JOB NO.: TCS01216/21

WSD Contract No.: 3/WSD/20 -

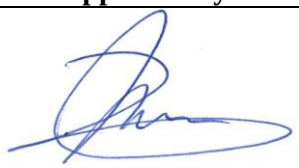
Reclaimed Water Supply to Sheung Shui and Fanling

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT (NO.18) – MAY 2023

PREPARED FOR

WATER SUPPLIES DEPARTMENT

Quality Index

Date	Reference No.	Prepared By	Approved By
12 June 2023	TCS01216/21/600/R0078v1	 Martin Li Environmental Consultant	 TW Tam Environmental Team Leader

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1	12 June 2023	First Submission

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Date: 14th June 2023

Project Manager
Water Supplies Department
Immigration Tower, 7 Gloucester Road,
Wan Chai, Hong Kong
Attn: Mr. Tim Wong

Dear Sir,

Agreement No. CE67/2017(WS)
Reclaimed Water Supply to Sheung Shi and Fanling – Investigation, Design and Construction
Independent Environmental Checker (IEC) Services for
Shek Wu Hui Water Reclamation Plant under Contract No. 3/WSD/20

Monthly EM&A Monitoring Report for May 2023

We refer to the monthly EM&A Report for May 2023 for WSD Contract No.: 3/WSD/20 – Reclaimed Water Supply to Sheung Shui and Fanling certified by the Environmental Team Leader on 12th June 2023. Please note we have no adverse comments on the captioned submission. The captioned submission is hereby verified in accordance with the requirement stipulated in Condition 3.4 of Environmental Permit No. FEP-01/470/2013.

Should you have any query, please feel free to contact the undersigned at 6113 2368.

Yours Sincerely,

Vega Wong
Independent Environmental Checker

c.c.

- ET Leader –- AUES (Attn: Mr. T.W. Tam) [by Email: twtam@fordbusiness.com]
- Resident Engineer – Binnies Hong Kong Limited (Attn: Mr. Chester Chan) [by Email: chancw@binnies.com]

EXECUTIVE SUMMARY

ES.01 Water Supplies Department (WSD) is the Project Proponent and the Permit Holder of **Reclaimed Water Supply to Sheung Shui and Fanling** (hereinafter referred as "the Contract Works"), which is a Designated Project to be implemented under Further Environmental Permit number FEP-01/470/2013 (hereinafter referred as "the FEP-01/470/2013" or "the FEP").

ES.02 In according with the Updated EM&A Manual stipulation and the location of Contract Works, only construction noise monitoring and waterbird of ecological monitoring are required during the construction phase of the Contract Works.

ES.03 As part of the EM&A programme, Baseline Monitoring Report which determined Action and Limit Levels (A/L Levels) based on the baseline data, has been verified by Independent Environmental Checker (IEC) and submitted to EPD endorsement on ***24 November 2021***. Also, construction activities under the Contract Works were commenced on ***7 December 2021***.

ES.04 This is the **18th** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1** to **31 May 2023** (hereinafter 'the Reporting Period').

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES.06 Environmental monitoring activities under the EM&A programme in the Reporting Period are summarized in the following table.

Table ES-1 Environmental monitoring activities in the Reporting Period

Environmental Aspect	Environmental Monitoring Parameters / Inspection	Total Occasions during Reporting Period
Construction Noise	$L_{eq(30min)}$ Daytime	**5**
Ecology	Waterbirds	**5**
Site Inspection / Audit	ET, the Contractor and RE joint site Environmental Inspection	**4**

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES.07 In the Reporting Period, no construction noise limit level exceedance construction noise was recorded and no noise complaint (i.e. Action Level) was received. No action and limit level exceedance for waterbirds survey was recorded in the Reporting Period. No Notifications of Exceedances (NOEs) was issued to the Resident Engineer (RE), IEC and the Main Contractor. The statistics of environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

Table ES-2 Breach of Action and Limit (A/L) Levels in the Reporting Period

Environmental Aspect	Monitoring Parameters	Action Level	Limit Level	Event & Action		
				NOE Issued	Investigation	Corrective Actions
Construction Noise	$L_{eq(30min)}$ Daytime	0	0	0	0	0
Ecology	Waterbirds Abundance	0	0	0	0	0

ENVIRONMENTAL COMPLAINT

ES.08 No environmental complaint was recorded or received in this Reporting Month. The statistics of environmental complaint are summarized in the following table.

Table ES-3 Environmental Complaint Summaries in the Reporting Month

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 May 2023	0	0	NA

ES.09 In addition, no complaint received and emergency events relating to violation of environmental legislation for illegal dumping and landfilling were received.

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.10 No environmental summons or successful prosecution was recorded in this Reporting Month. The statistics of summons or successful prosecutions are summarized in the following tables.

Table ES-4 Environmental Summons Summaries in the Reporting Month

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 May 2023	0	0	NA

Table ES-5 Environmental Prosecution Summaries in the Reporting Month

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 May 2023	0	0	NA

REPORTING CHANGE

ES.11 No report change in the reporting period.

SITE INSPECTION

ES.12 Weekly site inspections to evaluate the site environmental performance have been carried out by the RE, ET and the Main Contractor on ***4, 11, 18*** and ***24 May 2023***. No non-compliance was noted during the site inspection.

ES.13 IEC inspection was conducted on ***18 May 2023***.

FUTURE KEY ISSUES

ES.14 ABWF & E&M works at ReWPS & HCF, and construction of fence wall at SWHWRP will be the major construction work in the coming month. Noise mitigation measures such as erect barrier for steel bar cutting machines were recommended to reduce noise impact generated from rebar fixing work. In addition, the Contractor should pay attention to potential water quality impact from concreting works and waste impact from ABWF Work, and implement mitigation measures according to the ISEMM.

ES.15 As wet season has approached, the Contractor was general reminded to paid attention to water quality mitigation measures such as ensure sufficient wastewater treatment facilities capacity is provided on site and keep review on the temporary drainage system to avoid water quality impact arise from the Project.

ES.16 Details of the future issues in the coming month are described in Section 9.4.

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1. INTRODUCTION

1.1 BACKGROUND

1.1.1 Water Supplies Department (WSD) is the Project Proponent of Utilization of Treated Sewage Effluent (TSE) from Shek Wu Hui Sewage Treatment Works. On 30th July 2021, China Geo-Engineering Corporation (hereinafter named as "the Main-Contractor") was awarded WSD Contract Works 3/WSD/20 - Reclaimed Water Supply to Sheung Shui and Fanling (hereinafter referred as "the Contract Works").

1.1.2 The reclaimed water supply to Sheung Shui and Fanling (SSF) comprises a Shek Wu Hui Water Reclamation Plant (SWHWRP), part of pumping water mains to Table Hill Reclaimed Water Service Reservoir (TBHRWSR), and Kwu Tung North (KTN) New Development Area (NDA) and distribution water mains to SSF area.

1.1.3 The SWHWRP, which comprises Hypo-Chlorination Facilities (HCF) and Reclaimed Water Pumping Station (ReWPS), will be located at a long-stripped area between Ng Tung River and Sheung Shui Slaughter House at the northwest of the Shek Wu Hui Sewage Treatment Works (SWHSTW).

1.1.4 The HCF, which consists of a hypo-chlorination dosing plant, a chlorine contact tank, dye dosing system, water refilling station, other post-treatment facilitates and storage areas for chemicals, would produce reclaimed water by further treatment of the treated sewage effluent (TSE) pumped from the discharge outlet of the SWHSTW. The treatment capacity of the SWHWRP will be 73,000m3/day.

1.1.5 The Reclaimed Water P/S, which will be located at the northwest of the HCF, will receive reclaimed water by gravity from the HCF and deliver to the TBHRWSR serving SSF areas, Kwu Tung North Flushing Water Service Reservoir (KTN FLWSR) serving KTN NDA and Fanling North Flushing Water Service Reservoir (FLN FLWSR) serving Fanling North (FLN) NDA

1.1.6 This Work Contract mainly comprise construction of Shek Wu Hui Water Reclamation Plant and laying of the associated water main to produce reclaimed water for supply to the Northeast New Territories areas for non-potable used. It is estimated that about 22 million cubic metres of fresh water can be saved each year ultimately.

1.1.7 The construction of Shek Wu Hui Water Reclamation Plant under the Work Contract is a Designated Project to be implemented under Further Environmental Permit number FEP-01/470/2013 (hereinafter referred as "the FEP-01/470/2013" or "the FEP"). Location of Shek Wu Hui Water Reclamation Plant is shown in ***Appendix A***.

1.1.8 The major work of the Work Contract under FEP included:

- Civil engineering construction works, including structures, foundations and earthworks for the SWHWRP and ancillary buildings;
- Electrical and mechanical (E&M), building services, fire services installations, and treatment process system engineering work;
- Other associated systems and facilities for the SWHWRP.

1.1.9 Pursuant to the FEP stipulation, the Main Contractor has commissioned Action-United Environmental Services & Consulting (hereinafter referred as "AUES") as Environmental Team (hereinafter referred as "ET") perform relevant EM&A programme and as well as the associated duties.

1.1.10 As part of the EM&A programme, Baseline Monitoring Report which determined Action and Limit Levels (A/L Levels) based on the baseline data, has been verified by Independent Environmental Checker (IEC) and submitted to EPD endorsement on ***24 November 2021***. Also, construction activities of the Contract were commencement on ***7 December 2021***.

1.1.11 This is **18th** monthly EM&A report to presenting the monitoring results and inspection findings from ***1*** to ***31 May 2023*** of the Reporting Period.

1.2 REPORT STRUCTURE

1.2.1 The report was structured into the following sections:-

Section 1	*Introduction*
Section 2	*Project Organization and Construction Progress*
Section 3	*Summary of Impact Monitoring Requirements*
Section 4	*Construction Noise Monitoring*
Section 5	*Ecology Waterbirds Monitoring*
Section 6	*Waste Management*
Section 7	*Site Inspections*
Section 8	*Environmental Complaints and Non-Compliance*
Section 9	*Implementation Status of Mitigation Measures*
Section 10	*Conclusions and Recommendations*

2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1 PROJECT ORGANIZATION

2.1.1 The project organization is shown in ***Appendix B***. The roles and responsibilities of the various parties involved in the EM&A process and the organizational structure of the organizations responsible for implementing the EM&A programme are outlined below.

Water Supplies Department (WSD)

2.1.2 WSD is the Project Proponent and the Permit Holder of the EP of the development of the Project and will assume overall responsibility for the project. An Independent Environmental Checker (IEC) shall be employed by WSD to audit the results of the EM&A works carried out by the ET.

Environmental Protection Department (EPD)

2.1.3 EPD is the statutory enforcement body for environmental protection matters in Hong Kong.

Engineer or Engineers Representative (ER)

2.1.4 The ER is responsible for overseeing the construction works and for ensuring that the works are undertaken by the Contractor in accordance with the specification and contract requirements. The duties and responsibilities of the ER with respect to EM&A are:

- Supervise the Contractor's activities and ensure that the requirements in the Contract Works Specific EM&A Manual are fully complied with;
- Inform the Contractor when action is required to reduce impacts in accordance with the Even and Action Plans;
- Employ an IEC to audit the results of the EM&A works carried out by the ET; and
- Comply with the agreed Event Contingency Plan in the event of any exceedance.

The Main Contractor

2.1.5 The Main Contractor is responsible perform construction works and for ensuring that the works are undertaken compliance with the specification and contract requirements. The duties and responsibilities of the Main Contractor with respect to EM&A are:

- Employ an Environmental Team (ET) to undertake monitoring, laboratory analysis and reporting of environmental monitoring and audit;
- Provide assistance to ET in carrying out monitoring and auditing;
- Submit proposals on mitigation measures in case of exceedances of Action and Limit levels in accordance with the Event and Action Plans;
- Implement measures to reduce impact where Action and Limit levels are exceeded; and
- Adhere to the agreed procedures for carrying out compliant investigation.

Environmental Team (ET)

2.1.6 The ET is responsible perform implementation EM&A programmes of the Contract Works as stipulated in the Updated EM&A Manual ensure the works are fully compliance with environmental regulations. The duties and responsibilities of the ET with respect to EM&A are:

- Set up all the required environmental monitoring stations;
- Monitor various environmental parameters as required in the EM&A Manual;
- Analyze the EM&A data and review the success of EM&A programme to cost effectively confirm the adequacy of mitigation measures implemented and the validity of the EIA predictions and to identify any adverse environmental impacts arising;
- Carry out site inspection to investigate and audit the Contractors' site practice, equipment and work methodologies with respect to pollution control and environmental mitigation, and take proactive actions to pre-empt problems;
- Audit and prepare audit reports on the environmental monitoring data and site environmental conditions;
- Report on the EM&A results to the IEC, Contractor, the ER and EPD or its delegated representative;
- Recommend suitable mitigation measures to the Contractor in the case of exceedance of

Action and Limit levels in accordance with the Event and Action Plans;
- Undertake regular and ad-hoc on-site audits / inspections and report to the Contractor and the ER of any potential non-compliance; and
- Follow up and close out non-compliance actions.

Independent Environmental Checker (IEC)

2.1.7 The duties and responsibilities of IEC with respect to EM&A are:
- Review the EM&A works performed by the ET (at not less than monthly intervals);
- Audit the monitoring activities and results (at not less than monthly intervals);
- Report the audit results to the ER and EPD in parallel;
- Review the EM&A reports (monthly summary reports) submitted by the ET;
- Review the proposal on mitigation measures submitted by the Contractor in accordance with the Event and Action Plans;
- Check the mitigation measures submitted by the Contractor in accordance with the Event and Action Plans;
- Check the mitigation measures that have been recommended in the EIA and this Manual, and ensure they are properly implemented in a timely manner, when necessary;
- Report the findings of site inspections and other environmental performance reviews to ER and EPD;
- Coordinate the monitoring and auditing works for all the on-going contracts in the area in order to identify possible sources / causes of exceedances and recommend suitable remedial actions where appropriate; and
- Coordinate the assessment and response to complaints / enquires from locals, green groups, district councils or the public at large.

2.2 CONSTRUCTION PROGRESS

2.2.1 In the Reporting Period, the major construction activities of the Contract Works under FEP are listed in below. Moreover, the master construction program and site overview photo in the reporting period are enclosed in ***Appendix C***.
- ABWF Works at ReWPS (Basement Floor) – Application of waterproofing material and ABWF at wall & ceiling
- ABWF Works at ReWPS (Ground Floor) – steel & metal works, E&M works
- ABWF Works at HCF (Grid 1-3) – E&M works, fitting-out works
- ABWF Works at HCF (Grid 5-6) – E&M works
- Electrical conduits installation work and fire services conduits installation work at HCF
- Fence Wall at SWHWRP – Concreting work

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.3.1 To according with the FEP stipulation, the required documents has submitted to EPD for retention as listed below:
- Project Location Plans;
- Updated Environmental Monitoring and Audit Manual of Project Specific (*TCS01176/21/600/R0012v2*); and
- Baseline Monitoring Report (*TCS01216/21/600/R0017v3*) for the Project.

2.3.2 Summary of the relevant permits, licenses, and/or notifications on environmental protection for the Project is presented in ***Table 2-3-1***.

Table 2-3-1 Status of Environmental Licenses and Permits

Item	Description	Licence/Permit Status		
		Ref. no.	Effective Date	Expiry Date
1	Air Pollution Control (Construction Dust) Regulation	Notification was made on 3 Aug 2021	3 Aug 2021	Till the Contract ends
2	Waste Disposal Regulation – Billing Account for Disposal of Construction Waste	Account No.: 7041397	8 Aug 2021	Till the Contract ends

Item	Description	Licence/Permit Status		
		Ref. no.	Effective Date	Expiry Date
3	Chemical Waste Producer Registration	Application was made on 3 Aug 2021	3 Aug 2021	Till the Contract ends
4	Water Pollution Control Ordinance – Discharge Licence	Discharge Licence No.: WT00039707-2021	17 Nov 2021	30 Nov 2026
5	Construction Noise Permit	CNP No. GW-RN0336-23	27 Apr 2023	26 Aug 2023

3. SUMMARY OF IMPACT MONITORING REQUIREMENTS

3.1 GENERAL

3.1.1 According to the Updated EM&A Manual and the location of the Contract Works, only construction noise monitoring and waterbirds ecological of environmental monitoring are related the Contract Works during the construction phase. Details requirement of noise and waterbirds ecological impact monitoring are presented sub-sections as below.

3.2 REQUIREMENT OF CONSTRUCTION NOISE MONITORING

3.2.1 One set of $L_{eq(30min)}$ as 6 consecutive $L_{eq(5min)}$ between 0700-1900 hours on normal weekdays and once every week during course of works. If construction work necessary to carry out at other time periods, i.e. restricted time period (19:00 to 07:00 the next morning and whole day on public holidays) (hereinafter referred as "the restricted hours"), $L_{eq(5min)}$ measurement will be carried out in accordance with the CNP requirements. Supplementary information for data auditing, statistical results such as L_{10} and L_{90} shall also be obtained for reference.

3.2.2 Noise measurements shall not be made in fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

3.3 LOCATION OF CONSTRUCTION NOISE IMPACT MONITORING

3.3.1 According to the Updated EM&A Manual of CEDD Contract No. NDO 14/2018 - *Advance and First Stage Works of Kwu Tung North and Fanling North New Development Areas*, four noise sensitive receivers are designated on Fanling North New Development Areas for construction noise monitoring.

3.3.2 According to the geographic location of proposed Shek Wu Hui Water Reclamation Plant and all the recommended designated construction noise monitoring stations, only the designated noise monitoring station CP-KTN-NMS5 (prior named "CP-NMS7") shown in ***Appendix D***, is located near the proposed Shek Wu Hui Water Reclamation Plant within 300m (distance about 110m). Therefore, the designated noise monitoring station CP-KTN-NMS5 is recommended for the Contract Works to undertake construction noise monitoring. If the recommended noise monitoring location CP-KTN-NMS5 not available, the ET shall propose alternative monitoring locations/additional monitoring locations and seek approval from the Supervisor of the proposal. When alternative/new monitoring location is proposed, the monitoring location shall be chosen based on the following criteria:

(i) at locations close to the major site activities which are likely to have noise impacts;

(ii) close to the noise sensitive receivers; and

(iii) for monitoring locations located in the vicinity of the sensitive receivers, care shall be taken to cause minimal disturbance to the occupants during monitoring.

3.3.3 The construction noise monitoring station shall normally be at a point 1 m from the exterior of the sensitive receivers building façade and be a position 1.2m above the ground. If there is problem with access to the normal monitoring position, an alternative position may be chosen, and a correction to the measurements shall be made to the free field measurements. The ET shall agree with the Supervisor on the monitoring station that is chosen for impact monitoring.

3.4 ACTION AND LIMIT LEVEL FOR CONSTRUCTION NOISE

3.4.1 The Action and Limit levels for construction noise are defined in ***Table 3-4-1***. Should non-compliance of the criteria occur, action in accordance with the Action Plan which shown in Section 4 of this report**,** shall be carried out.

Table 3-4-1 Action and Limit Levels for Construction Noise

Monitoring Location	Action Level	Limit Level in dB(A)
	Time Period: 0700-1900 hours on normal weekdays	
CP-KTN-NMS5	When one or more documented complaints are received	75 dB(A)[Note 1]
Note 1: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the NCA have to be followed.		

3.5 NOISE MONITORING METHODOLOGY

Monitoring Equipment

3.5.1 Sound level meter in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications was used for carrying out the noise monitoring. Noise equipment used for impact monitoring is listed in ***Table 3-5-1***.

Table 3-5-1 Equipment of Noise Impact Monitoring

Equipment	Model
Integrating Sound Level Meter	Rion NL – 52
Calibrator	Rion NC – 73

Remark: Sound level meter IEC 60651:1979 (Type 1) was replaced by 60672 (Type 1) in 2002 (Ref: https://webstore.iec.ch/publication/17086

3.5.2 The sound level meter and calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis. The valid calibration certificates of the monitoring equipment are shown in ***Appendix E***.

3.6 MONITORING PROCEDURE

3.6.1 All noise measurements were performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq). $Leq_{(30min)}$ in six consecutive $Leq_{(5min)}$ measurements was used as the monitoring parameter for the time period between 07:00-19:00 hours during the baseline monitoring.

3.6.2 In general, the sound level meter would be mounted on a tripod at a height of 1.2 m and placed at the assessment point and oriented such that the microphone was pointed to the site with the microphone facing perpendicular to the line of sight. The windshield would be fitted for all measurement. Where a measurement was to be carried out at a building, the assessment point would normally be at a position 1 m from the exterior of the building façade. Where a measurement was to be made for noise being received at a place other than a building, the assessment point would be at a position 1.2 m above the ground in a free-field situation, i.e. at least 3.5 m away from reflective surfaces such as adjacent buildings or walls.

3.6.3 Immediately prior to and following each noise measurement the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements would be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB.

3.6.4 Noise measurements would not be made in fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed would be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

3.7 DATA MANAGEMENT AND DATA QA/QC CONTROL

3.7.1 The monitoring data recorded in the equipment would be downloaded directly from the equipment at each monitoring day. The downloaded monitoring data would input into a computerized database properly maintained and handled by the ET's in-house data recording and management system.

3.8 REQUIREMENT OF WATERBIRDS ECOLOGICAL IMPACT MONITORING

3.8.1 Where development under the NDAs project is undertaken within 200m (the maximum distance at which it is predicted there may be some disturbance, and hence a reduction in numbers, of large waterbirds) of the Ng Tung, Sheung Yue and Shek Sheung Rivers and Long Valley the monitoring protocol detailed in the updated EM&A Manual Table 12.1 should be followed. A transect should be undertaken throughout the sections of the rivers where NDA construction activities are proposed; as the sensitive receivers (large waterbirds) are easily visible, the transect route needs only follow one bank of the rivers. The transect route should remain the same during the different phases in order to ensure that data are comparable. Monitoring of large waterbirds should be conducted in pre-construction, construction and operational phases of the concerned development.

3.8.2 The proposed Shek Wu Hui Water Reclamation Plant location is located less than 200m to Ng Tung River, Sheung Yue River and Shek Sheung River, waterbirds ecological monitoring included pre-construction (i.e. baseline), construction (i.e. impact) and post-construction (i.e. operating) should be requires. The detailed monitoring protocol is listed in ***Table 3-8-1***.

Table 3-8-1 Monitoring of Measures to Minimize Disturbance to Waterbirds on the Ng Tung, Sheung Yue and Shek Sheung Rivers

Phase	Methodology
Pre-construction (baseline)	Weekly transect at both high and low tides to identify and enumerate all bird species utilising the river channels for 12 months prior to the commencement of construction.
Construction	Weekly transect at both high and low tides to identify and enumerate all bird species utilising the river channels and identify any sources of actual or potential disturbance to birds due to construction activities throughout the construction period.
Post-construction	Weekly transect at both high and low tides to identify and enumerate all bird species utilising the river channels and identify any sources of actual or potential disturbance to birds due to operational activities for 12 months following the completion of the construction period.

3.8.3 Waterbirds ecological baseline monitoring at Ng Tung River, Sheung Yue River and Shek Sheung River was conducted by DSD between ***December 2017*** and ***June 2019*** (total 19 months baseline monitoring)**,** in compliance with the Updated EM&A Manual. Thus, the action and limit levels and responses to evidence of disturbance to waterbirds using in Ng Tung, Sheung Yue and Shek Sheung Rivers will be made reference during construction phase of the Project.

3.9 MONITORING METHODOLOGY FOR WATERBIRDS ECOLOGICAL IMPACT MONITORING

3.9.1 Three transects and seven point count locations were selected at the Ng Tung, Sheung Yue and Shek Sheung River. These locations are shown in Appendix L and summarized in ***Table 3-9-1***.

Table 3-9-1 Ecological Monitoring Stations

Monitoring Stations	Descriptions	Influenced by Tidal Action
Transect T1	Along Ng Tung River	No
Transect T2		
Point Count Location P1		
Point Count Location P2		
Point Count Location P3		
Point Count Location P4		
Point Count Location P5	At Shek Sheung River (Low-flow Channel)	No
Transect T3	Along Shek Sheung River & Sheung Yue River	Yes
Point Count Location P6	At Shek Sheung River	Yes
Point Count Location P7	At Intersection between Sheung Yue and Shek Sheung River	Yes

3.9.2 Surveys will be conducted on a weekly basis at both high and low tides (it is considered high tide when tidal levels are above 1.5m and low tide when tidal level are below 1.5m at Tsim Bei Tsui Station).

3.9.3 All avifauna species that were seen or heard would be identified and quantified along transects and at point count locations. Survey data would be recorded continuously by the surveyor as they walk along the transects, while survey data of each point count location would be collected for 5-minutes after surveyor reaches the designated point count location.

3.9.4 Noticeable behaviours such as breeding, nesting, roosting, feeding and presences of recently fledged juveniles were recorded and reported. In the case which such behaviours were observed for species of conservation importance, the Resident Engineer (RE), the Contractor and the Independent Environmental Checker (IEC) would be immediately notified after the survey such that the Contractor could review the current construction programme and minimize disturbances due to construction activities.

3.10 EVENT ACTION PLAN

Noise

3.10.1 Should non-compliance of the construction noise criteria occur, action in accordance with the Action Plan in **Table 3-10-1** shall be carried out.

Table 3-10-1 Event and Action Plan for Construction Noise

Event	Action			
	ET	**IEC**	**ER**	**Contractor**
Action Level Exceedance	1. Notify the IEC, ER and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the monitoring data submitted by the ET; 2. Review the construction methods and proposed remedial measures by the Contractor, and advise the ET and ER if the proposed remedial measures would be sufficient; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify the Contractor; 3. Require the Contractor to propose remedial measures for the analyzed noise problem; 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to the ER and IEC and copy to the ET; 2. Implement noise mitigation proposals.
Limit Level Exceedance	1. Identify sources. 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase the monitoring frequency; 5. Carry out analysis of the Contractor's working procedures with the ER and Contractor to determine possible mitigations to be implemented; 6. Inform IEC, ER, EPD and Contractor the causes and	1. Discuss amongst the ER, ET and Contractor on the potential remedial actions; 2. Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analyzed noise problems; 4. Ensure remedial measures are properly implemented; 5. If exceedance continues,	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial action to the ER and IEC and copy to the ET within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit

Event	Action			
	ET	**IEC**	**ER**	**Contractor**
	actions taken for the exceedances; 7. Assess the effectiveness of the Contractor's remedial action with the ER and keep the IEC informed of the results; 8. If exceedance stops, cease additional monitoring.		consider what portion of work is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated.	proposals if problems still not under control; stop the relevant portion of works as determined by the ER until the exceedance is abated.

Waterbird of Ecological

3.10.2 Should any exceedance encountered during construction phase, action in accordance with the Action Plan listed in ***Table 3-10-2*** shall be carried out.

Table 3-10-2 Event and Action Plan of Waterbirds of Ecological

Action Level	Response	Limit Level	Response
Construction Phase			
Decline in numbers of all waterbird species relative to numbers during Baseline Monitoring such that the Action Level response is triggered.	Investigate cause and if cause identified as related to NDAs project instigate remedial action to remove or reduce source of disturbance.	Decline in numbers of all waterbird species relative to numbers during Baseline Monitoring such that the Limit Level response is triggered.	Investigate cause and if caused identified as related to NDAs project instigate remedial action. Review and adjust LVNP management measures to improve conditions for affected species.
Decline in numbers of any one waterbird species occurring in significant numbers* during Baseline Monitoring such that the Action Level response is triggered.	Investigate cause and if cause identified as related to NDAs project instigate remedial action to remove or reduce source of disturbance.	Decline in numbers of any one waterbird species occurring in significant numbers* during Baseline Monitoring such that the Limit Level response is triggered.	Investigate cause and if caused identified as related to NDAs project instigate remedial action. Review and adjust LVNP management measures to improve conditions for affected species.

(*) W*aterbird numbers refer to combined numbers using the channels*

4. CONSTRUCTION NOISE MONITORING

4.1 GENERAL

4.1.1 The noise monitoring schedule is presented in ***Appendix F*** and the monitoring results are presented in the following sections.

4.2 RESULTS OF NOISE MONITORING

4.2.1 In the Reporting Period, a total of **5** occasions noise monitoring were carried out at the designated location CP-KTN-NMS5. The sound level meter was set in free-field situation, and therefore, façade correction (+3dB) is added according to acoustical principles and EPD guidelines. The noise monitoring results at the designated locations are summarized in ***Tables 4-2-1.*** The detailed noise monitoring data is presented in ***Appendix G*** and the relevant graphical plot shown in ***Appendix H***.

Table 4-2-1 Summaries of Noise Monitoring Results of CP-KTN-NMS5

Date	Start Time	$L_{Aeq30min}$ (dB(A))
2-May-23	10:10	60
8-May-23	14:20	60
19-May-23	13:16	60
24-May-23	9:25	63
30-May-23	9:30	67
Limit Level		**75 dB(A)**

Note: façade correction +3dB has added according to acoustical principles and EPD guidelines

4.2.2 During construction noise monitoring, no rain was encountered and wind speed is below 5m/s and gusts not exceeding 10m/s.

4.2.3 As shown in ***Table 4-2-1***, the noise level measured at the designated monitoring location was below 75dB(A). Furthermore, there were no noise complaints (Action Level exceedance) received by the RE, Contractor, WSD or EPD in the Reporting Period. Therefore, no Action or Limit Level exceedance was triggered and no corrective action was therefore required.

4.2.4 During the reporting period, no construction work was carried out during restricted hours.

5. ECOLOGY WATERBIRD MONITORING

5.1 GENERAL

5.1.1 Ecological monitoring for waterbirds shall be performed as transects and point count surveys along Ng Tung River, Sheung Yue River and Shek Sheung River in accordance with general surveying practices.

5.1.2 The surveying shall be undertaken by a qualified ecologist and he/she shall be a member of the ET. Throughout the construction period, weekly transect shall be conducted at both high and low tides to identify and enumerate all bird species utilising the river channels and identify any sources of actual or potential disturbance to birds due to construction activities.

5.1.3 Since occurrence of waterbirds has distinctive seasonal pattern, the construction phase data for all waterbirds and representative waterbirds shall be compared with the baseline data for the respective month and season. Total number of Waterbirds and six representative Waterbird species are used as an indicator of the level disturbance to water birds at each of the survey location. The representatives of waterbirds are listed in ***Table 5-1-1***.

Table 5-1-1 Representative Waterbirds

Species Name	Common Name	Chinese Name
Egretta garzetta	Little Egret	小白鷺
Ardea alba	Great Egret	大白鷺
Ardea cinerea	Grey Heron	蒼鷺
Ardeola bacchus	Chinese Pond Heron	池鷺
Bubulcus coromandus	Eastern Cattle Egret	牛背鷺
Phalacrocorax carbo	Great Cormorant	普通鸕鷀

5.2 RESULTS OF WATERBIRDS SURVEY

5.2.1 ***Five (5)*** occasion of waterbirds survey were conducted in the Reporting Month.

5.2.2 Abundance and diversity of total bird species and key waterbirds species in the Reporting Month are summarized in **Table 5-2-1** and **Table 5-2-2**.

Table 5-2-1 Total Bird Species and Abundance at Point Count Locations in the Reporting Month

Category	Number of Species	Abundance
All Avifauna	35	466
Waterbirds	12	158

Table 5-2-2 Abundance of Representative Waterbirds at Point Count Locations in the Reporting Month

Common Name	Species Name	Chinese Name	Abundance
Chinese Pond Heron	Ardeola bacchus	池鷺	41
Eastern Cattle Egret	Bubulcus coromandus	牛背鷺	2
Grey Heron	Ardea cinerea	蒼鷺	1
Great Egret	Ardea alba	大白鷺	13
Little Egret	Egretta garzetta	小白鷺	90
Great Cormorant	Phalacrocorax carbo	普通鸕鷀	0

5.2.3 The result was compared with the baseline data (both April average and Winter average) and decline in abundance of all waterbirds were recorded. A table showing the waterbirds abundance comparison with baseline data was provided in **Appendix L**. (Appendix C of the waterbirds survey report).

5.2.4 Abundance of all waterbirds was expected to decrease in general as migratory birds leave Hong Kong in the Summer, as the abundance in waterbirds of the reporting month does not trigger the action level when compared to the monthly data, it is suggested that decline in waterbird abundance is in line with seasonal fluctuations.

5.2.5 As discussed in previous reporting period, the decline of individual waterbird species should not be the result of increased disturbances from the Project or its surrounding on-going projects, as increased disturbance would discourage multiple waterbird species from foraging near the transect and point count locations instead. Thus it is concluded that the decline in Chinese Pond Heron and Little Egret is not related to the construction works of the Project.

5.2.6 According to surveyors, the construction works by other Projects around the survey transects observed in previous month are still active during the reporting month.

5.2.7 Maintenance work of the inflatable dam work was observed across Ng Tung River at P2 and P3 by other Project since November 2022. It was observed at the end of May 2023 during the survey that the maintenance work was completed and part of the temporary concrete dam was being removed. The water level of Ng Tung River along T1 (P1 and P2 included) is higher than the baseline survey due to the concrete blocks damming the flow of water, and may reduce the foraging area at P1 and/or P2 and attract less waterbirds to forage at these two points.

5.2.8 A playback device for bird calls was seen to be installed and in operation near the pond in T1 during the survey on 3rd April 2023 by other Project and the device was seen to be in operation throughout the reporting month. This may directly lower the number of waterbirds and representative waterbirds visiting P1 and P2 as the birds would be incentivized to forage away from these two points and in the pond instead.

5.2.9 Remote control boat racing by a group of hobbyists were also seen multiple times at T1 near P2 during surveys in this reporting month, the noise produced by the activity and high speed movements of the boat across the surface of Ng Tung River may discourage waterbirds from foraging along the river bank at P2.

5.2.10 Road improvement works by other Project was also observed along T2 near P3, and large vehicles producing noise were seen to enter and leave the site. This may be a potential source of disturbance that discourages waterbirds from foraging at P3. In addition, the construction work by other Project near P7 was observed active throughout the entire reporting month.

5.2.11 The details of the waterbirds survey for the Reporting Month can be referred to the full waterbirds survey report provided in **Appendix L**.

6. WASTE MANAGEMENT

6.1 GENERAL WASTE MANAGEMENT

6.1.1 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time.

6.2 RECORDS OF WASTE QUANTITIES

6.2.1 All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste;
- General Refuse; and
- Excavated Soil.

6.2.2 The quantities of waste for disposal in this Reporting Period are summarized in ***Tables 6-2-1*** and ***6-2-2*** and the Monthly Summary Waste Flow Table is shown in ***Appendix I***. Whenever possible, materials were reused on-site as far as practicable.

Table 6-2-1 Summary of Quantities of Inert C&D Materials

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) (in '000m^3)	0.3980	-
Reused in this Contract (Inert) (in '000 m^3)	0	-
Reused in other Contracts/ Projects (Inert) (in '000 m^3)	0	-
Disposal as Public Fill (Inert) (in '000 m^3)	0.3980	TM38

Table 6-2-2 Summary of Quantities of C&D Wastes

Type of Waste	Quantity	Disposal Location
Recycled Metal (‘000kg)	0	-
Recycled Paper / Cardboard Packing (‘000kg)	0	-
Recycled Plastic (‘000kg)	0	-
Chemical Wastes (‘000kg)	0	-
General Refuses (‘000m^3)	0.057	SENT

7. SITE INSPECTION

7.1 REQUIREMENTS

7.1.1 According to the approved Updated EM&A Manual, the environmental site inspection shall be formulation by ET Leader. Weekly environmental site inspections should carry out to confirm the environmental performance.

7.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

7.2.1 In the Reporting Month, weekly regular site inspection by the RE, the Main Contractor and ET was carried out on ***4, 11, 18*** and ***24 May 2023*** to evaluate site environmental performance of the Contract Works. During the site inspections, no non-compliance was noted.

7.2.2 The findings/deficiencies of the Contract Works observed that during the weekly site inspection are listed in ***Table 7-2-1***.

Table 7-2-1 Site Observations

Date	Findings / Deficiencies	Follow-Up Status
4 May 2023	• The Contractor was reminded to dispose of empty cement bags regularly.	Empty cement bags were disposed regularly.
11 May 2023	• The Contractor was advised to dispose of cumulated construction waste on the ground regularly.	Cumulated construction waste was dispose of regularly.
18 May 2023	• No adverse environmental issue was observed.	NA
24 May 2023	• The Contractor was advised to clean the stagnant water inside drip tray.	Stagnant water inside drip tray was cleaned and dispose of chemical waste.

8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

8.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

8.1.1 For the Contract Works, no environmental complaint, summons and prosecution was received in the Reporting Period. The statistical summary table of environmental complaint is presented in ***Tables 8-1-1, 8-1-2*** and ***8-1-3***.

Table 8-1-1 Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 May 2023	0	0	NA

Table 8-1-2 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 May 2023	0	0	NA

Table 8-1-3 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 May 2023	0	0	NA

9. IMPLEMENTATION STATUS OF MITIGATION MEASURES

9.1 GENERAL REQUIREMENTS

9.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the approved Updated EM&A Manual covered the issues of dust, noise, water and waste and they are summarized presented in ***Appendix J.***

9.2 IMPLEMENTATION STATUS OF THE MITIGATION MEASURES IN THE REPORTING PERIOD

9.2.1 The Contract Works shall be implementing the required environmental mitigation measures according to the approved Updated EM&A Manual as subject to the site condition. Environmental mitigation measures implemented by the Main Contractor in this Reporting Month are summarized in ***Table 9-1-1***. An as-built drawing of site temporary drainage is shown in ***Appendix K***.

