Contract No. : DC/2007/06
River Improvement Works in Upper Lam Tsuen, She Shan River and Upper Tai Po River

ENVIRONMENTAL MONITORING AND AUDIT

MONTHLY EM&A REPORT of

UPPER TAI PO RIVER

for December 2010

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Report submission and revision:
First submission on 18th January 2011
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TABLE OF CONTENTS

Executive summary

This is the twenty-eighth monthly Environmental Monitoring and Audit (EM&A) Report for the river improvement works at Upper Tai Po River under Drainage Services Department Contract No. DC/2007/06 entitled "River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River". This report concludes the impact monitoring for the activities undertaken during the period from 1st December 2010 to 31st December 2010. Construction of footbridge and retaining wall, formation of haul access and erection of temporary noise barriers were carried out in this reporting period.

The Environmental Team (ET) is responsible for the EM&A works required in the EM&A manual. Site inspections were carried out on weekly basis to investigate and audit the equipment and work methodologies with respect to pollution control and environmental mitigation. The weekly inspections records and photos taken were kept.

The next ecological impact monitoring was scheduled on 27th January 2011. The summary of ecological site inspection findings and implementation status of environmental protection and mitigation for ecology, prepared by the Ecologist, are provided in table 6.2 and Appendix G respectively.

Environmental Team had carried out construction noise monitoring on weekly basis and no exceedance was found. Noise monitoring records for the reporting month and the data is presented in Section 4. The location plan and the graphical plots presenting the data are provided in Appendix D.

Piling works were not scheduled for this month. Therefore, no vibration monitoring was conducted by ET during the reporting month.

There was no non-compliance recorded for this reporting month.

There was no formal complaint in relation to environmental issue received in the reporting month.

There was no breach of action and limit levels for this month.

There was no reporting change for this month.

Construction of retaining wall, footbridge, gabion wall and box culvert will be the major construction activities to be carried out in the upcoming month.

ET has reminded the contractor to provide environmental pollution control measures wherever necessary and to keep a good environmental management at site practice.

1.0 Introduction

This is the twenty-eighth monthly Environmental Monitoring and Audit (EM&A) Report for the river improvement works at Upper Tai Po River under Drainage Services Department Contract No. DC/2007/06 entitled "River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River". The site layout plan is shown in Figure 2.1. The Environmental Team, Environmental Pioneers & Solutions Limited appointed by Chiu Hing Construction and Transportation Company Limited, prepares the report. The report is to be submitted to the Contractor, the Engineer and the IEC.

This report presents the results of the environmental monitoring of the project activities for Upper Tai Po River conducted during the month of December 2010. This included regular site inspections once per week for verification of implementation of the mitigation measures as recommended in the Environmental Permit (EP-223/2005/A) (EP), EM&A Manual and the Contractor's Environmental Management Plan (EMP).

2.0 Environmental status

2.1 Project area

The location of the project site – Upper Tai Po River starting from Ta Tit Yan of Yai Mo Shan, the Upper Tai Po River flows from southeast to northeast alongside Wilson Trail, turning northward before joining the Lam Tsuen River and then runs towards Tai Po Market. To the east of the river, there are active and abandoned cultivated lands. While the village settlements are mainly located on the west and northeast side of the river bank, where the San Uk Ka and Lai Chi Shan establishment also lie. The Project site is indicated in **Figure 2.1.**

2.2 Construction programme

Approximately 0.6km of Upper Tai Po River will be improved to enhance the hydraulic performance of the river. The improvement works comprise the following:

(1) Re-profiling and realignment of the Channel;
(2) Inclusion of gabions and retaining wall for bank protection whilst providing a natural channel bed; and
(3) Re-provisioning of footbridges and footpaths along the channel

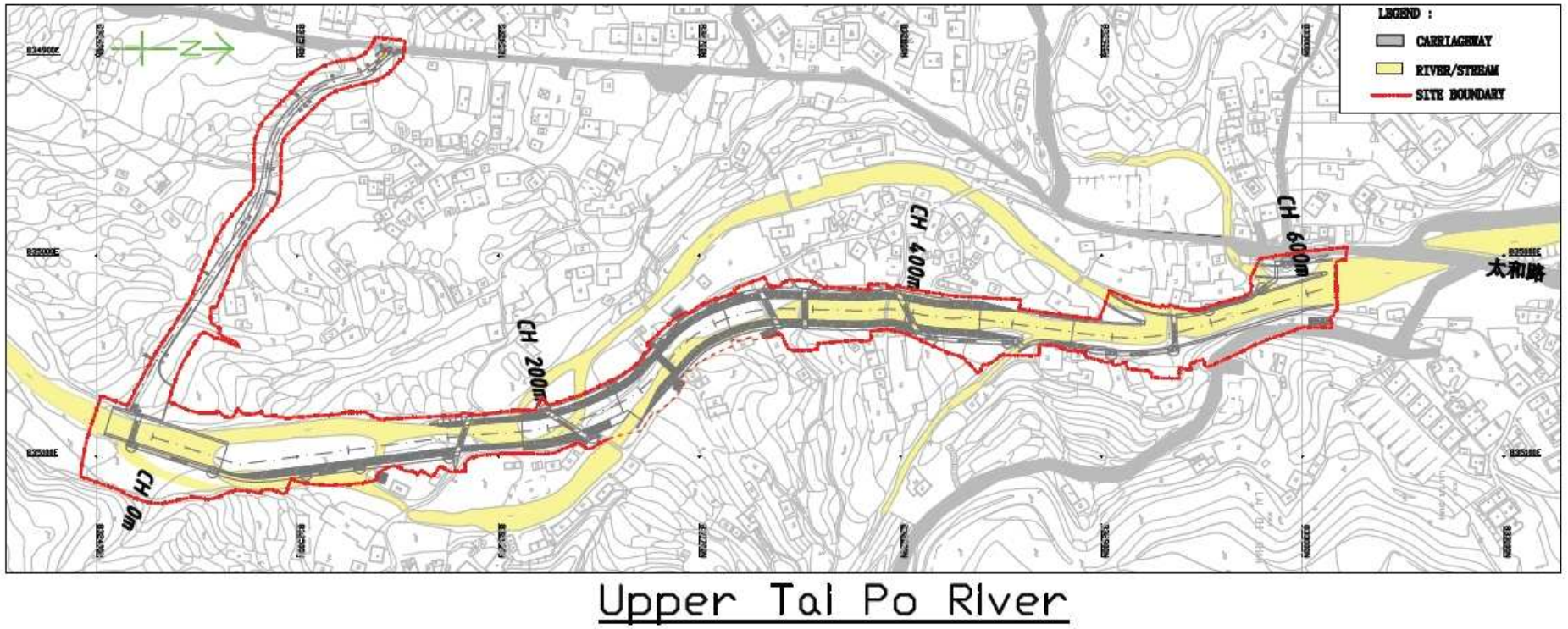
The construction of the proposed improvement works for Upper Tai Po River has been commenced on September 15th 2008 and anticipated to complete in March 2012.

2.3 Proposed construction sequences

The proposed construction sequence is shown in the following sequences:

(1) Site clearance and preparation works
(2) Construction of the maintenance access which involves the construction of retaining walls
(3) River channel construction and excavation, involving the excavation works, construction of retaining walls and gabion walls
(4) Re-provisioning of footbridges
(5) Construction of footpaths
(6) Landscaping works

Fig 2.1 Layout of construction area



2.4 Construction activities for the reporting period

Major construction activities carried out by the contractor during this reporting period include:

1.) construction of retaining wall;
2.) construction of footbridge;
3.) formation of haul access; and
4.) erection of temporary noise barrier

2.5 Construction activities for the next reporting period

Major construction activities carried out by the contractor anticipated for the coming month include:

1.) construction of retaining wall;
2.) construction of footbridge;
3.) construction of gabion wall; and
4.) construction of box culvert.

2.6 Non-compliance with the environmental performance limits

There was no non-compliance with the environmental performance limits for this reporting month. The event and action plan for Ecology is shown in Appendix A. The action and limit level for Noise is shown in Appendix B. The reference standards for vibration are shown in Appendix C.

2.7 Summary of complaints

No formal complaint in relation to environmental issue was received in the reporting month. Totally, eleven complaints had been received since the commencement of the contract. The cumulative complaint log is shown in Appendix F.

3.0 Ecological monitoring results

No ecological survey was carried out in this reporting period. The next ecological impact monitoring was scheduled on 27th January 2011.

4.0 Noise monitoring results

In accordance with the EM&A Manual, monitoring locations were established at 11 N.S.R. locations. The description of all 11 N.S.R. are shown in Table 4.1.

TABLE 4.1 Description of Noise Sensitive Receivers

Sensitive Receiver No.	Location and Description
UTP1	54B, Sheung Wun Yiu
UTP2	Village House in Lai Chi Shan
UTP3	Village House near Upper Tai Po River
UTP4	Village House near Upper Tai Po River
UTP5	Village House near Upper Tai Po River
UTP6	Village House near Upper Tai Po River
UTP7	Village House near Upper Tai Po River
UTP8	Village House near Upper Tai Po River
UTP9	49A, Pun Shan Chau
UTP10	Village House near the proposed access road
UTP11	49G, San Uk Ka

Noise monitoring was carried out by the Environmental Team on weekly basis for this reporting month on 3rd, 10th, 17th, 24th and 31st December 2010. Measured $L_{eq\ (30min)}$ results ranged from 53.0dB(A) to 74.6dB(A). And therefore, no exceedance was recorded within the reporting period.

For further details of the monitoring results, graphical plots and the location plan, please refer to the Appendix D.

5.0 Vibration monitoring results

There was no vibration monitoring results for this reporting month. Vibration monitoring will be started once the piling works start in Upper Tai Po River.

6.0 Environmental issues and actions

6.1 Site inspections and key environmental issues

Site inspections were undertaken routinely to inspect the construction activities in Upper Tai Po River to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented. Implementation status of environmental protection and mitigation measures is shown in Appendix G.

Within this reporting month, site inspections were conducted on 1st, 8th, 15th, 22nd, 29th December 2010. A detailed checklist of each site inspection together with comments and relevant photos have been filed and kept. The findings from inspection were summarized in Table 6.1.

Ecological inspections by the Ecologist Dr. Mark Shea were carried out on 1st, 9th, 16th, 23rd, 31st December 2010. Details of findings were summarized in Table 6.2.

Table 6.1 Summary results of site inspections findings

Date	Findings	Identification	Advice from ET	Action taken	Closing date	Remarks
20 Oct 10	Oil stains were observed on the haul access and underneath the backhoe at approximate ch.50	Observation	Contractor was reminded to provide regular maintenance to the site equipments as to avoid leakage. Contaminated soil observed should be collected and handled as chemical waste for storage and disposal	Still outstanding. To be followed during the next reporting period	Ongoing	--
27 Oct 10	Oil stains were observed on the haul access at approximate ch.100	Observation	Contractor was advised to collect the contaminated soil and handle as chemical waste for storage and disposal	Still outstanding. To be followed during the next reporting period	Ongoing	--
03 Nov 10	Implementation of protective measures for	Observation	Contractor was reminded to provide proper bund wall at	Still outstanding. To be followed during the next	Ongoing	--

Date	Findings	Identification	Advice from ET	Action taken	Closing date	Remarks
	haul access and exposed riverbanks was outstanding		edges of haul access and geo-textile coverings to the riverbanks to prevent erosion and runoff	reporting period		
03 Nov 10	Oil stains were observed on the haul access at approximate ch.600	Observation	Contractor was advised to collect the contaminated soil and handle as chemical waste for storage and disposal	Still outstanding. To be followed during the next reporting period	Ongoing	--
17 Nov 10	Oil stains were observed underneath of the idling backhoe at approximate ch.500	Observation	Contractor was recommended to provide maintenance to the backhoe as to avoid further leakage. Soil contaminated by leakage should be collected and handled as chemical waste for temporary storage and disposal	Still outstanding. To be followed during the next period	Ongoing	--
17 Nov 10	Excavated materials were stockpiled on top of the riverbank at approximate ch.200	Observation	Contractor was advised to remove the stockpiles away from the river channel as soon as possible	Still outstanding. To be followed during the next period	Ongoing	--
01 Dec 10	No particular observation	N/A	N/A	N/A	N/A	--
08 Dec 10	Implementation of water quality mitigation measure for construction of footbridge at ch.200 was outstanding	Observation	Contractor was recommended to implement necessary protective measures, such as provision of bund wall and geo-textile coverings, to avoid water contamination from site works	Still outstanding. To be followed during the next period	Ongoing	--
08 Dec 10	Backhoe idling at ch.400 was severely leaking oil during inspection	Observation	Contractor was recommended to provide necessary maintenance and collect the contaminated soil immediately	Maintenance was provided as reported by contractor. However, follow up action in collecting the contaminated soil was still outstanding	Ongoing	--
08 Dec 10	Site surface was observed to be dry and dusty	Observation	Contractor was reminded to dampen dusty static area regularly for dust suppression	Follow up action was taken as advised prior to the inspection on 15 Dec	22 Dec 10	--

Date	Findings	Identification	Advice from ET	Action taken	Closing date	Remarks
08 Dec 10	Chemical containers without secondary containment were found at ch.400	Observation	Contractor was advised to provide proper drip pan for chemicals using on site	Observed containers were relocated to chemical store as reported by Contractor	15 Dec 10	--
15 Dec 10	Implementation of water quality mitigation measure f at ch.500 was outstanding	Observation	Contractor was recommended to implement necessary protective measures, such as provision of bund wall and geo-textile coverings, to avoid water contamination from site works	Still outstanding. To be followed during the next period	Ongoing	--
15, 22 & 29 Dec 10	Sandbag barriers for temporary crossing at ch.600 were observed to be damaged	Observation	Contractor was advised to replace the damaged sandbags to avoid grit and soil from dropping into the river channel	Still Outstanding. To be followed during the next reporting period	Ongoing	--
29 Dec 10	Site surface was observed to be dry and dusty	Observation	Contractor was reminded to dampen dusty static area regularly for dust suppression	To be followed during the next reporting period	Ongoing	--

The summary of ecological inspection prepared by the Ecologist, Dr. Mark Shea is shown in Table 6.2.

Table 6.2 Summary results of ecological site inspection findings

Date	Observations	Advice from Ecologist	Action Taken	Closing Date
01 Dec 2010	No major findings for this inspection	No Advice is required	No Action is required to be taken	N/A
09 Dec 2010	No major findings for this inspection	No Advice is required	No Action is required to be taken	N/A
16 Dec 2010	No major findings for this inspection	No Advice is required	No Action is required to be taken	N/A
23 Dec 2010	No major findings for this inspection	No Advice is required	No Action is required to be taken	N/A
31 Dec 2010	No major findings for this inspection	No Advice is required	No Action is required to be taken	N/A

6.2 Non-compliance

There was no non-compliance recorded for the month of December 2010.

6.3 Recommendations

Contractor was reminded to implement necessary mitigation measures to minimize water quality impact arising from construction activities. Prior to excavation bund walls should be formed as an enclosed environment for excavation activities to prevent any earth material and site water from entering into the river channel. Riverbanks and earth bunds should be covered with geo-textile coverings to prevent erosion. Contractor should also prevent excessive storage of any earth materials on site as to avoid soil debris from washing into the river channel by surface runoff.

Chemicals using on site should be provided with proper drip tray as to avoid chemical spillage from causing contamination to surrounding area. Powered equipment should be serviced regularly as to maintain good condition and minimize oil leakage.

Contractor should also implement necessary measures to mitigate air quality impact from construction works. Earthy stockpiles should be covered with tarpaulin coverings and dusty static area should be dampened regularly for dust suppression.

6.4 Implementation status and effectiveness of the mitigation measures

Refer the previous table 6.1, the deficiencies regarding to oil stains on haul access which was caused by leakage have been identified since 20th October 2010, however, follow actions in collecting contaminated soil were still outstanding. Contractor was reminded again to implement corrective actions as soon as possible.

7.0 Waste management status

It is the contractor's responsibility to ensure that all wastes produced during construction phase for the drainage improvement works are handled, stored and disposed of in accordance with good waste management practices and EPD's regulation and requirement. Waste materials generated during construction activities such as construction and demolition(C&D) material, chemical wastes and general refuse, are recommended to be audited at regular intervals to ensure that proper storage, transportation and disposal practices are being implemented. **Table 7.1** is the Waste Disposal recorded by the Contractor in this month.

From the report of Contractor, C&D materials generated, were all reused and therefore no inert waste was disposed from the project.

The following table showed amount of waste generation, reused and disposed from this project site in this reporting month.

Table 7.1 Summary of Waste generated and disposed in December 2010

Type of waste	Amount generated	Amount reused	Amount disposed
Inert waste	11 m^3	11 m^3	0
Non-inert waste	10 kg	0	10 kg
Chemical waste	0	N/A	0

The cumulative waste flow table is shown in Appendix H.

8.0 Status of environmental licensing and permit

This project requires different permits and licenses to be run legally. **Table 8.1** is the summary of permits/ licenses for this project.

Table 8.1 Summary of Environmental Licensing and Permit Status

Description	License / Permit No.	Date of Issue	Date of Expiry	Remarks
Environmental Permit	EP-223/2005	31st Aug, 2005	N/A	Superseded
Amended Environmental Permit	EP-223/2005/A	18th Nov, 2008	N/A	Issued
Construction Noise Permit	N/A	N/A	N/A	N/A
Effluent Discharge License	3678	14th Mar, 2008	31st Mar, 2013	Issued
Registration as a Chemical Waste Producer	5213-724-C3251-03	19th Dec, 2007	Not applicable	Issued
Billing Account for Disposal of Construction Waste	7006101	N/A	N/A	N/A

9.0 Future key issues

Construction of retaining wall, footbridge, gabion wall and box culvert will be major construction activities to be carried out in the upcoming month. The construction activities for these items will generate environmental impacts in several aspects.

To minimize water quality impact arising from construction activities within river channel, water quality mitigation measures should be implemented as far as practicable. Any muddy water, underground water or wastewater generated from construction activities should be diverted to proper treatment facility prior to discharge.

For the proposed construction activities, heavy plants and vehicles may be occupied and those would generate certain noise impacts to the sensitive receivers. To minimize noise generation, noisy activities should be well planned and scheduled to avoid parallel operation of multiple plants. Erection of noise barriers and/or movable barriers should be implemented whenever necessary.

Contractor was reminded to provide regular water spraying to dusty static area for dust suppression. Excessive storage of earthy stockpile and/or C&D wastes should be prevented to minimize air quality impact arisen by wind erosion.

Aforementioned construction works may generate wastes on site. Contractor is advised to assign a site area for temporary waste storage and segregation. Wastes accumulation should be prevented on site; licensed waste collection and disposal should be implemented regularly for hygiene issues.

10.0 Conclusion

Construction of retaining wall and footbridge, formation of haul access and erection of temporary noise barrier were major site activities carried out by the Contractor in this reporting period.

Regular site meetings and inspection audits led by the seniors for discussing environmental issues were held among project proponent, Contractor and the Environmental Team on weekly basis.

Environmental Team had carried out construction noise monitoring on weekly basis. All results obtained were within limit and therefore no exceedance was recorded in this reporting month.

