction and provide greater design flexibility. By accommodating more facilities above ground, the need for extensive excavation can be minimised, leading to improved construction efficiency and reduced costs associated with basement works, long-term operation, and maintenance.
- 1.1.5 Since the extent of the proposed changes in maximum BH between the Southern Portion of the Approved Scheme (+38.5mPD) and the Indicative Scheme (+53mPD) is beyond Class A or Class B amendments specified in the Town Planning Board’s Guidelines on Class A and Class B Amendments to the Approved Development Proposals (TPB PG-No. 36C), a fresh S16 Planning Application is required. The Indicative Scheme would follow the committed planning gains and design merits in the Approved Scheme from traffic, environmental, sewerage, drainage, landscape and visual aspects.
- 1.1.6 The YLSEPP is considered necessary and essential in catering the sewage treatment needs of the future development in YLS and surrounding area. The Indicative Scheme represents an efficient approach by making optimal use of existing resources, thereby enabling earlier delivery of infrastructure and enhancing overall cost-effectiveness of public works in accordance with the Policy Address objective of reducing construction costs. Approval of the S16 Planning Application would facilitate timely project delivery, contribute to overall cost savings, and support the expeditious implementation of the YLSEPP in line with the Government’s objectives.

1.2 Objectives of the Report

- 1.2.1 The objective of this Environmental Review Report (ERR) is to carry out an environmental review which aims to support the planning application in environmental aspect. The ERR will address any environmental implications resulting from the proposed maximum BH at the Southern Portion of YLSEPP and recommend additional mitigation measures if required. In addition, updating of the EM&A programme will be recommended as necessary. All necessary submissions will be prepared in close consultation with EPD to streamline the reports preparation and approval processes.

1.3 Report Structure

- 1.3.1 The remainder of this Report is organized as follows:
- a) Section 2 presents the information of the Application Site
 - b) Section 3 presents the previous EIA findings regarding to the YLSEPP.
 - c) Sections 4 to 10 provide a review on the potential environmental impacts due to the proposed Project and propose additional mitigation measures (if required) for compliance with the requirements in the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM):
 - Section 4 Air Quality Impact Review
 - Section 5 Noise Impact Review
 - Section 6 Water Quality Impact Review
 - Section 7 Waste Management Implication Review
 - Section 8 Land Contamination Review
 - d) Section 9 presents the conclusion of this ERR.

2. Description of Application Site

2.1 Site Location

- 2.1.1 The Application Site, with an area of about 10,244 m², is situated at the southern end of YLS Development Area adjacent to the roundabout of Kung Um Road. The Application Site also falls within the planned Government (Reserve) intended for Government Depots (i.e. Site G3.1), as set out in the Revised Recommended Outline Development Plan (RODP) of YLS Development. The location of the Application Site on the Outline Zoning Plan (OZP) is presented in **Figure 2.1**.

2.2 Proposed changes and rationale

- 2.2.1 Under the Approved Scheme, the prevailing BHR restricted the height of the proposed facilities of the Application site, leading to the need for underground excavation during construction. As the Study has progressed, more detailed design development, cost estimation, and geotechnical assessments have been undertaken. These assessments have identified that the Application Site is potentially underlain by a relatively high rockhead level of about +20mPD.
- 2.2.2 In this regard, undertaking underground excavation into hard rock to comply with the BHR under the Approved Scheme would involve substantial technical challenges. Such construction works would be complex temporary works and structural support systems, thereby significantly increasing construction complexity, risks and overall costs associated with deep excavation in hard rock conditions.
- 2.2.3 Conversely, the presence of competent hard rock strata also presents an opportunity from a structural perspective, as it provides a stable and reliable founding medium. The proposed facilities can be supported by raft foundations bearing directly on the hard rock, thereby avoiding the need for excessive excavation while maintaining structural integrity.
- 2.2.4 In light of the refined technical findings and above considerations, the planning application seeks to relax the building height restriction from +38.5 mPD to +53 mPD to reduce reliance on deep underground construction and to provide greater design flexibility. The proposed layout is indicative only and remains subject to refinement during the detailed design stage. A further detailed assessment will be conducted in the Environmental Review Report to demonstrate that the proposed design changes can achieve full compliance with the relevant criteria of the EIAO-TM, and to support application of Variation of Environmental Permit, if necessary.
- 2.2.5 By accommodating more of the development above ground, the extent of excavation can be minimised, resulting in improved construction efficiency and cost-effectiveness, as well as facilitating more practical long-term operation and maintenance.

3. Review of EIA Findings

3.1 Overview

- 3.1.1 YLSEPP has been proposed within the YLS NDA to provide sewage treatment to the sewage generation from the population growth and development of YLS NDA and other developments in the North West New Territories (NWNT), which will prevent pollution and minimize any impact to the discharging water body (Deep Bay).
- 3.1.2 The following sections summarize the findings in the approved YLSEPP EIA report (AEIAR-237/2022) (hereinafter refer to as the Project).

3.2 Air Quality

- 3.2.1 The air quality impacts associated with the Project include construction dust emissions from excavation, piling, paving, and superstructure works, operational emissions from CHP units, boilers and nearby traffic, and potential odour emissions from treatment facilities. With the implementation of statutory dust control measures, good site practices, enclosure and deodorization of odour sources, and appropriate design and operational controls, all predicted air pollutant concentrations comply with relevant AQO criteria and identified odour exceedances are minor, infrequent, and largely attributable to existing sources rather than the Project and the Project demonstrates the net improvement in cumulative odour impact with the Project in place. Accordingly, no adverse air quality or residual odour impacts are anticipated at air sensitive receivers, and with the implementation of recommended EM&A measures, the Project is considered environmentally acceptable in terms of air quality.

3.3 Noise

- 3.3.1 The noise impact assessment identified potential construction noise exceedances arising from the use of Powered Mechanical Equipment at two assessment points, as well as operational noise from fixed plant sources such as pumps and ventilation fans. With the implementation of recommended mitigation measures including temporary movable noise barriers, acoustic enclosures, and Quality Powered Mechanical Equipment, construction noise levels will fully comply with the relevant criteria. Furthermore, operational noise levels were predicted to be well below the statutory standards across all time periods without the need for additional mitigation. In conclusion, no adverse residual noise impacts are anticipated, provided that the required environmental monitoring and audit programme is implemented during the construction phase and a commissioning test for fixed plant is conducted prior to operation.

3.4 Water Quality

- 3.4.1 The assessment identified minor construction water quality impacts from site runoff, wastewater generation, and accidental spillage, which will be fully mitigated through standard best management practices to ensure no adverse residual effects. During the operational phase, hydrodynamic modelling indicates that normal effluent discharge and temporary emergency events may cause localized fluctuations in pollutant levels. Any predicted non-compliances with water quality objectives are primarily driven by the existing high background pollution in Deep Bay rather than the Project itself. With the implementation of advanced tertiary treatment, robust backup systems, and an Emergency Response Plan, no adverse operational water quality impacts are expected. Comprehensive water quality monitoring, site audits, and strict adherence to Water Pollution Control Ordinance licensing requirements will be implemented across both phases to verify the effectiveness of mitigation measures and ensure overall environmental acceptability.

3.5 Waste Management Implication

- 3.5.1 The waste impacts identified for the Project include the generation of construction and demolition materials, chemical waste, and general refuse during the construction phase, alongside screenings, dewatered sludge, chemical waste, and general refuse during the operation phase. By implementing a Waste Management Plan, good site practices, and proper waste segregation during construction, coupled with appropriate storage and designated disposal strategies for operational waste streams, all generated waste will be managed safely and in compliance with regulatory requirements. As a result, no adverse residual waste impacts are anticipated throughout the project lifecycle. Environmental monitoring and audit site inspections are required during the construction phase to verify the implementation of waste management practices, while no regular waste-related monitoring is necessary during the operation phase.

3.6 Land Contamination

- 3.6.1 The assessment identified potential land contamination within the Project area, mainly associated with sites used for storage and warehousing, with possible presence of metals, VOCs, SVOCs, PCRs, and PCBs. As some sites were inaccessible during the study, further works including site re-appraisal, site investigation, and, if necessary, remediation with submission of relevant reports to EPD are required prior to construction. With proper implementation of these assessment and remediation measures, supported by environmental monitoring and audit where necessary, any contamination can be effectively identified and managed. Overall, land contamination impacts are not considered insurmountable, and no adverse residual impacts are anticipated.

4. Air Quality

4.1 Introduction

4.1.1 This Section reviews the construction and operational phase air quality impact arising from the proposed project.

4.2 Environmental Legislation and Criteria

4.2.1 The relevant legislation, standards and guidelines applicable to the present study for the assessment of air quality impact include:

- Air Pollution Control Ordinance (APCO) (Cap. 311);
- Air Pollution Control (Construction Dust) Regulation;
- Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation; and
- Air Quality Standards for Non-AQO Criteria Pollutants

Air Pollution Control Ordinance (APCO) (Cap. 311)

4.2.2 The principal legislation for the management of air quality in Hong Kong is the Air Pollution Control Ordinance (APCO) (Cap 311). A set of Air Quality Objectives (AQOs), effective from 11 April 2025, stipulates statutory ambient limits for air pollutants and the maximum allowable number of exceedances over specific averaging periods. These AQOs are presented in **Table 4.1**, and they are used as the evaluation criteria for this ERR.

Table 4-1 Hong Kong Air Quality Objectives

AIR POLLUTANT	AVERAGING TIME	CONCENTRATION ($\mu\text{g m}^{-3}$) ^(a)	NO. OF EXCEEDANCES ALLOWED PER YEAR
Sulphur Dioxide (SO ₂)	10-minute	500	3
	24-hours	40	3
Respirable Suspended Particulates (RSP) ^(b)	24-hours	75	9
	Annual	30	-
Fine Suspended Particulates (FSP) ^(c)	24-hours	37.5	18
	Annual	15	-
Nitrogen Dioxide (NO ₂)	1-hour	200	18
	24-hours	120	9
	Annual	40	-
Ozone (O ₃)	8-hours	160	9

AIR POLLUTANT	AVERAGING TIME	CONCENTRATION ($\mu\text{g m}^{-3}$) ^(a)	NO. OF EXCEEDANCES ALLOWED PER YEAR
	Peak	100	-
Carbon Monoxide (CO)	1-hour	30,000	0
	8-hours	10,000	0
	24-hours	4,000	0
Lead	Annual	0.5	-

Notes:

- Measured at 293K and 101.325 kPa.
- Suspended particles in air with a nominal aerodynamic diameter of 10 μm or less
- Suspended particles in air with a nominal aerodynamic diameter of 2.5 μm or less

Air Pollution Control (Construction Dust) Regulation

- 4.2.3 Notifiable and regulatory works are under the control of Air Pollution Control (Construction Dust) Regulation. This Project is expected to include notifiable works (foundation and superstructure construction) and regulatory works (dusty material handling and excavation). Contractors and site agents are required to inform the Environmental Protection Department (EPD) and adopt dust control requirements to abate dust emission, while carrying out construction works to the acceptable level.

Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation

- 4.2.4 The Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation comes into effect on 1 June 2015. Under the Regulation, Non-road mobile machinery (NRMMS), except those exempted, are required to comply with the prescribed emission standards. From 1 September 2015, all regulated machines sold or leased for use in Hong Kong must be approved or exempted with a proper label in a prescribed format issued by EPD. Starting from 1 December 2015, only approved or exempted NRMMS with a proper label are allowed to be used in specified activities and locations including construction sites. The Contractor is required to ensure the adopted machines or non-road vehicle under the Project could meet the prescribed emission standards and requirement.

Air Quality Standards for Non-AQO Criteria Pollutants

- 4.2.5 Aside from the AQO criteria pollutants mentioned in Section 4.2.2, Volatile Organic Compounds (VOCs), Hydrogen Chloride (HCl), Hydrogen Fluoride (HF) and formaldehyde would also be emitted from the combustion of biogas at the proposed biogas engine and boilers. In accordance with Annex 4 of EIAO-TM, for air pollutants with no established criteria under the Air Pollution Control Ordinance nor in the EIAO-TM, standards or criteria should be adopted by recognized international organizations. The air quality standards for these pollutants are therefore employed by referring to standards by recognized international organizations and are detailed in **Table 4.2**.

Table 4-2 Air Quality Standards for Non-AQO Criteria Pollutants

Pollutants	Averaging Time	Air Quality Standard ($\mu\text{g /m}^3$)	Reference
Methane	1-hour	6,000	TEEL-0 (the threshold concentration below which most people will experience no adverse health effects) from https://edms3.energy.gov/pac/Docs/Revision_26_Table4.pdf

Pollutants	Averaging Time	Air Quality Standard ($\mu\text{g}/\text{m}^3$)	Reference
HCl	1-hour	2,100	Office of Environmental Health Hazard Assessment (OEHHA) Toxicity Criteria Database, California, USA (https://oehha.ca.gov/chemicals/hydrogen-chloride)
	Annual	20	Integrated Risk Information System, USEPA
HF	1-hour	240	Office of Environmental Health Hazard Assessment (OEHHA) Toxicity Criteria Database, California, USA (https://oehha.ca.gov/chemicals/hydrogen-fluoride)
	Annual	14	Office of Environmental Health Hazard Assessment (OEHHA) Toxicity Criteria Database, California, USA (https://oehha.ca.gov/chemicals/hydrogen-fluoride)
Formaldehyde	30-minute	100	World Health Organization Air Quality Guidelines for Europe (https://iris.who.int/server/api/core/bitstreams/7107999d-7e53-47aa-90e8-bb1d162ff46e/content)
	Annual	9	Office of Environmental Health Hazard Assessment (OEHHA) Toxicity Criteria Database, California, USA (https://oehha.ca.gov/chemicals/formaldehyde)

4.3 Description of Environment

- 4.3.1 The small site area of YLSEPP is located at the southern tip of YLS NDA. It is bound by Ma Shan (Kung Um Shan) and Tai Lam Country Park at its southwest. There will be a planned stormwater retention pond and green belt to its north, and planned government and institutional land use to its east side.
- 4.3.2 Currently, the YLS NDA is generally rural in character with a mixture of land uses. The predominant uses are brownfield operations including open storage yards, warehouses, industrial workshops, etc. These brownfield operations are intermingled with rural settlements and residential settlements, agricultural land, livestock farms and vacant land.
- 4.3.3 The nearest EPD Air Quality Monitoring Station is located at Yuen Long District Office. The annual average monitoring data recorded at EPD's Yuen Long Air Quality Monitoring Station has shown a declining trend of pollutants' concentration in the past five years. The recent five years (2021 – 2025) annual average concentrations of air pollutants relevant to the Project are summarized in **Table 4.3**.

Table 4-3 Air Quality Monitoring Data (Yuen Long AQMS, 2021-2025)

Pollutant	Averaging Time	AQOs ($\mu\text{g}/\text{m}^3$)	Pollutant Concentration ($\mu\text{g}/\text{m}^3$)					
			2021	2022	2023	2024	2025	5-year Mean
Respirable Suspended Particulates (RSP)	10th Highest 24-hour	75 (9)	73	56	59	61	63	62
	Annual	30 (N/A)	30	25	26	25	26	26
Fine Suspended Particulates (FSP)	19th Highest 24-hour	37.5 (18)	36	38	34	38	37	37
	Annual	15	17	16	16	17	16	16
Nitrogen Dioxide (NO_2)	19th Highest 1-hour	200 (18)	148	122	130	125	134	132
	10th Highest 24-hour	120 (9)	78	68	67	66	72	70
	Annual	40	40	37	37	35	36	37
Sulphur Dioxide (SO_2)	4th Highest 10-min	500 (3)	24	21	20	14	22	20
	4th Highest 24-hour	40 (3)	14	7	10	5	5	8
Carbon Monoxide (CO)	1st Highest 1-hour	30,000 (0)	2090	1700	1580	1920	2000	1858
	1st Highest 8-hour	10,000 (0)	1591	1519	1273	1778	1500	1532
	1st Highest 24-hour	4000 (0)	1183	1159	1047	1342	1400	1226
Ozone (O_3)	10th Highest 8-hour	160 (9)	178	194	155	168	141	167
	Peak season	100	84	95	84	92	84	88

Notes:

- Number of exceedances allowed under the AQO is shown in (). The 5-year mean is the average of the annual values.
- Monitoring results exceeding the AQO are bolded and underlined.

4.3.4

Apart from the air quality monitoring data, EPD has released a set of background levels from “Pollutants in the Atmosphere and their Transport over Hong Kong” (PATH v3.0) model in January 2024. The commencement year for the construction phase of the project is 2027. Therefore, the PATH data for Year 2027 has been adopted to represent the background air pollutant concentrations in the Study Area. According to the PATH v3.0 data published by EPD, the concentrations of SO₂, NO₂, RSP and FSP at various averaging times would be lower than the Air Quality Objectives (AQOs) in Year 2027 within the assessment area. **Table 4.4** summarises the background levels of relevant PATH grids from the PATH model against the AQOs and presented in **Figure 4.1**.

