Airport Management Services Limited

SkyCity Golf Course EM&A

Monthly Impact Report

July 2006

7 August 2006 Report no: 01332R0061



Airport Management Services Limited

SkyCity Golf Course EM&A

Monthly Impact Report

				June 2006
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Report no:	01332R0061		Date:	7 August 2006

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1 Executive Summary

The purpose of this Project is to construct and operate a 9-hole Golf Course at the east side of the North Commercial District (NCD) on the Airport Island as an interim arrangement prior to the area's future development as a business park (see Figure 1-1). The proposed interim golf facility, known as "SkyCity Golf Course" is intended to serve airport passengers, overseas visitors and airport workers until August 2013.

The Project will be managed by Airport Management Services Limited (AMS) who have employed a Works Contractor, Wing Fat Construction Co. Ltd., to carry out the construction works. Hyder Consulting have been employed as the Environmental Team (ET) for the Construction Period and have engaged ALS Technichem Pty Ltd as the HOKLAS accredited testing laboratory to carry out marine water analysis.

The construction work commenced on 7 March 2006 and it anticipated to last for a period of six to seven months. According to the approved EM&A Manual, impact monitoring during the Construction Period is required for suspended solids, dissolved oxygen and turbidity.

The monthly site audit revealed that there were no significant non-compliances in terms of water, air, noise, waste or landscape and visual, although the Environmental Team made a number of recommendations to the Works Contractor to improve environmental conditions.

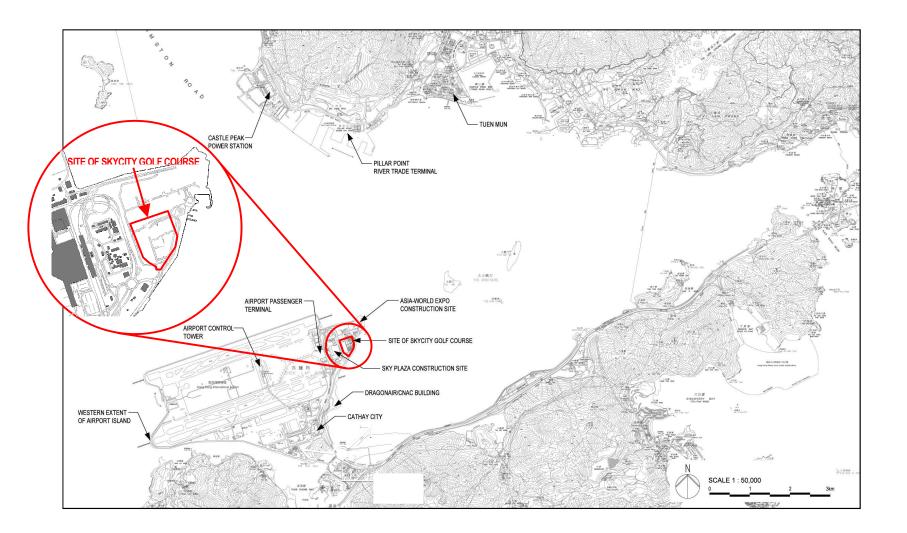
Impact monitoring was carried out during July 2006 in accordance with the approved EM&A Manual. Monitoring was carried out on 3, 7, 10, 14, 17, 21, 24, 28 and 31 July. The monitoring results are detailed in this report, which complies with the reporting requirements stated in the approved EM&A Manual.

There was one exceedance of Limit Level for suspended solids during July 2006. Although there were rainfalls during the reporting, there were no discharges from site. As such, the exceedance cannot be attributed to site activities and so cannot be considered as exceedances in terms of the EM&A programme. No action or follow-up is thus deemed to be necessary. Notwithstanding, future monitoring results will be examined closely and correlations with any discharge from site will be followed up immediately to ensure that no adverse environmental impacts are caused by this Project.

There were no complaints received and no notifications of summons.

Overall, there are no adverse environmental impacts caused by the Works during the reporting month, although there is room for improvement in overall site environmental management – recommendations have been made and will be followed up in due course.







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2 Site Audit

The monthly site audit examines the implementation status of environmental protection, mitigation and pollution control measures.

Appendix 1 contains the site audit checklist for July 2006. From this the following observations on the implementation status of environmental, mitigation and pollution control measures can be made. Areas for improvement and follow-up are indicated on the checklist and have been highlighted below. The Works Contractor is aware of any shortcomings and has been advised by the ET of any improvements that are required.

2.1 Water Quality

A vehicle wheelwash has been provided at the site egress point. However, the Contractor was reminded to the silt accumulated in the wheel washing bay frequently. The remaining perimeter U-channel of some 20m along the southern part of the site is being constructed.

As indicated by the Contractor, no water has been discharged from the site during the reporting month as rain water are collected in the excavated lake bowls and from there percolate down to replenish the groundwater below the site. However, it was observed that a section of hoarding near the site entrance was not sealed. Muddy water was found flowing out from the site through the gap between hoarding and the ground. The Contractor was reminded to seal the hoarding properly. The Contractor was also reminded to provide tarpaulin cover for the stockpiles of soil during rainstorms.

It is noted that a Discharge Licence under the Water Pollution Control Ordinance has been issued by EPD to the Contractor. The Contractor is reminded to keep the license on site for inspection. The Contractor has also been reminded to make silt traps/settlement tanks available on site in case these are needed for discharge off-site.

2.2 Air Quality

It was observed that the unpaved areas and haul roads of the entire site area were wet. No adverse air quality caused by the construction activities as observed.

2.3 Noise

No significant noise problems were noted. The most apparent noise source is overhead aircraft.



2.4 Waste/Chemical Management

Three-colour recycling bins have been placed near to the Contractor's site office. The Contractor has registered as a Waste Producer under the Waste Disposal Ordinance. It was observed that chemical waste storage has been provided.

All diesel storage tanks and oil/lubricant drums have been provided with a drip tray.

2.5 Landscape and Visual

The site is completely surrounded by a hoarding and there are no landscape or visual issues at this time.

2.6 General

The Environmental Permit is displayed at the entrance to the site as required. Although the Contractor has applied and/or received other permits and licences relating to environmental protection, these are not filed in an accessible manner. The Contractor was recommended to ensure that all relevant permits and licences are easily available for inspection, by both the ET and also by EPD.

Overall, the site operation is acceptable from an environmental point of view, but there is room for improvement. The Contractor has been advised of those areas which require immediate attention and this will be followed-up during the next site audit.

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3 Marine Water Quality EM&A

Monitoring of Dissolved Oxygen (DO) concentration in mg/ℓ , Suspended Solids (SS) in mg/ℓ and turbidity in NTU, was carried out by the ET to ensure that any deterioration in marine water quality could be readily detected and timely action could be taken to rectify the situation if this was due to site activities. DO and turbidity were measured *in-situ* whilst SS was determined in laboratory.

Other parameters, such as water depth, sea temperature, salinity and DO saturation are recorded for reference, and weather conditions, sea conditions, tidal stage and any particular site activities are recorded for information.

3.1 Monitoring Results

3.1.1 Summary

A summary of monitoring results for the reporting month is provided in Table 3-1, below. Detailed results are provided in Appendix 2, in which exceedances of Action/Limit (A/L) Levels are highlighted.

Station		Temperature (^o C)	Salinity (mg/ℓ)	DO Saturation (%age)	DO Concentration (mg/ℓ)	Turbidity (NTU)	SS (mg/ℓ)
	Mean	28.1	15.6	93.0	6.7	5	6
C1	Maximum	30.6	26.7	108.1	7.7	7	10
	Minimum	24.5	6.2	82.8	5.8	3	3
-	1		Γ	Γ		[1
	Mean	28.1	15.7	93.2	6.7	4	5
C2	Maximum	30.4	26.9	106.0	7.6	5	10
	Minimum	25.2	6.2	82.5	5.8	2	3
	11						1
	Mean	28.2	15.7	91.9	6.7	4	5
M1	Maximum	30.6	26.8	106.1	7.7	6	7
	Minimum	25.4	6.2	64.6	5.8	3	2
							
	Mean	28.2	15.9	93.5	6.7	4	5
M2	Maximum	30.5	28.9	106.4	7.6	6	10
	Minimum	25.3	6.1	82.4	5.8	2	2

 Table 3-1
 Summary of Impact Monitoring Data



3.1.2 Equipment and Methodology

Because of the relatively shallow water, *in-situ* measurements and water sampling were conducted at only one water depth – the mid-depth. Water samples for all monitoring parameters were collected, stored, preserved and analysed according to *APHA Standard Methods for the Examination of Water and Wastewater*, 19th Edition, #17.