Piling works were not scheduled for this month. Therefore, no vibration monitoring was conducted during the reporting month.

From the summary of ecological site inspection findings and implementation status of environmental protection and mitigation for ecology, prepared by the Ecologist Dr. Mark Shea, there is no abnormal finding observed in the reporting month. The ecologist has no further advice and no action suggested to the contractor.

No non-compliance event was recorded in this reporting month.

There was no formal complaint in relation to environmental issue received in the reporting month.

The next ecological impact monitoring was arranged in January 2011.

ET has reminded the contractor to provide environmental pollution control measures wherever necessary; and to keep a good environmental management at site practice.

The ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual and Environmental Permit requirement.

Appendix A: Event and action plan for ecology

Event and action plan for ecology

In the event of non-compliance, the Event / Action plan prepared by the ecologist shall be followed. Detailed Event/ Action plan was shown in **Appendix Table 1** for reference.

It is not proposed to set population size of the three species (i.e. Three-lined Chinese Stream Catfish, Predaceous and the Hong Kong Newt) or other faunal species for the Action Level and Limit Level in the revised EM&A manual in considering the following reasons:

I. The schedule capture surveys would let to decrease in the populations of the target species; and

II. The planned drainage works would also temporally de-fauna the stream habitat.

It is considered logical and appropriate to audit non-compliance events in relation with ecological mitigation measures, which were specified in the EP and the PS of the project.

APPENDIX TABLE 1 Event / Action plan table for Ecology

Event	Action			
	ET	**ER**	**IEC**	**Contractor**
Non-conformity on one occasion	1. Identify Source 2. Inform the IEC and the ER 3. Discuss remedial actions with the IEC, the ER and the Contractor 4. Monitor remedial actions until rectification has been completed	1. Check report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures, 4. Advise the Contractor on effectiveness of proposed remedial measures 5. Check implementation of remedial measures	1. Ensure Remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement
Repeated Non conformity	1. Identify Source 2. Inform the IEC and the ER 3. Increase monitoring frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If exceedance stops, cease additional monitoring	1. Check monitoring report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the Contractor on effectiveness of proposed remedial measures 5. Check implementation of remedial measures	1. Ensure Remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement

Appendix B: Action and limit level for construction noise

The Action and Limit levels for construction noise are defined in **Appendix Table 2**

Appendix Table 2: Action and Limit Levels for Construction Noise

Time Period	Action	Limit
0700 – 1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)*
0700 – 2300hrs on holidays; and 1900 – 2300 hrs on all other days		Subject to the control of Noise Control Ordinance
2300 – 0700 hrs of next day		Subject to the control of Noise Control Ordinance

*Limit level set in accordance with Particular Specification Section 26

Appendix C: Reference standards for vibration

Guidance regarding vibration limits is provided by the following British Standards (or their equivalent ISO standards):
BS 7385 - Measurement and evaluation of vibration in buildings. Part 2: Guide to damage levels from ground borne vibration.

BS 7385 suggests vibration levels, below which damage is unlikely to occur in 95% of buildings. For cosmetic damage, the level is 15 mm/s at 4 Hz, increasing to 20 mm/s at 15 Hz, increasing to 50 mm/s at 40 Hz and above. Minor structural damage is possible at vibration levels twice those given above, major damage at four times the levels given.

Appendix Table 3: Transient vibration guide values for cosmetic building damage (BS7385:Part 2 1993)

	Type of Building	**Peak component particle velocity (mm/s) in frequency range of predominant pulse**
1	Reinforced or framed structures	50 at 4 Hz and above
2	Un-reinforced or light framed structures	15 at 4 Hz, increasing to 20 at 15 Hz, increasing to 50 at 40 Hz and above.

The vibration magnitudes and frequencies refer to Peak Particle Velocities (PPV) occurring in any single direction, measured on the ground level of the building concerned.

Appendix D: Noise monitoring results, graphical plots and location plan

Location	Leq 30min	L_{10} 30min	L_{90} 30min	Date	Time Duration	Major Construction Noise	Other Noise source	Weather	Location description
UTP 1	67.3	70.8	61.2	3-Dec-10	08:50-09:20	Operation of Backhoe	Background noise from traffic	Sunny	Façade
UTP 2	64.4	69.2	57.3	3-Dec-10	09:29-09:59	Operation of Backhoe	Background noise from traffic	Sunny	Façade
UTP 3	66.2	68.4	62.2	3-Dec-10	10:10-10:40	Operation of Backhoe	N/A	Sunny	Façade
UTP 4	59.4	60.3	52.2	3-Dec-10	10:47-11:17	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	Façade
UTP 5	54.8	55.0	43.4	3-Dec-10	11:19-11:49	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	Façade
UTP 6	55.6	55.7	41.6	3-Dec-10	13:00-13:30	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	Façade
UTP 7	57.3	59.0	44.3	3-Dec-10	13:34-14:04	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	Façade
UTP 8	58.4	60.4	47.3	3-Dec-10	14:06-14:36	Operation of Backhoe and Lorry	N/A	Sunny	Façade
UTP 9	59.4	63.3	48.0	3-Dec-10	14:44-15:14	Operation of Backhoe	N/A	Sunny	Façade
UTP 10	53.7	53.9	41.4	3-Dec-10	15:30-16:00	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	Façade
UTP 11	56.0	56.4	43.6	3-Dec-10	16:05-16:35	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	*Freefield

Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

Location	Leq 30min	L_{10} 30min	L_{90} 30min	Date	Time Duration	Major Construction Noise	Other Noise source	Weather	Location description
UTP 1	65.6	68.3	56.4	10-Dec-10	09:42-10:12	Operation of Backhoe	Background noise from traffic	Cloudy	Façade
UTP 2	63.2	67.4	58.3	10-Dec-10	09:06-09:36	Operation of Backhoe	Background noise from traffic	Cloudy	Façade
UTP 3	67.1	68.9	64.7	10-Dec-10	10:18-10:48	Operation of Backhoe	N/A	Cloudy	Façade
UTP 4	55.8	57.3	47.6	10-Dec-10	10:58-11:25	Operation of Backhoe	N/A	Cloudy	Façade
UTP 5	58.2	58.8	50.4	10-Dec-10	11:27-11:57	Operation of Backhoe	N/A	Cloudy	Façade
UTP 6	54.5	54.5	46.2	10-Dec-10	15:50-16:20	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 7	56.2	56.4	48.3	10-Dec-10	15:17-15:47	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 8	54.3	54.8	42.7	10-Dec-10	14:45-15:15	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 9	57.4	58.0	49.3	10-Dec-10	14:09-14:39	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 10	55.2	56.4	43.3	10-Dec-10	13:33-14:03	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 11	60.1	60.5	48.0	10-Dec-10	13:00-13:30	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	*Freefield

Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

Location	Leq 30min	L_{10} 30min	L_{90} 30min	Date	Time Duration	Major Construction Noise	Other Noise source	Weather	Location description
UTP 1	70.3	74.6	62.3	17-Dec-10	13:35-14:05	Operation of Backhoe & Boulder Breaking	Background noise from traffic	Cloudy	Façade
UTP 2	70.6	73.8	65.8	17-Dec-10	13:00-13:30	Operation of Backhoe & Boulder Breaking	Background noise from traffic	Cloudy	Façade
UTP 3	68.8	73.4	65.6	17-Dec-10	14:09-14:39	Operation of Backhoe & Boulder Breaking	N/A	Cloudy	Façade
UTP 4	56.7	56.9	44.8	17-Dec-10	14:45-15:15	Operation of Backhoe	N/A	Cloudy	Façade
UTP 5	57.3	59.9	46.3	17-Dec-10	15:17-15:47	Operation of Backhoe	N/A	Cloudy	Façade
UTP 6	55.4	55.5	42.0	17-Dec-10	15:50-16:20	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 7	54.8	58.7	47.7	17-Dec-10	11:15-11:45	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 8	55.2	56.2	43.4	17-Dec-10	10:42-11:12	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 9	56.2	57.3	50.3	17-Dec-10	10:04-10:37	Operation of Backhoe	N/A	Cloudy	Façade
UTP 10	54.2	54.7	47.2	17-Dec-10	09:30-10:00	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 11	56.4	57.1	49.8	17-Dec-10	08:56-09:26	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	*Freefield

Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

Location	Leq 30min	L_{10} 30min	L_{90} 30min	Date	Time Duration	Major Construction Noise	Other Noise source	Weather	Location description
UTP 1	72.6	78.8	63.4	24-Dec-10	09:39-10:09	Boulder Breaking	Background noise from traffic	Cloudy	Façade
UTP 2	73.4	77.6	65.2	24-Dec-10	09:03-09:33	Boulder Breaking	Background noise from traffic	Cloudy	Façade
UTP 3	69.3	74.1	63.0	24-Dec-10	10:16-10:46	Boulder Breaking	N/A	Cloudy	Façade
UTP 4	63.4	66.4	58.2	24-Dec-10	10:51-11:21	Operation of Backhoe & Boulder Movement	N/A	Cloudy	Façade
UTP 5	62.6	65.5	57.1	24-Dec-10	11:23-11:53	Operation of Backhoe & Boulder Movement	N/A	Cloudy	Façade
UTP 6	55.2	58.4	45.4	24-Dec-10	16:00-16:30	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 7	53.4	54.1	41.2	24-Dec-10	15:26-15:56	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 8	55.3	57.2	42.2	24-Dec-10	14:49-15:19	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 9	54.8	58.3	48.2	24-Dec-10	14:15-14:45	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 10	53.0	52.8	42.2	24-Dec-10	13:34-14:04	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	Façade
UTP 11	56.4	56.5	44.0	24-Dec-10	13:00-13:30	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Cloudy	*Freefield

Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

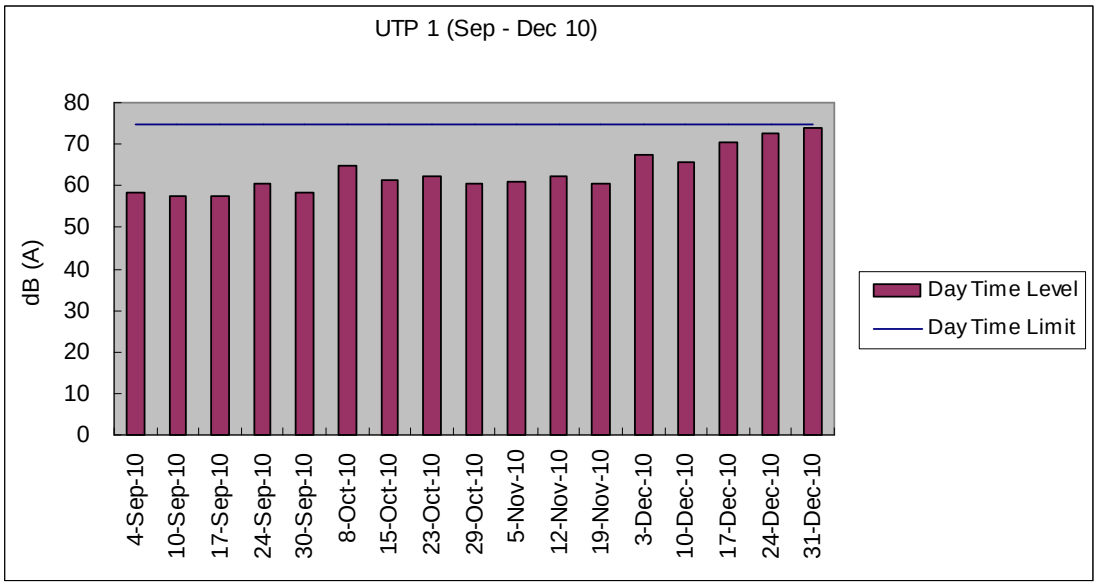
Location	Leq 30min	L_{10} 30min	L_{90} 30min	Date	Time Duration	Major Construction Noise	Other Noise source	Weather	Location description
UTP 1	73.8	79.6	68.4	31-Dec-10	09:33-10:03	Boulder Breaking	Background noise from traffic	Sunny	Façade
UTP 2	74.6	80.2	64.2	31-Dec-10	08:58-09:28	Boulder Breaking	Background noise from traffic	Sunny	Façade
UTP 3	71.2	76.3	65.6	31-Dec-10	10:09-10:39	Boulder Breaking	N/A	Sunny	Façade
UTP 4	73.4	77.4	66.6	31-Dec-10	10:46-11:16	Boulder Breaking	N/A	Sunny	Façade
UTP 5	74.5	78.1	66.9	31-Dec-10	11:20-11:50	Boulder Breaking	N/A	Sunny	Façade
UTP 6	59.4	61.3	47.6	31-Dec-10	16:04-16:34	Boulder Breaking	N/A	Sunny	Façade
UTP 7	58.8	60.4	46.3	31-Dec-10	15:28-15:58	Boulder Breaking	N/A	Sunny	Façade
UTP 8	58.4	61.1	46.0	31-Dec-10	14:55-15:25	Boulder Breaking	N/A	Sunny	Façade
UTP 9	56.2	57.4	44.3	31-Dec-10	14:19-14:49	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	Façade
UTP 10	53.7	53.9	42.0	31-Dec-10	13:34-14:04	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	Façade
UTP 11	55.2	55.5	44.6	31-Dec-10	13:00-13:30	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	*Freefield

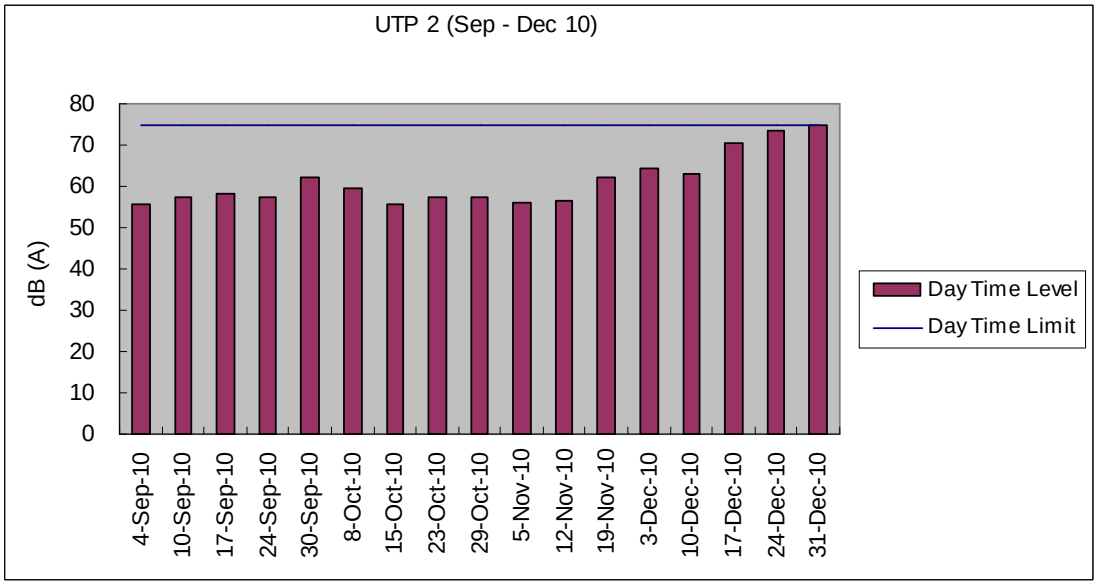
Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

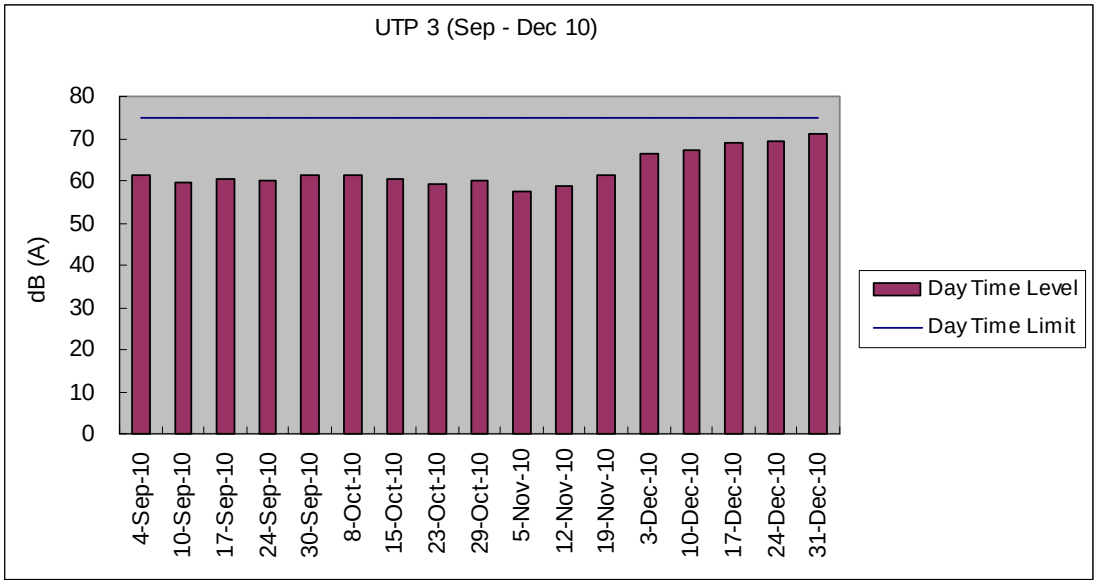
Graphical plot for noise measurements

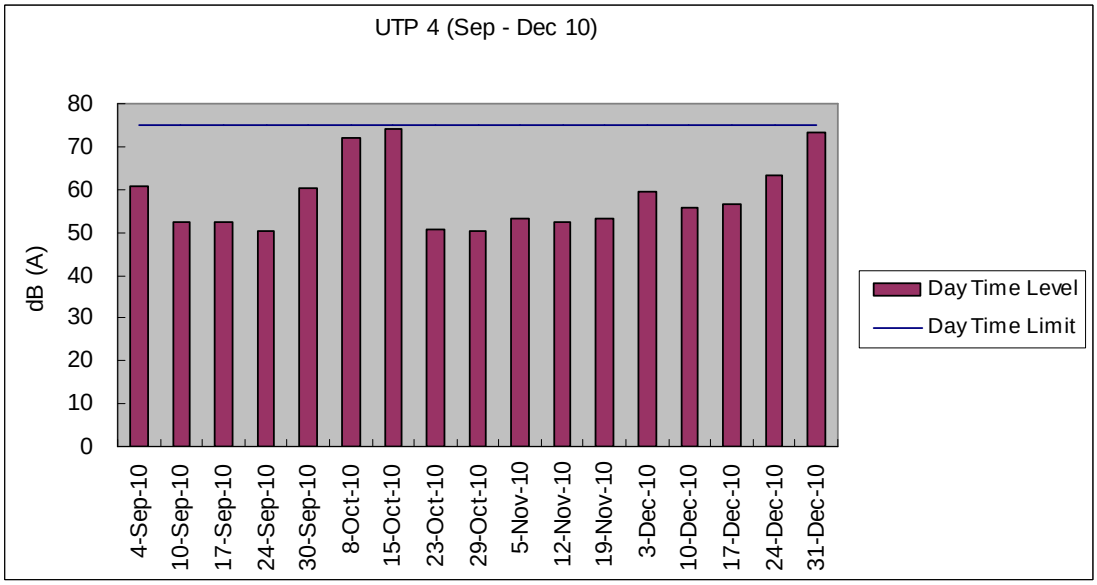
The followings were the graphical plots for the 11 monitoring locations. Each plot showed the date of measurement taken, day time limit of 75 dB(A) as well as the measured daytime level for each location. The graphs contain the data recorded from September 2010 to December 2010.

