



Safety Issues and Challenges in Piling Contracts

地基工程的安全議題及挑戰

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溫穎倫 (項目經理)

30 September 2008

Heavy Lifting 重型吊運



Working at Height 高空工作



Tight Programme 施工期緊迫



Site Congestion 密集環境



All Weather Operation 全天候運作



Safety Focus 實踐安全



Plan 計劃

Safety by Design 可建性設計



Safety by Design 可建性設計



Vs.

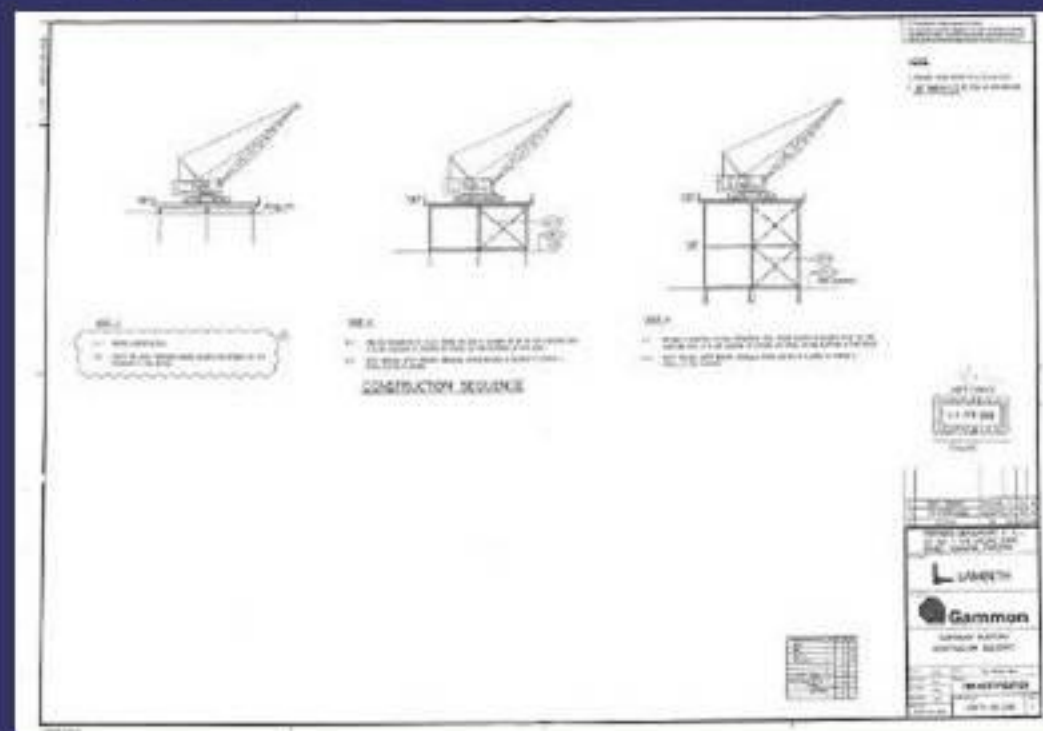


Plan for Safety 安全施工計劃

Prefabricate to minimise working at height
預製件減少高空工作



Step-by-step instructions
清晰步驟



Innovation & Enhancement 創意與提升



Safety Consideration
考慮安全

Implement 實行

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Orbital Parts Inspection: Orbiter Cass NOBELCO 7108									
Serial No.									
Inspector:		Date of Inspection:		Operating hours:		Signature:		Inspector No.:	
S. G. T. A. S.		21-10-2010		1145.5		[Signature]		[Number]	
Condition		Serial Number		Remarks / Remarks / Notes Required		Critical Items Checked		Inspected / Inspected	
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Hard Paving 穩固地面



