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TEST REPORT

Wai Kee (Zens) Construction & Transportation Co., Ltd.

**CONSTRUCTION OF JETTY
AT LUNG KWU CHAU**

(CED CONTRACT NO.: CV/2002/11)

**MONTHLY EM&A REPORT
(09 AUGUST TO 08 SEPTEMBER 2003)**

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Date: 09 August to 08 September 2003

Report No.: ENA 30453

Our Ref: TCS/2003/E010/600/Cert-05

INDEPENDENT ENGINEER AUDIT CERTIFICATE

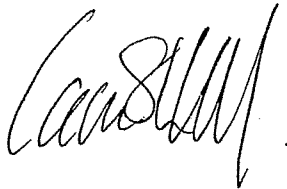
CED CONTRACT NO. CV/2002/11

CONSTRUCTION OF LUNG KWU CHAU JETTY

ENVIRONMENTAL MONITORING AND AUDIT REPORT (9 AUGUST – 8 SEPTEMBER 2003)

We certify that this report has been audited against Environmental Permit No. EP-150/2002 A using reasonable skill and care.

Signed:



INDEPENDENT ENGINEER

Name: CLIFF LAM

**Action-United
Environmental Services & Consulting**

Date: 16 September 2003



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TS-2031 Proposed Marine Water Quality Monitoring Stations

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EXECUTIVE SUMMARY

This monthly EM&A report No.3 has been prepared by the Environmental Team (ET) of ETS-Testconsult Ltd for impact monitoring under the Environmental Permit No. EP-150/2002/A (the EP) for " Construction of Jetty at Lung Kwu Chau (CED Contract No.: CV/2002/11) " (The Project) during the reporting period from 09 August to 08 September 2003.

Construction Progress

The major construction works in this reporting month included the setting of precast concrete backings and berm blocks at jetty, and the placing of grade 700 rockfill and the setting of precast concrete pipes at catwalk. Precast concrete pavings were under fabrication at Zhong Shan casting yard.

Environmental Monitoring Progress

The monitoring activities in this monitoring month are summarized below:

- Site inspection: 1 Occasion.

Marine Water Monitoring

As implied by clause 4.2(b) of the EP-150/2002A, no impact monitoring on water quality was required during this reporting period since there were no dredging activities taken place. Therefore, no exceedances of Action and Limit Level were recorded in this reporting month.

Site Inspection

Environmental audits and inspections conducted in this reporting month are summarized as follows:

<u>Concerned Parties</u>	<u>Dates of Audit / Inspection</u>
CED / WKC&T / ET	22/08

The Contractor was recommended to maintain good environmental management in order to minimize environmental impacts at the site.

Environmental Complaints and Notification of Summons and Successful Prosecutions

No environmental complaints were received and no notification of summons and prosecutions with respect to environmental issues were registered in this reporting month.

Future Key Issues and Recommendations to the Contractor

Dredging for approach channel will commence at the end of September 2003.

The Contractor is recommended to minimize the environmental impacts through maintenance of good site practice and implementation of the required waste management.



1.0 INTRODUCTION

Wai Kee (Zens) Construction & Transportation Co., Ltd. (WKC&T) has been awarded the Contract No.: CV/2002/11, "Construction of Jetty at Lung Kwu Chau" (the Project) by the CED. ETS-Testconsult Limited (ETL) has been commissioned as Environmental Team (ET) to carry out impact marine water quality monitoring at Lung Kwu Chau.

Under the requirements of Section 4 of Environmental Permit to Construct and Operate a Designate Project (EP-150/2002/A), EM&A programme as set out in the EM&A Manual is required to be implemented. In accordance with the EM&A manual, environmental monitoring of water quality, ecology and waste management is required for the Project.

The EM&A requirement is described in details in subsequent sections, including:

- Monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event-Action Plans;
- Environmental mitigation measures, as recommended in the project EIA study report;
- Environmental requirements in contract documents.

This monthly EM&A report summarizes the impact monitoring results and audit findings of the EM&A program during the reporting period from 09 August to 08 September 2003.