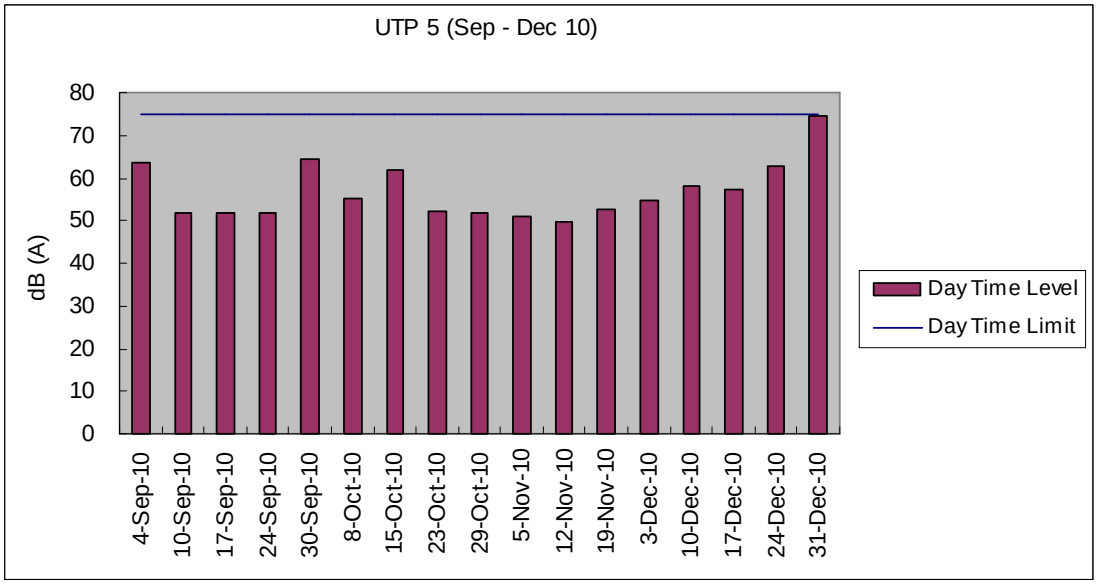
Noise monitoring originally proposed to be carried out 26th November 2010 was cancelled due to security and safety reason.






UTP 3 (Sep - Dec 10)
dB (A)
80
70
60
50
40
30
20
10
0
4-Sep-10
10-Sep-10
17-Sep-10
24-Sep-10
30-Sep-10
8-Oct-10
15-Oct-10
23-Oct-10
29-Oct-10
5-Nov-10
12-Nov-10
19-Nov-10
3-Dec-10
10-Dec-10
17-Dec-10
24-Dec-10
31-Dec-10
Day Time Level
Day Time Limit


UTP 4 (Sep - Dec 10)
dB (A)
80
70
60
50
40
30
20
10
0
4-Sep-10
10-Sep-10
17-Sep-10
24-Sep-10
30-Sep-10
8-Oct-10
15-Oct-10
23-Oct-10
29-Oct-10
5-Nov-10
12-Nov-10
19-Nov-10
3-Dec-10
10-Dec-10
17-Dec-10
24-Dec-10
31-Dec-10
Day Time Level
Day Time Limit


UTP 5 (Sep - Dec 10)
dB (A)
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10
20
30
40
50
60
70
80
4-Sep-10
10-Sep-10
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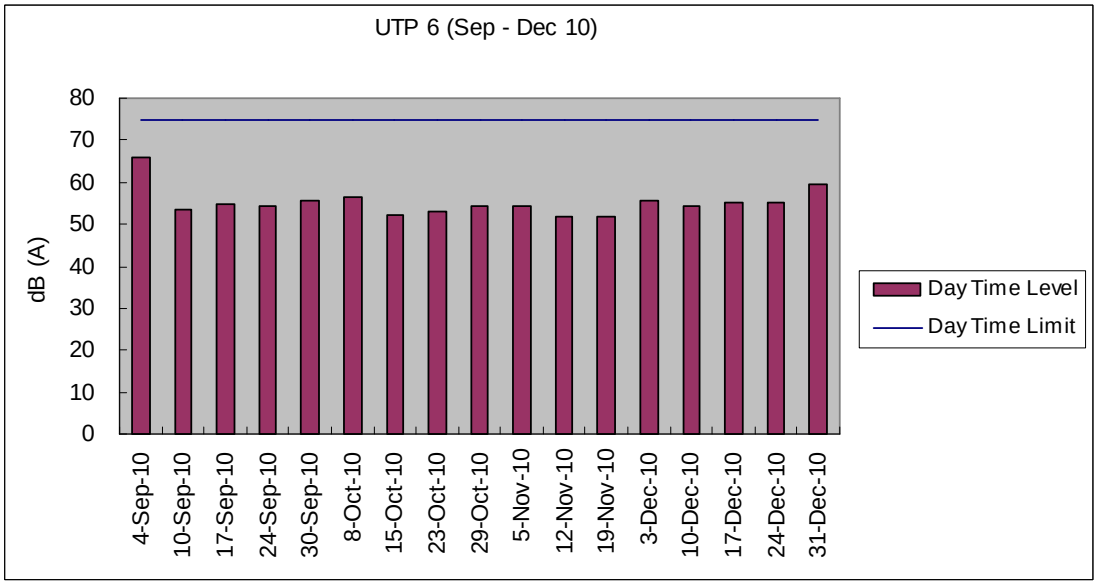
24-Sep-10
30-Sep-10
8-Oct-10
15-Oct-10
23-Oct-10
29-Oct-10
5-Nov-10
12-Nov-10
19-Nov-10
3-Dec-10
10-Dec-10
17-Dec-10
24-Dec-10
31-Dec-10
Day Time Level
Day Time Limit


UTP 6 (Sep - Dec 10)
dB (A)
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10
20
30
40
50
60
70
80
4-Sep-10
10-Sep-10
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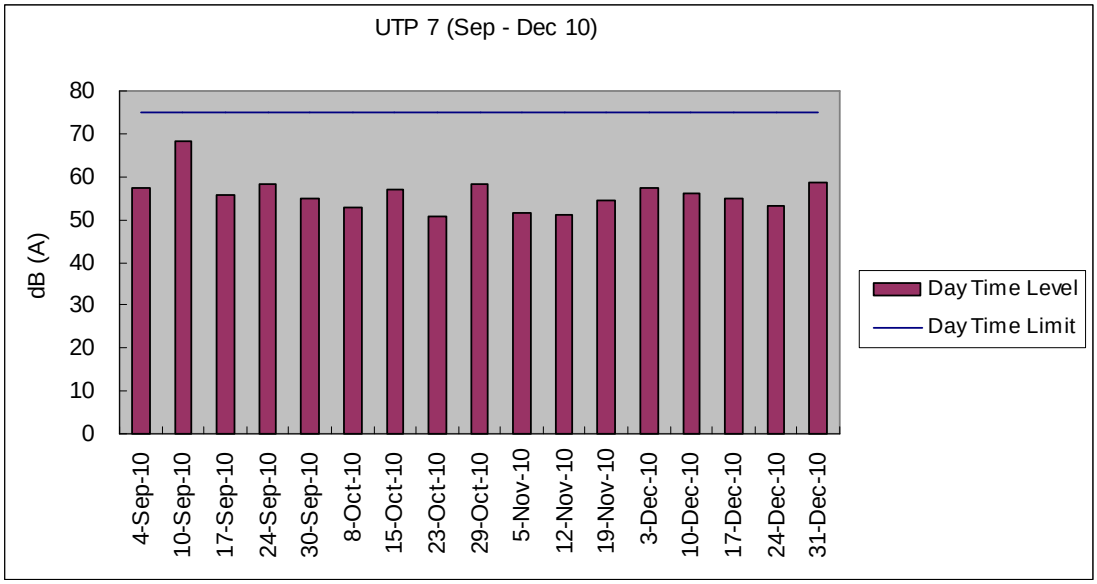
24-Sep-10
30-Sep-10
8-Oct-10
15-Oct-10
23-Oct-10
29-Oct-10
5-Nov-10
12-Nov-10
19-Nov-10
3-Dec-10
10-Dec-10
17-Dec-10
24-Dec-10
31-Dec-10
Day Time Level
Day Time Limit


UTP 7 (Sep - Dec 10)
dB (A)
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70
60
50
40
30
20
10
0
4-Sep-10
10-Sep-10
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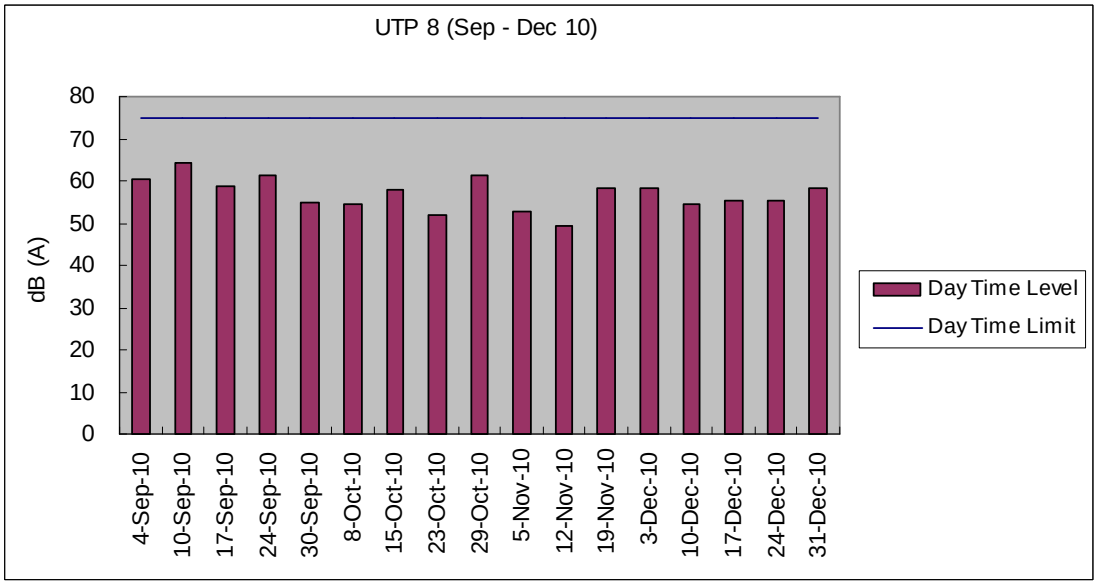
15-Oct-10
23-Oct-10
29-Oct-10
5-Nov-10
12-Nov-10
19-Nov-10
3-Dec-10
10-Dec-10
17-Dec-10
24-Dec-10
31-Dec-10
Day Time Level
Day Time Limit


UTP 8 (Sep - Dec 10)
dB (A)
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40
30
20
10
0
4-Sep-10
10-Sep-10
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30-Sep-10
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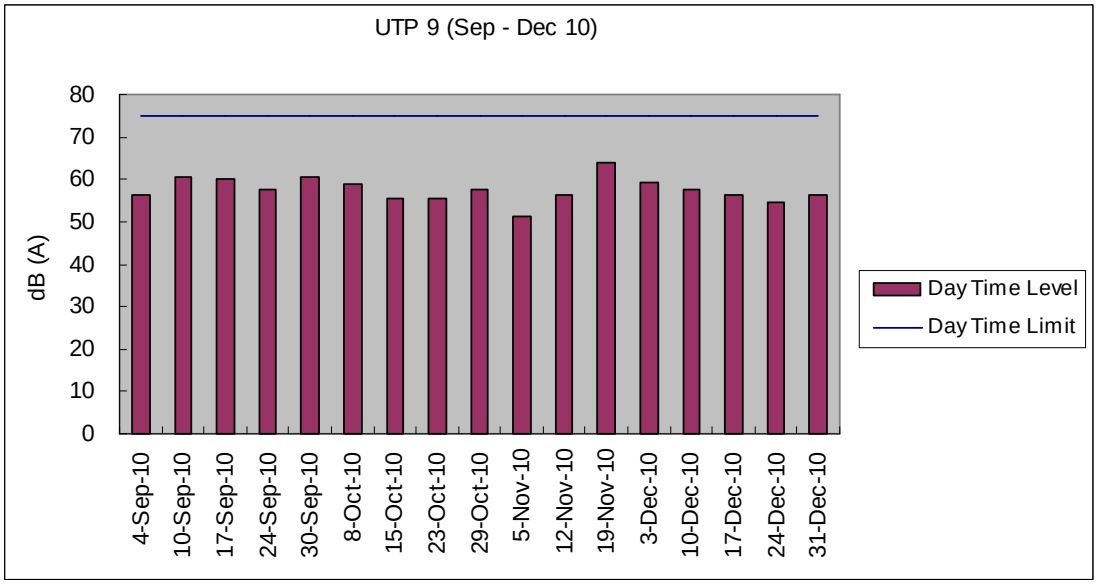
15-Oct-10
23-Oct-10
29-Oct-10
5-Nov-10
12-Nov-10
19-Nov-10
3-Dec-10
10-Dec-10
17-Dec-10
24-Dec-10
31-Dec-10
Day Time Level
Day Time Limit


UTP 9 (Sep - Dec 10)
dB (A)
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60
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40
30
20
10
0
4-Sep-10
10-Sep-10
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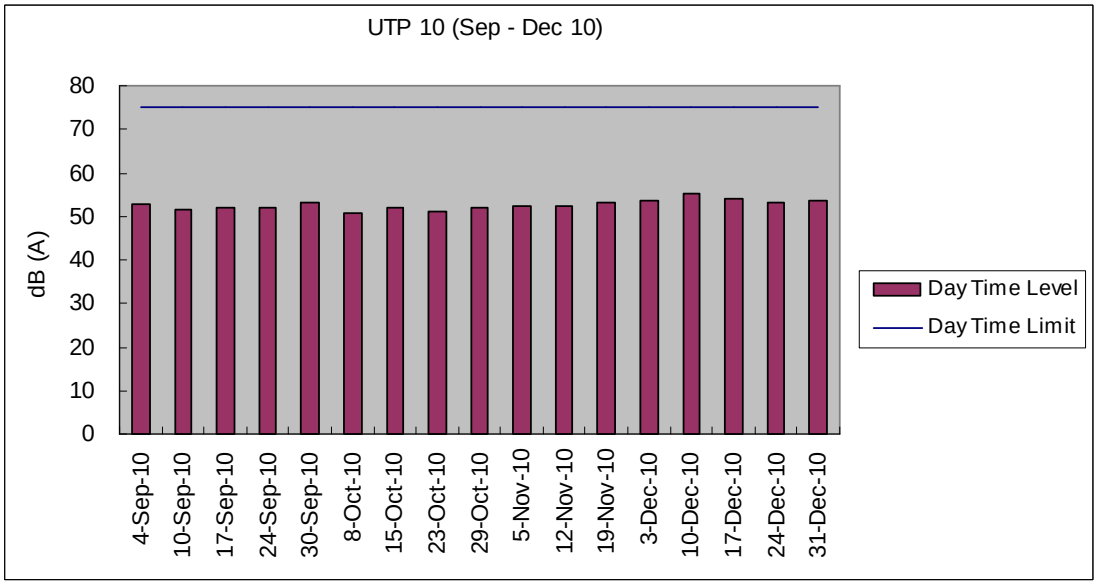
30-Sep-10
8-Oct-10
15-Oct-10
23-Oct-10
29-Oct-10
5-Nov-10
12-Nov-10
19-Nov-10
3-Dec-10
10-Dec-10
17-Dec-10
24-Dec-10
31-Dec-10
Day Time Level
Day Time Limit


UTP 10 (Sep - Dec 10)
dB (A)
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60
50
40
30
20
10
0
4-Sep-10
10-Sep-10
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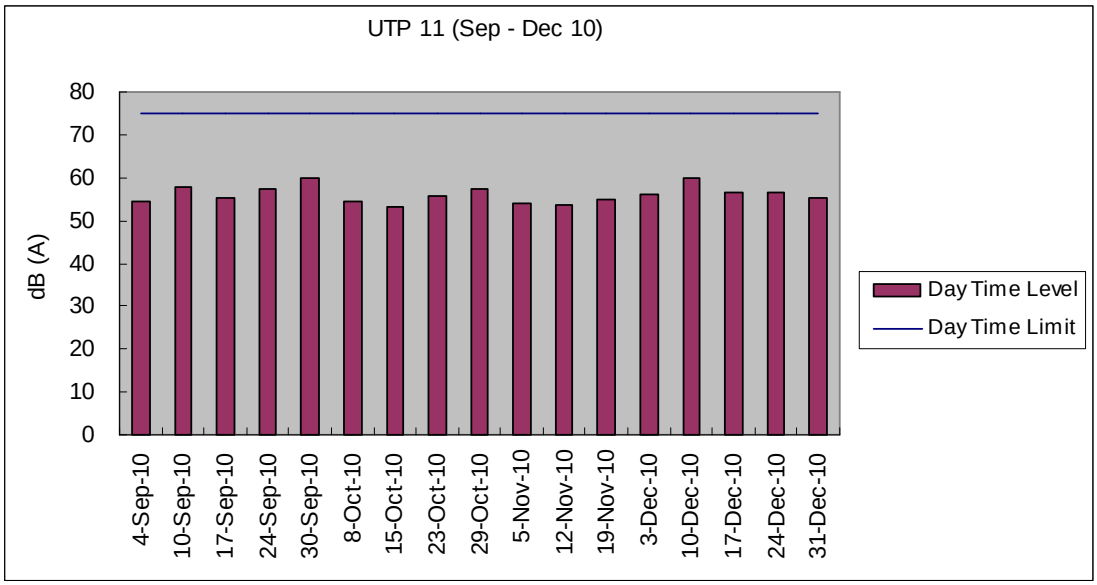
30-Sep-10
8-Oct-10
15-Oct-10
23-Oct-10
29-Oct-10
5-Nov-10
12-Nov-10
19-Nov-10
3-Dec-10
10-Dec-10
17-Dec-10
24-Dec-10
31-Dec-10
Day Time Level
Day Time Limit