Table 4-4 Background Air Pollutants in Year 2027 Extracted from the PATH v3.0 Model (Level 0-17m)

Pollutant	Averaging Time	AQO	Data Summary	PATH v3.0 Grid in Year 2027			
				24,43	24,44	25,43	25,44
Respirable Suspended Particulates (RSP)	24-hour	75 (9)	10th	58	57	58	60
			Exceedance	0	0	0	1
	Annual	30	-	21	21	22	23
Fine Suspended Particulates (FSP)	24-hour	37.5 (18)	19th	35	34	36	37
			Exceedance	13	13	17	18
	Annual	15	-	13	13	14	15
Nitrogen Dioxide (NO ₂)	1-hour	200 (18)	19th	78	73	80	80
			Exceedance	0	0	0	0
	24-hour	120 (9)	10th	32	30	33	33
			Exceedance	0	0	0	0
	Annual	40	-	17	16	17	17
Sulphur Dioxide (SO ₂)	10-Min	500 (3)	4th	28	29	28	28
			Exceedance	0	0	0	0
	24-hour	40 (3)	4th	7	7	7	7
			Exceedance	0	0	0	0
Ozone (O ₃)	8-Hour	160 (9)	10th	188	191	187	184
			Exceedance	21	23	21	20
	Peak Season	100	-	118	121	118	117
Carbon Monoxide (CO)	1-Hour	30000 (0)	1st	602	603	607	607
			Exceedance	0	0	0	0
	8-Hour	10000 (0)	1st	582	583	584	586
			Exceedance	0	0	0	0
	24-Hour	4000 (0)	1st	527	528	526	529
			Exceedance	0	0	0	0

Note:

1. Values in () mean the number of exceedances allowed per year.
2. Bolded values mean exceedance of the AQOs.
3. With reference to Guidelines on Choice of Models and Model Parameters.
4. All concentration units are in microgram per cubic metre (µg/m³).

4.4 Review of Air Sensitive Receivers (ASR)

4.4.1

The assessment area will be within 500m from the site boundary of the Application Site. Following an updated review, no changes have been identified to the ASRs listed in the approved EIA report (AEIAR-237/2022). No new ASRs have been identified. They mainly include villages, residential, educational, and institution / community. The location of representative air sensitive receivers was presented in **Figure 4.2** and **Figure 4.3**.

Table 4-5 Identified Air Sensitive Receivers in the Vicinity of the Application Site

ASR IDs	Description	Land Use	Shortest Distance from Site Boundary (m)	Assessment Heights (mAG)	Assessment Phase
YAE01	117, Wong Nai Tun Tsuen	Residential	394	1.5, 5	C, O
YAE02	125, Wong Nai Tun Tsuen	Residential	378	1.5, 5, 10	C, O
YAE03	121, Wong Nai Tun Tsuen	Residential	392	1.5, 5, 10	C, O
YAE04	128, Wong Nai Tun Tsuen	Residential	429	1.5, 5, 10	C, O
YAE06	Pui Hong Kui	Education	341	1.5, 5	C
YAE07	291, Pak Sha Tsuen	Residential	269	1.5, 5, 10	C

ASR IDs	Description	Land Use	Shortest Distance from Site Boundary (m)	Assessment Heights (mAG)	Assessment Phase
YAP04	Planned Residential (PDA Zone 2)	Residential	499	1.5, 5, 10 up to 75 at 5m interval	O
YAP08	Planned School (PDA Zone 2)	Education	480	1.5, 5, 10 up to 40 at 5m interval	O
YAP10	Planned Primary School	Education	452	1.5, 5, 10 up to 40 at 5m interval	O
YAP11	Planned Low-rise Residential Developments	Residential	381	1.5, 5, 10, 15, 20	O

Notes:

(a) ASR subject to change based on the final layout and development details.

(b) C – Construction; O – Operation

4.5 Review of Air Quality Impacts during Construction Phase

- 4.5.1 The proposed building height relaxation will not introduce additional construction activities or increase emissions beyond those assessed in the approved EIA. On the contrary, the reduced excavation requirement will lower fugitive dust generation. Less excavation directly reduces construction dust emissions because it minimizes the primary sources of fugitive dust generation. Excavation activities involve soil breaking, loading, unloading, stockpiling, and transportation of materials, all of which are major contributors to dust. By reducing the excavation volume, there is less exposed soil surface, fewer earth-moving operations, and lower handling and transfer of loose materials. This in turn decreases the frequency and intensity of dust-generating activities such as truck movements, material stockpiling, and wind erosion of exposed surfaces. Consequently, the overall potential for fugitive dust emissions during construction is substantially reduced.
- 4.5.2 While the relaxation may increase the building height and superstructure area, the additional dust from superstructure works remains minimal. Superstructure construction primarily involves reinforced concrete works, steelwork, and formwork, which generate far less dust than excavation. Superstructure works do not involve moving loose earth or handling excavation materials, which are the main sources of fugitive dust. Any dust from cutting concrete, drilling, or grinding is localized and can be effectively controlled with standard measures such as water spraying, dust extraction units, and good site practices. Even if there is slightly more superstructure work, the reduction in excavation volume (which dominates dust emissions) outweighs any marginal increase from superstructure activities, resulting in a net reduction of total dust emissions. The excavation depth of the Application Site is anticipated to be reduced from approximately 15m to 2m.
- 4.5.3 Emissions from powered mechanical equipment and construction vehicles will remain consistent with the EIA assumptions. With the implementation of established dust control measures and good site practices, no additional impact is expected from the Project, and no adverse construction air quality impact is anticipated.

4.6 Review of Air Quality Impacts during Operation Phase

- 4.6.1 The proposed relaxation of building height at the Application Site will not result in any change to the air pollutant emission sources identified in the approved EIA (AEIAR-237/2022). There is no air pollutant emission source at the Application Site, which is the same as the approved EIA (AEIAR-237/2022). Accordingly, the assessment results for gaseous emissions presented in the EIA remain valid.

- 4.6.2 For odour impact, the deodorizers (DOs) are designed to provide adequate ventilation and odour extraction for treatment prior to the discharge to the atmosphere. The summary of the DO5 design comparison with the approved EIA (AEIAR-237/2022) is summarized in **Table 4.6**.

Table 4-6 DO5 Odour Extraction Rates, Emission Rate and Removal Efficiencies of Approved EIA and the Application Site

	EIA (AEIAR-237/2022)			
	Extraction Rate (m ³ /hr)	Unmitigated Odour Emission Rate (ou/s)	Odour Removal Efficiency	Mitigated Odour Emission Rate (ou/s)
DO5	1,961	627	95%	31
	The Application Site			
	Extraction Rate (m ³ /hr)	Unmitigated Odour Emission Rate (ou/s)	Odour Removal Efficiency	Mitigated Odour Emission Rate (ou/s)
DO5: Food waste reception hall	1,100	227	96%	9

- 4.6.3 The location of the DO5 Food Waste Reception Hall may be adjusted, subject to Contractor's design, from the approved EIA (AEIAR-237/2022) layout. Nevertheless, the revised design demonstrates an improvement in odour control performance. Although the air extraction rate is reduced from 1,961 m³/hr to 1,100 m³/hr, the proposed system achieves a higher odour removal efficiency of 96%, compared to 95% in the approved EIA. As a result, the mitigated odour emission rate is reduced from 31 ou/s to 9 ou/s.
- 4.6.4 Consequently, potential odour nuisance to nearby sensitive receivers is expected to be well below the levels previously evaluated and approved. While the approved EIA report (AEIAR-237/2022) already demonstrated a net improvement in cumulative odour impact with the YLSEPP in place, the introduction of DO5 with an increased odour removal efficiency from 95% to 96% will further improve the odour impact at the ASRs. The net improvement demonstrated in the approved EIA will not be affected. No adverse residual odour impact is anticipated from the Project, and no additional air quality or odour-related environmental impacts are expected. Overall, this modification delivers enhanced environmental performance.
- 4.6.5 According to the HKPSG, a minimum separation distance of 200 meters between the odour source and ASRs is recommended to minimise potential odour nuisance. As shown in **Table 4-5**, the shortest distance from the site boundary of the Project to the identified ASRs is approximately 269 meters (YAE07). All identified ASRs are located more than 200 meters from the Project site boundary. Therefore, the buffer distance requirements for odour impact under Chapter 9 of the HKPSG are fully satisfied. No adverse odour impact is anticipated.

4.7 Review of Environmental Monitoring and Audit Requirements

- 4.7.1 Since there are no identified changes in air quality impacts or mitigation measures compared to the approved EIA (AEIAR-237/2022), the environmental monitoring and audit requirements as outlined in the EIA report also remain unchanged.

4.8 Conclusion

- 4.8.1 With the implementation of air quality control measures together with good site practices, no adverse air quality impact is anticipated during the construction phase of this Project.
- 4.8.2 No adverse air quality and odour impact is anticipated during the operation phase of this Project.

5. Noise Impact Review

5.1 Introduction

- 5.1.1 This Section reviews the construction and operational phase noise impact arising from the proposed design changes.

5.2 Environmental Legislation and Criteria

- 5.2.1 The legislation and regulation used in the EIA Report for noise impact assessments have been reviewed to be valid.

Construction Phase

- 5.2.2 The principal legislation relating to the control of construction noise is the Environmental Impact Assessment Ordinance (Cap. 499). The Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM), issued under the EIAO, provides guidelines and noise criteria for evaluating noise impacts. The assessment criteria are defined in Annex 5 of the EIAO-TM.
- 5.2.3 The Noise Control Ordinance (NCO) (Cap. 400) also provides means to assess construction noise impacts. Several Technical Memoranda (TMs) have been issued under the NCO to stipulate control approaches and criteria. The Technical Memorandum on Noise from Construction Work Other than Percussive Piling (GW-TM), which provides the guidelines for controlling the construction noise from powered mechanical equipment (PME) in general construction works, is applicable to the control of noise impacts from the construction of this Project. The Technical Memorandum on Noise from Construction Work in Designated Areas (DA-TM) provides the guidelines for controlling construction noise from the use of Specified Powered Mechanical Equipment (SPME) and the undertaking of Prescribed Construction Work (PCW) during the restricted hours in designated areas.

General Construction Works during Normal Working Hours

- 5.2.4 Under the EIAO, potential noise impact arising from general construction works during normal working hours (i.e. 07:00 to 19:00 hrs on any day not being a Sunday or public holiday) at 1 m from the external façade of the uses, which rely on opened windows for ventilation, is to be assessed in accordance with the noise criteria specified in the EIAO-TM. The EIAO-TM noise standards are presented in **Table 5.1**.

Table 5-1 EIAO-TM Day-time Construction Noise Standards

Uses	Noise Standard <i>L</i> _{eq, 30 min} (dB(A))
• All domestic premises, • Temporary housing accommodation, • Hostels • Convalescent homes, and • Homes for the aged	75
• Places of public worship, • Courts of law, and • Hospitals and medical clinics	70
• Educational institutions (including kindergartens and nurseries)	70 65 (during examinations)

Uses	Noise Standard Leq, 30 min (dB(A))
Notes:	
(1) The above standards apply to uses which rely on opened windows for ventilation and are assessed at 1m from external façade.	
(2) A Construction Noise Permit shall be required for carrying out relevant construction work during restricted hours under the Noise Control Ordinance. In case the applicant would like to evaluate whether carrying out relevant construction works during restricted hours under the Noise Control Ordinance is feasible or not in the context of programming construction works, reference should be made to relevant technical memoranda issued under the Noise Control Ordinance.	

General Construction Works during Restricted Hours

- 5.2.5 The NCO provides statutory controls on general construction works during restricted hours (i.e. 1900 - 0700 hrs Monday to Saturday and at any time on Sundays and public holidays). The use of PME for carrying out construction works during these restricted hours would require a Construction Noise Permit (CNP). The Noise Control Authority will assess all CNP applications on a case-by-case basis and, in doing so, the authority advises that they will be guided by the GW-TM.
- 5.2.6 When assessing an application for CNP for the use of PME during restricted hours, the Noise Control Authority will compare the Acceptable Noise Levels (ANLs) specified in the GW-TM with the Corrected Noise Levels (CNLs) (i.e. after accounting for factors such as barrier effects and reflections) associated with the proposed PME operations. The NCO requires that noise levels from construction at affected Noise Sensitive Receiver (NSR) be less than the specified ANL. The ANLs are related to the inherent noise sensitivity of the noise receiver areas in question, and different Area Sensitivity Ratings (ASRs, i.e. A, B or C, see **Table 5.2**) have been established to reflect the background characteristics of different areas. Each noise receiver area is assigned an ASR based on its predominant land use and the presence, if any, of Influencing Factors (IFs) such as nearby industrial areas, major roads or airports. The appropriate ASR for the NSR is determined with reference to **Table 5.2**.

Table 5-2 Area Sensitivity Ratings

Types of Area Containing NSR	Degree to which NSR is affected by Influencing Factor (IF)		
	Not Affected	Indirectly Affected	Directly Affected
Rural area, including Country Parks or village type developments	A	B	B
Low density residential area consisting of low-rise or isolated high-rise developments	A	B	C
Urban area	B	C	C
Area other than those above	B	B	C

Notes:

The following definitions apply:

- (a) "Country Park" means an area that is designated as a country park pursuant to section 14 of the *Country Parks Ordinance*;
- (b) "directly affected" means that the NSR is at such a location that noise generated by the IF is readily noticeable at the NSR and is a dominant feature of the noise climate of the NSR;
- (c) "indirectly affected" means that the NSR is at such a location that noise generated by the IF, whilst noticeable at the NSR, is not a dominant feature of the noise climate of the NSR;
- (d) "not affected" means that the NSR is at such a location that noise generated by the IF is not noticeable at the NSR; and

Types of Area Containing NSR	Degree to which NSR is affected by Influencing Factor (IF)		
	Not Affected	Indirectly Affected	Directly Affected
(e) "urban area" means an area of high density, diverse development including a mixture of such elements as industrial activities, major trade or commercial activities and residential premises.			

5.2.7 The relevant ANLs for each ASR are shown in **Table 5.3**.

Table 5-3 Acceptable Noise Levels (ANLs) for General Construction Works to be carried out during Restricted Hours (GW-TM) ^(a)

Time period	Area Sensitivity Rating Leq, 5 min (dB(A))		
	A	B	C
All days during the evening (i.e. 1900-2300 hrs) and general holidays (including Sundays) during the day and evening (i.e. 0700-2300 hrs)	60	65	70
All days during the night-time (i.e. 2300-0700 hrs)	45	50	55

Note:

(a) The above standard applies to uses which rely on opened windows for ventilation.

5.2.8 The Noise Control Authority will consider a well-justified CNP application for construction works within restricted hours as guided by the relevant Technical Memorandum issued under the NCO. The Noise Control Authority will take into account adjoining land uses and any previous complaints against construction activities at the site before making a decision. Factors influencing the outcome of a CNP application, such as the assigning of ANLs, would be determined by the Noise Control Authority at the time of the application review based on the prevailing site conditions which may change from time to time.

5.2.9 The DA-TM issued under the NCO indicates a list of Specified Powered Mechanical Equipment (SPME) and the types of Prescribed Construction Work (PCW) to be regulated within restricted hours in Designated Areas (DAs). Under the DA-TM, the use of five types of SPME and the carrying out of three types of PCW within a designated area during restricted hours would require a valid CNP. The SPME includes hand-held breaker, bulldozer, concrete lorry mixer, dump truck and hand-held vibratory poker. The PCW are:

- Erecting or dismantling of formwork or scaffolding;
- Loading, unloading, or handling of rubble, wooden boards, steel bars, wood or scaffolding material; and
- Hammering.

5.2.10 Any PCW and use of SPME during the restricted hours within the designated area shall be guided by the DA-TM under the control of the NCO. The Noise Control Authority will assess the CNP applications based on procedures and requirements as described in the DA-TM. In general, it should not be presumed that a CNP would be granted for the carrying out of PCW within a designated area during the restricted hours. The CNP may be granted for the execution of construction works within a designated area during restricted hours involving the use of SPME if the relevant ANL and criteria stipulated in the DA-TM can be satisfied. Nonetheless, according to the latest design, no part of the construction works of the Project will fall within the Designated Areas established under the NCO.

Operational Phase

- 5.2.11 Fixed plant noise associated with the operation of a project is controlled under Section 13 of the NCO, and the Technical Memorandum on Noise From Places Other than Domestic Premises, Public Places or Construction Sites (IND-TM) specifies the applicable ANLs for assessing potential operational noise impacts. The noise standards are set out in the EIAO-TM as follows:
- The total fixed source noise level at the facade of the nearest NSR is at least 5 dB(A) lower than the appropriate ANL (as shown in **Table 5.4**) as specified in the IND-TM; or
 - Where the prevailing noise level in the area is 5 dB(A) or more below the appropriate ANL, the total fixed source noise level must not exceed this noise level.
- 5.2.12 The noise criteria stipulated in the IND-TM apply for all days and general holidays. The ANLs are dependent on the ASR of the NSRs and the time of the day and are presented in **Table 5.4**.

Table 5-4 ANLs to be used as Operational Noise Criteria

Time Period	Leq 30min (dB(A))		
	ASR "A"	ASR "B"	ASR "C"
Day-time (0700 - 1900 hrs)	60 (55)	65 (60)	70 (65)
Evening (1900 - 2300 hrs)	60 (55)	65 (60)	70 (65)
Night-time (2300 - 0700 hrs)	50 (45)	55 (50)	60 (55)

Note: The number in brackets indicates the noise limit (ANL -5) for operational noise impact assessment.