In-situ DO concentration, turbidity (and temperature, salinity and DO saturation) were carried out using a YSI Model 6820 CE-C-M-Y multi-parameter meter:

Demonster	YSI Model 6820 CE-C-M-Y			
Parameter	Range	Resolution	Accuracy	
DO Concentration	0 to 50 mg/ℓ	0.01 mg/ ł	0 to 20 mg/ ℓ : \pm 2% of reading or 0.2 mg/ ℓ , whichever is greater; 20 to 50 mg/ ℓ : \pm 6% of reading	
DO Saturation	0 to 500%	0.1%	0 to 200%: \pm 2% of reading or 2% air saturation, whichever is greater; 200 to 500%: \pm 6% of reading	
Turbidity	0 to 1,000 NTU	0.1 NTU	$\pm2\%$ of reading or 0.3 NTU, whichever is greater	
Temperature	-5 to +70°C	0.01°C	±0.15°C	
Salinity	0 to 70 ppt	0.01 ppt	\pm 1% of reading or 0.1 ppt, whichever is greater	

 Table 3-2
 In-situ Monitoring Equipment Details

A Kahlisco water sampler was used to obtain the water sample for subsequent SS analysis. Water samples were collected in high density polythene bottles, packed in ice (cooled to 4°C without being frozen), and delivered to ALS' laboratory (HOKLAS accredited) immediately after completion of monitoring. The analysis follows APHA *Standard Methods #*2540D.

A Global Positioning System (GPS) was used to determine the exact monitoring location and water depth was determined using an echo-sounder.

3.1.3 Maintenance and Calibration

All *in-situ* monitoring instruments are calibrated and certified by ALS at 3-monthly intervals throughout the marine water quality monitoring programme.

For DO, the probe (YSI 6820) is calibrated once per monitoring day by the wet bulb method. Calibration at ALS is carried out once every three months in a water sample of known dissolved oxygen concentration. The sensor is immersed in the water and after thermal equilibration, the known mg/l value is keyed in and the calibration is carried out automatically.

For turbidity, the probe (YSI 6820) is calibrated with a solution of known NTU at ALS once every three months. Calibration as per dissolved oxygen, above.

Calibration details are provided in Appendix 3.



3.1.4 Parameters Monitored

The following parameters are monitored and compared to A/L Levels:

- Dissolved Oxygen (DO)
- Suspended Solids (SS)
- Turbidity

Other parameters, such as water depth, sea temperature, salinity and dissolved oxygen saturation ware recorded for reference, and weather conditions, sea conditions, tidal stage and any particular site activities were recorded for information.

3.1.5 Monitoring Locations

Monitoring locations together with grid references are shown in Figure 3-2. Control Stations are designated C1 and C2 and Monitoring Stations are designated M1 and M2.

3.1.6 Monitoring Date, Time, Frequency and Duration

Monitoring of marine water quality is carried out twice-weekly during mid-ebb and mid-flood tides. Table 3-3, below, provides details of the monitoring dates, times and duration:

Date	Duration of Ebb Tide	Monitoring at Mid- Ebb	Duration of Flood Time	Monitoring at Mid- Flood
3/7/06	14:01 to 21:37	17:49	08:30 to 14:01	11:15
7/7/06	06:16 to 14:19	10:17	14:19 to 20:48	17:33
10/7/06	08:20 to 16:36	12:28	16:36 to 23:21	19:58
14/7/06	11:39 to 19:20	15:29	05:16 to 11:39	08:27
17/7/06	14:30 to 21:06	17:48	08:30 to 14:30	11:30
21/7/06	06:20 to 14:19	10:19	14:19 to 21:34	17:56
24/7/06	08:38 to 16:40	12:39	16:40 to 23:16	19:58
28/7/06	11:16 to 18:50	15:03	04:53 to 11:16	08:04
31/7/06	08:38 to 14:20	11:10	14:20 to 21:30	18:00

 Table 3-3
 Monitoring Date, Time, Frequency and Duration

3.2 Action/Limit Levels

The A/L Levels for the impact monitoring stations (M1 and M2) were determined in the approved Interim Baseline Monitoring Report and are shown in Table 3-4:



Parameter	Action Level	Limit Level
DO Concentration	5^{th} percentile of baseline data = 7.0 mg/ ℓ , or 80% of the upstream control station	4.0 mg/ℓ, or 70% of the upstream control station
Turbidity	95 th percentile of baseline data = 9.6 NTU, or 120% of the upstream control station	99 th percentile of baseline data = 10.5 NTU, or 130% of the upstream control station
SS	95 th percentile of baseline data = 9.4 mg/ℓ, or 120% of the upstream control station	99 th percentile of baseline data = 9.9 mg/ℓ, or 130% of the upstream control station

Table 3-4 Action and Limit Levels for Water Monitoring Stations

In case of exceedance of A/L Levels at M1 or M2, the Event/ Action Plan (shown in Table 3-5, below) shall be followed.

Event	Action					
	ET	Works Contractor				
Exceedance of Action Level	 Identify the source(s) of impact. If not from the Project then provide justification and document this If exceedance is caused by the Project then inform Contractor Check monitoring data and Contractor's working methods Discuss possible mitigation measures with Contractor Repeat measurement on next day of exceedance 	 Confirm notification of the exceedance in writing Rectify any unacceptable practice Check all plant and equipment Amend working methods if appropriate Discuss possible mitigation measures with ET Implement the agreed mitigation measures 				
Exceedance of Limit Level	 Identify the source(s) of impact. If not from the Project then provide justification and document this in the EM&A Report If exceedance is caused by the Project then inform Contractor Check monitoring data and Contractor's working methods Agree mitigation measures with Contractor Ensure mitigation measures are implemented immediately Increase the monitoring frequency to daily until no further exceedance of Limit Level 	 Confirm notification of the exceedance in writing Rectify any unacceptable practice Check all plant and equipment Amend working methods if appropriate Agree possible mitigation measures with ET Implement the agreed mitigation measures immediately 				

Table 3-5 Event /	Action Plan for Marine	Water Quality Monitoring
-------------------	------------------------	--------------------------



3.3 Summary of Exceedances

3.3.1 Review of Exceedances and Implications

There was one exceedance of Limit Level for suspended solids during July 2006. The Event/Action Plan was implemented.

The first action is to determine the source of the exceedance. There have been rainfalls during the reporting month. However, there was no surface run-off or no discharges from site since rainwater was collected in the excavated lake bowls and from there percolated down to replenish the groundwater below the site. As such, the cause of these exceedances cannot be from site activities.

As such, the exceedance cannot be considered as exceedances in terms of the EM&A programme. No action or follow-up is thus deemed to be necessary.

Notwithstanding, future monitoring results will be examined closely and correlations with any discharge from site will be followed up immediately to ensure that no adverse environmental impacts are caused by this Project.

3.3.2 Action Taken and Follow-up

The exceedances of Limit Level noted during this reporting month are not considered to be exceedances in terms of the EM&A programme and so no action or follow-up is deemed to be necessary.

3.4 Complaints and Notifications of Summons

3.4.1 Complaints

No complaints were received during the reporting month and there are no outstanding follow-up issues to be addressed.

3.4.2 Notifications of Summons

No notifications of summons were received during the reporting month and there are no outstanding follow-up issues to be addressed.

3.5 Works Programme and Future Monitoring Schedule

Appendix 4 shows the current work programme for the works and Appendix 5 provides the future schedule for marine water quality monitoring.

Based on the work to be carried out in future months, no significant impacts to marine water quality are anticipated.