UTP 11 (Sep - Dec 10)
dB (A)
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70
60
50
40
30
20
10
0
4-Sep-10
10-Sep-10
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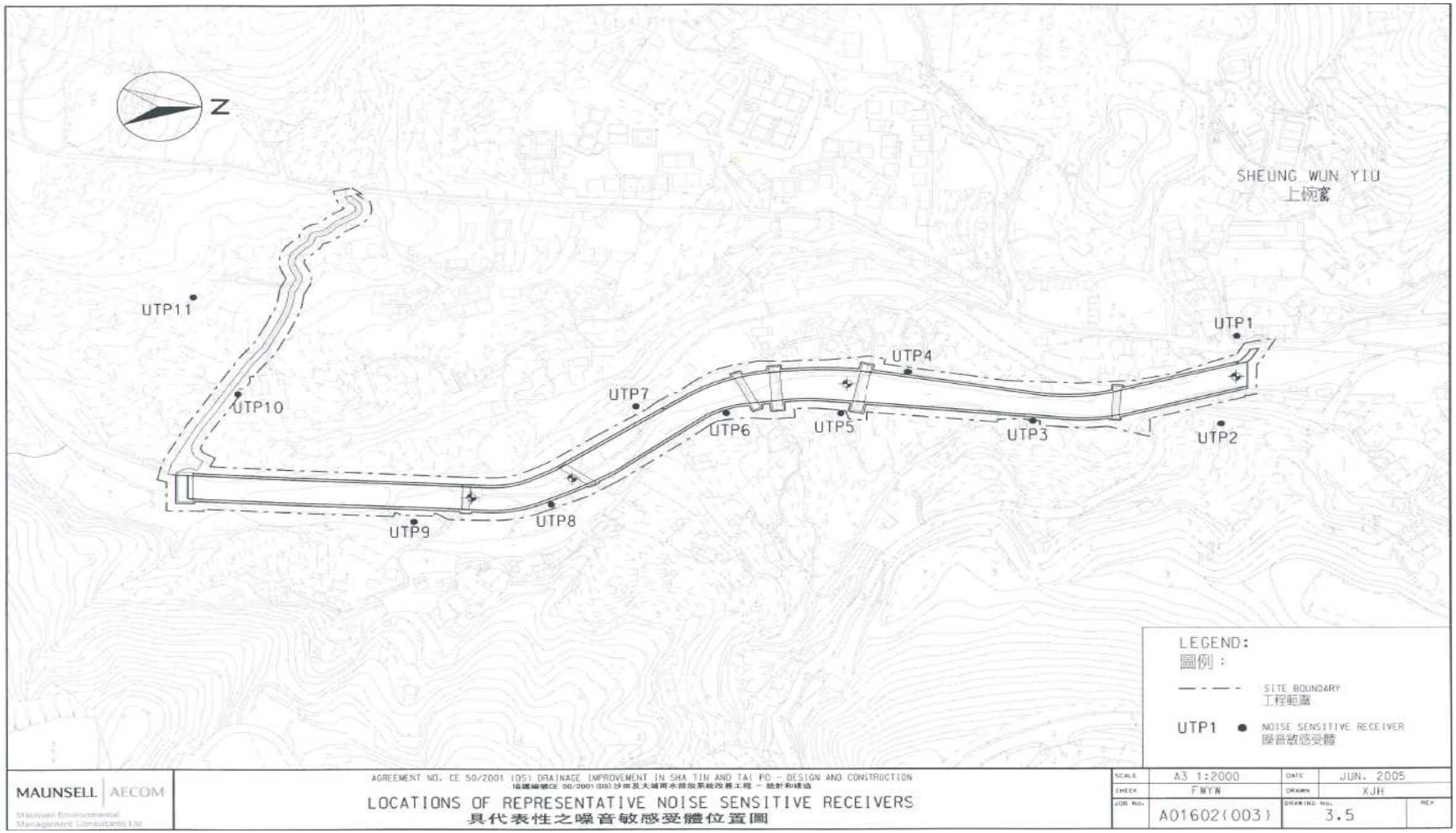
30-Sep-10
8-Oct-10
15-Oct-10
23-Oct-10
29-Oct-10
5-Nov-10
12-Nov-10
19-Nov-10
3-Dec-10
10-Dec-10
17-Dec-10
24-Dec-10
31-Dec-10
Day Time Level
Day Time Limit


N
SHEUNG WUN YIU
上碗窰
UTP11
UTP10
UTP9
UTP8
UTP7
UTP6
UTP5
UTP4
UTP3
UTP2
UTP1
LEGEND:
圖例：
SITE BOUNDARY
工程範圍
UTP1
NOISE SENSITIVE RECEIVER
噪音敏感受體
MAUNSELL AECOM
Maunsell Environmental Management Consultants Ltd
AGREEMENT NO. CE 50/2001 (DS) DRAINAGE IMPROVEMENT IN SHA TIN AND TAI PO – DESIGN AND CONSTRUCTION
LOCATIONS OF REPRESENTATIVE NOISE SENSITIVE RECEIVERS
具代表性之噪音敏感受體位置圖
SCALE A3 1:2000
DATE JUN. 2005
CHECK FWYW
DRAWN KJH
JOB NO. A01602(003)
DRAWING NO. 3.5
REV

Appendix E: Monitoring schedule for the present and next reporting period

Master Schedule of EM&A works in December 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01/12	02/12	03/12	04/12
			Site inspection at afternoon & Ecological site inspection		Noise monitoring	
05/12	06/12	07/12	08/12	09/12	10/12	11/12
			Site inspection at afternoon	Ecological site inspection	Noise monitoring	
12/12	13/12	14/12	15/12	16/12	17/12	18/12
			Site inspection at afternoon	Ecological site inspection	Noise monitoring	
19/12	20/12	21/12	22/12	23/12	24/12	25/12
			Site inspection and SSEMC at morning	Ecological site inspection	Noise monitoring	
26/12	27/12	28/12	29/12	30/12	31/12	
			Site inspection at afternoon		Noise monitoring & Ecological site inspection	

Master Schedule of EM&A works in January 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30/01	31/01					01/01
02/01	03/01	04/01	05/01	06/01	07/01	08/01
	Ecological site inspection		Site inspection at afternoon		Noise monitoring	
09/01	10/01	11/01	12/01	13/01	14/01	15/01
	Ecological site inspection		Site inspection at afternoon		Noise monitoring	
16/01	17/01	18/01	19/01	20/01	21/01	22/01
	Ecological site inspection		Site inspection at afternoon		Noise monitoring	
23/01	24/01	25/01	26/01	27/01	28/01	29/01
	Ecological site inspection		Site inspection and SSEMC at morning	Ecological impact monitoring	Noise monitoring	

Appendix F: Cumulative complaint log

Environmental Parameters	Cumulative no. Brought forward	No. of complaint December 2010	Overall Total
Air/Dust	1	0	1
Noise	2	0	2
Water	8	0	8
House Keeping Hygiene	0	0	0
Chemical waste	0	0	0
Total	11	0	11

Appendix G: Implementation status of environmental protection and mitigation measures

Implementation status of environmental protection and mitigation

Environmental Aspect	Protection / Mitigation Measures	Implementation status	Follow-up action
Construction Noise	No percussive piling shall be carried out	Implemented	Not required
	-Use well maintained construction plant	Implemented	Not required
	-Shut down plants between work periods	Implemented	Not required
	-Install silencers on construction equipment	Implemented	Not required
	-Locate mobile plant far away from NSRs	Implemented	Not required
	-Quiet plants should be used	Implemented	Not required
	-2m high temporary noise barriers, as stipulated in EP condition 2.9, shall be installed	Implemented	Not required
Fugitive Dust Emission	-Implement regular watering and vehicle washing facilities	Implemented	Not required
	-Cover excavated or stockpile of dusty material by impervious sheeting or sprayed with water	Implemented	Not required
	-Use tarpaulin to cover dusty materials on vehicles	Implemented	Not required
Water Quality	Excavation works within the Tai Po River within the Project shall be carried out in stages and excavation area for each stage shall be limited to section of half width of the channel and less than 100m long at any one time in order to maintain water flow within the river during construction stage	Implemented	Not required
	Land-based plant shall be employed and site run-off shall be directed towards regularly cleaned and maintained silt traps and oil / grease separators to minimize leakage and loss of sediments during excavation	Implemented	Not required
	Large boulders removed from the Tai Po River within the Project during excavation shall be re-instated upon completion of works A section of 150m long natural riverbank on the western side of the river channel (Ch0 –Ch150) shall be retained	Implemented	Not required
	The excavation area shall be enclosed with bunds or barriers and dewatered prior to excavation to minimize the impacts upon the downstream of the Tai Po River	Deficiency identified	Ongoing

	Provide silt trap and oil interceptor to remove the oil, lubricants, grease, silt, grit and debris from the wastewater before pumped to the public storm water drainage system	Implemented	Not required
	Provide site toilet facilities	Implemented	Not required
Waste Management	Reuse excavated material as far as possible	Implemented	Not required
	Recycle scrap metals or abandoned equipment	Implemented	Not required
	Adopt a trip ticket system for the disposal of C&D materials	Implemented	Not required
	All general refuse should be segregated and stored in enclosed bins or compaction units	Implemented	Not required
Vibration	Percussive piling is to be replaced by bore-hole piling to minimize vibration impacts to the two identified Declared monuments	Not applicable at this stage	Not required
	Carrying out of vibration monitoring to ensure that vibration associated with the construction phase do not exceed the threshold limit otherwise contractor have to review the work method and construction activities have to be slow down or rescheduled to reduce the impacts	Not applicable at this stage	Not required
	Close monitoring and measurement on the cracks of the external wall of Fan Sin Temple during construction works will be carried out. Any changes on the cracks will be recorded for the contractor to slow down the construction activities accordingly; and to review the work methods and equipments immediately	Not Applicable at this stage	Not required

Implementation status of environmental protection and mitigation for ecology, prepared by the Ecologist, Dr. Mark Shea.

Environmental Aspect	Protection / Mitigation Measures	Implementation status	Follow-up action
Ecology	Large boulders will be returned to the riverbed following the excavation works.	Not applicable	Not required
	Construction works from Ch. 0.0m – Ch. 150m would be along one side of the river only	Concerns raised due to the flood incident on 22 Jul 10 and the follow up flood relief works	To be followed
	Approximately 150m of the existing natural riverbank on the western side of the river would be retained.	Implemented	Not required
	Excavation works within the river channel should be restricted to an enclosed dewater section of the river, and would be limited to sections 50-100m long at any one time.	Implemented	Not required
	Flows to the area downstream shall be maintained at all times during the construction phase	Implemented	Not required
	Capture survey shall be conducted within the Tai Po River before commencement of works. The captured target species shall be relocated to areas of the watercourse upstream of the watercourse upstream of the Tai Po River	Capture surveys had been conducted at the beginning of the Contract, during the wet season July/August 2008, 4th November 2008, 27th, 28th October 2009, 15th October and 9th November 2010	Not required
	Temporary noise barriers should be constructed to control noise impacts to habitats and associated wildlife within and adjacent to the proposed works area	Implemented	Not required
	Excavation works shall be carried out by land based plant within enclosed dry section of river channel.	Implemented	Not required
	Compensatory planting of trees and other vegetation along the banks of the newly improved drainage channel should be provided to compensate for the loss of riparian vegetation.	Not applicable	Not required
	Operation phase activities in the improved drainage channel would be limited to periodic channel maintenance such as de-silting.	Not applicable	Not required

Appendix H: Cumulative waste flow table

Cumulative waste flow table showing amount of wastes generated, reused and disposed since 15th September 2008

Type of waste	Inert Waste			Non-Inert Waste			Chemical Waste	
	Amount generated	Amount reused	Amount disposed	Amount generated	Amount reused	Amount disposed	Amount generated	Amount disposed*
Year 2008 to 2009	36.9m^3	0	36.9m^3	2 tonnes	0	2 tonnes	20kg	20kg
January 2010	0	0	0	0	0	0	0	0
February 2010	205m^3	205m^3	0	0	0	0	0	0
March 2010	125m^3	125m^3	0	0	0	0	0	0
April 2010	354m^3	354m^3	0	0	0	0	0	0
May 2010	13m^3	13m^3	0	0	0	0	0	0
June 2010	10m^3	10m^3	0	0.020 tonnes	0	0.020 tonnes	0	0
July 2010	10m^3	10m^3	0	0	0	0	0	0
August 2010	265m^3	265m^3	0	0.064 tonnes	0	0.064 tonnes	0	0
September 2010	550m^3	550m^3	0	0.057 tonnes	0	0.057 tonnes	0	0
October 2010	412m^3	412m^3	0	0.024 tonnes	0	0.024 tonnes	0	0
November 2010	0	0	0	0.017 tonnes	0	0.017 tonnes	0	0
December 2010	11m^3	11m^3	0	0.010 tonnes	0	0.010 tonnes	0	0
Total	**1991.9m^3**	**1944m^3**	**36.9m^3**	**2.192 tonnes**	**0**	**2.192 tonnes**	**20kg**	**20kg**

Remark*: Chemical wastes generated from the project sites including Upper Tai Po River, Lam Tsuen River and She Shan River were centralized for disposal.

Appendix I: Construction programme (Rev. No. 13)