- 5.2.13 The Project site is in a rural area without any influencing factors affecting the NSRs. An ASR "A" has been assumed for the NSR located in the vicinity of the works areas. Noise criteria were assigned based on the ANL and the prevailing noise levels for the assessment of operational noise impact from the Project were described in Chapter 4 of the approved EIA report (AEIAR-237/2022).
- 5.2.14 In any event, the noise criterion employed in this Report is for an indicative operational noise assessment only. It should be noted that fixed noise sources are controlled under Section 13 of the NCO. At the time of investigation, the Noise Control Authority shall determine noise impact from concerned fixed noise sources on the basis of prevailing legislation and practices being in force and taking account of contemporary conditions / situations of adjoining land uses. Nothing in this Report shall bind the Noise Control Authority in the context of law enforcement against any fixed noise source being assessed.

5.3 Description of the Noise Environment

- 5.3.1 The Application Site is located at the southern tip of YLS NDA. It is bound by Ma Shan (Kung Um Shan) and Tai Lam Country Park at its southwest. There will be a planned retention pond and green belt to its north, and planned government and institutional land use to its east side.
- 5.3.2 The YLS NDA is generally rural in character with a mixture of land uses. The predominant uses are brownfield operations including open storage yards, warehouses, industrial workshops, etc. These brownfield operations are intermingled with rural settlements and residential settlements, agricultural land, livestock farms and vacant land. The prevailing noise climate of the assessment area is dominated by the brownfield operations.

5.4 Review of Noise Sensitive Receivers

- 5.4.1 The assessment area will be within 300m from the site boundary of the Application Site. No changes to the noise sensitive receivers (NSRs) identified in the approved EIA report (AEIAR-237/2022) have been identified. The location of representative noise sensitive receivers was presented in **Figure 5.1**.

Table 5-5 Identified Noise Sensitive Receivers in the Vicinity of the Application Site

NSR ID	Description	Land Use	Existing/ Planned
PST	PAK Sha Tsuen	Residential	Existing
TLCP	Tai Lam Country Park	Country Park	Existing

- 5.4.2 The first layer of NSRs located close to the subject noise sources are considered as the most affected location and would provide acoustic shielding to those receivers at further distance behind. The first layer of NSRs represent the worst-case scenario and are selected as representative noise assessment points (NAPs) for the noise assessment. No changes to the NAPs identified in the approved EIA report (AEIAR-237/2022) have been identified. The location of representative NAPs was presented in **Figure 5.2**.

Table 5-6 Identified Noise Assessment Points in the Vicinity of the Application Site

ID	Description	Land Use	No. of Storeys	Shortest Distance from Project Site Boundary (m)	Existing/ Planned	Assessment Phase
YE01*	291 Pak Sha Tsuen	Residential	3	269	Existing	C

Notes:

- ASR subject to change based on the final layout and development details.
- C – Construction
- *This NAP would be demolished no later than 2029 under YLSDA Stage 3 in accordance with its latest programme.

5.5 Review of Construction Noise Impacts

- 5.5.1 The proposed building height relaxation will not introduce additional construction activities or increase the use of Powered Mechanical Equipment (PME) beyond that assessed in the approved EIA. As such, construction noise impacts remain unchanged, and no additional noise impact is anticipated. With the implementation of mitigation measures and good site practices recommended in the EIA, noise impacts during construction will remain acceptable. Similarly, operational noise from fixed plant equipment will be consistent with the EIA assumptions, and no adverse noise impact is expected.

5.6 Review of Environmental Monitoring and Audit Requirements

- 5.6.1 Since there are no identified changes in impacts or mitigation measures compared to the EIA, the environmental monitoring and audit requirements as outlined in the assessment also remain unchanged.

5.7 Conclusion

- 5.7.1 The proposed building height relaxation will not result in any additional noise impacts compared with the approved EIA. Both construction and operational noise levels remain consistent with the original assessment and comply with relevant criteria. With the implementation of established mitigation measures, all noise impacts are considered acceptable.

6. Water Quality

6.1 Introduction

6.1.1 This Section reviews the construction and operational phase water quality impact arising from the Project.

6.2 Environmental Legislation and Criteria

Environmental Impact Assessment Ordinance (EIAO)

6.2.1 The EIAO-TM specifies the assessment method and criteria that need to be followed in the EIA. Reference sections in the EIAO-TM provide the details of the assessment criteria and guidelines that are relevant to the water quality impact assessment, including:

- Annex 6 – Criteria for Evaluating Water Pollution
- Annex 14 –Guidelines for Assessment of Water Pollution

Water Pollution Control Ordinance (WPCO)

6.2.2 The Water Pollution Control Ordinance (WPCO, Cap. 358) provides the major statutory framework for the protection and control of water quality in Hong Kong. According to the WPCO and its subsidiary legislation, Hong Kong waters are divided into ten Water Control Zones (WCZs). Corresponding statements of WQOs are stipulated for different water regimes (marine waters, inland waters, bathing beaches subzones, secondary contact recreation subzones and fish culture subzones) in the WCZ based on their beneficial uses. The Project site is located within Deep Bay WCZs and may have potential impacts to the North Western WCZ. The corresponding WQOs are summarized in **Table 6.1** and **Table 6.2** below.

Table 6-1 Summary of Water Quality Objectives for Deep Bay WCZ

Parameter	Criteria	Subzone
Aesthetic appearance	Waste discharges shall cause no objectionable odours or discolouration of the water.	Whole Zone
	Tarry residues, floating wood, articles made of glass, plastic, rubber or of any other substances should be absent.	
	Mineral oil should not be visible on the surface. Surfactants should not give rise to a lasting foam.	
	There should be no recognisable sewage-derived debris.	
	Floating, submerged and semi submerged objects of a size likely to interfere with the free movement of vessels, or cause damage to vessels, should be absent.	
	Waste discharges shall not cause the water to contain substances which settle to form objectionable deposits.	
Bacteria	Should not exceed 610 per 100 mL, calculated as the geometric mean of all samples collected in one calendar year.	Secondary Contact Recreation Subzone and Mariculture Subzone (L.N. 455 of 1991)
	Should be zero per 100 mL, calculated as the running median of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Yuen Long & Kam Tin (Upper) Subzone, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	Should not exceed 1000 per 100 mL, calculated as the running median of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Yuen Long & Kam Tin (Lower) Subzone and other inland waters

Parameter	Criteria	Subzone
	Should not exceed 180 per 100 mL, calculated as the geometric mean of all samples collected from March to October inclusive in one calendar year. Samples should be taken at least 3 times in a calendar month at intervals of between 3 and 14 days.	Yung Long Bathing Beach Subzone (L.N. 455 of 1991)
Dissolved Oxygen (DO) within 2m of the seabed	Not less than 2 mg/L for 90% of the sample	Outer Marine Subzone excepting Mariculture Subzone
Dissolved Oxygen (DO)	Not less than 4 mg/L for 90% of the sample, taken at 1 metre below surface	Inner Marine Subzone excepting Mariculture Subzone
	Not less than 4 mg/L for 90% of the sampling, calculated as water column average	Outer Marine Subzone excepting Mariculture Subzone
	Not less than 5 mg/L for 90% of the sample, taken at 1 metre below surface	Mariculture Subzone
	Not less than 4 mg/L	Yuen Long & Kam Tin (Upper and Lower) Subzones, Beas Subzone, Indus Subzone, Ganges Subzone, Water Gathering Ground Subzones and other inland waters of the Zone
Colour	Human activity should not cause the colour of water to exceed 30 Hazen units.	Yuen Long & Kam Tin (Upper) Subzone, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	Human activity should not cause the colour of water to exceed 50 Hazen units.	Yuen Long & Kam Tin (Lower) Subzone and other inland waters
Temperature	Waste discharges shall not cause the natural daily temperature range to change by more than 2°C	Whole Zone
Salinity	Waste discharges shall not cause the natural ambient salinity level to change by more than 10%	Whole Zone
pH	To be in the range of 6.5-8.5, change due to human activity not to exceed 0.2 units	Marine waters excepting Yung Long Bathing Beach Subzone
	To be in the range of 6.5-8.5	Yuen Long & Kam Tin (Upper and Lower) Subzones, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	To be in the range of 6.0-9.0	Other inland waters
	To be in the range of 6.0-9.0 for 95% of samples, change due to human activity not to exceed 0.5 units	Yung Long Bathing Beach Subzone
Suspended solids (SS)	Human activity shall neither cause the natural ambient SS level to be raised by 30% nor give rise to accumulation of SS which may adversely affect aquatic communities	Marine waters
	Human activity shall not cause the annual median of SS to exceed 20 mg/L.	Yuen Long & Kam Tin (Upper and Lower) Subzones, Beas Subzone, Ganges Subzone, Indus Subzone, Water Gathering Ground Subzones and other inland waters
Un-ionized ammonia (UIA)	The un-ionized ammoniacal nitrogen level should not be more than 0.021 mg/L, calculated as the annual average (arithmetic mean).	Whole Zone
Nutrients	(a) Nutrients shall not be present in quantities sufficient to cause excessive or nuisance growth of algae or other aquatic plants.	Inner and Outer Marine Subzones
	(b) Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.7 mg/L, expressed as annual mean.	Inner Marine Subzones
	(c) Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.5 mg/L, expressed as annual water column average (arithmetic mean of at least 2 measurements at 1 m below surface and 1 m above seabed).	Outer Marine Subzones

Parameter	Criteria	Subzone
5-Day Biochemical Oxygen Demand (BOD5)	Waste discharges shall not cause the 5-day biochemical oxygen demand to exceed 3 mg/L	Yuen Long & Kam Tin (Upper) Subzone, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	Waste discharges shall not cause the 5-day biochemical oxygen demand to exceed 5 mg/L	Yuen Long & Kam Tin (Lower) Subzone and other inland waters
Chemical Oxygen Demand (COD)	Waste discharges shall not cause the chemical oxygen demand to exceed 15 mg/L	Yuen Long & Kam Tin (Upper) Subzone, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	Waste discharges shall not cause the chemical oxygen demand to exceed 30 mg/L	Yuen Long & Kam Tin (Lower) Subzone and other inland waters
Toxins	Waste discharges shall not cause the toxins in water to attain such levels as to produce significant toxic carcinogenic, mutagenic or teratogenic effects in humans, fish or any other aquatic organisms, with due regard to biologically cumulative effects in food chains and to toxicant interactions with each other.	Whole Zone
	Waste discharges shall not cause a risk to any beneficial uses of the aquatic environment.	Whole Zone
Phenol	Phenols shall not be present in such quantities as to produce a specific odour, or in concentration greater than 0.05 mg/L as C6H5OH.	Yung Long Bathing Beach Subzone
Turbidity	Waste discharges shall not reduce light transmission substantially from the normal level.	Yung Long Bathing Beach Subzone

Table 6-2 Summary of Water Quality Objectives for North Western WCZ-

Parameter	Criteria	Subzone
Aesthetic appearance	Waste discharges shall cause no objectionable odours or discolouration of the water.	Whole Zone
	Tarry residues, floating wood, articles made of glass, plastic, rubber or of any other substances should be absent.	
	Mineral oil should not be visible on the surface. Surfactants should not give rise to a lasting foam.	
	There should be no recognisable sewage-derived debris.	
	Floating, submerged and semi submerged objects of a size likely to interfere with the free movement of vessels, or cause damage to vessels, should be absent.	
	Waste discharges shall not cause the water to contain substances which settle to form objectionable deposits.	
Bacteria	Should not exceed 610 per 100 mL, calculated as the geometric mean of all samples collected in one calendar year.	Secondary Contact Recreation Subzone and Mariculture Subzone
	Should be zero per 100 mL, calculated as the running median of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Tuen Mun (A) and Tuen Mun (B) Subzones and Water Gathering Ground Subzones
	Should not exceed 1000 per 100 mL, calculated as the running median of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Tuen Mun (C) Subzone and other inland waters
	Should not exceed 180 per 100 mL, calculated as the geometric mean of all samples collected from March to October inclusive in one calendar year. Samples should be taken at least 3 times in a calendar month at intervals of between 3 and 14 days.	Bathing Beach Subzones
Dissolved Oxygen (DO) within 2m of the seabed	Not less than 2 mg/L for 90% of the sample	Marine waters
Dissolved Oxygen (DO)	Not less than 4 mg/L for 90% of the sample, taken at 1 metre below surface	Marine waters
	Not less than 4 mg/L for 90% of the sampling, calculated as water column average	Outer Marine Subzone excepting Mariculture Subzone
	Not less than 5 mg/L for 90% of the sample, taken at 1 metre below surface	Mariculture Subzone

Parameter	Criteria	Subzone
	Not less than 4 mg/L	Tuen Mun (A), Tuen Mun (B) and Tuen Mun (C) Subzones, Water Gathering Ground Subzones and other inland waters
Colour	Human activity should not cause the colour of water to exceed 30 Hazen units.	Tuen Mun (A) and Tuen Mun (B) Subzones and Water Gathering Ground Subzones
	Human activity should not cause the colour of water to exceed 50 Hazen units.	Tuen Mun (C) Subzone and other inland waters
Temperature	Waste discharges shall not cause the natural daily temperature range to change by more than 2°C	Whole Zone
Salinity	Waste discharges shall not cause the natural ambient salinity level to change by more than 10‰	Whole Zone
pH	To be in the range of 6.5-8.5, change due to human activity not to exceed 0.2 units	Marine waters excepting Bathing Beach Subzones
	To be in the range of 6.5-8.5	Tuen Mun (A), Tuen Mun (B) and Tuen Mun (C) Subzones and Water Gathering Ground Subzones
	To be in the range of 6.0-9.0	Other inland waters
	To be in the range of 6.0-9.0 for 95% of samples, change due to human activity not to exceed 0.5 units	Bathing Beach Subzone
Suspended solids (SS)	Human activity shall neither cause the natural ambient SS level to be raised by 30% nor give rise to accumulation of SS which may adversely affect aquatic communities	Marine waters
	Human activity shall not cause the annual median of SS to exceed 20 mg/L.	Tuen Mun (A), Tuen Mun (B) and Tuen Mun (C) Subzones and Water Gathering Ground Subzones
	Human activity shall not cause the annual median of SS to exceed 25 mg/L.	Other inland waters
Un-ionized ammonia (UIA)	The un-ionized ammoniacal nitrogen level should not be more than 0.021 mg/L, calculated as the annual average (arithmetic mean).	Whole Zone
Nutrients	(a) Nutrients shall not be present in quantities sufficient to cause excessive or nuisance growth of algae or other aquatic plants.	Marine waters
	(b) Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.7 mg/L, expressed as annual mean.	Castle Peak Bay Subzone
	(c) Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.5 mg/L, expressed as annual water column average (arithmetic mean of at least 2 measurements at 1 m below surface and 1 m above seabed).	Marine waters excepting Castle Peak Bay Subzone
5-Day Biochemical Oxygen Demand (BOD5)	Waste discharges shall not cause the 5-day biochemical oxygen demand to exceed 3 mg/L	Tuen Mun (A), Tuen Mun (B) and Tuen Mun (C) Subzones and Water Gathering Ground Subzones
	Waste discharges shall not cause the 5-day biochemical oxygen demand to exceed 5 mg/L	Other inland waters
Chemical Oxygen Demand (COD)	Waste discharges shall not cause the chemical oxygen demand to exceed 15 mg/L	Tuen Mun (A), Tuen Mun (B) and Tuen Mun (C) Subzones and Gathering Ground Subzones
	Waste discharges shall not cause the chemical oxygen demand to exceed 30 mg/L	Other inland waters
Toxins	Waste discharges shall not cause the toxins in water to attain such levels as to produce significant toxic carcinogenic, mutagenic or teratogenic effects in humans, fish or any other aquatic organisms, with due regard to biologically cumulative effects in food chains and to toxicant interactions with each other.	Whole Zone
	Waste discharges shall not cause a risk to any beneficial uses of the aquatic environment.	Whole Zone
Phenol	Phenols shall not be present in such quantities as to produce a specific odour, or in concentration greater than 0.05 mg/L as C6H5OH.	Bathing Beach Subzone
Turbidity	Waste discharges shall not reduce light transmission substantially from the normal level.	Bathing Beach Subzone

- 6.2.3 For mangroves, there is considerable evidence that mangroves are generally adapted to muddy or sandy substrate and used to turbid water and are survived in dramatic changes in salinity environment due to the nature of the inter-tidal habitat in which they grow (i.e. salinity levels can fluctuate from freshwater to sea water (0-34 ppt). No suspended solids and salinity criteria are recommended for this WSR.

Technical Memorandum for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS)

- 6.2.4 Apart from the WQOs, Section 21 of the WPCO (Cap. 358), Technical Memorandum - Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS) also specifies the limits to control the physical, chemical and microbial parameters for effluent discharges into drainage and sewerage system at both inland and coastal waters. The limits vary with the effluent flow rates. Group B, C and D inland water standards in TM-DSS are adopted and the effluent discharge standards are presented in **Table 6.3**, **Table 6.4** and **Table 6.5** respectively.