2.0 PROJECT INFORMATION

2.1 Background

To provide essential navigational aid for aircraft operating into and out of Hong Kong International Airport, a Doppler VHF Omni-directional Range and Distance Measuring Equipment (DVOR/DME) Station is being operated on Lung Kwu Chau. The existing jetty at Lung Kwu Chau is too small and the surrounding waters are too shallow to accommodate the vessels employed by Civil Aviation Department (CAD) for transporting equipment and personnel for servicing and maintaining the DVOR/DME. At present, the transportation relies heavily on helicopters, the operation of which is prohibited during night times and adverse weather conditions. In order that emergency repair work can be undertaken during such periods, CED has proposed to construct a proper jetty for berthing of marine vessels.

2.2 Project Location and Scope

The proposed site of the Project is located on the eastern coast of Lung Kwu Chau as shown in Figure 1. Lung Kwu Chau is situated within the gazetted Sha Chau and Lung Kwu Chau Marine Park. Due to the remoteness of the site, the island is uninhabited with no infrastructure other than the existing jetty and the DVOR/DME Station. Under the preliminary design, the scope of this Project comprises the following:

- Construction of a precast concrete blockwork jetty (10 m by 20 m) with a single berth;
- Construction of a concrete catwalk (approximately 22 m long);
- Dredging of an approach channel to a level of -2.5 mCD in front of the berth;
- Installation of miscellaneous facilities on the jetty, including lighting, navigation light, fendering, handrails, bollards, tide gauge, etc;
- Demolition of the existing jetty upon completion of the proposed jetty;
- Extension of an existing footpath.

2.3 Construction Programme

The Project is scheduled to commence in April 2003 for completion in December 2003. The Construction Programme is attached in Appendix B.



2.4 Project Organization and Management Structure

The organization chart with respect to the on-site environmental management and monitoring program are shown in Appendix A.

2.5 Contact Details of Key Personnel

The key personnel contact names and telephone numbers, and construction programme are shown in table 2.1.

Table 2.1 Contact Details of Key Personnel

Organization	Project Role	Name of Key Staff	Tel. No.	Fax No.
CED	Employer	Mr. T. S. Tsui	2762 5571	2714 2054
AUES	Independent Environmental Checker	Mr. Cliff Lam	2959 6059	2959 6079
WKC&T	Contractor	Mr. W. T. Ho	2548 3529	2548 5248
ETL	Contractor's Environmental Team	Mr C L Lau (Environmental Team Leader)	2946 7791	2695 3944

3.0 CONSTRUCTION PROGRESS IN THIS REPORTING MONTH

The site area of this project is shown in Figure 1.

A summary of the major construction activities undertaken in this monitoring month were:

- Placing of grade 700 rockfill;
- Setting of precast concrete blocks and berm blocks for jetty;
- Setting of precast concrete pipes at catwalk.

The above construction activities are defined as "General Construction Activities".

The implementation of the corresponding mitigation measures is summarized in Table 3.1.

Table 3.1 Implementation of Environmental Mitigation Measures

Construction Activities	Environmental Mitigation Measures
General construction works	<ul style="list-style-type: none"> • Remove the sand/rubbish accumulated in the site regularly; • Provide good site practice (e.g. selection of quieter plant and working methods and reduction in number of plant operating in critical areas close to Dolphins' habitats) to limit noise emissions at source; • Remove the construction waste accumulated inside or outside the site regularly; • Keep good waste management.



4.0 MARINE WATER QUALITY MONITORING

Since no dredging activities were carried out at the construction site during the reporting period, no impact monitoring on water quality was carried out.

5.0 ECOLOGY MONITORING

5.1 Introduction

According to the EM&A manual, there will be small loss of backshore vegetation and grass/shrubland due to the construction of footpath to the catwalk. At the same time, the construction works also cause impact on the marine dolphin habitat near the north and east coast of Lung Kwu Chau.

In order to minimize the impact to an acceptable level, the implementation schedule of the recommended ecological mitigation measures is developed and stated at the Appendix A of EM&A manual. Implementation of these recommended mitigation measures will be monitored and audited during the construction stage.

5.2 Monitoring Procedure

During the weekly site inspection, ET monitored and audited the implementation of the recommended mitigation measures for terrestrial ecology and marine ecology following the site inspection checklist.

5.3 Monitoring Frequency and Schedule

Weekly site inspection for terrestrial ecology and marine ecology was carried by ET during the construction period. Four site inspections were undertaken in this reporting month.