Table 9-1-1 Environmental Mitigation Measures Implemented in the Reporting Period

Issues	Environmental Mitigation Measures
Air Quality	• All vehicles must be washed before leaving the site; • Sprayed water during excavation works; • Stockpile of dusty material was covered entirely with impervious sheeting or sprayed with water so as to maintain the entire surface wet; • Water spraying on haul road and dry site area was provided regularly; and • Where a vehicle leaving the works site is carrying a load of dusty materials, the load has covered entirely with clean impervious sheeting;
Constriction Noise	• Keep all vehicles/plants in good condition to minimize noise impact; • Shut down the plants when not in used; • Provided quiet powered mechanical equipment to use onsite; • Avoided using multiple vehicles at the same time as far as practicable
Water Quality	• All the surface runoff are collected to sedimentation pit and tanks for sedimentation prior discharged • Sand bag bund was provided along the boundary of the site area near Ng Tung River to divert the surface runoff to sedimentation pit and avoid direct discharge of surface runoff. • Standby water pumps were provided on site to pump the runoff water collected at pit to the sedimentation tank for sedimentation. • Standby sedimentation tanks were provided on site to ensure sufficient sedimentation capacity. • Complied with the requirement under the discharge license. • Avoid spilt concrete during concreting works • Haul road was hard paved to reduce muddy runoff during rainy days.
Waste and Chemical Management	• Disposal of C&D wastes to any designated public filling facility and/or landfill followed a trip ticket system; • Debris and refuse generated on-site collected regularly; • Oils and fuels were stored in designated areas; • Kept the site tidy and clean.

9.3 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

9.3.1 The tentative construction works schedule of the Contract Works under FEP in the coming month are listed below:

- ABWF Works at ReWPS (Basement Floor) – Application of waterproofing material and ABWF at wall & ceiling
- ABWF Works at ReWPS (Ground Floor) – steel & metal works, E&M works
- ABWF Works at HCF (Grid 1-3) – E&M works, fitting-out works
- ABWF Works at HCF (Grid 5-6) – E&M works
- Electrical conduits installation work and fire services conduits installation work at HCF

9.4 KEY ISSUES FOR THE COMING MONTH

9.4.1 Key issues to be considered in the coming month for the Contract Works under FEP include:

ABWF Work at ReWPS and HCF

- Proper management and storage of chemicals used for the ABWF Work to avoid land contamination.
- Chemical label for chemical container should be regularly checked and provided.
- Sufficient secondary containment for chemical containers should be provided at work area.

Fence Wall at SWHWRP (Rebar fixing and concreting work)

- Collect spilt cement/concrete washings during concreting works to avoid water quality impact
- Erect barrier for steel bar cutting machine to reduce noise impact;
- Restrict operation time of PME from 07:00 to 19:00 on any working day;

General

- Ensure the sand bag bund at site boundary near the Ng Tung River is properly maintained to avoid muddy discharge during heavy rain;
- Ensure sufficient capacity of sedimentation pit and tanks for wastewater sedimentation;
- Ensure all surface runoff are diverted to sedimentation pit and tanks properly;
- Sufficient stock of standby pump should be available on site for pumping the runoff water/wastewater to the sedimentation tank.
- Cover the dusty stockpile on site to reduce potential fugitive dust quality impact;
- Spraying water at dry haul road more frequently to reduce dust generation;
- All the vehicles should be properly washed prior leaving the site;
- Use Quiet powered mechanical equipment (QPME) whenever applicable;
- Minimize the number of plants used at the same time to reduce cumulative noise impact;
- Proper management of general refuse and chemical waste generated on site.
- Keep review the temporary drainage system on site during rainy reason

10. CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

10.1.1 This is **18th** monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from **1** to **31 May 2023**.

10.1.2 No noise complaint (which is an Action Level exceedance) was received and no construction noise measurement results that exceeded the Limit Level were recorded in the Reporting Period. No NOEs or the associated corrective actions were therefore issued.

10.1.3 Five (5) occasions of the weekly waterbirds survey has been taken in the Reporting Period. Although decline in waterbirds were recorded in the Reporting Period, the cause of decline was considered unlikely due to the Project. No action and limit level exceedance was considered triggered in the Reporting Month.

10.1.4 No documented complaint, notification of summons or successful prosecution was received by either the RE or WSD or the Main Contractor.

10.1.5 Weekly site inspection by the RE, ET and the Main Contractor had carried out on ***4, 11, 18*** and ***24 May 2023***. The mitigation measures implemented was considered satisfactory. No non-compliance observed during the site inspection.

10.2 RECOMMENDATIONS

10.2.1 ABWF & E&M works at ReWPS & HCF, and construction of fence wall at SWHWRP will be the major construction work in the coming month. Noise mitigation measures such as erect barrier for steel bar cutting machines were recommended to reduce noise impact generated from rebar fixing work. In addition, the Contractor should pay attention to potential water quality impact from concreting works and waste impact from ABWF Work, and implement mitigation measures according to the ISEMM.

10.2.2 As wet season has approached, the Contractor was general reminded to paid attention to water quality mitigation measures such as ensure sufficient wastewater treatment facilities capacity is provided on site and keep review on the temporary drainage system to avoid water quality impact arise from the Project.

10.2.3 The Contractor was reminded to pay attention to the key issues for the coming month mentioned in Section 9.4.

Appendix A

Location of Shek Wu Hui Water Reclamation Plant

N

830100 E

841700 N

841600 N

SURGE VESSEL

UNDERGROUND FLOWMETER CHAMBER

ANCILLARY ROOMS

MOTOR HALL

RECLAIMED WATER REFILLING STATION WITH UNDERGEOUND WATER TANK

ANCILLARY ROOMS

BUFFER TANK

HYPO-CHLORINATION CONTACT TANK

INLET CHAMBER

SHEUNG SHUI SLAUGHTER HOUSE

TO BE CONNECTED WITH PROPOSED PEOMENADE TO BE CONSTRUCTED BY OTHERS

NG TUNG RIVER (RIVER INDUS)

Ramp

Platform

Outfall

CUL

FP

TS

Road

Sheung Shui Slaughter House

PLAN
SCALE 1 : 400

N

830300 E

SHEUNG YUE RIVER 石上河

FU TEI AU ROAD 導管

CHUK WAN STREET

污水處理廠
Sewage Treatment Works

SHEK SHEUNG

SITE PLAN
SCALE 1 : 5000

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFED.
2. THE BASE PLAN IS EXTRACTED FROM SURVEY SHEET NOS. 2-SE ADN 3-SW.
3. TOP SLABS OF STRUCTURES ARE NOT SHOWN FOR CLARITY.

LEGEND:

- SITE BOUNDARY OF SWHWRP
- FENCING
- EVA
- PLANTER GREENING AREA
- GRASSCRETE
- RIVERSIDE PROMENADE
- GROUND LEVEL
- TREE (INDICATIVE)
- F/P — FOOTPATH
- MANHOLE/CABLE PIT
- ACCESS GATE

Revision	Date	Description		Initial
	Designed	Checked	Drawn	Checked
Initial	CWC	GC	SZ	GC
Date	02/21	02/21	02/21	02/21

Approved

Contract No.
3 / WSD / 20

Contract Title
RECLAIMED WATER SUPPLY TO SHEUNG SHUI AND FANLING

Drawing Title
GENERAL ARRANGEMENT OF SWHWRP - GENERAL PLAN

Drawing No.
401582/B&V/WRP/GA/101

Revision
-

Scale
AS SHOWN

水務署 Water Supplies Department

BINNIES HONG KONG LIMITED
賓尼斯工程顧問有限公司

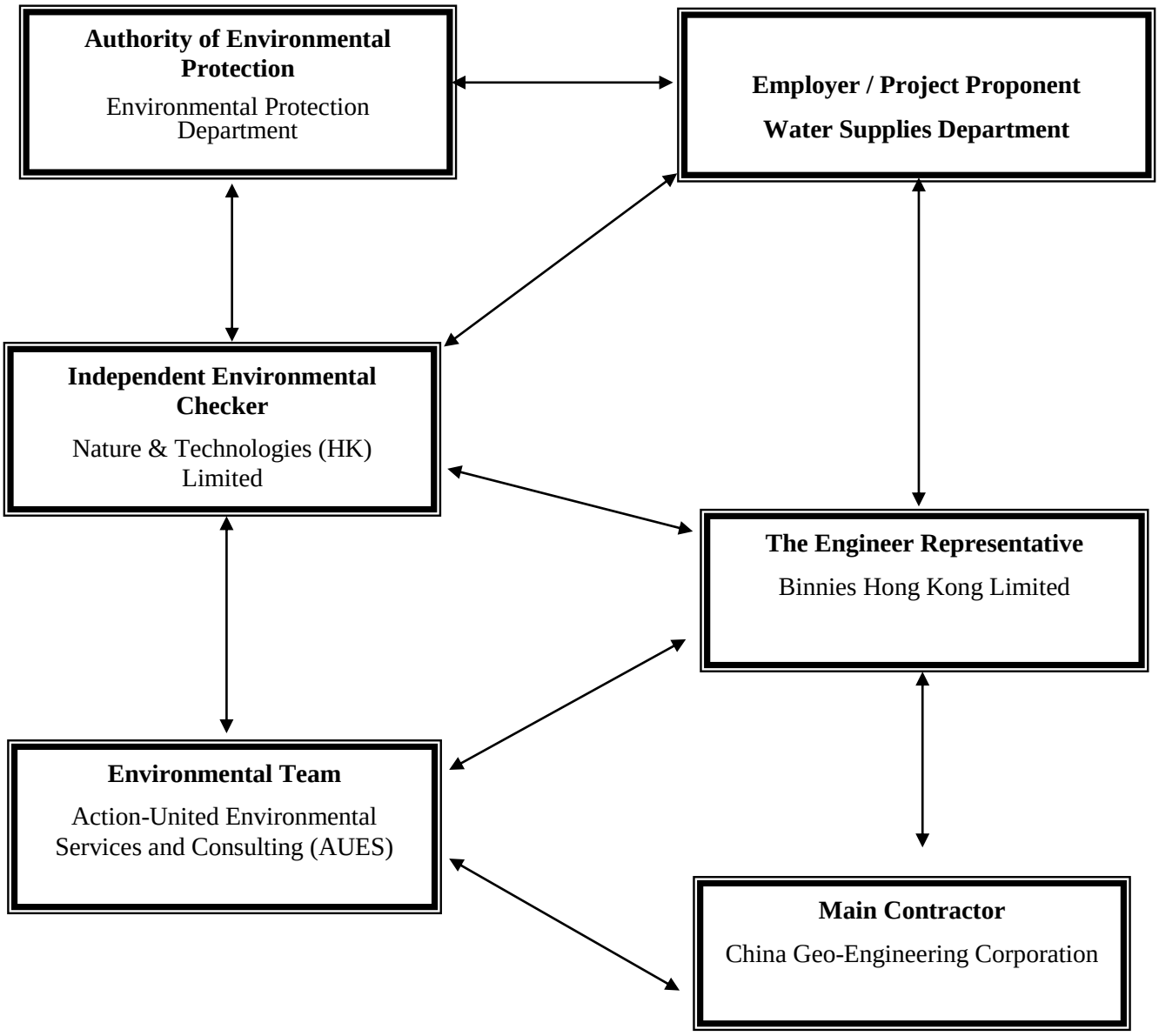
Plot Date: 3/15/2021 11:20:19 AM

File Name: BIM 360://401582 - Sheung Shui & Fanling Reclaimed Water IDC/BV-401582-WRP-SI-N.rvt

Appendix B

Project Organization

Project Organization Chart



Contact Details of Key Personnel for the Project

Organization	Project Role	Name of Key Staff	Tel No.	Email
WSD	Project Proponent	Tim Wong	2829 5638	tim_cw_wong@wsd.gov.hk
Binnies	Senior Resident Engineer	S.H. Chung	2608 7380	sre.3wsd20@gmail.com
Binnies	Resident Engineer	Chester Chan,	2608 7380	chancw@binnies.com
N&T	Independent Environmental Checker	Vega Wong	2877 3122	vegawong@nt.com.hk
CGC	Site Agent	Wong Fai	9785 2545	3wsd20@gmail.com
CGC	Environmental Officer	Leo Wong	9337 2420	3wsd20.so1@gmail.com
AUES	Environmental Team Leader	T. W. Tam	2959 6059	twtam@fordbusiness.com
AUES	Environmental Consultant	Martin Li	2959 6059	martinli@fordbusiness.com
AUES	Assistant Environmental Consultant	Fai So	2959 6059	faiso@fordbusiness.com

Legend:

WSD (Employer) – Water Supplies Department
Binnies (Engineer Representative) – Binnies Hong Kong Limited
CGC (Main Contractor) –China Geo-Engineering Corporation
N&T (IEC) –Nature & Technologies (HK) Limited
AUES (ET) – Action-United Environmental Services and Consulting (AUES)

Appendix C

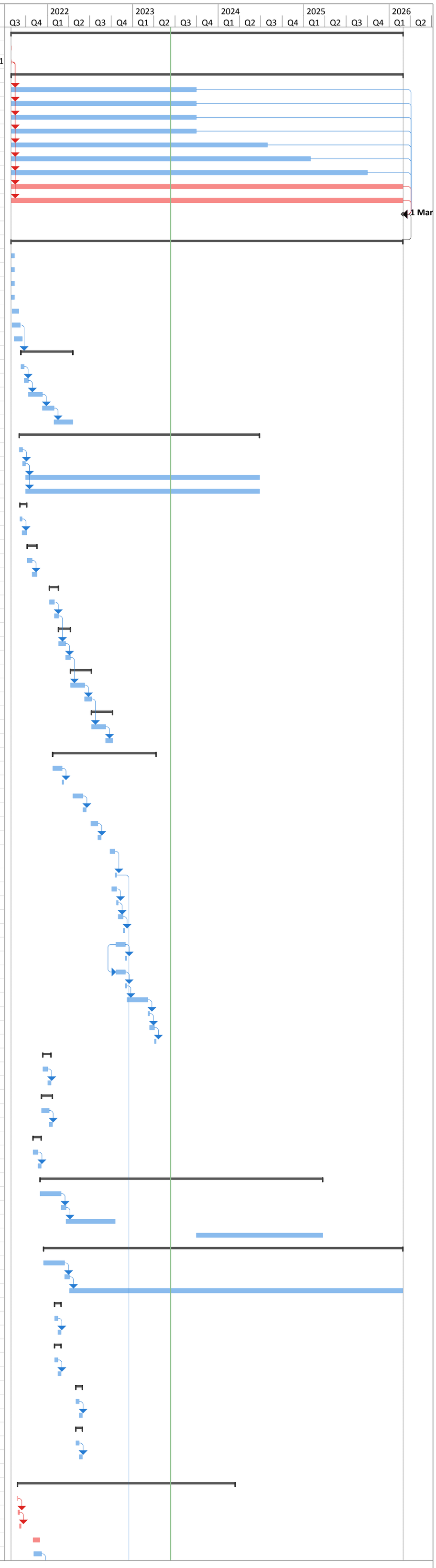
Master Construction Program and Site Overview Photo in the Reporting Period

SITE OVERVIEW PHOTO IN THE REPORTING PERIOD

ABWF Works – ReWPS Ground Floor

Fence wall at SWHWRP – Rebar fixing and Concreting work

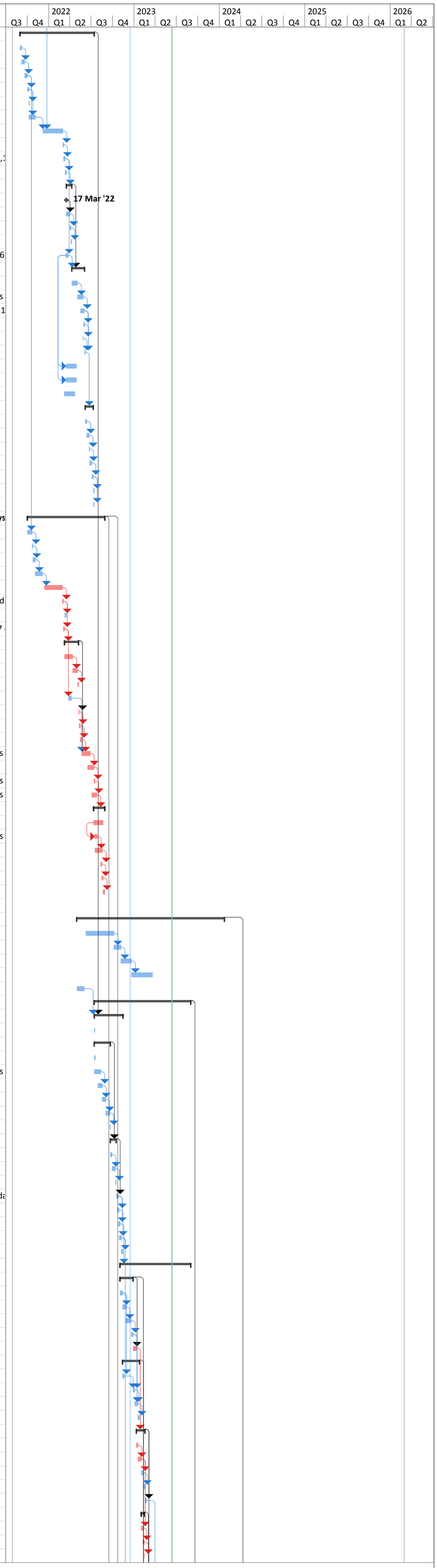
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1	**Key Dates**	**1676 days**	**30/7/21**	**1/3/26**			
2	Contract Date	1 day	30/7/21	30/7/21			
3	Starting Date	1 day	30/7/21	30/7/21			5,6,7,8,9,10,11
4	**Contract Period**	**1675 days**	**31/7/21**	**1/3/26**			
5	Section 1 - Shek Wu Hui Water Reclamation Plant (SWHWRP)	791 days	31/7/21	29/9/23		3	14FF
6	Section 2 - Landscaping works of SWHWRP	791 days	31/7/21	29/9/23		3	14FF
7	Section 3 - Modification of Table Hill Reclaimed Water Service Reservoir	791 days	31/7/21	29/9/23		3	14FF
8	Section 4 - Mainlaying works in part 3 of the Site	791 days	31/7/21	29/9/23		3	14FF
9	Section 5 - Mainlaying works in part 4 of the Site	1095 days	31/7/21	29/7/24		3	14FF
10	Section 6 - Mainlaying works in part 5 of the Site	1279 days	31/7/21	29/1/25		3	14FF
11	Section 7 - Mainlaying works in part 6 of the Site	1522 days	31/7/21	29/9/25		3	14FF
12	Section 8 - Mainlaying works in part 7 of the Site & remaining WM works	1675 days	31/7/21	1/3/26		3	14FF
13	Section 9 - Conversion works of reclaimed water	1675 days	31/7/21	1/3/26		3	14FF
14	**Contract Completion date**	**0 days**	**1/3/26**	**1/3/26**		**5FF,6FF,7FF,8FF**	
15							
16	**Preliminary & General**	**1675 days**	**30/7/21**	**28/2/26**			**14FF**
17	Submission of Draft Safety Plan	14 days	30/7/21	12/8/21			
18	Submission of Draft Environmental Management Plan	14 days	30/7/21	12/8/21			
19	Submission of Sub-contractor Management Plan	14 days	30/7/21	12/8/21			
20	Notification & request for UU record from utility undertakers	14 days	30/7/21	12/8/21			
21	Submission and acceptance of selection procedure for supplier	29 days	3/8/21	31/8/21			
22	Submission and acceptance of selection procedure for subcontractor	35 days	3/8/21	6/9/21			24
23	Agreement on preliminary office layout	35 days	12/8/21	15/9/21			
24	Provision of Project Manager's Accommodation	222 days	10/9/21	19/4/22		22	
25	Submission and acceptance of subletting package	14 days	10/9/21	23/9/21			26
26	Selection of Subcontractor	18 days	24/9/21	11/10/21		25	27
27	Submission and acceptance of design and material	60 days	12/10/21	10/12/21		26	28
28	Manufacture and delivery of MiC office	50 days	11/12/21	29/1/22		27	29
29	Erection of Project Manager's Accommodation	80 days	30/1/22	19/4/22		28	
30	**Selection of Traffic Consultant**	**1027 days**	**3/9/21**	**25/6/24**			
31	Submission and acceptance of subletting package	14 days	3/9/21	16/9/21			32
32	Selection of traffic consultant	13 days	17/9/21	29/9/21		31	33,34
33	XP application for different Sections	1000 days	30/9/21	25/6/24		32	
34	TTA application and Attend TMLG Meetings for different Sections	1000 days	30/9/21	25/6/24		32	
35	**Selection of Concrete Supplier**	**29 days**	**6/9/21**	**4/10/21**			
36	Submission and acceptance of subletting package	9 days	6/9/21	14/9/21			37
37	Selection of concrete supplier	20 days	15/9/21	4/10/21		36	
38	**Selection of Subcontractor for Excavation and ELS Works at SWHWRP**	**42 days**	**7/10/21**	**17/11/21**			
39	Submission and acceptance of subletting package	21 days	7/10/21	27/10/21			40
40	Selection of subcontractor	21 days	28/10/21	17/11/21		39	
41	**Selection of Subcontractor for Structural Works**	**39 days**	**10/1/22**	**17/2/22**			
42	Submission and acceptance of subletting package	21 days	10/1/22	30/1/22			43
43	Selection of subcontractor	18 days	31/1/22	17/2/22		42	45
44	**Selection of Subcontractor for Roadworks**	**51 days**	**18/2/22**	**9/4/22**			
45	Submission and acceptance of subletting package	30 days	18/2/22	19/3/22		43	46
46	Selection of subcontractor	21 days	20/3/22	9/4/22		45	48
47	**Selection of Subcontractor for Architectural Works**	**90 days**	**10/4/22**	**8/7/22**			
48	Submission and acceptance of subletting package	60 days	10/4/22	8/6/22		46	49
49	Selection of subcontractor	30 days	9/6/22	8/7/22		48	51
50	**Selection of Subcontractor for Landscape Works**	**90 days**	**9/7/22**	**6/10/22**			
51	Submission and acceptance of subletting package	60 days	9/7/22	6/9/22		49	52
52	Selection of subcontractor	30 days	7/9/22	6/10/22		51	
53	**Selection of Subcontractor for Mainlaying Works**	**442 days**	**24/1/22**	**10/4/23**			
54	Submission and acceptance of subletting package - open trench (for Section 4)	40 days	24/1/22	4/3/22			55
55	Selection of subcontractor - open trench (for Section 4)	7 days	5/3/22	11/3/22		54	
56	Submission and acceptance of subletting package - open trench (for Section 5)	43 days	20/4/22	1/6/22			57
57	Selection of subcontractor - open trench (for Section 5)	14 days	2/6/22	15/6/22		56	
58	Submission and acceptance of subletting package - open trench (SC-028)	30 days	6/7/22	4/8/22			59
59	Selection of subcontractor - open trench (SC-028)	14 days	5/8/22	18/8/22		58	
60	Submission and acceptance of subletting package - open trench (Shek Wu Hui) (SC-035)	21 days	26/9/22	16/10/22			61
61	Selection of subcontractor - open trench (Shek Wu Hui) (SC-035)	7 days	17/10/22	23/10/22		60	1272
62	Submission and acceptance of subletting package - open trench (Remaining) (SC-036)	21 days	3/10/22	23/10/22			63
63	Selection of subcontractor - open trench (Remaining) (SC-036)	7 days	24/10/22	30/10/22		62	64
64	Submission and acceptance of subletting package - road marking	21 days	31/10/22	20/11/22		63	65
65	Selection of subcontractor - road marking	7 days	21/11/22	27/11/22		64	
66	Submission and acceptance of subletting package - trenchless (SC-029)	40 days	21/10/22	29/11/22			67,68SS
67	Selection of subcontractor - trenchless (SC-029)	7 days	30/11/22	6/12/22		66	
68	Submission and acceptance of subletting package - trenchless (SC-042)	40 days	21/10/22	29/11/22		66SS	69
69	Selection of subcontractor - trenchless (SC-042)	7 days	30/11/22	6/12/22		68	70
70	Submission and acceptance of subletting package - trenchless (SC-051)	90 days	7/12/22	6/3/23		69	71
71	Selection of subcontractor - trenchless (SC-051)	7 days	7/3/23	13/3/23		70	72
72	Submission and acceptance of subletting package - trenchless (SC-052)	21 days	14/3/23	3/4/23		71	73
73	Selection of subcontractor - trenchless (SC-052)	7 days	4/4/23	10/4/23		72	
74	**Selection of Supplier for Survey Equipment**	**35 days**	**13/12/21**	**16/1/22**			
75	Submission and acceptance of subletting package	21 days	13/12/21	2/1/22			76
76	Selection of subcontractor	14 days	3/1/22	16/1/22		75	
77	**Selection of Supplier for Computer Facilities**	**47 days**	**7/12/21**	**22/1/22**			
78	Submission and acceptance of subletting package	33 days	7/12/21	8/1/22			79
79	Selection of subcontractor	14 days	9/1/22	22/1/22		78	
80	**Selection of Environment Team**	**35 days**	**1/11/21**	**5/12/21**			
81	Submission and acceptance of subletting package	21 days	1/11/21	21/11/21			82
82	Selection of Environment Team	14 days	22/11/21	5/12/21		81	
83	**BEAM Plus**	**1208 days**	**1/12/21**	**22/3/25**			
84	Submission and acceptance of subletting package	90 days	1/12/21	28/2/22			85
85	Selection of BEAM plus consultant	21 days	1/3/22	21/3/22		84	86
86	BEAM Plus PA submission	210 days	22/3/22	17/10/22		85	
87	BEAM Plus FA submission	540 days	30/9/23	22/3/25			
88	**BIM**	**1536 days**	**16/12/21**	**28/2/26**			
89	Submission and acceptance of subletting package	90 days	16/12/21	15/3/22			90
90	Selection of BIM consultant	21 days	16/3/22	5/4/22		89	91
91	Execution of BIM (rebar BIM, CSD and CBWD coordination and production)	1425 days	6/4/22	28/2/26		90	
92	**Selection of Contractor's Designer for foundation works**	**28 days**	**1/2/22**	**28/2/22**			
93	Submission and acceptance of subletting package	14 days	1/2/22	14/2/22			94
94	Selection of Contractor's Designer	14 days	15/2/22	28/2/22		93	
95	**Selection of Independent Checking Engineer (ICE) for Permanent Works (foundation)**	**28 days**	**1/2/22**	**28/2/22**			
96	Submission and acceptance of subletting package	14 days	1/2/22	14/2/22			97
97	Selection of ICE for Permanent Works	14 days	15/2/22	28/2/22		96	
98	**Selection of Contractor's Designer for Civil & Structural Works**	**28 days**	**3/5/22**	**30/5/22**			
99	Submission and acceptance of subletting package	14 days	3/5/22	16/5/22			100
100	Selection of Contractor's Designer	14 days	17/5/22	30/5/22		99	
101	**Selection of Independent Checking Engineer (ICE) for Permanent Works (Civil & Structural)**	**28 days**	**3/5/22**	**30/5/22**			
102	Submission and acceptance of subletting package	14 days	3/5/22	16/5/22			103
103	Selection of ICE for Permanent Works	14 days	17/5/22	30/5/22		102	
104							
105	**Section 1 & 2 - Construction of SWHWRP and Landscaping Works**	**930 days**	**27/8/21**	**13/3/24**			
106	Access Date (part 1 of the Site)	1 day	27/8/21	27/8/21			107
107	Site clearance	7 days	28/8/21	3/9/21		106	108
108	Initial survey	7 days	4/9/21	10/9/21		107	
109	Installation of monitoring instruments and take initial readings	28 days	1/11/21	28/11/21			
110	Environmental baseline montioring by ET	33 days	4/11/21	6/12/21			118



Project: 3WSD20 Programme
Date: 12/6/23

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

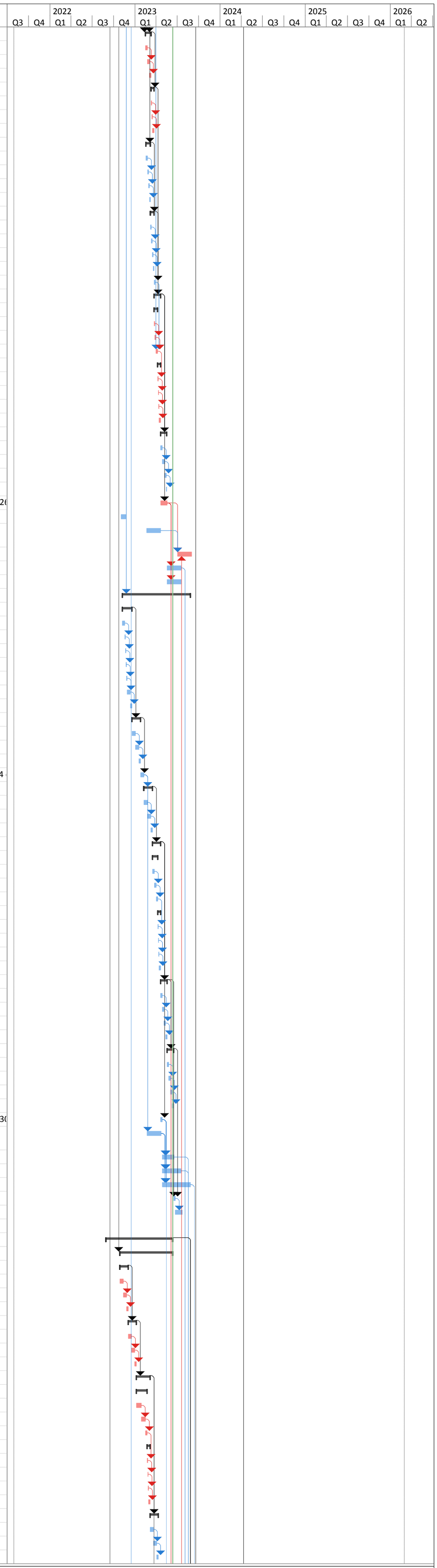
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
111	**Foundation Works - ReWPS**	**318 days**	**31/8/21**	**14/7/22**			**182**
112	Submission and approval of subletting package for pre-drilling works	7 days	31/8/21	6/9/21			113
113	Selection of pre-drilling subcontractor	13 days	7/9/21	19/9/21		112	114
114	Pre-drilling works (15 nos.)	12 days	20/9/21	1/10/21		113	147,115
115	Pre-drill log report and Point Load Test	6 days	2/10/21	7/10/21		114	117,116
116	CE-020 _ Inclement Weather in October 2021	3 days	8/10/21	10/10/21		115	
117	Design review for foundation works	28 days	8/10/21	4/11/21		115	118
118	Piling works (54 nos. of pre-bored H piles) - Total length = 2387m	85 days	7/12/21	1/3/22		110,117	119
119	CE-040 _ Inclement Weather in February 2022	3.5 days	2/3/22	5/3/22		118	120
120	Installation of King Post	7 days	5/3/22	12/3/22		119	127FS+3 days,1
121	CE-041 _ Inclement Weather in March 2022	5 days	12/3/22	17/3/22		120	122
122	**Testing of pre-bored H-pile - tension load test**	**23.5 days**	**17/3/22**	**9/4/22**		**121**	**128**
123	Site ready for setting up of tension load test	0 days	17/3/22	17/3/22			124
124	(CE-044) EoT due to Shortage of Acetylene Gas Supply	15 days	17/3/22	1/4/22		123	125
125	Setting up of load test	4.5 days	1/4/22	5/4/22		124	126
126	Tension Load Test	4 days	6/4/22	9/4/22		125	
127	Sheet piling works for ELS - 300 pcs (length 12m)	10 days	15/3/22	25/3/22		120FS+3 days	128,135SS,136
128	**Excavation works (6900m3) and ELS installation**	**54.5 days**	**10/4/22**	**3/6/22**		**122,127**	
129	(CE-044) EoT due to Shortage of Acetylene Gas Supply	24 days	10/4/22	3/5/22			130
130	ELS installation and excavation	25 days	4/5/22	28/5/22		129	131FS-11 days
131	Welding of pile head capping plate	15 days	18/5/22	1/6/22		130FS-11 days	132FS-3 days,1
132	CE-052 _ Inclement Weather in May 2022 (under assessment)	4.5 days	30/5/22	3/6/22		131FS-3 days	134
133	Laying of blinding layer (1st pour)	1 day	27/5/22	27/5/22		131FS-6 days	134
134	Laying of blinding layer (2nd pour)	3 days	3/6/22	6/6/22		132,133	138
135	Submission and acceptance of method statement for pile cap construction	45 days	15/3/22	29/4/22		127SS	
136	Submission and acceptance of water proofing material	45 days	15/3/22	29/4/22		127SS	
137	Concrete mix submission, plant trial and acceptance of Grade 50 concrete	45 days	9/3/22	22/4/22			
138	**Construction of pile cap**	**34.5 days**	**6/6/22**	**10/7/22**		**134**	
139	CE-053 _ Inclement Weather in June 2022 (under assessment)	6.5 days	6/6/22	12/6/22			140
140	Installation of water proofing system and testing	10 days	13/6/22	22/6/22		139	141
141	CE-025 _ GI works of Contract ND/2021/01	2 days	23/6/22	24/6/22		140	142
142	Rebar fixing	10 days	25/6/22	4/7/22		141	143
143	Concreting of pile cap (996 m3)	6 days	5/7/22	10/7/22		142	144,145
144	Backfilling to pile cap top level	4 days	11/7/22	14/7/22		143	
145	Rebar fixing (horizontal bars at starter bars from pile cap)	3 days	12/7/22	14/7/22		143	
146	**Foundation Works - HCF**	**331 days**	**2/10/21**	**28/8/22**			**309FS+60 days**
147	Pre-drilling works (25 nos.)	20 days	2/10/21	21/10/21		114	148
148	CE-020 _ Inclement Weather in October 2021	3 days	22/10/21	24/10/21		147	149
149	Pre-drill log report and Point Load Test	11 days	25/10/21	4/11/21		148	150
150	Design review for foundation works	30 days	5/11/21	4/12/21		149	151
151	Piling works - HCF (56 nos. of pre-bored H piles) - Total length = 1871m	77 days	14/12/21	28/2/22		150	152
152	CE-040 _ Inclement Weather in February 2022	3.5 days	1/3/22	4/3/22		151	154,153FS+6 d
153	Testing of pre-bored H-pile - proof drilling	7 days	10/3/22	17/3/22		152FS+6 days	
154	CE-041 _ Inclement Weather in March 2022	5 days	4/3/22	9/3/22		152	155,159FS+17
155	**Testing of pre-bored H-pile - compression load test**	**60.5 days**	**9/3/22**	**8/5/22**		**154**	**163,160**
156	(CE-044) EoT due to Shortage of Acetylene Gas Supply	35 days	9/3/22	13/4/22			157
157	Construction of mini-piles and setting up of load test	21 days	13/4/22	4/5/22		156	158
158	Compression load test	4.5 days	4/5/22	8/5/22		157	
159	Sheet piling works for ELS - 425 pcs (length 6m)	13 days	26/3/22	8/4/22	3	154FS+17 days	163
160	CE-025 _ GI works of Contract ND/2021/01	2 days	9/5/22	10/5/22		155	161
161	CE-052 _ Inclement Weather in May 2022 (under assessment)	4.5 days	11/5/22	15/5/22		160	162
162	CE-053 _ Inclement Weather in June 2022 (under assessment)	6.5 days	15/5/22	21/5/22		161	163
163	Excavation works (7600m3)	37 days	22/5/22	27/6/22		155,159,162	164FS-12 days
164	Welding of pile head capping plate	28 days	16/6/22	13/7/22		163FS-12 days	165
165	CE-054 _ Inclement Weather in July 2022 (under assessment)	4 days	14/7/22	17/7/22		164	166FS-14 days
166	Laying of blinding layer	22 days	4/7/22	25/7/22		165FS-14 days	167FS-14 days
167	**Construction of pile cap**	**48 days**	**12/7/22**	**28/8/22**		**166FS-14 days**	
168	Formwork erection	40 days	12/7/22	20/8/22			169SS+4 days
169	Installation of water proofing system and testing	12 days	16/7/22	27/7/22		168SS+4 days	170FS-10 days
170	Rebar fixing	31 days	18/7/22	17/8/22		169FS-10 days	171FS-7 days
171	Concreting of pile cap - 1600m3	5 days	11/8/22	15/8/22		170FS-7 days	172
172	Concreting of pile cap - 400m3	6 days	16/8/22	21/8/22		171	173
173	Concreting of pile cap - 1000m3	7 days	22/8/22	28/8/22		172	
174							
175	**Construction of SWHWRP**	**632 days**	**1/5/22**	**22/1/24**			**575FF**
176	Submission and acceptance of DfMA proposal	120 days	9/6/22	6/10/22			177
177	Selection of Designer & Supplier for DfMA	30 days	7/10/22	5/11/22		176	178
178	Manufacture of DfMA Precast Segments	45 days	6/11/22	20/12/22		177	179
179	Installation of DfMA segments	90 days	21/12/22	20/3/23		178	
180	Submission and acceptance of method statement for construction of ReWPS and HCF	30 days	3/5/22	1/6/22			182
181	**Construction of RC structure of ReWPS**	**413 days**	**15/7/22**	**31/8/23**			**433,444**
182	**Construction of basement (below ground) - Grid Line 1-4**	**123 days**	**15/7/22**	**14/11/22**		**111,180**	
183	Removal of ELS strut and wailing (2nd layer)	2 days	15/7/22	16/7/22			
184	Construction of external walls, W6, W8-W15 (+0mPD to +3.6mPD)	69 days	15/7/22	21/9/22			191
185	CE-054 _ Inclement Weather in July 2022 (under assessment)	4 days	15/7/22	18/7/22			
186	Scaffolding and Falsework erection	28 days	15/7/22	11/8/22			187FS-13 days
187	Formwork erection	19 days	30/7/22	17/8/22		186FS-13 days	188
188	CE-068 _ Inclement Weather in August 2022	15 days	18/8/22	1/9/22		187	189
189	Rebar fixing (up to +7.2mPD) and formwork erection (up to +3.6mPD)	18 days	2/9/22	19/9/22		188	190
190	Concreting	2 days	20/9/22	21/9/22		189	
191	Construction of external walls, W6, W8-W15 (+3.6mPD to +5.7mPD)	25 days	22/9/22	16/10/22		184	195
192	C.J. preparation at +3.6mPD	7 days	22/9/22	28/9/22			193
193	Formwork erection	15 days	29/9/22	13/10/22		192	194
194	Concreting	3 days	14/10/22	16/10/22		193	
195	Removal of formwork (+0mPD to +5.7mPD)	9 days	17/10/22	25/10/22		191	197,196FS-4 da
196	Rectification of exposed piles between G.L. 4-5	7 days	22/10/22	28/10/22		195FS-4 days	198
197	Installation and testing of water proofing system (+0mPD to +5.7mPD)	7 days	26/10/22	1/11/22		195	200
198	Backfilling of sand (+0mPD to +4.4mPD)	10 days	29/10/22	7/11/22		196	262,199
199	Removal of ELS strut and wailing	7 days	8/11/22	14/11/22		198	
200	**Construction of Superstructure (above ground) - Grid Line 1-4**	**303 days**	**2/11/22**	**31/8/23**		**197**	
201	Construction of Beams and Slabs at +7.2mPD	56 days	2/11/22	27/12/22			206,222
202	Falsework erection	11 days	2/11/22	12/11/22			203,208
203	Formwork erection	14 days	13/11/22	26/11/22		202	204
204	Rebar fixing	24 days	27/11/22	20/12/22		203	205
205	Concreting (+5.7mPD to +7.2mPD)	7 days	21/12/22	27/12/22		204	210,209
206	Partial Removal of formwork and falsework below +7.2mPD	14 days	28/12/22	10/1/23		201	212
207	Construction of Beams and Slabs at +9.1mPD	73 days	13/11/22	24/1/23			222
208	Falsework erection	7 days	13/11/22	19/11/22		202	209
209	Formwork erection	7 days	28/12/22	3/1/23		208,205	210
210	Rebar fixing	14 days	4/1/23	17/1/23		205,209	211
211	Concreting (+7.2mPD to +9.1mPD)	7 days	18/1/23	24/1/23		210	
212	Construction of Beams and Slabs at +3.6mPD and ST6	37 days	11/1/23	16/2/23		206	217,230
213	Scaffolding and falsework erection	7 days	11/1/23	17/1/23			214
214	Formwork erection	14 days	18/1/23	31/1/23		213	215,219
215	Rebar fixing	9 days	1/2/23	9/2/23		214	216
216	Concreting (+3.6mPD)	7 days	10/2/23	16/2/23		215	
217	Re-instatement of falsework below +7.2mPD	7 days	17/2/23	23/2/23		212	245
218	Construction of Staircase ST4 & ST5 (+7.2mPD to +8.85mPD)	14 days	1/2/23	14/2/23			222
219	Formwork erection	7 days	1/2/23	7/2/23		214	220
220	Rebar fixing	6 days	8/2/23	13/2/23		219	221
221	Concreting	1 day	14/2/23	14/2/23		220	