Table 6-3 Standards for effluents discharged into Group B Inland Waters

Determinant	Flow rate (m ³ /day)							
	≤200	>200 and ≤400	>400 and ≤600	>600 and ≤800	>800 and ≤1000	>1000 and ≤1500	>1500 and ≤2000	>2000 and ≤3000
pH (pH units)	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
Temperature (°C)	35	30	30	30	30	30	30	30
Colour (lovibond units) (25mm cell length)	1	1	1	1	1	1	1	1
Suspended Solids	30	30	30	30	30	30	30	30
BOD	20	20	20	20	20	20	20	20
COD	80	80	80	80	80	80	80	80
Oil & grease	10	10	10	10	10	10	10	10
Iron	10	8	7	5	4	3	2	1
Boron	5	4	3	2.5	2	1.5	1	0.5
Barium	5	4	3	2.5	2	1.5	1	0.5
Mercury	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Cadmium	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Selenium	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Other toxic metals individually	0.5	0.5	0.2	0.2	0.2	0.1	0.1	0.1
Total toxic metals	2	1.5	1	0.5	0.5	0.2	0.2	0.2
Cyanide	0.1	0.1	0.1	0.08	0.08	0.05	0.05	0.03
Phenols	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sulphide	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Fluoride	10	10	8	8	8	5	5	3
Sulphate	800	800	600	600	600	400	400	400
Chloride	1000	1000	800	800	800	600	600	400
Total phosphorus	10	10	10	8	8	8	5	5
Ammonia nitrogen	5	5	5	5	5	5	5	5
Nitrate + nitrite nitrogen	30	30	30	20	20	20	10	10
Surfactants (total)	5	5	5	5	5	5	5	5
E. coli (count/100mL)	100	100	100	100	100	100	100	100

Table 6-4 Standards for effluents discharged into Group C Inland Waters

Determinant	Flow rate (m ³ /day)			
	≤100	>100 and ≤500	>500 and ≤1000	>1000 and ≤2000
pH (pH units)	6-9	6-9	6-9	6-9
Temperature (°C)	30	30	30	30
Colour (lovibond units) (25mm cell length)	1	1	1	1
Suspended Solids	20	10	10	5
BOD	20	15	10	5
COD	80	60	40	20
Oil & grease	1	1	1	1
Iron	0.5	0.4	0.3	0.2

Determinant	Flow rate (m3/day)			
	≤100	>100 and ≤500	>500 and ≤1000	>1000 and ≤2000
Boron	10	5	4	2
Barium	1	1	1	0.5
Mercury	0.001	0.001	0.001	0.001
Cadmium	0.001	0.001	0.001	0.001
Silver	0.1	0.1	0.1	0.1
Copper	0.1	0.1	0.05	0.05
Selenium	0.1	0.1	0.05	0.05
Other toxic metals individually	0.5	0.4	0.3	0.2
Total toxic metals	0.5	0.4	0.3	0.2
Cyanide	0.05	0.05	0.05	0.01
Phenols	0.1	0.1	0.1	0.1
Sulphide	0.2	0.2	0.2	0.1
Fluoride	10	7	5	4
Sulphate	800	600	400	200
Chloride	1000	1000	1000	1000
Total phosphorus	10	10	8	8
Ammonia nitrogen	2	2	2	
Nitrate + nitrite nitrogen	30	30	20	20
Surfactants (total)	2	2	2	1
E. coli (count/100mL)	1000	1000	1000	1000

Table 6-5 Standards for effluents discharged into Group D Inland Waters

Determinant	Flow rate (m³/day)							
	≤200	>200 and ≤400	>400 and ≤600	>600 and ≤800	>800 and ≤1000	>1000 and ≤1500	>1500 and ≤2000	>2000 and ≤3000
pH (pH units)	6-10	6-10	6-10	6-10	6-10	6-10	6-10	6-10
Temperature (°C)	35	30	30	30	30	30	30	30
Colour (lovibond units) (25mm cell length)	1	1	1	1	1	1	1	1
Suspended Solids	30	30	30	30	30	30	30	30
BOD	20	20	20	20	20	20	20	20
COD	80	80	80	80	80	80	80	80
Oil & grease	10	10	10	10	10	10	10	10
Iron	10	8	7	5	4	2.7	2	1.3
Boron	5	4	3.5	2.5	2	1.5	1	0.7
Barium	5	4	3.5	2.5	2	1.5	1	0.7
Mercury	0.1	0.05	0.001	0.001	0.001	0.001	0.001	0.001
Cadmium	0.1	0.05	0.001	0.001	0.001	0.001	0.001	0.001
Other toxic metals individually	1	1	0.8	0.8	0.5	0.5	0.2	0.2
Total toxic metals	2	1.5	1	0.5	0.5	0.2	0.2	0.2
Cyanide	0.4	0.4	0.3	0.3	0.2	0.1	0.1	0.05
Phenols	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1
Sulphide	1	1	1	1	1	1	1	1
Fluoride	10	8	8	8	5	5	3	3
Sulphate	800	600	600	600	600	400	400	400
Chloride	1000	800	800	800	800	600	600	400
Total phosphorus	10	10	10	8	8	8	5	5
Ammonia nitrogen	20	20	20	20	20	20	20	10
Nitrate + nitrite nitrogen	50	50	50	30	30	30	30	20
Surfactants (total)	15	15	15	15	15	15	15	15
E. coli (count/100mL)	1000	1000	1000	1000	1000	1000	1000	1000

6.2.5 The TM-DSS also specifies the discharge standards into foul sewers leading into the Government's sewage treatment plants as shown in Table 6.6 and Table 6.7 below. Subject to the flow rate of the effluents, corresponding standards for the effluent discharge into the Government's foul sewers should be followed.

Table 6-6 Standards for effluents discharged into Foul Sewers leading into Government Sewage Treatment Plants

Determinant	Flow rate (m ³ /day)												
	≤10	>10 and ≤100	>100 and ≤200	>200 and ≤400	>400 and ≤600	>600 and ≤800	>800 and ≤1000	>1000 and ≤1500	>1500 and ≤2000	>2000 and ≤3000	>3000 and ≤4000	>4000 and ≤5000	>5000 and ≤6000
pH (pH units)	6-10	6-10	6-10	6-10	6-10	6-10	6-10	6-10	6-10	6-10	6-10	6-10	6-10
Temperature (°C)	43	43	43	43	43	43	43	43	43	43	43	43	43
Suspended Solids	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Settleable Solids	100	100	100	100	100	100	100	100	100	100	100	100	100
BOD	1200	1000	900	800	800	800	800	800	800	800	800	800	800
COD	3000	2500	2200	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Oil & grease	100	100	100	100	100	100	100	100	100	100	100	100	100
Iron	30	25	25	25	15	12.5	10	7.5	5	3.5	2.5	2	1.5
Boron	8	7	6	5	4	3	2.4	1.6	1.2	0.8	0.6	0.5	0.4
Barium	8	7	6	5	4	3	2.4	1.6	1.2	0.8	0.6	0.5	0.4
Mercury	0.2	0.15	0.1	0.1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Cadmium	0.2	0.15	0.1	0.1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Copper	4	4	4	3	1.5	1.5	1	1	1	1	1	1	1
Nickel	4	3	3	2	1.5	1.5	1	0.8	0.7	0.7	0.6	0.6	0.6
Chromium	2	2	2	2	1	0.7	0.6	0.4	0.3	0.2	0.1	0.1	0.1
Zinc	5	5	4	3	1.5	1.5	1	0.8	0.7	0.7	0.6	0.6	0.6
Silver	4	3	3	2	1.5	1.5	1	0.8	0.7	0.7	0.6	0.6	0.6
Other toxic metals individually	2.5	2.2	2	1.5	1	0.7	0.6	0.4	0.3	0.2	0.15	0.12	0.1
Total toxic metals	10	10	8	7	3	2	2	1.6	1.4	1.2	1.2	1.2	1
Cyanide	2	2	2	1	0.7	0.5	0.4	0.27	0.2	0.13	0.1	0.08	0.08
Phenols	1	1	1	1	0.7	0.5	0.4	0.27	0.2	0.13	0.1	0.1	0.1
Sulphide	10	10	10	10	5	5	4	2	2	2	1	1	1
Sulphate	1000	1000	1000	1000	1000	1000	1000	900	800	600	600	600	600
Total nitrogen	200	200	200	200	200	200	200	100	100	100	100	100	100
Total phosphorus	50	50	50	50	50	50	50	25	25	25	25	25	25
Surfactants (total)	200	150	50	40	30	25	25	25	25	25	25	25	25

Note: All units in mg/L unless otherwise stated; all figures are upper limits unless otherwise indicated.

Table 6-7 Standards for effluents discharged into Foul Sewers leading into Government Sewage Treatment Plants with Microbial Treatment

Determinant	Flow rate (m ³ /day)												
	≤10	>10 and ≤100	>100 and ≤200	>200 and ≤400	>400 and ≤600	>600 and ≤800	>800 and ≤1000	>1000 and ≤1500	>1500 and ≤2000	>2000 and ≤3000	>3000 and ≤4000	>4000 and ≤5000	>5000 and ≤6000
Copper	1.5	1	1	1	0.8	0.6	0.5	0.4	0.3	0.2	0.15	0.1	0.05

Notes: All units in mg/L unless otherwise stated; all figures are upper limits unless otherwise indicated. Standards in this table apply in place of those in Table 5.6 for the corresponding determinant

Practice Notes

- 6.2.6 A “Professional Persons Environmental Consultative Committee Practice Note” (ProPECC PN) was issued by the EPD to provide guidelines for handling and disposal of construction site discharges. The ProPECC PN 2/24 "Construction Site Drainage" provides good practice guidelines for dealing with 10 types of discharge from construction sites. These include surface run-off, groundwater, boring and drilling water, bentonite slurry, water for testing and sterilisation of water retaining structures and water pipes, wastewater from building constructions, acid cleaning, etching and pickling wastewater, and wastewater from site facilities. Practices given in the ProPECC PN 2/24 should be followed as far as possible during construction to minimise the water quality impact due to construction site drainage.

- 6.2.7 The “Drainage Plans Subject to Comment by the EPD” (ProPECC PN 1/23) provides guidelines and practices for handling, treatment and disposal of various effluent discharges to stormwater drains and foul sewers during the operation phase. The design of site drainage and disposal of various site effluents generated within the new development area should follow the relevant guidelines and practices as given in the ProPECC PN 1/23.

Technical Circular

- 6.2.8 Environment, Transport and Works Bureau Technical Circular (ETWB TC) (Works) No. 5/2005 provides an administrative framework to better protect all natural streams/ivers from the impacts of construction works. The procedures promulgated under this Circular aim to clarify and strengthen existing measures for protection of natural streams/ivers from government projects and private developments. The guidelines and precautionary mitigation measures given in the ETWB TC (Works) No. 5/2005 should be followed as far as possible to protect the inland watercourses at or near the Project area during the construction phase.

Hong Kong Planning Standards and Guidelines (HKPSG)

- 6.2.9 Chapter 9 of the HKPSG outlines environmental requirements that need to be considered in land use planning. The recommended guidelines, standards and guidance cover the selection of suitable locations for the developments and sensitive uses, provision of environmental facilities, and design, layout, phasing and operational controls to minimise adverse environmental impacts. It also lists environmental factors that influence land use planning and recommends buffer distances for land uses.

Water Quality Standards for Reclaimed Water

- 6.2.10 The water quality standards for reclaimed water to be adopted by this Project are based on the water quality standards endorsed by the “Working Group on the Implementation of Reclaimed Water Supply in Sheung Shui and Fanling” at its meeting on 13 July 2012 for non-potable uses. Details of the standards are summarized in **Table 6-8** below.

Table 6-8 Reclaimed Water Quality Standards for Non-Potable Uses

Parameters	Unit	Recommended Water Quality Standards
<i>E. coli</i>	Cfu/100mL	Non detectable
Total Residual Chlorine	mg/L	≥ 1 exiting treatment system; ≥ 0.2 at user end
Dissolved Oxygen	mg/L	≥ 2
Suspended Solids (SS)	mg/L	≤ 5
Colour	Hazen unit	≤ 20
Turbidity	NTU	≤ 5
pH	-	6-9
Threshold Odour Number (TON)	-	≤ 100
5-day Biochemical Oxygen Demand (BOD5)	mg/L	≤ 10
Ammoniacal Nitrogen	mg/L as N	≤ 1
Synthetic Detergents	mg/L	≤ 5

Source: Final Environmental Impact Assessment Report under Agreement No. CE 61/2007(CE) - "North East New Territories New Development Areas Planning and Engineering Study – Investigation", Table 6.18.

Notes:

1. Apart from total residual chlorine which has been specified, the water quality standards for all parameters shall be applied at the point-of-use of the system.
2. Where reclaimed water is treated for immediate usage, the level of total residual chlorine may be lower than the one specified in this table.
3. Immediate usage means the collected grey water / rainwater is drawn into the treatment process immediate before a particular round of usage and the treated water will be depleted after that round of usage is completed.

6.3 Description of the Environment

Study Area

- 6.3.1 The Study Area for the water quality impact assessment include areas within 500m from the boundary of the Project and shall cover Deep Bay, North Western and other affected WCZs as designated under the WPCO and water sensitive receivers, such as the natural streams and nullah in the vicinity of the Project. The baseline condition of water bodies in the Study Area have been established with reference to routine river and marine water quality monitoring data collected by EPD. Descriptions of the baseline conditions provided in the subsequent sections are extracted from the EPD's reports "Marine Water Quality in Hong Kong in 2023" and "River Water Quality in Hong Kong in 2023" which contains the latest information published by EPD on river and marine water quality.

Marine Water

- 6.3.2 The baseline water quality condition of marine water was established from the marine water quality monitoring data routinely collected by EPD in the Deep Bay and North Western WCZs. A summary of EPD monitoring data collected in 2025 for Deep Bay WCZ and North Western WCZ were presented in **Table 6.9** and **Table 6.10** respectively.

Table 6-9 Summary EPD's Routine Marine Water Quality Data for Deep Bay WCZ in Year 2025

Parameter	Inner Deep Bay			Outer Deep Bay	
	DM1	DM2	DM3	DM4	DM5
Temperature (°C)	24	24.1	24	24.1	24
	(17.7 - 29.9)	(17.4 - 29.9)	(17.6 - 29.3)	(18.0 - 29.0)	(18.0 - 28.7)
Salinity	16	19.2	22.2	24.4	26.7
	(5.4 - 22.9)	(9.5 - 26.3)	(12.0 - 28.9)	(13.1 - 30.9)	(17.2 - 32.0)
Dissolved Oxygen (mg/L)	6.8	7	6.6	6.7	7.1
	(4.6 - 9.5)	(4.9 - 9.3)	(4.5 - 9.0)	(4.3 - 9.8)	(4.7 - 11.4)
Bottom	#NA	#NA	#NA	7	7.7
	#NA	#NA	#NA	(4.5 - 10.7)	(4.7 - 13.9)
Dissolved Oxygen (% Saturation)	87	92	89	91	97
	(59 - 114)	(66 - 114)	(63 - 115)	(62 - 125)	(69 - 147)
Bottom	#NA	#NA	#NA	94	105
	#NA	#NA	#NA	(66 - 136)	(68 - 179)
pH	7.5	7.6	7.7	7.8	7.9
	(7.1 - 8.2)	(7.2 - 8.3)	(7.3 - 8.1)	(7.4 - 8.1)	(7.5 - 8.1)
Secchi Disc Depth (m)	1.2	1.2	1.3	1.6	1.9
	(0.5 - 1.7)	(0.5 - 1.6)	(0.8 - 1.8)	(1.0 - 2.0)	(1.3 - 2.5)
Turbidity (NTU)	15.3	10.9	5.5	3.7	3.9
	(3.1 - 48.3)	(1.6 - 31.6)	(1.1 - 13.1)	(0.9 - 11.9)	(0.7 - 12.6)
Suspended Solids (mg/L)	19.3	13.2	7.7	5.1	5.7
	(6.4 - 46.0)	(5.2 - 29.0)	(4.3 - 17.0)	(2.5 - 7.3)	(2.7 - 11.4)
5-day Biochemical Oxygen Demand (mg/L)	1.6	1.1	0.8	0.6	0.5
	(0.4 - 3.3)	(0.2 - 4.5)	(<0.1 - 5.2)	(<0.1 - 1.5)	(0.1 - 1.2)
Ammonia Nitrogen (mg/L)	0.427	0.224	0.127	0.109	0.087
	(0.130 - 0.970)	(0.047 - 0.550)	(0.018 - 0.330)	(0.010 - 0.255)	(0.019 - 0.170)
Unionised Ammonia (mg/L)	0.007	0.004	0.003	0.003	0.003
	(0.002 - 0.030)	(<0.001 - 0.011)	(<0.001 - 0.009)	(<0.001 - 0.005)	(<0.001 - 0.004)
Nitrite Nitrogen (mg/L)	0.123	0.094	0.072	0.069	0.06
	(0.035 - 0.350)	(0.011 - 0.340)	(0.008 - 0.210)	(0.006 - 0.180)	(0.007 - 0.153)
Nitrate Nitrogen (mg/L)	1.12	0.908	0.684	0.613	0.498
	(0.730 - 1.600)	(0.280 - 1.300)	(0.130 - 1.400)	(0.150 - 1.400)	(0.099 - 1.220)
Total Inorganic Nitrogen (mg/L)	1.67	1.23	0.88	0.79	0.65
	(0.94 - 2.53)	(0.36 - 1.72)	(0.19 - 1.58)	(0.23 - 1.57)	(0.18 - 1.39)
Total Kjeldahl Nitrogen (mg/L)	0.76	0.49	0.33	0.29	0.23
	(0.35 - 1.40)	(0.20 - 0.94)	(0.13 - 0.59)	(0.15 - 0.61)	(0.13 - 0.43)
Total Nitrogen (mg/L)	2	1.49	1.08	0.97	0.79
	(1.21 - 3.11)	(0.49 - 2.20)	(0.27 - 1.77)	(0.31 - 1.76)	(0.24 - 1.56)
Orthophosphate Phosphorus (mg/L)	0.13	0.101	0.058	0.039	0.028
	(0.097 - 0.200)	(0.044 - 0.140)	(0.009 - 0.110)	(0.003 - 0.085)	(0.004 - 0.058)

