Chapter

4

Project Management

1. EXECUTIVE SUMMARY

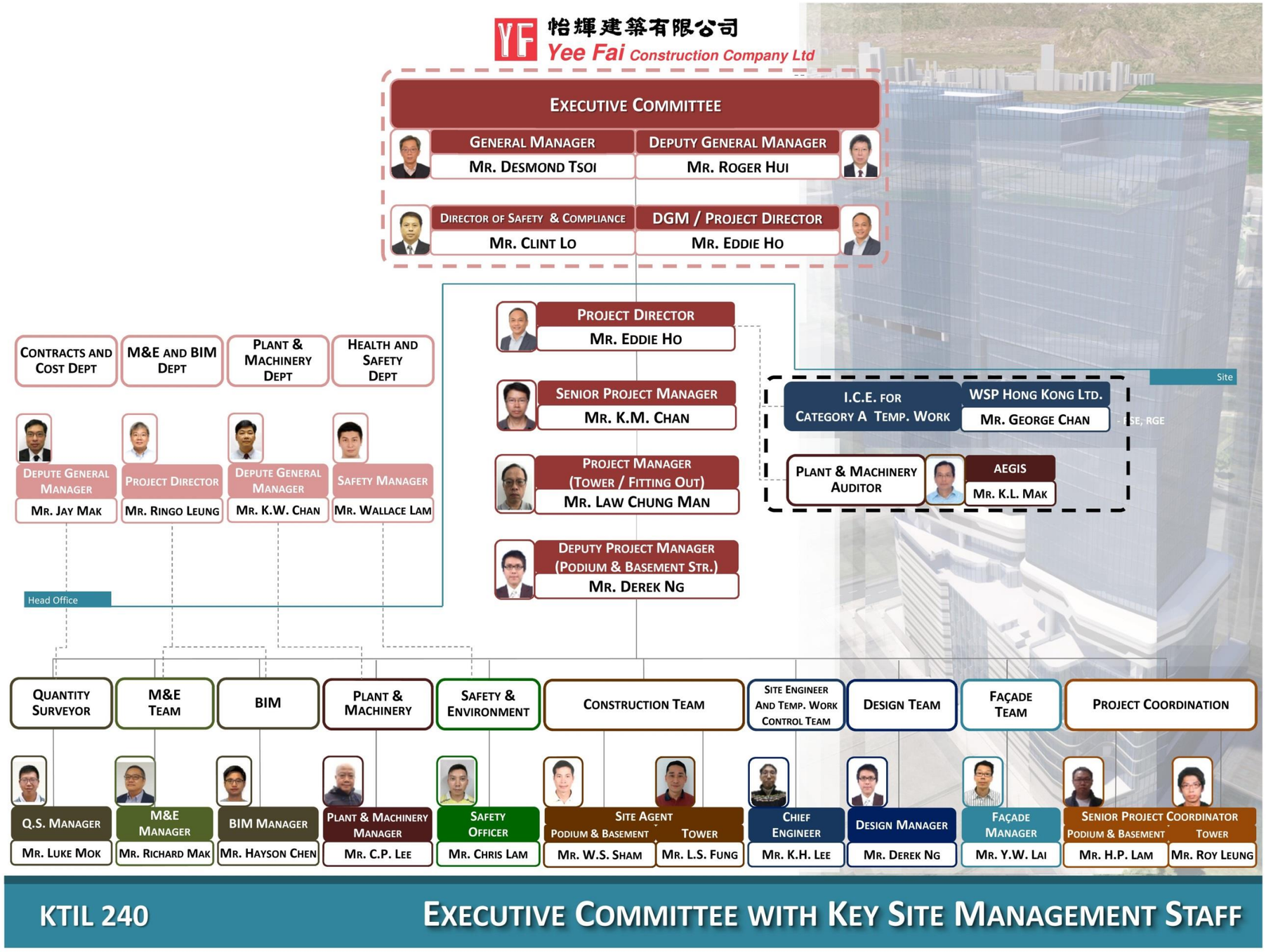
1. ***Project Management Organization Chart:***
2. ***Machinery and Equipment Management:***
3. ***Health and Safety Management:***
4. ***Environmental Related Management***
5. ***Inspection and Quality Control***
6. ***BIM***
7. ***Temporary Works Management,***
8. ***Handover Control***

This chapter summarizes the management organization and approaches adopted by **Yee Fai** for KTIL240. It covers:

1. ***Project Management Organization Chart:***
   - ✧ To explain our organization from executive to site level, responsibilities and duties of different functional groups
2. ***Machinery and Equipment Management:***
   - ✧ Types of plant and machinery selection, special features of the selected equipment, inspection and maintenance procedures will be fully illustrated in this section
3. ***Health and Safety Management:***
   - ✧ Our Safety Policy and Plan, Fire Safety, Security Plan, Special Task Force, Hazard Identification, Risk Assessment, Training are exhaustively listed down here.
4. ***Environmental Related Management***
   - ✧ Waste Management Plan, Environmental Management Plan, details action plans show our experience on handling environmental stuff from project commencement to completion
5. ***Inspection and Quality Control***
   - ✧ It illustrates our experience on quality control from setting out to knowledge base application and overall Quality Management System
6. ***BIM***
   - ✧ It defines our understanding on BIM implementation requirement of this project, LOD, and our respective organization and review potential integration with 3D scanning.
7. ***Temporary Works Management,***
   - ✧ Hierarchy and responsible representatives on vetting every temporary works design, from structural matters to all temporary M&E provisions.
8. ***Handover Control***
   - ✧ **Yee Fai,** a name for delivery of quality product in the industry, we have pioneered and established comprehensive and versatile handover process for development in different scales

2. PROJECT MANAGEMENT ORGANIZATION CHART

2.1. PROJECT ORGANIZATION CHART



The following persons **Mr Desmond Tsoi** (Chiarman); **Mr Roger Hui**; **Mr Eddie Ho**; and **Mr Clint Lo** are appointed to be the members of the Executive Committee (ExCom) to act on behalf of the board of directors of **Yee Fai**. The ExCom is responsible for the strategic planning and decision-making for all matters in relation to KTIL240.

The ExCom is composed of the most senior-level executives of **Yee Fai**. **Mr Tsoi**, being the General Manager, is able to assess all plant and resources of **Yee Fai** and ensures its deployment to be of adequate standard throughout the entire course of the execution of KTIL240.

The ExCom is also uniquely composited to cope with the highly technical challenges. **Mr Hui** was the Project Director for the largest commercial complex at Kwun Tong – Millennium City 1, 2, 3, 5(APM), 6 and 7 and he is now the Deputy General Manager looking after all commercial projects within the company. **Mr Ho** is the Deputy General Manager and also a renowned expert in design and construction of super highrise buildings in Hong Kong and Mainland China. He was the key member of the large-scaled Design-and-Build projects in Hong Kong, requiring "Method-led Design" such as International Commerce Centre; Tamar Government Headquarters and Forum Exchange Square.

Last but not least, **Mr Lo**, being the Director of Safety and Compliance, is participated in the ExCom such that "Safety" voices are able to be brought to the attention of the senior executives. All the safety advices and directives can be swiftly responded and thereby greatly enhancing the safety performance of KTIL240.

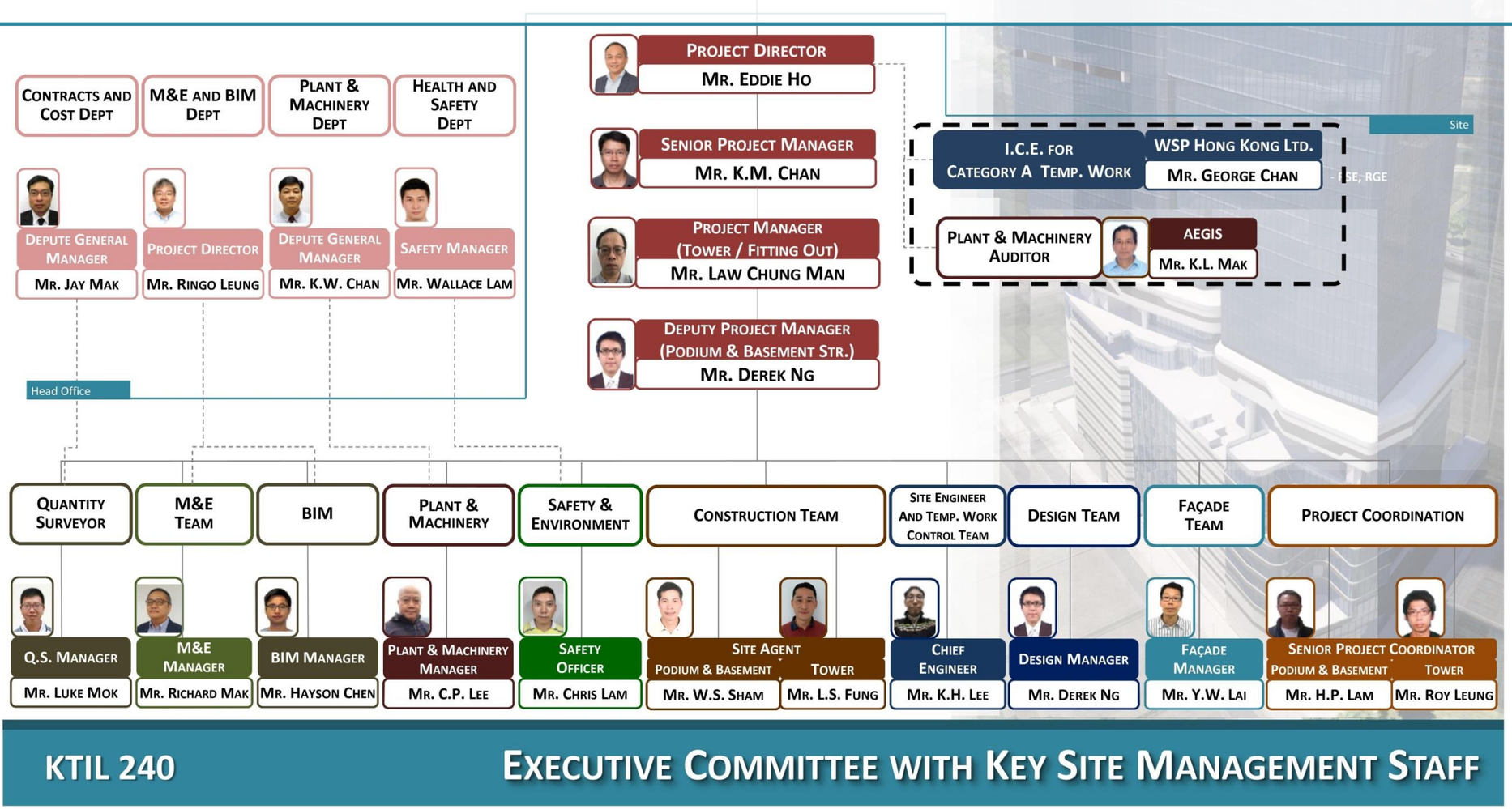
KTIL 240 **EXECUTIVE COMMITTEE WITH KEY SITE MANAGEMENT STAFF**

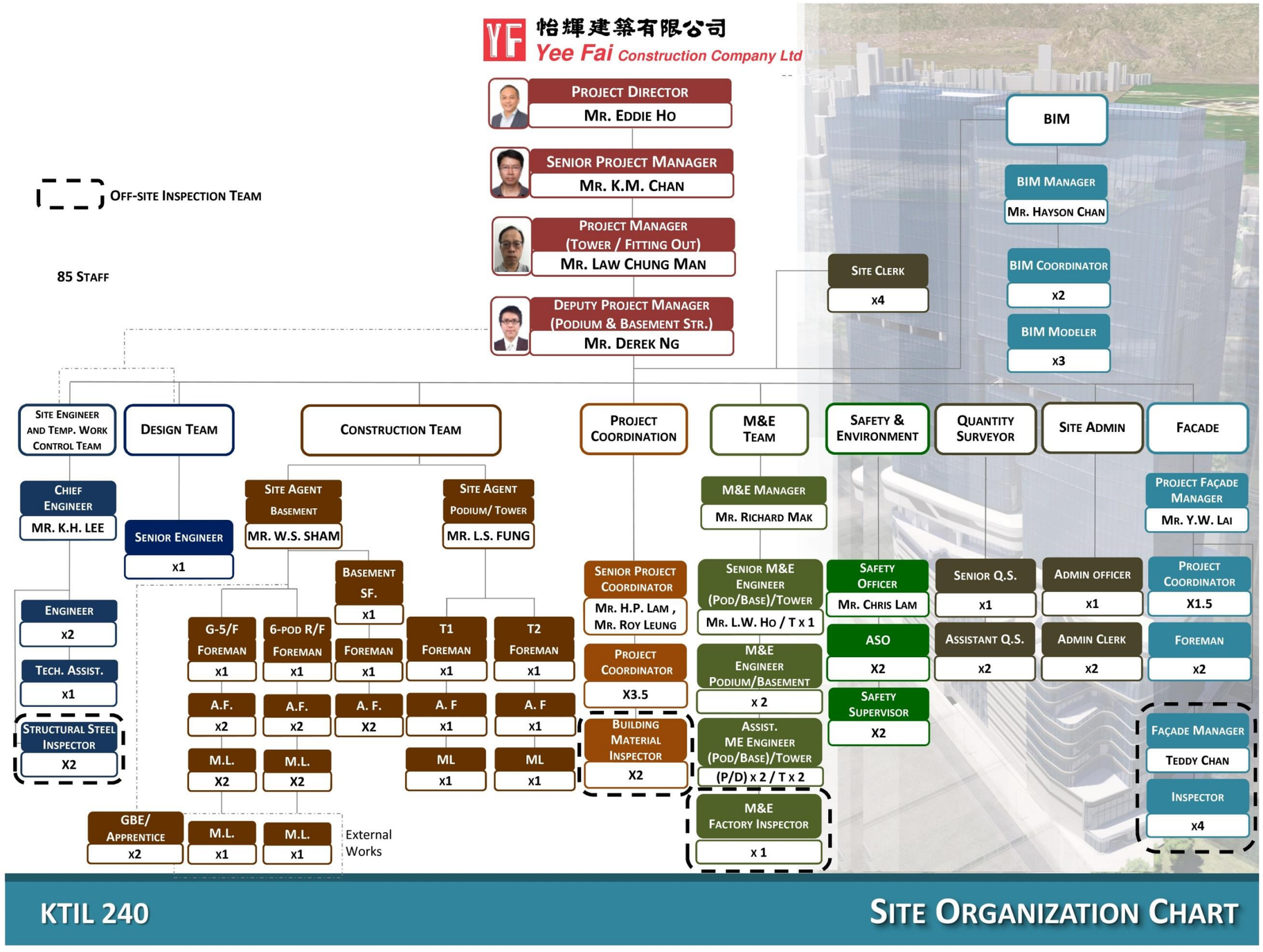
2.3. KEY SITE MANAGEMENT STAFF

Our wholehearted commitment to KTIL240 is well illustrated by the resolution of the board of directors of Yee Fai to appoint one of our senior executives – **Mr Eddie Ho** (Deputy General Manager) to be the Project Director. Not only does he oversee the overall Project execution till its satisfactory completion but also work closely with the Employer to develop options as well as solutions to cope with the ever-charging market needs. **Mr Ho** will lead a principal site management team, composing of highly experienced and passionate project managers and engineers throughout the entire course of the Project.

The principal site management team is constituted of the following core members: **Mr K.M. Chan**; **Mr Law Chung Man** and **Mr Derek Ng**. They are deliberately selected according to their own experience and expertise, uniquely suit for the Project characteristics.

Mr Chan possesses versatile experience from various kinds of construction, specializing in QA/QC, quantity surveying, to contract administration and construction planning. He was the Project Manager of various previous signature projects such as The Wings; Popcorn; The Wings II, Parc Central of Guangzhou, KTIL522; PERW195, and also the Head of Planning Section of Yee Fai. For KLIT240, Mr Chan will assume the role of the Senior Project Manager, responsible for the overall Project supervision. **Mr Law** is highly experienced in construction of Grade-A commercial projects in Hong Kong and Mainland China. His recent works include STTL617; 8 Heung Yip Road; IGC Guangzhou; Dragon Lake Guangzhou; 483 Castel Peek Road; 77 Wing Hong Street; KTIL 750; 502c 192c 654 and 653. He will be the Project Manager, responsible for the overall construction execution. **Mr Ng** is a RSE and familiarized in all statutory submission protocols in Hong Kong. He is highly experienced in the design and construction of deep basement, super high-rise building and structural steelworks, and to be the Deputy Project Manager and also assume the role of Design Manager, supervising all Contractor's alternative design.




帕輝建築有限公司
Yee Fai Construction Company Ltd
Off-site Inspection Team
85 Staff
Project Director
Mr. Eddie Ho
Senior Project Manager
Mr. K.M. Chan
Project Manager (Tower / Fitting Out)
Mr. Law Chung Man
Deputy Project Manager (Podium & Basement Str.)
Mr. Derek Ng
Site Clerk
x4
BIM
BIM Manager
Mr. Hayson Chan
BIM Coordinator
x2
BIM Modeler
x3
Site Engineer and Temp. Work Control Team
Chief Engineer
Mr. K.H. Lee
Engineer
x2
Tech. Assist.
x1
Structural Steel Inspector
X2
Design Team
Senior Engineer
x1
Construction Team
Site Agent Basement
Mr. W.S. Sham
Basement SF.
x1
Foreman
x1
A.F.
x2
M.L.
X2
G-5/F Foreman
x1
A.F.
x2
M.L.
X2
6-pod R/F Foreman
x1
A.F.
x2
M.L.
X2
Site Agent Podium/ Tower
Mr. L.S. Fung
T1 Foreman
x1
A. F
x1
ML
x1
T2 Foreman
x1
A. F
x1
ML
x1
GBE/ Apprentice
x2
M.L.
x1
M.L.
x1
External Works
Project Coordination
Senior Project Coordinator
Mr. H.P. Lam , Mr. Roy Leung
Project Coordinator
X3.5
Building Material Inspector
X2
M&E Team
M&E Manager
Mr. Richard Mak
Senior M&E Engineer (Pod/Base)/Tower
Mr. L.W. Ho / T x 1
M&E Engineer Podium/Basement
x 2
Assist. ME Engineer (Pod/Base)/Tower
(P/D) x 2 / T x 2
M&E Factory Inspector
x 1
Safety & Environment
Safety Officer
Mr. Chris Lam
ASO
X2
Safety Supervisor
X2
Quantity Surveyor
Senior Q.S.
x1
Assistant Q.S.
x2
Site Admin
Admin officer
x1
Admin Clerk
x2
Facade
Project Façade Manager
Mr. Y.W. Lai
Project Coordinator
X1.5
Foreman
x2
Façade Manager
Teddy Chan
Inspector
x4
KTIL 240
Site Organization Chart

Besides the compacted on-site project monitoring by site management team, **Yee Fai**'s head office would provide comprehensive off-site management support to the Project in terms of manufacturer and subcontractor assessment, factory quality control and checking, material inspection, in-house rules and specification to enhance the overall quality of building material and performance.