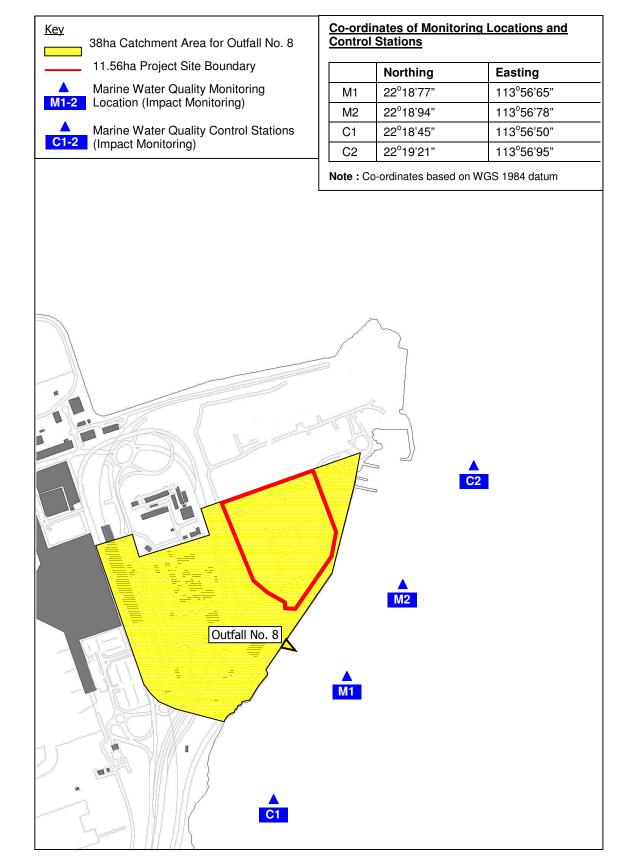


Figure 3-2 Location of Impact Monitoring Stations

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4 Comments, Recommendations and Conclusions

The monthly site audit revealed that there was no significant non-compliances in terms of water, air, noise, waste or landscape and visual, although the Environmental Team made a number of recommendations to the Works Contractor to improve environmental conditions.

In terms of marine water quality monitoring, there were no exceedances of A/L Levels during July 2006.

There were no complaints received and no notifications of summons.

Overall, there are no adverse environmental impacts caused by the Works during the reporting month, although there is room for improvement in overall site environmental management – recommendations have been made and will be followed up in due course.



Appendix 1

Site Audit Checklist

SkyCity Golf Course Environmental Team (ET) for Construction Period SITE INSPECTION/AUDIT CHECKLIST

		· · · · · · · · · · · · · · · · · · ·
		Inspection No.
Inspecti	on Date $\sqrt{876}$ Time 10:60	Inspected By Client:
Site	Skylity Golflowscontractor Wing Fad	Contractor: (<t ET: Add</t
Weather		
Conditio	n Sunny Fine Overcast Drizzle	Rain Storm Hazy
Tempera	ature 71°C Humidity High	Moderate Low
Wind	Calm Light Breeze Strong	Direction
	N/A or not ob	served Yes No Photo/Remarks
1 W	ater Quality Perimeter cut off drains direct off-site water around the site?	
1.2	Is all surface runoff directed to silt removal facilities prior to discharge?	
1.3	Channels, earth bunds or sandbags direct surface runoff to silt removal facilities?	
1.4	Is groundwater pumped out from tunnelling and excavations discharged via silt removal facilities?	
1.5	Are there silt removal facilities for settling surface runoff prior to discharge?	
	1.5.1 Constructed from pre-formed individual cells or silt traps / basins?	
	1.5.2 Adequate capacity?	
	1.5.3 Free from silt and sand?	V V Plus
	1.5.4 Inspected and maintained after rain storm?	
1.6	Is drainage system well maintained to prevent flooding and overflow?	
1.7	Is exposed earth stabilized after earthworks have been completed?	
1.8	Are exposed slope surfaces covered (by tarpaulin or other means)?	
1.9	Are open stockpiles of excavated and construction materials covered during rainstorms?	
1.10	Any measures to prevent the washing away of excavated and construction materials e.g. sand/silt to drains?	
1.11	Are manholes covered and sealed?	
1.12	Are vehicles and plant cleaned of earth, mud and debris before leaving the site?	
1.13	Are vehicle washing facilities provided at every site exit?	

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SkyCity Golf Course Environmental Team (ET) for Construction Period SITE INSPECTION/AUDIT CHECKLIST

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					N/A or not obs	erved	Yes	No	Photo/Remarks
			Vastewater treated in silt r acility emptied of silt regul		ilt removal			\checkmark	
		1.13.2 V	Vashing area and road ex	iting from washing	facility paved?				
			access road has sufficient unded to prevent of untre		shing facility or				
	1.14	Equipment maintenanc	oil and lubrication replace e area?	ments performed o	only in bunded				·
	1.15	Drainage fr	om maintenance area disc	charged via an oil i	nterceptor?	\checkmark			
		1.15.1 C	il and grease removed re	gularly?					
	1.16	Toilets that	connect to foul sewer or c	hemical toilets pro	vided?		\square		1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -
	1.17	ls debris an	d rubbish prevented from	entering drains?		,		\mathbf{v}	<u>_</u>
	1.18	Is Effluent I	Discharge Licence availab	le for inspection?					
2	AIF	R QUALITY	• ••• / · · •••						
	2.1	Are hoardin public acce	g not less than 2.4m tall p ss?	rovided beside roa	ads or areas with			-	
	2.2	Are the road generation?	ds and unpaved areas wa	tered regularly to a	void dust				
	2.3	Are stockpi	es of excavated material of	covered or regular	y watered?	\checkmark			
	2.4	ls stockpile barriers, fer	of dusty materials kept to cing or traffic cones?	not extend beyond	the pedestrian		\checkmark		
۰.	2.5	Is the public dust?	road around the site entr	ance kept clean ar	nd free from		\checkmark		· · · · ·
	2.6	Do the site	vehicles use the vehicle w	ash facility at the s	site exits?				
	2.7	Are materia	ls transported on trucks co	overed?					
	2.8	Are dusty m	aterials sprayed prior to lo	bading?					· · ·
	2.9	Are all truck	loads to a level within the	side and tail boar	ds?				
•	2.10	Are areas w watered?	here demolition/site clear	ance/breaking take	e place regularly	\checkmark			
	2.11	Is every stor by impervious the three side	ck of more than 20 bags o us sheeting or placed in a led?	f cement or day co n area sheltered o	overed entirely n the top and				
	2.12	Are potentia three sided	lly dusty demolished item shelter?	s/debris covered o	r placed in a	~			
		2.12.1 Is ke	the debris sprayed with weep wet before it is dumpe	ater/dust suppress d onto a debris ch	sion chemical to ute?				
	2.13	Odorous ma site?	terials immediately covere	ed and promptly re	moved from		\$		
	2.14	Are there er	closures around the main	dust-generating a	ctivities?	$\overline{}$, ·

SkyCity Golf Course Environmental Team (ET) for Construction Period SITE INSPECTION/AUDIT CHECKLIST



		N/A or not of	oserved	Yes	No	Photo/Remarks
	2.15	Is open burning prohibited?		\checkmark		
	2.16	Are completed earthworks sealed and hydroseeded and planted as soon as practicable?				
	2.17	Are vehicles and equipment switched off while not in use?		\checkmark		
	2.18	Do vehicles and equipment maintained that no excessive smoke or visible vapour emitted?				· · · · · · · · · · · · · · · · · · ·
Ot	serval	ble dust sources Wind erosion	Vehicle	/equipment	movemen	ts
1 44		Loading/unloading of materials	Others_	· · · · · · · · · · · · · · · · · · ·		
3	No	ise				
	3.1	Are the construction works scheduled to minimise noise nuisance?	[]		[]	
			۱ <u> </u>			
	3.2	Are the works or equipment sited to minimize noise nuisance? Mobile plant sited away from NSRs? Noisy plant oriented away from NSRs?				
	3.3	Are all plant and equipment well maintained and in good operating condition?		/		
	3.4	Is idle equipment turned off or throttled down?				
	3.5	Are powered mechanical equipment covered or shielded by appropriate acoustic materials?	\checkmark			
	3.6	Are quiet plant used as required?	\checkmark			<u> </u>
	3.7	Are silencers/mufflers fitted and maintained?	\checkmark			
	3.8	Are mobile/temporary noise barriers used where specified?	\Box			a
	3.9	Do air compressors (≥500kPa of supplying compressed air) and hand held percussive breakers (>10kg in weight) have valid noise labels?				
	3.10	Do compressors and generators operate with doors closed?		\checkmark		
	3.11	Are Construction Noise Permits available for inspection?	\checkmark			
Мај	or nois	se source(s)	Constru	uction activit	ies inside	of site
		Construction activities outside of site	Others			<u> </u>
4	Was	ste/Chemical Management				
	4.1	General refuse				• •
		4.1.1 Accumulation on-site avoided?				
		4.1.2 Receptacles (e.g. rubbish bins) available?				
	4	4.1.3 Disposed of regularly and properly?				
	4	4.1.4 Records of quantities generated/recycled/disposed maintained?				