Total Phosphorus (mg/L)	0.25 (0.18 - 0.40)	0.19 (0.14 - 0.27)	0.16 (0.09 - 0.37)	0.1 (0.07 - 0.16)	0.09 (0.06 - 0.14)
Silica (as SiO₂) (mg/L)	6.78 (2.80 - 10.00)	5.33 (0.72 - 8.50)	3.59 (0.38 - 6.60)	2.99 (0.22 - 6.65)	2.38 (0.16 - 5.27)
Chlorophyll-a (µg/L)	5.5 (1.1 - 15.0)	2.3 (0.7 - 4.9)	2 (0.5 - 6.1)	2.5 (0.5 - 13.7)	2 (0.4 - 5.2)
<i>E. coli</i> (count/100mL)	400 (6 - 48000)	75 (1 - 2200)	12 (<1 - 1200)	6 (<1 - 710)	16 (1 - 340)
Faecal Coliforms (count/100mL)	940 (31 - 130000)	180 (2 - 4200)	35 (3 - 2800)	16 (1 - 1400)	38 (2 - 990)
Notes: 1. Data source: EPD Marine Water Quality in Hong Kong in 2025 2. Unless otherwise specified, data presented are depth-averaged (A) values calculated by taking the means of three depths; Surface (S), Mid-depth (M), Bottom (B). 3. Data presented are annual arithmetic means of the depth-averaged results except for <i>E. coli</i> and faecal coliforms which are annual geometric means. 4. Data in brackets indicate the ranges. 5. NA (Not Applicable) indicates the measurement was not made due to shallow water.					

Table 6-10 Summary EPD's Routine Marine Water Quality Data for North Western WCZ in Year 2025

Parameter	Lantau Island				Chek Lap Kok	
	(North)	Pearl Island	Pillar Point	Urmston Road	(North)	(West)
	NM1	NM2	NM3	NM5	NM6	NM8
Temperature (° C)	24.2 (17.4 - 29.1)	24.4 (17.3 - 29.3)	24.4 (17.3 - 29.4)	24.5 (17.4 - 29.2)	24.6 (17.2 - 29.4)	24.5 (17.0 - 29.6)
Salinity	29 (24.0 - 32.9)	28 (21.8 - 32.9)	27.8 (22.5 - 32.7)	27 (20.5 - 32.6)	25.6 (17.4 - 32.0)	26.9 (16.1 - 33.1)
Dissolved Oxygen (mg/L)	5.3 (2.7 - 7.0)	6.1 (3.5 - 11.0)	5.8 (3.1 - 8.9)	5.6 (2.9 - 7.2)	6.3 (3.9 - 10.4)	6.6 (3.5 - 10.4)
Bottom	4.7 (1.6 - 6.4)	5.8 (2.2 - 13.7)	5.1 (2.2 - 6.8)	4.9 (2.0 - 6.6)	6.1 (3.2 - 12.7)	6.2 (2.6 - 12.7)
Dissolved Oxygen (% Saturation)	74 (39 - 88)	84 (51 - 154)	81 (44 - 125)	78 (42 - 96)	87 (56 - 147)	91 (52 - 147)
Bottom	66 (24 - 91)	81 (32 - 191)	71 (32 - 91)	67 (28 - 91)	84 (47 - 179)	86 (39 - 179)
pH	7.8 (7.5 - 8.1)	7.9 (7.6 - 8.2)	7.9 (7.5 - 8.2)	7.8 (7.5 - 8.2)	7.9 (8.2 - 8.3)	7.9 (7.4 - 8.3)
Secchi Disc Depth (m)	2.3 (1.6 - 3.6)	2.2 (1.7 - 3.4)	2.1 (1.8 - 2.9)	2 (1.5 - 2.8)	2.1 (1.5 - 3.0)	2 (1.6 - 2.4)
Turbidity (NTU)	2.8 (0.8 - 6.9)	2.4 (0.7 - 6.7)	3.1 (0.9 - 7.3)	4.2 (1.2 - 15.6)	3.1 (0.8 - 10.2)	5.8 (1.4 - 19.2)
Suspended Solids (mg/L)	5.2 (2.4 - 10.1)	4.2 (2.0 - 8.1)	4.6 (2.3 - 8.2)	5.6 (2.1 - 10.0)	4.7 (2.8 - 8.3)	6.7 (3.6 - 15.0)
5-day Biochemical Oxygen Demand (mg/L)	0.5 (<0.1 - 1.1)	0.5 (<0.1 - 0.8)	0.5 (<0.1 - 1.0)	0.5 (<0.1 - 1.5)	-0.1 (<0.1 - 1.6)	-0.1 (<0.1 - 2.0)
Ammonia Nitrogen (mg/L)	0.107 (0.037 - 0.177)	0.094 (0.038 - 0.190)	0.092 (0.034 - 0.147)	0.097 (0.046 - 0.163)	0.068 (0.008 - 0.157)	0.044 (0.005 - 0.104)
Unionised Ammonia (mg/L)	0.003 (<0.001 - 0.010)	0.003 (<0.001 - 0.010)	0.003 (<0.001 - 0.011)	0.003 (<0.001 - 0.010)	0.003 (<0.001 - 0.009)	0.002 (<0.001 - 0.008)
Nitrite Nitrogen (mg/L)	0.033 (0.003 - 0.088)	0.04 (0.002 - 0.123)	0.042 (0.002 - 0.115)	0.047 (0.004 - 0.133)	0.051 (0.004 - 0.143)	0.045 (0.002 - 0.117)
Nitrate Nitrogen (mg/L)	0.317 (0.065 - 0.793)	0.373 (0.061 - 1.000)	0.408 (0.062 - 0.933)	0.459 (0.081 - 1.020)	0.52 (0.095 - 1.200)	0.469 (0.015 - 1.430)
Total Inorganic Nitrogen (mg/L)	0.46 (0.17 - 0.93)	0.51 (0.16 - 1.14)	0.54 (0.16 - 1.08)	0.6 (0.20 - 1.22)	0.64 (0.19 - 1.34)	0.56 (0.07 - 1.56)
Total Kjeldahl Nitrogen (mg/L)	0.29 (0.15 - 0.62)	0.26 (0.14 - 0.71)	0.26 (0.14 - 0.49)	0.29 (0.17 - 0.71)	0.27 (0.14 - 0.65)	0.28 (0.14 - 0.71)
Total Nitrogen (mg/L)	0.64 (0.33 - 1.05)	0.67 (0.33 - 1.25)	0.71 (0.33 - 1.22)	0.79 (0.33 - 1.33)	0.84 (0.33 - 1.51)	0.79 (0.32 - 1.77)
Orthophosphate Phosphorus (mg/L)	0.02 (0.012 - 0.033)	0.02 (0.011 - 0.034)	0.021 (0.011 - 0.034)	0.022 (0.008 - 0.046)	0.023 (0.010 - 0.040)	0.018 (<0.002 - 0.044)
Total Phosphorus (mg/L)	0.08 (0.04 - 0.14)	0.08 (0.03 - 0.13)	0.08 (0.04 - 0.14)	0.08 (0.04 - 0.11)	0.07 (0.04 - 0.11)	0.07 (0.03 - 0.14)
Silica (as SiO₂) (mg/L)	1.5 (0.26 - 3.37)	1.62 (0.26 - 4.23)	1.73 (0.29 - 3.93)	1.98 (0.34 - 4.83)	2.14 (0.34 - 4.87)	2.11 (0.12 - 6.13)
Chlorophyll-a (µg/L)	1.9	1.8	1.9	2.2	2.8	3.2

Parameter	Lantau Island				Chek Lap Kok	
	(North)	Pearl Island	Pillar Point	Urmston Road	(North)	(West)
	NM1	NM2	NM3	NM5	NM6	NM8
	(0.5 - 7.6)	(0.2 - 7.9)	(0.2 - 6.1)	(0.4 - 8.1)	(0.2 - 12.7)	(0.7 - 6.7)
<i>E. coli</i> (count/100mL)	40	28	33	28	4	2
	(2 - 670)	(4 - 160)	(6 - 200)	(6 - 230)	(1 - 64)	(<1 - 11)
Faecal Coliforms (count/100mL)	90	64	78	63	13	5
	(3 - 1100)	(13 - 670)	(16 - 830)	(12 - 740)	(1 - 230)	(1 - 50)

Notes:

1. Data source: EPD Marine Water Quality in Hong Kong in 2025
2. Except as specified, data presented are depth-averaged values calculated by taking the means of three depths: Surface, Mid-depth, Bottom.
3. Data presented are annual arithmetic means of depth-averaged results except for *E. coli* and faecal coliforms that are annual geometric means.
4. Data in brackets indicate the ranges.

6.3.4 In 2025, the overall WQO compliance rate for the Deep Bay WCZ was 67%, as compared with a ten-year average of 47% in 2009-2018. Overall, with the measures taken progressively by the governments of Hong Kong and Shenzhen under the Deep Bay Water Pollution Control Joint Implementation Programme, there have been significant water quality improvements in Deep Bay. In particular, the NH₃-N WQO has been fully met in the past ten years. Although Deep Bay, as compared with other WCZs, shows higher nutrient levels with annual depth-averaged TIN levels exceeding the respective TIN WQOs, a noticeable long-term decrease in TIN levels since mid-2000s has been seen.

6.3.5 In 2025, the overall WQO compliance rate of the North Western WCZ was 44%, with the DO and NH₃-N WQOs fully met. Under the influence of high seasonal background level in the Pearl River Estuary, the compliance rate for TIN WQO was 17%. With intensive stratification of water column during the summer and stormy months in the year, the compliance rate for DO WQO was only 17%.

Inland Water

6.3.6 The water quality monitoring results at stations in Yuen Long Nullah, namely YL1, YL2, YL3 and YL4, are shown in **Table 6.11**. According to the EPD's publication "River Water Quality in Hong Kong in 2025", the overall compliance rate of Yuen Long Nullah in 2025 was 58%, as compared with 30% in 1995. In terms of Water Quality Index (WQI) grading, the two upstream monitoring stations (YL1 and YL2) were both graded as "Fair", while the downstream stations (YL3 and YL4) were graded as "Bad" and "Very Bad" gradings respectively. In terms of *E. coli*, the four river monitoring stations of Yuen Long Nullah recorded "High" or "Very High" *E. coli* levels (annual geometric mean >10,000 counts/100mL), mainly due to discharges from livestock farms, surface runoffs from unsewered villages as well as expedient connections in old districts.

Table 6-11 Summary Statistic of 2025 River Water Quality of Yuen Long Nullah

Parameter	Unit	Yuen Long Nullah			
		YL1	YL2	YL3	YL4
Dissolved Oxygen	mg/L	5.6	6	4.3	3.1
		(3.2 - 7.9)	(4.4 - 8.8)	(2.8 - 5.2)	(1.8 - 4.4)
pH	-	7.2	7.2	7.3	7.1
		(7.0 - 7.4)	(7.0 - 7.6)	(7.1 - 7.9)	(6.9 - 7.3)
Suspended Solids	mg/L	6.4	3.7	18.5	23
		(1.9 - 23.0)	(1.6 - 7.4)	(7.0 - 83.0)	(12.0 - 48.0)
5-Day Biochemical Oxygen Demand	mg/L	8.1	9.5	52.5	102
		(2.0 - 42.0)	(5.5 - 44.0)	(17.0 - 160.0)	(71.0 - 200.0)
Chemical Oxygen Demand	mg/L	16	14	37	75
		(10 - 70)	(5 - 19)	(14 - 190)	(28 - 180)
Oil & Grease	mg/L	0.5	<0.5	1.8	5.2
		(<0.5 - 4.5)	(<0.5 - <0.5)	(<0.5 - 7.3)	(2.2 - 20.0)
<i>E. coli</i>	counts/100mL	75 718	70 893	1 158 178	2 529 015
		(34000 - 880000)	(24000 - 510000)	(560000 - 8000000)	(720000 - 15000000)

Parameter	Unit	Yuen Long Nullah			
		YL1	YL2	YL3	YL4
Faecal Coliforms	counts/ 100mL	205 073	391 410	2 426 249	6 836 820
		(72000 - 1100000)	(80000 - 1600000)	(900000 - 30000000)	(1700000 - 26000000)
Ammonia-Nitrogen	mg/L	4.8	3.25	4.3	6.6
		(1.200 - 17.000)	(2.300 - 4.100)	(2.000 - 7.800)	(4.100 - 8.500)
Nitrate-Nitrogen	mg/L	0.49	0.63	0.139	0.002
		(<0.002 - 0.900)	(0.410 - 0.990)	(<0.002 - 1.100)	(<0.002 - 0.032)
Total Kjeldahl Nitrogen	mg/L	7.4	4	6.6	10
		(3.30 - 19.00)	(2.60 - 11.00)	(2.90 - 19.00)	(5.50 - 13.00)
Orthophosphate Phosphorus	mg/L	0.485	0.25	0.29	0.55
		(0.140 - 1.300)	(0.150 - 0.510)	(0.100 - 0.580)	(0.290 - 0.710)
Total Phosphorus	mg/L	0.85	0.35	0.73	0.96
		(0.35 - 1.70)	(0.27 - 0.57)	(0.38 - 1.70)	(0.57 - 1.70)
Sulphide	mg/L	<0.02	<0.02	0.08	0.37
		(<0.02 - 0.07)	(<0.02 - 0.04)	(<0.02 - 0.41)	(0.11 - 0.57)
Aluminium	µg/L	<50	<50	<50	<50
		(<50 - <50)	(<50 - <50)	(<50 - <50)	(<50 - <50)
Cadmium	µg/L	<0.1	<0.1	<0.1	<0.1
		(<0.1 - <0.1)	(<0.1 - <0.1)	(<0.1 - <0.1)	(<0.1 - <0.1)
Chromium	µg/L	<1	<1	<1	<1
		(<1 - <1)	(<1 - <1)	(<1 - <1)	(<1 - <1)
Copper	µg/L	2	<1	<1	<1
		(<1 - 3)	(<1 - 3)	(<1 - 3)	(<1 - 3)
Lead	µg/L	<1	<1	<1	<1
		(<1 - <1)	(<1 - <1)	(<1 - <1)	(<1 - <1)
Zinc	µg/L	<10	<10	<10	<10
		(<10 - 20)	(<10 - 20)	(<10 - 20)	(<10 - 20)
Flow	m ³ /s	0.209	0.019	0.621	0.161
		(0.004 - 1.200)	(0.006 - 0.058)	(0.068 - 3.875)	(0.063 - 0.304)

Notes:

1. Data source: EPD River Water Quality in Hong Kong in 2025
2. Data presented are in annual medians of monthly samples; except those for faecal coliforms and *E. coli* which are in annual geometric means
3. Figures in brackets are annual ranges
4. Values at or below laboratory reporting limits are presented as laboratory reporting limits
5. Equal values for annual median (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits

6.4 Review of Water Sensitive Receivers

- 6.4.1 With reference to previously approved EIA report (AEIAR-237/2022), the 500m assessment area from the site boundary of the Project and the representative WSRs within the assessment area are shown in **Figure 6.1**. No changes to the WSRs identified in the approved EIA report have been observed following the updated review.

Existing Inland Watercourses

- 6.4.2 Major existing watercourses identified within and near the Project are summarized below and are shown in **Figure 6.1**, which include:

- Yuen Long Nullah (S1)
- Immediate upstream of the southern end of Yuen Long Nullah (S2)
- Yeung Ka Tsuen Ecologically Important Stream (EIS) (S3)
- Near YLSEPP (S4)

- Modified watercourse along the fence of the existing brownfield operation in the northern side of the Project site (S9)
- Catchwater which lead to Wong Nai Tun Irrigation Reservoir (S10)

Existing Ponds and other WSRs

6.4.3 A summary of all ponds and other inland water bodies identified within the assessment area is provided in **Table 6.12** and illustrated in **Figure 6.1**.