The following categories of work would be fully supported by our off-site management team:-

- Building material
- Façade
- Structural steel
- M&E

Building Material

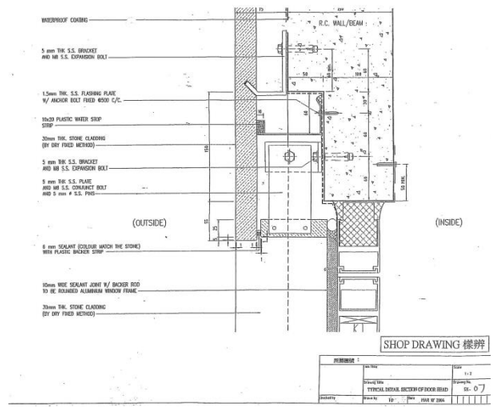
In view of various materials to be involved in a project, quality assurance and control would be our first priority to accomplish. Therefore, our purchasing department are well developed with intensive project data base for providing building materials' and subletting advices to all projects.

Yee Fai targeted some trades which require high attendance to deliver the product with appreciation. In this connection, In-house rules and specifications are established and well developed in terms of materials selection and installation details for its performance.

- Alum & Metal Works
- Alum Windows
- Fitting Out
- False Ceiling
- Timber Flooring
- Kitchen Cabinet
- Kitchen Worktop
- Wall Titles
- Reinforcement
- Sanitary wares
- Ironmongery

Each of the in-house rules and specification would be reviewed and updated every 5 years to closely follow the market's demand.

Standard details of stone cladding installation



Despite the specification and details, building material inspection team for different trade would be arrange to carry out spontaneously factory check and routine inspection before and during the subcontractor's bulk fabrication.

For instance, the marble & granite inspection team would participate stone slab (before bulk cutting) and pre-lay inspection to ensure the stone quality in accordance to the contract's requirement and designer's specification.

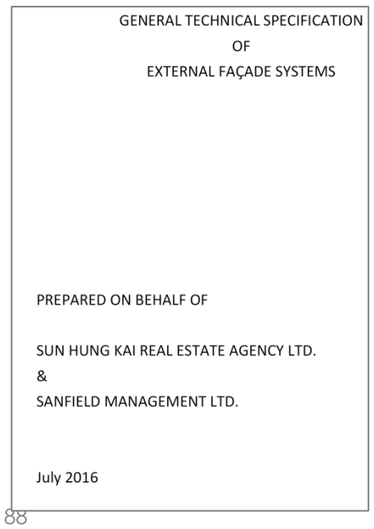
Template of marble factory inspection

Façade

To cope with the enormous demand of projects with complexity of façade design, **Yee Fai** has established special façade task force to overview all projects' façade works from subletting, design, fabrication and site installation point of view. The centralized façade team could raise the overall quality assurance into a higher level and gather all projects common difficulties and hence set up a project mitigation measures for a prevention of design incident.

Two of our façade managers would be actively involved to KTIL240 in different stages to apply their expertise for all the risks prediction and solution to smoothen the progress.

In-house general technical specification of external façade systems


GENERAL TECHNICAL SPECIFICATION
OF
EXTERNAL FAÇADE SYSTEMS

PREPARED ON BEHALF OF

SUN HUNG KAI REAL ESTATE AGENCY LTD.
&
SANFIELD MANAGEMENT LTD.

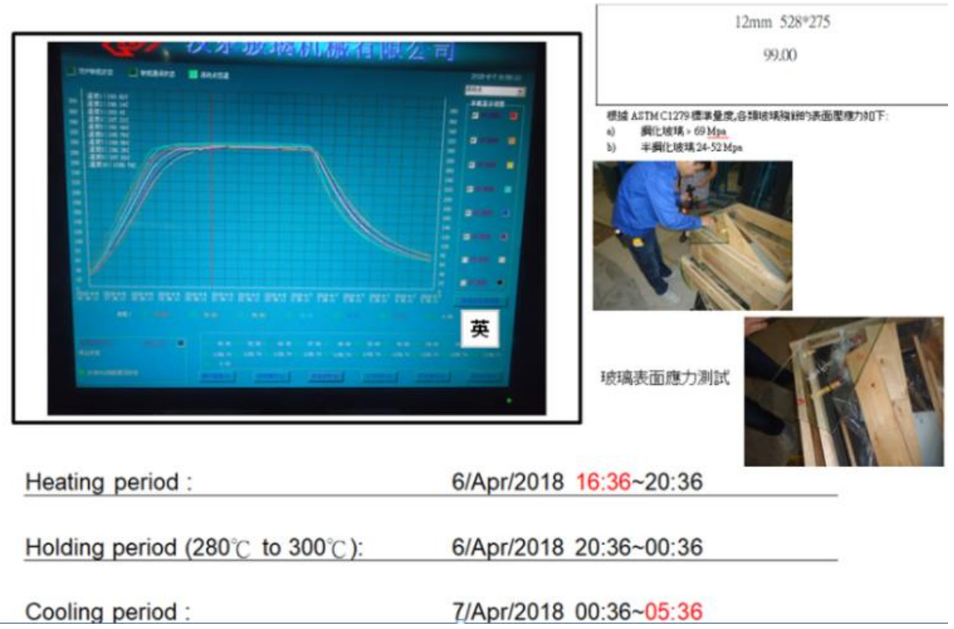
July 2016

Flow Chart of Façade Team's involvement

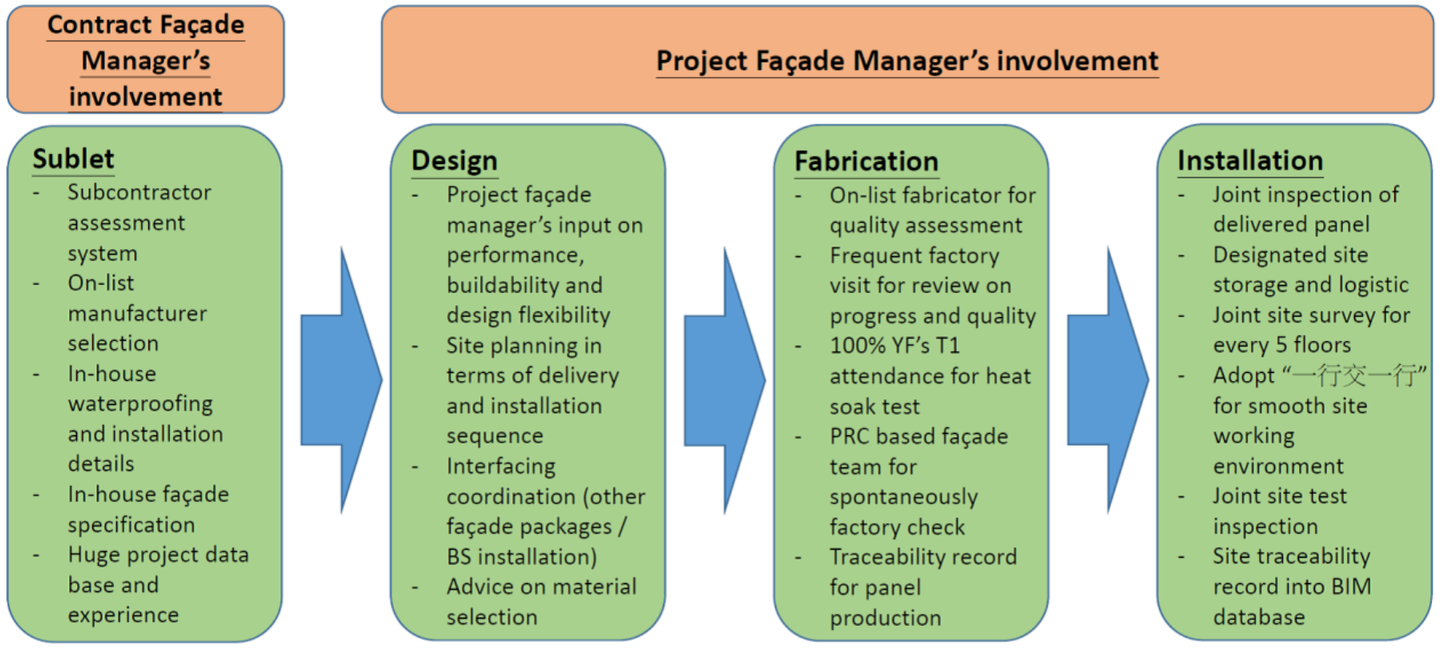
Similar to the management system of building materials serval in-house façade guild lines could be treated as a project advice and coordinate with the future façade work subcontractors to enhance the production and installation quality.

Our in-house façade guidelines and supports:-

- On-list façade fabricator (raw materials, extrusion, coating and assembly)
- In-house waterproofing and installation details
- In-house façade specification and water test procedure
- 100% YF's T1 attendance for heat soak test



- 100% YF's T1 attendance on heat soak test for tempered glass.



Structural Steelworks

A large amount of structural steelworks are adopted in KTIL240. Our site engineer team will take lead to coordinate with off-site structural steelworks inspection team to ensure all structural steelworks are fabricated in accordance to the structural specification with detailed checking on steel mill cert, off-site welding test report and delivery record etc. Afterward, our site engineer team will collect all the record and arrange factory inspection with consultant's representative for joint inspection.

The above arrangement benefits the project progress in the following aspects:-

- To mitigate unnecessary site modification
- To suit site's demand and targeted delivery date
- To guarantee the product quality

M&E

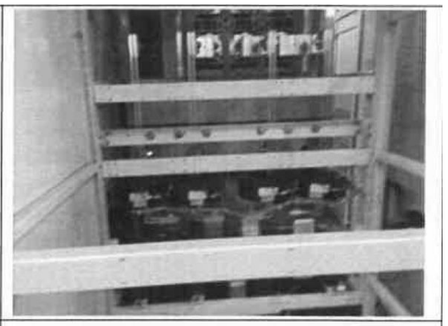
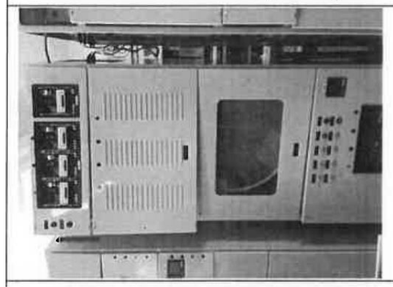
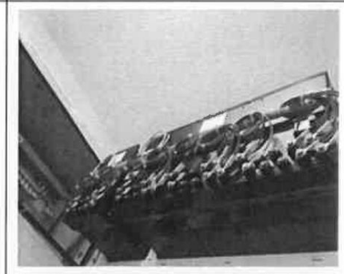
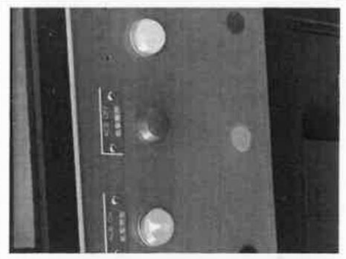
In addition to the intensive on-site testing and commissioning of the M&E system, several routine off-site testing and factory inspection would be arranged to ensure all the system could be delivered in the highest quality and timely completion.

In example, our off-site M&E inspection team would carry out switchboard factory inspection to ensure the equipment's are in accordance to the specification and approved materials.

The switchboard inspection would carry out the following inspection:-

- Model and specification of the switchboard before delivery
- Trial run of the equipment's
- Inspection of any damaged parts (ie. Color mark / name plate / indicator…etc)
- Resistant measurement and record

Template of switchboard inspection record

	
1. The model no. (NSC-6) of power factor controller is not matched with approved equipment and shop drawing. The resubmission for power factor controller (NSC-06n) is required.	2. Missing color marks for L1/L2/L3/N inside LVMB/2 panel 4 and 5.
	
3. Proper name should be provided for all IDMT Relays.	4. The proper protection plate should be provided for separation of live parts at switchboard, especially behind the IDMT section.
	
5. The 30V DC Battery & Changer found failure at LVSB/CAT2	6. The color of indication lamp for ACB trip to be changed to red and provided proper name plate at LVMB/G1 Panel 3

3. CONSTRUCTION MACHINERY AND EQUIPMENT MANAGEMENT

3.1. PLANT LIST

Item	Types of plants	Specification	Qty	Function
A.	**General purpose**			
1	Diesel Generator	200-400KVA	5	
2	Crawler crane		3	
3	Tower Crane (TC1, TC2)	Jib length 45m, tip load 4T	2	Concrete, rebar, formwork and falsework, curtain wall, scaffold
4	Material hoist		2	Transportation of finishes materials;
5	Material / Passenger hoist		2	For labour use
6	Rooftop crane (TC(S))	~25m, 20T	1	For structural steelworks erection
7	Mobile concrete pump truck	~45m jib	2	
8	Telescopic Boom	Max 6T @15M Tip Load	2	Basement x 2 fpr rebar fixing
9	Mobile crane	50-100T	2	
10	Skid Loader		4	
11	Forklift	2-3Ton	4	
12	Scissor Platform	Max 15m	16	Basement x 2, podium x 4; Ext x 1
13	Articulated Boom Lift	Max 47.72m	1	
14	Submersible pump	Φ150-200	25	
15	Surface pump	Φ100	6	
16	Placing boom	26m	1	
17	Placing boom	19m	1	
18	Proprietary access tower	~20M	4	Basement access
B.	**ELS & RC construction Stage**			
1	Mucking machine			
2	Excavator	50T, long ram	2	
3	Excavator	20T	5	
4	Excavator	13T	5	
5	Excavator	Breaker head	4	
C.	**Surveying**			
1	3D scanner	Faro Focus S350	2	
2	UAV	Ambit SP-1	1	
3		DJI Inspire 2	1	
4		DJI Phantom 2-4	7	
5	Total station	Topcon, Leica, Sokkia	11	
6	Digital Level	Topcon, Leica	7	
7	Optical Level	Topcon, Leica, Sokkia	8	
8	Plummet	KiKuchi, Leica, Sokkia	10	
9	GPS	Leica NetRover	1	

怡輝建築有限公司
Yee Fai Construction Company Ltd.

PLANT & MACHINERY ORGANIZATION CHART

DEPUTY GENERAL MANAGER
MR. JONATHAN CHAN

PLANT & MACHINERY MANAGER
MR. C.P. LEE

Plant & Machinery Management

- Manage and allocate the pool of plant and machinery resources within the construction sites and in-house storage facilities. Facilitate inventory control, provide regular maintenance and repair.
- Procure and ensure the quality and services of subcontractors and suppliers to satisfy the additional needs of the Construction Teams.

Planning and Liaison

- Contribute in the planning stages of sites and help Construction Teams to identify the most appropriate machinery needed.
- Assess budget estimations on plant and machinery, ensure that such expenses are under control.
- Provide technical support and review documents(e.g. Method statement & design report)

Training and Development of Staff

- Ensure that staffs are competent in the application of basic technology and management tools.
- Develop succession plans at all levels in order to provide the best service to Construction Teams.

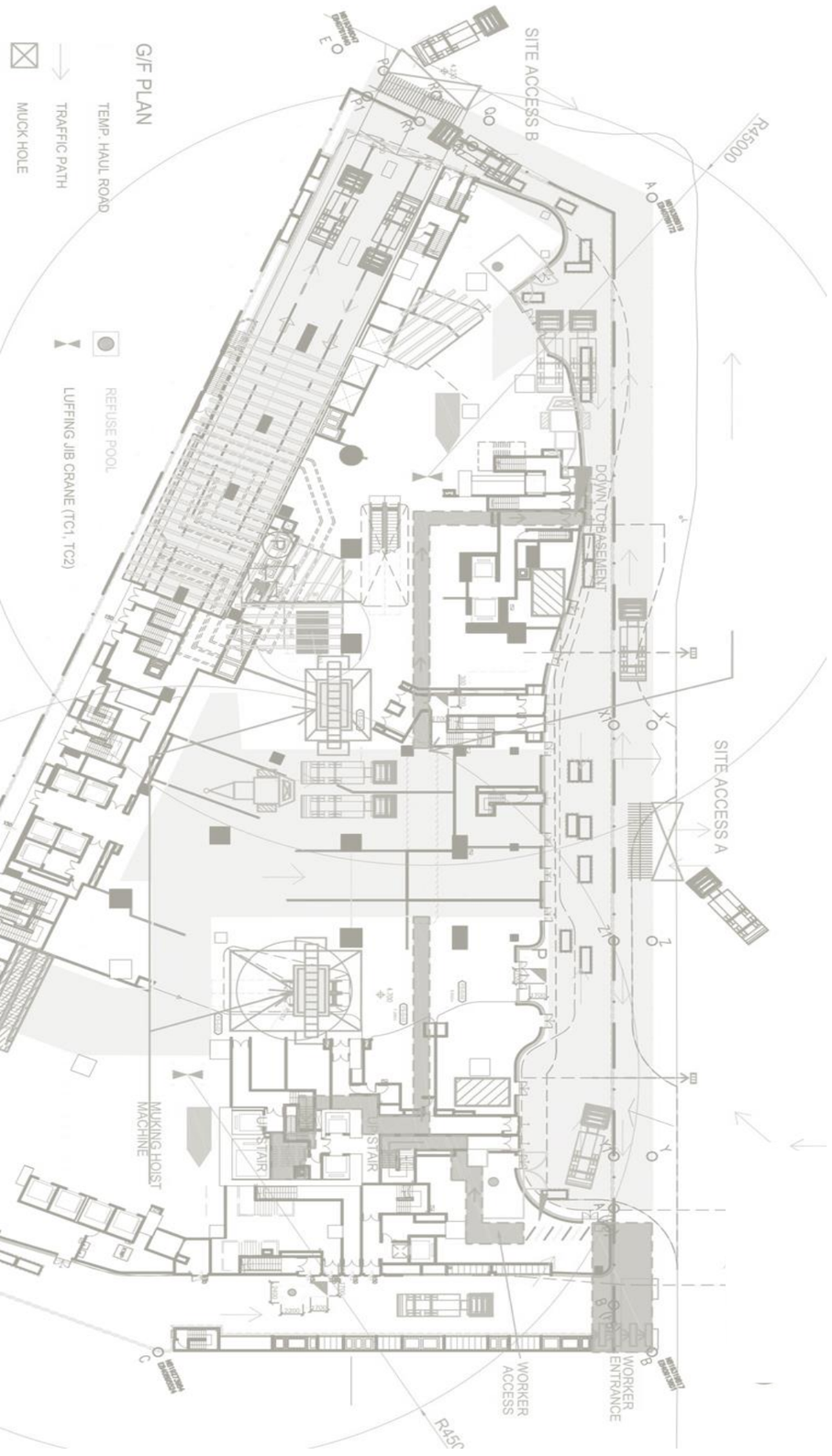
PLANT & MACHINERY (AUDITOR)/ AEGIS
MR. GARY LIU

Emergency Support and Safety

- Provide immediate support to the sites in response to ad-hoc issues such as emergency breakdowns, natural disaster and industrial accidents.
- Perform regular safety audits to ensure the safe operation of all plant and machinery.