Project: 3WSD20 Programme
Date: 12/6/23

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
222	Construction of Walls and Columns (+7.2mPD/+9.1mPD to +12.2mPD)	24 days	15/2/23	10/3/23		207,218,201	226
223	Scaffolding erection and Formwork erection	8 days	15/2/23	22/2/23			224
224	Rebar fixing and Formwork erection	9 days	23/2/23	3/3/23		223	225
225	Concreting	7 days	4/3/23	10/3/23		224	
226	Construction of Walls and Columns (+12.2mPD to +15.2mPD)	13 days	11/3/23	23/3/23		222	241
227	Scaffolding erection and Formwork erection	3 days	11/3/23	13/3/23			228
228	Rebar fixing and Formwork erection	3 days	14/3/23	16/3/23		227	229
229	Concreting	7 days	17/3/23	23/3/23		228	
230	Construction of Staircase ST1, ST2 (+0mPD to +3.6mPD)	19 days	17/2/23	7/3/23		212	235
231	Scaffolding and falsework erection	7 days	17/2/23	23/2/23			232
232	Formwork erection	4 days	24/2/23	27/2/23		231	233
233	Rebar fixing	4 days	28/2/23	3/3/23		232	234
234	Concreting	4 days	4/3/23	7/3/23		233	
235	Construction of Staircase ST1, ST2 (+3.6mPD to +7.2mPD)	16 days	8/3/23	23/3/23		230	240
236	Scaffolding and falsework erection	4 days	8/3/23	11/3/23			237
237	Formwork erection	4 days	12/3/23	15/3/23		236	238
238	Rebar fixing	4 days	16/3/23	19/3/23		237	239
239	Concreting	4 days	20/3/23	23/3/23		238	
240	Re-instatement of falsework at Staircase below +7.2mPD	4 days	24/3/23	27/3/23		235	245
241	Construction of Beams and Slabs at +15.2mPD	28 days	24/3/23	20/4/23		226	251,256
242	Construction of Beams	15 days	24/3/23	7/4/23			
243	Falsework and formwork erection for beam	3 days	24/3/23	26/3/23			244
244	Rebar fixing for beam	5 days	27/3/23	31/3/23		243	245
245	Concreting and curing of concrete for beam	7 days	1/4/23	7/4/23		244,240,217	247
246	Construction of Slabs	13 days	8/4/23	20/4/23			
247	Installation of precast segments (65 nos.)	3 days	8/4/23	10/4/23		245	248
248	Formwork erection for half slab	1 day	11/4/23	11/4/23		247	249
249	Rebar fixing for half slab	2 days	12/4/23	13/4/23		248	250
250	Concreting for half slab and curing of concrete	7 days	14/4/23	20/4/23		249	
251	Construction of Parapet Walls (+15.2mPD to +16.6mPD)	26 days	21/4/23	16/5/23		241	
252	Scaffolding erection	7 days	21/4/23	27/4/23			253
253	Rebar fixing	10 days	28/4/23	7/5/23		252	254
254	Formwork erection	7 days	8/5/23	14/5/23		253	255
255	Concreting	2 days	15/5/23	16/5/23		254	
256	Removal of formwork and falsework below +15.2mPD	28 days	21/4/23	18/5/23		241	259,524,528,26
257	Watertightness test (G.L. 2-3, below +9.1mPD)	21 days	2/11/22	22/11/22			
258	Detailed Design for Internal Façade Treatment for Assess Road and Interior Fitting for Internal Rooms	60 days	20/2/23	20/4/23			259
259	Fitting out Works for Motor Hall & Maintenance Room	60 days	3/7/23	31/8/23		256,258,528	
260	Waterproofing & Fitting out Works for Pump Hall	60 days	19/5/23	17/7/23		256	529
261	Fitting out Works for Other Rooms	60 days	19/5/23	17/7/23		256	
262	**Construction of Superstructure (above ground) - Grid Line 4-6**	**292 days**	**8/11/22**	**26/8/23**		**198**	
263	Construction of base slab (+4.45mPD to +5.95mPD & +5.6mPD to +7.1mPD)	41 days	8/11/22	18/12/22			271
264	Open-cut excavation to formation level	10 days	8/11/22	17/11/22			265
265	Welding of pile head capping plate (11 nos.)	3 days	18/11/22	20/11/22		264	266
266	Laying of blinding layer	2 days	21/11/22	22/11/22		265	267
267	Installation of water proofing system and testing	2 days	23/11/22	24/11/22		266	268
268	Formwork erection	3 days	25/11/22	27/11/22		267	269
269	Rebar fixing	14 days	28/11/22	11/12/22		268	270
270	Concreting	7 days	12/12/22	18/12/22		269	
271	Construction of Bearing walls and Slabs (+5.95mPD to +7.2mPD)	37 days	19/12/22	24/1/23		263	275
272	Formwork erection and Rebar fixing	15 days	19/12/22	2/1/23			273
273	Formwork erection	15 days	3/1/23	17/1/23		272	274
274	Concreting	7 days	18/1/23	24/1/23		273	
275	Backfilling of pile cap edge	14 days	25/1/23	7/2/23		271	276,301FS+14
276	Construction of Columns, Walls, Beams & Slabs (+7.2mPD to +11.8mPD)	37 days	8/2/23	16/3/23		275	280
277	Scaffolding erection and formwork erection	15 days	8/2/23	22/2/23			278
278	Rebar fixing and formwork erection	15 days	23/2/23	9/3/23		277	279
279	Concreting	7 days	10/3/23	16/3/23		278	
280	Construction of Columns, Walls, Beams & Slabs (+11.8mPD to +13.25mPD)	35 days	17/3/23	20/4/23		276	290,300
281	Construction of Columns, Walls and Beams (+11.8mPD to +13.05mPD)	23 days	17/3/23	8/4/23			
282	Falsework and formwork erection	8 days	17/3/23	24/3/23			283
283	Rebar fixing	8 days	25/3/23	1/4/23		282	284
284	Concreting and curing of concrete	7 days	2/4/23	8/4/23		283	286
285	Construction of Slabs at +13.25mPD	12 days	9/4/23	20/4/23			
286	Installation of precast segments (22 nos.)	2 days	9/4/23	10/4/23		284	287
287	Formwork erection for half slab	1 day	11/4/23	11/4/23		286	288
288	Rebar fixing for half slab	2 days	12/4/23	13/4/23		287	289
289	Concreting for half slab	7 days	14/4/23	20/4/23		288	
290	Construction of Parapet Walls (+13.25mPD to +14.65mPD)	28 days	21/4/23	18/5/23		280	305,295
291	Scaffolding erection	7 days	21/4/23	27/4/23			292
292	Rebar fixing	7 days	28/4/23	4/5/23		291	293
293	Formwork erection	7 days	5/5/23	11/5/23		292	294
294	Concreting	7 days	12/5/23	18/5/23		293	
295	Construction of Staircase ST3 (+7.1mPD to +15.45mPD)	28 days	19/5/23	15/6/23		290	305
296	Scaffolding and falsework erection	7 days	19/5/23	25/5/23			297
297	Formwork erection	7 days	26/5/23	1/6/23		296	298
298	Rebar fixing	7 days	2/6/23	8/6/23		297	299
299	Concreting	7 days	9/6/23	15/6/23		298	
300	Removal of formwork and falsework below +11.8mPD & +13.25mPD	7 days	21/4/23	27/4/23		280	302,524,303,30
301	Detailed Design for Internal Façade Treatment for Assess Road and Interior Fitting for Internal Rooms	60 days	22/2/23	22/4/23		275FS+14 days	302,303,304
302	Fitting out & BS Works for CLP Transformer Rooms	50 days	28/4/23	16/6/23		300,301	545
303	Fitting out & BS Works for LV/SB Room	80 days	28/4/23	16/7/23		300,301	545
304	Fitting out Works for Other Rooms	121 days	28/4/23	26/8/23		300,301	545
305	Construction of water proofing system at roof slab of ReWPS	7 days	16/6/23	22/6/23		290,295	306
306	Water tightness test for roof slab of ReWPS	30 days	23/6/23	22/7/23		305	
307							
308	**Construction of RC structure of HCF**	**287 days**	**29/8/22**	**11/6/23**			**433,444**
309	**Construction of Superstructure (above ground) - Grid Line 1-3**	**227 days**	**28/10/22**	**11/6/23**		**146FS+60 days**	
310	Construction of Columns and Walls (+5.55mPD to +10.2mPD)	36 days	28/10/22	2/12/22			314
311	Scaffolding erection and formwork erection	15 days	28/10/22	11/11/22			312
312	Rebar fixing and formwork erection	14 days	12/11/22	25/11/22		311	313
313	Concreting	7 days	26/11/22	2/12/22		312	
314	Construction of Columns and Walls (+10.2mPD to +13.00mPD)	35 days	3/12/22	6/1/23		310	318
315	Scaffolding erection and formwork erection	14 days	3/12/22	16/12/22			316
316	Rebar fixing and formwork erection	14 days	17/12/22	30/12/22		315	317
317	Concreting	7 days	31/12/22	6/1/23		316	
318	Construction of Beams and Slabs at +13.00mPD	59 days	7/1/23	6/3/23		314	328,332
319	Construction of Beams	46 days	7/1/23	21/2/23			
320	Falsework and formwork erection for beam	21 days	7/1/23	27/1/23			321
321	Rebar fixing for beam	18 days	28/1/23	14/2/23		320	322
322	Concreting and curing of concrete for beam	7 days	15/2/23	21/2/23		321	324
323	Construction of Slabs	13 days	22/2/23	6/3/23			
324	Installation of precast segments (32 nos.)	3 days	22/2/23	24/2/23		322	325
325	Formwork erection for half slab	1 day	25/2/23	25/2/23		324	326
326	Rebar fixing for half slab	2 days	26/2/23	27/2/23		325	327
327	Concreting for half slab	7 days	28/2/23	6/3/23		326	
328	Construction of Bearing walls and Slabs (+5.55mPD to +7.1mPD)	35 days	7/3/23	10/4/23		318	
329	Formwork erection	14 days	7/3/23	20/3/23			330
330	Rebar fixing and formwork erection	14 days	21/3/23	3/4/23		329	331
331	Concreting	7 days	4/4/23	10/4/23		330	



Project: 3WSD20 Programme
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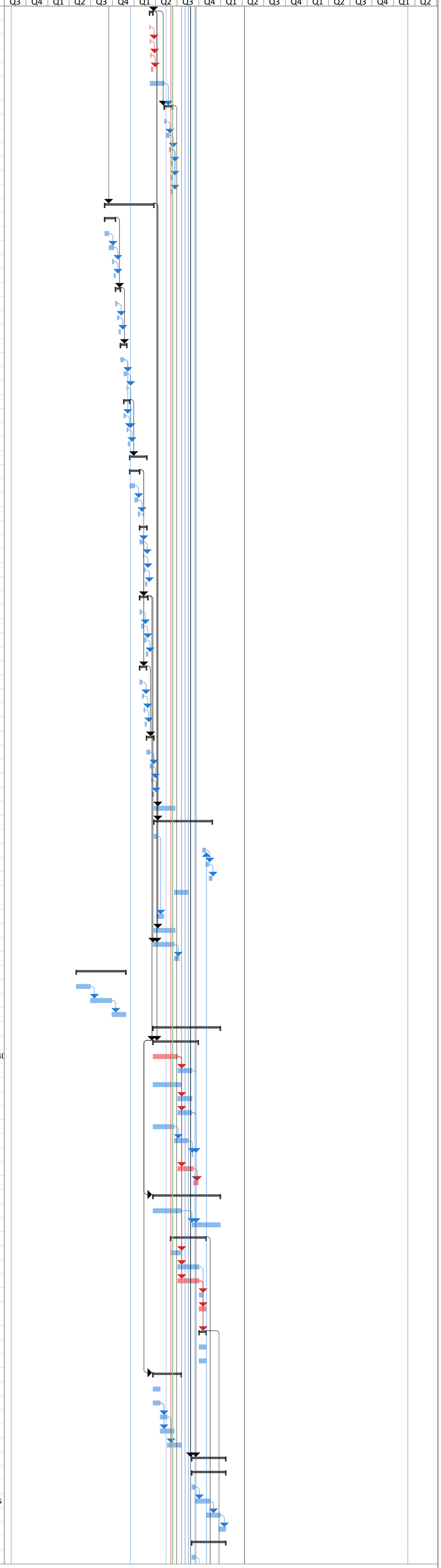
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
332	Construction of Parapet Walls (+13.00mPD to +15.1mPD)	14 days	7/3/23	20/3/23		318	397,338,404
333	Scaffolding erection	2 days	7/3/23	8/3/23			334
334	Rebar fixing	2 days	9/3/23	10/3/23		333	335
335	Formwork erection	3 days	11/3/23	13/3/23		334	336
336	Concreting	7 days	14/3/23	20/3/23		335	
337	Detailed Design for Internal Façade Treatment for Assess Road and Interior Fitting for Internal Rooms	60 days	9/3/23	7/5/23			338
338	Installation of internal finishing works for Grid Line 1-3	35 days	8/5/23	11/6/23		337,332	544
339	Waterproofing system at slabs	7 days	8/5/23	14/5/23			340
340	Plaster and paint at wall and soffit	14 days	15/5/23	28/5/23		339	341
341	Epoxy painting on floor finish	7 days	29/5/23	4/6/23		340	342,343,344
342	Chequer plate system at cable trench and aerator room	7 days	5/6/23	11/6/23		341	
343	Steel grating floor system at chemical storage rooms	7 days	5/6/23	11/6/23		341	
344	SS door and aluminum louver	7 days	5/6/23	11/6/23		341	
345	**Construction of Superstructure (above ground) - Grid Line 3-7**	**208 days**	**29/8/22**	**24/3/23**		**146**	**389,388,396**
346	Construction of Walls W2, W3, W5, W6 and columns within G.L. 3-5	46 days	29/8/22	13/10/22			351
347	Scaffolding erection and Formwork erection	18 days	29/8/22	15/9/22			348
348	Rebar fixing and Formwork erection	21 days	16/9/22	6/10/22		347	349FS-7 days
349	Concreting of walls W2, W3 and Columns	7 days	30/9/22	6/10/22		348FS-7 days	350
350	Concreting of walls W5, W6 and Columns	7 days	7/10/22	13/10/22		349	
351	Construction of remaining walls and columns within G.L. 3-5	21 days	14/10/22	3/11/22		346	355
352	Scaffolding erection and Formwork erection	7 days	14/10/22	20/10/22			353
353	Rebar fixing and Formwork erection	7 days	21/10/22	27/10/22		352	354
354	Concreting	7 days	28/10/22	3/11/22		353	
355	Construction of walls and columns within G.L. 5-7 (+4.55mPD to +9.2mPD)	27 days	4/11/22	30/11/22		351	
356	Scaffolding erection and Formwork erection	14 days	4/11/22	17/11/22			357,360
357	Rebar fixing and Formwork erection	12 days	18/11/22	29/11/22		356	358
358	Concreting	1 day	30/11/22	30/11/22		357	361
359	Construction of walls and columns within G.L. 5-7 (+9.2mPD to +10.8mPD)	**25 days**	**18/11/22**	**12/12/22**			**363**
360	Scaffolding erection and Formwork erection	7 days	18/11/22	24/11/22		356	361
361	Rebar fixing and Formwork erection	5 days	1/12/22	5/12/22		358,360	362
362	Concreting	7 days	6/12/22	12/12/22		361	
363	Construction of Beams and Slabs at +10.4mPD and +10.8mPD	73 days	13/12/22	23/2/23		359	
364	Construction of Beams	42 days	13/12/22	23/1/23			378,373
365	Falsework and formwork erection for beam	21 days	13/12/22	2/1/23			366
366	Rebar fixing for beam	14 days	3/1/23	16/1/23		365	367
367	Concreting and curing of concrete	7 days	17/1/23	23/1/23		366	369
368	Construction of Slabs	31 days	24/1/23	23/2/23			
369	Installation of precast segments (156 nos.)	15 days	24/1/23	7/2/23		367	370
370	Formwork erection for half slab	3 days	8/2/23	10/2/23		369	371
371	Rebar fixing for half slab	6 days	11/2/23	16/2/23		370	372
372	Concreting for half slab	7 days	17/2/23	23/2/23		371	
373	Construction of Parapet Walls (+10.4mPD/+10.8mPD to +12.5mPD)	35 days	24/1/23	27/2/23		364	404,397
374	Scaffolding erection	7 days	24/1/23	30/1/23			375
375	Rebar fixing	10 days	31/1/23	9/2/23		374	376
376	Formwork erection	10 days	10/2/23	19/2/23		375	377
377	Concreting	8 days	20/2/23	27/2/23		376	
378	Construction of Staircase ST01 (+7.1mPD to +11.35mPD)	29 days	24/1/23	21/2/23		364	383
379	Scaffolding and falsework erection	10 days	24/1/23	2/2/23			380
380	Rebar fixing	7 days	3/2/23	9/2/23		379	381
381	Formwork erection	5 days	10/2/23	14/2/23		380	382
382	Concreting	7 days	15/2/23	21/2/23		381	
383	Construction of Staircase ST02 (+10.4mPD to +13.95mPD)	31 days	22/2/23	24/3/23		378	
384	Scaffolding and falsework erection	14 days	22/2/23	7/3/23			385
385	Rebar fixing	7 days	8/3/23	14/3/23		384	386
386	Formwork erection	3 days	15/3/23	17/3/23		385	387
387	Concreting	7 days	18/3/23	24/3/23		386	
388	Backfilling of general fill material up to +7.2mPD, and removal of ELS	90 days	25/3/23	22/6/23		345	
389	**Watertightness test in stages**	**247 days**	**25/3/23**	**26/11/23**		**345**	
390	Overall water retaining structure at HCF	12 days	25/3/23	5/4/23			395
391	Inlet Channel and Outlet Channel	14 days	16/10/23	29/10/23		532	392
392	On duty contact tank	14 days	30/10/23	12/11/23		391	393
393	Standby contact tank	14 days	13/11/23	26/11/23		392	
394	Detailed Design for Internal Façade Treatment for Assess Road and Interior Fitting for Internal Rooms	60 days	19/6/23	17/8/23			
395	Installation of Waterproofing for Grid Line 3-7	30 days	6/4/23	5/5/23		390	
396	Fitting out & BS Installations for Rooms	90 days	25/3/23	22/6/23		345	
397	Construction of water proofing system at roof slab of HCF	90 days	21/3/23	18/6/23		332,373	398
398	Water tightness test for roof slab of HCF	21 days	19/6/23	9/7/23		397	
399	**Provisional of Fire Service, Flushing and Fresh Water Supply by WSD**	**210 days**	**1/5/22**	**26/11/22**			
400	WWO542 design submission for Fire Service, Flushing and Fresh Water Supply	60 days	1/5/22	29/6/22			401
401	Acceptance of WWO542 submission by WSD	90 days	30/6/22	27/9/22		400	402
402	Provision of water supply to Part 1 by WSD	60 days	28/9/22	26/11/22		401	
403	**Construction of roadworks**	**285 days**	**21/3/23**	**30/12/23**			
404	**Construction of fence wall**	**192 days**	**21/3/23**	**28/9/23**		**373,332**	**427SS,415SS**
405	Type-2 & Type-3 fence wall at West side (198m)	105 days	21/3/23	3/7/23			406,413,408,4(
406	Type-1 fence wall at East side (189m)	60 days	4/7/23	1/9/23		405	417
407	Type-3 fence wall at North side (44m)	120 days	21/3/23	18/7/23			
408	Type-4 fence wall at middle (28m)	60 days	4/7/23	1/9/23		405	
409	Type-2 & Type-3 fence wall at South side (37m)	60 days	4/7/23	1/9/23		405	412,414
410	Detailed design of Entrance Logo Feature	90 days	21/3/23	18/6/23			411
411	Fabrication of Entrance Gates and Logo Feature	60 days	19/6/23	17/8/23		410	412
412	Installation of Gate 1 and Gate 2	3 days	2/9/23	4/9/23		409,411	
413	Fabrication of steelworks	66 days	4/7/23	7/9/23		405	414
414	Installation of wall finishes and steelworks	21 days	8/9/23	28/9/23		413,409	
415	**Construction of River Promenade**	**285 days**	**21/3/23**	**30/12/23**		**404SS**	
416	Detailed design of River Promenade	120 days	21/3/23	18/7/23			417
417	Construction of River Promenade	120 days	2/9/23	30/12/23		406,416	
418	**Construction of underground utilities**	**150 days**	**4/6/23**	**31/10/23**			**551**
419	Construction of CLP Drawpits and Ducts	42 days	4/6/23	15/7/23		405FS-30 days	
420	Laying of pipe work system outside ReWPS and HCF	90 days	4/7/23	1/10/23		405	424
421	Construction of chambers and water refilling station	90 days	4/7/23	1/10/23		405	422,423,424
422	Installation of surge vessels	15 days	2/10/23	16/10/23		421	
423	Construction of underground utilities (Drainage, Telecom ducts, CLP cable ducts & drawpits, Fire Service, Flushing & Fresh Watermain, etc.)	30 days	2/10/23	31/10/23		421	
424	**Construction of EVA road pavement**	**30 days**	**2/10/23**	**31/10/23**		**420,421**	**558**
425	Construction of road pavement near ReWPS	30 days	2/10/23	31/10/23			
426	Construction of road pavement near HCF	30 days	2/10/23	31/10/23			
427	**Design submission and fabrication of steelwork system for the aluminum fin**	**120 days**	**21/3/23**	**18/7/23**		**404SS**	
428	Detailed Design for External Façade Treatment and Vertical Green Wall	30 days	21/3/23	19/4/23			
429	Design submission of steelwork system for vertical aluminum fin at ReWPS	30 days	21/3/23	19/4/23			430,431
430	Design submission of steelwork system for horizontal aluminum fin at HCF	30 days	20/4/23	19/5/23		429	432
431	Fabrication of vertical aluminum fin for ReWPS	60 days	20/4/23	18/6/23		429	
432	Fabrication of horizontal aluminum fin for HCF	60 days	20/5/23	18/7/23		430	
433	**Installation of architectural works**	**144 days**	**1/9/23**	**22/1/24**		**181,308**	
434	**Installation of architectural works near ReWPS**	**144 days**	**1/9/23**	**22/1/24**			
435	Erection of working platform	15 days	1/9/23	15/9/23			436
436	Laying of artificial granite tile at external wall	60 days	16/9/23	14/11/23		435	437FS-14 days
437	Installation of steelworks	60 days	1/11/23	30/12/23		436FS-14 days	438FS-7 days
438	Installation of cladding	30 days	24/12/23	22/1/24		437FS-7 days	
439	**Installation of architectural works near HCF**	**144 days**	**1/9/23**	**22/1/24**			
440	Erection of working platform	15 days	1/9/23	15/9/23			441



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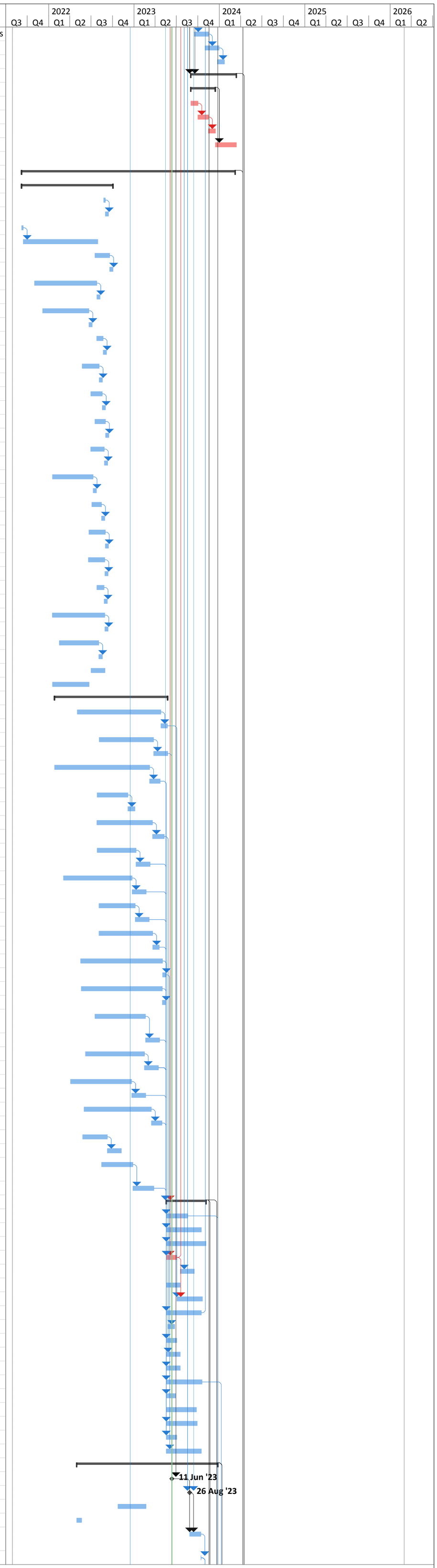
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

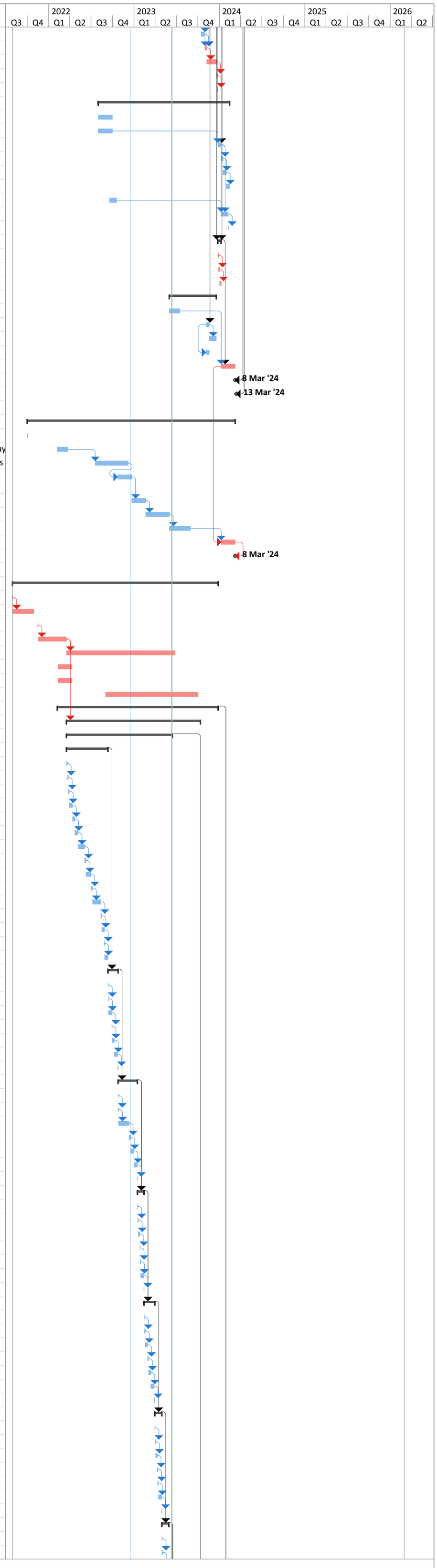
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
441	Laying of artificial granite tile at external wall	60 days	16/9/23	14/11/23		440	442FS-14 days
442	Installation of steelworks	60 days	1/11/23	30/12/23		441FS-14 days	443FS-7 days
443	Installation of cladding	30 days	24/12/23	22/1/24		442FS-7 days	
444	**Landscape works**	**195 days**	**1/9/23**	**13/3/24**		**181,308**	**576FF**
445	**Landscape works at roof top**	**105 days**	**1/9/23**	**14/12/23**			**449**
446	Installation of composite timber decking with pedestal	30 days	1/9/23	30/9/23			447
447	Laying of artificial granite floor tile / paver block	45 days	1/10/23	14/11/23		446	448
448	Construciton of roof drainage system	30 days	15/11/23	14/12/23		447	
449	Landscape works within SWHWRP	90 days	15/12/23	13/3/24		445	
450							
451	**E&M Works of SWHWRP**	**914 days**	**7/9/21**	**8/3/24**			**575FF**
452	**Design and Submission Stage**	**391 days**	**7/9/21**	**2/10/22**			
453	Submission of Surge Analysis Report	7 days	24/8/22	30/8/22			454
454	Acceptance of Surge Analysis Report	14 days	31/8/22	13/9/22		453	
455	Submission and review of Reclaimed Water Main Pumps	7 days	7/9/21	13/9/21			456
456	Acceptance of Reclaimed Water Main Pumps	319 days	14/9/21	29/7/22		455	
457	Submission and review of Surge Vessels and Air Compressors	63 days	18/7/22	18/9/22			458
458	Acceptance of Surge Vessels and Air Compressors	14 days	19/9/22	2/10/22		457	
459	Submission and review of Penstock & Stoplog	267 days	1/11/21	25/7/22			460
460	Acceptance of Penstock & Stoplog	14 days	26/7/22	8/8/22		459	
461	Submission and review of Chemical Dosing System & Static In-line Mixer	198 days	6/12/21	21/6/22			462
462	Acceptance of Chemical Dosing System & Static In-line Mixer	14 days	22/6/22	5/7/22		461	
463	Submission and review of Air Blower and Air Diffuser	28 days	25/7/22	21/8/22			464
464	Acceptance of Air Blower and Air Diffuser	14 days	22/8/22	4/9/22		463	
465	Submission and review of Lifting Appliances	73 days	24/5/22	4/8/22			466
466	Acceptance of Lifting Appliances	14 days	5/8/22	18/8/22		465	
467	Submission and review of Minor Mechanical Equipment	49 days	30/6/22	17/8/22			468
468	Acceptance of Minor Mechanical Equipment	14 days	18/8/22	31/8/22		467	
469	Submission and review of LV switchboard	45 days	18/7/22	31/8/22			470
470	Acceptance of LV switchboard	14 days	1/9/22	14/9/22		469	
471	Submission and review of DCS	58 days	30/6/22	26/8/22			472
472	Acceptance of DCS	14 days	27/8/22	9/9/22		471	
473	Submission and review of Instrumenation & Water Monitoring Equipment	174 days	17/1/22	9/7/22			474
474	Acceptance of Instrumenation & Water Monitoring Equipment	14 days	10/7/22	23/7/22		473	
475	Submission and review of Misc. Electrical Items	42 days	4/7/22	14/8/22			476
476	Acceptance of Misc. Electrical Items	14 days	15/8/22	28/8/22		475	
477	Submission and review of Fire Services Equipment	70 days	22/6/22	30/8/22			478
478	Acceptance of Fire Services Equipment	14 days	31/8/22	13/9/22		477	
479	Submission and review of MVAC Equipment	70 days	20/6/22	28/8/22			480
480	Acceptance of MVAC Equipment	14 days	29/8/22	11/9/22		479	
481	Submission and review of Plumbing & Drainage Equipment	31 days	26/7/22	25/8/22			482
482	Acceptance of Plumbing & Drainage Equipment	14 days	26/8/22	8/9/22		481	
483	Submission and review of General Arrangement Drawing	224 days	17/1/22	28/8/22			484
484	Acceptance of General Arrangement Drawing	14 days	29/8/22	11/9/22		483	
485	Submission and review of Civil Requirement Drawing	169 days	15/2/22	2/8/22			486
486	Acceptance of Civil Requirement Drawing	16 days	3/8/22	18/8/22		485	
487	Submission and acceptance of method statement for E&M installation works	60 days	1/7/22	29/8/22			
488	CSD, CBWD coordination	157 days	17/1/22	22/6/22			
489	**Procurement and Delivery of Equipment**	**484 days**	**26/1/22**	**24/5/23**			
490	Procerement and manufacturing of Reclaimed Water Main Pumps (6 nos.)	358 days	3/5/22	25/4/23			491
491	Delivery of Reclaimed Water Main Pumps (6 nos.)	28 days	26/4/23	23/5/23		490	531
492	Procerement and manufacturing of Surge Vessels and Air Compressors	233 days	5/8/22	25/3/23			493
493	Delivery of Surge Vessels and Air Compressors	60 days	26/3/23	24/5/23		492	533
494	Procerement and manufacturing of Penstock & Stoplog	407 days	26/1/22	8/3/23			495
495	Delivery of Penstock & Stoplog	45 days	9/3/23	22/4/23		494	532
496	Procerement and manufacturing of Chemical Dosing System	132 days	27/7/22	5/12/22			497
497	Delivery of Chemical Dosing System	30 days	6/12/22	4/1/23		496	
498	Procerement and manufacturing of Static In-line Mixer	238 days	26/7/22	20/3/23			499
499	Delivery of Static In-line Mixer	50 days	21/3/23	9/5/23		498	535
500	Procerement and manufacturing of Air Blower and Air Diffuser	167 days	27/7/22	9/1/23			501
501	Delivery of Air Blower and Air Diffuser	60 days	10/1/23	10/3/23		500	534
502	Procerement and manufacturing of Lifting Appliances	294 days	5/3/22	23/12/22			503
503	Delivery of Lifting Appliances	60 days	24/12/22	21/2/23		502	528
504	Procerement and manufacturing of Sump Pumps	155 days	4/8/22	5/1/23			505
505	Delivery of Sump Pumps	60 days	6/1/23	6/3/23		504	540
506	Procerement and manufacturing of Pipework and Valves	230 days	4/8/22	21/3/23			507
507	Delivery of Pipework and Valves	28 days	22/3/23	18/4/23		506	536
508	Procerement and manufacturing of LV switchboard	350 days	18/5/22	2/5/23			509
509	Delivery of LV switchboard	14 days	3/5/23	16/5/23		508	542
510	Procerement and manufacturing of DCS	347 days	20/5/22	1/5/23			511
511	Delivery of DCS	14 days	2/5/23	15/5/23		510	
512	Procerement and manufacturing of Instrumenation and Water Monitoring Equipment	216 days	18/7/22	18/2/23			513
513	Delivery of Instrumenation and Water Monitoring Equipment	60 days	19/2/23	19/4/23		512	538
514	Procerement and manufacturing of Misc. Electrical Items (PV Panel, Earthing, etc)	252 days	7/6/22	13/2/23			515
515	Delivery of Misc. Electrical Items (PV Panel, Earthing, etc)	60 days	14/2/23	14/4/23		514	527,541
516	Procerement and manufacturing of Fire Services Equipment	262 days	4/4/22	21/12/22			517
517	Delivery of Fire Services Equipment	60 days	22/12/22	19/2/23		516	525
518	Procerement and manufacturing of MVAC Equipment	288 days	1/6/22	15/3/23			519
519	Delivery of MVAC Equipment	45 days	16/3/23	29/4/23		518	526
520	Procerement and manufacturing of Plumbing & Drainage Equipment	106 days	26/5/22	8/9/22			521
521	Delivery of Plumbing & Drainage Equipment	60 days	9/9/22	7/11/22		520	
522	Procerement and manufacturing of Misc. Electrical Items (Cables, Cable Containment, Lightings)	134 days	15/8/22	26/12/22			523
523	Delivery of Misc. Electrical Items (Cables, Cable Containment, Lightings)	90 days	27/12/22	26/3/23		522	537
524	**Installation Works**	**170 days**	**19/5/23**	**4/11/23**		**256,300**	**565,571**
525	Installation FS Equipment	92 days	19/5/23	18/8/23		517	558
526	Installation of MVAC Equipment	150 days	19/5/23	15/10/23		519	
527	Installation of BS/lighting Equipment	170 days	19/5/23	4/11/23		515	
528	Installation of Lifting Appliance at Motor Hall & Maintenance Room of RWPS	45 days	19/5/23	2/7/23		503,256	531,259
529	Installation of Lifting Appliance at Pump Hall of RWPS	60 days	18/7/23	15/9/23		260	
530	Installation of Lifting Appliance at Pipe Gallery of HCF	60 days	19/5/23	17/7/23			
531	Installation of Reclaimed Water Pumps (6 Nos.)	110 days	3/7/23	20/10/23		491,528	
532	Installation of penstocks (10 nos.) & Stoplogs (2 nos.)	150 days	19/5/23	15/10/23		495	391
533	Installation of Surge Vessel (4 Nos.) & Air Compressor (4 Nos.)	30 days	25/5/23	23/6/23		493	
534	Installation of Air Blower (2 Nos.) & Air Diffuser (1 set)	45 days	19/5/23	2/7/23		501	
535	Installation of tanks (14 nos.) & Chemical Pumps (12 nos.)	60 days	19/5/23	17/7/23		499	
536	Installation of Pipeworks (DI, Chemical pipe, Air pipe)	60 days	19/5/23	17/7/23		507	
537	Installation of Cabling, MCC & DCS	153 days	19/5/23	18/10/23		523	563
538	Installation of Instrumentation and Monitoring Stations	40 days	19/5/23	27/6/23		513	
539	Installation of ELV System (CCTV & Access Control)	129 days	19/5/23	24/9/23			
540	Installation of Plumbing & Drainage Equipment	132 days	19/5/23	27/9/23		505	
541	Installation of PV Panels	45 days	19/5/23	2/7/23		515	
542	Installation of LV Switchborad / MCC	150 days	19/5/23	15/10/23		509	
543	**Power Energization Related Items**	**604 days**	**1/5/22**	**25/12/23**			**565,558**
544	CLP Room Ready for BS installation (HCF)	0 days	11/6/23	11/6/23		338	548
545	CLP Room Ready for BS installation (ReWPS)	0 days	26/8/23	26/8/23		302,303,304	548
546	CLP meter application	120 days	24/10/22	20/2/23			
547	Cable laying by CLP in DSD's EVA	21 days	1/5/22	21/5/22			
548	CLP's Inspection and Acceptance for Transformer Room(ReWPS), CLP Room(HCF), draw pit and accsociated cable ducts	48 days	27/8/23	13/10/23		544,545	549
549	Handover of Transformer Room to CLP	1 day	14/10/23	14/10/23		548	551,550