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SkyCity Golf Course Environmental Team (ET) for Construction Period SITE INSPECTION/AUDIT CHECKLIST

		Ν	/A or not obs	erved	Yes	No	Photo/Remarks
4.2	Chem	ical waste					
	4.2.1	Stored properly in designated area?					<u></u>
	4.2.2	Storage in accordance with Code of Practice?					
	4.2.3	Disposed of properly?					
	4.2.4	Trip tickets available for inspection?			\square		· · · ·
4.3	Chem	ical/fuel storage					
	4.3.1	Is storage area bunded?			\checkmark		<u>.</u>
	4.3.2	Adequate bund capacity? (>110% of the largest tan	k)		\checkmark		
	4.3.3	Area storage area provided with locks and located or areas?	on sealed		\checkmark		· · · ·
	4.3.4	Are oil/fuel drums and plant/equipment provided wit to prevent soil contamination?	h drip trays		V		
4.4	C&D N	faterial					
	4.4.1	Reused/recycled where practicable?					
	4.4.2	Inert/non inert materials segregated?			\checkmark		
	4.4.3	Disposed of properly?			\checkmark		
	4.4.4	Records of quantities generated/recycled/disposed	maintained?		\checkmark		
4.5	Excava	ated Material					
	4.5.1	Reused where practicable?			N		·
	4.5.2	Records of quantities generated/reused/disposed m	aintained?		\square		
4.6	Are spo reused	ent bentonite slurries or grouts collected, reconditione?	ed and				· .
4.7	ls foarr nearby	n, oil, grease, litter or other objectionable matters in w drain/sewer avoided?	vater to				
La	ndscape	e and Visual		1 			
5.1	Are ret	ained trees protected by fencing?		\checkmark			<u> </u>
5.2	Is the v	vork site confined within site boundaries?			\square		
5.3	Is dam	age to surrounding areas avoided?			\checkmark		

5



- () The contrator was reminded to provide tarpaulin cover to the Hockpiles of excavated materials during rain Horm.
- Removal of sitt accumulated in the wheel washing bary chould be (\mathcal{T}) Carvied out more frequently.
- (3) It was observed that a portion of hearding near the site intrance is not sealed, sitty water was found flowing out the site through the gap between hearding and the gourd. The hearding should be proporty sealed.

Signatures:

Remarks

ET Inspector

AMS Site Representative

Contractor's Representative

Date: 28 (7/2006

Name: ALAN SHEWNG KNOW

Name: Ada. 28/7/06

Date:

Date:

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Appendix 2

Marine Water Quality Monitoring Data



Date	Time	Station	Sample Depth (m)	Water Depth (m)	Sea Temp (℃)	Salinity (ppt)	DO Sat (%age)	DO Conc (mg/ℓ)	Turbidity (NTU)	SS (mg/ℓ)
03-Jul-06	(mid-ebb)	M1	3	6	29.1	17.5	104	7.3	3	6
03-Jul-06	(mid-ebb)	M2	3	6	29.2	17.4	103	7.2	2	6
03-Jul-06	(mid-ebb)	C1	2	3	29.3	17.2	102	7.1	3	7
03-Jul-06	(mid-ebb)	C2	3	6	29.1	17.1	102	7.2	2	6
03-Jul-06	(mid-flood)	M1	3	6	28.3	17.7	98	6.9	4	7
03-Jul-06	(mid-flood)	M2	3	6	28.3	17.6	99	7.0	4	10
03-Jul-06	(mid-flood)	C1	2	3	28.4	17.4	98	6.9	4	7
03-Jul-06	(mid-flood)	C2	3	7	28.3	17.5	97	6.9	3	10
07-Jul-06	(mid-ebb)	M1	3	6	30.2	7.9	103	7.3	4	6
07-Jul-06	(mid-ebb)	M2	3	6	30.2	7.8	104	7.4	4	7
07-Jul-06	(mid-ebb)	C1	1	3	30.3	7.8	106	7.5	4	7
07-Jul-06	(mid-ebb)	C2	3	6	30.2	7.9	104	7.4	5	6
07-Jul-06	(mid-flood)	M1	3	6	30.6	7.8	106	7.5	5	6
07-Jul-06	(mid-flood)	M2	3	6	30.5	7.8	106	7.5	4	7
07-Jul-06	(mid-flood)	C1	2	3	30.6	7.8	108	7.6	4	6
07-Jul-06	(mid-flood)	C2	3	6	30.4	7.8	106	7.5	5	6
10-Jul-06	(mid-ebb)	M1	3	6	29.3	13.8	102	7.3	5	7
10-Jul-06	(mid-ebb)	M2	3	6	29.3	14.0	101	7.4	3	8
10-Jul-06	(mid-ebb)	C1	2	3	29.4	13.7	99	7.4	7	10
10-Jul-06	(mid-ebb)	C2	3	6	29.3	13.9	101	7.4	3	7
10-Jul-06	(mid-flood)	M1	3	6	29.3	13.7	104	7.7	5	7
10-Jul-06	(mid-flood)	M2	3	6	29.3	13.7	106	7.6	4	6
10-Jul-06	(mid-flood)	C1	2	3	29.4	13.6	102	7.7	6	9
10-Jul-06	(mid-flood)	C2	3	6	29.4	13.8	105	7.6	4	7



Date	Time	Station	Sample Depth (m)	Water Depth (m)	Sea Temp (℃)	Salinity (ppt)	DO Sat (%age)	DO Conc (mg/ℓ)	Turbidity (NTU)	SS (mg/ℓ)
14-Jul-06	(mid-ebb)	M1	3	6	28.5	17.4	85	5.9	4	2
14-Jul-06	(mid-ebb)	M2	3	6	28.6	17.4	84	5.9	2	2
14-Jul-06	(mid-ebb)	C1	2	3	28.6	17.2	85	6.0	3	3
14-Jul-06	(mid-ebb)	C2	3	6	28.5	17.4	85	5.9	4	3
14-Jul-06	(mid-flood)	M1	3	6	28.1	17.6	83	5.8	3	3
14-Jul-06	(mid-flood)	M2	3	6	28.1	17.6	82	5.8	3	4
14-Jul-06	(mid-flood)	C1	2	3	28.2	17.2	83	5.8	4	5
14-Jul-06	(mid-flood)	C2	3	6	28.0	17.6	83	5.8	3	3
17-Jul-06	(mid-ebb)	M1	3	6	27.4	17.2	97	6.8	5	4
17-Jul-06	(mid-ebb)	M2	3	6	27.4	17.1	96	6.8	4	5
17-Jul-06	(mid-ebb)	C1	2	3	27.4	17.3	96	6.7	5	5
17-Jul-06	(mid-ebb)	C2	3	6	27.4	16.3	96	6.8	4	4
17-Jul-06	(mid-flood)	M1	3	6	27.4	17.3	65	6.7	4	5
17-Jul-06	(mid-flood)	M2	3	6	27.4	17.1	95	6.7	4	4
17-Jul-06	(mid-flood)	C1	2	3	24.5	17.2	94	6.6	4	5
17-Jul-06	(mid-flood)	C2	3	6	27.4	16.7	93	6.6	3	6
21-Jul-06	(mid-ebb)	M1	6	3	29.4	6.2	91	6.4	5	4
21-Jul-06	(mid-ebb)	M2	6	3	29.3	6.1	92	6.4	5	5
21-Jul-06	(mid-ebb)	C1	3	1	29.5	6.2	91	6.4	6	5
21-Jul-06	(mid-ebb)	C2	6	3	29.3	6.2	92	6.5	4	4
21-Jul-06	(mid-flood)	M1	6	3	29.7	6.2	94	6.6	6	5
21-Jul-06	(mid-flood)	M2	6	3	29.7	6.2	92	6.5	5	4
21-Jul-06	(mid-flood)	C1	3	2	29.8	6.3	94	6.6	7	5
21-Jul-06	(mid-flood)	C2	6	3	29.7	6.2	93	6.5	5	6