Innovations and Compliance with Regulations

- Arrange supervisor engineer to and monitoring an entire construction procedure(e.g. Erection, climbing and disassembly of tower crane)
- Monitor the latest development in plant and machinery, outsource.
- Prepare for the changes and tightening on government regulations, ensure that Yee Fai could meet and fulfil the new requirements once they implement.
- Regularly identify ways to save material and human resources by means of automation and improved technology or method.

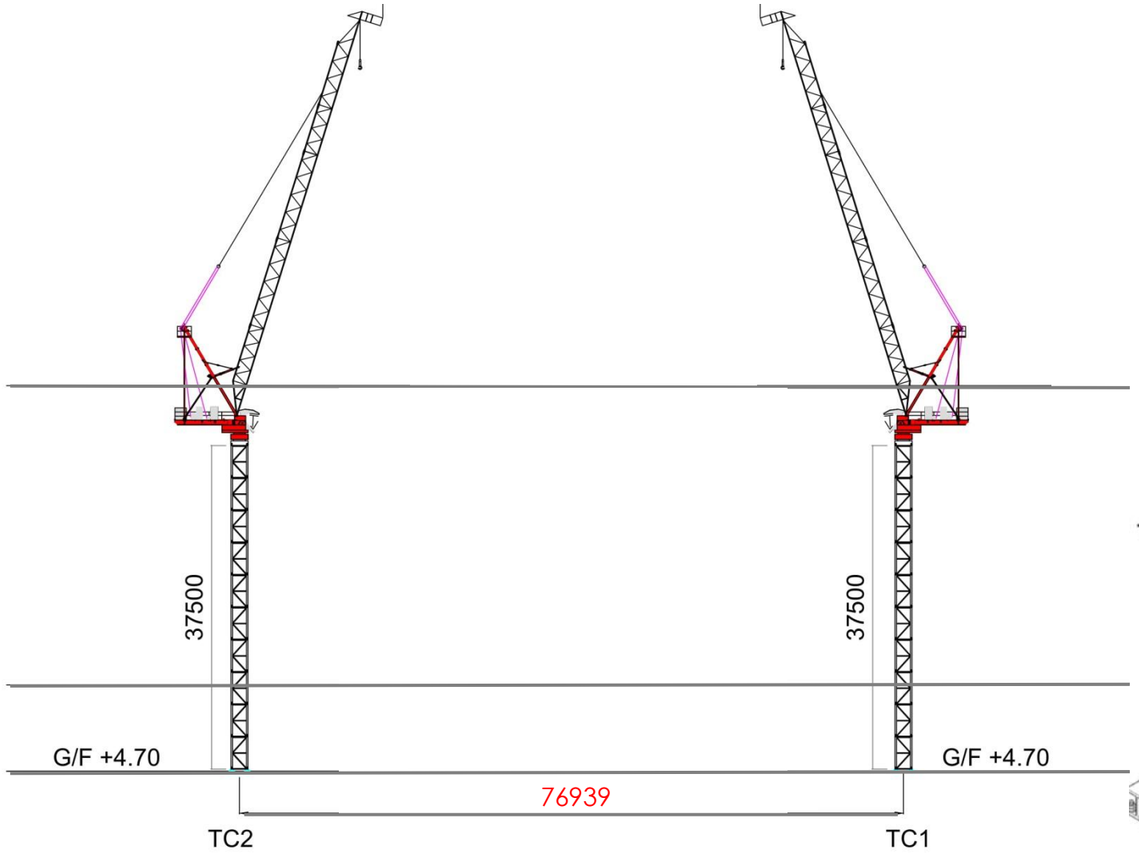


3.3. TOWER CRANE

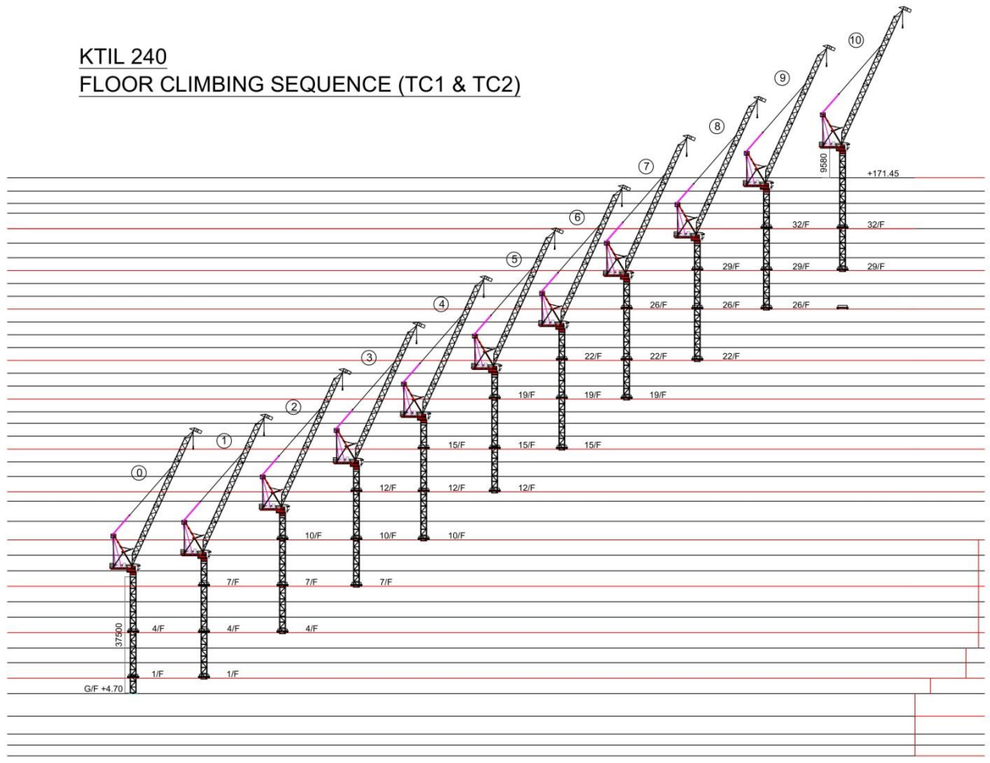
3.3.1. TOWER CRANE PLANNING

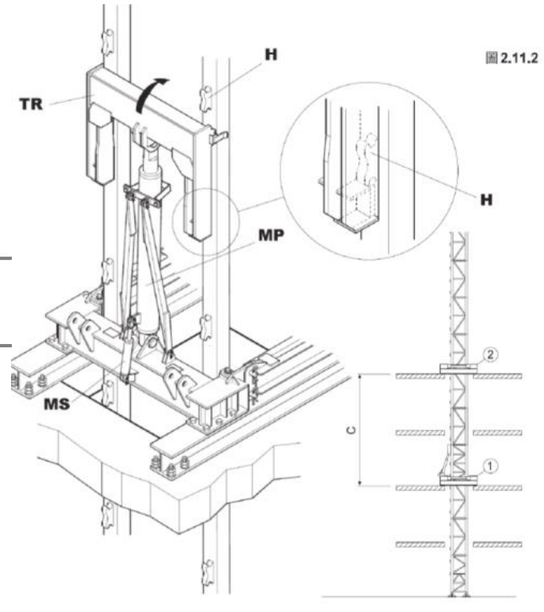
For KTIL240, 2 luffing jib tower cranes are chosen. Luffing jib cranes are always the best solution when more than one crane are operating in a narrow area. They have variable working radius and can be parked with a reduced radius. The details of the tower cranes are as follows:

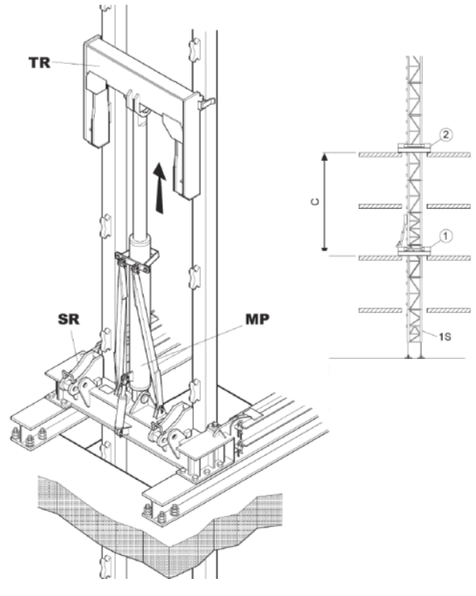
Tower Crane Type	Footing Level	Jib Length	Mast Height	Parking Radius	Lifting Capacity	Nos. of Climbing
TC1 – Luffing TC	G/F +4.70	45m	37.5m	18.2m	3Tons @ 45m	10 times
TC2 – Luffing TC	G/F +4.70	45m	37.5m	18.2m	3Tons @ 45m	10 times



KTIL 240
FLOOR CLIMBING SEQUENCE (TC1 & TC2)







Useter JL236 (Made in China)

Uester JL236 (Made in China)

3.3.2. TOWER CRANE GENERAL REQUIIREMENT

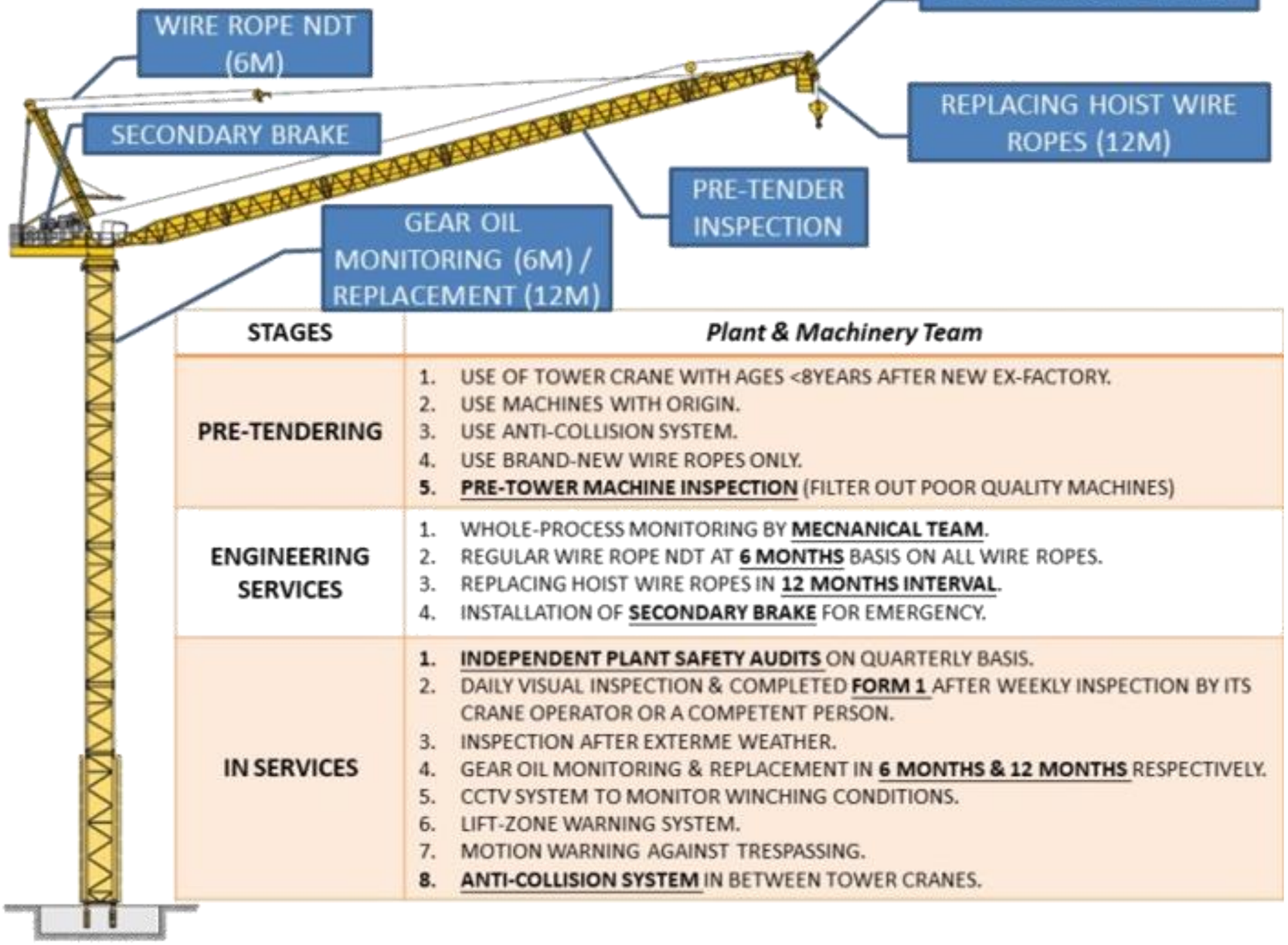
Due to the climate change, hurricanes and typhoons are predicted to become more power and destructive. Serious damage caused by the super typhoon "Hato" and "Mangkhut" hitting Hong Kong successively in recent years. The following incidents are the experience of recent crane(s) collapse:

As can be seen from the above diagrams, those accidents may inflict heavy casualties and property losses.

3.3.3. TOWER CRANE GENERAL REQUIIREMENT

Here, **Yee Fai** would like to reaffirm our related position and policy that those high risk, insecurity and bad reputation model/brand will be restricted in our construction site. We only use the Europe brand which is known to be one of the best performance and safety in the world. Besides, we have established guidelines and standards requirement for selecting the qualified tower crane. Therefore, we is always choosing the tower crane that must passed our stringent annual quality assessments.

TOWER CRANE SAFETY ENHANCEMENT



STAGES	*Plant & Machinery Team*
PRE-TENDERING	1. USE OF TOWER CRANE WITH AGES <8YEARS AFTER NEW EX-FACTORY. 2. USE MACHINES WITH ORIGIN. 3. USE ANTI-COLLISION SYSTEM. 4. USE BRAND-NEW WIRE ROPES ONLY. 5. **PRE-TOWER MACHINE INSPECTION** (FILTER OUT POOR QUALITY MACHINES)
ENGINEERING SERVICES	1. WHOLE-PROCESS MONITORING BY **MECNANICAL TEAM**. 2. REGULAR WIRE ROPE NDT AT **6 MONTHS** BASIS ON ALL WIRE ROPES. 3. REPLACING HOIST WIRE ROPES IN **12 MONTHS INTERVAL**. 4. INSTALLATION OF **SECONDARY BRAKE** FOR EMERGENCY.
IN SERVICES	1. **INDEPENDENT PLANT SAFETY AUDITS** ON QUARTERLY BASIS. 2. DAILY VISUAL INSPECTION & COMPLETED **FORM 1** AFTER WEEKLY INSPECTION BY ITS CRANE OPERATOR OR A COMPETENT PERSON. 3. INSPECTION AFTER EXTERME WEATHER. 4. GEAR OIL MONITORING & REPLACEMENT IN **6 MONTHS & 12 MONTHS** RESPECTIVELY. 5. CCTV SYSTEM TO MONITOR WINCHING CONDITIONS. 6. LIFT-ZONE WARNING SYSTEM. 7. MOTION WARNING AGAINST TRESPASSING. 8. **ANTI-COLLISION SYSTEM** IN BETWEEN TOWER CRANES.

FORM 1
表 格 一

[reg 7A]
[規例第 7A 條]

Name of owner
擁有人姓名 .....
.....
.....

Address of installation
安裝地址 .....
.....
.....