5.4 Result and Observation

A summary of the implementation status of the mitigation measures for terrestrial ecology and marine ecology on site inspections is presented in Appendix C.

No disturbance to the terrestrial habitat and dolphin habitat due to construction work was observed in this reporting month.

6.0 ENVIRONMENTAL NON-CONFORMANCE

6.1 Summary of Exceedance of Action and Limit Level

No exceedances of Action and Limit Level of marine water monitoring results were recorded during the reporting month since no impact monitoring on water quality was carried out.

6.2 Summary of Environmental Complaints

No environmental complaints were received in this monitoring month.

6.3 Summary of Notification of Summons and Prosecution

There were no notification of summons respect to environmental issues registered in this month.



7.0 WASTE MANAGEMENT

7.1 Waste Management Audit

Waste management audit was carried out by the ET. A summary of the implementation status of the mitigation measures on waste management is presented in Appendix C.

7.2 Records of Waste Quantities

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

- General refuses;
- Chemical waste;
- Construction & demolition (C&D) material.

The quantities of waste for disposal in this month are summarized in Table 6.1.

Table 7.1 Summary of Quantities of Waste for Disposal in this reporting month

Type of Waste	Quantity	Disposal Location
C&D Material (Inert) (m ³)	0	Nil
C&D material (Non-inert) (m ³)	0	Nil
General Refuse (m ³)	4	Public Refuse Collection Point
Chemical Waste (m ³)	0	Nil

8.0 ENVIRONMENTAL AUDIT

8.1 Site Inspection

Site inspection was carried out by the ET at 22 August 2003. A summary of the implementation status of the mitigation measures on site inspections is presented in Appendix C.

8.2 Status of Environmental Licensing and Permitting

All permits/licenses obtained in this reporting month are summarized in Table 8.1.

Table 8.1 Summary of environmental licensing and permit status

Description	Permit No.	Valid Period		Section
		From	To	
Environmental Permit	EP-150/2002/A	29/04/03	---	Whole work site
Marine Dumping Permit	EP/MD/04-005	15/05/03	14/11/03	• Hopper barge and Motor tug
Construction Noise Permit	GW-TW0136-03	01/05/03	31/10/03	• One Derrick Barge (CNP 061) • One Tug boat (CNP 221)

8.3 Implementation Status of Environmental Mitigation Measures

WKC&T has been implementing the required environmental mitigation measures according to Implementation of Mitigation Measures stated in the Appendix A of EM&A manual. A summary of the implementation status of the mitigation measures is presented in Appendix C. The following observations were made during site inspection:



Water Quality

- All vessels were kept tidy and no oil or other substances were washed overboard;
- No litter and loose objects, e.g. tools, were left lying around.

Terrestrial Ecology and Marine Ecology

- No damage of surrounding natural habitats was observed;
- No open fires were observed within the work site boundary;
- No disturbance to the dolphin habitat was observed.

Waste Management

WKC&T has been implementing most mitigation measures on waste management. The Contractor was reminded to provide more manpower to maintain good wash management, such as recycling of waste before disposal.

8.4 Recommendations on site inspection findings

Based on the site inspection findings, the recommendations are as below:

- Use quiet or 'silenced' plant equipment;
- Avoid the use of high-speed vessels where possible, or slow the high-speed vessels to under 10 knots which is the speed restriction for all marine traffic inside the Marine Park Boundary;
- Check the work site boundaries regularly to ensure that no damage occurs to surrounding natural habitats;
- Construction activities shall not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site;
- Maintain good site practices and waste management at the site;

8.5 Implementation Status of Event and Action Plan

Since no exceedances were recorded in this reporting month, no further mitigation measures were required.

8.6 Implementation Status of Environmental Complaint Handling

No written or verbal complaints had been received during this monitoring month.

8.7 Implementation of Notification of Summons and Prosecution

There was no notification of summons respect to environmental issues registered in this reporting month. No prosecutions related to environmental issues were received.

9.0 CONCLUSION

According to the ET weekly site inspections and IE monthly site audit carried out this month, it indicated that site practices of the WKC&T were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory.