Best Practice 模範作業



- Lifting Supervisor
吊運監督
- Banksman
訊號員



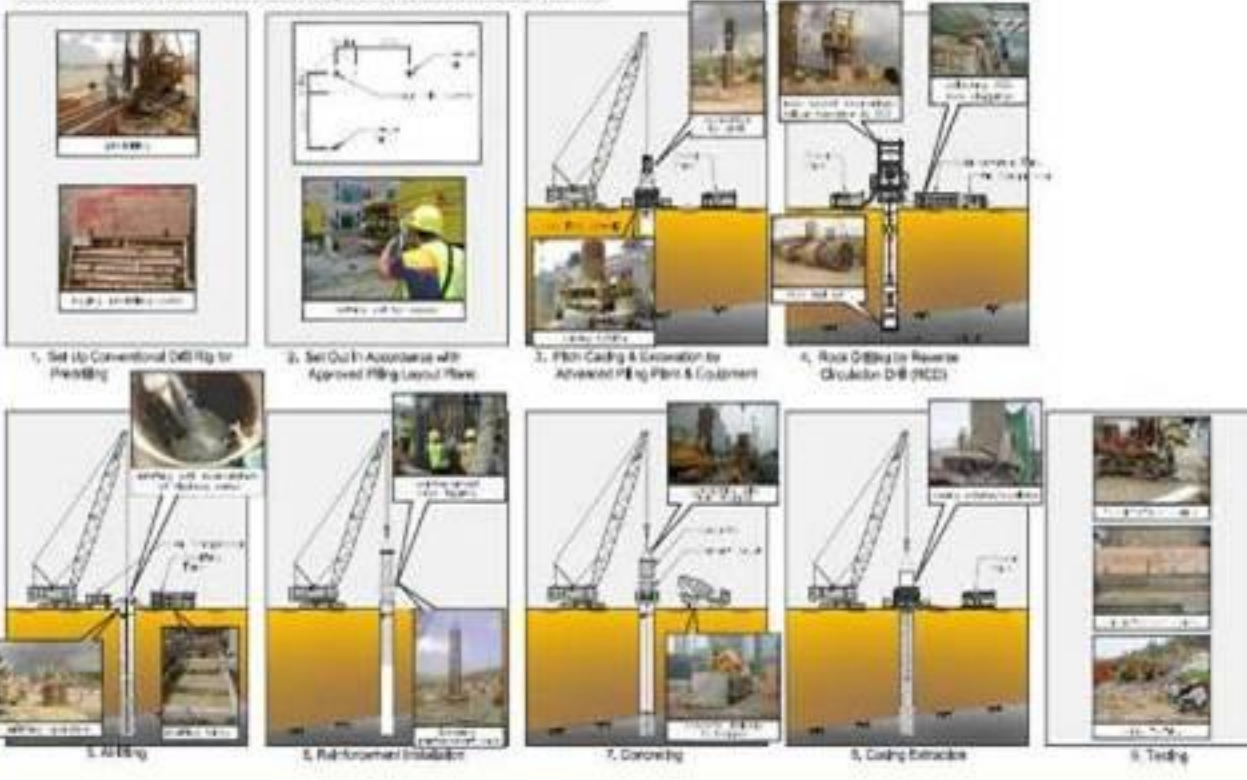
Best Practice 模範作業



Generic vs. Specific Instructions

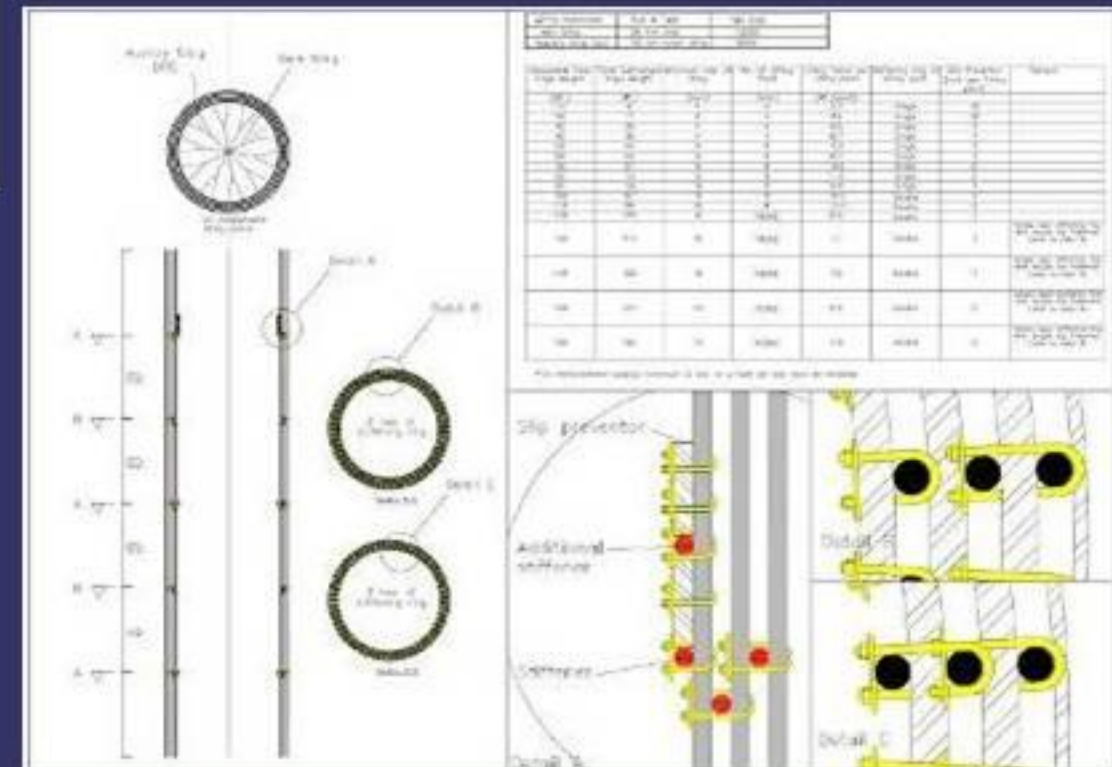
一般性指示 與 特定指示

General Construction Sequence For Bored Pile



← Generic

Specific →



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Caring for Your People 照顧員工



Birdeye view of retractable shelter for steel bending yard



Heavy Duty Tarpaulin sheets are extended during rebar bending works to provide shelter for steel fixer in sunny and rainy weather.