FORM 1
表 格 一

[reg 7A]
[規例第 7A 條]

Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations

REPORTS OF RESULTS OF WEEKLY INSPECTIONS OF LIFTING APPLIANCES

Form approved by the Commissioner for Labour for the purposes of regulation 7A of the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations

工廠及工業經營(起重機械及起重裝置)規例
起重機械的每週一次檢查結果報告
本表格乃由勞工處處長就工廠及工業經營(起重機械及起重裝置)規例第 7A 條的需要而認可

Description of lifting appliance and means of identification 起重機械說明及識別標誌	Date of inspection 檢查日期	Result of inspection (including all working gear and anchoring or fixing plant or gear, and where required the automatic safe load indicator and derricking interlock) State whether in safe working order 檢查結果 (包括所有操作裝置及錨定或固定設置或裝置，在需要時並包括安全負荷自動顯示器及人字吊臂聯鎖)。註明是否處於安全操作狀態。	Signature and designation of person who made the inspection 檢查者簽署及職階
(1)	(2)	(3)	(4)

Any competent examiner or competent person who delivers to an owner a certificate or makes a report which is to his knowledge false as to a material particular shall be guilty of an offence and shall be liable on conviction to a fine of $200,000 and to imprisonment for 12 months.
任何合資格檢驗員或合資格的人，如向擁有人交付他明知有任何要項屬虛假的證明書或作出他明知有任何要項屬虛假的報告，即屬犯罪；一經定罪，可處罰款二十萬元及監禁十二個月。

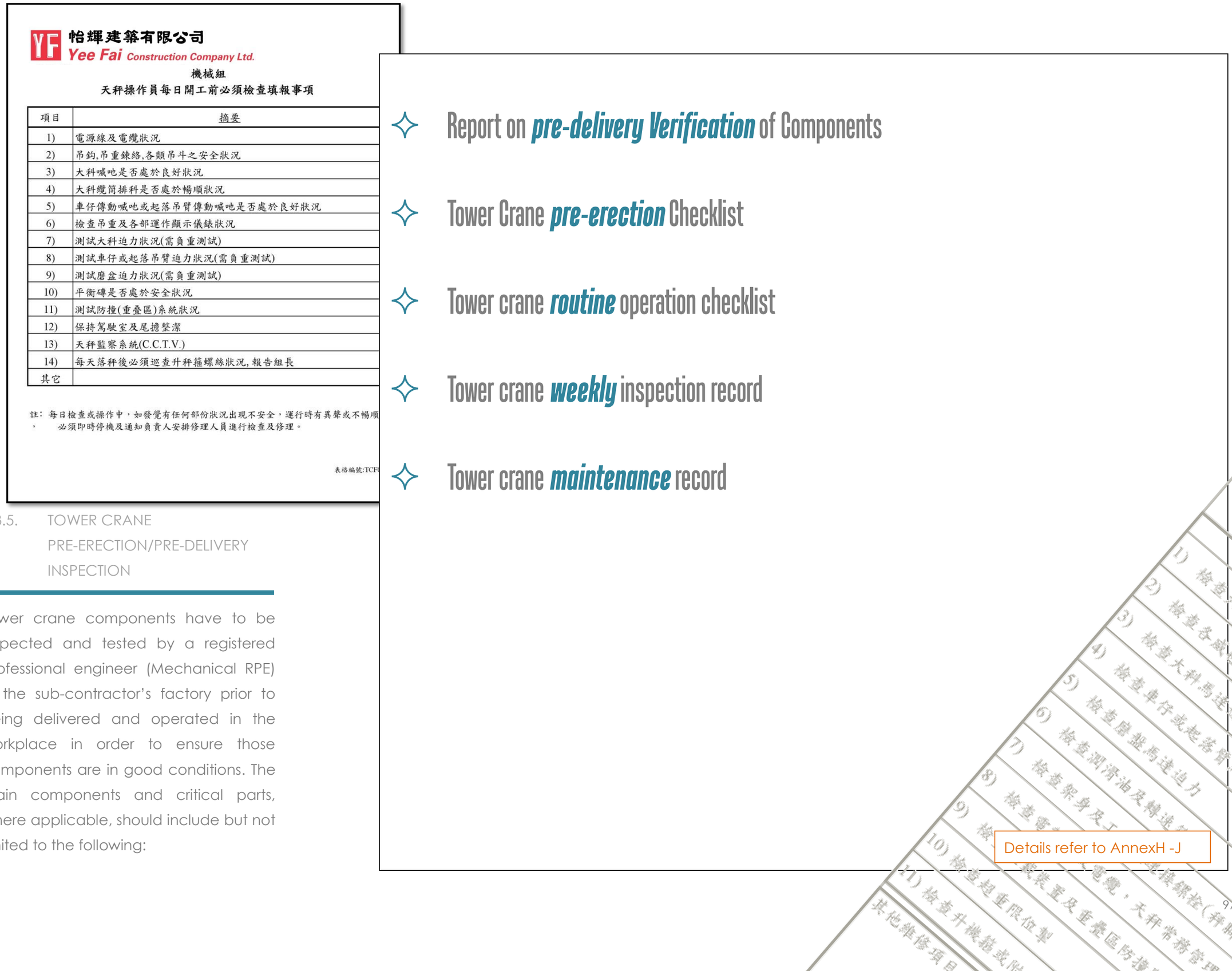
LALG-F1

3.3.4. TOWER CRANE MAINTENANCE AND INSPECTION

To ensure every tower crane works safely and efficiently, it is essential to carry out variety of preventive maintenance and inspection works by its crane operator, a competent person or examiner:

- Tower crane is required to inspect daily and Form 1 has to be written and signed by its crane operator or a competent person after weekly inspection.
- Further to weekly inspection by competent person, specialist sub-contractor is demanded to engage inspection and maintenance technician who is holding" the Training Certificate of Routine Inspection and Maintenance of Tower Cranes" to execute inspection and maintenance for the tower crane(s) erected on construction site once a week. Periodical inspection and maintenance at intervals of 1 month, 6 months and 12 months are required as well.

All inspection and maintenance results will properly be kept for record under the relevant forms prepared and written by the responsible technicians.

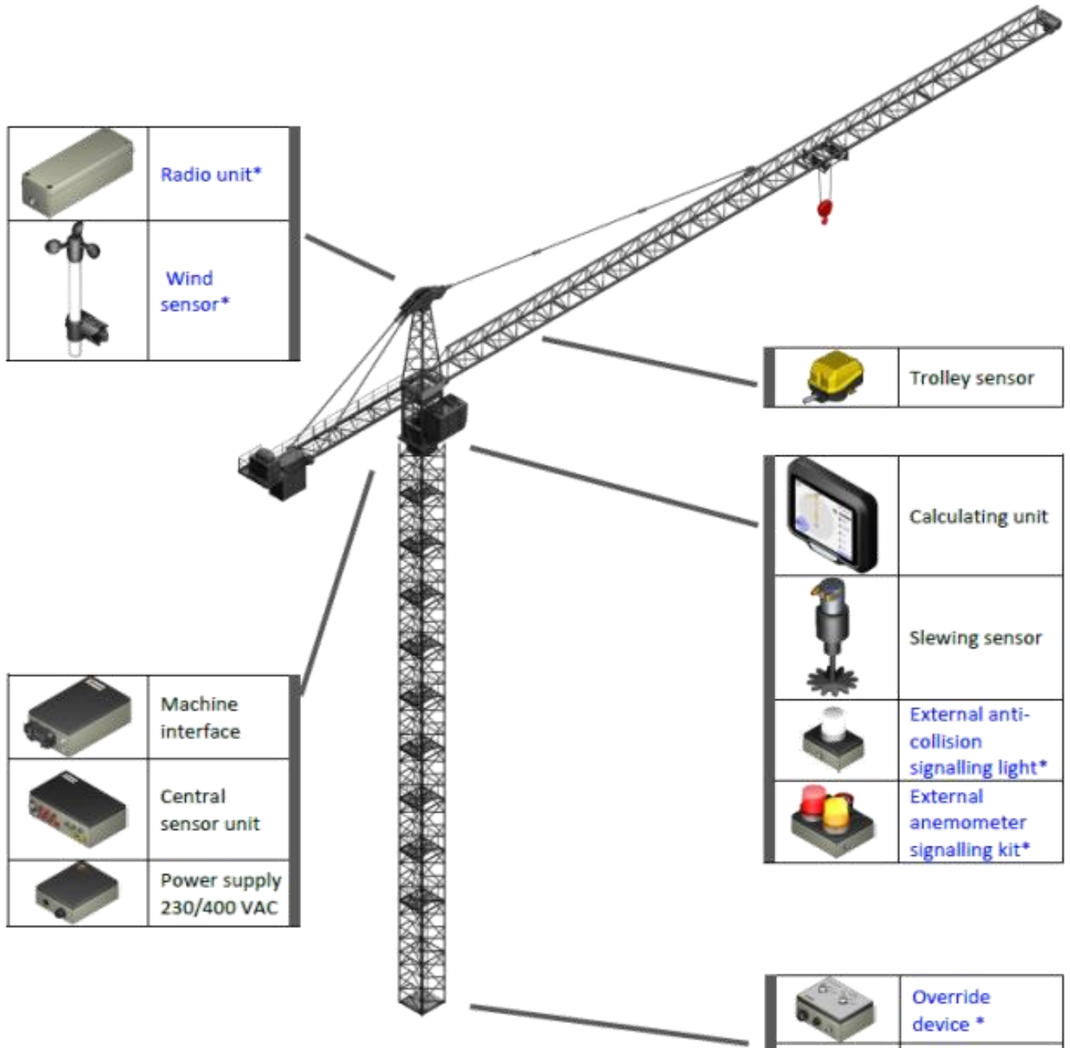

怡輝建築有限公司
Yee Fai Construction Company Ltd.
機械組
天秤操作員每日開工前必須檢查填報事項
項目 摘要
1) 電源線及電纜狀況
2) 吊鈎,吊重鍊絡,各類吊斗之安全狀況
3) 大科喊吔是否處於良好狀況
4) 大科纜筒排科是否處於暢順狀況
5) 車仔傳動喊吔或起落吊臂傳動喊吔是否處於良好狀況
6) 檢查吊重及各部運作顯示儀錶狀況
7) 測試大科迫力狀況(需負重測試)
8) 測試車仔或起落吊臂迫力狀況(需負重測試)
9) 測試磨盆迫力狀況(需負重測試)
10) 平衡磚是否處於安全狀況
11) 測試防撞(重叠區)系統狀況
12) 保持駕駛室及尾擔整潔
13) 天秤監察系統(C.C.T.V.)
14) 每天落秤後必須巡查升秤箍螺絲狀況,報告組長
其它
註: 每日檢查或操作中，如發覺有任何部份狀況出現不安全，運行時有異聲或不暢順
， 必須即時停機及通知負責人安排修理人員進行檢查及修理。
表格編號:TCF

- Report on ***pre-delivery Verification*** of Components
- Tower Crane ***pre-erection*** Checklist
- Tower crane ***routine*** operation checklist
- Tower crane ***weekly*** inspection record
- Tower crane ***maintenance*** record

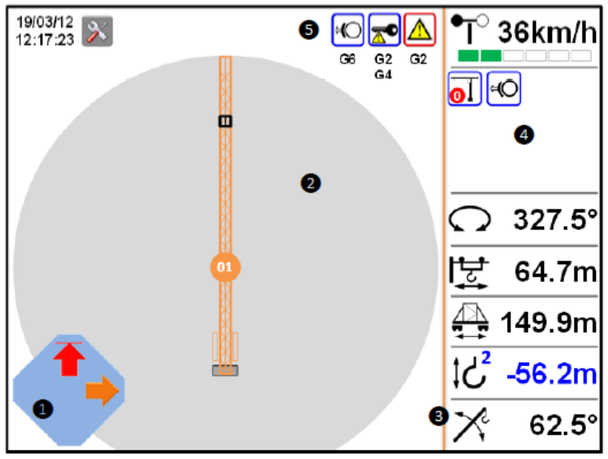
Details refer to AnnexH -J

3.3.5. TOWER CRANE PRE-ERECTION/PRE-DELIVERY INSPECTION

Tower crane components have to be inspected and tested by a registered professional engineer (Mechanical RPE) in the sub-contractor's factory prior to being delivered and operated in the workplace in order to ensure those components are in good conditions. The main components and critical parts, where applicable, should include but not limited to the following:



*Additional units needed



3.3.6. TOWER CRANE ANTICOLLISION SYSTEM

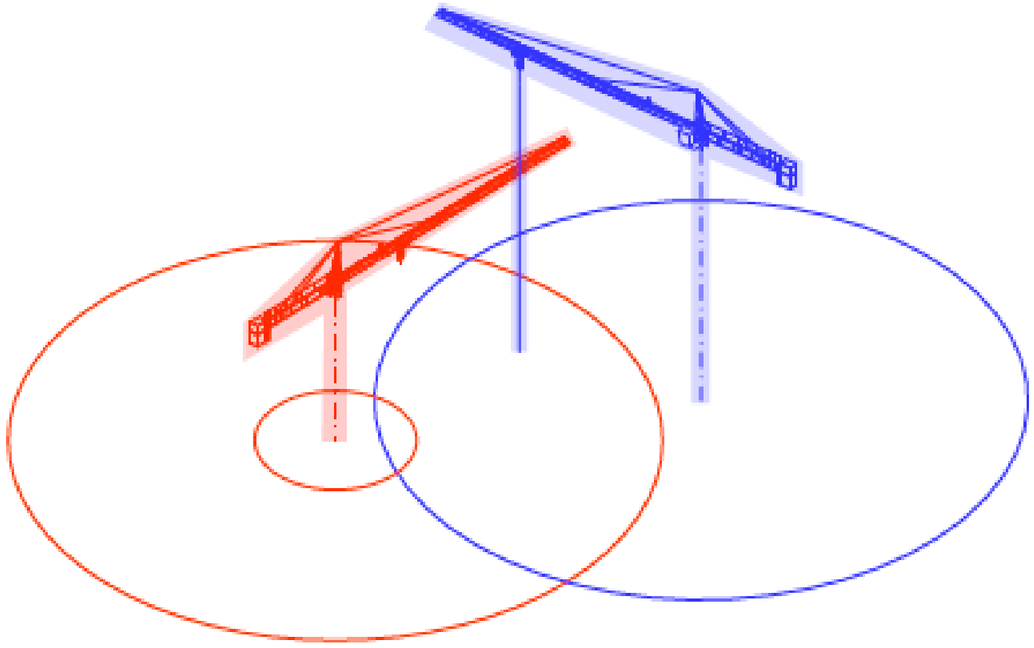
- A computerized database managed Anti-Collision system for Tower Cranes' anti-collision and zone protection in Tower Cranes' operation on construction sites.
- For Driving Control System - ensures site safety by managing interference between cranes and restricted area. It makes work even easier by displaying useful settings for operating the crane.
- Easy to install anti-collision and zone protection control system for tower cranes in construction sites.
- The latest user-friendly design comes with an informative Active TFT Colour LCD display for anti-collision system. It provides Anti-Collision Path Protection for construction sites with multiple tower cranes and Zone Protection from over-flying restricted zones.
- A safety and efficient monitoring system which helps to prevent serious and even fatal accidents which can be caused by human error. With this efficient helping tool, it increases site productivity and a safer operating environment.

Real time calculation on the relative distances between potential collision paths and these data will be sent to the involved crane and the crane movement will automatic decelerate and stop when needed to prevent collision. The operator will also alert immediately.

Regardless of the type of crane (flat of luffing jib), the system applies “adjustable” safety coverage to all of the machines sections. This coverage incorporates the jib, counter jib, mast, tower head, tie bars and hoist rope(figures 1 and 2).

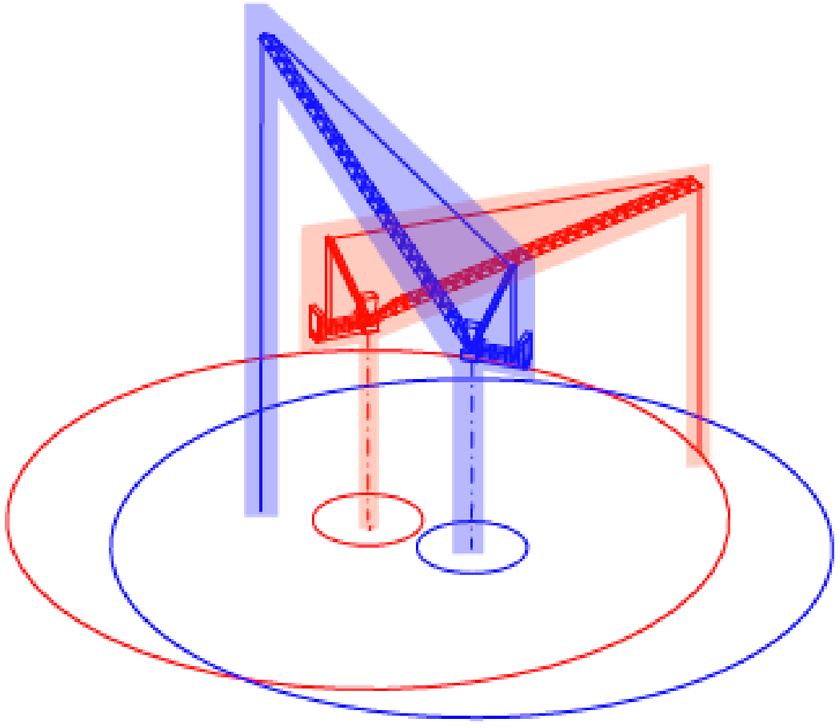
In addition to the safety coverage, the system factors in a slowing down angle or distance for each movement (slewing, trolley and travelling).