10.0 FUTURE KEY ISSUES

10.1 Upcoming EM&A Schedule

Dredging for approach channel will be started in the end of September 2003. Therefore, schedule of impact monitoring on water quality in the coming month will be subject to the WKC&T work progress. The Proposed site inspection schedule in the coming month will be at 26 September 2003.



10.2 Upcoming construction works schedule in the coming two months

The major construction works planned to be carried out in next month and their possible impact is tabulated (Table 10.1) for reference.

Table 10.1 – Construction Plan in the coming two month

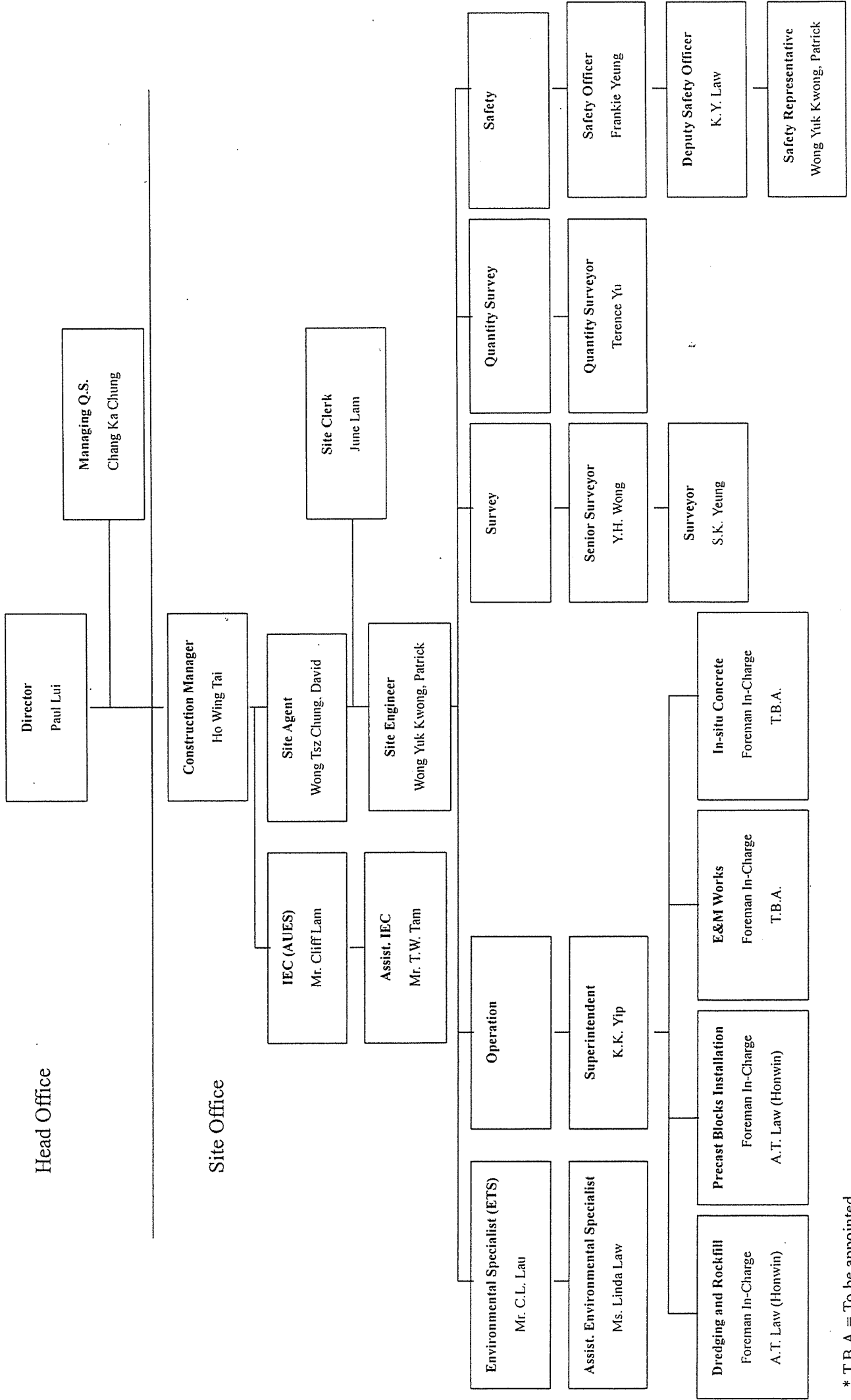
Construction Work	Activities (proposed)
Jetty Construction	<ul style="list-style-type: none">• Filling of general fill and sub-base materials;• Casting of jetty's coping;• Setting of remaining PC units.
Catwalk Construction	<ul style="list-style-type: none">• Filling of general fill and sub-base materials;• Setting of remaining PC units.
Footpath Construction	<ul style="list-style-type: none">• Excavation;• Placing of precast footpath footing and slabs.
Approach Channel	<ul style="list-style-type: none">• Dredging