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Date	Time	Station	Sample Depth (m)	Water Depth (m)	Sea Temp (℃)	Salinity (ppt)	DO Sat (%age)	DO Conc (mg/ℓ)	Turbidity (NTU)	SS (mg/ℓ)
24-Jul-06	(mid-ebb)	M1	3	6	28.6	13.9	88	6.3	5	5
24-Jul-06	(mid-ebb)	M2	3	6	28.5	13.9	88	6.4	5	6
24-Jul-06	(mid-ebb)	C1	2	3	28.7	13.5	85	6.4	6	6
24-Jul-06	(mid-ebb)	C2	3	6	28.5	14.2	87	6.4	4	7
24-Jul-06	(mid-flood)	M1	3	6	28.9	13.9	85	6.3	5	7
24-Jul-06	(mid-flood)	M2	3	6	28.9	13.8	87	6.2	6	7
24-Jul-06	(mid-flood)	C1	2	3	29.0	13.7	83	6.3	6	6
24-Jul-06	(mid-flood)	C2	3	6	28.9	14.0	88	6.3	5	6
28-Jul-06	(mid-ebb)	M1	3	6	25.6	26.4	91	6.4	3	3
28-Jul-06	(mid-ebb)	M2	3	6	25.6	26.3	91	6.5	3	3
28-Jul-06	(mid-ebb)	C1	2	3	25.7	26.3	90	6.5	4	5
28-Jul-06	(mid-ebb)	C2	3	6	25.4	26.4	91	6.5	3	4
28-Jul-06	(mid-flood)	M1	3	6	25.4	26.8	89	6.4	3	4
28-Jul-06	(mid-flood)	M2	3	6	25.3	28.9	89	6.3	3	3
28-Jul-06	(mid-flood)	C1	2	3	25.4	26.7	89	6.5	3	4
28-Jul-06	(mid-flood)	C2	3	6	25.2	26.9	89	6.3	2	3
31-Jul-06	(mid-ebb)	M1	3	6	25.9	21.0	85	6.3	3	2
31-Jul-06	(mid-ebb)	M2	3	6	25.9	21.4	83	6.2	3	5
31-Jul-06	(mid-ebb)	C1	2	3	26.0	20.9	86	6.4	4	3
31-Jul-06	(mid-ebb)	C2	3	6	25.8	22.0	84	6.2	3	4
31-Jul-06	(mid-flood)	M1	3	6	25.5	20.8	83	6.2	4	3
31-Jul-06	(mid-flood)	M2	3	6	25.6	21.2	85	6.3	4	5
31-Jul-06	(mid-flood)	C1	2	3	25.6	20.5	85	6.3	4	4
31-Jul-06	(mid-flood)	C2	3	6	25.5	21.5	84	6.2	4	4



Date	Time	Station	Sample Depth (m)	Water Depth (m)	Sea Temp (℃)	Salinity (ppt)	DO Sat (%age)	DO Conc (mg/ℓ)	Turbidity (NTU)	SS (mg/ℓ)
	Notes : "-" indicates no data is available		Mean	26.9	17.6	92.3	6.7	4.6	6.4	
	Bold indicates Action Level exceedance			Maximum	28.8	24.0	106.0	8.4	7.0	16.0
Bold indicates Limit Level exceedance			Minimum	25.3	8.9	80.2	5.8	3.0	3.0	



Appendix 3

Equipment Calibration Details

 Batch:
 HK51718

 Sub Batch:
 0

 Date of Issue:
 17/05/2006

 Client:
 MAUNSELL ENV MGT CNLT LTD

 Client Reference:
 HK51718

Calibration of Tubidimeter

Item :	YSI SONDE Environmental Monitoring System
Model No. :	6820-C-M
Serial No. :	00010867
Equipment No. :	W-026-27
Calibration Method :	This meter was calibrated in accordance with standard method APHA (19th Ed.) 2130B
Date of Calibration :	04 May,2006

Testing Results :

Expected Reading	Recording Reading
0.00 NTU	0.00 NTU
4.00 NTU	4.30 NTU
16.0 NTU	17.4 NTU
80.0 NTU	83.5 NTU
160 NTU	160 NTU
Allowing Deviation	±10%

Ms Wong Wai Man, Alice

Laboratory Manager - Hong Kong

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Page 2 of 6

Batch:	HK51718	
Sub Batch :	0	
Date of Issue:	17/05/2006	
Client:	MAUNSELL ENV MGT CNLT LT	D
Client Reference:		-

Calibration of Conductivity System

Item :	YSI SONDE Environmental Monitoring System
Model No. :	6820-C-M
Serial No. :	00010867
Equipment No. :	W-026-27
Calibration Method :	This meter was calibrated in accordance with standard method APHA (19th Ed.) 2510B
Date of Calibration :	04 May,2006
Testing Results :	

Expected Reading	Recording Reading
1412 uS/cm 6667 uS/cm 58670 uS/cm	1387 uS/cm 6781 uS/cm 58910 uS/cm
Allowing Deviation	±10%

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 Batch:
 HK51718

 Sub Batch:
 0

 Date of Issue:
 17/05/2006

 Client:
 MAUNSELL ENV MGT CNLT LTD

 Client Reference:
 MAUNSELL ENV MGT CNLT LTD

Calibration of Salinity System

Item :	YSI SONDE Environmental Monitoring System
Model No. :	6820-C-M
Serial No. :	00010867
Equipment No. :	W-026-27
Calibration Method :	This meter was calibrated in accordance with standard method APHA (19th Ed.) 2520 A and B
Date of Calibration :	04 May,2006
Testing Results :	

Expected Reading	11.2	Recording Reading		
10.0 g/L 20.0 g/L 30.0 g/L	2	10.5 g/L 20.9 g/L 30.5 g/L		
 Allowing Deviation		±10%		

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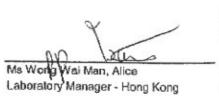
Batch:	HK51718
Sub Batch :	0
Date of Issue:	17/05/2006
Client:	MAUNSELL ENV MGT CNLT LTD
Client Reference:	

Calibration of Thermometer

Item :	YSI SONDE Environmental Monitoring System
Model No. :	6820-C-M
Serial No. :	00010867
Equipment No. :	W-026-27
Calibration Method :	In-house Method
Date of Calibration :	04 May,2006
Tester Bardh	

Testing Results :

Reference Temperature (⁶ C)	Recorded Temperature (⁰ C)			
20.5 °C 24.5 °C	20.7 ^o C 24.7 ^o C			
Allowing Deviation	±2.0°C			



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Batch:	HK51718
Sub Batch :	0
Date of Issue:	17/05/2006
Client:	MAUNSELL ENV MGT CNLT LTD
Client Reference:	

Calibration of DO System

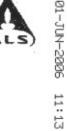
Item :	YSI SONDE Environmental Monitoring System	
Model No. :	6820-C-M	
Serial No. :	00010867	
Equipment No. :	W-026-27	
Calibration Method :	This meter was calibrated in accordance with standard method APHA (18th Ed.) 4500-0C & G	
Date of Calibration :	04 May,2006	

Testing Results :

Expected Reading	Recording Reading
0.00 mg/L 4.32 mg/L	0.00 mg/L
6.79 mg/L	4.47 mg/L 6.59 mg/L
8.98 mg/L	8.83 mg/L
Allowing Deviation	±0.2 mg/L

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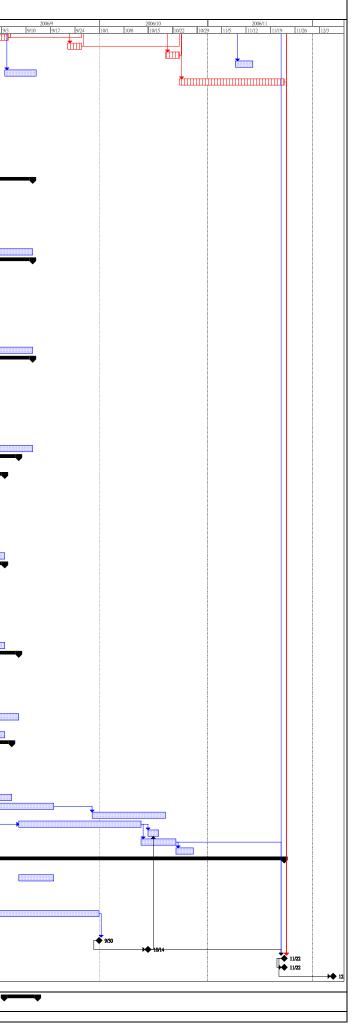
Appendix 4