Project: 3WSD20 Programme
Date: 12/6/23

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Critical
Critical Split
Progress
Manual Progress

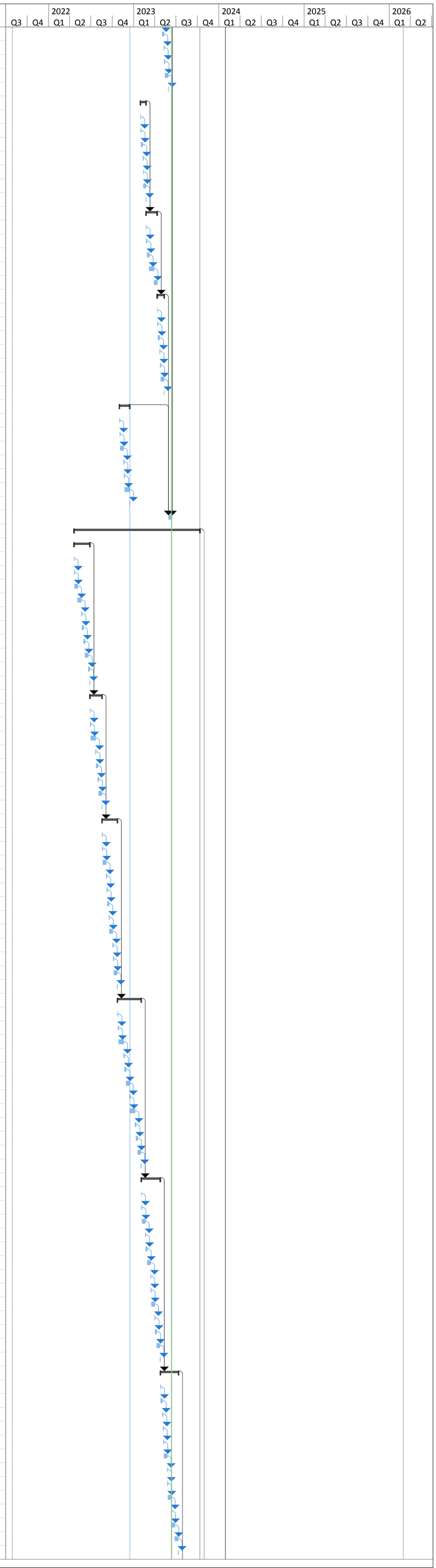
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
550	Lead time for CLP installation works	14 days	15/10/23	28/10/23		549	551
551	CLP to install Transformers and Cabling	7 days	1/11/23	7/11/23		549,550,418	552
552	Lead time for power energization	42 days	8/11/23	19/12/23		551	553
553	Power Energization from CLP Transformer to LVSB	3 days	20/12/23	22/12/23		552	554
554	Power Energization from LVSB to All Equipment	3 days	23/12/23	25/12/23		553	
555	**FS / DG Inspection Related Items**	**562 days**	**1/8/22**	**13/2/24**			
556	VAC Desgin Submission to FSD	60 days	1/8/22	29/9/22			
557	FS related statutory submission to FSD	60 days	1/8/22	29/9/22			558
558	T&C of FS Related Installation (Integrated Test & Rehearsal)	14 days	26/12/23	8/1/24		424,525,543,55	559,563
559	Submission of FSI 314 & 501	7 days	9/1/24	15/1/24		558	560
560	Target FS Inpsection	15 days	16/1/24	30/1/24		559	561
561	Obtain FSD approval letter (Form FS172 Fire Certificate)	14 days	31/1/24	13/2/24		560	
562	DG Design Submission to FSD	30 days	18/9/22	17/10/22			563
563	DG Inspection	30 days	9/1/24	7/2/24		537,558,562	564
564	Obtain DG License	1 day	8/2/24	8/2/24		563	
565	**Preliminary Test of Equipment**	**14 days**	**26/12/23**	**8/1/24**		**524,543**	**574**
566	Inspection of Equipment/System with SOR	3 days	26/12/23	28/12/23			567
567	Trial Run of Equipment/System	4 days	29/12/23	1/1/24		566	568
568	Site Acceptance Test (SAT) of Equipment/Systems with SOR	7 days	2/1/24	8/1/24		567	
569	**Submission**	**201 days**	**1/6/23**	**18/12/23**			
570	Submission of Testing Procedures & Commissioning Plan	45 days	1/6/23	15/7/23			574
571	Submission of As Fitted Drawings	14 days	5/11/23	18/11/23		524	572,573SS
572	Submission of Manual	30 days	19/11/23	18/12/23		571	
573	Submission of Training Material	14 days	5/11/23	18/11/23		571SS	
574	**System Commissioning Test**	**60 days**	**9/1/24**	**8/3/24**		**565,570**	**586SS**
575	Planned completion for section 1	0 days	8/3/24	8/3/24		175FF,451FF	
576	Planned completion for section 2	0 days	13/3/24	13/3/24		444FF	
577							
578	**Section 3 - Modification of Table Hill Reclaimed Water Service Reservoir**	**890 days**	**1/10/21**	**8/3/24**			
579	Access Date (part 2 of the Site)	1 day	1/10/21	1/10/21			
580	Initial survey and condition survey	45 days	7/2/22	23/3/22			581FS+117 day
581	Design submission and acceptance of the supplementary dosing and dyeing system (E&M)	141 days	19/7/22	6/12/22		580FS+117 days	582FS-45 days
582	Submission and acceptance of method statement for supplementary dosing and dyeing system	60 days	23/10/22	21/12/22		581FS-45 days	583
583	Selection of sub-contractor	60 days	22/12/22	19/2/23		582	584
584	Construction of chemical room	101 days	20/2/23	31/5/23		583	585
585	Installation of supplementary dosing and dyeing system	90 days	1/6/23	29/8/23		584	586
586	T&C of E&M equipment	60 days	9/1/24	8/3/24		585,574SS	587FF
587	Planned completion for section 3	0 days	8/3/24	8/3/24		586FF	
588							
589	**Section 4 - Water main laying works in part 3 of the Site**	**880 days**	**30/7/21**	**26/12/23**			
590	Access Date (part 3 of the Site)	1 day	30/7/21	30/7/21			591
591	Initial survey (utility survey, condition survey, initial photo)	90 days	31/7/21	28/10/21		590	
592	1st TMLG meeting	1 day	15/11/21	15/11/21			593
593	Application and approval of XP and TTA, including local consultation	122 days	16/11/21	17/3/22		592	594,599
594	Implementation of TTA by stages	465 days	18/3/22	25/6/23		593	
595	Procurement and Delivery of pipes, fittings and related materials	60 days	10/2/22	10/4/22			
596	Submission and acceptance of method statement and material	60 days	10/2/22	10/4/22			
597	Excavation of Inspection Pit	396 days	1/9/22	1/10/23			
598	**Mainlaying by open trench method (RW03 & RW43)**	**688 days**	**7/2/22**	**26/12/23**			**1024FF**
599	**RW03 : DN600 DI pipe - 1092m (XP ID: 1301128, 1301129)**	**573.5 days**	**18/3/22**	**12/10/23**		**593**	
600	**Team A : CH000 - CH550**	**453 days**	**18/3/22**	**13/6/23**			**788**
601	**CH450 - CH550 (100m)**	**178 days**	**18/3/22**	**11/9/22**			**617**
602	TTA establishment	3 days	18/3/22	20/3/22			603
603	CE-041 _ Inclement Weather in March 2022	4.5 days	21/3/22	25/3/22		602	604
604	Hard material excavation and disposal	4 days	25/3/22	29/3/22		603	605
605	Soil excavation , laying sheetpile and disposal	14 days	29/3/22	12/4/22		604	606
606	Obstruction of unchart 900mm pipe	10 days	12/4/22	22/4/22		605	607
607	Pending for setting out of DSD	14 days	22/4/22	6/5/22		606	608
608	Amendment of ELS	28 days	6/5/22	3/6/22		607	609
609	CE-052 _ Inclement Weather in May 2022 (under assessment)	6 days	3/6/22	9/6/22		608	610
610	Treatment of bedding	21 days	9/6/22	30/6/22		609	611
611	CE-053 _ Inclement Weather in June 2022 (under assessment)	6.5 days	30/6/22	6/7/22		610	612
612	Pipe laying D.I. & PE (DSD's pipe)	36 days	7/7/22	11/8/22		611	613
613	CE-054 _ Inclement Weather in July 2022 (under assessment)	4 days	12/8/22	15/8/22		612	614
614	Backfilling sand/aggregate, concurrent bend block/chambers	11 days	16/8/22	26/8/22		613	615
615	Reinstatement	1 day	27/8/22	27/8/22		614	616
616	CE-068 _ Inclement Weather in August 2022	15 days	28/8/22	11/9/22		615	
617	**CH420 - CH450 (30m)**	**43 days**	**12/9/22**	**24/10/22**		**601**	**625**
618	TTA establishment	1 day	12/9/22	12/9/22			619
619	Hard material excavation and disposal	1 day	13/9/22	13/9/22		618	620
620	Soil excavation , laying sheetpile and disposal	14 days	14/9/22	27/9/22		619	621
621	Treatment of bedding	1 day	28/9/22	28/9/22		620	622
622	Pipe laying D.I.	10 days	29/9/22	8/10/22		621	623
623	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	9/10/22	22/10/22		622	624
624	Reinstatement	2 days	23/10/22	24/10/22		623	
625	**CH390 - CH420 (30m)**	**83 days**	**25/10/22**	**15/1/23**		**617**	**633**
626	TTA establishment	1 day	25/10/22	25/10/22			627
627	Hard material excavation and disposal	1 day	26/10/22	26/10/22		626	628
628	Soil excavation , laying sheetpile and disposal	45 days	27/10/22	10/12/22		627	629
629	Treatment of bedding	7 days	11/12/22	17/12/22		628	630
630	Pipe laying D.I.	14 days	18/12/22	31/12/22		629	631
631	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	1/1/23	14/1/23		630	632
632	Reinstatement	1 day	15/1/23	15/1/23		631	
633	**CH360 - CH390 (30m)**	**28 days**	**16/1/23**	**12/2/23**		**625**	**641**
634	TTA establishment	1 day	16/1/23	16/1/23			635
635	Hard material excavation and disposal	2 days	17/1/23	18/1/23		634	636
636	Soil excavation , laying sheetpile and disposal	7 days	19/1/23	25/1/23		635	637
637	Treatment of bedding	1 day	26/1/23	26/1/23		636	638
638	Pipe laying D.I.	2 days	27/1/23	28/1/23		637	639
639	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	29/1/23	11/2/23		638	640
640	Reinstatement	1 day	12/2/23	12/2/23		639	
641	**CH290 - CH360 (70m)**	**46 days**	**13/2/23**	**30/3/23**		**633**	**649**
642	TTA establishment	1 day	13/2/23	13/2/23			643
643	Hard material excavation and disposal	4 days	14/2/23	17/2/23		642	644
644	Soil excavation , laying sheetpile and disposal	10 days	18/2/23	27/2/23		643	645
645	Treatment of bedding	4 days	28/2/23	3/3/23		644	646
646	Pipe laying D.I.	10 days	4/3/23	13/3/23		645	647
647	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	14/3/23	27/3/23		646	648
648	Reinstatement	3 days	28/3/23	30/3/23		647	
649	**CH240 - CH290 (50m)**	**30 days**	**31/3/23**	**29/4/23**		**641**	**657**
650	TTA establishment	1 day	31/3/23	31/3/23			651
651	Hard material excavation and disposal	2 days	1/4/23	2/4/23		650	652
652	Soil excavation , laying sheetpile and disposal	7 days	3/4/23	9/4/23		651	653
653	Treatment of bedding	2 days	10/4/23	11/4/23		652	654
654	Pipe laying D.I.	3 days	12/4/23	14/4/23		653	655
655	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	15/4/23	28/4/23		654	656
656	Reinstatement	1 day	29/4/23	29/4/23		655	
657	**CH190 - CH240 (50m)**	**30 days**	**30/4/23**	**29/5/23**		**649**	**695**
658	TTA establishment	1 day	30/4/23	30/4/23			659
659	Hard material excavation and disposal	2 days	1/5/23	2/5/23		658	660



Project: 3WSD20 Programme
Date: 12/6/23

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
660	Soil excavation , laying sheetpile and disposal	7 days	3/5/23	9/5/23		659	661
661	Treatment of bedding	2 days	10/5/23	11/5/23		660	662
662	Pipe laying D.I.	3 days	12/5/23	14/5/23		661	663
663	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	15/5/23	28/5/23		662	664
664	Reinstatement	1 day	29/5/23	29/5/23		663	
665	**CH170 - CH190 (20m)**	**24 days**	**30/1/23**	**22/2/23**			**673**
666	TTA establishment	1 day	30/1/23	30/1/23			667
667	Hard material excavation and disposal	2 days	31/1/23	1/2/23		666	668
668	Soil excavation , laying sheetpile and disposal	7 days	2/2/23	8/2/23		667	669
669	Treatment of bedding	2 days	9/2/23	10/2/23		668	670
670	Pipe laying D.I.	1 day	11/2/23	11/2/23		669	671
671	Backfilling sand/aggregate, concurrent bend block/chambers	10 days	12/2/23	21/2/23		670	672
672	Reinstatement	1 day	22/2/23	22/2/23		671	
673	**CH120 - CH170 (50m)**	**48 days**	**23/2/23**	**11/4/23**		**665**	**679**
674	TTA establishment	1 day	23/2/23	23/2/23			675
675	Removal of existing railing	3 days	24/2/23	26/2/23		674	676
676	Installation of mild steel pipe	9 days	27/2/23	7/3/23		675	677
677	Construction of thrust block	21 days	8/3/23	28/3/23		676	678
678	Reinstatement of railing	14 days	29/3/23	11/4/23		677	
679	**CH080 - CH120 (40m)**	**30 days**	**12/4/23**	**11/5/23**		**673**	**695**
680	TTA establishment	1 day	12/4/23	12/4/23			681
681	Hard material excavation and disposal	2 days	13/4/23	14/4/23		680	682
682	Soil excavation , laying sheetpile and disposal	7 days	15/4/23	21/4/23		681	683
683	Treatment of bedding	2 days	22/4/23	23/4/23		682	684
684	Pipe laying D.I.	3 days	24/4/23	26/4/23		683	685
685	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	27/4/23	10/5/23		684	686
686	Reinstatement	1 day	11/5/23	11/5/23		685	
687	**CH020 - CH080 (60m)**	**44 days**	**1/11/22**	**14/12/22**			**695**
688	TTA establishment	1 day	1/11/22	1/11/22			689
689	Hard material excavation and disposal	2 days	2/11/22	3/11/22		688	690
690	Soil excavation , laying sheetpile and disposal	14 days	4/11/22	17/11/22		689	691
691	Treatment of bedding	2 days	18/11/22	19/11/22		690	692
692	Pipe laying D.I.	3 days	20/11/22	22/11/22		691	693
693	Backfilling sand/aggregate, concurrent bend block/chambers	21 days	23/11/22	13/12/22		692	694
694	Reinstatement	1 day	14/12/22	14/12/22		693	
695	Pressure test, swabbing and CCTV	15 days	30/5/23	13/6/23		679,657,687	
696	**Team B : CH550 - CH1090 (540m)**	**540.5 days**	**20/4/22**	**12/10/23**			**788**
697	**CH970 - CH1010 (40m)**	**68.5 days**	**20/4/22**	**27/6/22**			**708**
698	TTA establishment	1 day	20/4/22	20/4/22			699
699	Hard material excavation and disposal	1 day	21/4/22	21/4/22		698	700
700	Soil excavation , laying sheetpile and disposal	14 days	22/4/22	5/5/22		699	701
701	CE-068 _ Inclement Weather in August 2022	15 days	6/5/22	20/5/22		700	702
702	Treatment of bedding	3 days	21/5/22	23/5/22		701	703
703	Pipe laying D.I.	7 days	24/5/22	30/5/22		702	704
704	CE-052 _ Inclement Weather in May 2022 (under assessment)	6 days	31/5/22	5/6/22		703	705
705	Backfilling sand/aggregate	14 days	6/6/22	19/6/22		704	706
706	CE-053 _ Inclement Weather in June 2022 (under assessment)	6.5 days	20/6/22	26/6/22		705	707
707	Reinstatement	1 day	26/6/22	27/6/22		706	
708	**CH930 - CH970 (40m)**	**52 days**	**27/6/22**	**18/8/22**		**697**	**717**
709	TTA establishment	1 day	27/6/22	28/6/22			710
710	Hard material excavation and disposal	2 days	28/6/22	30/6/22		709	711
711	Soil excavation , laying sheetpile and disposal	21 days	30/6/22	21/7/22		710	712
712	Treatment of bedding	2 days	21/7/22	23/7/22		711	713
713	Pipe laying D.I.	7 days	23/7/22	30/7/22		712	714
714	CE-054 _ Inclement Weather in July 2022 (under assessment)	4 days	30/7/22	3/8/22		713	715
715	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	3/8/22	17/8/22		714	716
716	Reinstatement	1 day	17/8/22	18/8/22		715	
717	**CH880 - CH930 (50m)**	**66 days**	**18/8/22**	**23/10/22**		**708**	**730**
718	TTA establishment	1 day	18/8/22	19/8/22			719
719	Hard material excavation and disposal (CH880 - CH910)	2 days	19/8/22	21/8/22		718	720
720	Soil excavation, laying sheetpile and disposal (CH880 - CH910)	14 days	21/8/22	4/9/22		719	721
721	Treatment of bedding (CH880 - CH910)	3 days	4/9/22	7/9/22		720	722
722	Pipe laying D.I. (CH880 - CH910)	2 days	7/9/22	9/9/22		721	723
723	Backfilling sand/aggregate, concurrent bend block/chambers (CH880 - CH910)	7 days	9/9/22	16/9/22		722	724
724	Hard material excavation and disposal (CH850 - CH880)	2 days	16/9/22	18/9/22		723	725
725	Soil excavation, laying sheetpile and disposal (CH850 - CH880)	14 days	18/9/22	2/10/22		724	726
726	Treatment of bedding (CH850 - CH880)	3 days	2/10/22	5/10/22		725	727
727	Pipe laying D.I. (CH850 - CH880)	2 days	5/10/22	7/10/22		726	728
728	Backfilling sand/aggregate, concurrent bend block/chambers (CH850 - CH880)	14 days	7/10/22	21/10/22		727	729
729	Reinstatement	2 days	21/10/22	23/10/22		728	
730	**CH780 - CH880 (100m)**	**102 days**	**23/10/22**	**2/2/23**		**717**	**743**
731	TTA establishment	2 days	23/10/22	25/10/22			732
732	Hard material excavation and disposal (CH800 - CH850)	3 days	25/10/22	28/10/22		731	733
733	Soil excavation , laying sheetpile and disposal (CH800 - CH850)	21 days	28/10/22	18/11/22		732	734
734	Treatment of bedding (CH800 - CH850)	4 days	18/11/22	22/11/22		733	735
735	Pipe laying D.I. (CH800 - CH850)	7 days	22/11/22	29/11/22		734	736
736	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	29/11/22	13/12/22		735	737
737	Hard material excavation and disposal (CH750 - CH800)	3 days	13/12/22	16/12/22		736	738
738	Soil excavation , laying sheetpile and disposal (CH750 - CH800)	21 days	16/12/22	6/1/23		737	739
739	Treatment of bedding (CH750 - CH800)	4 days	6/1/23	10/1/23		738	740
740	Pipe laying D.I. (CH750 - CH800)	7 days	10/1/23	17/1/23		739	741
741	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	17/1/23	31/1/23		740	742
742	Reinstatement	2 days	31/1/23	2/2/23		741	
743	**CH680 - CH780 (100m)**	**82 days**	**2/2/23**	**25/4/23**		**730**	**757**
744	TTA establishment	1 day	2/2/23	3/2/23			745
745	Hard material excavation and disposal (CH700 - CH750)	2 days	3/2/23	5/2/23		744	746
746	Soil excavation , laying sheetpile and disposal (CH700 - CH750)	14 days	5/2/23	19/2/23		745	747
747	Treatment of bedding (CH700 - CH750)	2 days	19/2/23	21/2/23		746	748
748	Pipe laying D.I. (CH700 - CH750)	7 days	21/2/23	28/2/23		747	749
749	Backfilling sand/aggregate, concurrent bend block/chambers (CH700 - CH750)	14 days	28/2/23	14/3/23		748	750
750	Reinstatement (CH700 - CH750)	1 day	14/3/23	15/3/23		749	751
751	Hard material excavation and disposal (CH650 - CH700)	2 days	15/3/23	17/3/23		750	752
752	Soil excavation , laying sheetpile and disposal (CH650 - CH700)	14 days	17/3/23	31/3/23		751	753
753	Treatment of bedding (CH650 - CH700)	2 days	31/3/23	2/4/23		752	754
754	Pipe laying D.I. (CH650 - CH700)	7 days	2/4/23	9/4/23		753	755
755	Backfilling sand/aggregate, concurrent bend block/chambers (CH650 - CH700)	14 days	9/4/23	23/4/23		754	756
756	Reinstatement	2 days	23/4/23	25/4/23		755	
757	**CH580 - CH680 (100m)**	**78 days**	**25/4/23**	**12/7/23**		**743**	**771**
758	TTA establishment	1 day	25/4/23	26/4/23			759
759	Hard material excavation and disposal (CH600 - CH650)	7 days	26/4/23	3/5/23		758	760
760	Soil excavation , laying sheetpile and disposal (CH600 - CH650)	3 days	3/5/23	6/5/23		759	761
761	Treatment of bedding (CH600 - CH650)	2 days	6/5/23	8/5/23		760	762
762	Pipe laying D.I. (CH600 - CH650)	2 days	8/5/23	10/5/23		761	763
763	Backfilling sand/aggregate, concurrent bend block/chambers (CH600 - CH650)	14 days	10/5/23	24/5/23		762	764
764	Reinstatement (CH600 - CH650)	1 day	24/5/23	25/5/23		763	765
765	Hard material excavation and disposal (CH550 - CH600)	2 days	25/5/23	27/5/23		764	766
766	Soil excavation , laying sheetpile and disposal (CH550 - CH600)	14 days	27/5/23	10/6/23		765	767
767	Treatment of bedding (CH550 - CH600)	2 days	10/6/23	12/6/23		766	768
768	Pipe laying D.I. (CH550 - CH600)	14 days	12/6/23	26/6/23		767	769
769	Backfilling sand/aggregate, concurrent bend block/chambers (CH550 - CH600)	14 days	26/6/23	10/7/23		768	770
770	Reinstatement	2 days	10/7/23	12/7/23		769	



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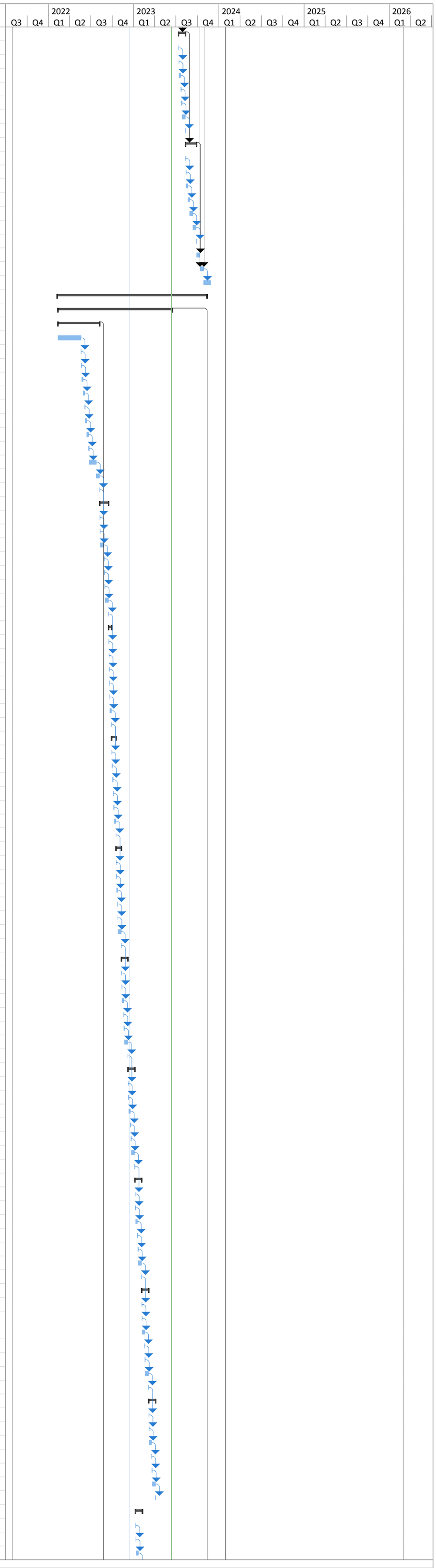
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
771	**CH1010 - CH1040 (30m)**	**30 days**	**12/7/23**	**11/8/23**		**757**	**779**
772	TTA establishment	1 day	12/7/23	13/7/23			773
773	Hard material excavation and disposal	1 day	13/7/23	14/7/23		772	774
774	Soil excavation , laying sheetpile and disposal	7 days	14/7/23	21/7/23		773	775
775	Treatment of bedding	2 days	21/7/23	23/7/23		774	776
776	Pipe laying D.I.	4 days	23/7/23	27/7/23		775	777
777	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	27/7/23	10/8/23		776	778
778	Reinstatement	1 day	10/8/23	11/8/23		777	
779	**CH1040 - CH1090 (50m)**	**47 days**	**11/8/23**	**27/9/23**		**771**	**787**
780	TTA establishment	1 day	11/8/23	12/8/23			781
781	Hard material excavation and disposal	2 days	12/8/23	14/8/23		780	782
782	Soil excavation , laying sheetpile and disposal	7 days	14/8/23	21/8/23		781	783
783	Treatment of bedding	7 days	21/8/23	28/8/23		782	784
784	Pipe laying D.I.	14 days	28/8/23	11/9/23		783	785
785	Backfilling sand/aggregate, concurrent bend block/chambers	14 days	11/9/23	25/9/23		784	786
786	Reinstatement	2 days	25/9/23	27/9/23		785	
787	Pressure test, swabbing and CCTV	15 days	27/9/23	12/10/23		779	
788	Overall pressure test	15 days	12/10/23	27/10/23		600,696	789
789	Pipe connection and completion	30 days	27/10/23	26/11/23		788	
790	**RW43 : DN150 DI pipe - 1144m (XP ID: 1301130, 1301131)**	**643 days**	**7/2/22**	**11/11/23**			
791	**CH370 to CH850 (480m)**	**491 days**	**10/2/22**	**15/6/23**			**1022**
792	**Team A CH640 to CH680 (40m)**	**179.5 days**	**10/2/22**	**8/8/22**			**1010**
793	Pending for IIB of pipe fittings	99 days	10/2/22	19/5/22			794
794	TTA establishment	1 day	20/5/22	20/5/22		793	795
795	Hard material excavation and disposal	2 days	21/5/22	22/5/22		794	796
796	CE-052 _ Inclement Weather in May 2022 (under assessment)	6 days	23/5/22	28/5/22		795	797
797	Soil excavation , laying sheetpile and disposal	7 days	29/5/22	4/6/22		796	798
798	Treatment of bedding	2 days	5/6/22	6/6/22		797	799
799	CE-053 _ Inclement Weather in June 2022 (under assessment)	6.5 days	7/6/22	13/6/22		798	800
800	Pipe laying D.I.	7 days	13/6/22	20/6/22		799	801
801	CE-054 _ Inclement Weather in July 2022 (under assessment)	4 days	20/6/22	24/6/22		800	802
802	Works suspended by Sheung Shui Heung	30 days	24/6/22	24/7/22		801	803
803	Backfilling general fill and compaction	14 days	24/7/22	7/8/22		802	804
804	Reinstatement	1 day	7/8/22	8/8/22		803	806
805	**Team A CH420 to CH450 (35m)**	**38 days**	**8/8/22**	**15/9/22**			
806	TTA establishment	1 day	8/8/22	9/8/22		804	807
807	Hard material excavation and disposal	1 day	9/8/22	10/8/22		806	808
808	CE-068 _ Inclement Weather in August 2022	15 days	10/8/22	25/8/22		807	809
809	Soil excavation , laying sheetpile and disposal	3 days	25/8/22	28/8/22		808	810
810	Treatment of bedding	1 day	28/8/22	29/8/22		809	811
811	Pipe laying D.I.	2 days	29/8/22	31/8/22		810	812
812	Backfilling general fill and compaction	14 days	31/8/22	14/9/22		811	813
813	Reinstatement	1 day	14/9/22	15/9/22		812	815
814	**Team A CH410 to CH420 (10m)**	**13 days**	**15/9/22**	**28/9/22**			
815	TTA establishment	1 day	15/9/22	16/9/22		813	816
816	Hard material excavation and disposal	1 day	16/9/22	17/9/22		815	817
817	Soil excavation , laying sheetpile and disposal	1 day	17/9/22	18/9/22		816	818
818	Treatment of bedding	1 day	18/9/22	19/9/22		817	819
819	Pipe laying D.I.	1 day	19/9/22	20/9/22		818	820
820	Backfilling general fill and compaction	7 days	20/9/22	27/9/22		819	821
821	Reinstatement	1 day	27/9/22	28/9/22		820	823
822	**Team A CH450 to CH500 (50m)**	**19 days**	**28/9/22**	**17/10/22**			
823	TTA establishment	1 day	28/9/22	29/9/22		821	824
824	Hard material excavation and disposal	2 days	29/9/22	1/10/22		823	825
825	Soil excavation , laying sheetpile and disposal	4 days	1/10/22	5/10/22		824	826
826	Treatment of bedding	1 day	5/10/22	6/10/22		825	827
827	Pipe laying D.I.	3 days	6/10/22	9/10/22		826	828
828	Backfilling general fill and compaction	7 days	9/10/22	16/10/22		827	829
829	Reinstatement	1 day	16/10/22	17/10/22		828	831
830	**Team A CH400 to CH410 (10m)**	**23 days**	**17/10/22**	**9/11/22**			
831	TTA establishment	1 day	17/10/22	18/10/22		829	832
832	Hard material excavation and disposal	1 day	18/10/22	19/10/22		831	833
833	Soil excavation , laying sheetpile and disposal	4 days	19/10/22	23/10/22		832	834
834	Treatment of bedding	1 day	23/10/22	24/10/22		833	835
835	Pipe laying D.I.	1 day	24/10/22	25/10/22		834	836
836	Backfilling general fill and compaction	14 days	25/10/22	8/11/22		835	837
837	Reinstatement	1 day	8/11/22	9/11/22		836	839
838	**Team A CH370 to CH400 (30m)**	**28 days**	**9/11/22**	**7/12/22**			
839	TTA establishment	1 day	9/11/22	10/11/22		837	840
840	Hard material excavation and disposal	1 day	10/11/22	11/11/22		839	841
841	Soil excavation , laying sheetpile and disposal	7 days	11/11/22	18/11/22		840	842
842	Treatment of bedding	1 day	18/11/22	19/11/22		841	843
843	Pipe laying D.I.	3 days	19/11/22	22/11/22		842	844
844	Backfilling general fill and compaction	14 days	22/11/22	6/12/22		843	845
845	Reinstatement	1 day	6/12/22	7/12/22		844	847
846	**Team A CH500 to CH550 (50m)**	**30 days**	**7/12/22**	**6/1/23**			
847	TTA establishment	1 day	7/12/22	8/12/22		845	848
848	Hard material excavation and disposal	2 days	8/12/22	10/12/22		847	849
849	Soil excavation , laying sheetpile and disposal	7 days	10/12/22	17/12/22		848	850
850	Treatment of bedding	2 days	17/12/22	19/12/22		849	851
851	Pipe laying D.I.	2 days	19/12/22	21/12/22		850	852
852	Backfilling general fill and compaction	14 days	21/12/22	4/1/23		851	853
853	Reinstatement	2 days	4/1/23	6/1/23		852	855
854	**Team A CH550 to CH580 (30m)**	**29 days**	**6/1/23**	**4/2/23**			
855	TTA establishment	1 day	6/1/23	7/1/23		853	856
856	Hard material excavation and disposal	2 days	7/1/23	9/1/23		855	857
857	Soil excavation , laying sheetpile and disposal	7 days	9/1/23	16/1/23		856	858
858	Treatment of bedding	2 days	16/1/23	18/1/23		857	859
859	Pipe laying D.I.	2 days	18/1/23	20/1/23		858	860
860	Backfilling general fill and compaction	14 days	20/1/23	3/2/23		859	861
861	Reinstatement	1 day	3/2/23	4/2/23		860	863
862	**Team A CH580 to CH610 (30m)**	**30 days**	**4/2/23**	**6/3/23**			
863	TTA establishment	1 day	4/2/23	5/2/23		861	864
864	Hard material excavation and disposal	1 day	5/2/23	6/2/23		863	865
865	Soil excavation , laying sheetpile and disposal	10 days	6/2/23	16/2/23		864	866
866	Treatment of bedding	1 day	16/2/23	17/2/23		865	867
867	Pipe laying D.I.	2 days	17/2/23	19/2/23		866	868
868	Backfilling general fill and compaction	14 days	19/2/23	5/3/23		867	869
869	Reinstatement	1 day	5/3/23	6/3/23		868	871
870	**Team A CH610 to CH640 (30m)**	**30 days**	**6/3/23**	**5/4/23**			
871	TTA establishment	1 day	6/3/23	7/3/23		869	872
872	Hard material excavation and disposal	1 day	7/3/23	8/3/23		871	873
873	Soil excavation , laying sheetpile and disposal	10 days	8/3/23	18/3/23		872	874
874	Treatment of bedding	1 day	18/3/23	19/3/23		873	875
875	Pipe laying D.I.	2 days	19/3/23	21/3/23		874	876
876	Backfilling general fill and compaction	14 days	21/3/23	4/4/23		875	877
877	Reinstatement	1 day	4/4/23	5/4/23		876	
878	**Team A CH640 to CH680 (40m) _ re-alignmet**	**30 days**	**9/1/23**	**7/2/23**			
879	TTA establishment	1 day	9/1/23	9/1/23			880
880	Hard material excavation and disposal	1 day	10/1/23	10/1/23		879	881
881	Soil excavation , laying sheetpile and disposal	10 days	11/1/23	20/1/23		880	882