Table 6-12 Ponds and other WSRs within Assessment Area

WSR ID	Description	Location	Status
P1	Ponds	To the north west of the proposed Project site.	Overgrown with vegetation
P2	Ponds	To the north west of the proposed Project site.	Overgrown with vegetation
P3	Ponds	To the south east of the proposed Project site.	Overgrown with vegetation
P4	Ponds	To the north east of the proposed Project site.	Overgrown with vegetation
W1	Water Gathering Ground	To the south west of the proposed Project site.	Rainwater is collected via catchwaters and is then stored in Wong Nai Tun Irrigation Reservoir.
W2	Country Park	To the south of the proposed Project site.	-
W3	Conservation Area	To the south of the proposed Project site.	-

Marine Water Sensitive Receivers

6.4.4 The key marine WSRs within the Deep Bay WCZs have been identified as follows:

- Mai Po Marshes SSSI (E1)
- Mai Po and Inner Deep Bay Ramsar Site / Inner Deep Bay SSSI (E2)
- Oyster Culture Area in Deep Bay (E3)
- Mangroves (E4)
- Mangroves along Shan Pui River (E5)

6.4.5 The indicative locations of these major marine WSRs are shown in **Figure 6.2**.

6.5 Review of Water Quality Impact during Construction Phase and Operational Phase

6.5.1 The proposed building height relaxation will not introduce additional sources of wastewater nor increase the scale of such activities when compared with those assessed in the approved EIA during construction and operational phase. Therefore, no additional water quality impact is anticipated.

6.6 Review of Environmental Monitoring and Audit Requirements

- 6.6.1 Since there are no identified changes in impacts or mitigation measures compared to the EIA, the environmental monitoring and audit requirements as outlined in the assessment also remain unchanged.

6.7 Conclusion

- 6.7.1 The proposed building height relaxation will not introduce additional sources of wastewater nor increase the scale of such activities when compared with those assessed in the approved EIA during construction and operational phase. Therefore, no additional water quality impact is anticipated.
- 6.7.2 Since there are no identified changes in impacts or mitigation measures compared to the EIA, the environmental monitoring and audit requirements as outlined in the assessment also remain unchanged.

7. Waste Management Implication

7.1 Introduction

- 7.1.1 This Section reviews the construction and operational phase waste management impact arising from the Project.

7.2 Environmental Legislation and Criteria

- 7.2.1 The relevant legislation and associated guidelines applicable to the study for the assessment of waste management implications include:
- Waste Disposal Ordinance (Cap. 354);
 - Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C);
 - Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N);
 - Land (Miscellaneous Provisions) Ordinance (Cap. 28); and
 - Public Health and Municipal Services Ordinance (Cap. 132BK) – Public Cleansing and Prevention Nuisances Regulation.
 - Other relevant guidelines (as listed in **Table 7.1**).

Table 7-1 Other relevant documents and guidelines

Bureau / Department	Documents / Guidelines / Technical Circulars
CEDD	• Section 4.1.3 of Chapter 4 of the Project Administration Handbook (PAH) for Civil Engineering Works, Management of Construction/ Demolition Materials including Rocks.
EPD	• Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes (EPD); • A Guide to the Chemical Waste Control Scheme (EPD)
Development Bureau	• Works Branch Technical Circular (WBTC) No. 2/93 Public Dumps • WBTC No. 2/93B Public Filling Facilities • WBTC No. 12/2000 Fill Management • WBTC No. 19/2001 Metallic Site Hoardings and Signboards • WBTC No. 12/2002 Specifications Facilitating the Use of Recycled Aggregates • Environment, Transport and Works Bureau Technical Circular (Works) (ETWB TCW) No. 19/2005 Environmental Management on Construction Sites • Development Bureau Technical Circular (Works) (DEVB TCW) No. 06/2010 Tripticket System for Disposal of Construction and Demolition Material • DEVB TCW No. 08/2010 Enhanced Specification for Site Cleanliness and Tidiness • DEVB TCW No. 09/2011 Enhanced Control measures for Management of Public Fill
PlanD	• Hong Kong Planning Standards and Guidelines

7.3 Assessment Methodology

- 7.3.1 The potential waste management implications of the Project have been assessed through:
- Estimation of the types and quantities of the wastes generated;
 - Evaluation of opportunities for waste reduction and re-use;
 - Identification of disposal options for each type of wastes;
 - Assessment of potential environmental impacts arising from the wastes management with respect of potential hazards, air and odour emissions, noise, wastewater discharge, and public transport; and
 - Assessment of the impacts caused by handling, collection, transportation and re-use / disposal of wastes.

- 7.3.2 Prior to considering the disposal options for various types of waste, opportunities for reducing waste generation, on-site or off-site reuse and recycling have been evaluated. Measures which can be taken in the planning and design phases (e.g. by modifying the design approach) and in the construction phase for maximizing waste reduction have been separately considered. Practices to promote segregation of waste materials are additionally considered for advancing the waste management efficiency.
- 7.3.3 After considering all the opportunities for reducing waste generation and maximizing reuse, the types and quantities of the waste required to be disposed of have been estimated and the disposal options for each type of waste have been described. The disposal method recommended for each type of waste has been taken into account the result of the assessment. The impacts caused by handling (including stockpiling, labelling, packaging and storage), collection and reuse/ disposal of waste have been addressed, and appropriate mitigation measures have been proposed.

7.4 Evaluation of Waste Implication during Construction Phase

- 7.4.1 The proposed building height relaxation will not induce any additional waste management implications compared to the approved EIA (AEIAR-237/2022). Assessments on waste management implications, including updated waste volume estimates, were also conducted in the updated draft Environmental Review Report (ERR) and EM&A Manual (Draft - Issue 3) (REP-011-00) under CE 1/2023 (DS). By accommodating more of the development above ground, the revised design minimizes the extent of excavation, which actually reduces the generation of Construction and Demolition (C&D) materials. No new waste generation sources or disposal requirements are introduced by this modification. The quantities of chemical waste and general refuse will remain consistent with the original assessment. With the implementation of the recommended good site practices, waste reduction measures, and the Waste Management Plan (WMP), no adverse waste impacts are anticipated during the construction phase.

7.5 Evaluation of Waste Implication during Operation Phase

- 7.5.1 The proposed building height relaxation will not alter the operational capacity of the Project and therefore will not induce any additional waste management implications compared to the approved EIA (AEIAR-237/2022). Assessments on waste management implications, including updated waste volume estimates, were also conducted in the updated draft ERR and EM&A Manual (Draft - Issue 3) (REP-011-00) under CE 1/2023 (DS). During the operational phase, the types and quantities of waste generated will remain unchanged. All generated waste will continue to be properly stored, handled, collected, and disposed of at designated facilities in accordance with relevant EPD guidelines and established site practices. Consequently, no adverse environmental impacts related to operational waste management are anticipated.

7.6 Review of Environmental Monitoring and Audit Requirements

- 7.6.1 Assessments on waste management implications was conducted in the updated draft ERR and EM&A Manual (Draft - Issue 3) (REP-011-00) under CE 1/2023 (DS). Since there are no identified changes in impacts or mitigation measures compared to the approved EIA (AEIAR-237/2022), the environmental monitoring and audit requirements as outlined in the assessment also remain unchanged.

7.7 Conclusion

- 7.7.1 Construction and demolition materials will inevitably be produced during the construction phase of the Project. Waste generated during construction works include inert C&D materials, non-inert C&D materials, chemical waste and general refuse. Provided that there is strict control of construction and demolition materials generated from construction works and that all arisings are stored, handled, transported and disposed of in accordance with the recommended mitigation measures, no unacceptable impact due to waste management is expected during construction phase. The recommended mitigation measures can be enforced by incorporating them into the waste management requirements as part of the Environmental Management Plan. Environmental audit would be necessary to ensure the implementation of proper waste management practices during construction.
- 7.7.2 Provided proper handling procedures and disposal method are adopted, no adverse waste management issue is expected during operational phase.

8. Land Contamination

8.1 Introduction

8.1.1 This Section reviews the potential land contamination impact arising from the Project.

8.2 Environmental Legislation and Criteria

8.2.1 The relevant environmental legislation guidelines and standards on land contamination aspect include the following:

- Section 3 (Potential Contaminated Land Issues) of Annex 19 “Guidelines for Assessment of Impact on Sites of Cultural Heritage and Other Impacts” of the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM).
- Guidance Note for Contaminated Land Assessment and Remediation (Guidance Note): The Guidance Note sets out the requirements for proper assessment and management of potentially contaminated sites such as oil installations (e.g. oil depots, petrol filling stations), gas works, power plants, shipyards / boatyards, chemical manufacturing / processing plants, steel mills / metal workshops, car repairing / dismantling workshops and scrap yards. In addition, this Guidance Note provides guidelines on how site assessments should be conducted and analysed and suggests practical remedial measures that can be adopted for the remediation of contaminated sites.
- Practice Guide for Investigation and Remediation of Contaminated Land (Practice Guide): This guide outlines typical investigation methods and remediation strategies for the range of potential contaminants typically encountered in Hong Kong.
- Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management (Guidance Manual): The Guidance Manual introduces the risk-based approach in land contamination assessment and present instructions for comparison of soil and groundwater data to the Risk-Based Remediation Goals (RBRGs) for 54 chemicals of concern (COCs) commonly found in Hong Kong. The RBRGs were derived to suit Hong Kong conditions by following the international practice of adopting a risk-based methodology for contaminated land assessment and remediation and were designed to protect the health of people who could potentially be exposed to land impacted by chemicals under four broad post restoration land use categories. The RBRGs also serve as the remediation targets if remediation is necessary.

8.3 Review of Land Contamination Potential

8.3.1 Land contamination assessment covering the whole Project Site is shown in Figure 2.1.

8.3.2 Most anthropogenic contamination from sources such as open storage areas and warehouses is likely to be confined to shallow layers just below the surface. Site clearance and formation works will be carried out by CEDD, and therefore, any land contamination assessment and remediation work (if required) will also be undertaken by CEDD.

- 8.3.3 According to the approved YLSEPP EIA report (AEIAR-237/2022), most of the potentially contaminated sites identified were inaccessible for site walkover to assess the site condition. Further works including site re-appraisal for the entire proposed YLSEPP site, SI and if necessary, remediation works are recommended to be carried out for the concerned sites prior to the construction of the proposed YLSEPP. Relevant assessments on land contamination were also conducted in the updated draft ERR and EM&A Manual (Draft - Issue 3) (REP-011-00) under CE 1/2023 (DS).
- 8.3.4 It is anticipated that the land contamination assessment and remediation work (if any) on the site will be completed. No land contamination impact is anticipated during the construction phase. The future land uses of the Project Site, which include the Application Site, will have no land contamination potential. Land contamination due to the operation of the Project is also not anticipated.

8.4 Review of Environmental Monitoring and Audit Requirements

- 8.4.1 Assessments on land contamination was also conducted in the updated draft ERR and EM&A Manual (Draft - Issue 3) (REP-011-00) under CE 1/2023 (DS). Since there are no identified changes in impacts or mitigation measures compared to the EIA, the environmental monitoring and audit requirements as outlined in the assessment also remain unchanged.

8.5 Conclusion

- 8.5.1 The land contamination issues identified within the Application Site are considered manageable and surmountable. With the implementation of the recommended further works, including site re-appraisal, SI, and, if necessary, remediation, the risks associated with land contamination will be effectively mitigated, ensuring safe and sustainable development of the Application Site.

9. Conclusion

9.1 Introduction

- 9.1.1 This ERR report presents the assessments of water air quality, noise, water quality, waste management, land contamination implication for the construction and operation of the proposed project.

9.2 Air Quality

- 9.2.1 With the implementation of air quality control measures together with good site practices, no adverse air quality impact is anticipated during the construction phase of this Project.
- 9.2.2 No adverse air quality and odour impact is anticipated during the operation phase of this Project.

9.3 Noise

- 9.3.1 The proposed building height relaxation will not result in any additional noise impacts compared with the approved EIA. Both construction and operational noise levels remain consistent with the original assessment and comply with relevant criteria. With the implementation of established mitigation measures, all noise impacts are considered acceptable.

9.4 Water Quality

- 9.4.1 The proposed building height relaxation will not introduce additional sources of wastewater nor increase the scale of such activities when compared with those assessed in the approved EIA during construction and operational phase. Therefore, no additional water quality impact is anticipated.
- 9.4.2 Since there are no identified changes in impacts or mitigation measures compared to the EIA, the environmental monitoring and audit requirements as outlined in the assessment also remain unchanged.

9.5 Waste Management

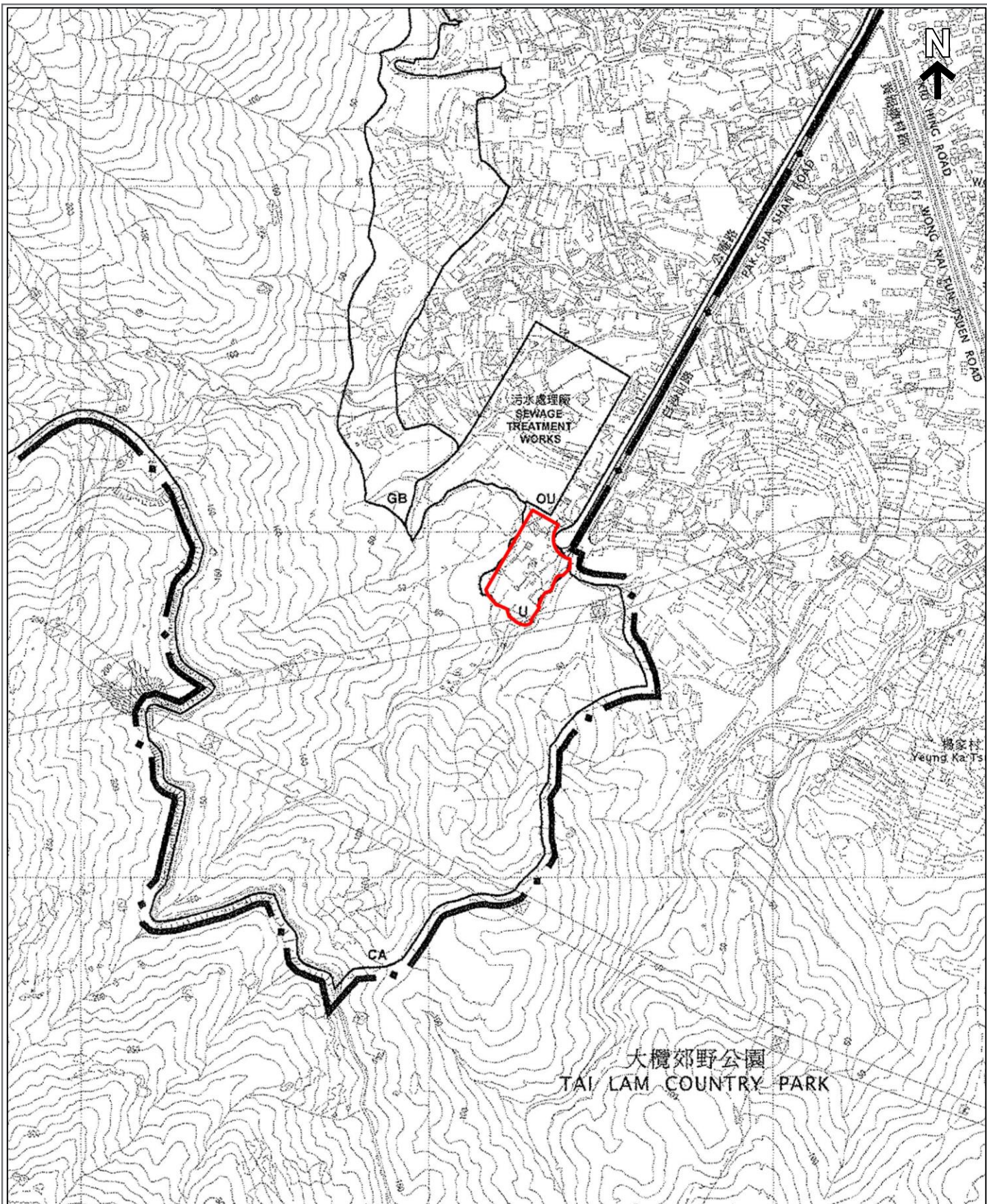
- 9.5.1 Construction and demolition materials will inevitably be produced during the construction phase of the Project. Waste generated during construction works include inert C&D materials, non-inert C&D materials, chemical waste and general refuse. Provided that there is strict control of construction and demolition materials generated from construction works and that all arisings are stored, handled, transported and disposed of in accordance with the recommended mitigation measures, no unacceptable impact due to waste management is expected during construction phase. The recommended mitigation measures can be enforced by incorporating them into the waste management requirements as part of the Environmental Management Plan. Environmental audit would be necessary to ensure the implementation of proper waste management practices during construction.
- 9.5.2 Provided proper handling procedures and disposal method are adopted, no adverse waste management issue is expected during operational phase.

9.6 Land Contamination

- 9.6.1 The land contamination issues identified within the Application Site are considered manageable and surmountable. With the implementation of the recommended further works, including site re-appraisal, SI, and, if necessary, remediation, the risks associated with land contamination by CEDD will be effectively mitigated, ensuring safe and sustainable development of the Application Site.