Works Programme

_						LOT NO 825, R.P. OF CHEK LAP KOK LOT NO. 1 AND THE EXTENSION THERETO, CHEK LAP KOK, HONG KONG
識別碼	WBS 任務名稱	工期 220 dour	開始時間	完成時間	2006/1 1/8 1/15 1/22 1/29 2/5	20062 20063 20064 20065 20066 20067 20068 2012 2019 2026 315 3112 319 3226 442 4430 577 \$574 5528 644 6411 6478 625 7/2 7/9 7/160 8/6 8/13 8/20 8/27 9/1
1 1	CONTRACT PERIOD Project Commencement (Site Handover to Contractor)	330 days 0 days	2006/1/11 2006/1/11	2006/12/6 2006/1/11	◆ 1/11	
3 1.	2 Preliminaries 2.1 Mobilization of Plants and Equipment	119 days 7 days	2006/1/11 2006/1/11	2006/5/9 2006/1/17		
	2.2 Site Accommodations (Office Setup, Temporary Power and Water Supplies, etc.)	21 days	2006/1/11	2006/1/31		
6 1. 7 1.	2.3 Initial Survey 2.4 Hoarding/Fencing Erection	14 days 45 days	2006/1/11 2006/1/11	2006/1/24 2006/2/24		
8 1	2.5 Site Clearance	30 days	2006/1/11	2006/2/9 2006/1/24		
9 1.	2.6 Technical/Samples Preparation and Submission (Structural) 2.7 Technical/Samples Approval (Structural)	14 days 14 days	2006/1/11 2006/1/25	2006/2/7		
11 1. 12 1.	Z.8 Technical/Shopdrawings/Samples Preparation and Submission (Architectural) Technical/Shopdrawings/Samples Approval (Architectural)	98 days 14 days	2006/1/11 2006/4/19	2006/4/18 2006/5/2		
	2.10 Shopdrawings/Samples Preparation and Submission (E&M)	28 days				
14	2.11 Shopdrawings/Samples Approval (E&M) 2.12 CSD and CBWD preparation and submission	14 days 28 days	2006/3/15 2006/3/29	2006/3/28 2006/4/25		
	.2.13 CSD and CBWD Approval	14 days	2006/4/26	2006/5/9		
17 1. 18 1	Phase 1 Approval and Consent obtain from Statutory Authority (Formation and Drainage)	265 days 28 days	2006/1/11 2006/1/11	2006/10/2 2006/2/7		
	3.2 Filing, Leveling and Formation Works 3.3 Approval and Consent obtain from Statutory Authority (Structure)	14 days 28 days	2006/2/10 2006/2/24			
20 1.	3.4 Structural Works	103 days	2006/3/24	2006/3/23		
	3.4.1 Buildings' Substructure Construction 3.4.1.1 Function Room/Changing Rooms/Pump Room Building	70 days 14 days	2006/3/24 2006/3/24	2006/6/1 2006/4/6		
24 1.	3.4.1.2 Restaurant and Klichen Building	14 days	2006/4/7	2006/4/20		
	3.4.1.3 General Office and Pro Shop Building 3.4.1.4 Maintenance Building	14 days 14 days	2006/4/21 2006/5/5	2006/5/4 2006/5/18		
	3.4.1.5 Cable Trench 3.4.2 Buildings' Superstructures Construction (including 14-days propping period)	14 days	2006/5/19	2006/6/1 2006/7/4		
	3.4.2 Buildings' Superstructures Construction (including 14-days propping period) 3.4.2.1 Function Room/Changing Rooms/Pump Room Building	49 days 35 days	2006/5/17 2006/5/17	2006/6/20		
	3.4.2.2 Restaurant and Kitchen Building 3.4.2.3 General Office and Pro Shop Building	28 days 28 days	2006/5/17 2006/5/17	2006/6/13 2006/6/13		
32 1.	3.4.2.4 Outdoor Sitting Area, Terrace and Entrance Plaza	21 days	2006/6/14	2006/7/4		
	3.4.2.5 Maintenance Building 3.4.3 Underground Drainage and Ducting Works Installation	35 days 16 days	2006/5/26 2006/5/10	2006/6/29 2006/5/25		
35 1.	3.4.3.1 Function Room/Changing Rooms/Pump Room Building	7 days	2006/5/10	2006/5/16		
	.3.4.3.2 Restaurant and Kitchen Building .3.4.3.3 General Office and Pro Shop Building	7 days 7 days	2006/5/10 2006/5/10	2006/5/16 2006/5/16		
	3.4.3.4 Maintenance Building 3.4.4 Concealing E&M Works Installation	7 days 7 days	2006/5/19 2006/4/7	2006/5/25 2006/4/13		
40 1.	3.5 Architectural Works	111 days	2006/6/14	2006/10/2		
	3.5.1 Internal Finishing Works and Fitting-out by Main Contractor 3.5.1.1 Function Room/Changing Room/Pump Room Building	46 days 30 days	2006/6/14 2006/6/21	2006/7/29 2006/7/20		
43 1.	3.5.1.2 Restaurant and Klichen Building	30 days	2006/6/14	2006/7/13		
	3.5.1.3 General Office and Pro Shop Building 3.5.1.4 Maintenance Building	30 days 30 days	2006/6/14 2006/6/30	2006/7/13 2006/7/29		
10	3.5.2 Internal Decorations to Clubhouse Buildings by NSC 3.5.3 External Finishing Works by Main Contractor	60 days 90 days	2006/7/30 2006/7/5	2006/9/27 2006/10/2		
48 1.	3.5.4 Indoor E&M Works and Fitting-out Installation	58 days	2006/1/5	2006/10/2 2006/8/10		
	3.5.4.1 Function Room/Changing Room/Pump Room Building 3.5.4.2 Restaurant and Kitchen Building	42 days 42 days	2006/6/21 2006/6/14	2006/8/1 2006/7/25		
51 1.	3.5.4.3 General Office and Pro Shop Building	42 days	2006/6/14	2006/7/25		
	3.5.4.4 Maintenance Building 3.6 External Area	42 days 134 days	2006/6/30 2006/4/14	2006/8/10 2006/8/25		
	3.6.1 Underground Drainage and Ducting Construction 3.6.2 Hardlandscaping and Paving Works	35 days 35 days	2006/4/14 2006/5/19	2006/5/18 2006/6/22		
	3.6.3 E&M Works and Fitting-out by Main Contractor	45 days	2006/5/19 2006/6/23	2006/8/22 2006/8/6		
	3.6.4 Finishing Works and Fitting-out by Main Contractor 3.6.5 Irrigation & Softlandscaping Works by NSC	19 days 45 days	2006/8/7 2006/6/23	2006/8/25 2006/8/6		
59 1.	.4 Phase 2	316 days	2006/1/11	2006/11/22	•	
60 1. 61 1.	.4.1 Approval and Consent obtain from Statutory Authority (Formation and Drainage) .4.2 Lake B / Zone H3	28 days 161 days	2006/1/11 2006/2/14	2006/2/7 2006/7/24		
	4.2.1 Lake-B Excavation 4.2.2 Lake-B Edge Retaining Walls Construction	7 days	2006/2/14	2006/2/21 2006/3/6		
64 1.	4.2.3 Erecting of hoarding works at GC/2 Area (Approx. 8.67% handover to MC at late of March 200	14 days 10 days			-	
	.4.2.4 Lake-B Excavation within GCI2 Area .4.2.5 Lake-B Edge Retaining Walls Construction within GCI2 Area		2006/4/11 2006/4/25			
67 1.	4.2.6 Waterproof Lining and Finishing Works to Walls and Lake Bottom	35 days	2006/5/23	2006/6/26		
	.4.2.7 Waterlightness test to Lakes and Reservoir .4.2.8 Zone H3 Underground Drainage and Ducting Construction	28 days 10 days	2006/6/27 2006/4/27	2006/7/24 2006/5/6		
70 1.	4.2.9 Zone H3 Filling, Leveling and Formation Works to Profile 4.2.10 Zone H3 Initigation System by NSC	17 days		2006/6/8		
72 1.	4.2.11 Zone H3 Lighting Fittings	7 days	2006/6/24	2006/6/30		
	4.2.12 Zone H3 Sand lying and Final Shaping 4.2.13 Zone H3 Softlandscaping Works by NSC	7 days 15 days	2006/7/1 2006/7/8			
75 1.	.4.3 Zone H4a	149 days	2006/6/27	2006/11/22		
	.4.3.1 Filing, leveling & formation .4.3.2 trigation pipes laying (NSC)	12 days 21 days	2006/6/27 2006/7/25			
78 1.	4.3.3 Rough shaping	8 days	2006/8/15	2006/8/22		
	4.3.4 Surface Drainage System Construction 4.3.5 Tee Boxes (No.4.13) Construction	7 days 14 days	2006/9/5 2006/9/5		-	
	.4.3.6 Sand lying and Final Shaping .4.3.7 Amenity Area Finishing Works by Main Contractor	10 days 8 days				
83 1.	.4.3.8 Cable Lying and Lighting Fittings	9 days	2006/8/8	2006/8/16		
	4.3.9 Softlandscaping Works by NSC 4.4 Zone H5	30 days 137 days	2006/10/24 2006/7/9			
86 1.	.4.4.1 Filing, leveling & formation	22 days	2006/7/9	2006/7/30		
	.4.4.2 Irrigation pipes kaying (NSC) .4.4.3 Rough shaping	21 days 9 days	2006/7/25 2006/8/23			
89 1.	.4.4.4 Surface Drainage System Construction	10 days 14 days				
91 1.	.4.4.5 Sand lying and Final Shaping .4.4.6 Cable Lying and Lighting Fittings	9 days	2006/8/17	2006/8/25		
	4.4.7 Softlandscaping Works by NSC 4.5 Zone H1	30 days 286 days	2006/10/24 2006/2/10			
94 1.	4.5.1 Underground Drainage and Ducting Construction	24 days	2006/2/10	2006/3/5		
	4.5.2 Filing, levelling & formation 4.5.3 Irrigation pipes laying (NSC)	22 days 21 days	2006/7/9 2006/7/25			
97 1.	4.5.4 Rough shaping	9 days	2006/8/23	2006/8/31		
	.4.5.5 Surface Drainage System Construction .4.5.6 Tee Boxes (No.1.2, 10, 11) Construction		2006/9/12 2006/9/19			
100 1.	4.5.7 Sand lying and Final Shaping	14 days	2006/10/6	2006/10/19		
102 1.	4.5.8 Amenity Area Finishing Works by Main Contractor 4.5.9 Cable Lying and Lighting Fittings	8 days 9 days	2006/11/1 2006/8/26			
103 1.	4.5.10 Softlandscaping Works by NSC 4.6 Zone P	30 days 262 days		2006/11/22		
104 1*						
105 1.	4.6.1 Underground Drainage and Ducting Construction	14 days	2006/3/6			
105 1. 106 1.	4.6.1 Underground Drainage and Ducting Construction 4.6.2 Filing, Leveling & formation 4.6.3 Irrigation pipes laying (NSC)	8 days	2006/3/6 2006/7/31 2006/7/25	2006/8/7	-	