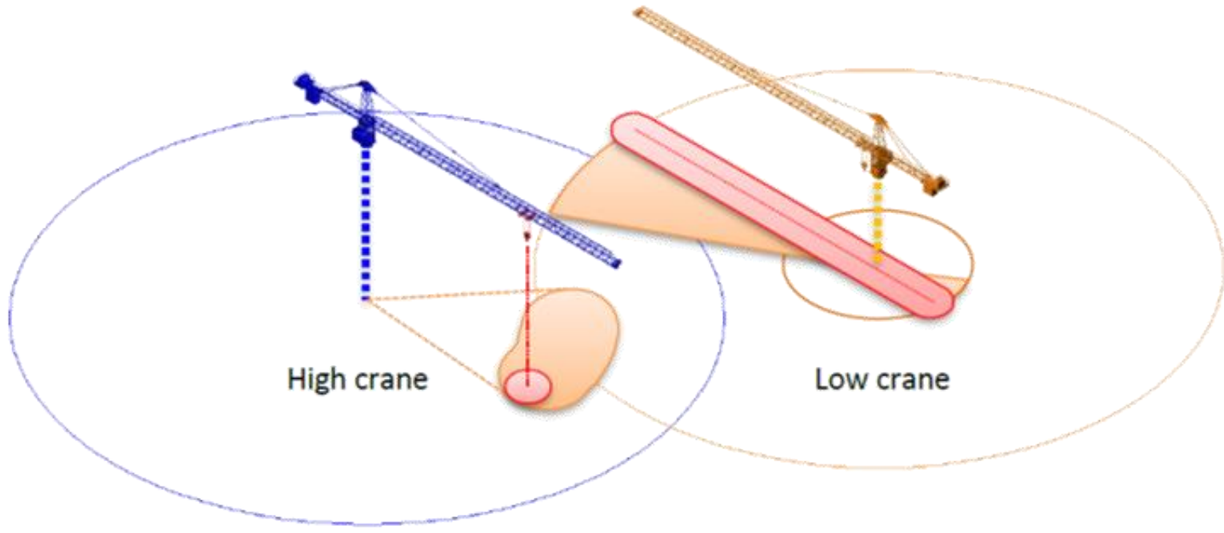
Figure 1



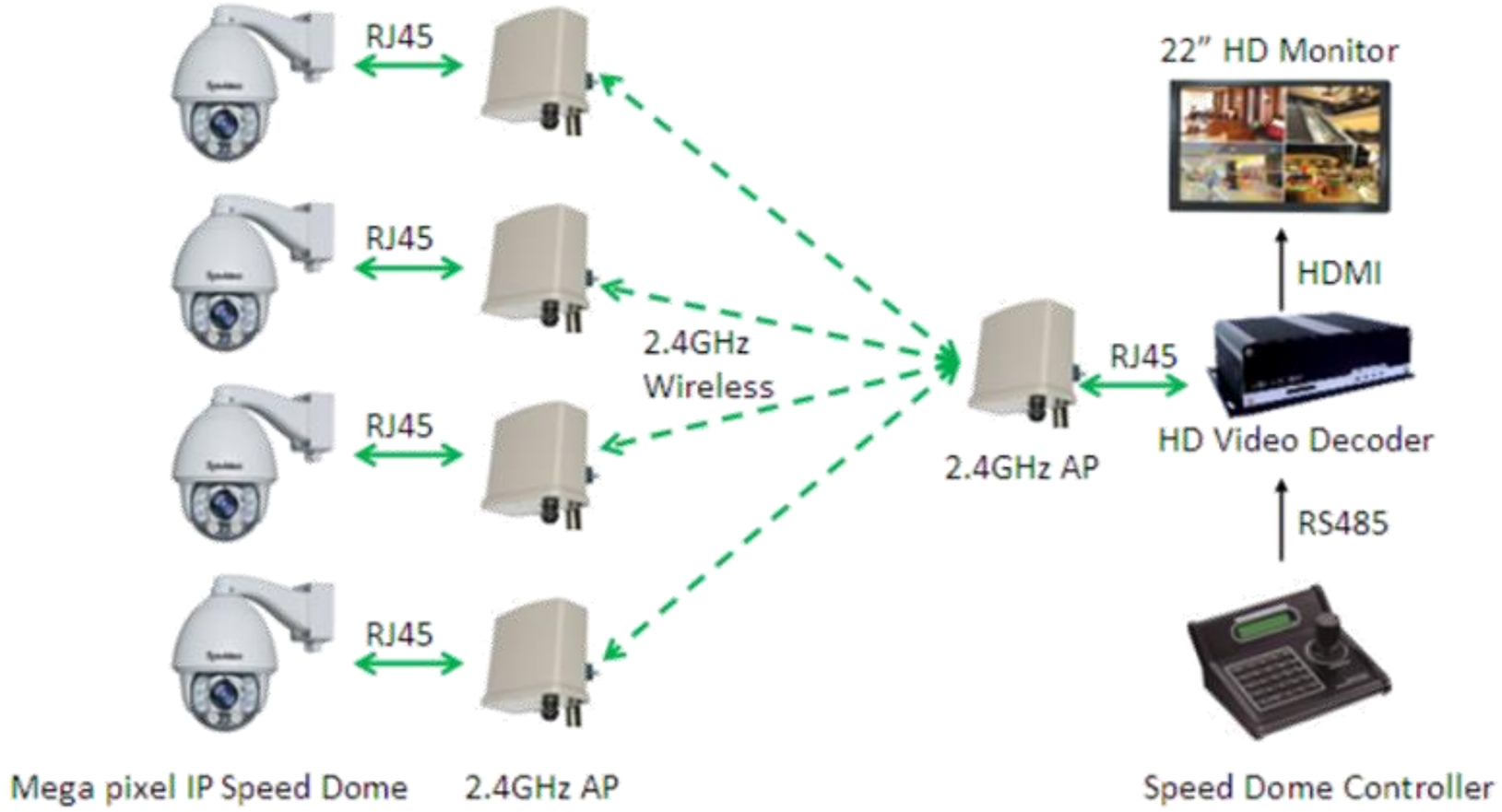
Tower Crane slewing slowdown right

Figure 2





Safety coverage.
slowing down range.



3.3.7. TOWER CRANE ALL-ROUND MONITORING SYSTEM

Tower Crane CCTV monitoring system: Through the monitors in the control room, all the operation in the construction site is under surveillance. It helps to improve the construction management and supervision of the wireless daily operation.

To enhance the safety management and avoid the accidents, CCTV monitoring system comes up with a flexible and easy maintenance surveillance system for the real time monitoring and remote management.

Advantage for using CCTV monitoring system:

- Ability to utilize real-time traffic monitoring.
- Able to monitor the whole lifting process and the lifting gear (e.g. hoisting winch, Luffing winch, etc.)
- Wireless AP are easy setting with plug and play function.
- Provide wireless connectivity to transmit or download data from CCTV to the control room.
- Eliminate blind spots
- Increase safety when tower crane in operation
- Improve productivity.

3.3.8. TOWER CRANE LIFTING ZONE ALERT SYSTEM

- The hazard of lifting in narrow area can be minimized via installing the Tower Crane Lifting Alert System.
- Once the lifting hook descends and reaches the designated height, the height detection device will trigger the alarm(s).
- The relative altitude between the lifting hook and the ground will be immediate calculated by the sensor.

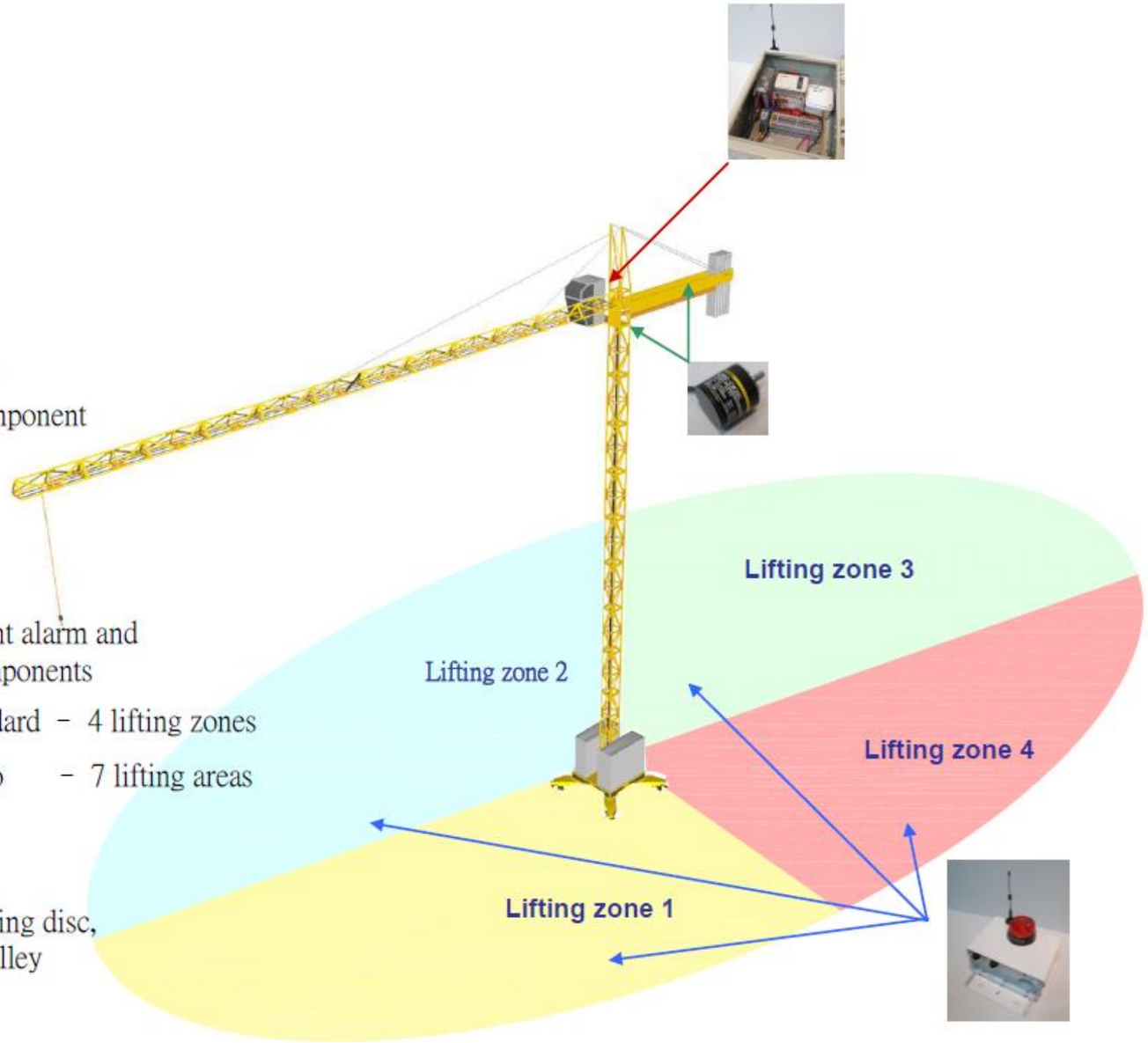
Controller and
transmitter component

Sound and light alarm and
receiving components

Standard – 4 lifting zones

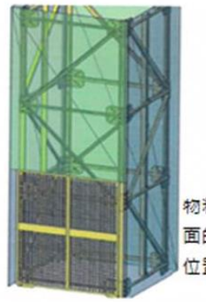
Up to – 7 lifting areas

Encoder: grinding disc,
big hook or trolley



材料架安全使用指引

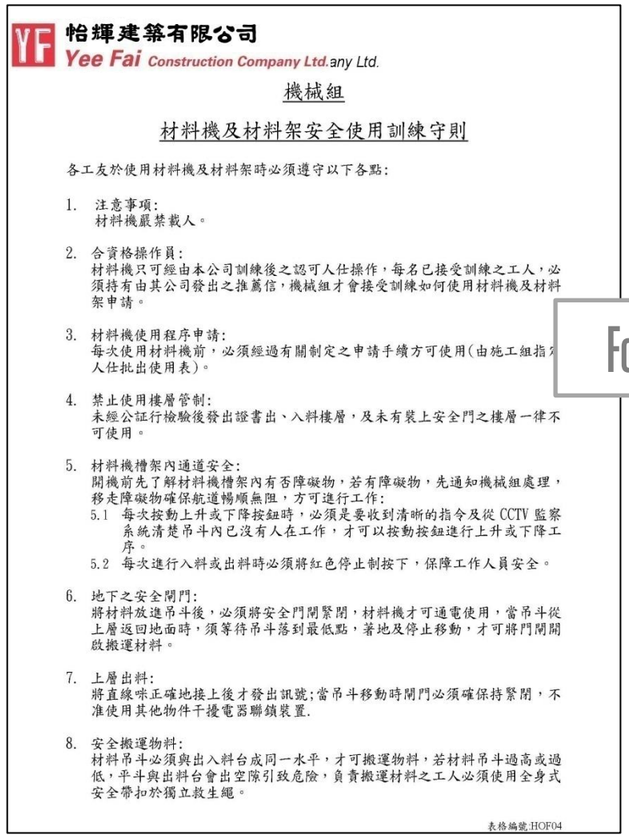
材料架四周掛上安全圍網必須完全處於密封狀態



物料架地面的入口位置

貨物開始上升通送

Digital Gate lock



怡輝建築有限公司
Yee Fai Construction Company Ltd.any Ltd.

機械組

材料機及材料架安全使用訓練守則

各工友於使用材料機及材料架時必須遵守以下各點:

1. 注意事項:
   材料機嚴禁載人。

2. 合資格操作員:
   材料機只可經由本公司訓練後之認可人仕操作，每名已接受訓練之工人，必須持有由其公司發出之推薦信，機械組才會接受訓練如何使用材料機及材料架申請。

3. 材料機使用程序申請:
   每次使用材料機前，必須經過有關制定之申請手續方可使用(由施工組指定人仕批出使用表)。

4. 禁止使用樓層管制:
   未經公証行檢驗後發出證書出、入料樓層，及未有裝上安全門之樓層一律不可使用。

5. 材料機槽架內通道安全:
   開機前先了解材料機槽架內有否障礙物，若有障礙物，先通知機械組處理，移走障礙物確保航道暢順無阻，方可進行工作:
   5.1 每次按動上升或下降按鈕時，必須是要收到清晰的指令及從 CCTV 監察系統清楚吊斗內已沒有人在工作，才可以按動按鈕進行上升或下降工序。
   5.2 每次進行入料或出料時必須將紅色停止制按下，保障工作人員安全。

6. 地下之安全閘門:
   將材料放進吊斗後，必須將安全門閉緊閉，材料機才可通電使用，當吊斗從上層返回地面時，須等待吊斗落到最低點，著地及停止移動，才可將門閉開啟搬運材料。

7. 上層出料:
   將直線喼正確地接上後才發出訊號;當吊斗移動時閘門必須確保持緊閉，不准使用其他物件干擾電器聯鎖裝置.

8. 安全搬運物料:
   材料吊斗必須與出入料台成同一水平，才可搬運物料，若材料吊斗過高或過低，平斗與出料台會出空隙引致危險，負責搬運材料之工人必須使用全身式安全帶扣於獨立救生繩。

表格編號:HOF04

Details refer to AnnexM-O

Form and Checklist

- Regulations for working in Material Hoist
- Application Form for a Work Permit in Material Hoist
- Weekly Maintenance and Inspection Checklist

3.4. MATERIAL HOIST

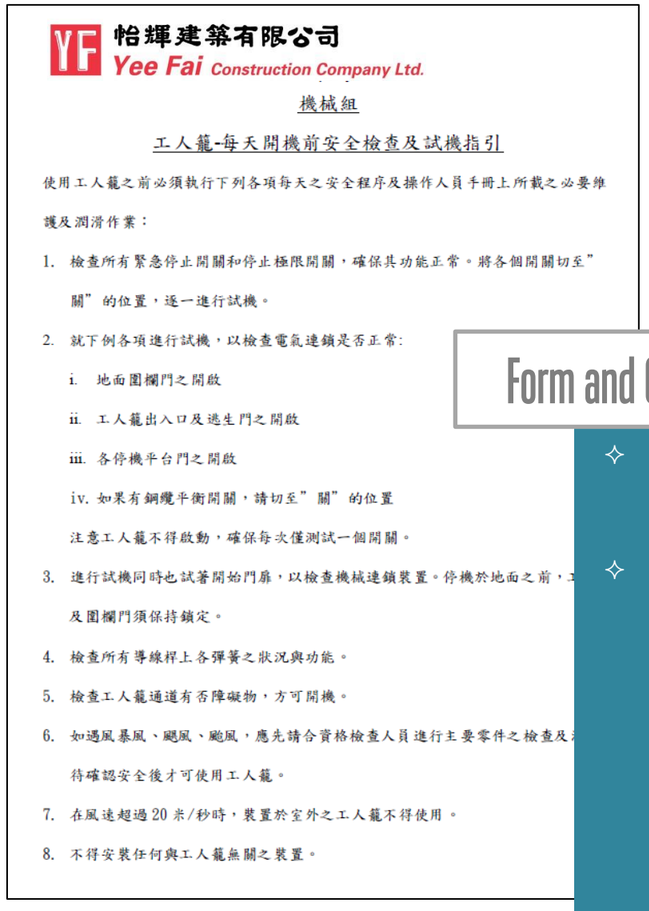
3.4.1. MAERIAL HOIST IN-HOUSE REQUIRMENT

Apart from the legislative regulations, **Yee Fai** has released instructions and checklist for maintenance and inspection the condition of material hoist.

3.5. PASSENGER HOIST

3.5.1. PASSENGER HOIST IN-HOUSE REQUIRMENT

In addition to the legislative regulations, **Yee Fai** has developed comprehensive guidelines and checklist to maintenance and inspect the condition of passenger hoist.



怡輝建築有限公司
Yee Fai Construction Company Ltd.

機械組

工人籠-每天開機前安全檢查及試機指引

使用工人籠之前必須執行下列各項每天之安全程序及操作人員手冊上所載之必要維護及潤滑作業：

1. 檢查所有緊急停止開關和停止極限開關，確保其功能正常。將各個開關切至"關"的位置，逐一進行試機。
2. 就下例各項進行試機，以檢查電氣連鎖是否正常:
   i. 地面圍欄門之開啟
   ii. 工人籠出入口及逃生門之開啟
   iii. 各停機平台門之開啟
   iv. 如果有鋼纜平衡開關，請切至"關"的位置
   注意工人籠不得啟動，確保每次僅測試一個開關。
3. 進行試機同時也試著開始門扉，以檢查機械連鎖裝置。停機於地面之前，工
   及圍欄門須保持鎖定。
4. 檢查所有導線桿上各彈簧之狀況與功能。
5. 檢查工人籠通道有否障礙物，方可開機。
6. 如遇風暴風、颶風、颱風，應先請合資格檢查人員進行主要零件之檢查及
   待確認安全後才可使用工人籠。
7. 在風速超過 20 米/秒時，裝置於室外之工人籠不得使用。
8. 不得安裝任何與工人籠無關之裝置。

Form and Checklist

- Precautions to be taken before Operating Passenger Hoist
- Weekly Maintenance and Inspection Checklist

Details refer to AnnexP&Q

3.6. MOBILE CRANE

3.6.1. MOBILE CRANE IN-HOUSE REQUIRMENT

Our Company has established guidelines for improving safety issue while operating mobile cranes.

怡輝建築有限公司
Yee Fai Construction Company Ltd.