Appendix A

Figures



LEGEND

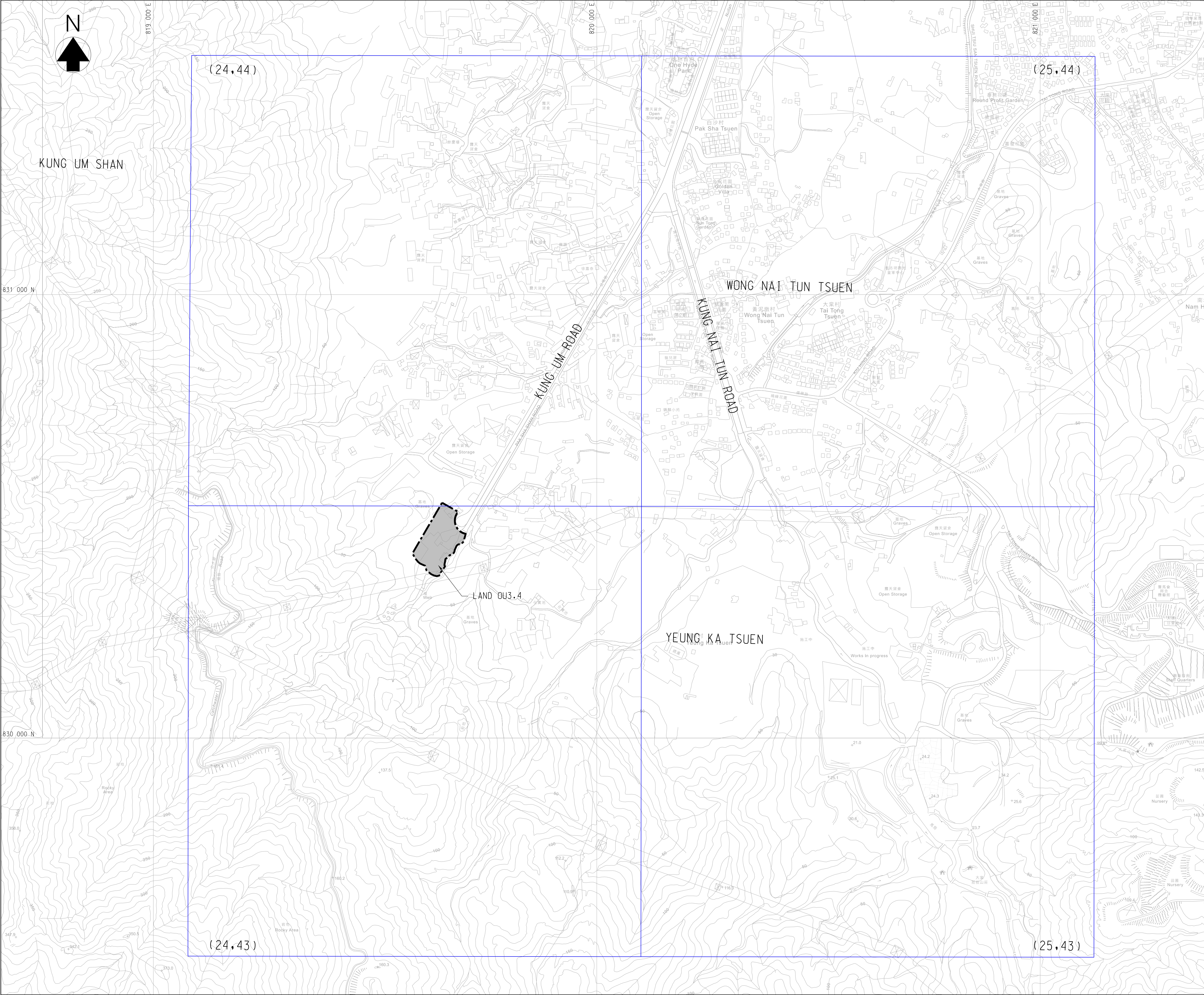


Application Site
(For identification purpose only, subject
to CEDD's site formation works)

ZONING

OU "Other Specified Uses"
GB "Green Belt"
CA "Conservation Area"
U "Undetermined"

Figure No.	Scale	Figure Title
2.1	1:7,500	Location Plan
ARUP	Date	Source
	July 2026	Extracted from Approved Tong Yan San Tsuen Outline Zoning Plan No. S/YL-TYST/14



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LEGEND:



PROPOSED YUEN LONG SOUTH (YLS)
EFFLUENT POLISHING PLANT



PATH GRID

Rev	Description	By	Date
Consultant			
ARUPbinnies Arup - Binnies Joint Venture			
Project Title			
Agreement No. CE 1/2023 (DS) Yuen Long South Effluent Polishing Plant – Design and Construction			
Drawing title			
LOCATION OF PATH GRIDS			
Drawing no.		Rev.	
FIGURE 4.1		–	
Drawn	Date	Checked	Approved
Scale		Status	
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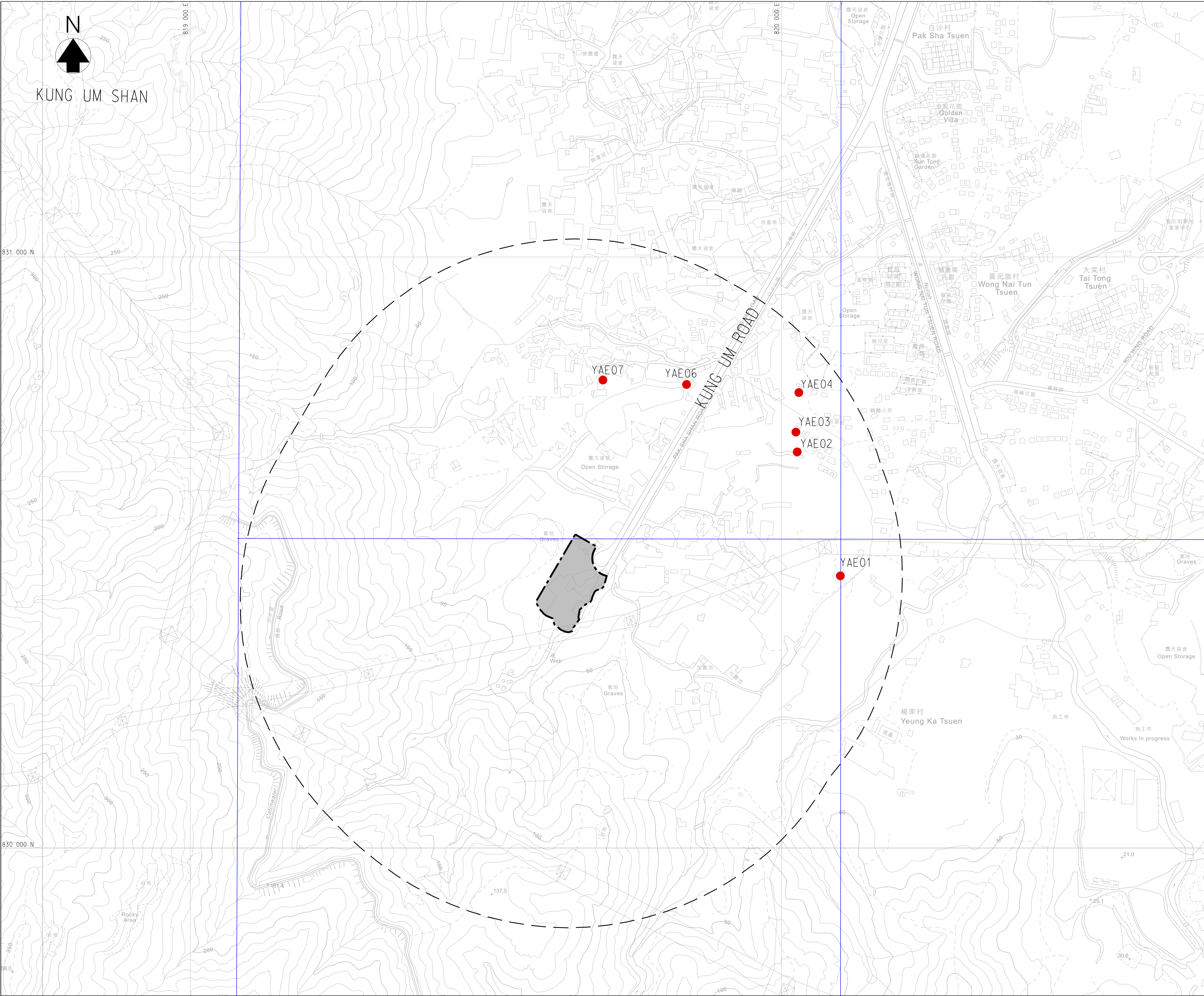
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DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
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Plot Date = 2026/7/21

CAD Filename = Y:\Daily Work\20260721F\4110484-BIN-ERR-FIGURE-4.1-TEMP.dgn



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LEGEND:

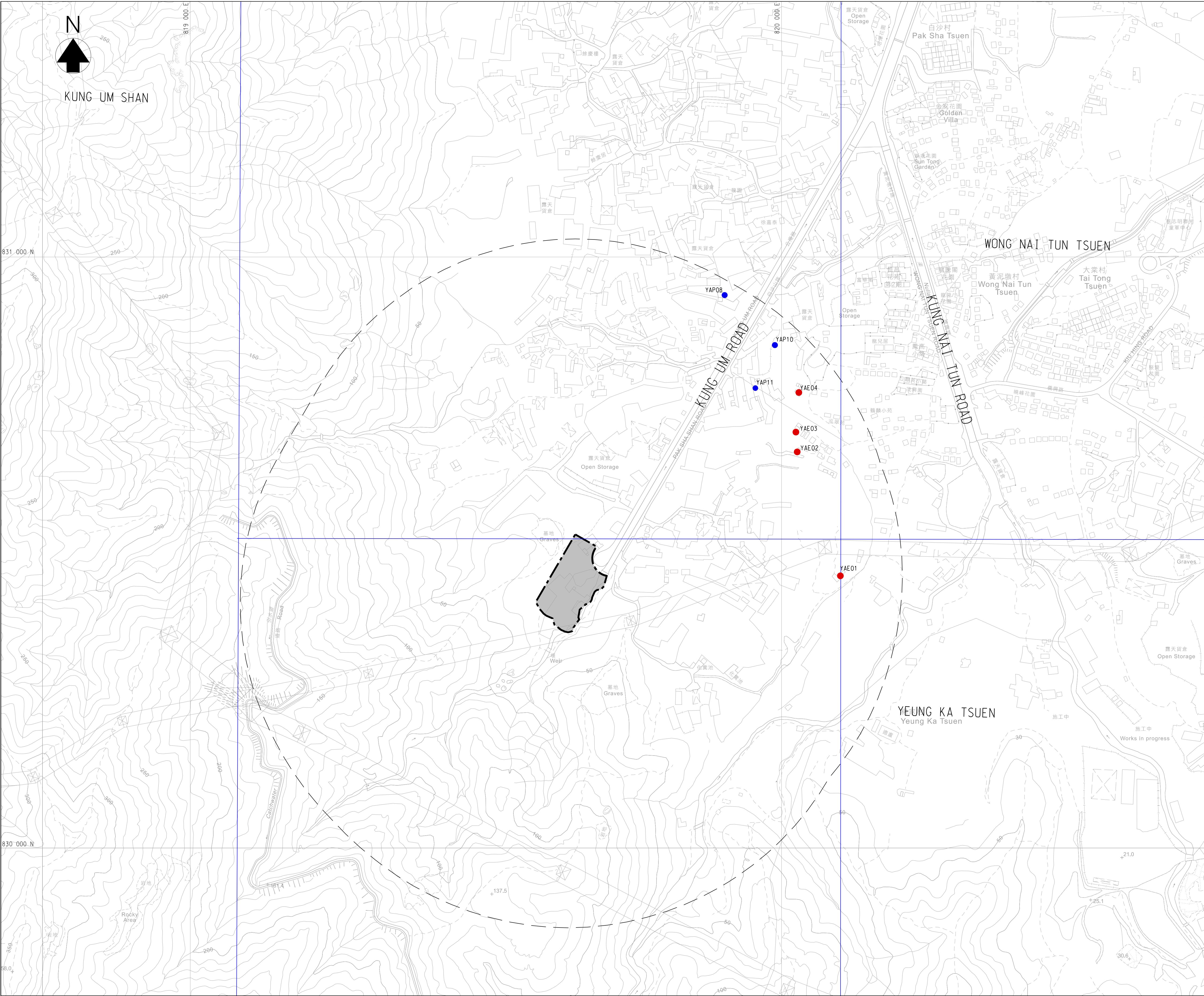
PROPOSED YUEN LONG SOUTH (YLS)
EFFLUENT POLISHING PLANT

500m ASSESSMENT AREA

EXISTING AIR SENSITIVE
RECEIVERS

PATH GRID

Rev	Description	By	Date
Consultant			
ARUP binnies Arup - Binnies Joint Venture			
Project Title			
Agreement No. CE 1/2023 (DS) Yuen Long South Effluent Polishing Plant – Design and Construction			
Drawing title			
LOCATION OF REPRESENTATIVE AIR SENSITIVE RECEIVERS (CONSTRUCTION PHASE)			
Drawing no.		Rev.	
FIGURE 4.2		—	
Drawn	Date	Checked	Approved
Scale		Status	
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LEGEND:

PROPOSED YUEN LONG SOUTH (YLS) EFFLUENT POLISHING PLANT

500m ASSESSMENT AREA

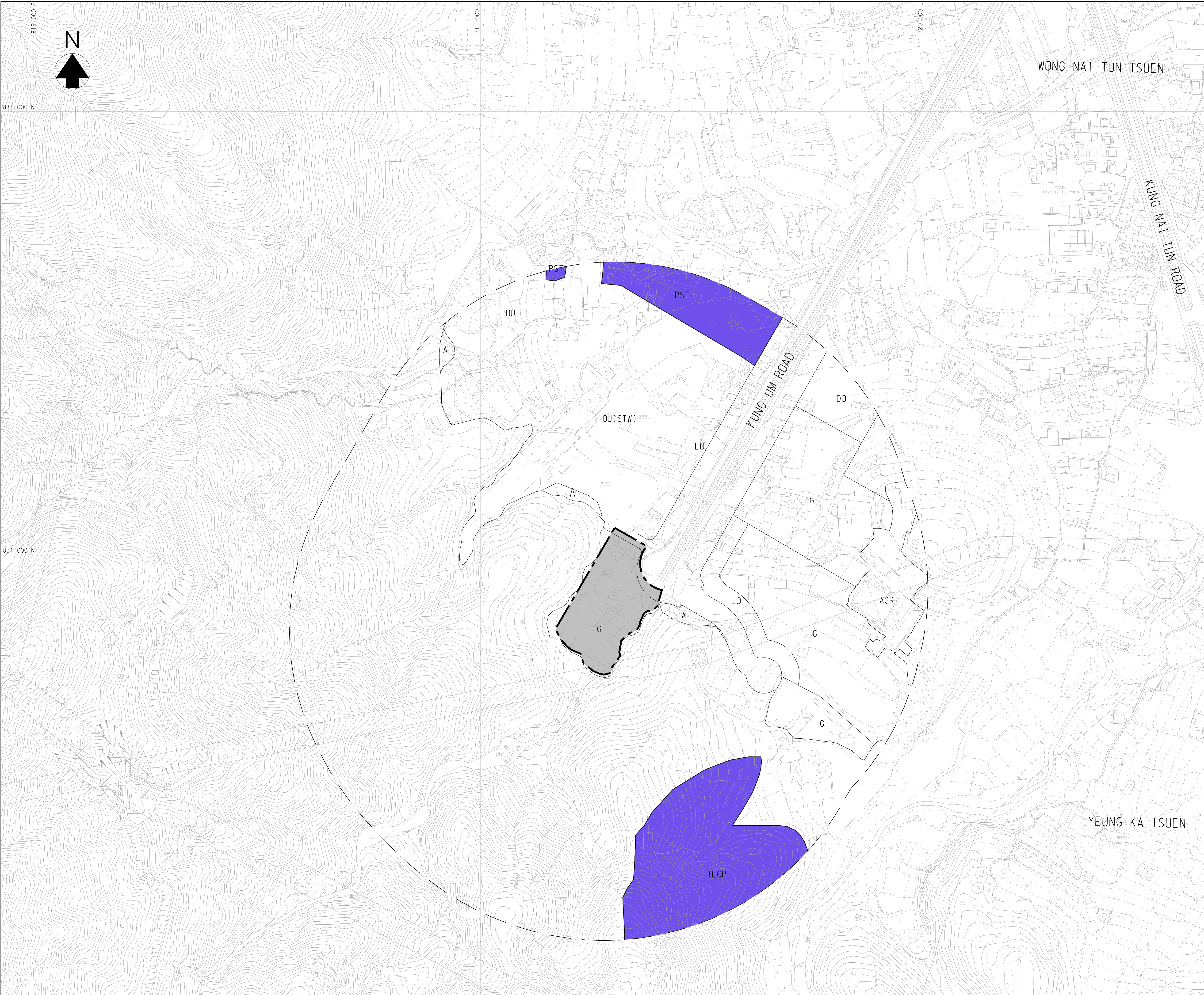
EXISTING AIR SENSITIVE RECEIVERS

PLANNED AIR SENSITIVE RECEIVERS

PATH GRID

Rev	Description	By	Date
Consultant			
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Project Title			
Agreement No. CE 1/2023 (DS) Yuen Long South Effluent Polishing Plant – Design and Construction			
Drawing title			
LOCATION OF REPRESENTATIVE AIR SENSITIVE RECEIVERS (OPERATION PHASE)			
Drawing no.		Rev.	
FIGURE 4.3		–	
Drawn	Date	Checked	Approved
Scale		Status	
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Plot Date = 2026/7/21