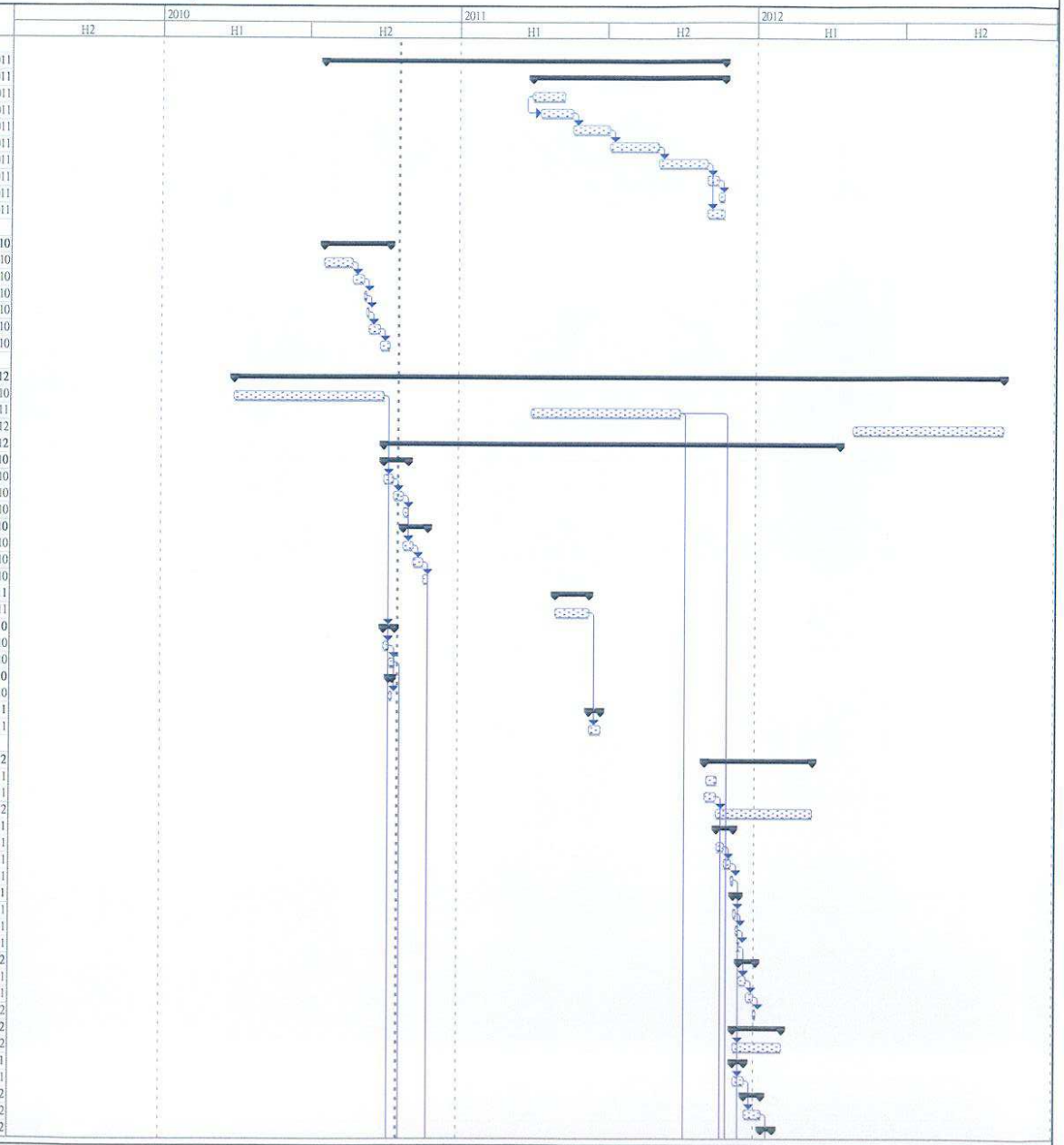
Drainage Services Department

Contract No. DC/2007/06

River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River

Revised Master Programme Aug 2010 - Oct 2012

ID	任務名稱	Duration	Start	Finish
971				
972	Section 2 - She Shan River (Area K) Ch 1850 to 1550	491 days	20/7/2010	22/11/2011
973	From CHL 1850 to CHL 1550	236 days	1/4/2011	22/11/2011
974	Footpath construction at LHS (Ch. 1520 to 1600)	40 days	1/4/2011	10/5/2011
975	Drainage pipe and U-channel construction	40 days	11/4/2011	20/5/2011
976	Excavation to form new arrangement of river bed (Prov. Substrates on riverbed)	45 days	21/5/2011	4/7/2011
977	Footbridge SB01 - Dwarf Wall	60 days	5/7/2011	2/9/2011
978	Dwarf Wall/Drawpit and Ducting Construction	60 days	3/9/2011	1/11/2011
979	Public Lighting Installation (CE2278/79)	14 days	2/11/2011	15/11/2011
980	T&C	7 days	16/11/2011	22/11/2011
981	Watermain Diversion	21 days	2/11/2011	22/11/2011
982				
983	Variation Order No. 116	81 days	20/7/2010	8/10/2010
984	Fabrication of Precast Concrete Planter	35 days	20/7/2010	23/8/2010
985	Material delivery	14 days	24/8/2010	6/9/2010
986	Blinding layer	3 days	7/9/2010	9/9/2010
987	PVC sheeting	3 days	10/9/2010	12/9/2010
988	Installation of Planters	14 days	13/9/2010	26/9/2010
989	Infill of Planting Soil	12 days	27/9/2010	8/10/2010
990				
991	Programme of Upper Tai Po River	945 days	1/4/2010	31/10/2012
992	Wet Season of 2010	184 days	1/4/2010	1/10/2010
993	Wet Season of 2011	183 days	1/4/2011	30/9/2011
994	Wet Season of 2012	184 days	1/5/2012	31/10/2012
995	Ch 230-350	561 days	2/10/2010	14/4/2012
996	Gabion Wall (Ch 235-270 RHS) TG1	30 days	2/10/2010	31/10/2010
997	Excavation and Formation	12 days	2/10/2010	13/10/2010
998	Gabion Wall Construction (Ch 235-270 LHS)	12 days	14/10/2010	25/10/2010
999	Backfilling	6 days	26/10/2010	31/10/2010
1000	Retaining Wall (Ch 270-315 RHS) TR1 (replaced by AD1)	30 days	26/10/2010	24/11/2010
1001	Excavation and Formation	12 days	26/10/2010	6/11/2010
1002	Laying Concrete block and gabion units	12 days	7/11/2010	18/11/2010
1003	Backfilling	6 days	19/11/2010	24/11/2010
1004	Drainage & Footpath (CH 235-315 RHS)	42 days	1/5/2011	11/6/2011
1005	Construction of drainage & footpath	42 days	1/5/2011	11/6/2011
1006	Gabion Wall (Ch 310-330 LHS) TG2	14 days	2/10/2010	15/10/2010
1007	Excavation and Formation	7 days	2/10/2010	8/10/2010
1008	Gabion Wall Construction (Ch 315-330 LHS)	7 days	9/10/2010	15/10/2010
1009	Maintainence Staircase (Ch 320 LHS)	4 days	9/10/2010	12/10/2010
1010	Formwork and concreting	4 days	9/10/2010	12/10/2010
1011	Drainage & Footpath (Ch 310-330 LHS)	14 days	12/6/2011	25/6/2011
1012	Construction of drainage & footpath	14 days	12/6/2011	25/6/2011
1013				
1014	Temp crossing at Ch230	133 days	1/11/2011	12/3/2012
1015	Temp crossing at Ch230	13 days	3/11/2011	15/11/2011
1016	UU diversion from LHS to F/P along Ch235-315 (RHS)	14 days	1/11/2011	14/11/2011
1017	Pedesrian Diversion LHS to F/P along Ch235-315 (RHS)	119 days	15/11/2011	12/3/2012
1018	Gabion Wall (Ch 230-270 LHS) TG2	21 days	16/11/2011	6/12/2011
1019	Excavation and Formation	9 days	16/11/2011	24/11/2011
1020	Gabion Wall Construction (Ch 230-270 LHS)	9 days	25/11/2011	3/12/2011
1021	Backfilling	3 days	4/12/2011	6/12/2011
1022	Gabion Wall (Ch 270-280 LHS) TG4	7 days	7/12/2011	13/12/2011
1023	Excavation and Formation	3 days	7/12/2011	9/12/2011
1024	Gabion Wall Construction (Ch 270-280 LHS)	3 days	10/12/2011	12/12/2011
1025	Backfilling	1 day	13/12/2011	13/12/2011
1026	Retaining Wall (Ch 280-310 LHS) TR1 (replaced by AD1)	21 days	14/12/2011	3/1/2012
1027	Excavation and Formation	9 days	14/12/2011	22/12/2011
1028	Laying Concrete block and gabion units	9 days	23/12/2011	31/12/2011
1029	Backfilling	3 days	1/1/2012	3/1/2012
1030	Drainage & Footpath (Ch 200-310 LHS)	60 days	7/12/2011	4/2/2012
1031	Construction of drainage & footpath (Ch 200-310 LHS)	60 days	7/12/2011	4/2/2012
1032	Step 2 (Ch 260)	14 days	7/12/2011	20/12/2011
1033	Construction of Step 2 (Ch 260)	14 days	7/12/2011	20/12/2011
1034	Cascade (Ch 275)	21 days	21/12/2011	10/1/2012
1035	Construction of Cascade (Ch 275)	21 days	21/12/2011	10/1/2012
1036	Step 3 (Ch 310)	14 days	11/1/2012	24/1/2012



Revised Master Prog (Aug10-Oct1
日期: 18/10/2010

任務 里程碑 上順型任務 上順型進度 外部任務 摘要群組
進度 摘要 上順型里程碑 分割 專案摘要 期限

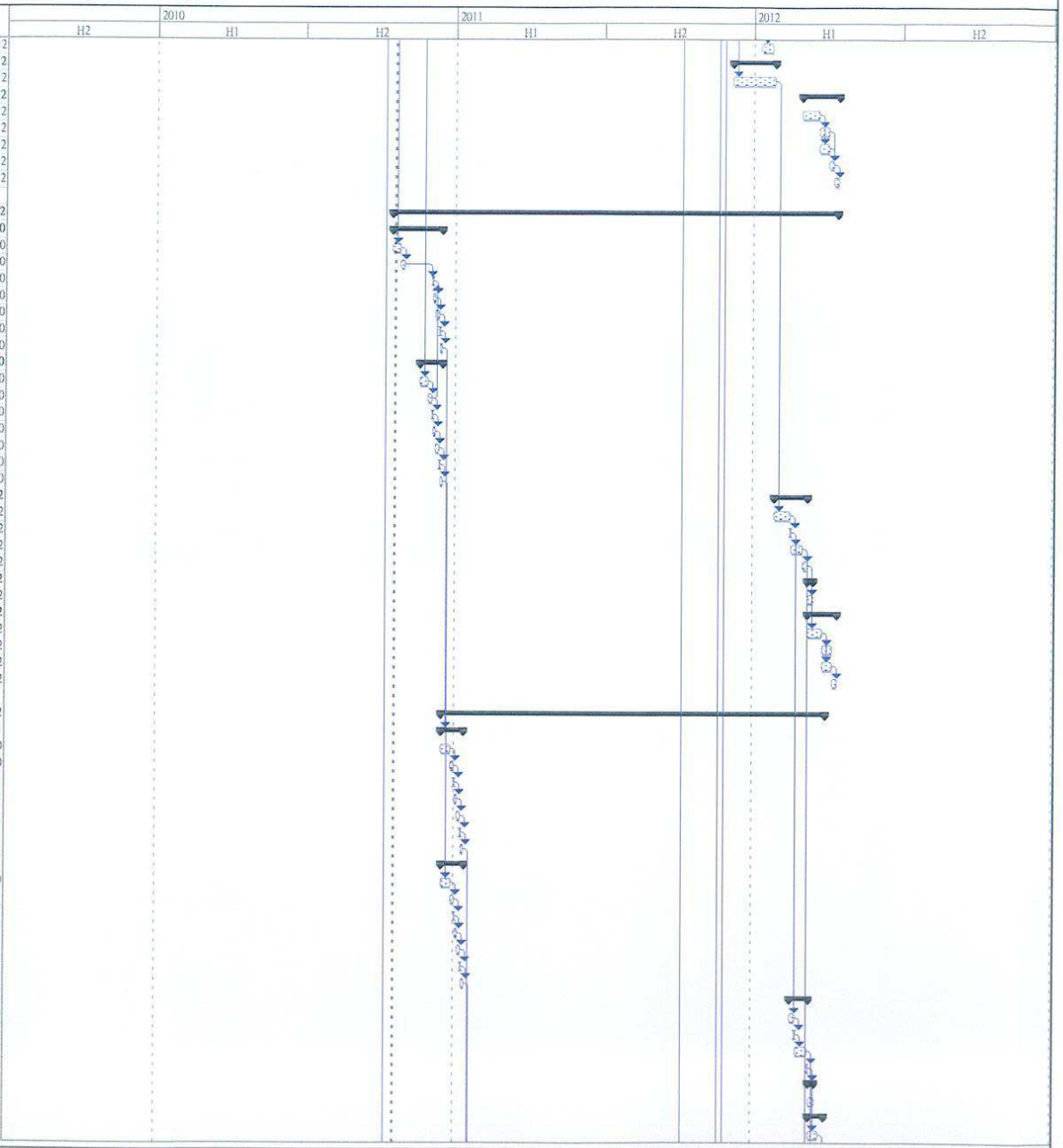
Drainage Services Department

Contract No. DC/2007/06

River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River

Revised Master Programme Aug 2010 - Oct 2012

ID	任務名稱	Duration	Start	Finish
1037	Construction of Step 3 (Ch319)	14 days	11/1/2012	24/1/2012
1038	River Bed formation (Ch 230-310)	52 days	7/12/2011	27/1/2012
1039	Placing Grade 500 toe Stone	52 days	7/12/2011	27/1/2012
1040	Lighting at CH 250-320	45 days	1/3/2012	14/4/2012
1041	Construction of Drawpits / Ductings	21 days	1/3/2012	21/3/2012
1042	Public lighting Installation (CE2318)	12 days	22/3/2012	2/4/2012
1043	Public lighting Installation (CE2317)	12 days	22/3/2012	2/4/2012
1044	T&C	6 days	3/4/2012	8/4/2012
1045	Removal of existing lighting (VA1311-Z1)	6 days	9/4/2012	14/4/2012
1046				
1047	Footbridge TB04 (Ch 330)	546 days	16/10/2010	13/4/2012
1048	Construction of Abutment A (LHS)	61 days	16/10/2010	15/12/2010
1049	Excavation and Blinding	10 days	16/10/2010	25/10/2010
1050	Formwork and rebar fixing for base slab	5 days	26/10/2010	30/10/2010
1051	Concreting of base slab	1 day	4/12/2010	4/12/2010
1052	Stripping off formwork	3 days	5/12/2010	7/12/2010
1053	Rebar fixing and shuttering formwork for column	5 days	8/12/2010	12/12/2010
1054	Concreting of column	1 day	13/12/2010	13/12/2010
1055	Stripping off formwork	2 days	14/12/2010	15/12/2010
1056	Construction of Abutment B (RHS)	28 days	19/11/2010	16/12/2010
1057	Excavation and Blinding	10 days	19/11/2010	28/11/2010
1058	Formwork and rebar fixing for base slab	5 days	29/11/2010	3/12/2010
1059	Concreting of base slab	1 day	4/12/2010	4/12/2010
1060	Stripping off formwork	3 days	5/12/2010	7/12/2010
1061	Rebar fixing and shuttering formwork for column	5 days	8/12/2010	12/12/2010
1062	Concreting of base slab	1 day	13/12/2010	13/12/2010
1063	Stripping off formwork	3 days	14/12/2010	16/12/2010
1064	Construction of decking	41 days	28/1/2012	8/3/2012
1065	Formwork and rebar fixing for decking	20 days	28/1/2012	16/2/2012
1066	Concreting	1 day	17/2/2012	17/2/2012
1067	Stripping off formwork	14 days	18/2/2012	2/3/2012
1068	Railing installation	6 days	3/3/2012	8/3/2012
1069	Demolition of Bridge TB-A	7 days	9/3/2012	15/3/2012
1070	Demolition works	7 days	9/3/2012	15/3/2012
1071	Lighting at Footbridge TB04	36 days	9/3/2012	13/4/2012
1072	Construction of Drawpits / Ductings	18 days	9/3/2012	26/3/2012
1073	Public lighting Installation (CE2315)	12 days	27/3/2012	7/4/2012
1074	Public lighting Installation (CE2316)	12 days	27/3/2012	7/4/2012
1075	T&C	6 days	8/4/2012	13/4/2012
1076				
1077	Footbridge TB05 (ch 350)	471 days	16/12/2010	30/3/2012
1078	Construction of Abutment A (LHS)	28 days	16/12/2010	12/1/2011
1079	Excavation and Blinding	12 days	16/12/2010	27/12/2010
1080	Formwork and rebar fixing for base slab	4 days	28/12/2010	31/12/2010
1081	Concreting of base slab	1 day	1/1/2011	1/1/2011
1082	Stripping off formwork	3 days	2/1/2011	4/1/2011
1083	Rebar fixing and shuttering formwork for column	4 days	5/1/2011	8/1/2011
1084	Concreting of column	1 day	9/1/2011	9/1/2011
1085	Stripping off formwork	3 days	10/1/2011	12/1/2011
1086	Construction of Abutment B (RHS)	28 days	17/12/2010	13/1/2011
1087	Excavation and Blinding	12 days	17/12/2010	28/12/2010
1088	Formwork and rebar fixing for base slab	4 days	29/12/2010	1/1/2011
1089	Concreting of base slab	1 day	2/1/2011	2/1/2011
1090	Stripping off formwork	3 days	3/1/2011	5/1/2011
1091	Rebar fixing and shuttering formwork for column	4 days	6/1/2011	9/1/2011
1092	Concreting of column	1 day	10/1/2011	10/1/2011
1093	Stripping off formwork	3 days	11/1/2011	13/1/2011
1094	Construction of decking	23 days	18/2/2012	11/3/2012
1095	Formwork and rebar fixing for decking	6 days	18/2/2012	23/2/2012
1096	Concreting	1 day	24/2/2012	24/2/2012
1097	Stripping off formwork	14 days	25/2/2012	9/3/2012
1098	Railing installation	2 days	10/3/2012	11/3/2012
1099	Demolition of Bridge TB-B	7 days	12/3/2012	18/3/2012
1100	Demolition works	7 days	12/3/2012	18/3/2012
1101	Lighting at Footbridge TB05	19 days	12/3/2012	30/3/2012
1102	Construction of Drawpits / Ductings	12 days	12/3/2012	23/3/2012



Revised Master Prog (Aug10-Oct1
日期: 18/10/2010

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進度 摘要 上顯型里程碑 分割 專案摘要 期限

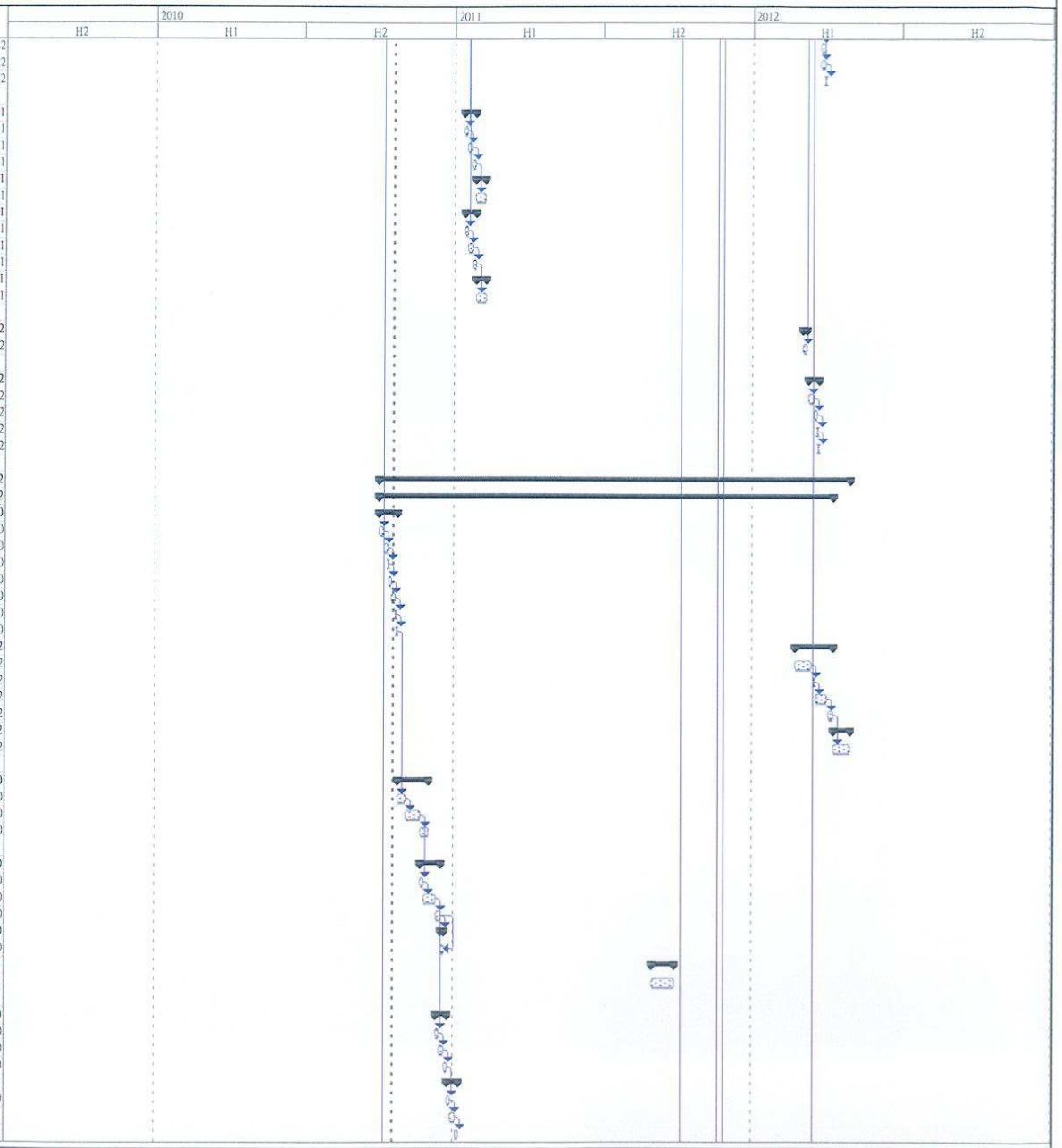
Drainage Services Department

Contract No. DC/2007/06

River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River

Revised Master Programme Aug 2010 - Oct 2012

ID	任務名稱	Duration	Start	Finish
1103	Public lighting Installation (CE2313)	6 days	24/3/2012	29/3/2012
1104	Public lighting Installation (CE2314)	6 days	24/3/2012	29/3/2012
1105	T&C	1 day	30/3/2012	30/3/2012
1106				
1107	Gabion Wall (Ch 330-345 LHS) TG2	14 days	13/1/2011	26/1/2011
1108	Excavation and Formation	4 days	13/1/2011	16/1/2011
1109	Gabion Wall Construction (Ch 260-270 LHS)	6 days	17/1/2011	22/1/2011
1110	Backfilling	4 days	23/1/2011	26/1/2011
1111	Drainage & Footpath (Ch 330-350 LHS)	12 days	27/1/2011	7/2/2011
1112	Construction of drainage & footpath	12 days	27/1/2011	7/2/2011
1113	Gabion Wall (Ch 330-345 RHS) TG2	14 days	14/1/2011	27/1/2011
1114	Excavation and Formation	4 days	14/1/2011	17/1/2011
1115	Gabion Wall Construction (Ch 260-270 LHS)	6 days	18/1/2011	23/1/2011
1116	Backfilling	4 days	24/1/2011	27/1/2011
1117	Drainage & Footpath (Ch 330-350 RHS)	12 days	28/1/2011	8/2/2011
1118	Construction of drainage & footpath	12 days	28/1/2011	8/2/2011
1119				
1120	River Bed formation (Ch 330-350)	5 days	3/3/2012	7/3/2012
1121	Placing Grade 500 toe Stone	5 days	3/3/2012	7/3/2012
1122				
1123	Step 4 (Ch 350)	13 days	10/3/2012	22/3/2012
1124	Excavation and Blinding	7 days	10/3/2012	16/3/2012
1125	Formwork and rebar fixing for base slab	4 days	17/3/2012	20/3/2012
1126	Concreting of base slab	1 day	21/3/2012	21/3/2012
1127	Stripping off formwork	1 day	22/3/2012	22/3/2012
1128				
1129	Ch 45-230	577 days	2/10/2010	30/4/2012
1130	Footbridge TB02 (Ch 150)	556 days	2/10/2010	9/4/2012
1131	Construction of Abutment A (LHS)	23 days	2/10/2010	24/10/2010
1132	Excavation and Blinding	6 days	2/10/2010	7/10/2010
1133	Formwork and rebar fixing for base slab	5 days	8/10/2010	12/10/2010
1134	Concreting of base slab	1 day	13/10/2010	13/10/2010
1135	Stripping off formwork	3 days	14/10/2010	16/10/2010
1136	Rebar fixing and shuttering formwork for column	5 days	17/10/2010	21/10/2010
1137	Concreting of column	1 day	22/10/2010	22/10/2010
1138	Stripping off formwork	2 days	23/10/2010	24/10/2010
1139	Construction of decking	47 days	23/2/2012	9/4/2012
1140	Formwork and rebar fixing for decking	20 days	23/2/2012	13/3/2012
1141	Concreting	1 day	17/3/2012	17/3/2012
1142	Stripping off formwork	14 days	19/3/2012	1/4/2012
1143	Railing installation	6 days	4/4/2012	9/4/2012
1144	River Bed formation (Ch 50-150)	21 days	10/4/2012	30/4/2012
1145	Placing Grade 500 toe Stone	21 days	10/4/2012	30/4/2012
1146				
1147	Gabion Wal (Ch 140-190 LHS) TG4	38 days	25/10/2010	1/12/2010
1148	Excavation and formation	10 days	25/10/2010	3/11/2010
1149	Gabion Wall construction (Ch 140-190 LHS)	18 days	4/11/2010	21/11/2010
1150	Backfilling	10 days	22/11/2010	1/12/2010
1151				
1152	Gabion Wal (Ch 100-150 RHS) TG2	25 days	22/11/2010	16/12/2010
1153	Excavation and formation	4 days	22/11/2010	25/11/2010
1154	Gabion Wall construction (Ch 100-150 RHS)	15 days	26/11/2010	10/12/2010
1155	Backfilling	6 days	11/12/2010	16/12/2010
1156	Maintainence Staircase (Ch 130 RHS)	4 days	17/12/2010	20/12/2010
1157	Formwork and concreting	4 days	17/12/2010	20/12/2010
1158	Drainage & Footpath (Ch 45-150 RHS)	28 days	1/9/2011	28/9/2011
1159	Construction of drainage & footpath	28 days	1/9/2011	28/9/2011
1160				
1161	Gabion Wall (Ch 150-160 RHS) TG2	14 days	11/12/2010	24/12/2010
1162	Excavation and formation	4 days	11/12/2010	14/12/2010
1163	Gabion Wall Construction (Ch 160-185 RHS)	6 days	15/12/2010	20/12/2010
1164	Backfilling	4 days	21/12/2010	24/12/2010
1165	Gabion Wall (Ch 160-185 RHS) TG4	14 days	25/12/2010	7/1/2011
1166	Excavation and formation	4 days	25/12/2010	28/12/2010
1167	Construction of Gabion Wall (Ch 160-185 RHS)	6 days	29/12/2010	3/1/2011
1168	Backfilling	4 days	4/1/2011	7/1/2011