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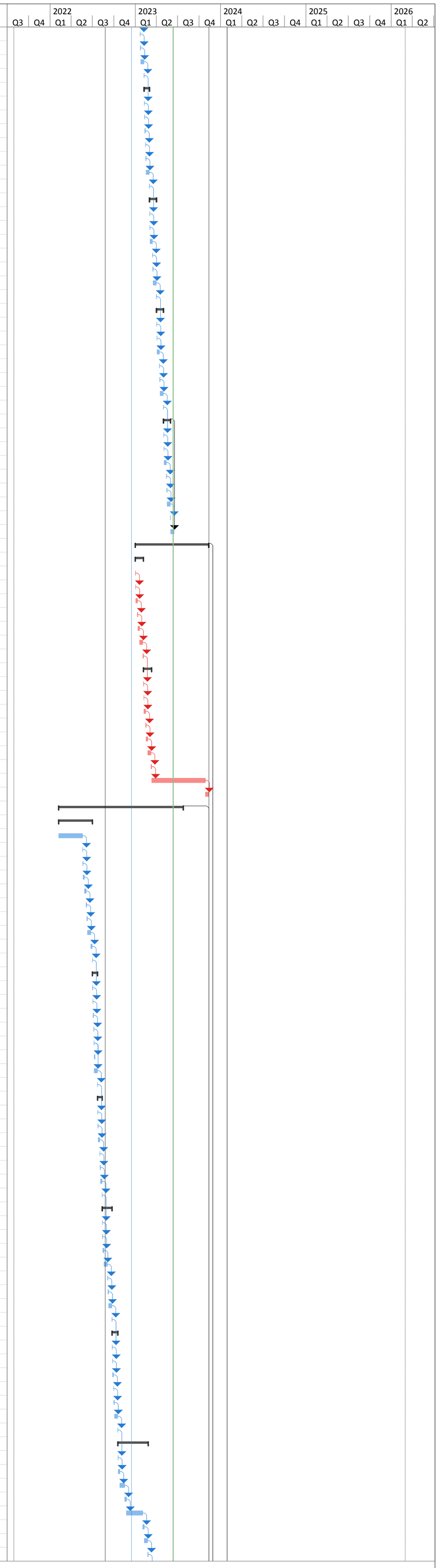
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress
Split	Inactive Milestone	Manual Summary	Deadline	
Milestone	Inactive Summary	Start-only	Critical	
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Progress	

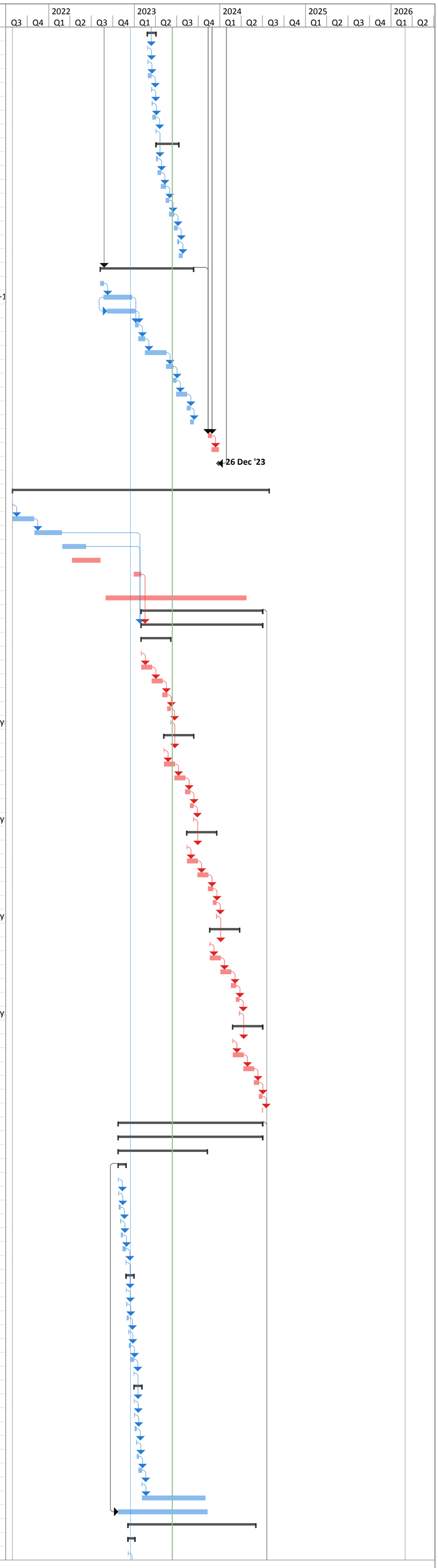
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
882	Treatment of bedding	1 day	21/1/23	21/1/23		881	883
883	Pipe laying D.I.	2 days	22/1/23	23/1/23		882	884
884	Backfilling general fill and compaction	14 days	24/1/23	6/2/23		883	885
885	Reinstatement	1 day	7/2/23	7/2/23		884	887
886	**Team A CH680 to CH740 (60m) _ re-alignmet**	**23 days**	**8/2/23**	**2/3/23**			
887	TTA establishment	1 day	8/2/23	8/2/23		885	888
888	Hard material excavation and disposal	1 day	9/2/23	9/2/23		887	889
889	Soil excavation , laying sheetpile and disposal	3 days	10/2/23	12/2/23		888	890
890	Treatment of bedding	1 day	13/2/23	13/2/23		889	891
891	Pipe laying D.I.	2 days	14/2/23	15/2/23		890	892
892	Backfilling general fill and compaction	14 days	16/2/23	1/3/23		891	893
893	Reinstatement	1 day	2/3/23	2/3/23		892	895
894	**Team A CH740 to CH770 (30m) _ re-alignmet**	**30 days**	**3/3/23**	**1/4/23**			
895	TTA establishment	1 day	3/3/23	3/3/23		893	896
896	Hard material excavation and disposal	1 day	4/3/23	4/3/23		895	897
897	Soil excavation , laying sheetpile and disposal	10 days	5/3/23	14/3/23		896	898
898	Treatment of bedding	1 day	15/3/23	15/3/23		897	899
899	Pipe laying D.I.	2 days	16/3/23	17/3/23		898	900
900	Backfilling general fill and compaction	14 days	18/3/23	31/3/23		899	901
901	Reinstatement	1 day	1/4/23	1/4/23		900	903
902	**Team A CH770 to CH810 (30m) _ re-alignmet**	**30 days**	**2/4/23**	**1/5/23**			
903	TTA establishment	1 day	2/4/23	2/4/23		901	904
904	Hard material excavation and disposal	1 day	3/4/23	3/4/23		903	905
905	Soil excavation , laying sheetpile and disposal	10 days	4/4/23	13/4/23		904	906
906	Treatment of bedding	1 day	14/4/23	14/4/23		905	907
907	Pipe laying D.I.	2 days	15/4/23	16/4/23		906	908
908	Backfilling general fill and compaction	14 days	17/4/23	30/4/23		907	909
909	Reinstatement	1 day	1/5/23	1/5/23		908	911
910	**Team A CH810 to CH850 (30m) _ re-alignmet**	**30 days**	**2/5/23**	**31/5/23**			**918**
911	TTA establishment	1 day	2/5/23	2/5/23		909	912
912	Hard material excavation and disposal	1 day	3/5/23	3/5/23		911	913
913	Soil excavation , laying sheetpile and disposal	10 days	4/5/23	13/5/23		912	914
914	Treatment of bedding	1 day	14/5/23	14/5/23		913	915
915	Pipe laying D.I.	2 days	15/5/23	16/5/23		914	916
916	Backfilling general fill and compaction	14 days	17/5/23	30/5/23		915	917
917	Reinstatement	1 day	31/5/23	31/5/23		916	
918	Pressure test, swabbing and CCTV	15 days	1/6/23	15/6/23		910	
919	**CH850 to CH1130 (280m)**	**315 days**	**1/1/23**	**11/11/23**			**1022**
920	**Team A1 CH1115 to CH1130 (15m)**	**35 days**	**1/1/23**	**4/2/23**			
921	TTA establishment	1 day	1/1/23	1/1/23			922
922	Hard material excavation and disposal	1 day	2/1/23	2/1/23		921	923
923	Soil excavation , laying sheetpile and disposal	7 days	3/1/23	9/1/23		922	924
924	Treatment of bedding	2 days	10/1/23	11/1/23		923	925
925	Pipe laying D.I.	7 days	12/1/23	18/1/23		924	926
926	Backfilling general fill and compaction	14 days	19/1/23	1/2/23		925	927
927	Reinstatement	3 days	2/2/23	4/2/23		926	929
928	**Team A1 CH1130 to CH1145 (15m)**	**35 days**	**5/2/23**	**11/3/23**			
929	TTA establishment	1 day	5/2/23	5/2/23		927	930
930	Hard material excavation and disposal	1 day	6/2/23	6/2/23		929	931
931	Soil excavation , laying sheetpile and disposal	7 days	7/2/23	13/2/23		930	932
932	Treatment of bedding	2 days	14/2/23	15/2/23		931	933
933	Pipe laying D.I.	7 days	16/2/23	22/2/23		932	934
934	Backfilling general fill and compaction	14 days	23/2/23	8/3/23		933	935
935	Reinstatement	3 days	9/3/23	11/3/23		934	936
936	Team A1 CH850 to CH1115 (265m)	230 days	12/3/23	27/10/23		935	937
937	Pressure test, swabbing and CCTV	15 days	28/10/23	11/11/23		936	
938	**CH000 to CH370 (370m)**	**533.5 days**	**7/2/22**	**25/7/23**			**1022**
939	**Team B CH220 to CH245 (25m)**	**144.5 days**	**7/2/22**	**1/7/22**			
940	Pending for release of TTA from other Contractor	102 days	7/2/22	19/5/22			941
941	TTA establishment	1 day	20/5/22	20/5/22		940	942
942	Hard material excavation and disposal	1 day	21/5/22	21/5/22		941	943
943	CE-052 _ Inclement Weather in May 2022 (under assessment)	6 days	22/5/22	27/5/22		942	944
944	Soil excavation , laying sheetpile and disposal	7 days	28/5/22	3/6/22		943	945
945	Treatment of bedding	3 days	4/6/22	6/6/22		944	946
946	Pipe laying D.I.	3 days	7/6/22	9/6/22		945	947
947	Backfilling general fill and compaction	14 days	10/6/22	23/6/22		946	948
948	CE-053 _ Inclement Weather in June 2022 (under assessment)	6.5 days	24/6/22	30/6/22		947	949
949	Reinstatement	1 day	30/6/22	1/7/22		948	951
950	**Team B CH190 to CH220 (30m)**	**22 days**	**1/7/22**	**23/7/22**			
951	TTA establishment	1 day	1/7/22	2/7/22		949	952
952	Hard material excavation and disposal	1 day	2/7/22	3/7/22		951	953
953	Soil excavation , laying sheetpile and disposal	3 days	3/7/22	6/7/22		952	954
954	Treatment of bedding	1 day	6/7/22	7/7/22		953	955
955	Pipe laying D.I.	1 day	7/7/22	8/7/22		954	957,956
956	CE-054 _ Inclement Weather in July 2022 (under assessment)	4 days	8/7/22	12/7/22		955	
957	Backfilling general fill and compaction	14 days	8/7/22	22/7/22		955	958
958	Reinstatement	1 day	22/7/22	23/7/22		957	960
959	**Team B CH245 to CH285 (40m)**	**20 days**	**23/7/22**	**12/8/22**			
960	TTA establishment	1 day	23/7/22	24/7/22		958	961
961	Hard material excavation and disposal	1 day	24/7/22	25/7/22		960	962
962	Soil excavation , laying sheetpile and disposal	7 days	25/7/22	1/8/22		961	963
963	Treatment of bedding	1 day	1/8/22	2/8/22		962	964
964	Pipe laying D.I.	2 days	2/8/22	4/8/22		963	965
965	Backfilling general fill and compaction	7 days	4/8/22	11/8/22		964	966
966	Reinstatement	1 day	11/8/22	12/8/22		965	968
967	**Team B CH285 to CH315 (30m)**	**42 days**	**12/8/22**	**23/9/22**			
968	TTA establishment	1 day	12/8/22	13/8/22		966	969
969	Hard material excavation and disposal	1 day	13/8/22	14/8/22		968	970
970	Soil excavation , laying sheetpile and disposal	5 days	14/8/22	19/8/22		969	971
971	CE-068 _ Inclement Weather in August 2022	15 days	19/8/22	3/9/22		970	972
972	Treatment of bedding	2 days	3/9/22	5/9/22		971	973
973	Pipe laying D.I.	3 days	5/9/22	8/9/22		972	974
974	Backfilling general fill and compaction	14 days	8/9/22	22/9/22		973	975
975	Reinstatement	1 day	22/9/22	23/9/22		974	977
976	**Team B CH315 to CH340 (25m)**	**25 days**	**23/9/22**	**18/10/22**			
977	TTA establishment	1 day	23/9/22	24/9/22		975	978
978	Hard material excavation and disposal	1 day	24/9/22	25/9/22		977	979
979	Soil excavation , laying sheetpile and disposal	4 days	25/9/22	29/9/22		978	980
980	Treatment of bedding	1 day	29/9/22	30/9/22		979	981
981	Pipe laying D.I.	3 days	30/9/22	3/10/22		980	982
982	Backfilling general fill and compaction	14 days	3/10/22	17/10/22		981	983
983	Reinstatement	1 day	17/10/22	18/10/22		982	985
984	**Team B CH0 to CH150 (150m)**	**130 days**	**18/10/22**	**25/2/23**			
985	TTA establishment	1 day	18/10/22	19/10/22		983	986
986	Hard material excavation and disposal	7 days	19/10/22	26/10/22		985	987
987	Soil excavation , laying sheetpile and disposal	21 days	26/10/22	16/11/22		986	988
988	Treatment of bedding	7 days	16/11/22	23/11/22		987	989
989	Pending for confirmation of design alignment	70 days	23/11/22	1/2/23		988	990
990	Pipe laying D.I.	7 days	1/2/23	8/2/23		989	991
991	Backfilling gerneral fill and compaction	14 days	8/2/23	22/2/23		990	992
992	Reinstatement	3 days	22/2/23	25/2/23		991	994



Project: 3WSD20 Programme
Date: 12/6/23

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Critical
Critical Split
Progress
Manual Progress

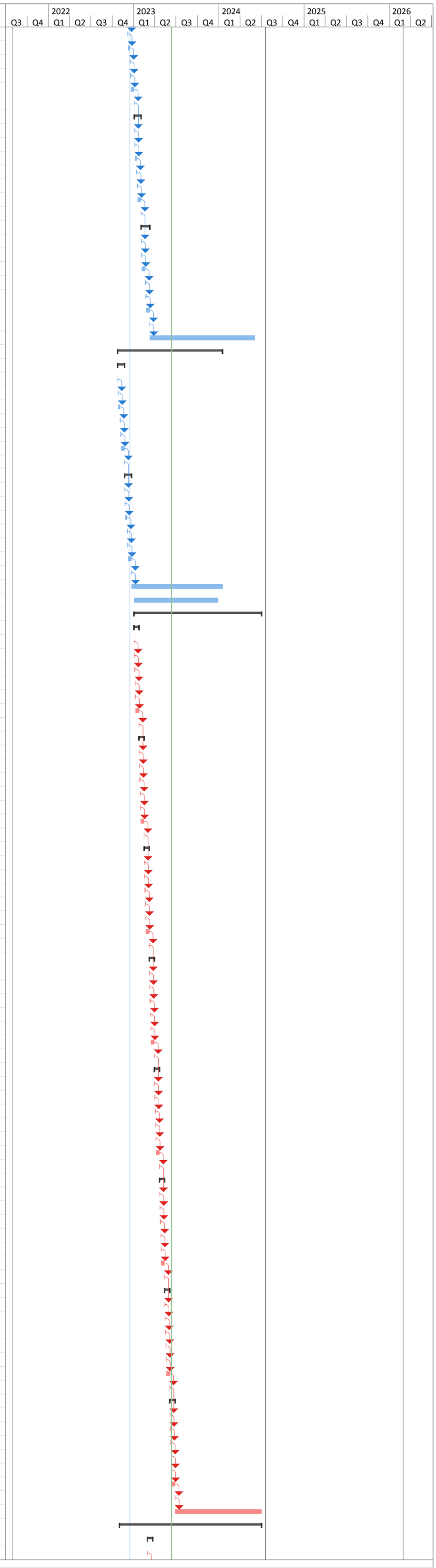
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
993	**Team B CH150 to CH190 (40m)**	**37 days**	**25/2/23**	**3/4/23**			
994	TTA establishment	1 day	25/2/23	26/2/23		992	995
995	Hard material excavation and disposal	2 days	26/2/23	28/2/23		994	996
996	Soil excavation , laying sheetpile and disposal	14 days	28/2/23	14/3/23		995	997
997	Treatment of bedding	2 days	14/3/23	16/3/23		996	998
998	Pipe laying D.I.	3 days	16/3/23	19/3/23		997	999
999	Backfilling general fill and compaction	14 days	19/3/23	2/4/23		998	1000
1000	Reinstatement	1 day	2/4/23	3/4/23		999	1002
1001	**Team B CH340 to CH370 (30m)**	**98 days**	**3/4/23**	**10/7/23**			
1002	TTA establishment	7 days	3/4/23	10/4/23		1000	1003
1003	Hard material excavation and disposal	14 days	10/4/23	24/4/23		1002	1004
1004	Soil excavation , laying sheetpile and disposal	21 days	24/4/23	15/5/23		1003	1005
1005	Treatment of bedding	14 days	15/5/23	29/5/23		1004	1006
1006	Pipe laying D.I.	21 days	29/5/23	19/6/23		1005	1007
1007	Backfilling general fill and compaction	14 days	19/6/23	3/7/23		1006	1008
1008	Reinstatement	7 days	3/7/23	10/7/23		1007	1009
1009	Pressure test, swabbing and CCTV	15 days	10/7/23	25/7/23		1008	
1010	**CH710 to CH970 (260m) -within the scope of Shueng Shui Hueng**	**399 days**	**8/8/22**	**11/9/23**		**792**	**1022**
1011	CE-068 _ Inclement Weather in August 2022	15 days	8/8/22	23/8/22			1012
1012	Pending agreement of Shueng Shui Hueng villagers	120 days	23/8/22	21/12/22		1011	1014,1013SS+1
1013	XP application for alternative alignment of watermain	120 days	6/9/22	4/1/23		1012SS+14 days	1014
1014	TTA establishment	14 days	4/1/23	18/1/23		1012,1013	1015
1015	Hard material excavation and disposal	28 days	18/1/23	15/2/23		1014	1016
1016	Soil excavation , laying sheetpile and disposal	90 days	15/2/23	16/5/23		1015	1017
1017	Treatment of bedding	30 days	16/5/23	15/6/23		1016	1018
1018	Pipe laying D.I.	14 days	15/6/23	29/6/23		1017	1019
1019	Backfilling general fill and compaction	45 days	29/6/23	13/8/23		1018	1020
1020	Reinstatement	14 days	13/8/23	27/8/23		1019	1021
1021	Pressure test, swabbing and CCTV	15 days	27/8/23	11/9/23		1020	
1022	Overall pressure testing	15 days	12/11/23	26/11/23		791,938,1010,9:	1023
1023	Pipe connection and completion	30 days	27/11/23	26/12/23		1022	
1024	Planned completion for section 4	0 days	26/12/23	26/12/23		598FF	
1025							
1026	**Section 5 - Water main laying works in part 4 of the Site**	**1096 days**	**30/7/21**	**29/7/24**			
1027	Access Date (part 4 of the Site)	1 day	30/7/21	30/7/21			1028
1028	Initial survey (utility survey, condition survey, initial photo)	90 days	31/7/21	28/10/21		1027	1029
1029	Application and approval of XP and TTA	116 days	1/11/21	24/2/22		1028	1035
1030	Procurement and Delivery of pipes, fittings and related materials	100 days	28/2/22	7/6/22			1035
1031	Submission and acceptance of method statement and material	120 days	11/4/22	8/8/22			
1032	Submission and acceptance of method statement and temp work design for trenchless works	30 days	31/12/22	29/1/23			1035
1033	Excavation of Inspection Pit	600 days	1/9/22	22/4/24			
1034	**Mainlaying by trenchless method (RW04)**	**519 days**	**30/1/23**	**1/7/24**			**1246**
1035	**RW04 : DN450 DI pipe (trenchless)**	**519 days**	**30/1/23**	**1/7/24**	**60**	**1029,1030,1032**	
1036	**Wo Tai Street (70m) - TBM Method**	**127 days**	**30/1/23**	**5/6/23**			
1037	TTA implementation	1 day	30/1/23	30/1/23			1038
1038	Contruction of jacking pit and receiving pit	45 days	31/1/23	16/3/23		1037	1039
1039	Trenchless works and pipe laying	45 days	17/3/23	30/4/23		1038	1040
1040	Manhole / Chamber construction	21 days	1/5/23	21/5/23		1039	1041
1041	Backfilling and compaction	14 days	22/5/23	4/6/23		1040	1042
1042	Reinstatement	1 day	5/6/23	5/6/23		1041	1044FS-30 day
1043	**Ma Sik Road (70m) - TBM Method**	**128 days**	**7/5/23**	**11/9/23**			
1044	TTA implementation	1 day	7/5/23	7/5/23		1042FS-30 days	1045
1045	Contruction of jacking pit and receiving pit	45 days	8/5/23	21/6/23		1044	1046
1046	Trenchless works and pipe laying	45 days	22/6/23	5/8/23		1045	1047
1047	Manhole / Chamber construction	21 days	6/8/23	26/8/23		1046	1048
1048	Backfilling and compaction	14 days	27/8/23	9/9/23		1047	1049
1049	Reinstatement	2 days	10/9/23	11/9/23		1048	1051FS-30 day
1050	**Luen Chit Street (70m) - TBM Method**	**128 days**	**13/8/23**	**18/12/23**			
1051	TTA implementation	1 day	13/8/23	13/8/23		1049FS-30 days	1052
1052	Contruction of jacking pit and receiving pit	45 days	14/8/23	27/9/23		1051	1053
1053	Trenchless works and pipe laying	45 days	28/9/23	11/11/23		1052	1054
1054	Manhole / Chamber construction	21 days	12/11/23	2/12/23		1053	1055
1055	Backfilling and compaction	14 days	3/12/23	16/12/23		1054	1056
1056	Reinstatement	2 days	17/12/23	18/12/23		1055	1058FS-30 day
1057	**Luen Sum Road (70m) - TBM Method**	**128 days**	**19/11/23**	**25/3/24**			
1058	TTA implementation	1 day	19/11/23	19/11/23		1056FS-30 days	1059
1059	Contruction of jacking pit and receiving pit	45 days	20/11/23	3/1/24		1058	1060
1060	Trenchless works and pipe laying	45 days	4/1/24	17/2/24		1059	1061
1061	Manhole / Chamber construction	21 days	18/2/24	9/3/24		1060	1062
1062	Backfilling and compaction	14 days	10/3/24	23/3/24		1061	1063
1063	Reinstatement	2 days	24/3/24	25/3/24		1062	1065FS-30 day
1064	**Fanling Lau Road (70m) - TBM Method**	**128 days**	**25/2/24**	**1/7/24**			
1065	TTA implementation	1 day	25/2/24	25/2/24		1063FS-30 days	1066
1066	Contruction of jacking pit and receiving pit	45 days	26/2/24	10/4/24		1065	1067
1067	Trenchless works and pipe laying	45 days	11/4/24	25/5/24		1066	1068
1068	Manhole / Chamber construction	21 days	26/5/24	15/6/24		1067	1069
1069	Backfilling and compaction	14 days	16/6/24	29/6/24		1068	1070
1070	Reinstatement	2 days	30/6/24	1/7/24		1069	
1071	**Mainlaying by open trench method (RW04)**	**617 days**	**24/10/22**	**1/7/24**			**1246**
1072	**RW04 : DN450 DI Pipe**	**617 days**	**24/10/22**	**1/7/24**			
1073	Ma Sik Road CH1400 to CH1700 (300m) (XP ID: 1301142, 1301146, 1301149)	381 days	24/10/22	8/11/23			
1074	CH1420 to CH1450 (30m)	34 days	24/10/22	26/11/22			1099SS
1075	TTA establishment	1 day	24/10/22	24/10/22			1076
1076	Hard material excavation and disposal	2 days	25/10/22	26/10/22		1075	1077
1077	Soil excavation , laying sheetpile and disposal	7 days	27/10/22	2/11/22		1076	1078
1078	Treatment of bedding	2 days	3/11/22	4/11/22		1077	1079
1079	Pipe laying D.I.	7 days	5/11/22	11/11/22		1078	1080
1080	Backfilling general fill and compaction	14 days	12/11/22	25/11/22		1079	1081
1081	Reinstatement	1 day	26/11/22	26/11/22		1080	1083
1082	CH1450 to CH1480 (30m)	34 days	27/11/22	30/12/22			
1083	TTA establishment	1 day	27/11/22	27/11/22		1081	1084
1084	Hard material excavation and disposal	2 days	28/11/22	29/11/22		1083	1085
1085	Soil excavation , laying sheetpile and disposal	7 days	30/11/22	6/12/22		1084	1086
1086	Treatment of bedding	2 days	7/12/22	8/12/22		1085	1087
1087	Pipe laying D.I.	7 days	9/12/22	15/12/22		1086	1088
1088	Backfilling general fill and compaction	14 days	16/12/22	29/12/22		1087	1089
1089	Reinstatement	1 day	30/12/22	30/12/22		1088	1091
1090	CH910 to CH960 (50m)	34 days	31/12/22	2/2/23			
1091	TTA establishment	1 day	31/12/22	31/12/22		1089	1092
1092	Hard material excavation and disposal	2 days	1/1/23	2/1/23		1091	1093
1093	Soil excavation , laying sheetpile and disposal	7 days	3/1/23	9/1/23		1092	1094
1094	Treatment of bedding	2 days	10/1/23	11/1/23		1093	1095
1095	Pipe laying D.I.	7 days	12/1/23	18/1/23		1094	1096
1096	Backfilling general fill and compaction	14 days	19/1/23	1/2/23		1095	1097
1097	Reinstatement	1 day	2/2/23	2/2/23		1096	1098
1098	CH1490 to 1700 (210m)	270 days	3/2/23	30/10/23	60	1097	
1099	Construction of valve chambers	381 days	24/10/22	8/11/23		1074SS	
1100	Ma Sik Road CH1700 to CH2180 (480m) (XP ID: 1301142, 1301146, 1301149)	546 days	5/12/22	2/6/24			
1101	CH1920 to CH1950 (30m)	30 days	5/12/22	3/1/23			
1102	TTA establishment	1 day	5/12/22	5/12/22			1103



Project: 3WSD20 Programme
Date: 12/6/23

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1103	Hard material excavation and disposal	2 days	6/12/22	7/12/22		1102	1104
1104	Soil excavation , laying sheetpile and disposal	7 days	8/12/22	14/12/22		1103	1105
1105	Treatment of bedding	2 days	15/12/22	16/12/22		1104	1106
1106	Pipe laying D.I.	3 days	17/12/22	19/12/22		1105	1107
1107	Backfilling general fill and compaction	14 days	20/12/22	2/1/23		1106	1108
1108	Reinstatement	1 day	3/1/23	3/1/23		1107	1110
1109	CH1950 to CH1990 (40m)	29 days	4/1/23	1/2/23			
1110	TTA establishment	1 day	4/1/23	4/1/23		1108	1111
1111	Hard material excavation and disposal	1 day	5/1/23	5/1/23		1110	1112
1112	Soil excavation , laying sheetpile and disposal	7 days	6/1/23	12/1/23		1111	1113
1113	Treatment of bedding	2 days	13/1/23	14/1/23		1112	1114
1114	Pipe laying D.I.	3 days	15/1/23	17/1/23		1113	1115
1115	Backfilling general fill and compaction	14 days	18/1/23	31/1/23		1114	1116
1116	Reinstatement	1 day	1/2/23	1/2/23		1115	1118
1117	CH1990 to CH2020 (30m)	37 days	2/2/23	10/3/23			
1118	TTA establishment	1 day	2/2/23	2/2/23		1116	1119
1119	Hard material excavation and disposal	2 days	3/2/23	4/2/23		1118	1120
1120	Soil excavation , laying sheetpile and disposal	14 days	5/2/23	18/2/23		1119	1121
1121	Treatment of bedding	2 days	19/2/23	20/2/23		1120	1122
1122	Pipe laying D.I.	3 days	21/2/23	23/2/23		1121	1123
1123	Backfilling general fill and compaction	14 days	24/2/23	9/3/23		1122	1124
1124	Reinstatement	1 day	10/3/23	10/3/23		1123	1125
1125	CH1790 to 2180 (390m)	450 days	11/3/23	2/6/24	60	1124	
1126	Ma Sik Road CH2180 to CH2400 (220m) (XP ID: 1301142, 1301146, 1301149)	450 days	24/10/22	16/1/24			
1127	CH2210 to CH2240 (30m)	30 days	24/10/22	22/11/22			
1128	TTA establishment	1 day	24/10/22	24/10/22			1129
1129	Hard material excavation and disposal	2 days	25/10/22	26/10/22		1128	1130
1130	Soil excavation , laying sheetpile and disposal	7 days	27/10/22	2/11/22		1129	1131
1131	Treatment of bedding	2 days	3/11/22	4/11/22		1130	1132
1132	Pipe laying D.I.	3 days	5/11/22	7/11/22		1131	1133
1133	Backfilling general fill and compaction	14 days	8/11/22	21/11/22		1132	1134
1134	Reinstatement	1 day	22/11/22	22/11/22		1133	1136
1135	CH2240 to CH2270 (30m)	30 days	23/11/22	22/12/22			
1136	TTA establishment	1 day	23/11/22	23/11/22		1134	1137
1137	Hard material excavation and disposal	2 days	24/11/22	25/11/22		1136	1138
1138	Soil excavation , laying sheetpile and disposal	7 days	26/11/22	2/12/22		1137	1139
1139	Treatment of bedding	2 days	3/12/22	4/12/22		1138	1140
1140	Pipe laying D.I.	3 days	5/12/22	7/12/22		1139	1141
1141	Backfilling general fill and compaction	14 days	8/12/22	21/12/22		1140	1142
1142	Reinstatement	1 day	22/12/22	22/12/22		1141	1143
1143	CH2270 to CH2400 (130m)	390 days	23/12/22	16/1/24	60	1142	
1144	Ma Sik Road CH2400 to CH2600 (200m) (XP ID: 1301142, 1301146, 1301149)	360 days	3/1/23	28/12/23			
1145	Tin Ping Road (1377m) (XP ID: 1309070, 1310475)	547 days	2/1/23	1/7/24			
1146	CH450 to CH480 (30m)	22 days	2/1/23	23/1/23			
1147	TTA establishment	1 day	2/1/23	2/1/23			1148
1148	Hard material excavation and disposal	1 day	3/1/23	3/1/23		1147	1149
1149	Soil excavation , laying sheetpile and disposal	3 days	4/1/23	6/1/23		1148	1150
1150	Treatment of bedding	1 day	7/1/23	7/1/23		1149	1151
1151	Pipe laying D.I.	1 day	8/1/23	8/1/23		1150	1152
1152	Backfilling general fill and compaction	14 days	9/1/23	22/1/23		1151	1153
1153	Reinstatement	1 day	23/1/23	23/1/23		1152	1155
1154	CH480 to CH510 (30m)	22 days	24/1/23	14/2/23			
1155	TTA establishment	1 day	24/1/23	24/1/23		1153	1156
1156	Hard material excavation and disposal	1 day	25/1/23	25/1/23		1155	1157
1157	Soil excavation , laying sheetpile and disposal	3 days	26/1/23	28/1/23		1156	1158
1158	Treatment of bedding	1 day	29/1/23	29/1/23		1157	1159
1159	Pipe laying D.I.	1 day	30/1/23	30/1/23		1158	1160
1160	Backfilling general fill and compaction	14 days	31/1/23	13/2/23		1159	1161
1161	Reinstatement	1 day	14/2/23	14/2/23		1160	1163
1162	CH510 to CH540 (30m)	22 days	15/2/23	8/3/23			
1163	TTA establishment	1 day	15/2/23	15/2/23		1161	1164
1164	Hard material excavation and disposal	1 day	16/2/23	16/2/23		1163	1165
1165	Soil excavation , laying sheetpile and disposal	3 days	17/2/23	19/2/23		1164	1166
1166	Treatment of bedding	1 day	20/2/23	20/2/23		1165	1167
1167	Pipe laying D.I.	1 day	21/2/23	21/2/23		1166	1168
1168	Backfilling general fill and compaction	14 days	22/2/23	7/3/23		1167	1169
1169	Reinstatement	1 day	8/3/23	8/3/23		1168	1171
1170	CH540 to CH570 (30m)	22 days	9/3/23	30/3/23			
1171	TTA establishment	1 day	9/3/23	9/3/23		1169	1172
1172	Hard material excavation and disposal	1 day	10/3/23	10/3/23		1171	1173
1173	Soil excavation , laying sheetpile and disposal	3 days	11/3/23	13/3/23		1172	1174
1174	Treatment of bedding	1 day	14/3/23	14/3/23		1173	1175
1175	Pipe laying D.I.	1 day	15/3/23	15/3/23		1174	1176
1176	Backfilling general fill and compaction	14 days	16/3/23	29/3/23		1175	1177
1177	Reinstatement	1 day	30/3/23	30/3/23		1176	1179
1178	CH570 to CH610 (30m)	22 days	31/3/23	21/4/23			
1179	TTA establishment	1 day	31/3/23	31/3/23		1177	1180
1180	Hard material excavation and disposal	1 day	1/4/23	1/4/23		1179	1181
1181	Soil excavation , laying sheetpile and disposal	3 days	2/4/23	4/4/23		1180	1182
1182	Treatment of bedding	1 day	5/4/23	5/4/23		1181	1183
1183	Pipe laying D.I.	1 day	6/4/23	6/4/23		1182	1184
1184	Backfilling general fill and compaction	14 days	7/4/23	20/4/23		1183	1185
1185	Reinstatement	1 day	21/4/23	21/4/23		1184	1187
1186	CH610 to CH640 (30m)	22 days	22/4/23	13/5/23			
1187	TTA establishment	1 day	22/4/23	22/4/23		1185	1188
1188	Hard material excavation and disposal	1 day	23/4/23	23/4/23		1187	1189
1189	Soil excavation , laying sheetpile and disposal	3 days	24/4/23	26/4/23		1188	1190
1190	Treatment of bedding	1 day	27/4/23	27/4/23		1189	1191
1191	Pipe laying D.I.	1 day	28/4/23	28/4/23		1190	1192
1192	Backfilling general fill and compaction	14 days	29/4/23	12/5/23		1191	1193
1193	Reinstatement	1 day	13/5/23	13/5/23		1192	1195
1194	CH640 to CH670 (30m)	22 days	14/5/23	4/6/23			
1195	TTA establishment	1 day	14/5/23	14/5/23		1193	1196
1196	Hard material excavation and disposal	1 day	15/5/23	15/5/23		1195	1197
1197	Soil excavation , laying sheetpile and disposal	3 days	16/5/23	18/5/23		1196	1198
1198	Treatment of bedding	1 day	19/5/23	19/5/23		1197	1199
1199	Pipe laying D.I.	1 day	20/5/23	20/5/23		1198	1200
1200	Backfilling general fill and compaction	14 days	21/5/23	3/6/23		1199	1201
1201	Reinstatement	1 day	4/6/23	4/6/23		1200	1203
1202	CH670 to CH710 (30m)	23 days	5/6/23	27/6/23			
1203	TTA establishment	1 day	5/6/23	5/6/23		1201	1204
1204	Hard material excavation and disposal	2 days	6/6/23	7/6/23		1203	1205
1205	Soil excavation , laying sheetpile and disposal	3 days	8/6/23	10/6/23		1204	1206
1206	Treatment of bedding	1 day	11/6/23	11/6/23		1205	1207
1207	Pipe laying D.I.	1 day	12/6/23	12/6/23		1206	1208
1208	Backfilling general fill and compaction	14 days	13/6/23	26/6/23		1207	1209
1209	Reinstatement	1 day	27/6/23	27/6/23		1208	1210
1210	Remaining Section of Tin Ping Road (1287m)	370 days	28/6/23	1/7/24		1209	
1211	Sha Tau Kok Road (869m)	609 days	1/11/22	1/7/24			
1212	CH3580 to CH3550 (30m)	23 days	1/3/23	23/3/23			
1213	TTA establishment	1 day	1/3/23	1/3/23			1214