Appendix A

Organization Chart

Construction of Jetty at Lung Kwu Chau
Organization Chart



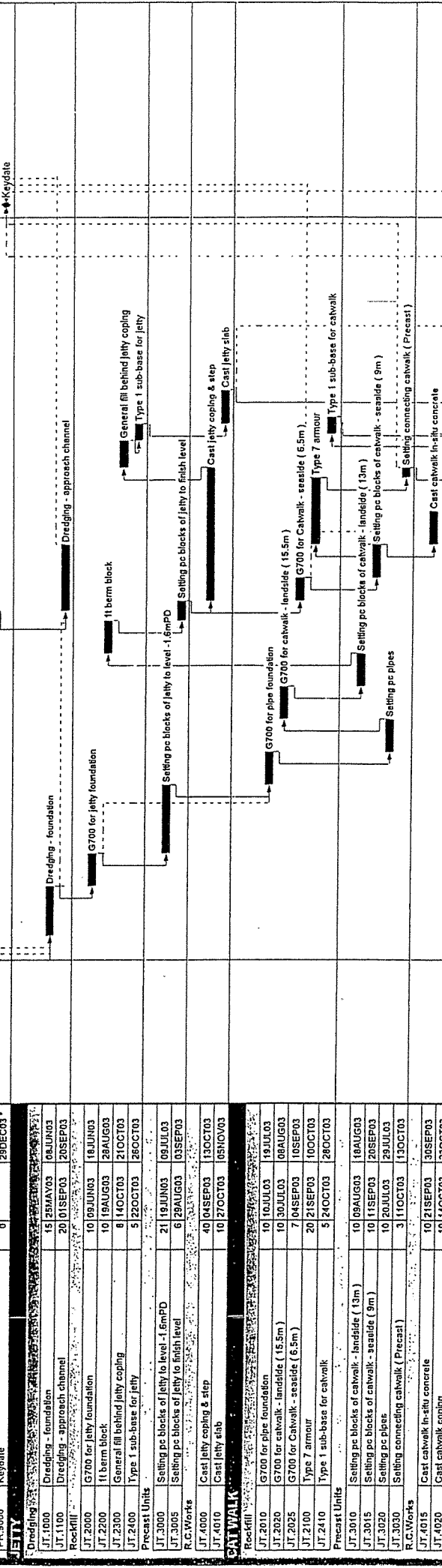
* T.B.A. = To be appointed



Appendix B

Construction Programme of the Project

Act ID	Description	Orig Dur	Early Start	Early Finish
PR-1000	Commencement	0	04APR03	24APR03
PR-1010	Mobilization / setup	21	04APR03	24APR03
PR-2000	Baseline monitoring	40	15APR03	24MAY03
PR-2005	Impact monitoring	219	25MAY03	29DEC03
PR-2007	Post project monitoring	28	30DEC03	26JAN04
PR-2100	Notice to Mariners	28	25APR03	22MAY03
PR-2200	Dumping permit	28	25APR03	22MAY03
PR-3000	Site offices - proposal and approval	21	04APR03	24APR03
PR-3100	Site Offices - erection	28	25APR03	22MAY03
PR-4000	Precast units - fabrication & approval	21	25APR03	15MAY03
PR-4100	Precast units - fabrication	75	18MAY03	29JUL03
PR-5100	EAM - submission & approval	35	25APR03	29MAY03
PR-5100	EAM - order & delivery	60	30MAY03	28JUL03
PR-6000	No dredging for approach channel	123	01MAY03	31AUG03
PR-9000	Keydate	0		29DEC03