Revised Master Prog (Aug10-Oct1
日期: 18/10/2010

任務 進度 里程碑 摘要 上顯型任務 上顯型進度 上顯型里程碑 分割 外部任務 專案摘要 摘要群組 期限

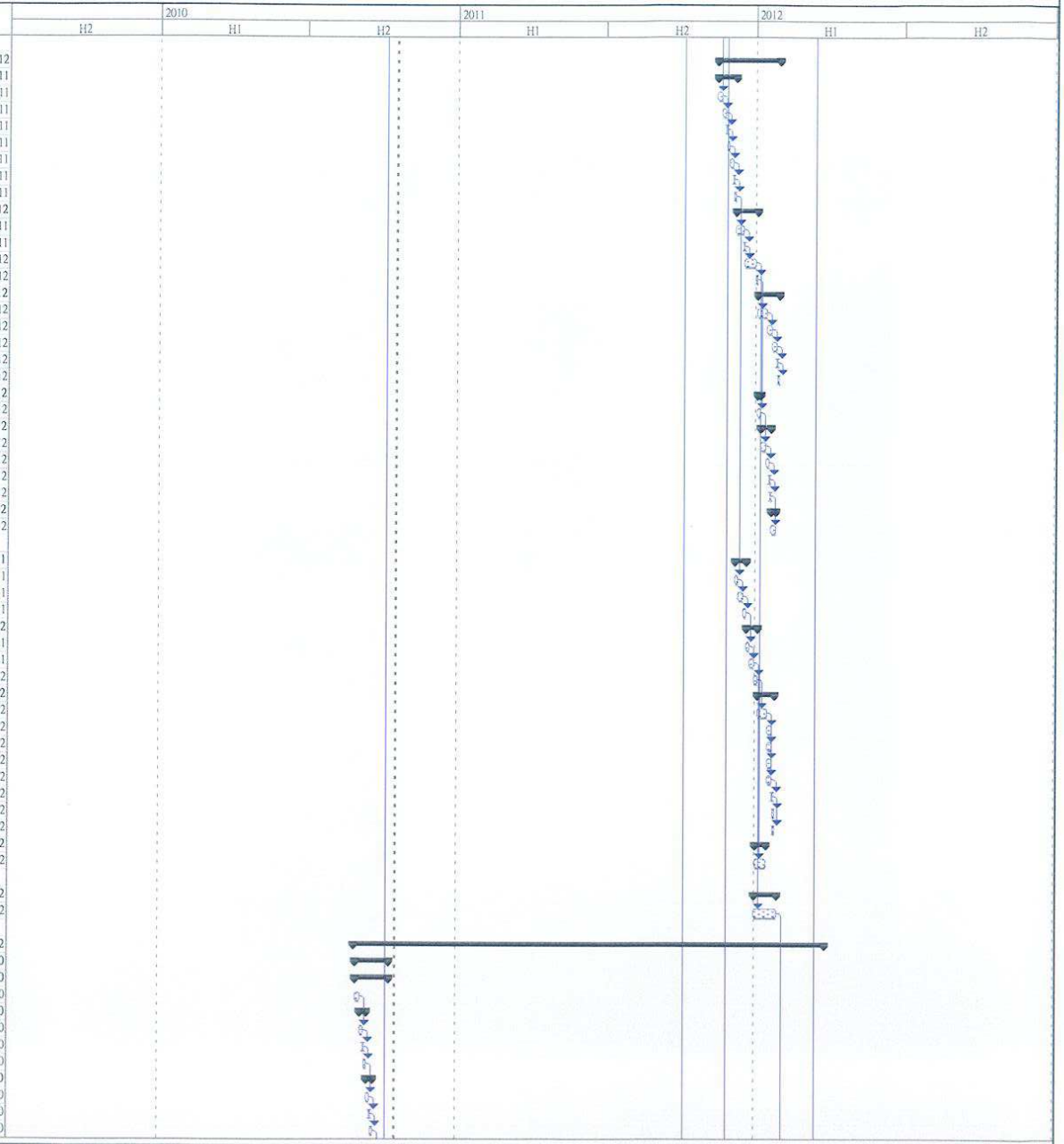
Drainage Services Department

Contract No. DC/2007/06

River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River

Revised Master Programme Aug 2010 - Oct 2012

ID	任務名稱	Duration	Start	Finish
1169				
1170	Footbridge TB03 (Ch 200)	77 days	15/11/2011	30/1/2012
1171	Construction of Abutment A (RHS)	23 days	15/11/2011	7/12/2011
1172	Excavation and Blinding	6 days	15/11/2011	20/11/2011
1173	Formwork and rebar fixing of base slab	5 days	21/11/2011	25/11/2011
1174	Concreting of base slab	1 day	26/11/2011	26/11/2011
1175	Stripping off formwork	3 days	27/11/2011	29/11/2011
1176	Rebar fixing and shuttering formwork for column	5 days	30/11/2011	4/12/2011
1177	Concreting	1 day	5/12/2011	5/12/2011
1178	Stripping off formwork	2 days	6/12/2011	7/12/2011
1179	Construction of Decking (TB03)	27 days	8/12/2011	3/1/2012
1180	Formwork and rebar fixing for decking	10 days	8/12/2011	17/12/2011
1181	Concreting	1 day	18/12/2011	18/12/2011
1182	Stripping off formwork	14 days	19/12/2011	1/1/2012
1183	Railing installation	2 days	2/1/2012	3/1/2012
1184	Lighting at Footbridge TB03	27 days	4/1/2012	30/1/2012
1185	Construction of Drawpits / Ductings	12 days	4/1/2012	15/1/2012
1186	Public lighting Installation (CE2321)	6 days	16/1/2012	21/1/2012
1187	Public lighting Installation (CE2322)	6 days	22/1/2012	27/1/2012
1188	T&C	1 day	28/1/2012	28/1/2012
1189	Removal of existing lighting (VA1309-Z1)	2 days	29/1/2012	30/1/2012
1190	River Bed formation (Ch 200-230)	4 days	4/1/2012	7/1/2012
1191	Placing Grade 500 toe Stone	4 days	4/1/2012	7/1/2012
1192	Step 1 (Ch 180)	13 days	8/1/2012	20/1/2012
1193	Excavation and Blinding	7 days	8/1/2012	14/1/2012
1194	Formwork and rebar fixing for base slab	4 days	15/1/2012	18/1/2012
1195	Concreting of base slab	1 day	19/1/2012	19/1/2012
1196	Stripping off formwork	1 day	20/1/2012	20/1/2012
1197	River Bed formation (Ch 150-180)	6 days	21/1/2012	26/1/2012
1198	Placing Grade 500 toe Stone	6 days	21/1/2012	26/1/2012
1199				
1200	Gabion Wall (Ch 185-210 RHS) TG1	14 days	8/12/2011	21/12/2011
1201	Excavation and formation	4 days	8/12/2011	11/12/2011
1202	Construction of Gabion Wall (Ch 185-210 RHS)	6 days	12/12/2011	17/12/2011
1203	Backfilling	4 days	18/12/2011	21/12/2011
1204	Gabion Wall (Ch 210-225 RHS) TG1	14 days	22/12/2011	4/1/2012
1205	Excavation and formation	4 days	22/12/2011	25/12/2011
1206	Construction of Gabion Wall (Ch 210-225 RHS)	6 days	26/12/2011	31/12/2011
1207	Backfilling	4 days	1/1/2012	4/1/2012
1208	Lighting CH 175-250	21 days	5/1/2012	25/1/2012
1209	Construction of Drawpits / Ductings	12 days	5/1/2012	16/1/2012
1210	Public lighting Installation (CE2319)	6 days	17/1/2012	22/1/2012
1211	Public lighting Installation (CE2320)	6 days	17/1/2012	22/1/2012
1212	Public lighting Installation (CE2323)	6 days	17/1/2012	22/1/2012
1213	Public lighting Installation (CE2324)	6 days	17/1/2012	22/1/2012
1214	T&C	1 day	23/1/2012	23/1/2012
1215	Removal of existing lighting (VE2641-A1)	2 days	24/1/2012	25/1/2012
1216	Removal of existing lighting (VA1310-A1)	2 days	24/1/2012	25/1/2012
1217	River Bed formation (Ch 180-230)	14 days	2/1/2012	15/1/2012
1218	Placing Grade 500 toe Stone	14 days	2/1/2012	15/1/2012
1219				
1220	Drainage & Footpath (Ch 180-230 RHS)	28 days	1/1/2012	28/1/2012
1221	Construction of drainage & footpath	28 days	1/1/2012	28/1/2012
1222				
1223	Ch -23-110	576 days	30/8/2010	27/3/2012
1224	Retaining Wall at Access D (Boulder Trap)	41 days	1/9/2010	11/10/2010
1225	Retaining Wall (RHS)	41 days	1/9/2010	11/10/2010
1226	Excavation and blinding	6 days	1/9/2010	6/9/2010
1227	Construction of Base Slab, Bay 2 and 4	8 days	7/9/2010	14/9/2010
1228	Formwork and rebar fixing	4 days	7/9/2010	10/9/2010
1229	Concreting	1 day	11/9/2010	11/9/2010
1230	Stripping off formwork	3 days	12/9/2010	14/9/2010
1231	Construction of Base Slab, Bay 1 and 3	8 days	15/9/2010	22/9/2010
1232	Formwork and rebar fixing	4 days	15/9/2010	18/9/2010
1233	Concreting	1 day	19/9/2010	19/9/2010
1234	Stripping off formwork	3 days	20/9/2010	22/9/2010



Revised Master Prog (Aug10-Oct1
日期: 18/10/2010

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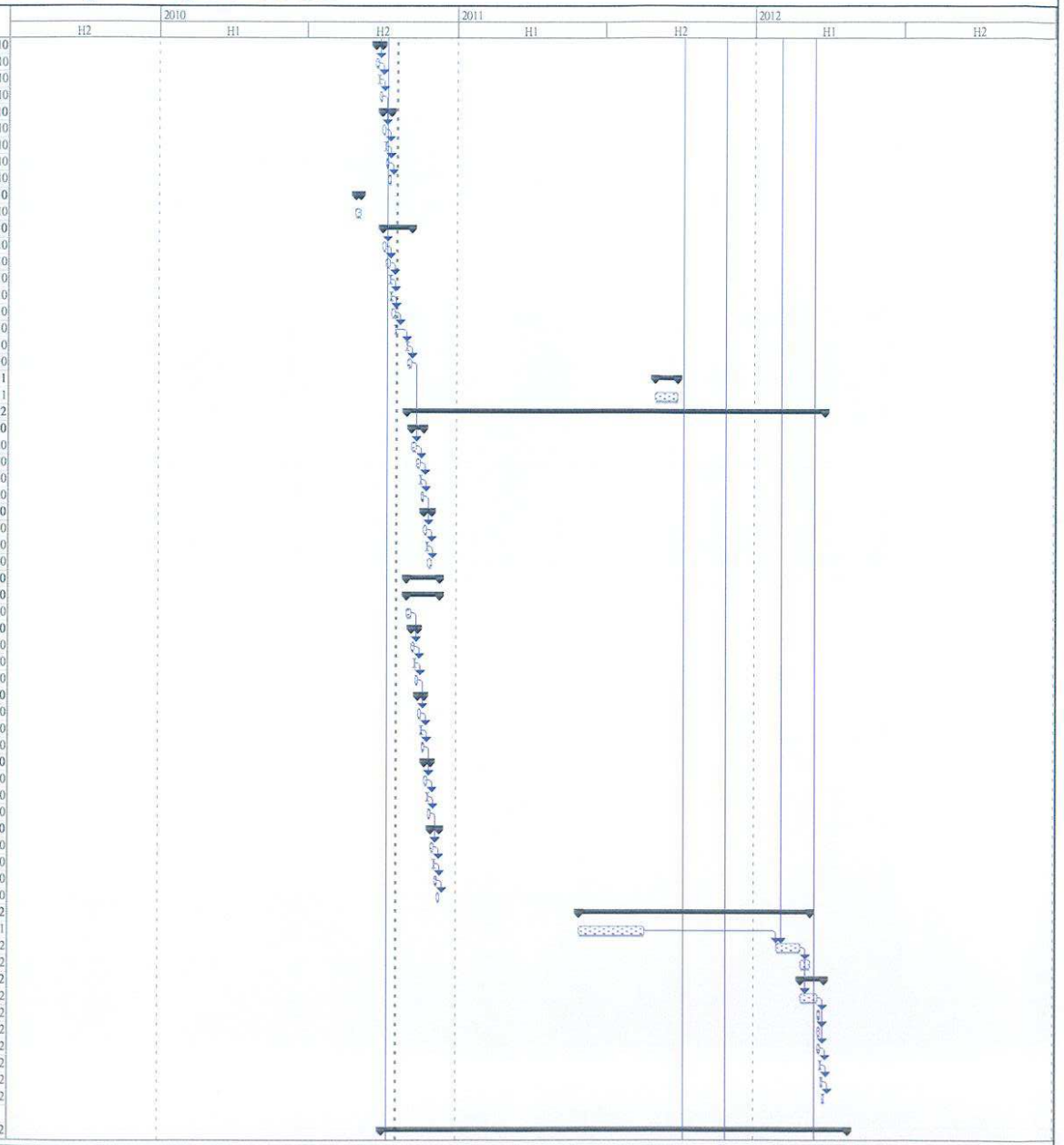
Drainage Services Department

Contract No. DC/2007/06

River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River

Revised Master Programme Aug 2010 - Oct 2012

ID	任務名稱	Duration	Start	Finish
1235	Construction of Wall Stem, Bay 2 and 4	8 days	23/9/2010	30/9/2010
1236	Formwork and rebar fixing	4 days	23/9/2010	26/9/2010
1237	Concreting	1 day	27/9/2010	27/9/2010
1238	Stripping off formwork	3 days	28/9/2010	30/9/2010
1239	Construction of Wall Stem, Bay 1 and 3	11 days	1/10/2010	11/10/2010
1240	Formwork and rebar fixing	4 days	1/10/2010	4/10/2010
1241	Concreting	1 day	5/10/2010	5/10/2010
1242	Stripping off formwork	3 days	6/10/2010	8/10/2010
1243	Backfill the Retaining Wall	3 days	9/10/2010	11/10/2010
1244	Filling Work at Boulder Trap (RHS of downstream)	6 days	30/8/2010	4/9/2010
1245	Filling works	6 days	30/8/2010	4/9/2010
1246	Dwarf Wall (Ch 60-75) RHS	36 days	2/10/2010	6/11/2010
1247	Excavation and Blinding	4 days	2/10/2010	5/10/2010
1248	Formwork and rebar fixing of base slab	5 days	6/10/2010	10/10/2010
1249	Concreting of base slab	1 day	11/10/2010	11/10/2010
1250	Stripping off formwork	1 day	12/10/2010	12/10/2010
1251	Rebar fixing and shuttering formwork for column	5 days	13/10/2010	17/10/2010
1252	Concreting	1 day	18/10/2010	18/10/2010
1253	Stripping off formwork	1 day	1/11/2010	1/11/2010
1254	Backfill	5 days	2/11/2010	6/11/2010
1255	Drainage & Footpath (Ch0-110)	28 days	1/9/2011	28/9/2011
1256	Drainage & Footpath (Ch0-110)	28 days	1/9/2011	28/9/2011
1257	Box Culvert TB03 (Ch 45)	513 days	1/11/2010	27/3/2012
1258	Construction of Base Slab	15 days	7/11/2010	21/11/2010
1259	Excavation and Blinding	6 days	7/11/2010	12/11/2010
1260	Formwork and rebar fixing	5 days	13/11/2010	17/11/2010
1261	Concreting	1 day	18/11/2010	18/11/2010
1262	Stripping off formwork	3 days	19/11/2010	21/11/2010
1263	Construction of Wall Stem and Top Slab	10 days	22/11/2010	1/12/2010
1264	Formwork and rebar fixing	4 days	22/11/2010	25/11/2010
1265	Concreting	1 day	26/11/2010	26/11/2010
1266	Stripping off formwork	5 days	27/11/2010	1/12/2010
1267	Retaining Wall at Access D (Boulder Trap)	41 days	1/11/2010	11/12/2010
1268	Retaining Wall (LHS)	41 days	1/11/2010	11/12/2010
1269	Excavation and blinding	6 days	1/11/2010	6/11/2010
1270	Construction of Base Slab, Bay 2	8 days	7/11/2010	14/11/2010
1271	Formwork and rebar fixing	4 days	7/11/2010	10/11/2010
1272	Concreting	1 day	11/11/2010	11/11/2010
1273	Stripping off formwork	3 days	12/11/2010	14/11/2010
1274	Construction of Base Slab, Bay 1	8 days	15/11/2010	22/11/2010
1275	Formwork and rebar fixing	4 days	15/11/2010	18/11/2010
1276	Concreting	1 day	19/11/2010	19/11/2010
1277	Stripping off formwork	3 days	20/11/2010	22/11/2010
1278	Construction of Wall Stem, Bay 2	8 days	23/11/2010	30/11/2010
1279	Formwork and rebar fixing	4 days	23/11/2010	26/11/2010
1280	Concreting	1 day	27/11/2010	27/11/2010
1281	Stripping off formwork	3 days	28/11/2010	30/11/2010
1282	Construction of Wall Stem, Bay 1	11 days	1/12/2010	11/12/2010
1283	Formwork and rebar fixing	4 days	1/12/2010	4/12/2010
1284	Concreting	1 day	5/12/2010	5/12/2010
1285	Stripping off formwork	3 days	6/12/2010	8/12/2010
1286	Backfill the Retaining Wall	3 days	9/12/2010	11/12/2010
1287	Vehicular Access D	284 days	1/6/2011	10/3/2012
1288	Road Kerb and formation	80 days	1/6/2011	19/8/2011
1289	Pavement	30 days	29/1/2012	27/2/2012
1290	Railing and street furniture	12 days	28/2/2012	10/3/2012
1291	Lighting at Access D	29 days	28/2/2012	27/3/2012
1292	Construction of Drawpits / Ductings	21 days	28/2/2012	19/3/2012
1293	Public lighting Installation (CE2300)	3 days	20/3/2012	22/3/2012
1294	Public lighting Installation (CE2301)	3 days	20/3/2012	22/3/2012
1295	Public lighting Installation (CE2302)	3 days	20/3/2012	22/3/2012
1296	T&C	1 day	23/3/2012	23/3/2012
1297	Removal of existing lighting (VA1278-A1)	2 days	24/3/2012	25/3/2012
1298	Removal of existing lighting (VA1279-A1)	2 days	26/3/2012	27/3/2012
1299				
1300	Ch 350-450	572 days	2/10/2010	25/4/2012