Project: 3WSD20 Programme
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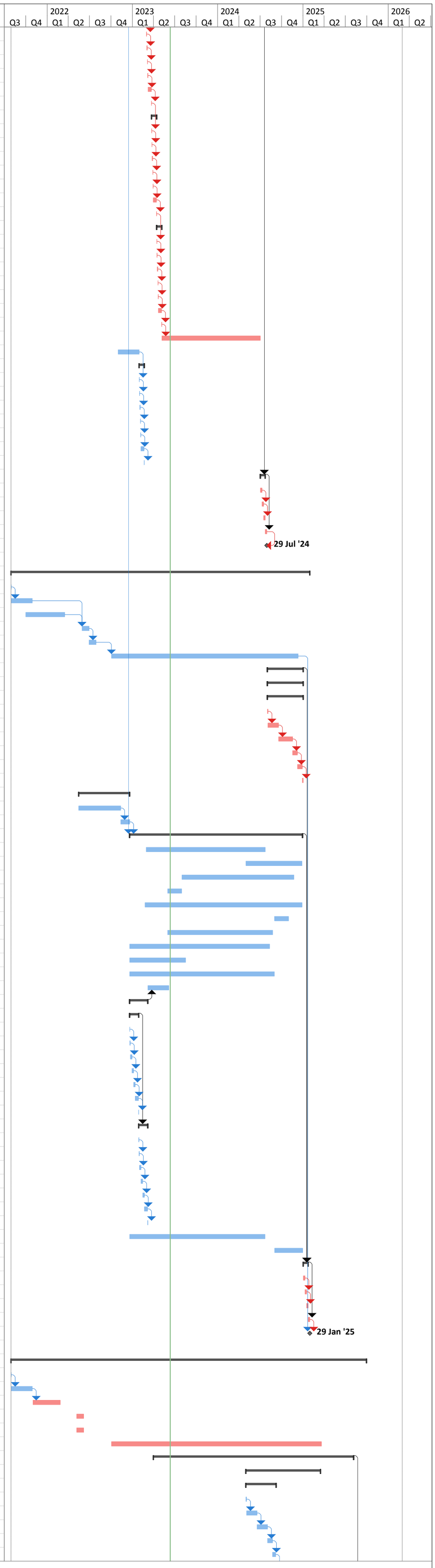
Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

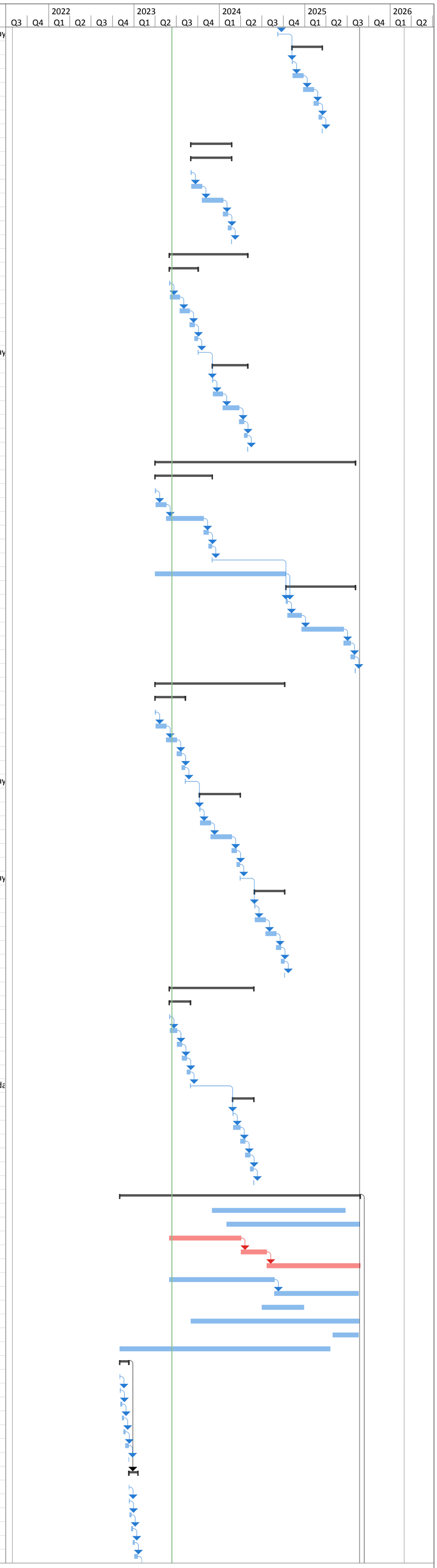
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1214	Hard material excavation and disposal	1 day	2/3/23	2/3/23		1213	1215
1215	Soil excavation , laying sheetpile and disposal	3 days	3/3/23	5/3/23		1214	1216
1216	Treatment of bedding	1 day	6/3/23	6/3/23		1215	1217
1217	Pipe laying D.I.	2 days	7/3/23	8/3/23		1216	1218
1218	Backfilling general fill and compaction	14 days	9/3/23	22/3/23		1217	1219
1219	Reinstatement	1 day	23/3/23	23/3/23		1218	1221
1220	CH3550 to CH3520 (30m)	22 days	24/3/23	14/4/23			
1221	TTA establishment	1 day	24/3/23	24/3/23		1219	1222
1222	Hard material excavation and disposal	1 day	25/3/23	25/3/23		1221	1223
1223	Soil excavation , laying sheetpile and disposal	3 days	26/3/23	28/3/23		1222	1224
1224	Treatment of bedding	1 day	29/3/23	29/3/23		1223	1225
1225	Pipe laying D.I.	1 day	30/3/23	30/3/23		1224	1226
1226	Backfilling general fill and compaction	14 days	31/3/23	13/4/23		1225	1227
1227	Reinstatement	1 day	14/4/23	14/4/23		1226	1229
1228	CH3520 to CH3490 (30m)	22 days	15/4/23	6/5/23			
1229	TTA establishment	1 day	15/4/23	15/4/23		1227	1230
1230	Hard material excavation and disposal	1 day	16/4/23	16/4/23		1229	1231
1231	Soil excavation , laying sheetpile and disposal	3 days	17/4/23	19/4/23		1230	1232
1232	Treatment of bedding	1 day	20/4/23	20/4/23		1231	1233
1233	Pipe laying D.I.	1 day	21/4/23	21/4/23		1232	1234
1234	Backfilling general fill and compaction	14 days	22/4/23	5/5/23		1233	1235
1235	Reinstatement	1 day	6/5/23	6/5/23		1234	1236
1236	Remaining Section of Sha Tau Kok Road	422 days	7/5/23	1/7/24		1235	
1237	Interface coordination with Contract ND/2019/04	90 days	1/11/22	29/1/23			1239
1238	CH2600 to CH2800 (200m)	22 days	30/1/23	20/2/23			
1239	TTA establishment	1 day	30/1/23	30/1/23		1237	1240
1240	Hard material excavation and disposal	1 day	31/1/23	31/1/23		1239	1241
1241	Soil excavation , laying sheetpile and disposal	3 days	1/2/23	3/2/23		1240	1242
1242	Treatment of bedding	1 day	4/2/23	4/2/23		1241	1243
1243	Pipe laying D.I.	1 day	5/2/23	5/2/23		1242	1244
1244	Backfilling general fill and compaction	14 days	6/2/23	19/2/23		1243	1245
1245	Reinstatement	1 day	20/2/23	20/2/23		1244	
1246	**Overall testing**	**21 days**	**2/7/24**	**22/7/24**		**1034,1071**	**1250**
1247	Swabbing	7 days	2/7/24	8/7/24			1248
1248	CCTV	7 days	9/7/24	15/7/24		1247	1249
1249	Hydrostatic pressure test	7 days	16/7/24	22/7/24		1248	
1250	Pipe connection and completion	7 days	23/7/24	29/7/24		1246	1251FF
1251	Planned completion for section 5	0 days	29/7/24	29/7/24		1250FF	
1252							
1253	**Section 6 - Water main laying works in part 5 of the Site**	**1280 days**	**30/7/21**	**29/1/25**			
1254	Access Date (part 5 of the Site)	1 day	30/7/21	30/7/21			1255
1255	Initial survey (utility survey, condition survey, initial photo)	90 days	31/7/21	28/10/21		1254	1257
1256	Application and approval of XP and TTA	167 days	1/10/21	16/3/22			1257
1257	Procurement and Delivery of pipes, fittings and related materials	30 days	30/5/22	28/6/22		1255,1256	1258
1258	Submission and acceptance of method statement and material	30 days	29/6/22	28/7/22		1257	1259
1259	Excavation of Inspection Pit	800 days	3/10/22	10/12/24		1258	1308
1260	**Mainlaying by trenchless method**	**154 days**	**1/8/24**	**1/1/25**			**1303**
1261	**RW06 : DN300 DI pipe (trenchless)**	**154 days**	**1/8/24**	**1/1/25**			
1262	**Jocky Club Road (100m) - TBM Method**	**154 days**	**1/8/24**	**1/1/25**			
1263	TTA implementation	3 days	1/8/24	3/8/24			1264
1264	Contruction of jacking pit and receiving pit	45 days	4/8/24	17/9/24		1263	1265
1265	Trenchless works and pipe laying	60 days	18/9/24	16/11/24		1264	1266
1266	Manhole / Chamber construction	21 days	17/11/24	7/12/24		1265	1267
1267	Backfilling and compaction	21 days	8/12/24	28/12/24		1266	1268
1268	Reinstatement	4 days	29/12/24	1/1/25		1267	
1269	**Contractor's Design and Construction of distribution mains**	**218 days**	**16/5/22**	**19/12/22**			
1270	Submission and acceptance of detailed design proposal	180 days	16/5/22	11/11/22			1271
1271	Site investigation and liaison with relevant parties	38 days	12/11/22	19/12/22		1270	1272
1272	**Mainlaying by open trench method (XP ID: 1301135, 1301136)**	**741 days**	**20/12/22**	**29/12/24**		**1271,61**	**1303**
1273	RW41 (DN150) - Sheung Shui Tung Hing Road (288m)	510 days	1/3/23	22/7/24			
1274	RW42 (DN150) - No name road in Sheung Shui Heung (210m)	240 days	1/5/24	26/12/24			
1275	RW71 (DN150) - Jockey Club Road (308m)	480 days	1/8/23	22/11/24			
1276	RW44 (DN150) - Jockey Club Road (38m)	60 days	1/6/23	30/7/23			
1277	RW11 (DN150) - Fung Nam Road (480m)	673 days	24/2/23	27/12/24	30		
1278	RW46 (DN150) - Fung Nam Lane (38m)	60 days	1/9/24	30/10/24			
1279	RW06 (DN300) - Lung Sum Avenue (290m)	450 days	1/6/23	23/8/24			
1280	RW05 (DN400) - Jockey Club Road (377m)	600 days	20/12/22	10/8/24	15		
1281	RW15 (DN150) - Sun Fung Road / Sun Shing Road (390m)	240 days	20/12/22	16/8/23			
1282	RW18 (DN150) - San Hong Street (464m)	620 days	20/12/22	30/8/24			
1283	RW20 (DN150) - Sun Wing Street (52m)	90 days	8/3/23	5/6/23		1284	
1284	**RW45 (DN150) - Tsun Fu Street (82m)**	**78 days**	**20/12/22**	**7/3/23**			**1283**
1285	**CH000 - CH040**	**39 days**	**20/12/22**	**27/1/23**			**1293**
1286	TTA establishment	1 day	20/12/22	20/12/22			1287
1287	Hard material excavation and disposal	2 days	21/12/22	22/12/22		1286	1288
1288	Soil excavation , laying sheetpile and disposal	7 days	23/12/22	29/12/22		1287	1289
1289	Treatment of bedding	7 days	30/12/22	5/1/23		1288	1290
1290	Pipe laying D.I.	7 days	6/1/23	12/1/23		1289	1291
1291	Backfilling general fill and compaction	14 days	13/1/23	26/1/23		1290	1292
1292	Reinstatement	1 day	27/1/23	27/1/23		1291	
1293	**CH040 - CH082**	**39 days**	**28/1/23**	**7/3/23**		**1285**	
1294	TTA establishment	1 day	28/1/23	28/1/23			1295
1295	Hard material excavation and disposal	2 days	29/1/23	30/1/23		1294	1296
1296	Soil excavation , laying sheetpile and disposal	7 days	31/1/23	6/2/23		1295	1297
1297	Treatment of bedding	7 days	7/2/23	13/2/23		1296	1298
1298	Pipe laying D.I.	7 days	14/2/23	20/2/23		1297	1299
1299	Backfilling general fill and compaction	14 days	21/2/23	6/3/23		1298	1300
1300	Reinstatement	1 day	7/3/23	7/3/23		1299	
1301	RW14 (DN150) - Fu Hing Street (372m)	580 days	20/12/22	21/7/24			
1302	RW21 (DN150) - Sun Fat Street (105m)	120 days	1/9/24	29/12/24			
1303	Overall testing	21 days	2/1/25	22/1/25		1260,1272	1307
1304	Swabbing	7 days	2/1/25	8/1/25			1305
1305	CCTV	7 days	9/1/25	15/1/25		1304	1306
1306	Hydrostatic pressure test	7 days	16/1/25	22/1/25		1305	
1307	Pipe connection and completion	7 days	23/1/25	29/1/25		1303	1308
1308	Planned completion for section 6	0 days	29/1/25	29/1/25		1307,1259	
1309							
1310	**Section 7 - Water main laying works in part 6 of the Site**	**1523 days**	**30/7/21**	**29/9/25**			
1311	Access Date (part 6 of the Site)	1 day	30/7/21	30/7/21			1312
1312	Initial survey (utility survey, condition survey, initial photo)	90 days	31/7/21	28/10/21		1311	1313
1313	Application and approval of XP and TTA	117 days	1/11/21	25/2/22		1312	
1314	Procurement and Delivery of pipes, fittings and related materials	30 days	7/5/22	5/6/22			
1315	Submission and acceptance of method statement and material	30 days	7/5/22	5/6/22			
1316	Excavation of Inspection Pit	900 days	3/10/22	20/3/25			
1317	**Mainlaying by trenchless method**	**858 days**	**1/4/23**	**5/8/25**			**1455**
1318	**RW05 : DN400 DI pipe (trenchless)**	**320 days**	**1/5/24**	**16/3/25**			
1319	**Fu Hing Street (75m) - TBM Method**	**130 days**	**1/5/24**	**7/9/24**			
1320	TTA implementation	3 days	1/5/24	3/5/24			1321
1321	Contruction of jacking pit and receiving pit	45 days	4/5/24	17/6/24		1320	1322
1322	Trenchless works and pipe laying	45 days	18/6/24	1/8/24		1321	1323
1323	Manhole / Chamber construction	21 days	2/8/24	22/8/24		1322	1324
1324	Backfilling and compaction	14 days	23/8/24	5/9/24		1323	1325



Project: 3WSD20 Programme
Date: 12/6/23

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

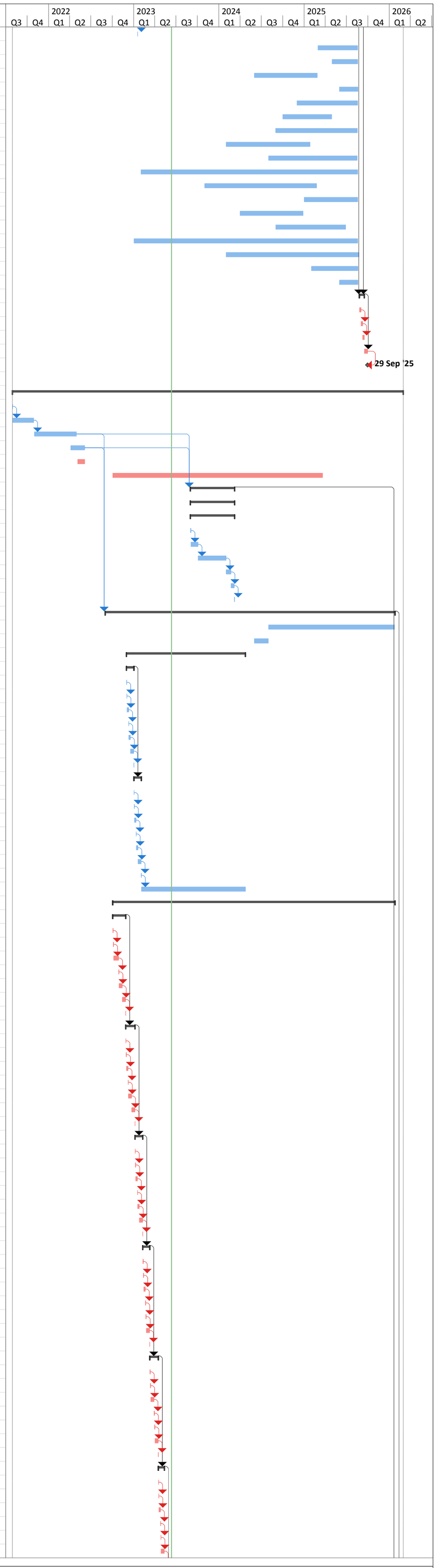
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1325	Reinstatement	2 days	6/9/24	7/9/24		1324	1327FS+60 day
1326	**Luen Sum Road (70m) - TBM Method**	**130 days**	**7/11/24**	**16/3/25**			
1327	TTA implementation	3 days	7/11/24	9/11/24		1325FS+60 days	1328
1328	Contruction of jacking pit and receiving pit	45 days	10/11/24	24/12/24		1327	1329
1329	Trenchless works and pipe laying	45 days	25/12/24	7/2/25		1328	1330
1330	Manhole / Chamber construction	21 days	8/2/25	28/2/25		1329	1331
1331	Backfilling and compaction	14 days	1/3/25	14/3/25		1330	1332
1332	Reinstatement	2 days	15/3/25	16/3/25		1331	
1333	**RW05 : DN300 DI pipe (trenchless)**	**175 days**	**1/9/23**	**22/2/24**			
1334	**Ma Sik Road (180m) - TBM Method**	**175 days**	**1/9/23**	**22/2/24**			
1335	TTA implementation	3 days	1/9/23	3/9/23			1336
1336	Contruction of jacking pit and receiving pit	45 days	4/9/23	18/10/23		1335	1337
1337	Trenchless works and pipe laying	90 days	19/10/23	16/1/24		1336	1338
1338	Manhole / Chamber construction	21 days	17/1/24	6/2/24		1337	1339
1339	Backfilling and compaction	14 days	7/2/24	20/2/24		1338	1340
1340	Reinstatement	2 days	21/2/24	22/2/24		1339	
1341	**RW08 : DN400 DI pipe (trenchless)**	**336 days**	**1/6/23**	**1/5/24**			
1342	**Wo Muk Road (60m) - TBM Method**	**124 days**	**1/6/23**	**2/10/23**			
1343	TTA implementation	3 days	1/6/23	3/6/23			1344
1344	Contruction of jacking pit and receiving pit	42 days	4/6/23	15/7/23		1343	1345
1345	Trenchless works and pipe laying	42 days	16/7/23	26/8/23		1344	1346
1346	Manhole / Chamber construction	21 days	27/8/23	16/9/23		1345	1347
1347	Backfilling and compaction	14 days	17/9/23	30/9/23		1346	1348
1348	Reinstatement	2 days	1/10/23	2/10/23		1347	1350FS+60 day
1349	**Wo Tai Street (100m) - TBM Method**	**152 days**	**2/12/23**	**1/5/24**			
1350	TTA implementation	3 days	2/12/23	4/12/23		1348FS+60 days	1351
1351	Contruction of jacking pit and receiving pit	42 days	5/12/23	15/1/24		1350	1352
1352	Trenchless works and pipe laying	70 days	16/1/24	25/3/24		1351	1353
1353	Manhole / Chamber construction	21 days	26/3/24	15/4/24		1352	1354
1354	Backfilling and compaction	14 days	16/4/24	29/4/24		1353	1355
1355	Reinstatement	2 days	30/4/24	1/5/24		1354	
1356	**RW09 : DN450 DI pipe (trenchless)**	**858 days**	**1/4/23**	**5/8/25**			
1357	**San Wang Road (435m) - TBM Method**	**245 days**	**1/4/23**	**1/12/23**			
1358	TTA implementation	3 days	1/4/23	3/4/23			1359
1359	Contruction of jacking pit and receiving pit	45 days	4/4/23	18/5/23		1358	1360
1360	Trenchless works and pipe laying	160 days	19/5/23	25/10/23		1359	1361
1361	Manhole / Chamber construction	21 days	26/10/23	15/11/23		1360	1362
1362	Backfilling and compaction	14 days	16/11/23	29/11/23		1361	1363
1363	Reinstatement	2 days	30/11/23	1/12/23		1362	1366
1364	Submission and acceptance of method statement by MTRC	560 days	1/4/23	11/10/24			1366
1365	**MTRC (315m) - TBM Method**	**298 days**	**12/10/24**	**5/8/25**			
1366	TTA implementation	7 days	12/10/24	18/10/24		1364,1363	1367
1367	Contruction of jacking pit and receiving pit	60 days	19/10/24	17/12/24		1366	1368
1368	Trenchless works and pipe laying	180 days	18/12/24	15/6/25		1367	1369
1369	Manhole / Chamber construction	30 days	16/6/25	15/7/25		1368	1370
1370	Backfilling and compaction	18 days	16/7/25	2/8/25		1369	1371
1371	Reinstatement	3 days	3/8/25	5/8/25		1370	
1372	**RW05 : DN300 DI pipe (trenchless)**	**555 days**	**1/4/23**	**6/10/24**			
1373	**Ling Shan Road (60m) - HDD Method**	**130 days**	**1/4/23**	**8/8/23**			
1374	TTA implementation	3 days	1/4/23	3/4/23			1375
1375	Contruction of jacking pit and receiving pit	45 days	4/4/23	18/5/23		1374	1376
1376	Trenchless works and pipe laying	45 days	19/5/23	2/7/23		1375	1377
1377	Manhole / Chamber construction	21 days	3/7/23	23/7/23		1376	1378
1378	Backfilling and compaction	14 days	24/7/23	6/8/23		1377	1379
1379	Reinstatement	2 days	7/8/23	8/8/23		1378	1381FS+60 day
1380	**San Wan Road Roundabout (130m) - HDD Method**	**175 days**	**8/10/23**	**30/3/24**			
1381	TTA implementation	3 days	8/10/23	10/10/23		1379FS+60 days	1382
1382	Contruction of jacking pit and receiving pit	45 days	11/10/23	24/11/23		1381	1383
1383	Trenchless works and pipe laying	90 days	25/11/23	22/2/24		1382	1384
1384	Manhole / Chamber construction	21 days	23/2/24	14/3/24		1383	1385
1385	Backfilling and compaction	14 days	15/3/24	28/3/24		1384	1386
1386	Reinstatement	2 days	29/3/24	30/3/24		1385	1388FS+60 day
1387	**Pak Fung Road (70m) - HDD Method**	**130 days**	**30/5/24**	**6/10/24**			
1388	TTA implementation	3 days	30/5/24	1/6/24		1386FS+60 days	1389
1389	Contruction of jacking pit and receiving pit	45 days	2/6/24	16/7/24		1388	1390
1390	Trenchless works and pipe laying	45 days	17/7/24	30/8/24		1389	1391
1391	Manhole / Chamber construction	21 days	31/8/24	20/9/24		1390	1392
1392	Backfilling and compaction	14 days	21/9/24	4/10/24		1391	1393
1393	Reinstatement	2 days	5/10/24	6/10/24		1392	
1394	**RW05 : DN300 DI pipe (trenchless)**	**362 days**	**1/6/23**	**27/5/24**			
1395	**Fanling Way (35m) - Hand Shield Method**	**91 days**	**1/6/23**	**30/8/23**			
1396	TTA implementation	3 days	1/6/23	3/6/23			1397
1397	Contruction of jacking pit and receiving pit	30 days	4/6/23	3/7/23		1396	1398
1398	Trenchless works and pipe laying	21 days	4/7/23	24/7/23		1397	1399
1399	Manhole / Chamber construction	21 days	25/7/23	14/8/23		1398	1400
1400	Backfilling and compaction	14 days	15/8/23	28/8/23		1399	1401
1401	Reinstatement	2 days	29/8/23	30/8/23		1400	1403FS+180 da
1402	**CLP Station (35m) - Hand Shield Method**	**91 days**	**27/2/24**	**27/5/24**			
1403	TTA implementation	3 days	27/2/24	29/2/24		1401FS+180 day	1404
1404	Contruction of jacking pit and receiving pit	30 days	1/3/24	30/3/24		1403	1405
1405	Trenchless works and pipe laying	21 days	31/3/24	20/4/24		1404	1406
1406	Manhole / Chamber construction	21 days	21/4/24	11/5/24		1405	1407
1407	Backfilling and compaction	14 days	12/5/24	25/5/24		1406	1408
1408	Reinstatement	2 days	26/5/24	27/5/24		1407	
1409	**Mainlaying by open trench method**	**1029 days**	**1/11/22**	**25/8/25**			**1455**
1410	RW07 (DN300) - Ma Sik Road (360m)	570 days	1/12/23	22/6/25			
1411	RW05 (DN400) - Jockey Club Road (681m) (XP ID: 1316661, 1301141)	570 days	1/2/24	23/8/25			
1412	RW05 (DN300) - Jockey Club Road (720m) (XP ID: 1316661, 1301141)	307 days	1/6/23	2/4/24			1413
1413	RW05 (DN300) - Pik Fung Road (270m)	110 days	3/4/24	21/7/24		1412	1414
1414	RW05 (DN300) - Sun Wan Road (945m)	400 days	22/7/24	25/8/25	30	1413	
1415	RW08 (DN400) - Fanling Lau Road (750m) (XP ID: 1310580, 1310468)	450 days	1/6/23	23/8/24			1416
1416	RW08 (DN400) - Lok Yip Road (616m)	360 days	24/8/24	18/8/25		1415	
1417	RW17 (DN150) - Sun Shing Road (114m)	180 days	1/7/24	27/12/24			
1418	RW16 (DN250) - Sun Fung Road / Lung Sum Avenue (741m)	720 days	1/9/23	20/8/25			
1419	RW47 (DN100) - Ben Lun Building (82m)	110 days	1/5/25	18/8/25			
1420	RW22 (DN150) - Chi Cheong Street (877m) (XP ID: 1310864)	900 days	1/11/22	18/4/25			
1421	**CH630 - CH700**	**39 days**	**1/11/22**	**9/12/22**			**1429**
1422	TTA establishment	1 day	1/11/22	1/11/22			1423
1423	Hard material excavation and disposal	2 days	2/11/22	3/11/22		1422	1424
1424	Soil excavation , laying sheetpile and disposal	7 days	4/11/22	10/11/22		1423	1425
1425	Treatment of bedding	7 days	11/11/22	17/11/22		1424	1426
1426	Pipe laying D.I.	7 days	18/11/22	24/11/22		1425	1427
1427	Backfilling general fill and compaction	14 days	25/11/22	8/12/22		1426	1428
1428	Reinstatement	1 day	9/12/22	9/12/22		1427	
1429	**CH040 - CH082**	**39 days**	**10/12/22**	**17/1/23**		**1421**	
1430	TTA establishment	1 day	10/12/22	10/12/22			1431
1431	Hard material excavation and disposal	2 days	11/12/22	12/12/22		1430	1432
1432	Soil excavation , laying sheetpile and disposal	7 days	13/12/22	19/12/22		1431	1433
1433	Treatment of bedding	7 days	20/12/22	26/12/22		1432	1434
1434	Pipe laying D.I.	7 days	27/12/22	2/1/23		1433	1435
1435	Backfilling general fill and compaction	14 days	3/1/23	16/1/23		1434	1436



Project: 3WSD20 Programme
Date: 12/6/23

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

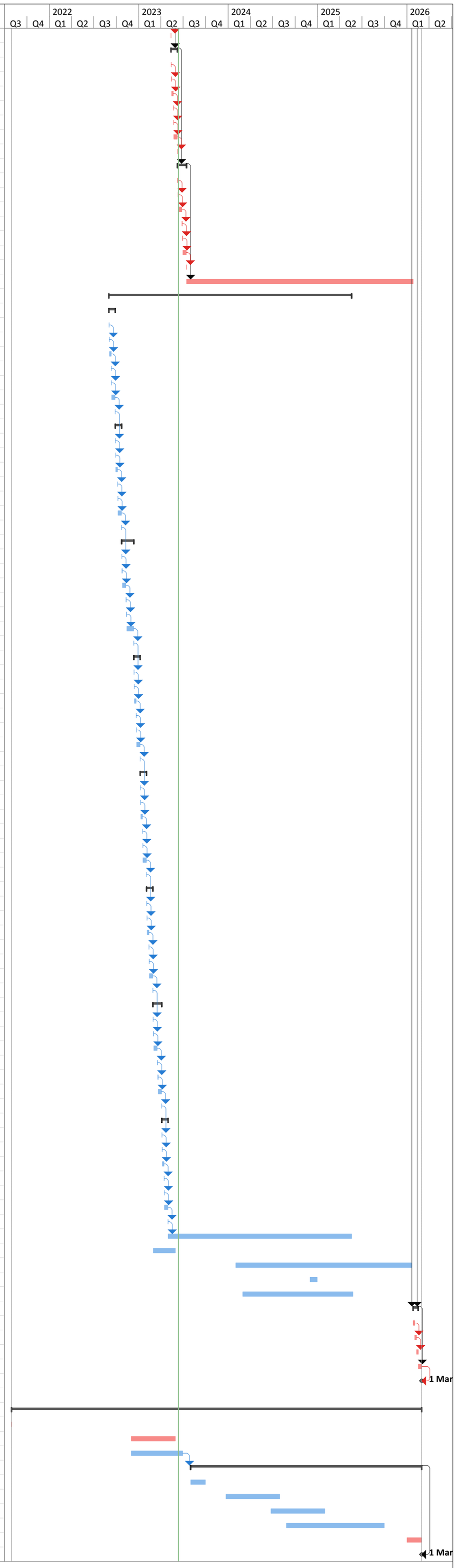
ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1436	Reinstatement	1 day	17/1/23	17/1/23		1435	
1437	RW24 (DN150) - Chi Ming Street (120m)	170 days	1/3/25	17/8/25			
1438	RW49 (DN150) - San Wan Road (75m)	110 days	1/5/25	18/8/25			
1439	RW23 (DN150) - Lung Wan Street (171m)	270 days	1/6/24	25/2/25			
1440	RW69 (DN150) - Lung Sum Lane (60m)	80 days	1/6/25	19/8/25			
1441	RW25 (DN150) - Road to Fanling Wai (330m)	260 days	1/12/24	17/8/25			
1442	RW26 (DN150) - Ka Siu Road (133m)	210 days	1/10/24	28/4/25			
1443	RW27 (DN150) - Fanling Station Road (273m)	350 days	1/9/24	16/8/25			
1444	RW34 (DN150) - Fan Leng Lau (380m) (XP ID: 1310580, 1310468)	360 days	1/2/24	25/1/25			
1445	RW36 (DN150) - Lok Fung Street (495m)	380 days	1/8/24	15/8/25			
1446	RW13 (DN150) - Wo Tai Street (630m)	930 days	1/2/23	18/8/25			
1447	RW28 (DN150) - Wo Mun Street (312m)	480 days	1/11/23	22/2/25			
1448	RW31 (DN150) - Luen Cheong Street (185m)	230 days	1/1/25	18/8/25			
1449	RW32 (DN150) - Luen Shing Street (185m)	270 days	1/4/24	26/12/24			
1450	RW33 (DN150) - Luen Hing Street (199m)	300 days	1/9/24	27/6/25			
1451	RW30 (DN150) - Luen On Street / Luen Wo Road / Luen Fai Street (649m)	960 days	2/1/23	18/8/25			
1452	RW29 (DN150) - Wo Muk Street / Luen Hing Street (360m)	570 days	1/2/24	23/8/25			
1453	RW12 (DN150) - Luen Chit Street (120m)	200 days	1/2/25	19/8/25			
1454	RW55 (DN150) - Mount One (44m)	80 days	1/6/25	19/8/25			
1455	Overall testing	21 days	26/8/25	15/9/25		1317,1409	1459
1456	Swabbing	7 days	26/8/25	1/9/25			1457
1457	CCTV	7 days	2/9/25	8/9/25		1456	1458
1458	Hydrostatic pressure test	7 days	9/9/25	15/9/25		1457	
1459	Pipe connection and completion	14 days	16/9/25	29/9/25		1455	1460FF
1460	Planned completion for section 7	0 days	29/9/25	29/9/25		1459FF	
1461							
1462	**Section 8 - Water main laying works in part 7 of the Site**	**1676 days**	**30/7/21**	**1/3/26**			
1463	Access Date (part 7 of the Site)	1 day	30/7/21	30/7/21			1464
1464	Initial survey (utility survey, condition survey, initial photo)	90 days	31/7/21	28/10/21		1463	1465
1465	Application and approval of XP and TTA	180 days	1/11/21	29/4/22		1464	1469,1478
1466	Procurement and Delivery of pipes, fittings and related materials	60 days	6/4/22	4/6/22			1469,1478
1467	Submission and acceptance of method statement and material	30 days	6/5/22	4/6/22			
1468	Excavation of Inspection Pit	900 days	3/10/22	20/3/25			
1469	**Mainlaying by trenchless method**	**190 days**	**1/9/23**	**8/3/24**		**1466,1465**	**1635**
1470	**RW05 : DN300 DI pipe (trenchless)**	**190 days**	**1/9/23**	**8/3/24**			
1471	**Jocky Club Road (110m) - TBM Method**	**190 days**	**1/9/23**	**8/3/24**			
1472	TTA implementation	3 days	1/9/23	3/9/23			1473
1473	Contruction of jacking pit and receiving pit	30 days	4/9/23	3/10/23		1472	1474
1474	Trenchless works and pipe laying	120 days	4/10/23	31/1/24		1473	1475
1475	Manhole / Chamber construction	21 days	1/2/24	21/2/24		1474	1476
1476	Backfilling and compaction	14 days	22/2/24	6/3/24		1475	1477
1477	Reinstatement	2 days	7/3/24	8/3/24		1476	
1478	**Mainlaying by open trench method**	**1243 days**	**1/9/22**	**25/1/26**		**1466,1465**	**1635**
1479	RW38 (DN150) - Yip Cheong Street (351m)	540 days	1/8/24	22/1/26			
1480	RW39 (DN150) - Yip Cheong Street (14m)	60 days	1/6/24	30/7/24			
1481	**RW37 (DN150) - Yip Wo Street (420m) (XP ID: 1309054)**	**510 days**	**1/12/22**	**23/4/24**			
1482	CH210 to CH300 (90m)	32 days	1/12/22	1/1/23			1490
1483	TTA establishment	1 day	1/12/22	1/12/22			1484
1484	Hard material excavation and disposal	1 day	2/12/22	2/12/22		1483	1485
1485	Soil excavation , laying sheetpile and disposal	7 days	3/12/22	9/12/22		1484	1486
1486	Treatment of bedding	1 day	10/12/22	10/12/22		1485	1487
1487	Pipe laying D.I.	7 days	11/12/22	17/12/22		1486	1488
1488	Backfilling general fill and compaction	14 days	18/12/22	31/12/22		1487	1489
1489	Reinstatement	1 day	1/1/23	1/1/23		1488	
1490	CH300 to CH360 (60m)	32 days	2/1/23	2/2/23		1482	
1491	TTA establishment	1 day	2/1/23	2/1/23			1492
1492	Hard material excavation and disposal	1 day	3/1/23	3/1/23		1491	1493
1493	Soil excavation , laying sheetpile and disposal	7 days	4/1/23	10/1/23		1492	1494
1494	Treatment of bedding	1 day	11/1/23	11/1/23		1493	1495
1495	Pipe laying D.I.	7 days	12/1/23	18/1/23		1494	1496
1496	Backfilling general fill and compaction	14 days	19/1/23	1/2/23		1495	1497
1497	Reinstatement	1 day	2/2/23	2/2/23		1496	1498
1498	Remaining section of Yip Wo Street (270m)	446 days	3/2/23	23/4/24		1497	
1499	RW10 (DN300) - On Lok Mun Street (930m) (XP ID: 1301294, 1311241)	1211 days	3/10/22	25/1/26			
1500	CH930 to CH980 (50m)	56 days	3/10/22	27/11/22			1508
1501	TTA establishment	2 days	3/10/22	4/10/22			1502
1502	Hard material excavation and disposal	2 days	5/10/22	6/10/22		1501	1503
1503	Soil excavation , laying sheetpile and disposal	21 days	7/10/22	27/10/22		1502	1504
1504	Treatment of bedding	2 days	28/10/22	29/10/22		1503	1505
1505	Pipe laying D.I.	14 days	30/10/22	12/11/22		1504	1506
1506	Backfilling general fill and compaction	14 days	13/11/22	26/11/22		1505	1507
1507	Reinstatement	1 day	27/11/22	27/11/22		1506	
1508	CH840 to CH930 (90m)	40 days	28/11/22	6/1/23		1500	1516
1509	TTA establishment	1 day	28/11/22	28/11/22			1510
1510	Hard material excavation and disposal	2 days	29/11/22	30/11/22		1509	1511
1511	Soil excavation , laying sheetpile and disposal	7 days	1/12/22	7/12/22		1510	1512
1512	Treatment of bedding	1 day	8/12/22	8/12/22		1511	1513
1513	Pipe laying D.I.	14 days	9/12/22	22/12/22		1512	1514
1514	Backfilling general fill and compaction	14 days	23/12/22	5/1/23		1513	1515
1515	Reinstatement	1 day	6/1/23	6/1/23		1514	
1516	CH800 to CH840 (40m)	33 days	7/1/23	8/2/23		1508	1524
1517	TTA establishment	1 day	7/1/23	7/1/23			1518
1518	Hard material excavation and disposal	2 days	8/1/23	9/1/23		1517	1519
1519	Soil excavation , laying sheetpile and disposal	7 days	10/1/23	16/1/23		1518	1520
1520	Treatment of bedding	1 day	17/1/23	17/1/23		1519	1521
1521	Pipe laying D.I.	7 days	18/1/23	24/1/23		1520	1522
1522	Backfilling general fill and compaction	14 days	25/1/23	7/2/23		1521	1523
1523	Reinstatement	1 day	8/2/23	8/2/23		1522	
1524	CH980 to CH1000 (20m)	30 days	9/2/23	10/3/23		1516	1532
1525	TTA establishment	2 days	9/2/23	10/2/23			1526
1526	Hard material excavation and disposal	2 days	11/2/23	12/2/23		1525	1527
1527	Soil excavation , laying sheetpile and disposal	7 days	13/2/23	19/2/23		1526	1528
1528	Treatment of bedding	2 days	20/2/23	21/2/23		1527	1529
1529	Pipe laying D.I.	2 days	22/2/23	23/2/23		1528	1530
1530	Backfilling general fill and compaction	14 days	24/2/23	9/3/23		1529	1531
1531	Reinstatement	1 day	10/3/23	10/3/23		1530	
1532	CH830 to CH860 (30m)	37 days	11/3/23	16/4/23		1524	1540
1533	TTA establishment	2 days	11/3/23	12/3/23			1534
1534	Hard material excavation and disposal	2 days	13/3/23	14/3/23		1533	1535
1535	Soil excavation , laying sheetpile and disposal	14 days	15/3/23	28/3/23		1534	1536
1536	Treatment of bedding	2 days	29/3/23	30/3/23		1535	1537
1537	Pipe laying D.I.	2 days	31/3/23	1/4/23		1536	1538
1538	Backfilling general fill and compaction	14 days	2/4/23	15/4/23		1537	1539
1539	Reinstatement	1 day	16/4/23	16/4/23		1538	
1540	CH800 to CH830 (30m)	26 days	17/4/23	12/5/23		1532	1548
1541	TTA establishment	1 day	17/4/23	17/4/23			1542
1542	Hard material excavation and disposal	1 day	18/4/23	18/4/23		1541	1543
1543	Soil excavation , laying sheetpile and disposal	7 days	19/4/23	25/4/23		1542	1544
1544	Treatment of bedding	1 day	26/4/23	26/4/23		1543	1545
1545	Pipe laying D.I.	1 day	27/4/23	27/4/23		1544	1546
1546	Backfilling general fill and compaction	14 days	28/4/23	11/5/23		1545	1547