Act ID	Description	Orig Dur	Early Start	Early Finish
JT-1000	Dredging - foundation	15	25MAY03	08JUN03
JT-1100	Dredging - approach channel	20	01SEP03	20SEP03
Reckfill				
JT-2000	G700 for jetty foundation	10	09JUN03	18JUN03
JT-2200	11 berm block	10	19AUG03	28AUG03
JT-2300	General fill behind jetty coping	8	14OCT03	21OCT03
JT-2400	Type 1 sub-base for jetty	5	22OCT03	26OCT03
Precast Units				
JT-3000	Setting pc blocks of jetty to level -1.6mPD	21	19JUN03	09JUL03
JT-3005	Setting pc blocks of jetty to finish level	6	28AUG03	03SEP03
R.C.Works				
JT-4000	Cast jetty coping & step	40	04SEP03	13OCT03
JT-4010	Cast jetty slab	10	27OCT03	05NOV03
CATWALK				
Reckfill				
JT-2010	G700 for pipe foundation	10	10JUL03	19JUL03
JT-2020	G700 for catwalk - landslide (15.5m)	10	30JUL03	08AUG03
JT-2025	G700 for Catwalk - sea-side (6.5m)	7	04SEP03	10SEP03
JT-2100	Type 7 armour	20	21SEP03	10OCT03
JT-2410	Type 1 sub-base for catwalk	5	24OCT03	28OCT03
Precast Units				
JT-3010	Setting pc blocks of catwalk - landslide (13m)	10	09AUG03	18AUG03
JT-3015	Setting pc blocks of catwalk - sea-side (9m)	10	11SEP03	20SEP03
JT-3020	Setting pc pipes	10	20JUL03	29JUL03
JT-3030	Setting connecting catwalk (Precast)	3	11OCT03	13OCT03
R.C.Works				
JT-4015	Cast catwalk in-situ concrete	10	21SEP03	30SEP03
JT-4020	Cast catwalk coping	10	14OCT03	23OCT03
JT-4030	Cast catwalk slab	15	06NOV03	20NOV03
Excavation				
FP-1000	Excavation for foundation (21nos)	140	25MAY03	11OCT03
R.C.Works				
FP-2000	Cast foundation	140	24JUN03	10NOV03
FP-3000	Cast slab	144	24JUL03	14DEC03
Jetty Furniture				
JT-5000	Bollard and fender	30	06NOV03	05DEC03
JT-5050	Handrail and sign	30	17NOV03	16DEC03
E&M				
JT-6000	Pillar box and pipe	21	29OCT03	18NOV03
JT-6100	Lighting - installation	18	21NOV03	08DEC03
JT-6150	Lighting - testing & commissioning	6	09DEC03	14DEC03
Demolition				
JT-9000	Demolition of old jetty	15	15DEC03	29DEC03

Start date	Finish date	Legend
04APR03	26JAN04	Early bar
04APR03	01MAY03	Progress bar
01MAY03	01MAY03	Critical bar
01MAY03	01MAY03	Summary bar
		Start milestone point
		Finish milestone point



Appendix C
Summary of the Implementation Status
of
Mitigation Measures



SUMMARY OF IMPLEMENTATION STATE OF THE MITIGATION MEASURES

Environmental Protection Measures / Mitigation Measures	Implementation Stages*			Remark
	Yes	No	N/A	
Measures to be implemented during dredging:				
<ul style="list-style-type: none"> • Use of a closed grab dredger with a maximum daily production rate of 500 m³/day; • Deployment of silt curtain to enclose the grab while dredging works are in progress. The silt curtain shall be frame type and designed to enclose local pollution caused by the grab dredging. • The second layer of silt curtain shall be formed from tough, abrasion-resistant permeable membranes, supported on floated booms in such a way as to ensure that egress of turbid waters from the enclosed dredging area shall be restricted. • Use of small sized hopper barge and dredger for dredging works. The maximum draft of the dredger and hopper barge, when fully loaded, shall not exceed 2m. The hopper barge shall make more frequent trips to transport the dredged material to the allocated marine disposal ground, instead of remaining at Lung Kwu Chau until it is fully loaded, in order to avoid grounding of the barge during low tide. • Mechanical grabs shall be designed and maintained to avoid spillage and sealed tightly while being lifted. • All pipe leakages shall be repaired promptly and plant shall not be operated with leaking pipes. • The decks of all vessels shall be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard. • Adequate freeboard (i.e. minimum of 200mm) shall be maintained on barges to ensure that decks are not washed by wave action. • All hopper barges and dredgers shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material. • Construction activities shall not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site or dumping grounds. • Loading of barges and hopper barges shall be controlled to prevent splashing of material into the surrounding water. Barges or hopper barges shall not be filled to a level that will cause the overflow of materials or sediment laden water during loading or transportation. 	✓	✓	✓	No dredging activities carried out
			✓	No dredging activities carried out
			✓	No dredging activities carried out
			✓	No dredging activities carried out
			✓	No dredging activities carried out
	✓			
			✓	No dredging activities carried out
			✓	No dredging activities carried out
	✓			
			✓	No dredging activities carried out
			✓	No dredging activities carried out