			LOT NO.825, R.P. OF CHECLAR PLOK LOT NO. 1.AND THE EXTENSION THERETO, CHECLAR PLOK HONK GNOR
別碼 WBS	任務名稱	工期 開始時間 完成時間 2006/1 1/1 1/8 1/1/5 1/22 1/29	2062 2063 2064 2065 2066 2067 2068
08 1.4.6.4	Rough shaping	4 days 2006/9/1 2006/9/4	125 121 1219 1226 135 312 319 326 442 4430 571 5714 572 528 64 671 678 625 772 779 776 7733 7790 846 8413 18
09 1.4.6.5	Surface Drainage System Construction Sand lying and Final Shaping	4 days 2006/9/22 2006/9/25 4 days 2006/10/20 2006/10/23	
11 1.4.6.7	Amenity Area Finishing Works by Main Contractor	5 days 2006/11/9 2006/11/13	
112 1.4.6.8 113 1.4.6.9	Cable Lying and Lighting Fittings	9 days 2006/9/4 2006/9/12 30 days 2006/10/24 2006/11/22	
113 1.4.6.9 114 1.4.7	Softlandscaping Works by NSC Lake A	30 days 2006/10/24 2006/11/22 165 days 2006/21/0 2006/71/24	
115 1.4.7.1	Lake-A Excavation	14 days 2006/2/10 2006/2/23	
116 1.4.7.2	Lake-A Edge Retaining Walls construction	49 days 2006/2/24 2006/4/13	
117 1.4.7.3 118 1.4.7.4	Waterproof Lining and Finishing Works to Walls and Lake Bottom Watertightness test to Lakes and Reservoir	35 days 2006/4/14 2006/5/18 28 days 2006/6/27 2006/7/24	
119 1.4.8	Pump House Construction	186 days 2006/2/10 2006/8/14	
120 1.4.8.1	Structural Works (Substructure and Superstructure)	42 days 2006/2/10 2006/3/23	
121 1.4.8.2 122 1.4.8.3	Finishing Works (Internal and External) Piping Works connect to Lakes (A & B)	42 days 2006/3/24 2006/5/4 28 days 2006/5/23 2006/6/19	
122 1.4.8.3	E&M Works (including Plants and Equipment Installation)	26 days 2006/1/2 2006/8/14	
124 1.4.9	Zone H7	176 days 2006/3/20 2006/9/11	
125 1.4.9.1	Underground Drainage and Ducting Construction	14 days 2006/3/20 2006/4/2	
126 1.4.9.2 127 1.4.9.3	Filling, leveling & formation Irrigation pipes laying (NSC)	16 days 2006/4/14 2006/4/29 21 days 2006/5/12 2006/6/1	
128 1.4.9.4	Rough Shaping	8 days 2006/6/2 2006/6/9	
129 1.4.9.5	Surface Drainage System Construction	8 days 2006/6/23 2006/6/30	
130 1.4.9.6	Sand lying and Final Shaping	10 days 2006/7/16 2006/7/25	
131 1.4.9.7 132 1.4.9.8	Cable Lying and Lighting Fittings Softlandscaping Works by NSC	9 days 2006/5/11 2006/5/19 30 days 2006/8/13 2006/9/11	
132 1.4.10 133 1.4.10	Zone H6	162 days 2006/4/3 2006/9/11	
134 1.4.10.1	Underground Drainage and Ducting Construction	14 days 2006/4/3 2006/4/16	
135 1.4.10.2 136 1.4.10.3	Filing, leveling & formation Irrigation pipes laying (NSC)	16 days 2006/4/30 2006/5/15 21 days 2006/5/12 2006/6/1	
136 1.4.10.3 137 1.4.10.4	Irrigation pipes laying (NSC) Rough Shaping	21 days 2006/5/12 2006/6/1 8 days 2006/6/10 2006/6/17	
138 1.4.10.5	Surface Drainage System Construction	8 days 2006/7/1 2006/7/8	
139 1.4.10.6	Tee Boxes (No.7, 16) Construction	21 days 2006/6/23 2006/7/13	
140 1.4.10.7	Sand lying and Final Shaping Amonthic Area Elisiching Middle Jul Main Contractor	10 days 2006/7/26 2006/8/4	
141 1.4.10.8 142 1.4.10.9	Amenity Area Finishing Works by Main Contractor Cable Lying and Lighting Fittings	7 days 2006/8/13 2006/8/19 9 days 2006/5/20 2006/5/28	
143 1.4.10.10	Softlandscaping Works by NSC	30 days 2006/8/13 2006/9/11	
144 1.4.11	Zone H9	148 days 2006/4/17 2006/9/11	
145 1.4.11.1	Underground Drainage and Ducting Construction	10 days 2006/4/17 2006/4/26	
146 1.4.11.2 147 1.4.11.3	Filing, leveling & formation Irrigation pipes laying (NSC)	10 days 2006/5/16 2006/5/25 21 days 2006/5/12 2006/6/1	
48 1.4.11.4	Rough Shaping	5 days 2006/6/18 2006/6/22	
49 1.4.11.5	Surface Drainage System Construction	5 days 2006/7/9 2006/7/13	
150 1.4.11.6 151 1.4.11.7	Tee Boxes (No.6,15) Construction	21 days 2006/0/14 2006/8/3 8 days 2006/8/5 2006/8/12	
151 1.4.11.7 152 1.4.11.8	Sand lying and Final Shaping Amenity Area Finishing Works by Main Contractor	8 days 2006/8/5 2006/8/12 7 days 2006/8/20 2006/8/26	
153 1.4.11.9	Cable Lying and Lighting Fittings	9 days 2006/5/29 2006/6/6	
154 1.4.11.10	Sottlandscaping Works by NSC	30 days 2006/8/13 2006/9/11	
55 1.5	Phase 3 Approval and Consent obtain from Statutory Authority (Formation and Drainage)	240 days 2006/1/11 2006/9/7 28 days 2006/1/11 2006/2/7	
156 1.5.1 157 1.5.2	Approval and Consent obtain from Statutory Authority (Formation and Drainage) Zone H8	28 days 2006/1/11 2006/2/7 206 days 2006/2/10 2006/9/3	
158 1.5.2.1	Underground Drainage and Ducting Construction	15 days 2006/2/10 2006/2/24	
159 1.5.2.2	Filling, Leveling and Formation Works to Profile	17 days 2006/3/7 2006/3/23	
160 1.5.2.3 161 1.5.2.4	Surface Drainage System Construction Tee Boxes No 8, 9, 17, 18 Construction	10 days 2006/5/11 2006/5/20 24 days 2006/6/8 2006/7/1	
161 1.5.2.4 162 1.5.2.5	Sand lying and Final Shaping	24 days 2006/08 2006//1 10 days 2006/6/8 2006/6/17	
163 1.5.2.6	Finishing Works by Main Contractor	7 days 2006/7/28 2006/8/3	
164 1.5.2.7	Lighting Fittings	7 days 2006/8/18 2006/8/24	
165 1.5.2.8 166 1.5.2.9	Irrigation System by NSC Softlandscaping Works by NSC	60 days 2006/5/11 2006/7/9 60 days 2006/7/6 2006/9/3	
167 1.5.3	Zone H4	191 days 2006/2/25 2006/9/3	
168 1.5.3.1	Underground Drainage and Ducting Construction	10 days 2006/2/25 2006/3/6	
169 1.5.3.2 170 1.5.3.3	Filling, Leveling and Formation Works to Profile Surface Drainage System Construction	18 days 2006/3/24 2006/4/10 11 days 2006/5/21 2006/5/31	
170 1.5.3.3 171 1.5.3.4	Tee Boxes No 5, 14 Construction	11 days 2006/5/31 12 days 2006/7/2 2006/7/13	
172 1.5.3.5	Sand lying and Final Shaping	11 days 2006/6/18 2006/6/28	
173 1.5.3.6	Finishing Works by Main Contractor	7 days 2006/8/4 2006/8/10	
174 1.5.3.7 175 1.5.3.8	Lighting Fittings Irrigation System by NSC	7 days 2006/8/25 2006/8/31 60 days 2006/5/11 2006/7/9	
175 1.5.3.8	Softlandscaping Works by NSC	60 days 2006/7/6 2006/9/3	
177 1.5.4	Zone H2	150 days 2006/4/11 2006/9/7	
178 1.5.4.1	Underground Drainage and Ducting Construction	20 days 2006/4/11 2006/4/30	
179 1.5.4.2 180 1.5.4.3	Filing, Leveling and Formation Works to Profile Surface Drainage System Construction	10 days 2006/5/1 2006/5/10 7 days 2006/6/1 2006/6/7	
180 1.5.4.3	Tee Boxes No 3, 12 Construction	14 days 2006/7/14 2006/7/27	
182 1.5.4.5	Sand lying and Final Shaping	7 days 2006/6/29 2006/7/5	
183 1.5.4.6	Finishing Works by Main Contractor	7 days 2006/8/11 2006/8/17	
184 1.5.4.7 185 1.5.4.8	Lighting Fittings Irrigation System by NSC	7 days 2006/9/1 2006/9/7 60 days 2006/5/11 2006/7/9	
86 1.5.4.9	Softlandscaping Works by NSC	60 days 2006/7/6 2006/9/3	
87 1.6	Drainage and Manhole Construction Works outside Site Boundary	238 days 2006/1/11 2006/9/5	
88 1.6.1	Approval and Consent obtain from Statutory Authority (Formation and Drainage) Application of Legenerating Traffic Argenerating Transport Department	28 days 2006/1/11 2006/2/7	
89 1.6.2 90 1.6.3	Application of Temporary Traffic Arrangement from Transport Department Application of Permit from RMO Police & AA	42 days 2006/3/29 2006/5/9 21 days 2006/5/10 2006/5/30	
90 1.6.3 91 1.6.4	Path section OP1 and WH OMH1 Construction	21 days 2006/3/10 2006/3/30 35 days 2006/5/31 2006/7/4	
92 1.6.5	Path section OP2 and M/H OMH2 Construction	28 days 2006/7/5 2006/8/1	
193 1.6.6	Path section OP3 and MH OMH3 Construction	35 days 2006/8/2 2006/9/5	
94 1.7 195 1.8	Testing and Commissioning As-built Drawings Preparation and Submission	21 days 2006/8/28 2006/9/17 21 days 2006/9/29 2006/10/19	
96 1.9	Removal & Reinstatement of Hoarding	35 days 2006/9/8 2006/10/12	
97 1.10	Final Inspection by Client	3 days 2006/10/15 2006/10/17	
98 1.11	Demobilization	10 days 2006/10/13 2006/10/22	
199 1.12 200 1.13	Site Clearance Form Submission and Authorities Inspection	5 days 2006/10/23 2006/10/27 232 days 2006/4/5 2006/11/22	
200 1.13	Electricity Supply Application (CLP Checking)	40 days 2006/4/5 2006/5/14	
202 1.13.2	Power Energizing	10 days 2006/9/8 2006/9/17	
203 1.13.3	Form WWO46 Part I & II Submission	0 days 2006/4/5 2006/4/5	→ 45
204 1.13.4 205 1.13.5	Form WWO46 Part III & IV Submission WSD Inspection	0 days 2006/8/14 2006/8/14 7 days 2006/8/15 2006/8/21	
205 1.13.5 206 1.13.6	WSD Inspection Water Certificate	7 days 2006/8/15 2006/8/21 40 days 2006/8/22 2006/9/30	
207 1.13.7	Form FSI/314 1st Submission	0 days 2006/4/5 2006/4/5	→ 45
208 1.13.8	Form FSI/314 2nd Submission	0 days 2006/8/14 2006/8/14	₩¥₩
	Form FSI/501 submission	0 days 2006/9/30 2006/9/30	
209 1.13.9		0 days 2006/10/14 2006/10/14	
210 1.13.10	FSD Inspection RD Inspection		
	FSD Inspection BD Inspection Drainage Inspection	0 days 2006/11/22 2006/11/22 0 days 2006/11/22 2006/11/22	