Revised Master Prog (Aug10-Oct1
日期: 18/10/2010

任務 里程碑 上順型任務 上順型進度 外部任務 摘要群組
進度 摘要 上順型里程碑 分割 專案摘要 期限

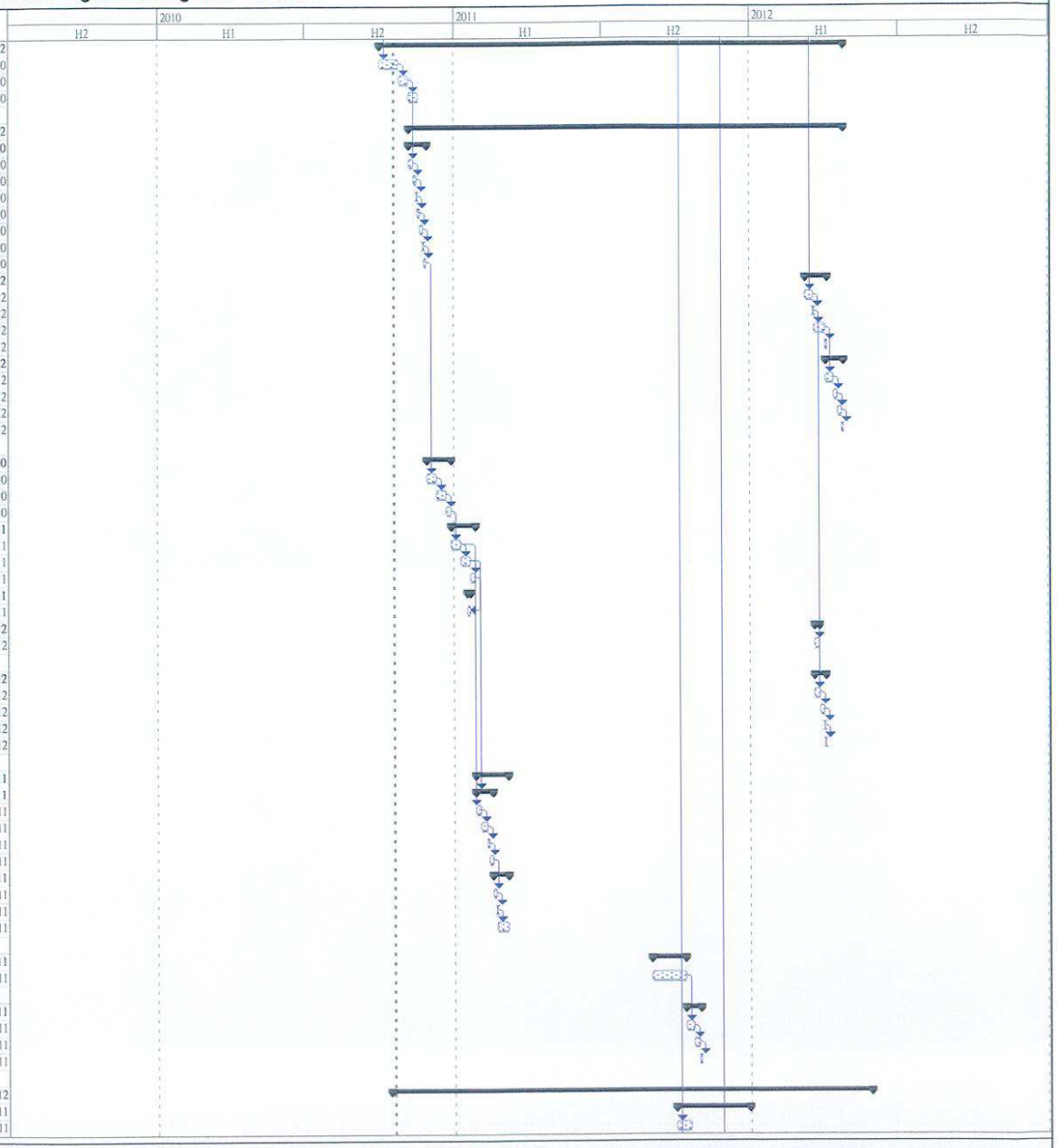
Drainage Services Department

Contract No. DC/2007/06

River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River

Revised Master Programme Aug 2010 - Oct 2012

ID	任務名稱	Duration	Start	Finish
1301	Retaining Wall (Ch 345-400 LHS) TR1 (replaced by AD1)	572 days	2/10/2010	25/4/2012
1302	Excavation and Foramtion	24 days	2/10/2010	25/10/2010
1303	Laying concrete blocks and gabion blocks	12 days	26/10/2010	6/11/2010
1304	Backfilling	12 days	7/11/2010	18/11/2010
1305				
1306	Footbridge TB06 (Ch 400)	536 days	7/11/2010	25/4/2012
1307	Construction of Abutment A (LHS)	22 days	7/11/2010	28/11/2010
1308	Excavation and Blinding	6 days	7/11/2010	12/11/2010
1309	Formwork and rebar fixing of base slab	4 days	13/11/2010	16/11/2010
1310	Concreting of base slab	1 day	17/11/2010	17/11/2010
1311	Stripping off formwork	3 days	18/11/2010	20/11/2010
1312	Rebar fixing and shuttering formwork for column	4 days	21/11/2010	24/11/2010
1313	Concreting	1 day	25/11/2010	25/11/2010
1314	Stripping off formwork	3 days	26/11/2010	28/11/2010
1315	Construction of decking	27 days	10/3/2012	5/4/2012
1316	Formwork and rebar fixing for decking	10 days	10/3/2012	19/3/2012
1317	Concreting	1 day	20/3/2012	20/3/2012
1318	Stripping off formwork	14 days	21/3/2012	3/4/2012
1319	Railing installation	2 days	4/4/2012	5/4/2012
1320	Lighting at Footbridge TB06	22 days	4/4/2012	25/4/2012
1321	Construction of Drawpits / Ductings	10 days	4/4/2012	13/4/2012
1322	Public lighting Installation (CE2311)	5 days	14/4/2012	18/4/2012
1323	Public lighting Installation (CE2310)	5 days	19/4/2012	23/4/2012
1324	T&C	2 days	24/4/2012	25/4/2012
1325				
1326	Retaining Wall (Ch 400-450 RHS) TR1 (replaced by AD1)	30 days	29/11/2010	28/12/2010
1327	Excavation and Formation	12 days	29/11/2010	10/12/2010
1328	Laying concrete blocks and gabion blocks	12 days	11/12/2010	22/12/2010
1329	Backfilling	6 days	23/12/2010	28/12/2010
1330	Retaining Wall (Ch 400-450 LHS) TR1 (replaced by AD1)	30 days	29/12/2010	27/1/2011
1331	Excavation and Foramtion	12 days	29/12/2010	9/1/2011
1332	Laying concrete blocks and gabion blocks	12 days	10/1/2011	21/1/2011
1333	Backfilling	6 days	22/1/2011	27/1/2011
1334	Maintainence Staircase (Ch 420 LHS)	4 days	18/1/2011	21/1/2011
1335	Formwork and concreting	4 days	18/1/2011	21/1/2011
1336	River Bed formation (Ch 400-450)	6 days	21/3/2012	26/3/2012
1337	Placing Grade 500 toe Stone	6 days	21/3/2012	26/3/2012
1338				
1339	Step 5 (Ch 410)	14 days	21/3/2012	3/4/2012
1340	Excavation and Blinding	7 days	21/3/2012	27/3/2012
1341	Formwork and rebar fixing for base slab	5 days	28/3/2012	1/4/2012
1342	Concreting of base slab	1 day	2/4/2012	2/4/2012
1343	Stripping off formwork	1 day	3/4/2012	3/4/2012
1344				
1345	Box Culvert TB01 (Ch 450)	40 days	28/1/2011	8/3/2011
1346	Construction of Base Slab	21 days	28/1/2011	17/2/2011
1347	Excavation and Blinding	6 days	28/1/2011	2/2/2011
1348	Formwork and rebar fixing	8 days	3/2/2011	10/2/2011
1349	Concreting	2 days	11/2/2011	12/2/2011
1350	Stripping off formwork	5 days	13/2/2011	17/2/2011
1351	Construction of Wall Stem and Top Slab	19 days	18/2/2011	8/3/2011
1352	Formwork and rebar fixing	4 days	18/2/2011	21/2/2011
1353	Concreting	1 day	22/2/2011	22/2/2011
1354	Stripping off formwork	14 days	23/2/2011	8/3/2011
1355				
1356	Drainage & Footpath (Ch350-450)	42 days	1/9/2011	12/10/2011
1357	Drainage & Footpath (Ch350-450)	42 days	1/9/2011	12/10/2011
1358				
1359	Lighting at CH 350-380	19 days	13/10/2011	31/10/2011
1360	Construction of Drawpits / Ductings	10 days	13/10/2011	22/10/2011
1361	Public lighting Installation (CE2312)	7 days	23/10/2011	29/10/2011
1362	T&C	2 days	30/10/2011	31/10/2011
1363				
1364	Ch 450-525	592 days	15/10/2010	28/5/2012
1365	Retaining Wall (ch 450-500) TR2	91 days	1/10/2011	30/12/2011
1366	Demolition of House 2 Sha Po Tsai	18 days	1/10/2011	18/10/2011



Revised Master Prog (Aug10-Oct1
日期: 18/10/2010

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進度 摘要 上顯型里程碑 分割 專案摘要 期限

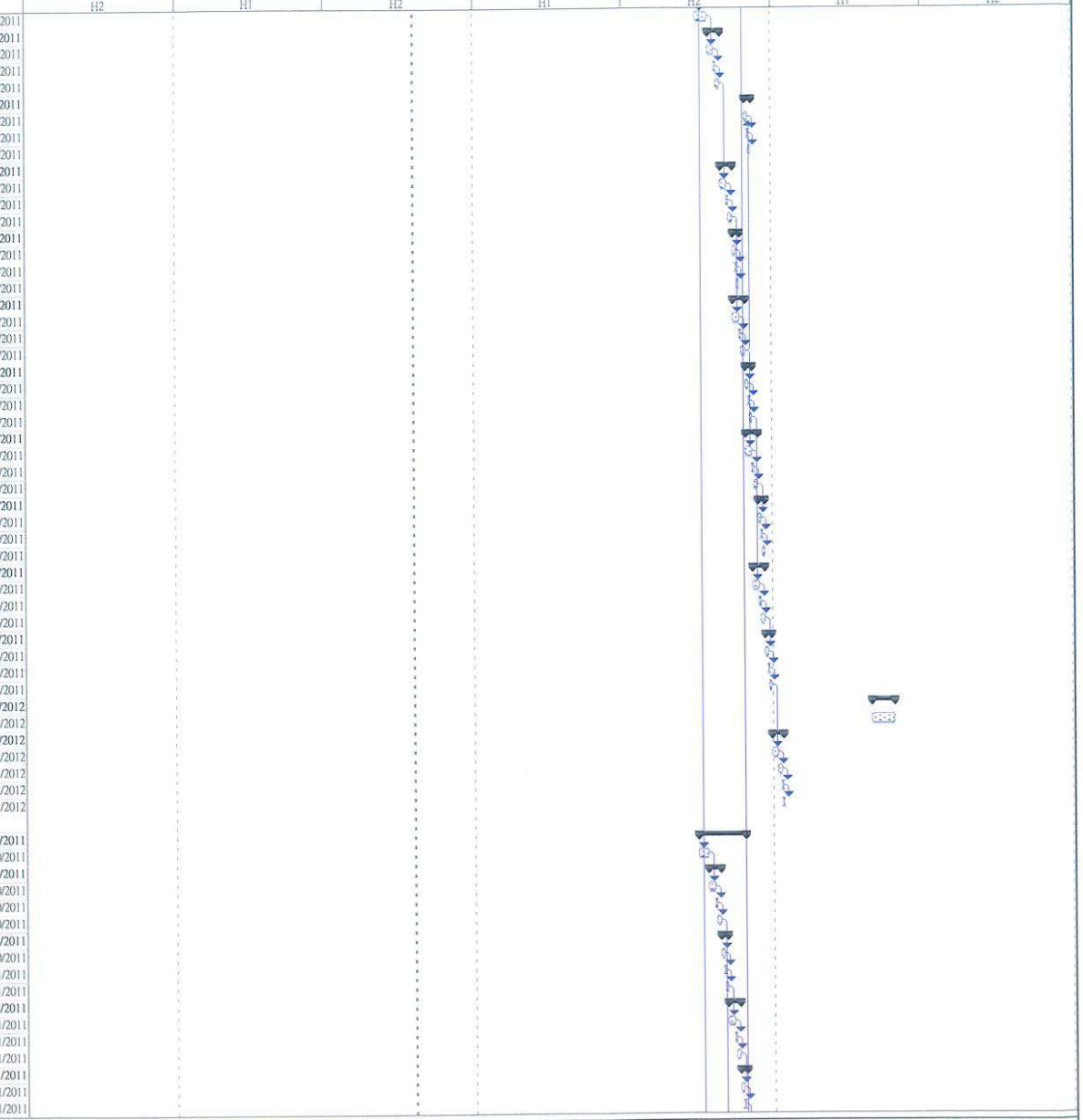
Drainage Services Department

Contract No. DC/2007/06

River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River

Revised Master Programme Aug 2010 - Oct 2012

ID	任務名稱	Duration	Start	Finish
1367	Excavation and Formation	15 days	1/10/2011	15/10/2011
1368	Base Slab Construction Bay 1	15 days	16/10/2011	30/10/2011
1369	Formwork and rebar fixing	8 days	16/10/2011	23/10/2011
1370	Concreting	2 days	24/10/2011	25/10/2011
1371	Stripping off formwork	5 days	26/10/2011	30/10/2011
1372	Wall Stem Construction Bay 1 (LHS, RHS)	8 days	30/11/2011	7/12/2011
1373	Formwork and rebar fixing	4 days	30/11/2011	3/12/2011
1374	Concreting	1 day	4/12/2011	4/12/2011
1375	Stripping off formwork	3 days	5/12/2011	7/12/2011
1376	Base Slab Construction Bay 2	15 days	31/10/2011	14/11/2011
1377	Formwork and rebar fixing	8 days	31/10/2011	7/11/2011
1378	Concreting	2 days	8/11/2011	9/11/2011
1379	Stripping off formwork	5 days	10/11/2011	14/11/2011
1380	Wall Stem Construction Bay 2 (LHS, RHS)	8 days	15/11/2011	22/11/2011
1381	Formwork and rebar fixing	4 days	15/11/2011	18/11/2011
1382	Concreting	1 day	19/11/2011	19/11/2011
1383	Stripping off formwork	3 days	20/11/2011	22/11/2011
1384	Base Slab Construction Bay 3	15 days	15/11/2011	29/11/2011
1385	Formwork and rebar fixing	8 days	15/11/2011	22/11/2011
1386	Concreting	2 days	23/11/2011	24/11/2011
1387	Stripping off formwork	5 days	25/11/2011	29/11/2011
1388	Wall Stem Construction Bay 3 (LHS, RHS)	8 days	30/11/2011	7/12/2011
1389	Formwork and rebar fixing	4 days	30/11/2011	3/12/2011
1390	Concreting	1 day	4/12/2011	4/12/2011
1391	Stripping off formwork	3 days	5/12/2011	7/12/2011
1392	Base Slab Construction Bay 4	15 days	30/11/2011	14/12/2011
1393	Formwork and rebar fixing	8 days	30/11/2011	7/12/2011
1394	Concreting	2 days	8/12/2011	9/12/2011
1395	Stripping off formwork	5 days	10/12/2011	14/12/2011
1396	Wall Stem Construction Bay 4 (LHS, RHS)	8 days	15/12/2011	22/12/2011
1397	Formwork and rebar fixing	4 days	15/12/2011	18/12/2011
1398	Concreting	1 day	19/12/2011	19/12/2011
1399	Stripping off formwork	3 days	20/12/2011	22/12/2011
1400	Base Slab Construction Bay 5	15 days	8/12/2011	22/12/2011
1401	Formwork and rebar fixing	8 days	8/12/2011	15/12/2011
1402	Concreting	2 days	16/12/2011	17/12/2011
1403	Stripping off formwork	5 days	18/12/2011	22/12/2011
1404	Wall Stem Construction Bay 5 (LHS, RHS)	8 days	23/12/2011	30/12/2011
1405	Formwork and rebar fixing	4 days	23/12/2011	26/12/2011
1406	Concreting	1 day	27/12/2011	27/12/2011
1407	Stripping off formwork	3 days	28/12/2011	30/12/2011
1408	Drainage & Footpath (Ch 450-490 RHS)	28 days	1/5/2012	28/5/2012
1409	Construction of drainage & footpath	28 days	1/5/2012	28/5/2012
1410	Step 6 (Ch 490)	14 days	31/12/2011	13/1/2012
1411	Excavation and Blinding	7 days	31/12/2011	6/1/2012
1412	Formwork and rebar fixing	5 days	7/1/2012	11/1/2012
1413	Concreting of base slab	1 day	12/1/2012	12/1/2012
1414	Stripping off formwork	1 day	13/1/2012	13/1/2012
1415				
1416	Retaining Wall (Ch 500-530 LHS) TR3	58 days	1/10/2011	27/11/2011
1417	Excavation and Formation	12 days	1/10/2011	12/10/2011
1418	Base Slab Construction Bay 1	15 days	13/10/2011	27/10/2011
1419	Formwork and rebar fixing	8 days	13/10/2011	20/10/2011
1420	Concreting	2 days	21/10/2011	22/10/2011
1421	Stripping off formwork	5 days	23/10/2011	27/10/2011
1422	Wall Stem Construction Bay 1 (LHS, RHS)	8 days	28/10/2011	4/11/2011
1423	Formwork and rebar fixing	4 days	28/10/2011	31/10/2011
1424	Concreting	1 day	1/11/2011	1/11/2011
1425	Stripping off formwork	3 days	2/11/2011	4/11/2011
1426	Base Slab Construction Bay 2	15 days	5/11/2011	19/11/2011
1427	Formwork and rebar fixing	8 days	5/11/2011	12/11/2011
1428	Concreting	2 days	13/11/2011	14/11/2011
1429	Stripping off formwork	5 days	15/11/2011	19/11/2011
1430	Wall Stem Construction Bay 2 (LHS, RHS)	8 days	20/11/2011	27/11/2011
1431	Formwork and rebar fixing	4 days	20/11/2011	23/11/2011
1432	Concreting	1 day	24/11/2011	24/11/2011