機械組

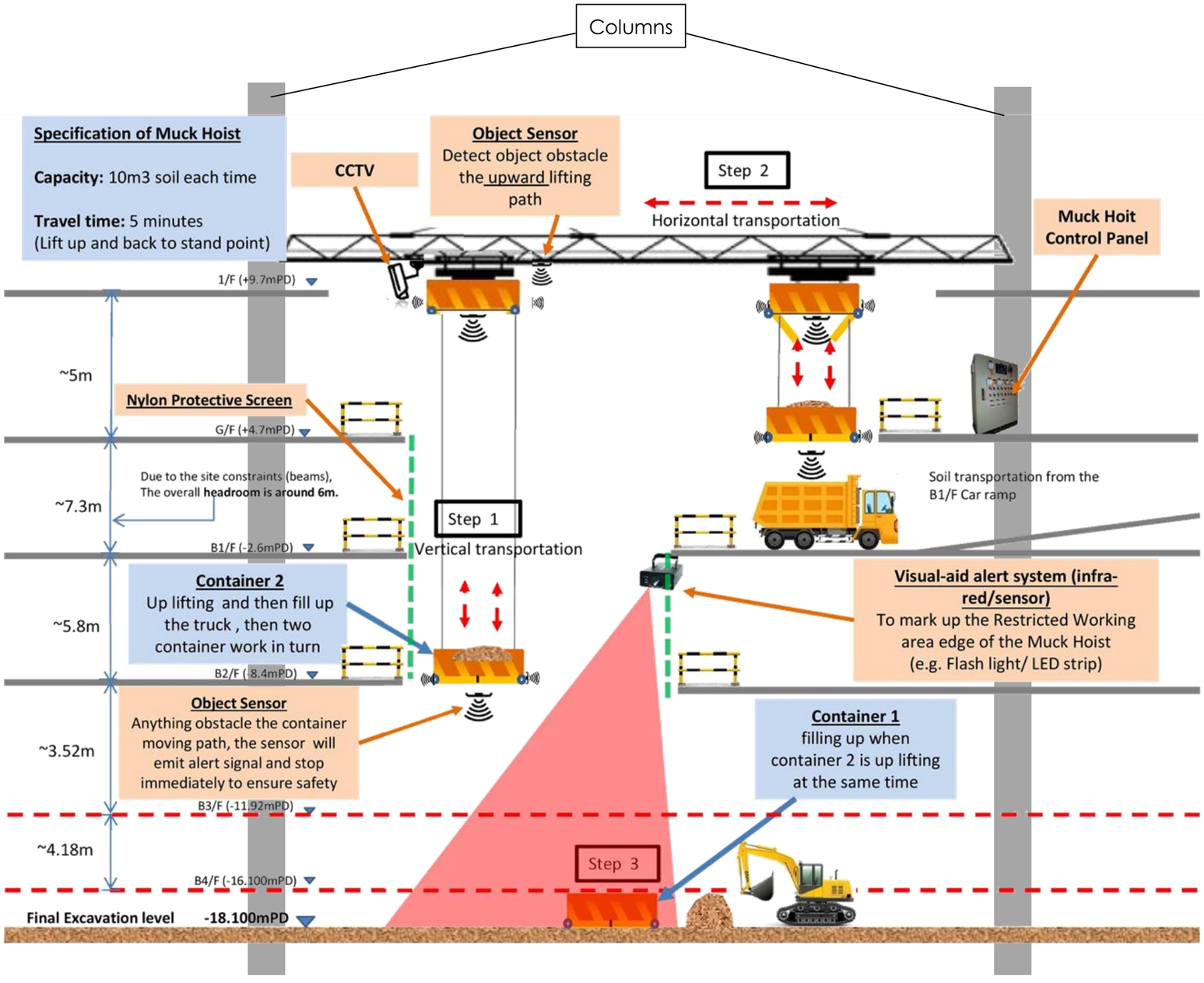
工人籠每週檢查項目指引

項目	檢查內容	✓/×	備註
1	**工人籠機槽圍欄**		
1.1	工人上落處裝上堅固之閘門		
1.2	機槽圍欄及閘門高度最少須為 2 米(由該層地面起計)		
1.3	機槽內通道暢通無阻		
1.4	機槽底部圍欄須穩固		
1.5	工人籠機槽圍欄沒有變形、損壞或耗損跡象		
2	**上落處及其閘門**		
2.1	上落處閘門操作情況須正常		
2.2	工人籠閘門與上落處閘門如有橋版，這橋板須符合「建築地盤(安全) 規例」之要求		
2.3	地面出入口必須有遮擋，以防高空墮物傷害工人		
2.4	上落處閘門沒有變形或損壞跡象		
3	**工人籠閘門**		
3.1	操作情況須正常		
3.2	工人籠閘門沒有變形或損壞跡象		
4	**閘門連鎖設備**		
4.1	閘門可以穩固地鎖上		
4.2	除工人籠到達它指定之樓層上落處外，任何上落處閘門或工人籠閘口是不能開啟		
4.3	確保上落處閘門或工人籠閘口完全關上後才能移動		
5	**工人籠**		
5.1	工人籠結構沒有變形、損壞或耗損跡象		
5.2	整個工人籠須完全圍起，所用之鐵絲網不可被遮擋		
5.3	保持工人籠內整潔		
5.4	工人籠內外須有充足的照明系統		
5.5	工人籠頂部須裝上穩固圍欄及踢腳板		
6	**工人籠救生窗**		
6.1	救生窗蓋須由籠向外開及正常操作時穩固地鎖上並與電器聯鎖斷電器連接		
7	**工人籠操作掣板**		
7.1	上落控制器操作情況正常		
7.2	緊急停機掣、警報器與起重警報，顯示及電源切斷器操作情況正常		

Form and Checklist

- Mobile Crane Service Record
- Instructions to Run Mobile Crane outriggers

Details refer to AnnexR&S



GENERAL OPERATION SEQUENCE

3.7. THE MUCK HOIST

3.7.1. OPERATION DETAILS AND MANAGEMENT

For KTIL240 it is well known there are approximately 177,476 m^3 of excavation with 23m depth of deep excavation to be encountered during ELS stage. In order to secure and improve the efficiency of the excavation, a mechanical construction method namely the Muck Hoist would be deployed to facilitate the excavation works.

- ✧ The Muck Hoist would be set up after B1/F slab and car ramp construction competed
- ✧ 1/F slab would be partially boxed up for hoisting beam installation
- ✧ A designated loading area would be located at excavation level for the excavator to fill up the mucking container, visual-aid alert system would be installed to mark up the restricted working area edge of the lifting area
- ✧ The filled mucking container would be lifted by the hoisting machine and transport to the awaiting dump truck on B1/F with 5 minutes per traveling
- ✧ Each filled bucket could fully utilize one cart of dump truck to maximize the efficiency of excavation productivity

With the assistance of the Muck Hoist, we plan to achieve the daily excavation productivity to be 1500 m^3 for 1st to 5th layer excavation.

3.7.2. SYNEGISTIC EFFECT OF THE MUCK HOIST WITH ALTERNATIVE ELS DESGIN

In view of the complexity of this project with fast track programme and **Yee Fai**'s proposed alternative ELS scheme, the tailor made the Muck Hoist could generate a synergistic effect with our alternative ELS design. Since the major excavation unloading zone and transportation path would be designated on B1/F with the the Muck Hoist, the utilization of G/F site logistics could be maximized to cater large amount of construction vehicles transportation for superstructure construction during ELS stage.

Due to massive material transportation would be involved while ELS and superstructure proceed in full swing concurrently, in example, rebar, concrete, structural steelworks, modular ELS strutting system and excavated disposal. A flexible site logistics shall be equipped in our site planning to provide a smooth transportation to our varies working area which could secure our planned site progress and productivity could be accomplished.

3.7.3. EMERGENCY MEASURES FOR THE MUCK HOIST

To prevent the site excavation fully relied on the the Muck Hoist, following emergency measures are established to prevent the the Muck Hoist breakdown or any system failure occurred to mitigate its influence to the site progress:

- A telescopic excavator would be deployed once the the Muck Hoist is found failure
- Emergency maintenance team to be on-site within 1 hour after system breakdown and resuming the operation in 2 hours.

General Requirements for the Muck Hoist

吊臂車操作之安全管理系統

考慮到貨車式起重機（俗稱「吊臂車」）於不同吊運象限操作時的穩定性問題，現建議任何該類機械進入新輝地盤，除現行法例、指引及新輝之既有要求外，必須額外符合以下<u>其中一項</u>，務求全方位提升操作安全。

1. 方案 1： 主判人認證計劃

此方案適用於以下兩類（具體流程可參照附件 1）：

A. ［配備原裝之全方位 ASLI ］任何吊臂車符合 CIC 2015 年之安全警示（編號 002/15）均屬此類；或

B. ［自行全方位驗證並配合全方位 ASLI］分判商必須先為吊臂車作 360 吊重能力覆核（並由註冊機械工程師簽署以確認其負載能力及整體車架之穩定性）；另外，吊臂車必須配備全方位之 ASLI 警報提示功能 。

2. 方案 2：非認證計劃

此方案可接納以下兩類：

A. ［吊運督導人員並配合吊重力遞減］分判商須委任 Lifting Supervisor (LS) 全程監督吊運作業，並按照附件 2 要求進行「強制性吊重力遞減」；或

B. ［電子磅連警報器系統］分判須準備最少 3 塊電子磅（附件 3）並放於 outrigger(s) 下作實時下壓力監察。

i. 只適用於多於一對支撐腳之吊臂車及平坦地面上使用

ii. 當電子磅讀數低於(15-20kg)時，系統必需發出視覺及聽覺警報

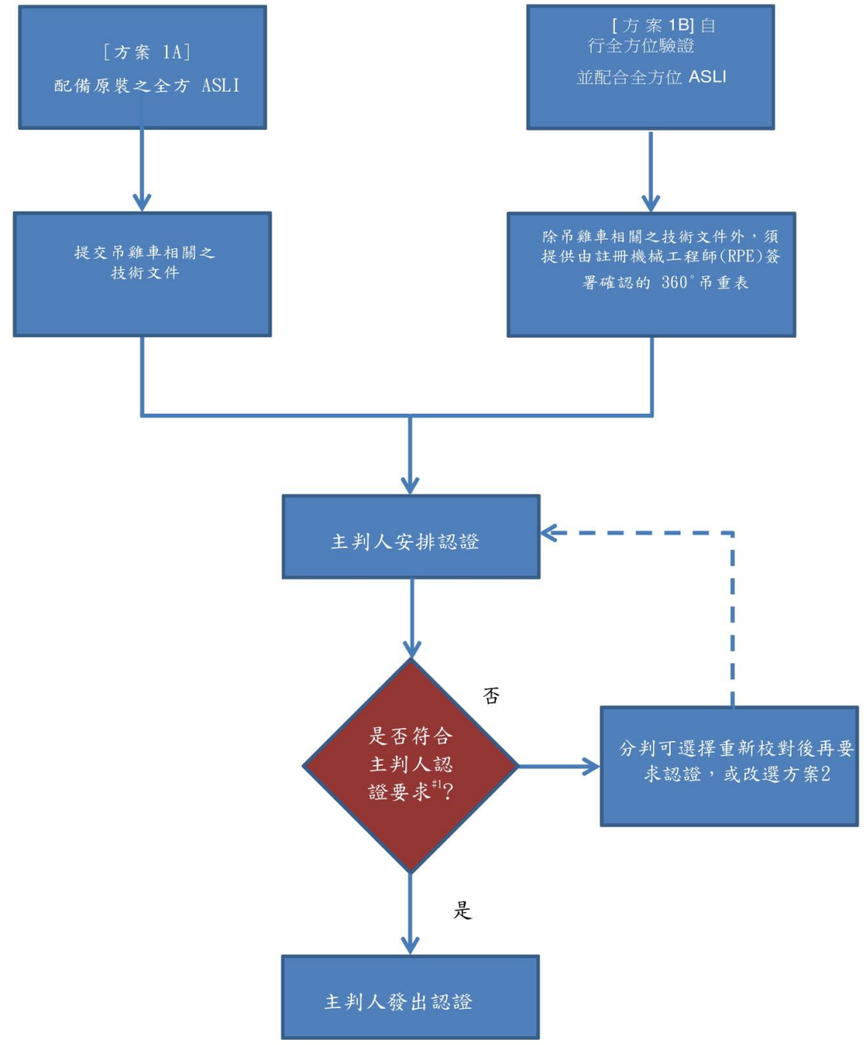
iii. 電子磅必需每年由公證行進行校對

註：

#1 全方位 ASLI 是指該系統能因應不同之吊運象限（即吊臂轉盤角度），當操作達至 360^{O} 吊重表（廠 方提供或經由 RPE 驗證確認）之 90% 及 100% 安全負重時發出警報。

#2 方案 1B 並無指定個別可行辦法，即主判人接受任何外加配置以做妥上述 1B 項的功能要求，但前題是新增配件不可影響操作安全。

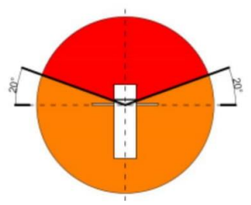
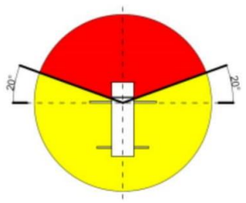
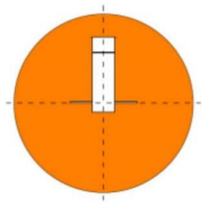
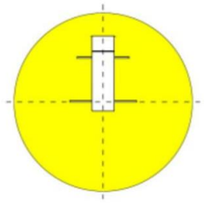
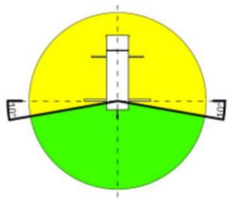
附件 1 ： 主判人認證計劃流程



認證要求#1：

1. 能全方位(於不同吊運象限)提供視覺及聽覺警報
2. 吊臂車的 360^{O} 吊重能力，必須由分判商提供、並交予主判人覆核，以確認其負載能力及整體車架之穩定

附件 2 ： 強制性吊重力遞減

前置吊臂	後置吊臂
	
支撐腳 前 2 後 0 尾 0  前 2 後 2 尾 0 	支撐腳 前 0 後 2 尾 0  前 2 後 2 尾 0 
安全負重比率 紅 30% 橙 70% 黃 80%	前 2 後 2 尾 1 
綠 90%	

附件 3 ： 電子磅連警報器系統

Lifting Supervisor

Lifting Supervisor is arranged by **Yee Fai** and his responsibilities are as follows:

- Managing all banksman and sub-contractors'/supplier slinger
- Providing adequate training, supervision and guidance to all banksman.
- Providing appropriate lifting methods, procedures and technical supports to the sub-contractor working at the site.
- Has sufficient authority to stop the lifting operation if he observes any unsafe condition or unsafe act during the lifting operation.
- Reports the problem of the site lifting, providing solutions and recommendations to chief mechanic every day, safety team and site agent every week.

Banksman (Yee Fai)

Qualifications and responsibilities:

- Appointed by us and holding a valid certificate" Construction Materials Rigger (A12)" issued by CIC.
- Ensure no one is in the lifting zone and the lifting object has to be safety fasten before the lifting operation.
- The lifting signal can be issued after assessing the route of the lifting to confirm that there are no obstacles and dangers.
- Has sufficient authority to stop the lifting operation if he observes any unsafe condition or unsafe act during the lifting operation.
- Should equip with a whistle and communicator. Wearing a reflective vest (Banksman) and wearing a qualified helmet in pink with chinstrap.

Slinger (Sub-Contractor/Supplier)

Qualifications and responsibilities:

- Holding a valid certificate" Construction Materials Rigger (A12)" issued by CIC.
- Wearing a reflective vest and wearing a qualified helmet in pink with chinstrap.
- Completed the site qualified training and appointed.

As time progresses, technology like QR code has gradually mature and becomes widely used. We have always continuous development and regular upgrade of supporting facilities in order to make works safer and efficiency. Nowadays, we understand the importance of utilizing QR code. QR code is used for generating data, manage and control the expired tools and keep tracking the maintenance records in real practice easily. Safety officer who is a registered holder, is respond to manage those equipment and data. Before using the lifting gear, all lifting gear has to be recorded in centralized database and ensure all lifting gear fulfill the legal requirements. We have also stored a full set of lifting gear (e.g. Chain Sling, Steel Wire Rope, Shackle…) providing for the sub-contractor when they need.

4. HEALTH AND SAFETY MANAGEMENT

4.1. SAFETY POLICY AND PLAN, 3-YEAR SAFETY RECORDS, SAFETY PROMOTION AND SAFETY ORGANIZATION STRUCTURE

The construction industry is a high-risk industry. The company does its utmost to maintain the safety and health of its employees provide sufficient resources to maintain a safe and healthy working environment, and conduct safety and health training. The Safety and Health Plan aims to establish site safety and health measures and training to ensure that every employee can comply with safety and health laws and regulations while also clearly understanding what they are doing in a safe and healthy working environment responsibility and obligations. This Safety and Health Plan will be revised as the construction environment changes.

The safety and health plan is divided into two main parts: prevention work and education work.

Preventive work

This plan assesses the potential risks of each process, describes the risk prevention methods and related safety and health measures.

Educational work

The Company will arrange and provide appropriate safety and health courses and organize relevant publicity activities to enable each employee to clearly understand the safety and health measures to enhance their safety and health awareness.

To enable the company's safety and health programmemer to be fully and effectively implemented, the Safety and Health Plan will be distributed to the relevant management contractors to provide clear guidance and follow-up on safety and health matters.

The company will review and review the safety and health measures of the site on a regular basis, revise the safety and health policy or safety and health plan as necessary, and redistribute the revised version to the relevant parties.

To enable the company's safety and health programmemer to be fully and effectively implemented, the Safety and Health Plan will be distributed to the relevant management contractors to provide clear guidance and follow-up on safety and health matters.

The company will review and review the safety and health measures of the site on a regular basis, revise the safety and health policy or safety and health plan as necessary, and redistribute the revised version to the relevant parties.

The company expects all employees to follow the rules in the safety and health plan, and the offenders will be punished and disciplined.