SUMMARY OF IMPLEMENTATION STATE OF THE MITIGATION MEASURES

Environmental Protection Measures / Mitigation Measures	Implementation Stages*			Remark
	Yes	No	N/A	
<i>Measure to be implemented during Demolition and removal works</i>				
<ul style="list-style-type: none"> Demolition and removal works of the submerged portion of the existing jetty shall be carried out around low tide to minimize the duration of works taking place within the marine waters. 	✓		✓	No demolition and removal works
<i>Mitigation for terrestrial ecology</i>				
<ul style="list-style-type: none"> Check the work site boundaries regularly to ensure that no damage occurs to surrounding natural habitats. Prohibit and prevent open fires within the work site boundary during construction and provide temporary fire fighting equipment in the work areas. Reinstate temporary work sites/disturbed areas immediately after completion of the construction. 	✓			
<i>General mitigation for Chinese White Dolphin</i>				
<ul style="list-style-type: none"> The use of high-speed vessels in the construction or operation of the jetty shall be avoided where possible. If high-speed vessels must be used, they shall be required to slow to under 10 knots which is the speed restriction for all marine traffic inside the Marine Park Boundary. Furthermore, marine traffic entering the Marine Park to the proposed jetty area shall follow a regular and predictable route. All vessel operators working on the project shall be given a briefing, alerting them to the conservation significance of the Marine Park and the presence of dolphins in the area, and setting out guidelines for safe vessel operations around cetaceans. A policy of no dumping of rubbish, food, oil, or chemicals shall be strictly enforced. This shall also be covered in the contractor briefing. Before dredging, an exclusion zone of 500m radius shall be scanned around work area for at least 30 minutes prior to the start of dredging. If dolphins are observed in the exclusion zone, marine works shall be delayed until they have left the area. Furthermore, if dolphins enter the exclusion zone after dredging has commenced, marine works shall cease until they have left the area. Staff shall monitor for the presence of dolphins within the exclusion zone by scanning the sea both with and without binoculars whilst positioned at vantage point near the summit of the hill behind the jetty location. The vantage point shall enable an extensive view of the 500m exclusion zone in all directions around the jetty. Staff shall communicate with the Engineer via a dedicated telecommunications device (e.g. mobile phone or 'walkie-talkie'). 	✓		✓	No dredging activities carried out



SUMMARY OF IMPLEMENTATION STATE OF THE MITIGATION MEASURES

Environmental Protection Measures/Mitigation Measures	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation for minimising possible noise impacts on dolphins				
<ul style="list-style-type: none"> • Other measures recommended to mitigate noise impact on dolphins by allowing their acclimatization to noise disturbance are to, as far as practicable: 	✓			
<ul style="list-style-type: none"> - The number of work vessels and small craft shall be minimised during the construction phase. 	✓			
<ul style="list-style-type: none"> - Dredging and jetty construction activities shall be continuous without short breaks or unpredictable noise outbursts at random intervals. 	✓			
<ul style="list-style-type: none"> - Events shall be scheduled on a regular basis with similar activities planned for similar time period each day. 	✓			
<ul style="list-style-type: none"> - Furthermore, the Contractor shall use quiet or 'silenced' plant equipment. All site plant equipment shall be well maintained. 	✓			
<ul style="list-style-type: none"> • Removal of the existing jetty structure shall be done in a way that minimise noise impact on dolphins by following the above recommended measures. Blasting shall not be permitted. Silenced breakers shall be used and demolition and removal works of the submerged portion of the jetty shall be carried out around low tide to minimise transmittance of noise into the water. In addition, demolition of the jetty structure shall be planned so that, as far as practicable, the structure is 'cut' into large manageable sections to minimise the amount of time breakers are used. 			✓	
<ul style="list-style-type: none"> • During the operational phase, vessels moored at the jetty for extended periods shall, as far as practicable, turn off their engines to minimise unnecessary underwater noise. 			✓	
Marine Sediment				
<ul style="list-style-type: none"> • The material must be dredged, transported and disposed of in a manner which minimizes the loss of contaminants either into solution or by resuspension. During transportation and disposal of the dredged marine sediments, the following measures shall be taken to minimise potential impacts on water quality. 			✓	No dredging activities carried out
<ul style="list-style-type: none"> • Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved. 			✓	No dredging activities carried out
<ul style="list-style-type: none"> • Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the Director of Environmental Protection. 			✓	No dredging activities carried out