Revised Master Prog (Aug10-Oct1
日期: 18/10/2010

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進度 摘要 上順型里程碑 分割 專案摘要 期限

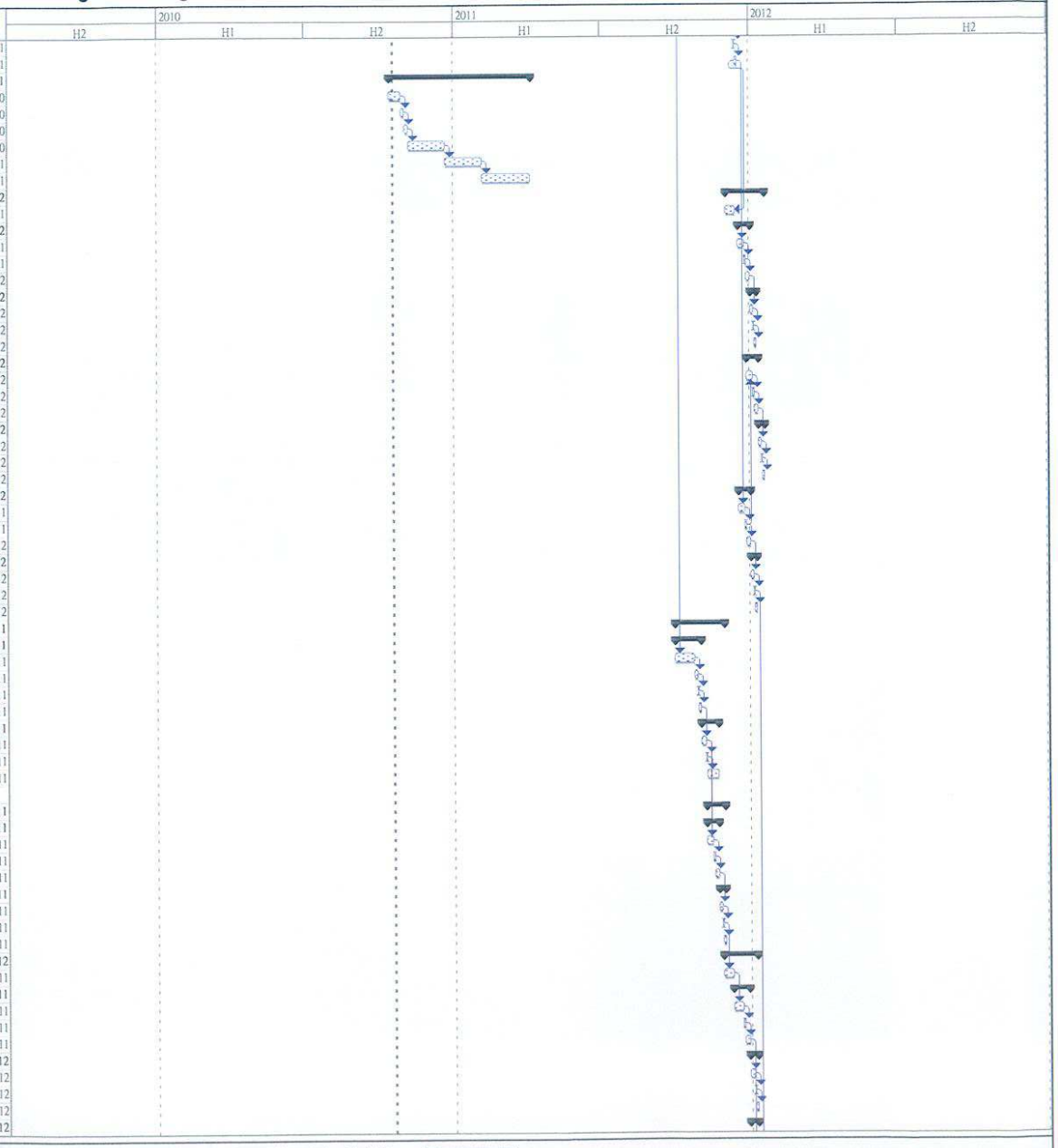
Drainage Services Department

Contract No. DC/2007/06

River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River

Revised Master Programme Aug 2010 - Oct 2012

ID	任務名稱	Duration	Start	Finish
1499	Concreting	1 day	15/12/2011	15/12/2011
1500	Stripping off formwork	3 days	16/12/2011	18/12/2011
1501	Retaining Wall TR5 Ch 555-595 LHS) TR5 (AD)	174 days	15/10/2010	6/4/2011
1502	Construction of temp haul road	15 days	15/10/2010	29/10/2010
1503	Demolition of Existing structure at slope crest	4 days	30/10/2010	2/11/2010
1504	Construction of temporary ground beam	5 days	3/11/2010	7/11/2010
1505	Trimming of rock slope (from downstream to upstream)	45 days	8/11/2010	22/12/2010
1506	Install rock dowel	45 days	23/12/2010	5/2/2011
1507	Construction of skin wall (from D/S to U/S, from toe to crest)	60 days	6/2/2011	6/4/2011
1508	Retaining Wall TR5A CH555-595 LHS	48 days	4/12/2011	20/1/2012
1509	Excavation and Formation	12 days	4/12/2011	16/12/2011
1510	Base Slab Construction TR5A Bay 1 LHS	15 days	19/12/2011	2/1/2012
1511	Formwork and rebar fixing	8 days	19/12/2011	26/12/2011
1512	Concreting	2 days	27/12/2011	28/12/2011
1513	Stripping off formwork	5 days	29/12/2011	2/1/2012
1514	Wall Stem Construction TR5A Bay 1 LHS	8 days	3/1/2012	10/1/2012
1515	Formwork and rebar fixing	4 days	3/1/2012	6/1/2012
1516	Concreting	1 day	7/1/2012	7/1/2012
1517	Stripping off formwork	3 days	8/1/2012	10/1/2012
1518	Base Slab Construction TR5A Bay 2 LHS	15 days	29/12/2011	12/1/2012
1519	Formwork and rebar fixing	8 days	29/12/2011	5/1/2012
1520	Concreting	2 days	6/1/2012	7/1/2012
1521	Stripping off formwork	5 days	8/1/2012	12/1/2012
1522	Wall Stem Construction TR5A Bay 2 LHS	8 days	13/1/2012	20/1/2012
1523	Formwork and rebar fixing	4 days	13/1/2012	16/1/2012
1524	Concreting	1 day	17/1/2012	17/1/2012
1525	Stripping off formwork	3 days	18/1/2012	20/1/2012
1526	Base Slab Construction TR5A Bay 3 LHS	15 days	19/12/2011	2/1/2012
1527	Formwork and rebar fixing	8 days	19/12/2011	26/12/2011
1528	Concreting	2 days	27/12/2011	28/12/2011
1529	Stripping off formwork	5 days	29/12/2011	2/1/2012
1530	Wall Stem Construction TR5A Bay 3 LHS	8 days	3/1/2012	10/1/2012
1531	Formwork and rebar fixing	4 days	3/1/2012	6/1/2012
1532	Concreting	1 day	7/1/2012	7/1/2012
1533	Stripping off formwork	3 days	8/1/2012	10/1/2012
1534	Box Culvert TB02 (ch 580)	61 days	1/10/2011	30/11/2011
1535	Construction of Base Slab	32 days	1/10/2011	1/11/2011
1536	Excavation and Blinding	24 days	1/10/2011	24/10/2011
1537	Formwork and rebar fixing	4 days	25/10/2011	28/10/2011
1538	Concreting	1 day	29/10/2011	29/10/2011
1539	Stripping off formwork	3 days	30/10/2011	1/11/2011
1540	Construction of Wall Stem and Top Slab	21 days	2/11/2011	22/11/2011
1541	Formwork and rebar fixing	6 days	2/11/2011	7/11/2011
1542	Concreting	1 day	8/11/2011	8/11/2011
1543	Stripping off formwork	14 days	9/11/2011	22/11/2011
1544				
1545	Retaining Wall TR5B & TR6 CH585-595 LHS	23 days	8/11/2011	30/11/2011
1546	Base Slab Construction Bay 1 LHS	15 days	8/11/2011	22/11/2011
1547	Formwork and rebar fixing	8 days	8/11/2011	15/11/2011
1548	Concreting	2 days	16/11/2011	17/11/2011
1549	Stripping off formwork	5 days	18/11/2011	22/11/2011
1550	Wall Stem Construction TR5B Bay 1 LHS	8 days	23/11/2011	30/11/2011
1551	Formwork and rebar fixing	4 days	23/11/2011	26/11/2011
1552	Concreting	1 day	27/11/2011	27/11/2011
1553	Stripping off formwork	3 days	28/11/2011	30/11/2011
1554	Retaining Wall (ch 595-615) TR3	42 days	28/11/2011	8/1/2012
1555	Excavation and formation	12 days	28/11/2011	9/12/2011
1556	Construction of Base Slab Bay 3	20 days	10/12/2011	29/12/2011
1557	Formwork and rebar fixing	12 days	10/12/2011	21/12/2011
1558	Concreting	2 days	22/12/2011	23/12/2011
1559	Stripping off formwork	6 days	24/12/2011	29/12/2011
1560	Construction of Wall Stem Bay 3 LHS	10 days	30/12/2011	8/1/2012
1561	Formwork and rebar fixing	6 days	30/12/2011	4/1/2012
1562	Concreting	1 day	5/1/2012	5/1/2012
1563	Stripping off formwork	3 days	6/1/2012	8/1/2012
1564	Construction of Wall Stem Bay 3 RHS	10 days	30/12/2011	8/1/2012



Revised Master Prog (Aug10-Oct1
日期: 18/10/2010

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進度 摘要 上順型里程碑 分割 專案摘要 期限

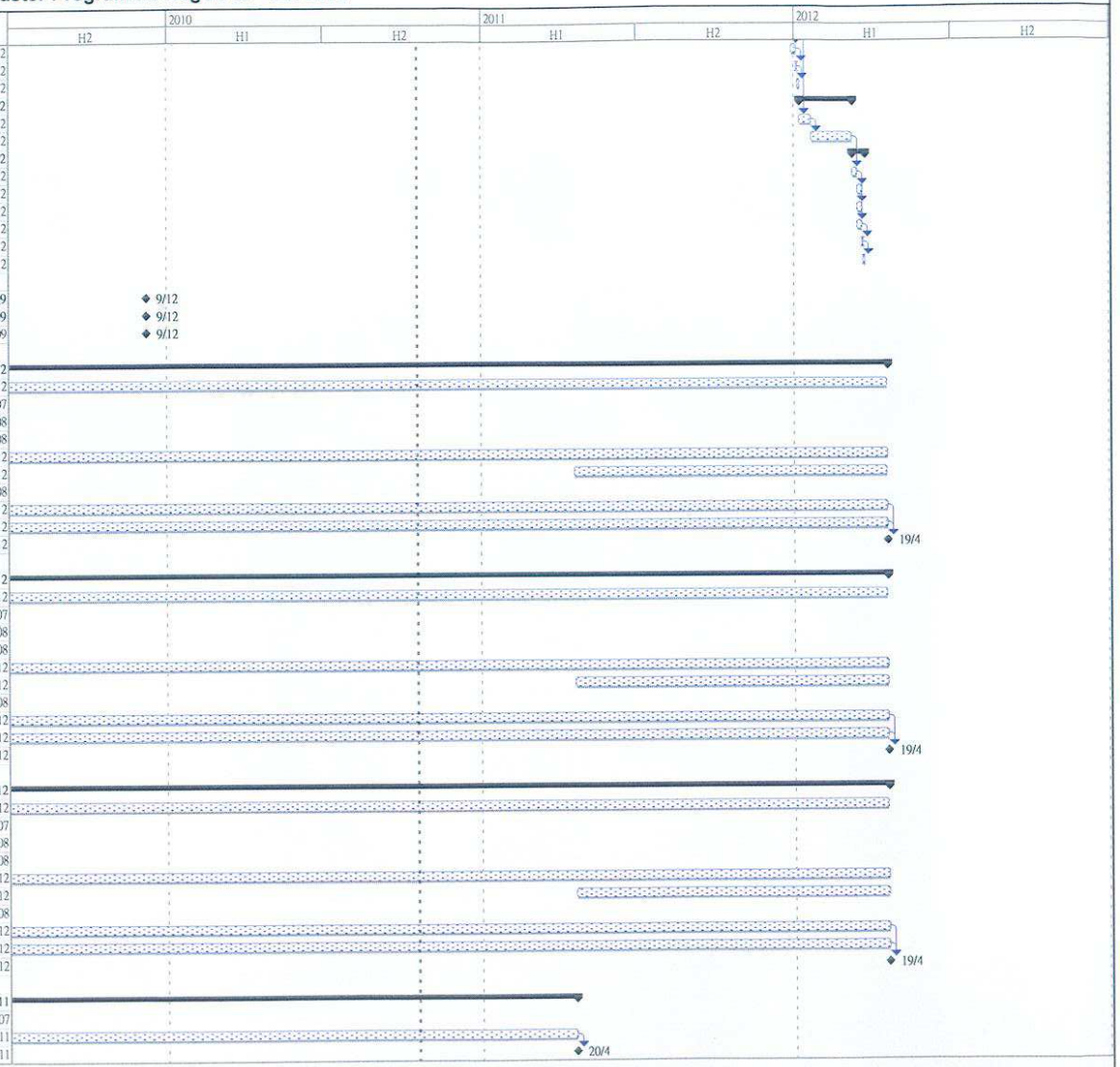
Drainage Services Department

Contract No. DC/2007/06

River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River

Revised Master Programme Aug 2010 - Oct 2012

ID	任務名稱	Duration	Start	Finish
1565	Formwork and rebar fixing	6 days	30/12/2011	4/1/2012
1566	Concreting	1 day	5/1/2012	5/1/2012
1567	Stripping off formwork	3 days	6/1/2012	8/1/2012
1568	Drainage & Footpath (Ch 525-615 LHS)	62 days	8/1/2012	9/3/2012
1569	Backfill	14 days	8/1/2012	21/1/2012
1570	Construction of footpath & drainage works	48 days	22/1/2012	9/3/2012
1571	Lighting at CH 550-610	15 days	10/3/2012	24/3/2012
1572	Construction of Drawpits / Ducting	6 days	10/3/2012	15/3/2012
1573	Public lighting Installation (CE2325)	6 days	16/3/2012	21/3/2012
1574	Public lighting Installation (CE2326)	6 days	16/3/2012	21/3/2012
1575	Public lighting Installation (CE2327)	6 days	16/3/2012	21/3/2012
1576	T&C	1 day	22/3/2012	22/3/2012
1577	Removal of existing lighting (CE1600-B2)	2 days	23/3/2012	24/3/2012
1578				
1579	Section 4 - Box Culvert at Ping Long	0 days	9/12/2009	9/12/2009
1580	Section 4 - Box Culvert (Area A)	0 days	9/12/2009	9/12/2009
1581	Completion of Work at Section 4	0 days	9/12/2009	9/12/2009
1582				
1583	Section 5 - Landscape Establishemnt Works (Portion B, C, D, E, F, G, H & I)	1666 days?	28/9/2007	19/4/2012
1584	Section 5 Landscape Works	1665 days	28/9/2007	18/4/2012
1585	Commencement of Works	1 day	28/9/2007	28/9/2007
1586	Material Submission	120 days	29/9/2007	26/1/2008
1587	Submission Approval	0 days	9/2/2008	9/2/2008
1588	Landscaping Hardworks	1541 days?	31/1/2008	19/4/2012
1589	Landscaping Softworks	365 days	20/4/2011	18/4/2012
1590	Submission of Tree Survey	400 days	29/9/2007	1/11/2008
1591	Preservation and Protection of Preserved Trees	1265 days	2/11/2008	19/4/2012
1592	Landscape Establishment Works	1265 days	2/11/2008	19/4/2012
1593	Completion of Works	0 days	19/4/2012	19/4/2012
1594				
1595	Section 6 - Landscape Establishemnt Works (Portion J, K & M)	1666 days?	28/9/2007	19/4/2012
1596	Section 6 Landscape Works	1665 days	28/9/2007	18/4/2012
1597	Commencement of Works	1 day	28/9/2007	28/9/2007
1598	Material Submission	120 days	29/9/2007	26/1/2008
1599	Submission Approval	0 days	9/2/2008	9/2/2008
1600	Landscaping Hardworks	1161 days?	14/2/2009	19/4/2012
1601	Landscaping Softworks	365 days	21/4/2011	19/4/2012
1602	Submission of Tree Survey	400 days	29/9/2007	1/11/2008
1603	Preservation and Protection of Preserved Trees	1265 days	2/11/2008	19/4/2012
1604	Landscape Establishment Works	1265 days	2/11/2008	19/4/2012
1605	Completion of Works	0 days	19/4/2012	19/4/2012
1606				
1607	Section 7 - Landscape Establishemnt Works (Portion L, N & P)	1666 days?	28/9/2007	19/4/2012
1608	Section 7 Landscape Works	1665 days	28/9/2007	18/4/2012
1609	Commencement of Works	1 day	28/9/2007	28/9/2007
1610	Material Submission	120 days	29/9/2007	26/1/2008
1611	Submission Approval	0 days	9/2/2008	9/2/2008
1612	Landscaping Hardworks	1176 days?	30/1/2009	19/4/2012
1613	Landscaping Softworks	365 days	21/4/2011	19/4/2012
1614	Submission of Tree Survey	400 days	29/9/2007	1/11/2008
1615	Preservation and Protection of Preserved Trees	1265 days	2/11/2008	19/4/2012
1616	Landscape Establishment Works	1265 days	2/11/2008	19/4/2012
1617	Completion of Works	0 days	19/4/2012	19/4/2012
1618				
1619	Section 8 - All Remaining Work at All Portions	1301 days	28/9/2007	20/4/2011
1620	Commencement of Works	1 day	28/9/2007	28/9/2007
1621	All remaining works at all Area	1300 days	29/9/2007	20/4/2011
1622	Completion of Works	0 days	20/4/2011	20/4/2011



Revised Master Prog (Aug10-Oct1
日期: 18/10/2010

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