The attached company and site safety and Health Policy Statements both in English and Chinese are signed by the Director of the Company and the Project Manager of KTIL240.

These policy statements are to demonstrate **Yee Fai**'s commitment to promote high standards of safety and health to prevent personal injury or ill health resulting from work activities for the duration of the project.

In order to achieve high safety and health standard, this project would spend a budget on this site for the upgrading and implementation of the site safety standard

This project aims at zero dangerous occurrences, which is defined in the First Schedule of the Factories and Industrial Undertakings Regulations.

This project aims at an accident rate of less than TEN per one thousand workers per year. Of course, our mission aims at zero accident.

The Director of the Company is in-charge of overall co-ordination and implementation of the safety and health policy.

Monitoring and reviewing of safety and health policy is one task of the Board of Directors. Members will meet at six months interval to discuss and review the safety performance of the overall situation of the Company.

怡輝建築有限公司
Yee Fai Construction Company Ltd.

Safety in our hearts! We all play a part!

Safety & Health Policy Statement

"Safety First" being the underlying principle of the safety & health policy and has been an integral part of our business of **Yee Fai Construction Co Ltd**. We recognize our obligation to comply with relevant statutory and in-house health and safety regulations as our minimum requirement. We are aiming to achieve a substantially higher standard of safety & health working environment for our workers and those who might come into contact with our activities. We are also committed to reduce the impacts and hazards to public as low as possible.

Our ultimate goal is to eliminate all reportable accidents from work. Safety target is zero fatal or serious accident and an incident rate of not more than 10 per 1,000 workers for 2018. To demonstrate safety and health at work as an integral part of our business performance, we therefore shall keep strengthening our safety performance by provision of sufficient resources, enhancement of system development and application as well as upgrading our staff's competency and safety awareness. We shall monitor and review the implementation of safety control measures by quarterly housekeeping inspections, regular safety inspections, statutory Safety Management audits and Central Safety Team's special task inspections. We will continuously enhance our safety and caring culture by further strengthening the penalty/reward scheme and two ways communication with all related parties to step up to our ultimate goal.

Safety at works shall be given a high priority and is being considered in matter of design, subletting, development of method statements, application of materials and equipment. Safety considerations shall form part of method statements in order to provide overall best solution without compromise to the safety while also offering a realistic balance between the programme and total project cost. It is to ensure that all foreseeable and significant hazards of the works in the next 3 months will be fully evaluated, controlled and tackled before commencement by keeping a hazard log by individual Project Manager with the assistance of Safety Officer. We need to encourage safety innovation, constantly improve and standardize our design and construction approach so as to remove risk and enhance the health and safety of our workers.

Safety is a shared responsibility from all stakeholders including our subcontractors, suppliers and every member working for us. Safety shall be the prime responsibilities of line management, from the most senior executive to the first-line supervisory level down to operatives. General Managers of Construction Department are accountable for overall coordination of this policy while implementation of this policy on sites lies with the responsibility of Project Managers and Site Agents through the effort of Site Safety Committee and advisory of safety section. Key Performance Indicators (KPI) will be established for different levels and the safety performance of each staff will be the one of consideration factors of their annual performance bonus.

To ensure the involvement, understanding, implementation and maintenance of this policy at all levels, Project Managers and Site Agents shall ensure appropriate resources for safety training, promotion and implement safety on sites. Safety officers shall ensure all employees, including those of subcontractors, to attend safety induction and being provided with necessary information, instructions and the full prospective of risk assessment for their task of operation to ensure their competence in carrying out their daily works under a reasonable and practicable safety working environment.

This policy, the safety management system as well as housekeeping standard shall be reviewed annually to ensure continuous improvement.

Clint Lo
Director of Safety & Compliance

Date of this issue: 01-01-2018

怡輝建築有限公司
Yee Fai Construction Company Ltd.

安全從心發 人人齊負責

安全健康政策聲明

怡輝建築有限公司的安全健康政策是以"安全第一"為業務中最基本的一環。 公司確認對安全的責任，我們會以遵守有關安全及健康的法例為最低要求。 公司承諾會為各僱員及參與工作人士提供一個務實而高水平的安全工作環境。 更會將對公眾人士的危害影響減至最低。

二零一八年的目標是零死亡及嚴重意外事故，而千人意外率低於十，並以零可呈報意外為最終目標。 我們無疑地會視工作安全與健康的表現為公司業績的重要部份。 故所以公司會透過提供足夠資源、系統發展和應用、提升員工的合資格性和安全意識來強化我們的安全表現；亦會利用管理層常務巡查，定期安全巡查、法定安全管理稽核及中央安全組統籌的突擊巡查，以監察安全措施的執行。 我們會繼續透過獎懲及雙向溝通，加強安全及關顧文化，從而加快達至我們的"最終目標"。

施工安全應予以優先考慮，因此，安全因素應在設計、發展施工方法、物料應用、設備及其他一切事務中一併考慮。 為達至進度、成本與安全得到最佳平衡，安全因素應為施工程序方案的一部份，並於施工開展前三個月做好全面的預應方案、編制及定期更新工程危害總表，以確保工程上可預見及重大的危害得以評估、控制及將影響減至最低甚至消除。 我們需要鼓勵安全創新、持續改進及標準化設計和方法，從而消除風險及加強保障員工的健康和安全。

安全是每名員工的共同責任。 所有承包商、供應商、及工作人員應共同承擔安全責任。 安全亦是由高層到前線管理人員及普及至工友階層的重要職責。 建築部總經理負責安全政策的整體實施，而策劃經理和總管透過工地安全委員會和安全組之協助在工地執行安全及健康政策。 公司將會定下各職級同事所須履行之職安健「主要績效指標」，其安全表現將被視為年終績效獎金的考慮因素之一。

為確保工地所有階層均參與、明白、落實和維護安全及健康政策，策劃經理和總管應確保足夠和合適的資源以進行安全教育、宣傳及落實安全及健康政策。 安全主任應確保工地所有僱員及承判商之員工均已接受入職安全培訓及獲知與工作相關必要的安全資料、指示及風險評估內容，以確保員工能勝任及在合理切實可行的安全環境下進行他們的日常工作。

此政策、安全管理系統及常務管理標準應至少每年作出檢討以達致持續改善。

盧韋良
安全及合規審查總監

此政策簽發日期：二零一八年一月一日

4.1.2. REVISION OF POLICY

Procedures for reviewing safety and health policy are as below:-

- Review the existing safety and health policy on whether it is up to date to meet newly issued statutory by the Safety Officer
- Prepare a draft Safety and Health Policy and disseminate to all departments and construction sites to discuss.
- Department and construction sites should discuss in their regular meetings and site safety committee meeting.
- Gather and return all feedback to Safety Department for any necessary amendment.
- Bring the revised Safety and Health Policy to the Board of the Directors for approval.
- Endorse and announce the newly issued safety and Health Policy by the Director of the Company.

Safety Officer is in charge of keeping up to date safety and health information, including changes to regulations, new codes of practices, newly identified hazards and new work practices. Subsequently, Safety Officer is responsible to disseminate the above information to concerned parties and subcontractors. The Safety and Health Policy or amended Policy shall be displayed on safety publication board, notice board, conference room and rest rooms. A summary of the amended Safety and Health Policy will be issued and explained to every worker during induction safety training course.

4.1.3. SAFETY AND HEALTH ORGANIZATION

4.1.3.1. SAFETY AND HEALTH ORGANIZATION STRUCTURE

- The safety and health organization of the site is implemented by the Project Director/Deputy Project Director, Safety Team, General Manager/Deputy General Manager and Executive Team to implement the company's safety and health policies. See (Annex I): "Safety and Health Organizational Structure Figure".
- Employees at all levels are responsible to the immediate supervisor, report on their work and reflect their opinions. When it is absent, the immediate supervisor is the agent.
- All employees of the company and all staff members of the contractors can submit their opinions and suggestions on safety or health directly to the head/deputy director and safety officer.
- Supervisors at all levels are responsible for explaining the work, construction methods and compliance with relevant safety regulations to their subordinates.
- The general manager/deputy director and safety officer must clearly communicate safety and health information to each staff member and submit the unsafe environment and the opinions of the staff to the Deputy Planning Director and the Safety and Health Committee.

Project Director / Deputy Project Director

- Understand and formulate site safety and health policies, commitments, rules and statutory requirements and promote them to all levels of personnel;
- Ensure that the workplace maintains a high level of safety and health;
- Establish a safety and health management system to monitor the performance of safety and health policies;
- Provide adequate and appropriate resources (including: financial and human resources, etc.), information and training;
- Establish safety and health management systems to identify, assess and remove hazards and to control hazards at work;
- Ensure that safety and health measures have been taken into account in the planning of the production process and in the works of the contractors;
- Ensure that all staff and contractors have complied with the safety and health legislation and taken relevant preventive measures;
- Ensure the development, maintenance and revision of safety rules, procedures and methods at the workplace;
- Maintain close liaison with the Company's safety team, various government departments and relevant professional bodies to jointly address and resolve safety and health issues;
- Provide effective, efficient and continuous safety and health promotion plans;
- Actively participate in and support safety and health promotion activities organized by the company (or other organizations recognized by the company) to enhance workers' safety awareness;
- The Safety and Health Committee meeting is held monthly and serves as the chairperson of the meeting. The meeting must have the management of the company and representatives of the workers involved;
- co-ordinate the safety and health activities of the main contractor, sub-contractors and other contractors working on the same site;
- Provide and maintain an effective response system in response to safety and health advice and advice from safety advisers/safety officers, safety supervisors, government personnel and workers;
- Review the relevant working methods and safety precautions together with the site management personnel before starting work.
- Organize a Safety and Health Committee/Emergency Response Team within the site to ensure that members are on time to handle emergencies;
- take disciplinary action against employees who violate safety regulations and/or company safety and health procedures;
- Deport any personnel who have serious or repeated violations of safety matters from the site;
- Establish a good safety example when visiting the site.

Site Agent / Sub Agent

- Understand the safety and health plan to ensure that the safety and health standards required by the company are met and maintained;
- Ensure that the workplace maintains a high level of safety and health;
- Establish a safety and health management system to monitor the performance of safety and health policies;
- Provide adequate and appropriate resources (including: financial and human resources, etc.), information and training;
- Establish safety and health management systems to identify, assess and remove hazards, and to control hazards at work;
- implement site safety and health requirements established by the Safety and Health Committee;
- Ensure that all staff members and contractors have complied with the safety and health legislation and taken relevant preventive measures;
- Provide and maintain an effective response system in response to safety and health advice and advice from safety officers, safety supervisors, government personnel and workers;
- Organize the site so that the relevant work meets the required standards while minimizing the risks to people, equipment and materials;
- To understand the construction site (safety) regulations and other latest requirements relating to safety, health and site welfare legislation;
- Remind all staff members of their responsibility to use the correct working methods and ensure that they do not require or permit workers to take unnecessary risks;
- Make arrangements with the contractors to ensure that the work is maintained at a high level of safety and health;
- Ensure that safety rules, procedures and methods for the development, maintenance and revision of workplaces are developed;
- Follow safety and health precautions when performing work;
- Maintain close liaison with the Company's safety team, various government departments and relevant professional bodies to jointly address and resolve safety and health issues;
- To seek advice from the Safety Officer on site safety when necessary;
- Provide effective, efficient and continuous safety and health promotion plans;
- Participate in monthly safety and health committee meetings and assist in promoting site safety. Carry out the relevant work in accordance with the resolution of the meeting of the Safety and Health Committee;
- Check whether necessary testing, inspection and maintenance of the relevant equipment and machinery are carried out;
- Ensure adequate and appropriate personal protective equipment and maintain effective and appropriate use;
- Accompany government officials to inspect the site and make improvements based on their recommendations;
- Plan and maintain the site clean and tidy;
- Investigate and analyze the causes of serious industrial accidents, propose improvements, and urge relevant personnel to implement them as soon as possible;
- Deport any personnel who have serious or repeated violations of safety matters from the site;
- Organize a Safety and Health Committee/Emergency Response Team within the site to ensure that members are on hand to handle emergencies;
- Develop emergency procedures to ensure that all employees and contractors fully understand the steps of the procedures;
- lead by example to do all safety matters;
- Establish a good safety example when patrolling the site.

Safety Officer

- Ensure that the site has been maintained at a high level in accordance with the company's safety and health policy.
- Make recommendations/measures to site managers on safety and health issues.
- Assist site managers to identify hazards and assess work risks.
- Assist in solving safety and health issues in the site.
- Inspect the workplace to identify potential hazards and safety performance, and report the results to the site management and make corrections.
- Investigate accidents (whether or not there is any injury) and dangerous accidents, and report to the management and make recommendations for prevention.
- Supervise the records and data analysis of injuries, damages and losses, and assess the trend of accidents and review the overall safety and health performance.
- Fully grasp the safety and health performance in the site.
- To provide safety and health, provide advice to the site management staff on the repair and maintenance of machinery and equipment.
- Supervise, direct and train safety supervisors.
- Receive, correct and add reports submitted by safety supervisors.
- Submit monthly reports in the specified form to the Deputy General Manager (Safety and Security) of the head office in accordance with the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations.
- Advise site management staff and relevant colleagues on laws, safety codes and contractual requirements affecting safety and health.
- Provide advice to site management personnel on the potential hazards of the new contract prior to the commencement of the project.
- Provide advice to site managers on changes to the Code of Practice and Safety Practices.
- Keep in touch with government officials and relevant professional bodies.
- In conjunction with the safety supervisor/site master/deputy/manager for safety inspection.
- Accompany occupational safety officers and government departments to conduct site inspections and make improvement actions based on their recommendations.
- Submit site inspection reports to the Project Director/Deputy Project Director/ Deputy General Manager on site unsafe conditions and methods of work, and follow up on improvement actions as needed.
- Take disciplinary action against employees who violate safety regulations and/or company safety and health procedures.
- Report safety and health performance to the Deputy Planning Director/Site Management/Deputy General Manager and the Safety and Health Committee on a regular basis and submit relevant statistics and reports.
- Keep and update records, reports, safety and health plans, safety and health hazard assessment reports and all necessary documents required by law or company.
- Provide safety and health training to relevant staff.
- Raise awareness of site management personnel and employees at all levels to prevent injury and damage control.
- If changes in the workplace may affect the safety and health of workers, they should consult the Deputy Project Director, the Supervisor/Deputy General Manager and the management and workers at all levels regarding the changes.
- Collect and maintain up-to-date codes of practice and safety information, and circulate relevant information to relevant employees at all levels to increase awareness of the latest safety trends.
- Deport any personnel who have serious or repeated violations of safety matters from the site.
- Propose a stoppage/improvement proposal to the Project Director/Deputy Project Director for any dangerous works or processes that may cause serious injury to workers or other persons (including third parties).

Safety Supervisor / Safety Representative

- Assist the safety officer in performing safety tasks.
- Guide and supervise staff to comply with relevant safety and health standards.
- Advise the management or safety officer on whether the staff has complied with safety standards.
- Inform the Project Director, the General Manager/Deputy General Manager and the management personnel at all levels regarding the compliance of workers with safety standards.
- Promote safe construction procedures at the site.
- Report safety and health performance on the site to the safety officer on a regular basis.
- Perform the duties specified in the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations and submit weekly reports in the specified form to the Safety Officer in accordance with the above regulations.
- Familiar with the requirements of the company's safety and health policy and statutory safety regulations and other relevant legislation to ensure that the works are carried out in accordance with the relevant requirements.
- Guide the relevant staff at the site to properly implement the relevant safety construction procedures.
- Plan and keep the site clean and tidy.
- Ensure that all machinery and equipment are maintained in a safe operating condition and are operated by qualified operators; also that the faulty machinery, machinery and equipment are to be repaired before use.
- Liaise with each contractor to ensure that the work carried out by them is carried out in accordance with safety and health standards.
- It is recommended that appropriate personal protective equipment be provided to the relevant employees and that the employees sign and use them correctly.
- Take disciplinary action against employees who violate safety regulations and/or company safety and health procedures.
- Displace any person who has serious or repeated violations of safety matters from the site.
- Accompany occupational safety officers and government departments to conduct site inspections and make improvements based on their recommendations.
- Take action to correct unsafe environments and working methods and implement the safety measures recommended by the safety officer.

Engineer/engineering liaison

- Assist in the implementation of safety and health policies, measures and procedures at the site.
- Assist the site to identify hazards and assess and control risks.
- Guide and supervise the staff in accordance with the relevant safety and health construction procedures.
- Ensure effective consultation on safety and health issues.
- Investigate accidents and accidents.
- Various construction methods and procedures for design engineering.
- Develop relevant safety construction methods with the contractors in accordance with the recommendations of the safety officer.
- Develop a suitable checklist based on the safe construction method and each contractor.
- Respond to safety and health advice and advice from safety advisers/safety officers, safety supervisors, government personnel and workers.
- Effectively communicate dangerous messages to workers and keep up to date with the latest safety and health legislation and information.
- Regularly inspect the site with the relevant contractor to determine that the items contained in the checklist have been implemented in accordance with the instructions.
- Regularly inspect the site with the safety officer to review the established construction methods.
- Participate in and assist in organizing relevant safety and health training programmemers.
- Actively participate in and promote site safety and health programmemers and related activities.

Senior Electrical Engineer / Electrical Engineer

- Design procedures for the design of electromechanical equipment.
- Assist in the implementation of safety and health policies, measures and procedures at the site.
- Assist the site to identify hazards and assess and control risks.
- Guide and supervise staff to comply with relevant safety and health construction procedures.
- Ensure effective consultation on safety and health issues.
- Investigate accidents and accidents.
- Establish relevant safety construction methods with the contractors in accordance with the recommendations of the safety officer.
- Develop appropriate checklists based on safe construction methods and each contractor.
- Respond to safety and health advice and advice from safety advisers/safety officers, safety supervisors, government personnel and workers.
- Effectively communicate dangerous messages to workers and keep up to date with the latest safety and health legislation and information.
- Regularly inspect the site with the relevant contractor to determine that the items contained in the checklist have been implemented in accordance with the instructions.
- Regularly inspect the site with the safety officer to review the established construction methods.
- Participate in and assist in organizing relevant safety and health training programmemers.
- Actively participate in and promote site safety and health programmemers and related activities.
- Participate in and assist in organizing relevant safety and health training programmemers.