Project: 3WSD20 Programme
Date: 12/6/23

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

ID	Task Name	Duration	Start	Finish	TRA	Predecessors	Successors
1547	Reinstatement	1 day	12/5/23	12/5/23		1546	
1548	CH110 to CH140 (30m)	26 days	13/5/23	7/6/23		1540	1556
1549	TTA establishment	1 day	13/5/23	13/5/23			1550
1550	Hard material excavation and disposal	1 day	14/5/23	14/5/23		1549	1551
1551	Soil excavation , laying sheetpile and disposal	7 days	15/5/23	21/5/23		1550	1552
1552	Treatment of bedding	1 day	22/5/23	22/5/23		1551	1553
1553	Pipe laying D.I.	1 day	23/5/23	23/5/23		1552	1554
1554	Backfilling general fill and compaction	14 days	24/5/23	6/6/23		1553	1555
1555	Reinstatement	1 day	7/6/23	7/6/23		1554	
1556	CH080 to CH110 (30m)	37 days	8/6/23	14/7/23		1548	1564
1557	TTA establishment	2 days	8/6/23	9/6/23			1558
1558	Hard material excavation and disposal	2 days	10/6/23	11/6/23		1557	1559
1559	Soil excavation , laying sheetpile and disposal	14 days	12/6/23	25/6/23		1558	1560
1560	Treatment of bedding	2 days	26/6/23	27/6/23		1559	1561
1561	Pipe laying D.I.	2 days	28/6/23	29/6/23		1560	1562
1562	Backfilling general fill and compaction	14 days	30/6/23	13/7/23		1561	1563
1563	Reinstatement	1 day	14/7/23	14/7/23		1562	
1564	Remaining Section of On Lok Mun Street (840m)	926 days	15/7/23	25/1/26		1556	
1565	RW35 (DN150) - On Chuen Street (720m) (XP ID: 1301294, 1311241)	992 days	1/9/22	19/5/25			
1566	CH590 to CH610 (30m)	26 days	1/9/22	26/9/22			
1567	TTA establishment	1 day	1/9/22	1/9/22			1568
1568	Hard material excavation and disposal	1 day	2/9/22	2/9/22		1567	1569
1569	Soil excavation , laying sheetpile and disposal	7 days	3/9/22	9/9/22		1568	1570
1570	Treatment of bedding	1 day	10/9/22	10/9/22		1569	1571
1571	Pipe laying D.I.	1 day	11/9/22	11/9/22		1570	1572
1572	Backfilling general fill and compaction	14 days	12/9/22	25/9/22		1571	1573
1573	Reinstatement	1 day	26/9/22	26/9/22		1572	1575
1574	CH560 to CH590 (30m)	26 days	27/9/22	22/10/22			
1575	TTA establishment	1 day	27/9/22	27/9/22		1573	1576
1576	Hard material excavation and disposal	1 day	28/9/22	28/9/22		1575	1577
1577	Soil excavation , laying sheetpile and disposal	7 days	29/9/22	5/10/22		1576	1578
1578	Treatment of bedding	1 day	6/10/22	6/10/22		1577	1579
1579	Pipe laying D.I.	1 day	7/10/22	7/10/22		1578	1580
1580	Backfilling general fill and compaction	14 days	8/10/22	21/10/22		1579	1581
1581	Reinstatement	1 day	22/10/22	22/10/22		1580	1583
1582	CH530 to CH560 (30m)	50 days	23/10/22	11/12/22			
1583	TTA establishment	1 day	23/10/22	23/10/22		1581	1584
1584	Hard material excavation and disposal	2 days	24/10/22	25/10/22		1583	1585
1585	Soil excavation , laying sheetpile and disposal	14 days	26/10/22	8/11/22		1584	1586
1586	Treatment of bedding	2 days	9/11/22	10/11/22		1585	1587
1587	Pipe laying D.I.	2 days	11/11/22	12/11/22		1586	1588
1588	Backfilling general fill and compaction	28 days	13/11/22	10/12/22		1587	1589
1589	Reinstatement	1 day	11/12/22	11/12/22		1588	1591
1590	CH500 to CH530 (30m)	26 days	12/12/22	6/1/23			
1591	TTA establishment	1 day	12/12/22	12/12/22		1589	1592
1592	Hard material excavation and disposal	1 day	13/12/22	13/12/22		1591	1593
1593	Soil excavation , laying sheetpile and disposal	7 days	14/12/22	20/12/22		1592	1594
1594	Treatment of bedding	1 day	21/12/22	21/12/22		1593	1595
1595	Pipe laying D.I.	1 day	22/12/22	22/12/22		1594	1596
1596	Backfilling general fill and compaction	14 days	23/12/22	5/1/23		1595	1597
1597	Reinstatement	1 day	6/1/23	6/1/23		1596	1599
1598	CH230 to CH260 (30m)	26 days	7/1/23	1/2/23			
1599	TTA establishment	1 day	7/1/23	7/1/23		1597	1600
1600	Hard material excavation and disposal	1 day	8/1/23	8/1/23		1599	1601
1601	Soil excavation , laying sheetpile and disposal	7 days	9/1/23	15/1/23		1600	1602
1602	Treatment of bedding	1 day	16/1/23	16/1/23		1601	1603
1603	Pipe laying D.I.	1 day	17/1/23	17/1/23		1602	1604
1604	Backfilling general fill and compaction	14 days	18/1/23	31/1/23		1603	1605
1605	Reinstatement	1 day	1/2/23	1/2/23		1604	1607
1606	CH200 to CH230 (30m)	26 days	2/2/23	27/2/23			
1607	TTA establishment	1 day	2/2/23	2/2/23		1605	1608
1608	Hard material excavation and disposal	1 day	3/2/23	3/2/23		1607	1609
1609	Soil excavation , laying sheetpile and disposal	7 days	4/2/23	10/2/23		1608	1610
1610	Treatment of bedding	1 day	11/2/23	11/2/23		1609	1611
1611	Pipe laying D.I.	1 day	12/2/23	12/2/23		1610	1612
1612	Backfilling general fill and compaction	14 days	13/2/23	26/2/23		1611	1613
1613	Reinstatement	1 day	27/2/23	27/2/23		1612	1615
1614	CH170 to CH200 (30m)	36 days	28/2/23	4/4/23			
1615	TTA establishment	1 day	28/2/23	28/2/23		1613	1616
1616	Hard material excavation and disposal	2 days	1/3/23	2/3/23		1615	1617
1617	Soil excavation , laying sheetpile and disposal	14 days	3/3/23	16/3/23		1616	1618
1618	Treatment of bedding	2 days	17/3/23	18/3/23		1617	1619
1619	Pipe laying D.I.	2 days	19/3/23	20/3/23		1618	1620
1620	Backfilling general fill and compaction	14 days	21/3/23	3/4/23		1619	1621
1621	Reinstatement	1 day	4/4/23	4/4/23		1620	1623
1622	CH000 to CH060 (60m)	26 days	5/4/23	30/4/23			
1623	TTA establishment	1 day	5/4/23	5/4/23		1621	1624
1624	Hard material excavation and disposal	1 day	6/4/23	6/4/23		1623	1625
1625	Soil excavation , laying sheetpile and disposal	7 days	7/4/23	13/4/23		1624	1626
1626	Treatment of bedding	1 day	14/4/23	14/4/23		1625	1627
1627	Pipe laying D.I.	1 day	15/4/23	15/4/23		1626	1628
1628	Backfilling general fill and compaction	14 days	16/4/23	29/4/23		1627	1629
1629	Reinstatement	1 day	30/4/23	30/4/23		1628	1630
1630	Remaining Section of On Chuen Street (630m)	750 days	1/5/23	19/5/25	60	1629	
1631	Coordination with ND/2019/04	90 days	1/3/23	29/5/23			
1632	RW09 (DN450) - Wo Hing Road (436m)	720 days	1/2/24	20/1/26			
1633	RW60 (DN150) - Tee from RW09 (14m)	29 days	1/12/24	29/12/24	14		
1634	RW40 (DN200) - Tai Wo Service Road West (420m)	450 days	1/3/24	24/5/25	30		
1635	Overall testing	21 days	26/1/26	15/2/26		1478,1469	1639
1636	Swabbing	7 days	26/1/26	1/2/26			1637
1637	CCTV	7 days	2/2/26	8/2/26		1636	1638
1638	Hydrostatic pressure test	7 days	9/2/26	15/2/26		1637	
1639	Pipe connection and completion	14 days	16/2/26	1/3/26		1635	1640FF
1640	Planned completion for section 8	0 days	1/3/26	1/3/26		1639FF	
1641							
1642	**Section 9 - Conversion works to effect the supply of reclaimed water**	**1676 days**	**30/7/21**	**1/3/26**			
1643	Access Date	1 day	30/7/21	30/7/21			
1644	Initial survey by stages	180 days	1/12/22	29/5/23			
1645	Liaison, coordination and enabling work for conversion	210 days	1/12/22	28/6/23			1646
1646	**Conversion works**	**944 days**	**1/8/23**	**1/3/26**		**1645**	**1652FF**
1647	Section 4 (Part 3) - 3 nos.	60 days	1/8/23	29/9/23			
1648	Section 5 (Part 4) - 11 nos.	220 days	23/12/23	29/7/24			
1649	Section 6 (Part 5) - 11 nos.	220 days	24/6/24	29/1/25			
1650	Section 7 (Part 6) - 40 nos.	400 days	26/8/24	29/9/25			
1651	Section 8 (Part 7) - 3 nos.	60 days	1/1/26	1/3/26			
1652	Planned completion for section 9	0 days	1/3/26	1/3/26		1646FF	

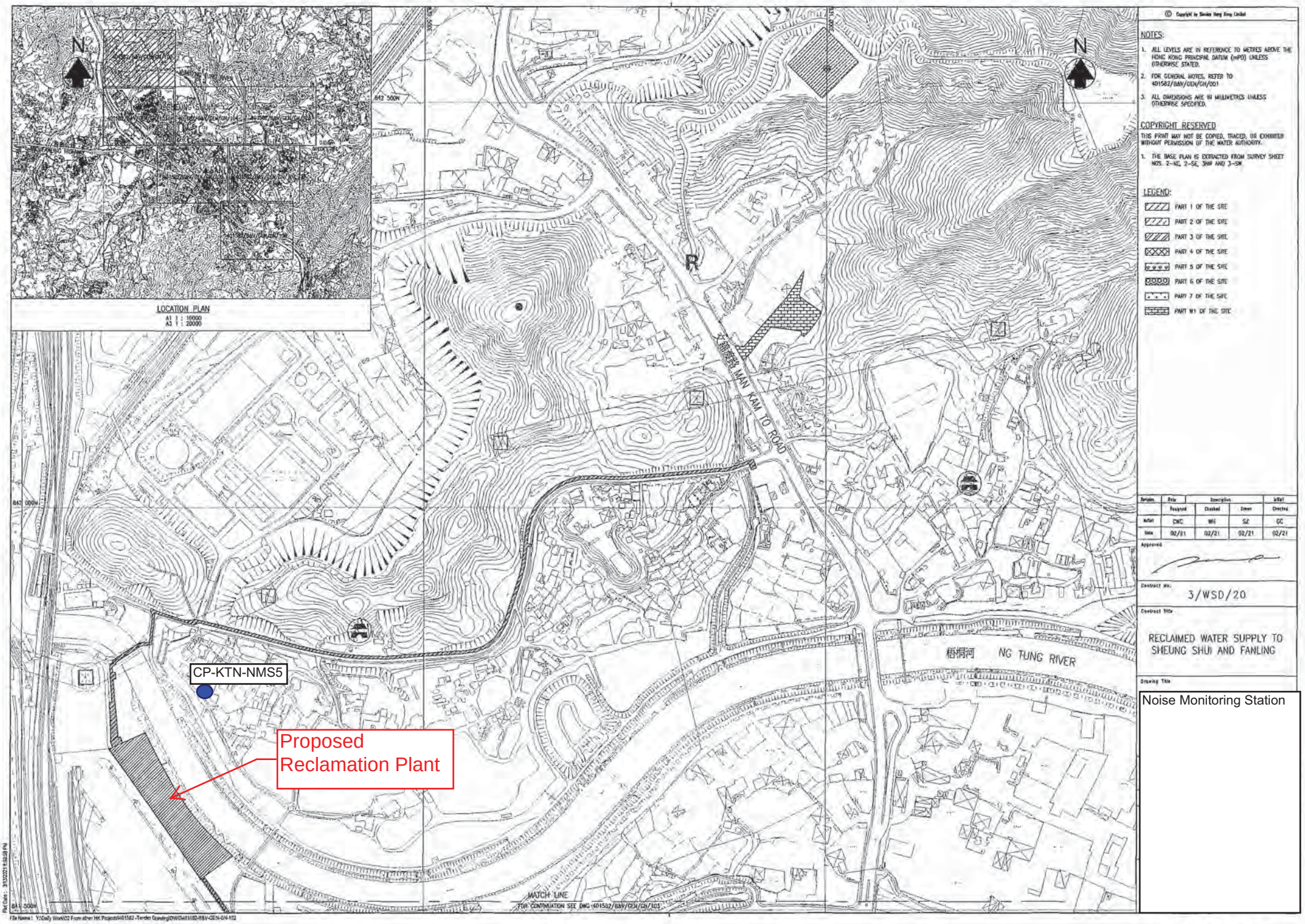


Project: 3WSD20 Programme
Date: 12/6/23

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress	
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Critical		
Summary	Manual Task	Finish-only	Critical Split		
Project Summary	Duration-only	External Tasks	Progress		

Appendix D

Location of Designated Noise Monitoring Station CP-KTN-NMS5



NOTES:

1. ALL LEVELS ARE IN REFERENCE TO METRES ABOVE THE HONG KONG PRINCIPAL DATUM (mPD) UNLESS OTHERWISE STATED.
2. FOR GENERAL NOTES, REFER TO 401582/GAN/GEN/GN/001
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

1. THE BASE PLAN IS EXTRACTED FROM SURVEY SHEET NOS. 2-NG, 2-SE, 3NW AND 3-SW.

LEGEND:

- PART 1 OF THE SITE
- PART 2 OF THE SITE
- PART 3 OF THE SITE
- PART 4 OF THE SITE
- PART 5 OF THE SITE
- PART 6 OF THE SITE
- PART 7 OF THE SITE
- PART W1 OF THE SITE

Revision	Date	Description			Initial
	Designed	Checked	Drawn	Checked
Initial	CWC	WH	SZ	GC
Date	02/21	02/21	02/21	02/21

Approved

Contract No.
3/WSD/20

Contract Title
RECLAIMED WATER SUPPLY TO SHEUNG SHUI AND FANLING

Drawing Title
Noise Monitoring Station

Plot Date: 3/03/2021 8:03:28 PM
File Name: Y:\Daily Work\CC From other HK Projects\401582-Tender Drawing\DWG\401582-BSV-GEN-GN-102

Appendix E

Valid Calibration Certificates of Monitoring Equipment

輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C224779
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC22-1539) Date of Receipt / 收件日期 : 4 August 2022

Description / 儀器名稱 : Sound Level Calibrator (EQ085)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-73
Serial No. / 編號 : 10655561
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 August 2022

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification & user's specified acceptance criteria.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試 : H T Wong, Assistant Engineer

Certified By 核證 : K C Lee, Engineer

Date of Issue 簽發日期 : 23 August 2022

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C224779
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C223647
CL281	Multifunction Acoustic Calibrator	AV210017
TST150A	Measuring Amplifier	C221750

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	User's Spec.	Uncertainty of Measured Value (Hz)
1	0.953	1 kHz ± 6 %	± 1

Remarks : - The user's specified acceptance criteria (user's spec.) is a customer pre-defined operating tolerance of the UUT, suitable for one's own intended use.

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

Sun Creation Engineering Limited - Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 - 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C226779
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC22-2282) Date of Receipt / 收件日期 : 8 November 2022

Description / 儀器名稱	:	Sound Level Meter (EQ015)
Manufacturer / 製造商	:	Rion
Model No. / 型號	:	NL-52
Serial No. / 編號	:	00142581
Supplied By / 委託者	:	Action-United Environmental Services and Consulting Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 19 November 2022

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試 : H T Wong, Assistant Engineer

Certified By 核證 : K C Lee, Engineer

Date of Issue 簽發日期 : 21 November 2022

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 - 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C226779
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C220381
CL281	Multifunction Acoustic Calibrator	AV210017

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	93.8	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L_A	A	Fast	94.00	1	93.8 (Ref.)
				104.00		103.8
				114.00		113.7

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	93.8	Ref.
			Slow			93.8	± 0.3

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 - 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C226779
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_A	A	Fast	94.00	63 Hz	67.5	-26.2 ± 1.5
					125 Hz	77.6	-16.1 ± 1.5
					250 Hz	85.1	-8.6 ± 1.4
					500 Hz	90.6	-3.2 ± 1.4
					1 kHz	93.8	Ref.
					2 kHz	95.0	+1.2 ± 1.6
					4 kHz	94.8	+1.0 ± 1.6
					8 kHz	92.8	-1.1 (+2.1 ; -3.1)
					16 kHz	85.8	-6.6 (+3.5 ; -17.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_C	C	Fast	94.00	63 Hz	92.9	-0.8 ± 1.5
					125 Hz	93.6	-0.2 ± 1.5
					250 Hz	93.8	0.0 ± 1.4
					500 Hz	93.8	0.0 ± 1.4
					1 kHz	93.8	Ref.
					2 kHz	93.6	-0.2 ± 1.6
					4 kHz	93.0	-0.8 ± 1.6
					8 kHz	90.9	-3.0 (+2.1 ; -3.1)
					16 kHz	83.9	-8.5 (+3.5 ; -17.0)

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Certificate of Calibration
校正證書

Certificate No. : C226779
證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 20044

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	: 63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	16 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Appendix F

Monitoring Schedule of the Reporting Month and Coming Month

The Reporting Monitoring Schedule (May 2023)

Date		Noise Monitoring (Leq30min)	Ecology Monitoring (Water Bird)
Mon	1-May-23		
Tue	2-May-23	✓	
Wed	3-May-23		
Thu	4-May-23		✓ **(High Tide)**
Fri	5-May-23		✓ **(Low Tide)**
Sat	6-May-23		
Sun	7-May-23		
Mon	8-May-23	✓	
Tue	9-May-23		✓ **(Low Tide)**
Wed	10-May-23		
Thu	11-May-23		
Fri	12-May-23		✓ **(High Tide)**
Sat	13-May-23		
Sun	14-May-23		
Mon	15-May-23		
Tue	16-May-23		✓ **(High Tide)**
Wed	17-May-23		
Thu	18-May-23		✓ **(Low Tide)**
Fri	19-May-23	✓	
Sat	20-May-23		
Sun	21-May-23		
Mon	22-May-23		
Tue	23-May-23		✓ **(Low Tide)**
Wed	24-May-23	✓	✓ **(High Tide)**
Thu	25-May-23		
Fri	26-May-23		
Sat	27-May-23		
Sun	28-May-23		
Mon	29-May-23		
Tue	30-May-23	✓	
Wed	31-May-23		✓ **(High Tide)**
Thu	1-Jun-23		✓ **(Low Tide)**

✓	Monitoring Day
	Sunday or Public Holiday

The Coming Month Monitoring Schedule (June 2023)

Date		Noise Monitoring (Leq30min)	Ecology Monitoring (Water Bird) *Note*
Thu	1-Jun-23		
Fri	2-Jun-23		
Sat	3-Jun-23		
Sun	4-Jun-23		
Mon	5-Jun-23	✓	
Tue	6-Jun-23		✓
Wed	7-Jun-23		
Thu	8-Jun-23		
Fri	9-Jun-23		
Sat	10-Jun-23		
Sun	11-Jun-23		
Mon	12-Jun-23		
Tue	13-Jun-23		
Wed	14-Jun-23		
Thu	15-Jun-23		✓
Fri	16-Jun-23	✓	
Sat	17-Jun-23		
Sun	18-Jun-23		
Mon	19-Jun-23		
Tue	20-Jun-23		✓
Wed	21-Jun-23	✓	
Thu	22-Jun-23		
Fri	23-Jun-23		
Sat	24-Jun-23		
Sun	25-Jun-23		
Mon	26-Jun-23		✓
Tue	27-Jun-23	✓	
Wed	28-Jun-23		
Thu	29-Jun-23		
Fri	30-Jun-23		

Note:

Ecology monitoring dates are tentative and are subject to change

✓	Monitoring Day
	Sunday or Public Holiday

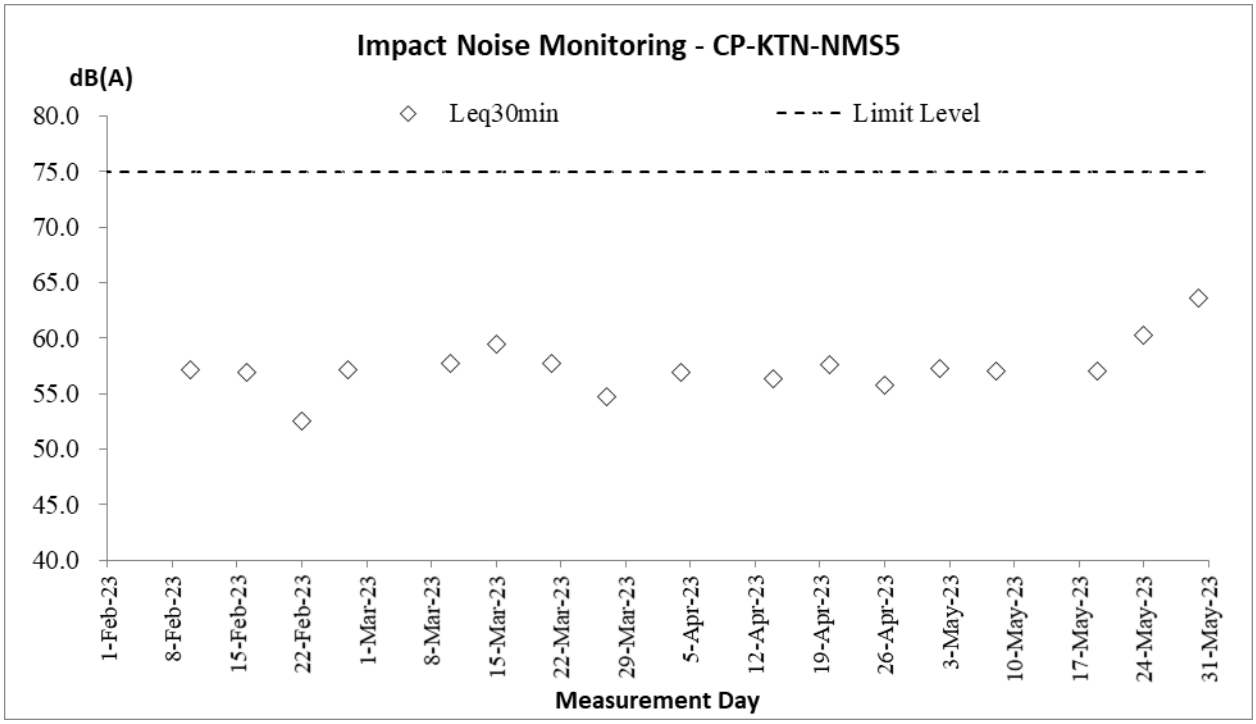
Appendix G

Database of Monitoring Result

Daytime Noise Measurement Results (dB) at CP-KTN-NMS5																				
Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)	Corrected Leq30min dB(A)
		Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)		
2-May-23	10:10	57.2	61.3	52.4	58.6	61.1	53.5	56.3	60.8	51.6	57.9	61.7	51.8	56.4	62.0	50.3	57.0	60.6	51.5	57.3	60.3
8-May-23	14:20	56.7	60.5	50.5	57.3	60.5	52.5	55.6	58.0	51.0	56.4	60.5	51.5	57.7	61.0	54.0	58.2	61.5	54.5	57.1	60.1
19-May-23	13:16	56.3	61.0	52.0	57.4	61.0	53.0	56.3	60.5	51.5	58.2	60.5	53.5	56.2	60.0	52.5	57.3	61.0	53.0	57.0	60.0
24-May-23	9:25	60.7	63.5	55.0	60.8	62.0	55.5	59.7	60.5	52.0	59.5	61.0	53.5	58.9	61.0	53.0	61.2	63.0	55.0	60.2	63.2
30-May-23	9:30	63.9	65.8	61.3	64.2	65.7	62.8	63.0	63.9	61.9	63.6	65.5	61.6	63.7	65.2	61.8	62.7	64.7	60.0	63.5	66.5

Appendix H

Graphical Plots for Monitoring Result


Impact Noise Monitoring - CP-KTN-NMS5
dB(A)
Leq30min
Limit Level
80.0
75.0
70.0
65.0
60.0
55.0
50.0
45.0
40.0
1-Feb-23
8-Feb-23
15-Feb-23
22-Feb-23
1-Mar-23
8-Mar-23
15-Mar-23
22-Mar-23
29-Mar-23
5-Apr-23
12-Apr-23
19-Apr-23
26-Apr-23
3-May-23
10-May-23
17-May-23
24-May-23
31-May-23
Measurement Day

Appendix I

Monthly Summary Waste Flow Table

Contract No. : 3/WSD/20
Contact Name: Reclaimed Water Supply to Sheung Shui and Fanling

Monthly Summary Waste Flow Table for _2023_

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan	0.1842	0	0	0	0.1842	0	0	0	0	0	0.0034
Feb	0.2990	0	0	0	0.2990	0	0	0	0	0	0.0170
Mar	0.1300	0	0	0	0.1300	0	0	0	0	0	0.0300
Apr	0.971	0	0	0	0.971	0	0	0	0	0	0.019
May	0.398	0	0	0	0.398	0	0	0	0		0.057
June											
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	1.9822	0	0	0	1.9822	0	0	0	0	0	0.1074

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
25.472	5.386	0	0	25.472	0	0	0	0	0	0.3885

Notes: (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
(2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

(3) The quantities of C&D material indicated in the half-yearly status report should be in tonnes. If the project offices do not have information on the densities of the material for the time being, they could initially adopt the following conversion factors for reporting purpose: insitu densities of rock and soil to be 2.5 tonnes/m3 and 2.0 tonnes/m3 respectively; and densities of imported rock and soil to be 2.0 tonnes/m3 and 1.8 tonnes/m3 respectively.

(4) Boken concrete and bitumen = 2.4 tonnes/m3

(5) Conversion to 1000m3 for general refuse is weight in 1000kg multiply by 0.002

Appendix J

Implementation Schedule for Environmental Mitigation Measures (ISEMM)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)							
Construction Dust Impact							
S3.8	D1	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 92.1%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.7 L/m2 to achieve the respective dust removal efficiencies.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D2	The Contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D3	Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hard cores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		• The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; and • Every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.					
Noise Impact (Construction Phase)							
S4.9	N1	Implement the following good site management practices: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	Control construction airborne noise	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO
S4.9	N2	Install temporary site hoarding (approx. 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
			zone of NSRs through partial screening.				
S4.9	N3	Install movable noise barriers, full enclosure and acoustic mat, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO
S4.9	N4	Use of "Quiet" Plant and Working Methods	Reduce the noise levels of plant items	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO
S4.9	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites	Construction phase	Annex 5, TM-EIAO
Water Quality Impact (Construction Phase)							
S5.7	W1	Construction Runoff In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures should be provided and the Storm Water Pollution Control Plan is given below. **Storm Water Pollution Control Plan** • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the Contractor prior to the commencement of construction. • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications	Control construction runoff	Contractor	All construction sites	Construction phase	WPCO, EIAO, TM-EIAO

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		where the influent is pumped. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates. • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the Contractor prior to the commencement of construction. • Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimize the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • All open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m3 should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		during storm events. • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds.					
S5.7	W2	**Sewage from Workforce** • Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed Contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance. • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the Project would not cause water quality impact after undertaking all required measures.	Handling of site sewage	Contractor	All construction sites	Construction phase	WPCO, EIAO, TM-EIAO

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
Waste Management (Construction Waste)							
S7.6	WM1	Waste Reduction Measures Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; • proper storage and site practices to minimize the potential for damage and contamination of construction materials; • plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.	Reduce waste generation	Contractor	All construction sites where practicable	Prior to the commencement of construction	Waste Disposal Ordinance
S7.6	WM2	Prepare Waste Management Plan and submit to the Engineer for approval	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance
S7.6	WM3	**Good Site Practice** The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance
S7.6	WM4	**Storage of Waste** The following recommendation should be implemented to minimize the impacts:	Minimize waste from storage impacts	Contractor	All construction	Construction phase	Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		• waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; • different locations should be designated to stockpile each material to enhance reuse;			sites		
S7.6	WM5	**Collection and Transportation of Waste** The following recommendation should minimize the impacts: • remove waste in timely manner; • employ the trucks with cover or enclosed containers for waste transportation; • obtain relevant waste disposal permits from the appropriate authorities; and • disposal of waste should be done at licensed waste disposal facilities.	Minimize waste from storage impacts	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance
S7.6	WM6	**Excavated and C&D Material** Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public filling areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • deliver surplus artificial hard materials to Tuen Mun Area 38 recycling plant or its successor for recycling into subsequent useful products; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • implement a recording system for the amount of waste generated, recycled and disposed of for checking; Standard formwork should be used as far as practicable in order to minimize the arising of C&D waste. The use of more durable formwork (e.g. metal hoarding) or plastic facing should be encouraged in order to enhance the possibility of recycling. The purchasing of construction materials should be carefully planned in order to avoid over ordering and wastage. Wheel wash facilities have to be provided at the site entrance before the trucks leaving the works area.	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction phase	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005
S7.6	WM8	**Chemical Waste** • If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste Contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.					Storage of Chemical Waste
S7.6	WM9	**General Waste** • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance
S7.6	WM10	**Sewage** • The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. • Regularly collection by licensed collectors should be arranged to minimize potential environmental impacts.	Minimize production of sewage impacts	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance
S7.6	WM11	**Topsoil reuse** – Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. This is considered a general measure for good site practice.	Good site practice	Contractor / Project Proponent	Onsite	Construction Phase	• ETWB Technical Circular (Works) No.29/2004
Landscape and Visual (Construction)							
S.12.9 MM3	LV5	Open Space Provision - the principles adopted in the RODP planning ensure that public open space systems are incorporated. All requirements for open space areas stipulated in the planning documents for the formulation of the Preliminary Layout Plan should be adhered to.	Reprovision of open space. Enhance visual amenity of the area and improve the overall landscape character	Government Developer / Detailed Design Consultant / Contractor	Onsite as stipulated in the planning documents for the formulation of the Preliminary Layout Plan	Prior to Construction and Construction Phase	Hong Kong Planning Standards and Guidelines (HKPSG) issued by the Planning Department (As at Aug 2011); Sustainable Building Design Guidelines
S.12.9 MM4	LV6	Tree Protection & Preservation – Exiting trees to be retained within the Project Site should be carefully protected during construction. In particular OVTs will be preserved according to ETWB Technical Circular (Works) No. 29/2004. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to	Protect and Preserve Trees	Government Developer / Detailed Design Consultant / Contractor	Onsite as stipulated in the planning documents for the formulation of	Prior to Construction and Construction Phase	ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006