Green Environment 綠色環境



Evaluate 評估

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- Review & update risks
檢討及更新

[illegible]

Communication 互動溝通

- Field Control Sheet
施工控制表
- Work Face Risk
Assessment
工地風險評估



A Picture is Worth a Thousand Words

百聞不如一見

Risk Assessment Sheet-Pile Piling Work HSEMS/02 Appendix G

Review No. 9/08 Date: 07 March 2008

Project / Department: J3051 - Cherry St
 Type of activity: Socket H piles
 Location: Cherry St

Date of last assessment: Nov 07
 Assessed by: SL / YWT / TWN / SC
 Revision: 1/08 Date: 07 March 2008





Photo 1: The ground should be checked before moving rig. Steel plate was laid under the rig during piling works.

Photo 2: Good observation site and proper flagging could minimise piling hazards.

Photo 3: The crane was secured to the steel beam.

Hazard Identification Sheet (Recommended Format) HSEMS/02 Appendix G

Review No. 9/08 Date: 07 March 2008 Page 1 of 1

Works Related Projects/Department: J3051 Cherry Street
 Type of Activity / Operation: Socket H Piles
 Location: Cherry Street Footbridge Area

Works Related Projects/Department Code:
 Code:
 Analysis by: SL / YWT / TWN / SC

No.	Job Task	Hazard	People Affected	Cause of Hazard	Worst Harm Due to Hazard	Existing Control Measures	Remark / Photos
1	Mobilization of piling rig	Fabricated parts hitting other plants or workers Damage piling rig / crane or property	Drilling crews and plants in the vicinity Rig operator & drilling crew	Long & large load moving during lifting Unauthorized operation of plant and equipment	Serious injury / fatality Serious injury / fatality and serious damage to the nearby property	Additional guide rope for lifting long / large load Crane / rig operator needed to remove the key from the plant and equipment after use	 
2	Setting up of rig	Damage to the property	Rig operator and drilling crews	Absence in checking the headroom / clearance of the route for moving piling rig.	Serious damage to the nearby property. Any damaged fragment might harm to the drilling crews	All headroom restriction should be identified with an height limit sign displayed.	
		Falling from height	POSD holders and drilling crews	No appropriate working platform for lifters or relevant persons while fabricating rig / crane	Serious injury	Safety harness or use a truck to act as a platform for while fabricating as shown in the photo	

Issue 1 Rev 0 Sheet 1 of 1 7 March 2008

Learning from Mistakes 錯誤中學習

- Near Miss Reports
險失報告
- Best Practice Guides
模範作業指引
- Technical Directives
技術指引



使用吊索安全

19 June 2008
Issue No. 76

FAILURE IN LIFTING GEAR



引言

一個吊機吊鉤發生一件險失事件，一部吊機正使用一個吊索，在一個吊機內進行夾取工作。但當吊機把吊索拉直而起吊夾時，連接吊索與夾之間的吊索突然斷裂，引至吊索留在吊機內。

INTRODUCTION

A near miss happened on one of our bored piling site. A crane started to carry out grabbing to a bored pile when the wire loop connected to the grab suddenly broke while intending to lift up the grab. The grab fell and remained inside the pile and fortunately no person was injured and property damaged in this case.

在任何情況下吊索工具必須依從以下要求：

In all cases lifting gear must comply with the following requirements as a minimum:

- 所有起重裝置必須每十二個月由合資格人士檢驗
All lifting appliances should be inspected before use and have a thorough examination by a competent examiner every 12 months.
- 每日開工前機手必須檢查(包括減速的狀態)
At the beginning of each shift, the crane operator shall carry out a pre-work checking (i.e. the rope condition before grabbing operation).



- 定期進行 CPI
Work with Part Department to ensure Critical Part Inspection conducted regularly.
- 所有吊索必須有足夠強度去承受吊重時的壓力
All slings shall be made of chains, wire ropes or fibre ropes of adequate strength to withstand the stresses to which they will be subjected.
- 合資格人士及機手必須經常檢查吊機上的吊索
Regular maintenance to the wire connected to the crane by competent person and the operator.
- 所有起重裝置必須有合法的測試證書
All lifting gears are to have valid statutory test certificates available for inspection.