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LEGEND:

PROPOSED YUEN LONG SOUTH (YLS)
EFFLUENT POLISHING PLANT

300m ASSESSMENT AREA

NOISE SENSITIVE RECEIVER

RESIDENTIAL - ZONE 2 (R2)

RESIDENTIAL - ZONE 3 (R3)

RESIDENTIAL - ZONE 6 (R6)

OTHER SPECIFIED USES
(SEWAGE TREATMENT WORKS)

OTHER SPECIFIED USES

GOVERNMENT (G)

EDUCATION (E)

DISTRICT OPEN SPACE (DO)

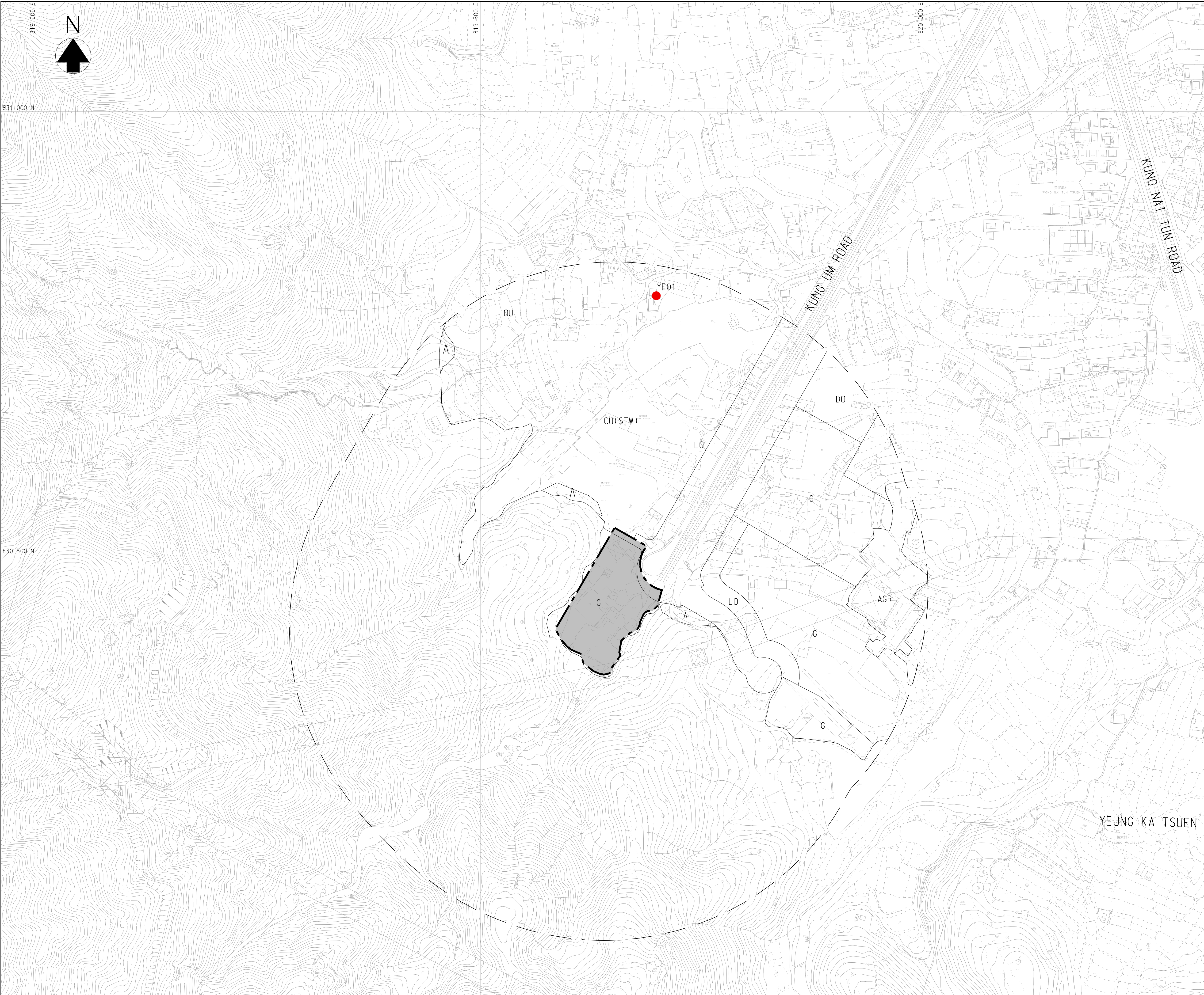
LOCAL OPEN SPACE (LO)

AMENITY (A)

AGRICULTURE (AGR)

GREEN BELT (1)(GB(1))

Rev	Description	By	Date
Consultant			
ARUP binnies Arup - Binnies Joint Venture			
Project Title			
Agreement No. CE 1/2023 (DS) Yuen Long South Effluent Polishing Plant – Design and Construction			
Drawing title			
LOCATION OF REPRESENTATIVE NOISE SENSITIVE RECEIVERS			
Drawing no.		Rev.	
FIGURE 5.1		–	
Drawn	Date	Checked	Approved
Scale		Status	
1:2000 @ A1			
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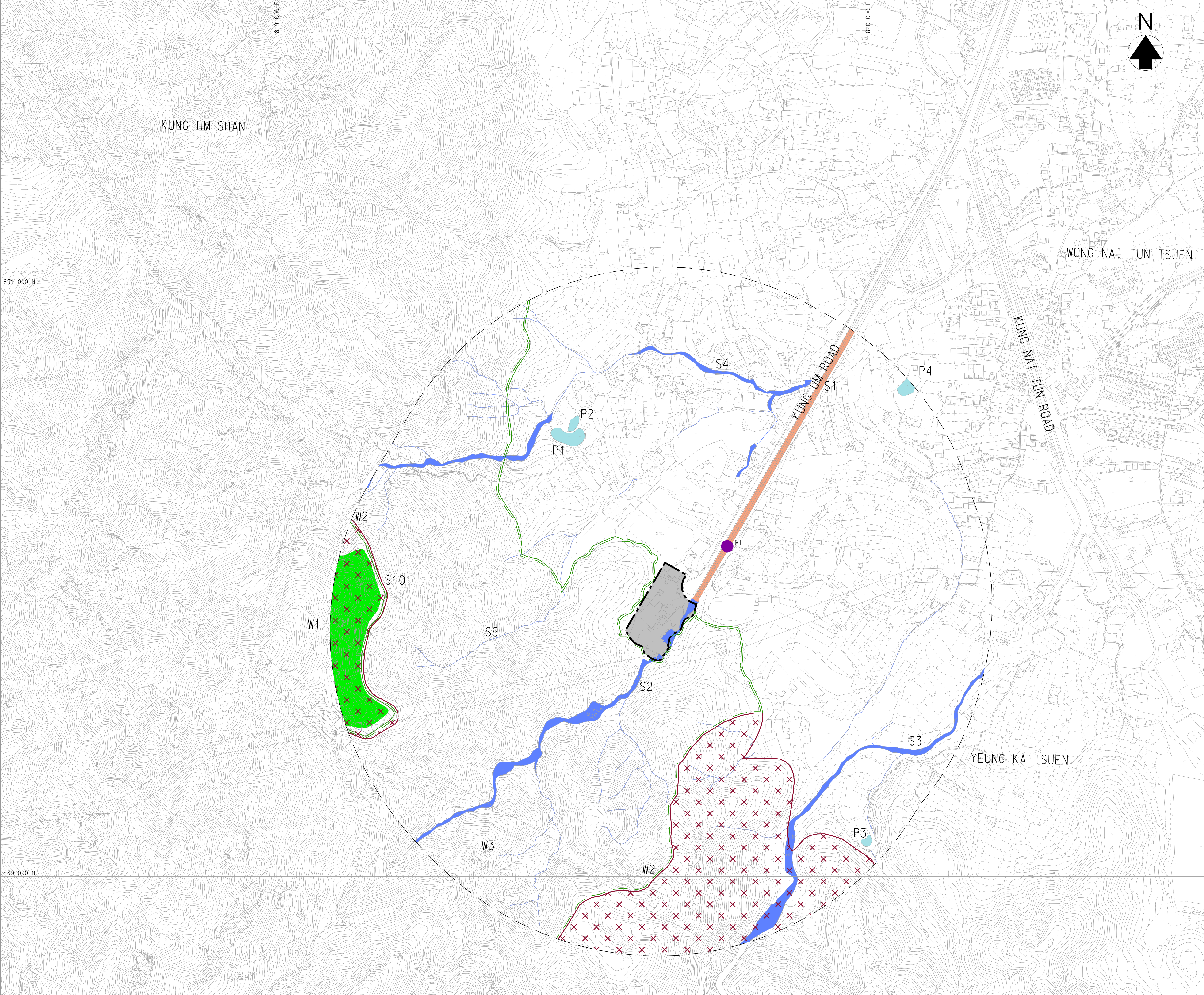
- PROPOSED YUEN LONG SOUTH (YLS) EFFLUENT POLISHING PLANT
- 500m ASSESSMENT AREA
- CONSTRUCTION PHASE NOISE ASSESSMENT POINT
- RESIDENTIAL - ZONE 2 (R2)
- RESIDENTIAL - ZONE 3 (R3)
- RESIDENTIAL - ZONE 6 (R6)
- OTHER SPECIFIED USES (SEWAGE TREATMENT WORKS)
- OTHER SPECIFIED USES
- GOVERNMENT (G)
- EDUCATION (E)
- DISTRICT OPEN SPACE (DO)
- LOCAL OPEN SPACE (LO)
- AMENITY (A)
- AGRICULTURE (AGR)
- GREEN BELT (1)(GB(1))

Rev	Description	By	Date
Consultant			
 Arup - Binnies Joint Venture			
Project Title			
Agreement No. CE 1/2023 (DS) Yuen Long South Effluent Polishing Plant – Design and Construction			
Drawing title			
LOCATION OF REPRESENTATIVE ASSESSMENT POINTS AND FIXED NOISE SOURCE			
Drawing no.		Rev.	
FIGURE 5.2		–	
Drawn	Date	Checked	Approved
Scale	Status		
1:2000 @ A1			

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DRAINAGE SERVICES DEPARTMENT
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LEGEND:

PROPOSED YUEN LONG SOUTH (YLS)
EFFLUENT POLISHING PLANT

500m ASSESSMENT AREA

COUNTRY PARK

CONSERVATION AREA

WATERCOURSE

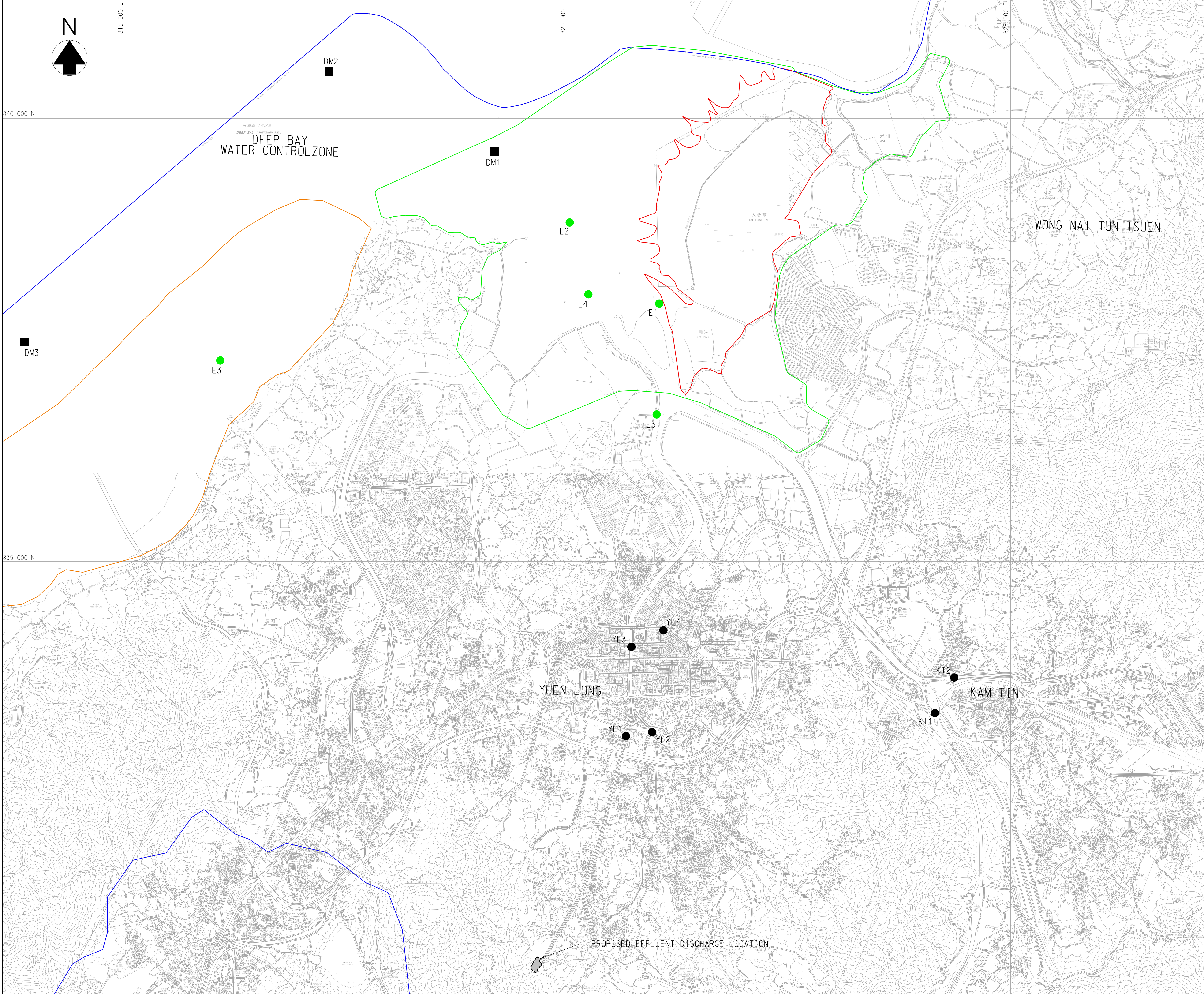
WATERCOURSE (CHANNELISED)

WATER GATHERING GROUND

M1
WATER QUALITY SURVEY POINT

ABANDONED FISH POND

Rev.	Description	By	Date
Consultant			
Arup - Binnies Joint Venture			
Project Title			
Agreement No. CE 1/2023 (DS) Yuen Long South Effluent Polishing Plant – Design and Construction			
Drawing title			
LOCATION OF REPRESENTATIVE WATER SENSITIVE RECEIVERS			
Drawing no.		Rev.	
FIGURE 6.1		—	
Drawn	Date	Checked	Approved
Scale		Status	
1:3000 @ A1			
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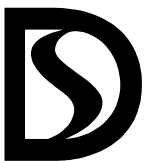
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LEGEND:

- OYSTER CULTURE AREA
- MAI PO INNER DEEP BAY RAMSAR SITE
- MAI PO MARSHES SSSI
- BOUNDARY OF DEEP BAY WATER CONTROL ZONE
- EPD MARINE WATER QUALITY MONITORING STATIONS
 - INNER DEEP BAY
 - DM1
 - DM2
 - DM3
- EPD RIVER WATER QUALITY MONITORING STATIONS
 - YUEN LONG CREEK
 - YL1
 - YL2
 - YL3
 - YL4
 - KAM TIN RIVER
 - KT1
 - KT2
- ECOLOGICAL/FISHERIES RESOURCES SURVEY STATIONS
 - E1 - MAI PO MARSHES SSSI
 - E2 - MAI PO INNER DEEP BAY RAMSAR SITE / INNER DEEP BAY SSSI
 - E3 - OYSTER CULTURE AREA
 - E4 - MANGROVES
 - E5 - MANGROVES ALONG SHAN PUI RIVER

Rev	Description	By	Date
Consultant			
ARUPbinnies Arup - Binnies Joint Venture			
Project Title			
Agreement No. CE 1/2023 (DS) Yuen Long South Effluent Polishing Plant – Design and Construction			
Drawing title			
LOCATION OF MAJOR MARINE WATER SENSITIVE RECEIVERS			
Drawing no.		Rev.	
FIGURE 6.2		–	
Drawn	Date	Checked	Approved
Scale	Status		
1:20000 @ A1			

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Plot Date = 2026/7/21

CAD Filename = Y:\Daily Work\20260721F\4110484-BIN-ERR-FIGURE-6.2-TEMP.dgn