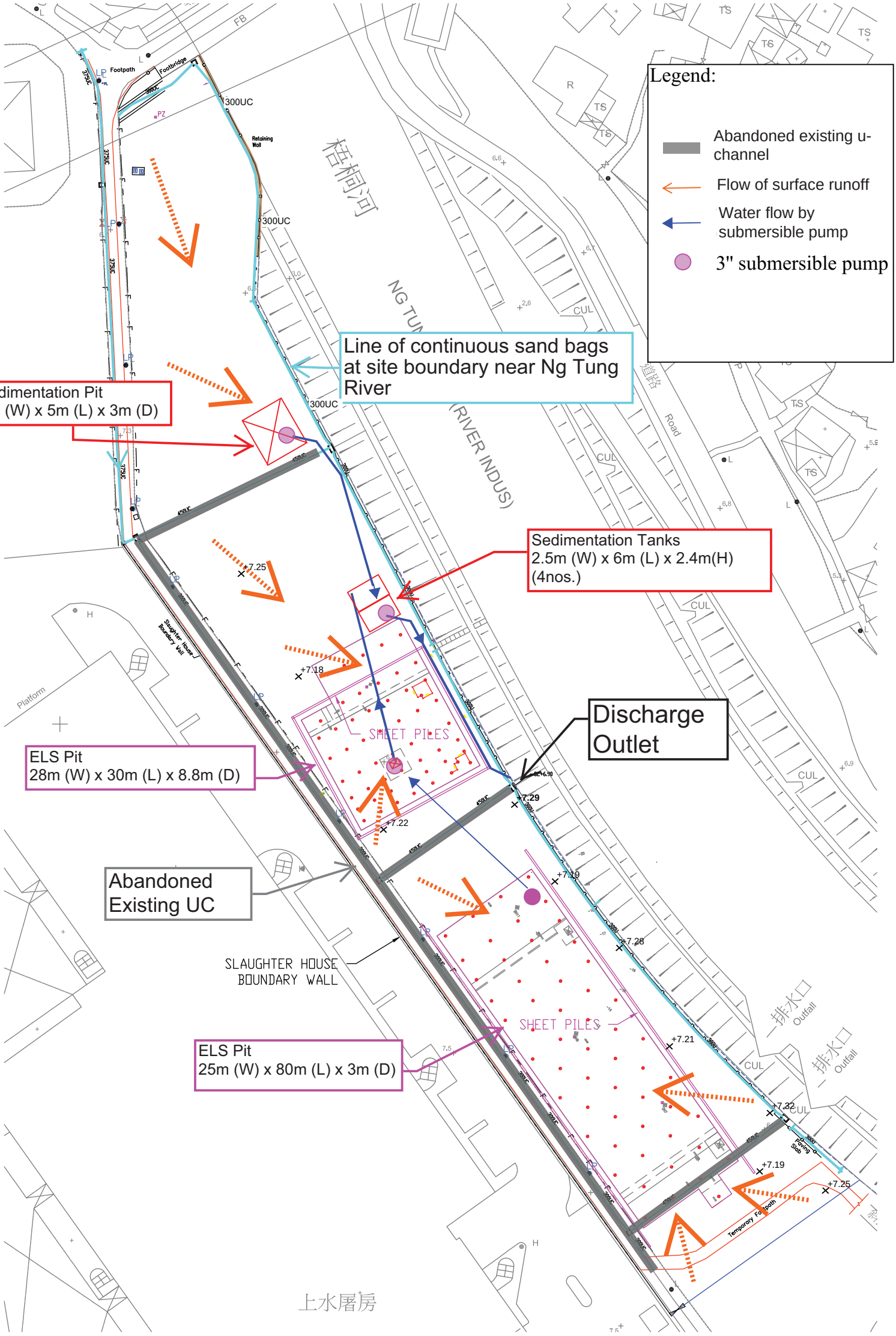
EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
		undertaking any works adjacent to all retained trees, including trees in Contractor's works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.			the Preliminary Layout Plan		
S.12.9 MM5	LV7	Tree Transplantation – Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.	Transplant Trees where suitable for transplantation	Government Developer / Detailed Design Consultant / Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit
S.12.9 MM7	LV9	Compensatory Planting – Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 3/2006. Compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes, as well as the open areas within development lots. Compensatory planting for shrubs should be considered in suitable locations. Native species such as *Melastoma malabathricum, Diospyros vaccinioides, Gardenia jasminoides, Ixora chinensis, Ligustrum sinense, Litsea rotundifolia, Melastoma dodecandrum, Atalantia buxifolia, Rhodomyrtus tomentosa, Rhaphiolepis indica,* and *Rhododendron simsii* are suggested.	Compensate for trees and shrubs lost due to the Project.	Government Developer / Detailed Design Consultant / Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004
S.12.9 MM9	LV11	Vertical Greening – Planting of climbers to grow up vertical surfaces were appropriate (e.g. building edges, piers).	Soften hard surfaces and	Project Proponent /	On appropriate	Prior to Construction,	ETWB TCW No. 11/2004 – Cyber

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
			facilities	Detailed Design Consultant / Contractor / Maintenance Authority	structures	Construction Phase & Maintenance in Operation Phase	Manual for Greening
S.12.9 MM10	LV12	Green Roof – Roof greening where appropriate should be established on proposed buildings as per the guidelines stated. These guidelines provide further details including information regarding structural loading, design, maintenance, etc. considerations as well as providing information on what types of plants might be suitable.	Reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to VSRs at high levels. Provide greening.	Project Proponent / Detailed Design Consultant / Contractor / Maintenance Authority	On appropriate buildings	Prior to Construction, Construction Phase & Maintenance in Operation Phase	CIBSE HK Branch, Technical Guidelines for Green Roof Systems in Hong Kong (2011); ArchSD/Urbis Study on Green Roof Application in HK (2007)
S.12.9 MM11	LV13	Screen Planting – Tall screen/buffer trees and shrubs should be planted. This measure may additionally form part of the compensatory planting.	To screen proposed structures such as roads and buildings. Improve compatibility with the surrounding environment and create a pleasant pedestrian environment	Government / Developer / Detailed Design Consultant / Contractor	Along roads, around suitable built structures, or around VSRs to contain their view out to the NDA Maintenance and create a pleasant Contractor structures	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWBTC 3/2006
S12.9 MM14.5	LV20	Screen Hoarding – Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, nonreflective, recessive colours be used. Any works areas near the ecological sensitive areas should erect 2m high dull green site boundary fence. Details can refer to the ecological impact assessment (Chapter 13 of the EIA report).	To screen undesirable views of the works site.	Contractor	Throughout NDAs	Construction Phase	
S12.9	LV21	Light Control – Construction day and night time lighting should be controlled to	To minimize glare	Government /	Throughout	Construction	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the Measures?	Location of the measures	When to implement the Measures?	What requirements or standards for the measures to achieve?
MM14.6		minimize glare impact to adjacent VSRs during the Construction phase. Street and night time lighting shall also be controlled to minimize glare impact to adjacent VSRs during the operation phase.	impact to adjacent VSRs	Developer / Contractor	NDAs	and Operation Phases	
Ecology (Construction Phase)							
S.13.9	E13	Review design and construction methods for bridges, especially those on the Sheung Yue and tidal Ng Tung Rivers, and adopt measures which minimize impacts on rivers and disturbance and fragmentation impacts on fauna. No construction during ardeid breeding season (1 March to 31 July) along Sheung Yue River north and east of KTN area D1-5 and east of D1-9 and C2-3 and restriction of working hours on new pedestrian bridges over the Sheung Yue River and tidal Ng Tung River to 09.00 to 17.30 during the ardeid breeding season (1 March to 31 July). Provision of alternative foraging habitat along main river channels for large waterbirds.	Minimize impacts on rivers and disturbance and fragmentation impacts on fauna.	Project Proponent / Detailed Design Consultant / Contractor	Along and within the Sheung Yue, Ng Tung and Shek Sheung Rivers	Detailed design and construction phases.	TM-EIAO.
S.13.9	E16	Creation of Green Corridors along the Sheung Yue, Ng Tung and Shek Sheung Rivers, retention and provision of screen plantings where feasible; provision of Open Space areas and development areas along river corridors; Design and erection of 2m high solid dull green site barrier fence between river channel and any active works area along or adjacent to Ng Tung, Sheung Yue and Shek Sheung Rivers. Ng Tung, Sheung Yue and Shek Sheung Rivers screen planting.	Minimize disturbance to waterbirds using Ng Tung, Sheung Yue and Shek Sheung River channels.	Detailed Design Consultant / Contractor	Ng Tung, Sheung Yue and Shek Sheung Rivers	Detailed design and construction phases.	TM-EIAO.
S.13.9	E19	Use opaque, non-transparent, non-reflective noise barriers for all construction sites. Unnecessary lighting should be avoided.	Minimize mortality impacts on birds.	Contractor	All construction sites	Construction phase.	TM-EIAO.

Appendix K

As-built Drawing of Site Temporary Drainage


Legend:
Abandoned existing u-channel
Flow of surface runoff
Water flow by submersible pump
3" submersible pump
Line of continuous sand bags at site boundary near Ng Tung River
Sedimentation Pit
5m (W) x 5m (L) x 3m (D)
Sedimentation Tanks
2.5m (W) x 6m (L) x 2.4m(H)
(4nos.)
Discharge Outlet
ELS Pit
28m (W) x 30m (L) x 8.8m (D)
Abandoned Existing UC
SLAUGHTER HOUSE BOUNDARY WALL
ELS Pit
25m (W) x 80m (L) x 3m (D)
SHEET PILES
SHEET PILES
上水屠房
Footpath
Footbridge
Retaining Wall
Slaughter House Boundary Wall
Platform
Temporary Footpath
Roaring Side
Outfall
Outfall
Road
(RIVER INDUS)
300UC
375UC
450UC
CUL
TS
FB
PZ
LP
+7.25
+7.18
+7.22
+7.29
+7.19
+7.28
+7.21
+7.32
+7.19
+7.25

Appendix L

Waterbirds Survey Report for the Reporting Month

ecology
biodiversity
landscape

aec

WSD Contract No. 3/WSD/20 - Reclaimed Water Supply to Sheung Shui and Fanling - Provision of EM&A (Ecological) Monitoring

Monthly Report for May 2023
(Issue 1)

Job Ref.: 21/2063/582 AUES-SWHTSE
Date: 6th Jun 2023

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WSD Contract No. 3/WSD/20 - Reclaimed Water Supply to Sheung Shui and Fanling - Provision of EM&A (Ecological) Monitoring

Monthly Report for May 2023

(Issue 1)

June 2023

	Name	Signature
Prepared by:	**Nicholas Tam**	
Reviewed by:	**Ida Yu**	
Date:	**6th Jun 2023**	

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1.1 According to Section 12.3.2.5 of "Updated EM&A Manual for Advance And First Stage Works of Kwu Tung North and Fanling North New Development Areas", monitor of measures to minimise disturbance to waterbirds on Ng Tung, Sheung Tue and Shek Sheung Rivers is required.

1.2 aec Ltd. has been appointed by Action-United Environmental Services & Consulting (AUES) to conduct weekly transect bird surveys at high and low tides along Ng Tung River, Sheung Yue River and Shek Sheung River; and identify sources of actual and potential disturbances to birds due to construction activities of WSD Contract No. 3/WSD/20 – Reclaimed Water Supply to Sheung Shui and Fanling. As instructed by the Contractor, the commencement date of the survey was in the week of 10th January 2022. This monthly report summarises the monitoring findings in May 2023.

2 MONITORING METHODOLOGY

2.1 The survey methodology references the methodology stated in approved Baseline Monitoring Report (Ecology) (Version 1) (prepared by Cinotech Consultants Limited (2019)) under "*Contract No. SPW 08/2019 – Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1*". Three transects and seven point count locations were selected within the 500m boundary of Ng Tung, Sheung Yue and Shek Sheung River. These locations are shown in **Figure 1** and summarized in **Table 1**.

Table 1 Ecological Monitoring Stations

Monitoring Stations	Descriptions	Influenced by Tidal Action
Transect T1	Along Ng Tung River	No
Transect T2		
Point Count Location P1		
Point Count Location P2		
Point Count Location P3		
Point Count Location P4		
Point Count Location P5	At Shek Sheung River (Low-flow Channel)	No
Transect T3	Along Shek Sheung River & Sheung Yue River	Yes
Point Count Location P6	At Shek Sheung River	Yes
Point Count Location P7	At Intersection between Sheung Yue and Shek Sheung River	Yes

2.2 Surveys were conducted on a weekly basis at both high and low tides (it is considered high tide when tidal levels are above 1.5m and low tide when tidal level are below 1.5m at Tsim Bei Tsui Station).

2.3 All avifauna species that were seen or heard were identified and quantified along transects and at point count locations. Survey data would be recorded continuously by the surveyor as they walk along the transects, while survey data of each point count location would be collected for 5-minutes after surveyor reaches the designated point count location. During the surveys, the utilisation of Ng Tung River, Sheung Yue River and Shek Shui River and their immediate environs/habitats by waterbirds will be focused. For comparison and data analysis, the transect routes and point count locations followed Figure 1 of the approved Baseline Monitoring Report (Ecology) (Version 1). Locations of T1, T2, and P1 to P4 were adjusted to the opposite side of Ng Tung River as the original transects were inaccessible due to various construction projects.

2.4 Noticeable behaviours such as breeding, nesting, roosting, feeding and presence of recently fledged juveniles were recorded and reported. In the case which such behaviours were observed for species of conservation importance, the Resident Engineer (RE), the Contractor and the Independent Environmental Checker (IEC) would be immediately notified after the survey such that the Contractor could review the current construction programme and minimize disturbances due to construction activities.

2.5 Weather conditions, tidal information, time of the survey and other noticeable activities occurring within the vicinity of the survey area were recorded.

3 ANALYTICAL METHODOLOGY

3.1 Total numbers of waterbirds and six representative waterbird species (listed in **Table 2**) are used as an indicator of the level disturbance to waterbirds at each of the survey location. Species listed as wetland-dependant according to Carey *et al*. (2001) are defined as waterbirds. A significant decline in the abundance of all or representative waterbirds would indicate a high level of disturbance.

Table 2 Representative Waterbirds

Common Name	Species Name	Chinese Name
Chinese Pond Heron	*Ardeola bacchus*	池鷺
Eastern Cattle Egret	*Bubulcus coromandus*	牛背鷺
Grey Heron	*Ardea cinerea*	蒼鷺
Great Egret	*Ardea alba*	大白鷺
Little Egret	*Egretta garzetta*	小白鷺
Great Cormorant	*Phalacrocorax carbo*	普通鸕鷀

Survey data from each month is compared to the baseline monitoring data. Baseline monitoring data was downloaded and extracted from the Baseline Monitoring Report retrieved from the following hyperlink (the extracted summer dataset of the baseline monitoring data is shown in **Appendix D**): https://www.epd.gov.hk/eia/register/english/permit/fep1792018/documents/blmrev1/pdf/blmrev1.pdf. When a decline in the total number of Waterbirds or the number of the representative Waterbird species is recorded the survey data would be compared to the baseline data (from Shek Wu Hui Effluent Polishing Plant Baseline Monitoring Report (Ecology) by Cinotech Consultants Limited, 2019) using a two-sample one-tailed Student's t-test assuming unequal variance to analyse whether the decline is significant.

3.2 If the collected data for the reporting month shows a significant difference at the 95% confidence level, the action level will be triggered. If the collected data for the reporting month shows a significant difference at the 99% confidence level, the limit level is triggered and corresponding suggestions would be given to minimize the disturbances according to **Table 3**.

Table 3 Action and Limit Levels and Responses to Evidence of Disturbance to Waterbirds using Ng Tung, Sheung Yue and Shek Sheung Rivers during Construction Phase

Action Level	Response	Limit Level	Response
Decline in numbers of all waterbird species relative to numbers during Baseline	Investigate cause(s) and if cause(s) identified as related to NDAs project instigate remedial action	Decline in numbers of all waterbird species relative to numbers during Baseline Monitoring such that the	Investigate cause(s) and if cause(s) identified as related to the NDAs project instigate remedial action.

Action Level	Response	Limit Level	Response
Monitoring such that the Action Level response is triggered.	to remove or reduce source of disturbance.	Limit Level response is triggered.	Review and adjust project's Long Valley Nature Park (LVNP) management measures to improve conditions for affected species.
Decline in numbers of any one Waterbird species occurring in significant numbers* during Baseline Monitoring such that the Action Level response is triggered.	Investigate cause(s) and if cause(s) identified as related to NDAs project instigate remedial action to remove or reduce source of disturbance.	Decline in numbers of any one Waterbird species occurring in significant numbers* during Baseline Monitoring such that the Limit Level response is triggered.	Investigate cause(s) and if cause(s) identified as related to the NDAs project instigate remedial action. Review and adjust project's LVNP management measures to improve conditions for affected species.

Note: Whether numbers are significant depend on species and season after collection and evaluation of baseline survey data.

3.3 In order to increase the sample size and reduce the random error on each survey day, survey data would be collectively analysed on a monthly basis. The collective data of each month is also compared to the baseline data of the respective month and season instead of the entire data set, to account for the seasonal variation in the abundance of waterbirds. In this study, the winter season is defined as October to March, while the summer season is defined as April to September.

4 RESULTS

4.1 The weather conditions and tide levels on the survey dates are listed in the table below.

Table 4 Weather Conditions and Tidal Information of Survey Dates in the Reporting Month

High Tide				Low Tide			
Date	**Time**	**Tide (m)**	**Weather**	**Date**	**Time**	**Tide (m)**	**Weather**
4-May-23	11:00	1.8	Sunny	5-May-23	14:00	1.3	Sunny
12-May-23	16:10	2.34	Cloudy	9-May-23	7:00	1.16	Cloudy
16-May-23	10:00	1.98	Sunny	18-May-23	16:00	0.37	Sunny
24-May-23	9:30	1.89	Sunny	23-May-23	16:30	1.39	Cloudy
31-May-23	9:00	1.96	Sunny	1-Jun-23	15:30	0.63	Sunny

4.2 Abundance and diversity of total bird species and key species are summarized in **Tables 5** and **6** respectively**.** Detailed list of avifauna recorded is provided in **Appendix A**.

Table 5 Total Bird Species and Abundance at Point Count Locations in the Reporting Month

Category	Number of Species	Abundance
All Avifauna	35	466
Waterbirds	12	158

Table 6 Abundance of Representative Waterbirds at Point Count Locations in the Reporting Month

Common Name	Species Name	Chinese Name	Abundance
Chinese Pond Heron	*Ardeola bacchus*	池鷺	41
Eastern Cattle Egret	*Bubulcus coromandus*	牛背鷺	2
Grey Heron	*Ardea cinerea*	蒼鷺	1
Great Egret	*Ardea alba*	大白鷺	13
Little Egret	*Egretta garzetta*	小白鷺	90
Great Cormorant	*Phalacrocorax carbo*	普通鸕鷀	0

5 ANALYSIS

5.1 The results of Student's t-test for all waterbirds and representative waterbirds are compiled in **Table 7** respectively. Further details are provided in **Appendices B** and **C**.

Table 7 T-test Result for Waterbirds in the Reporting Month

Category	Monthly					Seasonal				
	T-value	*df*	*p*	Action Level	Limit Level	T-value	*df*	*p*	Action Level	Limit Level
All Waterbirds	-1.690	10	0.061			-2.829	6	0.015	*	
Chinese Pond Heron	-2.778	11	0.009	*	*	-4.253	7	0.001	*	*
Eastern Cattle Egret	-1.375	8	0.103			-3.399	41	0.001	*	*
Grey Heron	No decline					-0.987	27	0.166		
Great Egret	No decline					-0.007	5	0.498		
Little Egret	-0.530	6	0.307			-0.730	4	0.253		
Great Cormorant	No decline					No decline				

* = level triggered

5.2 Decline in abundance in all waterbirds has triggered the action level compared to the Summer data. Decline in abundance of Chinese Pond Heron has triggered the limit level compared to previous data in April and Summer. Finally, decline in abundance of Eastern Cattle Egret has triggered the limit level when compared to the Summer average.

5.3 Abundance of all waterbirds was expected to decrease in general as migratory birds leave Hong Kong in the Summer, as the abundance in waterbirds of the reporting month does not trigger the action level when compared to the monthly data, it is suggested that decline in waterbird abundance is in line with seasonal fluctuations.

5.4 As discussed in previous months, the decline of individual waterbird species should not be the result of increased disturbances from the Project or its surrounding on-going projects, as increased disturbance would discourage multiple waterbird species from foraging near the transect and point count locations instead. Thus it is suggested that construction of the current project did not cause the decline in Chinese Pond Heron and Eastern Egret.

5.5 However, constructions and anthropogenic activities around the survey transects are still active during the reporting month and the following activities were noted:

5.6 Since the survey dated on 4th November 2022, surveyors have recorded inspection and maintenance works of the inflatable dam at P2, these works were determined to be as part of the North East New Territories Sewerage System Upgrade led by Drainage Services Department (DSD). It was observed during the survey on 31st May 2023 (as seen in Photo 2 of **Appendix E**) that the maintenance was

completed and the temporary concrete dam was being removed. The water level of Ng Tung River along T1 (P1 and P2 included) is still higher than the baseline survey during the reporting month due to the concrete blocks damming the flow of water, and may have reduced the foraging area at P1 and/or P2 and attract less waterbirds to forage at these two points.

5.7 A playback device for bird calls was seen to be installed by AECOM near the pond in T1 since the survey on 3rd April 2023, and the device was seen to be in operation throughout the reporting month. This may directly lower the number of waterbirds and representative waterbirds visiting P1 and P2 as the birds would be incentivized to forage away from these two points and in the pond instead. However, the playback device was observed to be turned off on all other surveys in the Reporting Month.

5.8 Remote control boat racing by a group of hobbyists were also seen multiple times at T1 near P2 during surveys in this reporting month (Photo 3 of **Appendix E**), the noise produced by the activity and high speed movements of the boat across the surface of Ng Tung River may discourage waterbirds from foraging along the river bank at P2.

5.9 Road improvement works by DSD (Photo 4 of **Appendix E**) was also observed to remain active along T2 near P3, and large vehicles producing noise were seen to enter and leave the site. This may be a potential source of disturbance that discourages waterbirds from foraging at P3.

5.10 The construction by Civil Engineering and Development Department (CEDD) near P7 was observed active throughout the entire reporting month (Photo 5 of **Appendix E**).

5.11 Monitoring work will be continued next month to evaluate any construction impact on waterbirds. The construction site should continue keeping the best site practice in noise control to minimize disturbance caused to waterbirds. No further action is advised at the moment.

6 OBSERVATIONS

6.1 The types of Waterbird behavior observed during ecological monitoring are listed below:

- Flying
- Resting
- Foraging

6.2 The anthropogenic activities observed during ecological monitoring are listed in **Table 8.**

Table 8 Observations of the anthropogenic activities during the Ecological Monitoring in the Reporting Month

Location	Observations	
	Project Related	**Non-project Related**
T1 (PC1, PC2)	/	Inflatable dam inspection and maintenance at P2 (DSD), playback device at nearby pond (AECOM), remote control boat racing
T2 (PC3, PC4)	Use of crane, scaffolding	Fishing, laying of concrete blocks at P3 (DSD), road enhancement (DSD)
T3 (PC6, PC7)	/	Fishing, piling works at P7 (CEDD)

7 REFERENCES

Carey, G.J., Chalmers, M.L., Diskin, D.A., Kennerley, P.R., Leader, P.J., Leven, M.R., Lewthwaite, R.W., Melville, D.S., Turnbull, M., and Young, L. 2001. The Avifauna of Hong Kong. Hong Kong Bird Watching Society, Hong Kong.

Cinotech Consultants Limited. 2019. Contract No. SPW 08/2019 Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1 Baseline Monitoring Report (Ecology) (Version 1). Accessed from https://shekwuhui.cinotech.hk/?page_id=24 in Jan 2022.

Appendix A Recorded Bird Species and their Abundance in the Reporting Month

Common Name	Chinese Name	Scientific Name	Waterbird	Point Count Abundance	Transect Abundance
Black-crowned Night Heron	夜鷺	*Nycticorax nycticorax*	Y		+
Chinese Pond Heron	池鷺	*Ardeola bacchus*	Y	41	+++
Eastern Cattle Egret	牛背鷺	*Bubulcus coromandus*	Y	2	
Grey Heron	蒼鷺	*Ardea cinerea*	Y	1	+
Great Egret	大白鷺	*Ardea alba*	Y	13	+
Little Egret	小白鷺	*Egretta garzetta*	Y	90	+++++
Black Kite	黑鳶	*Milvus migrans*	N	5	+
White-breasted Waterhen	白胸苦惡鳥	*Amaurornis phoenicurus*	Y	1	
Black-winged Stilt	黑翅長腳鷸	*Himantopus himantopus*	Y	1	+
Common Sandpiper	磯鷸	*Actitis hypoleucos*	Y	2	
Green Sandpiper	白腰草鷸	*Tringa ochropus*	Y	4	
Wood Sandpiper	林鷸	*Tringa glareola*	Y	1	
Spotted Dove	珠頸斑鳩	*Spilopelia chinensis*	N	31	+++
Greater Coucal	褐翅鴉鵑	*Centropus sinensis*	N		+
Asian Koel	噪鵑	*Eudynamys scolopaceus*	N	16	++
Large Hawk-cuckoo	大鷹鵑	*Hierococcyx sparverioides*	N	3	++
House swift	小白腰雨燕	*Apus nipalensis*	N	1	+
White-throated Kingfisher	白胸翡翠	*Halcyon smyrnensis*	Y	1	
Pied Kingfisher	斑魚狗	*Ceryle rudis*	Y	1	+
Alexandrine Parakeet	亞歷山大鸚鵡	*Psittacula eupatria*	N		+
Hair-crested Drongo	髮冠卷尾	*Dicrurus hottentottus*	N		+
Red-billed Blue Magpie	紅嘴藍鵲	*Urocissa erythroryncha*	N	1	+
Oriental Magpie	喜鵲	*Pica serica*	N	2	+
Large-billed Crow	大嘴烏鴉	*Corvus macrorhynchos*	N	1	+
Cinereous Tit	蒼背山雀	*Parus cinereus*	N	3	+
Red-whiskered Bulbul	紅耳鵯	*Pycnonotus jocosus*	N	33	+++
Chinese Bulbul	白頭鵯	*Pycnonotus sinensis*	N	11	+
Barn Swallow	家燕	*Hirundo rustica*	N	13	++
Yellow-browed Warbler	黃眉柳鶯	*Phylloscopus inornatus*	N	2	+
Yellow-bellied Prinia	黃腹鷦鶯	*Prinia flaviventris*	N		+
Plain Prinia	純色鷦鶯	*Prinia inornata*	N	1	+
Common Tailorbird	長尾縫葉鶯	*Orthotomus sutorius*	N	12	++
Masked Laughingthrush	黑臉噪鶥	*Pterorhinus perspicillatus*	N	22	++++
Swinhoe's white-eye	暗綠繡眼鳥	*Zosterops simplex*	N	10	++
Crested Myna	八哥	*Acridotheres cristatellus*	N	106	+++++
Common Myna	家八哥	*Acridotheres tristis*	N		+
Black-collared Starling	黑領椋鳥	*Gracupica nigricollis*	N	21	+++
Oriental Magpie Robin	鵲鴝	*Copsychus saularis*	N	1	+
Eurasian Tree Sparrow	樹麻雀	*Passer montanus*	N	3	+
Scaly-Breasted Munia	斑文鳥	*Lonchura punctulata*	N	2	
White Wagtail	白鶺鴒	*Motacilla alba*	N	8	+

Common Name	Chinese Name	Scientific Name	Waterbird	Point Count Abundance	Transect Abundance
		Total Point Count Abundance		466	
		Total Waterbirds		158	

For transect abundance, +: 1-10, ++: 11-20, +++: 21-30, ++++: 31-40, +++++: >40

Appendix B Total Waterbird Abundance from Point Count

Survey Information				Number of Waterbirds	
Week	**Date**	**Time**	**Tide Level**	**Individuals Recorded**	**Total**
1	5/4/23	11:00	High	12	28
	5/5/23	14:00	Low	16	
2	5/9/23	7:00	Low	13	21
	5/12/23	16:10	High	8	
3	5/16/23	10:00	High	5	25
	5/18/23	16:00	Low	20	
4	5/23/23	16:30	Low	29	41
	5/24/23	9:30	High	12	
5	5/31/23	9:00	High	6	43
	6/1/23	15:30	Low	37	
			Survey Average		31.6
			Baseline	May Average	41.44
				Summer Average	45.34

Appendix C Abundance of Representative Waterbirds from Point Count

Representative Species		Recorded Abundance (May 2023)						Baseline	
Common Name	**Species Name**	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Average**	**May Average**	**Summer Average**
Chinese Pond Heron	*Ardeola bacchus*	8	5	5	14	9	8.2	15	16.18
Eastern Cattle Egret	*Bubulcus coromandus*	1	0	0	0	1	0.4	2.33	3.32
Grey Heron	*Ardea cinerea*	0	0	0	1	0	0.2	0	0.55
Great Egret	*Ardea alba*	0	2	4	3	4	2.6	1.67	2.61
Little Egret	*Egretta garzetta*	11	12	16	22	29	18	20	20.53
Great Cormorant	*Phalacrocorax carbo*	0	0	0	0	0	0	0	0

Appendix D Baseline Survey Data Summer

** Only include data from "All Waterbirds" and the six representative waterbird species for data analysis*

Representative Species		Recorded Abundance (Summer Baseline)							
Common Name	**Species Name**	**06-04-18**	**13-04-18**	**19-04-18**	**27-04-18**	**04-05-18**	**11-05-18**	**17-05-18**	**25-05-18**
All Waterbirds		37	71	78	52	59	47	48	50
Chinese Pond Heron	*Ardeola bacchus*	9	27	21	10	17	16	14	19
Eastern Cattle Egret	*Bubulcus coromandus*	5	9	24	15	13	0	2	1
Grey Heron	*Ardea cinerea*	0	0	0	0	0	0	0	0
Great Egret	*Ardea alba*	2	6	2	5	6	5	1	2
Little Egret	*Egretta garzetta*	16	24	30	22	18	18	29	28
Great Cormorant	*Phalacrocorax carbo*	0	0	0	0	0	0	0	0
Representative Species		**Recorded Abundance (Summer Baseline)**							
Common Name	**Species Name**	**01-06-18**	**04-06-18**	**15-06-18**	**20-06-18**	**26-06-18**	**01-07-18**	**13-07-18**	**16-07-18**
All Waterbirds		68	63	55	51	50	59	40	43
Chinese Pond Heron	*Ardeola bacchus*	26	25	23	18	20	24	13	18
Eastern Cattle Egret	*Bubulcus coromandus*	8	8	5	5	3	2	2	3
Grey Heron	*Ardea cinerea*	0	0	0	0	0	0	0	0
Great Egret	*Ardea alba*	3	4	2	5	4	3	2	2
Little Egret	*Egretta garzetta*	29	26	25	23	21	29	23	20
Great Cormorant	*Phalacrocorax carbo*	0	0	0	0	0	0	0	0
Representative Species		**Recorded Abundance (Summer Baseline)**							
Common Name	**Species Name**	**27-07-18**	**10-08-18**	**13-08-18**	**24-08-18**	**27-08-18**	**07-09-18**	**10-09-18**	**21-09-18**
All Waterbirds		47	39	41	33	35	25	48	54
Chinese Pond Heron	*Ardeola bacchus*	17	14	19	10	14	6	16	13
Eastern Cattle Egret	*Bubulcus coromandus*	0	0	1	1	0	0	0	1
Grey Heron	*Ardea cinerea*	0	0	0	0	0	3	3	9
Great Egret	*Ardea alba*	3	2	3	0	3	3	6	4
Little Egret	*Egretta garzetta*	27	21	18	18	15	9	21	18
Great Cormorant	*Phalacrocorax carbo*	0	0	0	0	0	0	0	0
Representative Species		**Recorded Abundance (Summer Baseline)**							
Common Name	**Species Name**	**26-09-18**	**04-04-19**	**10-04-19**	**18-04-10**	**22-04-19**	**03-05-19**	**08-05-19**	**17-05-19**
All Waterbirds		48	30	30	48	39	34	28	23
Chinese Pond Heron	*Ardeola bacchus*	19	11	12	11	13	16	10	4
Eastern Cattle Egret	*Bubulcus coromandus*	0	3	0	0	3	3	0	0
Grey Heron	*Ardea cinerea*	6	0	0	0	0	0	0	0
Great Egret	*Ardea alba*	7	1	2	2	0	0	1	0
Little Egret	*Egretta garzetta*	14	14	15	25	23	14	16	18
Great Cormorant	*Phalacrocorax carbo*	0	0	0	0	0	0	0	0
Representative Species		**Recorded Abundance (Summer Baseline)**							
Common Name	**Species Name**	**20-05-19**	**31-05-19**	**05-06-19**	**14-06-19**	**18-06-19**			
All Waterbirds		45	39	33	40	57			
Chinese Pond Heron	*Ardeola bacchus*	23	16	15	18	23			
Eastern Cattle Egret	*Bubulcus coromandus*	2	0	0	0	7			
Grey Heron	*Ardea cinerea*	0	0	0	0	0			
Great Egret	*Ardea alba*	0	0	2	3	2			
Little Egret	*Egretta garzetta*	19	20	16	17	22			
Great Cormorant	*Phalacrocorax carbo*	0	0	0	0	0			

Appendix E Survey Photos

Photo 1 Works on current project at P4 (12/5/2023)	**Photo 2** Inflatable dam maintenance and the repair by DSD at P2 progress on 31/5/2023
	
Photo 3 Remote control boat racing at P2 (1/6/2023)	**Photo 4** Road enhancement works by DSD at T2 (5/5/2023)
	
Photo 5 Piling at P7 by CEDD (1/6/2023)	**Photo 6** Great Egret at T2 (23/5/2023)
	

Figure 1

Transect and Point Count Location

P4
P1
P3
P2
T1
T2
P7
P5
T3
P6

Proposed Shek Wu Hui Water Reclamation Plant
500m Survey Boundary
Proposed Retained Water Mains
Walk Transects
Point Count Locations

ecology biodiversity landscape aec

Project Title:

WSD Contract No. 3/WSD/20 -
Reclaimed Water Supply to Sheung Shui and Fanling -
Provision of EM&A (Ecological) Monitoring

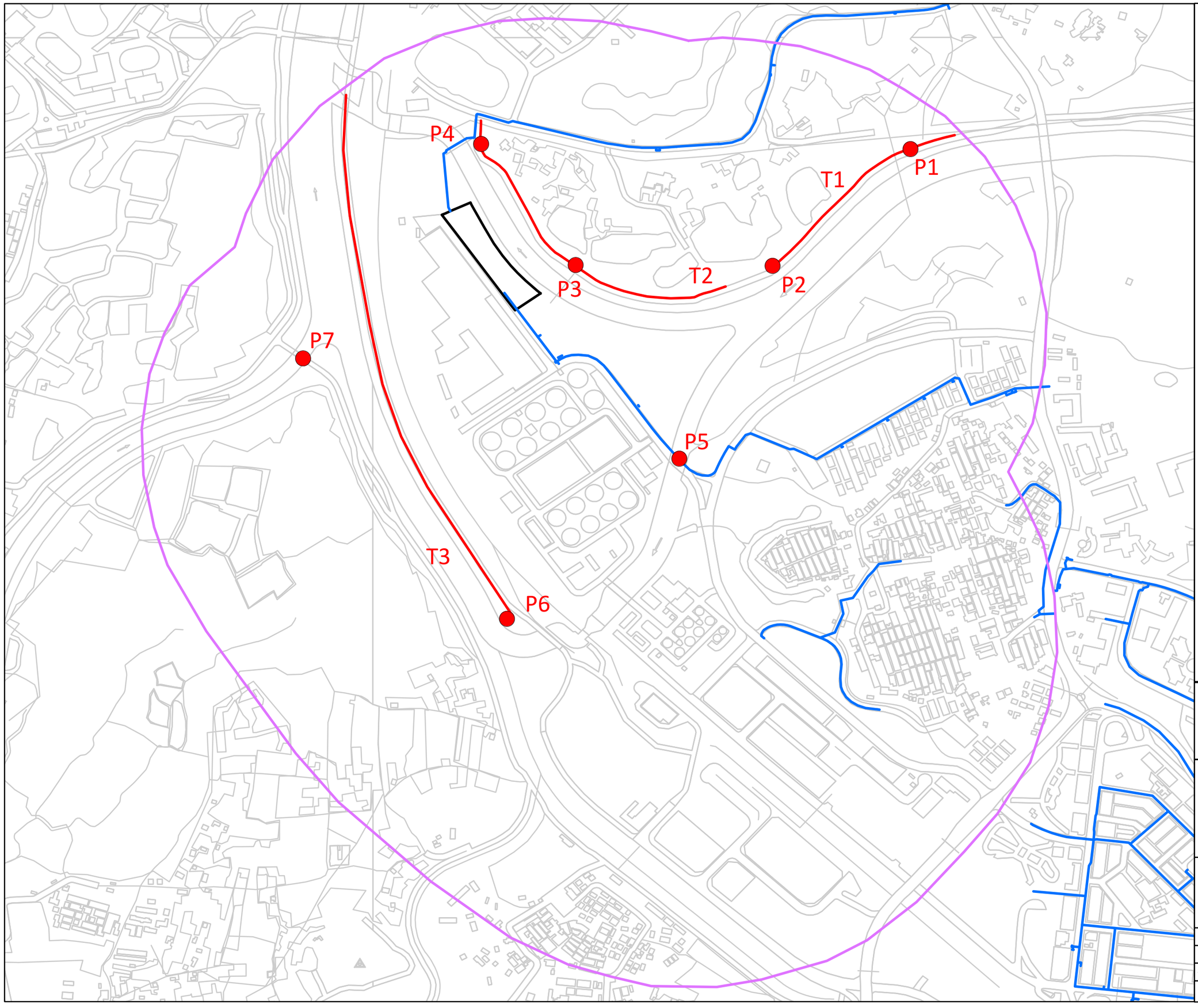
Figure Title:

Transect and Point Count Locations

Drawn by:	NT	Scale:	1:14,500 on A3
Checked By:	NT	Date:	5 July 2022
Approved by:	IY		
Figure Number:	Figure 1	Revision:	2

Figure 1a

Transect and Point Count Location (Zoomed In)



Proposed Shek Wu Hui Water Reclamation Plant

500m Survey Boundary

Proposed Retained Water Mains

Walk Transect

Point Count Locations

ecology
biodiversity
landscape
aec

Project Title:

WSD Contract No. 3/WSD/20 -
Reclaimed Water Supply to Sheung Shui and Fanling -
Provision of EM&A (Ecological) Monitoring

Figure Title:

Transect and Point Count Locations (zoomed in)

Drawn by:	NT	Scale: 1:6,000	on A3
Checked By:	NT	Date: 5 July 2022	
Approved by:	IY		
Figure Number:	Figure 1a		Revision: 2