Reference and further studies:
OCP19 Lifting Appliances and Lifting Gear

Changing the Mindset

重整觀念

“Tell me and I will forget, show me and I will remember, involve me and I will understand”

不聞不如聞之，聞之不如見之，見之不如知之，知之不如行之；學至于行之而止矣。行之，明也。

Hands-on Training 實地訓練



Worker Engagement 工友參與



Worker Engagement 工友參與



Gammon J3188 Safety Innovation Group

Safety Innovative Idea

Title: Resting Seat

Proposed by: J3188 - Boxed Piling Team

Shared by
Lapsum



Description

1. This resting seat is provided for workers and site supervisor during hot and sunny days.
2. Additional steel bars are fixed on both sides to prevent overturning.
3. Hooks are reserved for lifting and moving the seat to other locations.
4. Further modification may be suggested to add cushion on the seat as the plate may be hot for people to sit on it.



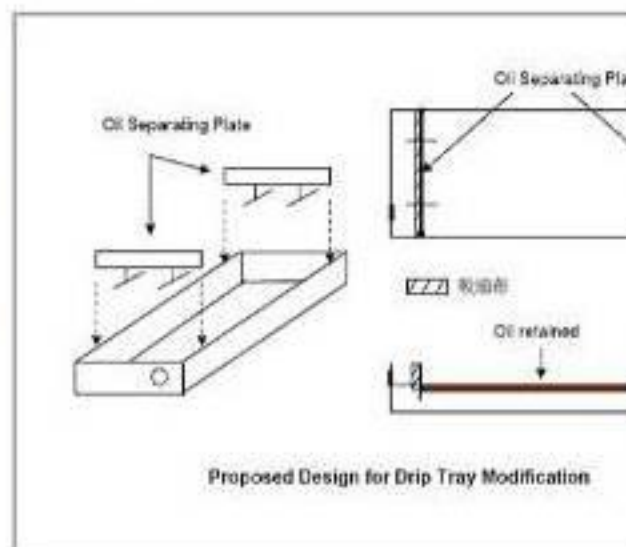
Gammon J3188 Safety Innovation Group

Safety Innovative Idea

SI No. 002

Title: Modification to Drip Trays

Proposed by: Joe Hong, Chairman of J3188 Safety Innovation



Description

1. The oil separating plate would be fabricated to have space at both ends. The sides connecting the drip tray would be welded / sealed with agent.
2. During raining and water accumulating in the tray, the oil separator would retain the oil at middle section and allow water to pass through the sides.
3. The proposed design would allow excess water to leave the tray thus lengthens the time before oil overflowing the tray.
4. A drain would be placed near the water outlet to capture any oil escaped from the oil separators.



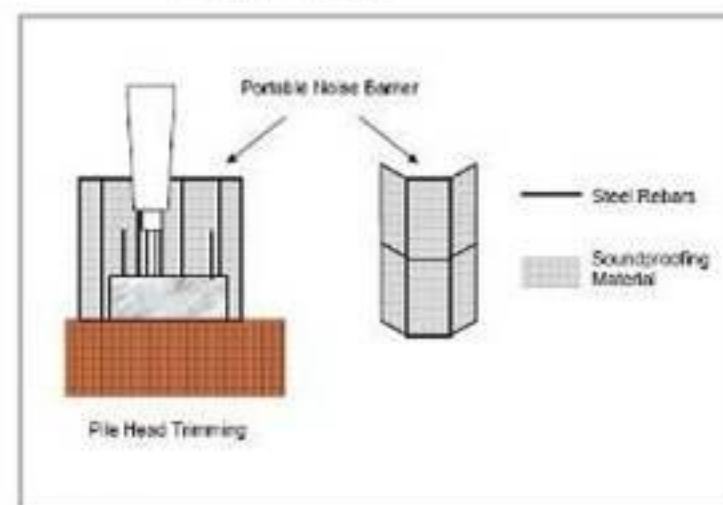
Gammon J3188 Safety Innovation Group

Safety Innovative Idea

SI No. 009

Title: Portable Noise Barrier for Pneumatic / Hydraulic Breakers

Proposed by: Leo Chow, Environmental Engineer
Wong Yuk Ming, Technical Apprentice (J3188 - Substructure Team)



Description

1. The portable noise barrier consists of a frame made of steel rebars covered with soundproofing material.
2. The noise barrier can be carried easily to location of works with breakers.
3. The soundproofing material could absorb part of the noise from the breaking works and reduce the noise level in the nearby area.
4. Further add-ons such as water sprays would be attached to the noise barrier and reduce the spreading of fine dust.

Client Involvement 業主推動

- Contract requirements 合約要求
- Trade test requirements 技術測試要求
- Pay for safety 支付安全計劃

Changing the Mindset 改變意識

Nightmare 以前



Dream 現在



2005/03/29

Thank you
多謝