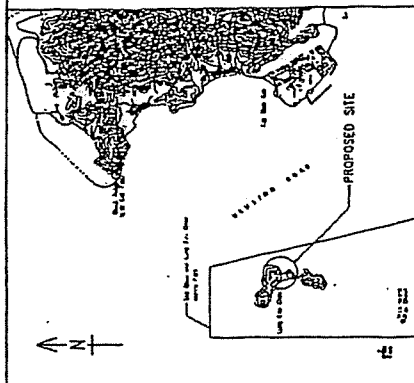
SUMMARY OF IMPLEMENTATION STATE OF THE MITIGATION MEASURES

Environmental Protection Measures/Mitigation Measures	Implementation Stages*			Remark
	Yes	No	N/A	
Environmental Protection Measures/Mitigation Measures				
Good Site Practices and Waste Reduction Measures				
Good site practices during the construction activities include:				
<ul style="list-style-type: none"> • Nomination of an approved personnel, such as a site agent, to be responsible for 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 proper waste management procedures. • High standards of waste management shall be observed on the works vessels and barges to ensure that no waste arisings or fuel/diesel oils are disposed to the surrounding marine waters. • No C&D materials and machinery fuels enter the marine waters at the site; • No stockpiles of construction material shall be permitted on Lung Kwu Chau Island. • All wastes, unused construction materials and construction equipment shall be removed from Lung Kwu Chau Island after the works are completed. • A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites). • In order to monitor the disposal of C&D materials at public filling areas, and to control fly-tipping, a trip-ticket system shall be included as one of the contractual requirements. 	√			
Waste reduction				
Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:				
<ul style="list-style-type: none"> • Prior to disposal of C&D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill. • Proper storage and site practices to minimise the potential for damage or contamination of construction materials. • Plan use of construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. 	√			No C&D Waste disposal



Figures

NOTES:
1. ALL DIMENSIONS ARE IN METRES.



KEY PLAN
SCALE 1:50 000



POINT	EASTING (m)	NORTHING (m)
M1	605 244	827 080
M2	605 323	825 408
M3	605 235	815 009
C1	605 116	827 618
C2	608 031	825 308

LEGEND:
● CONTROL STATION
▲ MONITORING STATION

REVISION		DATE	BY	CHECKED	DATE
1	Y F AU	15/11/2001	LSH/2001		
2	K F DS	15/11/2001			
3	K F DS	15/11/2001			
4	C F SH	15/11/2001			

DESIGNED BY: Y F AU
CHECKED BY: K F DS
DATE: 15/11/2001

PROJECT NO.: CV/2001/N
DRAWING NO.: 20510

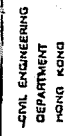
CONSTRUCTION OF JETTY
AT LUNG KWU CHAU

PROPOSED MARINE WATER
QUALITY MONITORING
STATIONS

TS 2031

1:5000

TECHNICAL SERVICES DIVISION
CMA ENGINEERING OFFICE



Construction of Lung Kwu Chau Jetty

NOTES

1. All dimensions are in metres.
2. All co-ordinates refer to Hong Kong geodetic datum 1980 and are in metres.
3. All levels refer to chart datum (C.D.) and are in meters.

Environmental Permit No.:

EP-150/2002

Figure 1

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