Appendix 5

Marine Water Monitoring Schedule for Next Month

Sky City Golf Course EM&A Tentative Water Quality Monitoring Schedule for August 2006

Sunday Monday		Tuesday	Wednesday	Thursday	Friday		Saturday	
30-Jul		31-Jul	01-Aug	02-Aug	03-Aug	04	1-Aug	05-Aug
						04:26 Mid-Flood	08:44 1 <i>3:03</i> 21:11 0 <i>5:19</i>	
06-Aug		07-Aug	08-Aug	09-Aug	10-Aug	11	I-Aug	12-Aug
	Mid-Ebb 07:10 Mid-Flood 15:36	11:23 <i>15:36</i> 19:04 <i>22:32</i>				<i>04:28</i> Mid-Ebb	07:37 1 <i>0:47</i> 14:27 1 <i>8:07</i>	
13-Aug		14-Aug	15-Aug	16-Aug	17-Aug	18	3-Aug	19-Aug
20-Aug	Mid-Flood <i>07:12</i> Mid-Ebb <i>13:22</i>	10:17 <i>13:22</i> 16:25 <i>19:28</i> 21-Aug	22-Aug	23-Aug		04:38 Mid-Flood 13:12	08:55 1 <i>3:12</i> 21:30 05:48 5-Aug	
	Mid-Ebb <i>07:48</i> Mid-Flood <i>15:41</i>	11:44 <i>15:41</i> 19:04 <i>22:28</i>				Mid-Flood 04:12 5 Mid-Ebb 5 10:33 5	07:22 1 <i>0:33</i> 14:05 1 <i>7:38</i>	
27-Aug		28-Aug	29-Aug	30-Aug	31-Aug	01	I-Sep	02-Sep
	Mid-Flood <i>06:08</i> Mid-Ebb <i>12:15</i>	09:11 <i>12:15</i> 15:23 <i>18:32</i>						