Senior Foreman / Foreman / Assistant Foreman

- Implement the provisions of the Safety and Health Plan.
- Assist in the implementation of safety and health policies, measures and procedures at the site.
- Assist the site to identify hazards and assess and control risks.
- Guide and supervise staff to comply with relevant safety and health construction procedures.
- Ensure effective consultation on safety and health issues.
- Investigate accidents and accidents.
- Respond to safety and health advice and advice from safety officers, safety supervisors, government personnel and workers.
- Communicate dangerous messages to workers and learn about the latest safety and health legislation and information.
- Implement guidelines on safety measures and safe working methods.
- Be familiar with the statutory regulations applicable to the project and ensure that workers comply with the relevant regulations when carrying out the works.
- Incorporate safety instructions into routines and ensure that workers follow the instructions.
- Stop workers from taking unnecessary risks.
- Ensure that appropriate personal protective equipment has been distributed to the relevant workers and that the workers are properly used at work
- Pay more attention to new employees and make sure they understand and take the relevant safety precautions.
- Prevent workers from playing while working on the site, and provide appropriate corrections to workers who care about themselves and others.
- Ensure that all machines and equipment are operated by qualified personnel, promptly report any malfunctions to the immediate supervisor and stop using unsafe machines and equipment.
- Give workers appropriate guidance to ensure they are familiar with safe working methods and relevant knowledge.
- If there is any danger or unsafe condition, notify the management or site safety personnel immediately.
- Any person who seriously violates safety regulations immediately prohibits the person from continuing work and, if necessary, requires the site manager/deputy/security officer to order the offender to be removed from the site.
- Give workers appropriate guidance to ensure they are familiar with safe working methods and relevant knowledge.
- If there is any danger or unsafe condition, notify the management or site safety personnel immediately.
- Any person who seriously violates safety regulations immediately prohibits the person from continuing work and, if necessary, requires the site manager/deputy/security officer to order the offender to be removed from the site.
- Actively participate in investigations and follow up safety recommendations in the event of an accident occurring within the jurisdiction.
- If an unsafe condition is found, it is necessary to follow up immediately. If necessary, a "Safety Improvement Notice" will be issued and will be reviewed at the specified time to confirm that it has been improved to safety standards.
- Actively participate in and promote site safety and health programmemers and related activities.
- Perform fire prevention work (including: patrol fire and inspection of fire extinguishing devices, etc.).
- Subordinates, contractors, and workers explain the safety procedures for each job.
- Do your own safety performance as an example.

Mechanical group / electrician

- Implement the provisions of the Safety and Health Plan.
- Understand the correct operation methods, maintenance techniques and relevant dangerous parts of various machinery or equipment in the site, and use and store them carefully.
- Regularly inspect and repair various types of machinery, electrical appliances, equipment and other tools and safety installations on the site.
- Subordinates, contractors and workers explain the dangerous parts of each type of tools and machinery and provide relevant safety knowledge.
- Reflect problems and suggestions to the site manager/deputy, safety officer, various management and safety committees to improve the safety of the site.
- Actively participate in and assist in safety training and safety promotion.
- Monitor all types of machinery operators.
- In case of accidents, actively participate in the investigation and follow up improvement suggestions.

The Muck Hoist group

- Regularly inspect and repair tools such as Mud lifting Machine equipment and safety installations on the site.
- Regularly monitor the safety of subcontractors
- Assist with issues related to the Mud lifting Machine system
- Provide relevant safety knowledge to relevant subcontractors
- Provide appropriate operational training to the subcontractors that need to be used
- To reflect problems and provide suggestions to the site agent/deputy agent, safety officer, Forman management and safety committees to improve the safety of the site.

Lifting Supervisor

- Implement the provisions of the Safety and Health Plan
- Responsible for supervising all lifting work in the lifting area
- Regular check of valid certificates and conditions of hoisting machinery or spreaders
- Manage all mobile hoisting machinery
- In case of accidents, assist the safety team to investigate and follow up improvement suggestions
- Assist in urging the progress of the implementation of the site safety plan and encourage staff to provide safety advice
- Immediately stop the problematic lifting process and report it to the site manager
- To reflect problems and provide suggestions to the site agent/deputy agent, safety officer, Foreman and safety committees to improve the safety of the site.

Site Executive Officer / Administrative Clerk

- Implement the provisions of the Safety and Health Plan.
- Supervise the workers under the contractors to ensure that all workers hold valid construction industry safety training certificates and local work permit.
- Understand the methods of storage, handling and overflow of various materials.
- A copy of the Material Safety Data is submitted to the site manager/deputy manager, safety officer, site management, relevant contractors and those using the materials.
- Keep the office buildings, toilets, bathrooms and kitchens clean and well lit.
- Supervise the performance of security guards to ensure that entry and exit vehicles and vehicles meet safety standards.
- Actively participate in safety training and safety promotion activities.
- To reflect problems and provide comments to the heads / deputy heads, safety officers, site management and safety committees to improve the safety and health of the site.

Purpose

This control plan is established in order to control the compliance of Temporary Works ("TW") construction during the project construction phase. The procedure gives clear guidelines as to the standard and format to be used for Temporary Works in accordance with the control framework to be implemented and adopted in Kwun Tong project.

Scope

- All Temporary Works regardless of complexity;
- Method of construction of permanent works;
- TW's load and center of gravity to permanent works; and
- Except lifting appliances and lifting gear.

Special Task Force for Temporary Works Control

Project Director (PD)

- Overall management responsibility for design process, safe construction, use and removal of TW.
- Allow adequate resources on execution of control plan.

Project Manager (PM)

- Identify major TW and prepare master schedule.
- Functional level direction to Safety Team, Site Operation Team and Temporary Works Control Team.
- Integration between design and operational resources to determine and implement the most effective temporary work solutions.
- Coordination between design and site operations.
- Explore TW proposals.

Temporary Works Control Team

- Lead by Temporary Works Controller.
- Consists of Temporary Works Designer, Independent Checking Engineer, Registered Structural Engineer, Competent Site Engineer and Site Engineer.

Temporary Works Controller (TWC)

- Monitor erection, use, maintenance and dismantling of TW.
- TW acceptability based on safety, not programmemer.
- Inputs to initial planning, design, safety and build ability reviews.
- Erect TW in strictly accordance with the approved drawings.
- Investigate undue movement or potential collapse, with remedial advice being sought from the TWD.
- Regular site inspection and report in TW review meeting.
- Permit to Load & Permit to remove
- Stop work authority.

Temporary Work Designer (TWD)

- Communications with PM and TWC.
- Undertake and deliver major TW design – safe to build and operate.
- Regular site inspection and report in TW review meetings.

Independent Checking Engineer (ICE)

- Direct report to Executive Committee.
- Conduct checking to TW design (Category A).
- Stop work authority.

Registered Structural Engineer (RSE)

- Conduct checking to TW design (Category B).
- Conduct regular on-site inspection to TW on bi-weekly basic.
- Stop work authority.

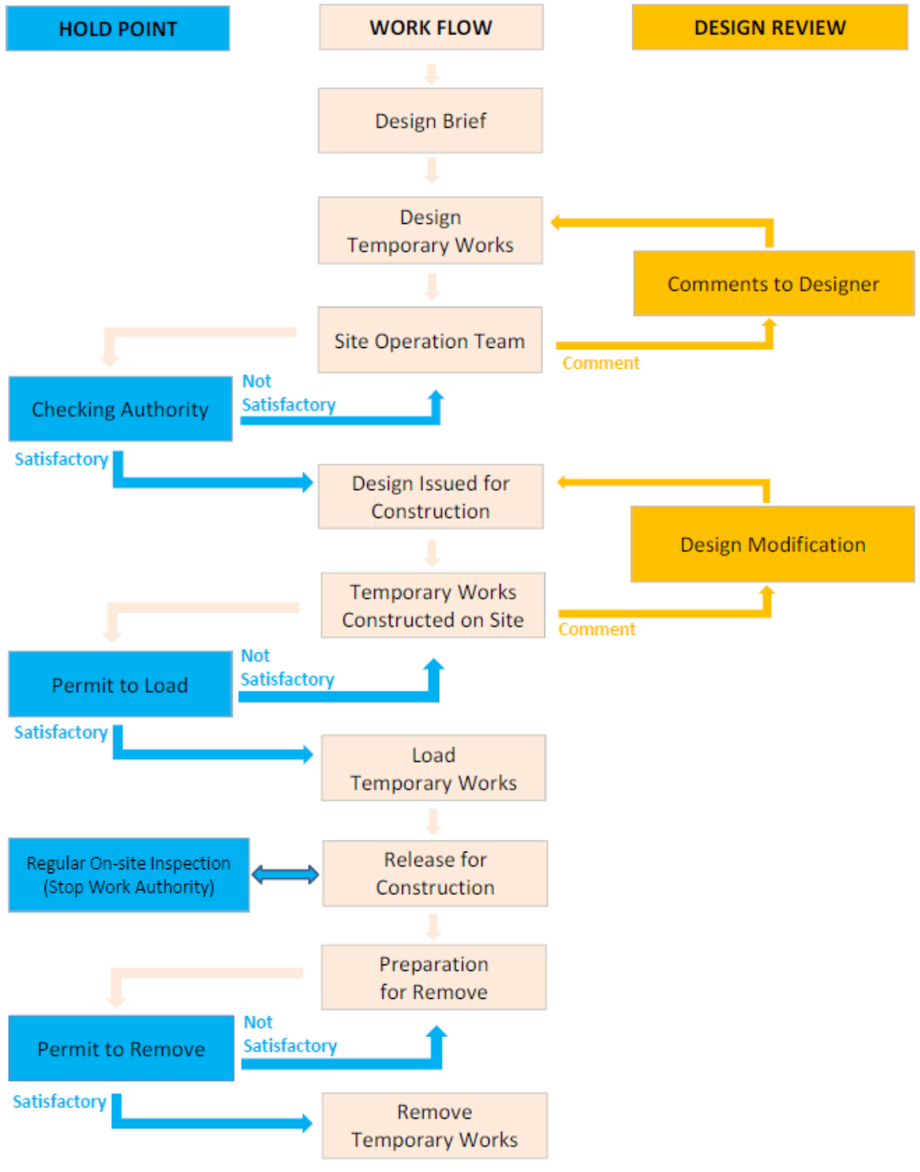
Competent Site Engineer (CSE)

- Conduct checking to TW design (Category C)
- Conduct regular on-site inspection to TW on weekly basic.
- Stop work authority.

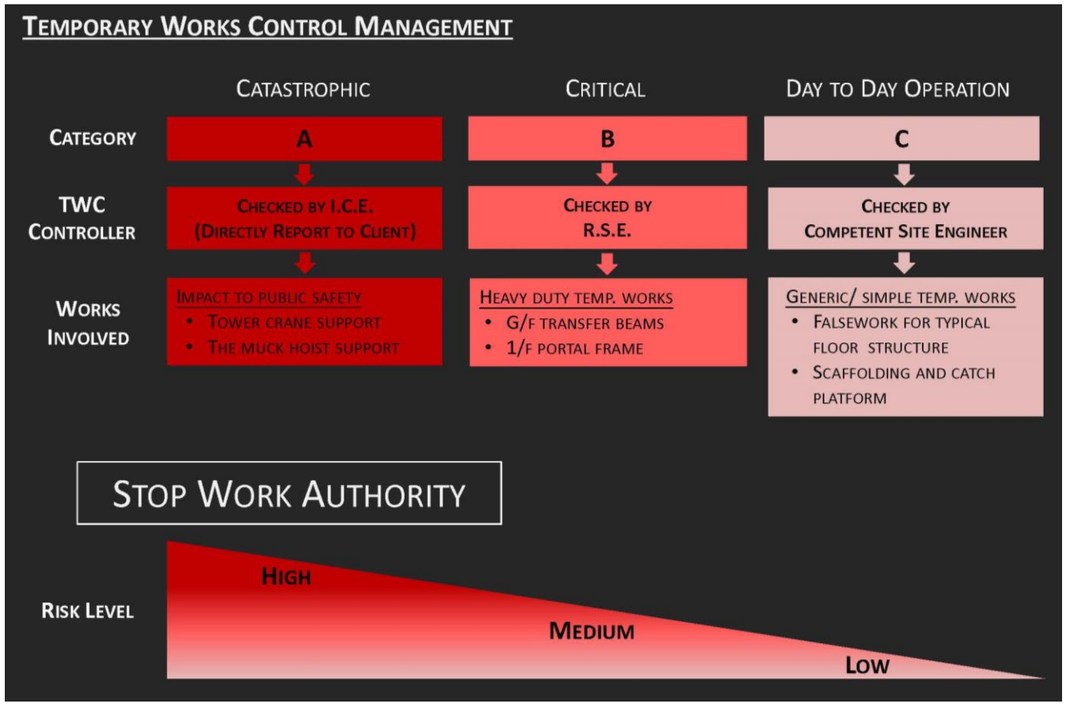
Safety Team and Site Operation Team

- Conduct checking to all necessary statutory forms prior to issuance of Permit to Load / Permit to Remove.
- Assist TWC on emergency procedure, including appointed Emergency Team Members, must be developed to cover any unforeseen eventualities in the lifetime of the temporary works construction.
- Assist TWC on risk identification and generate risk register.

4.1.4.2. TEMPORARY WORK CONTROL FRAMEWORK



4.1.4.3. TEMPORARY WORK RISK CATAGORIES



Risk Category A

- Temporary works having Impact on Public Safety
- Risk level : Catastrophic
- Design check by ICE
  - Parent Structures supporting tower crane
  - Temporary frames supporting the Muck Hoist

Risk Category B

- Heavy duty temporary works
- Risk level : critical
- Design check by RSE
  - G/F transfer beams
  - 1/F Portal Frames

Risk Category C

- Small sized, generic and standard design temporary works
- Risk level : day to day operation
- Design check by CSE
  - Falsework for typical floor structure
  - Scaffold and catch frame

4.1.5. SAFETY AND HEALTH TRAINING

When developing a safety and health training programme, it is important to note that it is possible to fully take care of every employee at every level to ensure that each employee is aware of the safety and health knowledge required and the Responsibility.

4.1.5.1. SAFETY AND HEALTH TRAINING PROGRAMME

- The company attaches great importance to the training of all aspects of the staff, and requires all staff to receive appropriate training, especially to make everyone pay attention to the safety and health of themselves and others to avoid accidents.

- Staff members are assessed for safety and health training programmes subject to statutory requirements and company requirements in accordance with their duties and responsibilities, and are required to perform relevant work through the required safety and health training.

- The Deputy Planning Director and Safety Officer are required to conduct regular (about six months) review of the safety and health training programmemer described below.

Establish safety and health training programmes

- The General Manager/Deputy General Manager and the Safety Officer determine the required safety and health training programmes (internal or external) and specify the items that the staff at all levels should receive.

- Management training content includes:
  - Leadership;
  - Communication skills;
  - Safety management skills;
  - Training, mentoring, teaching and problem-solving skills related to safety and health;
  - Understand the hazard from the perspective of a manager;
  - awareness of relevant legislation and appropriate control methods (including risk management); and
  - Awareness of the organization's planning, measurement, and review or review arrangements.

- Emergency response team members are required to receive emergency response training. The supervisor/deputy chief and safety officer provide appropriate and adequate emergency response training courses based on site conditions.

DEVELOP TRAINING PROJECT CONTENT

- The Site Agent/Sub Agent and safety officer shall design the contents of the training programme in accordance with professional guidelines and safety legislation.
  - Work procedures, methods of operation, risk assessment and corresponding safety measures for each type of work;
  - items that are hazardous to health and the corresponding methods of defense;
  - Emergency response exercises to train the strain and escape methods in the event of an emergency.

Monitoring of safety and health training effectiveness

- During the daily safety inspection, the safety team and the foreman will discuss with the staff the safety and health training contents of the site and the opinions and effects of the application in the daily work; the safety officer will take the advice of the staff as important reference material for the revision of the training course.

Use appropriate training materials

- The Safety Officer prepares clear and easy-to-understand training project handouts based on the progress of the project.
  - The safety officer prepares the equipment required for the training course and arranges the venue so that the training course can proceed smoothly.
  - The safety officer shall, according to the new technology and requirements of each line of work, perform regular (about six months) revision of the handouts and equipment of the safety training programme if necessary.

Arranging training courses

- Deputy Planning Director, Site Agent/Deputy Agent and Safety Officer prepare timetables for safety and health training, conduct regular internal training, arrange employees at all levels to participate in the required training programmes, and arrange staff according to the plan (especially responsible for high The risk worker) receives relevant or specific safety and health training at the designated external training institution.

- The Safety Officer or the Site Agent/Deputy Agent will inform the relevant trainees of the course, time and place prior to the training to enable early arrangements and attendance of the training courses on time.

- When new safety and health laws or skills are required to be known to the staff, the safety officer should arrange the training as soon as possible.

Construction Industry Safety Training Certificate Course

- All staff working on the company's construction site must have a valid construction industry safety training certificate or equivalent supporting documents before they can enter the site. This course is a required course of study and all levels of site staff must attend.

Entry Safety Introduction Training Course

- New arrivals to the site must first receive the induction safety briefing training course. The Safety Officer will prepare information on the induction safety briefing training courses, including the company's safety and health policy, general responsibilities, site safety and health codes, site emergency facility location maps, work injury handling procedures, and emergency response measures. The Safety Officer/Assistant Safety Officer/Safety Supervisor will explain to each staff member who arrives at the site that the safety and health training must be completed for each staff member to be employed or transferred to the local plate. All new staff working on the local plate must complete the induction safety briefing course within 2 days of arrival at the local plate.

Danger awareness and prevention training before starting work

- Each contractor must explain the training of potential hazards and preventive methods for each employee according to the nature of their respective industries before starting work. The content should also include the key points in their safety and health plans.

Site discussion training

- The safety supervisor/safety representative of each contractor shall provide site training for its subordinates at least twice a week for approximately 15 minutes. The course may be the person in charge of the contractor, the supervisor and the safety supervisor. And make a choice based on the situation at the time. The course content should be relevant to the daily work of the workers. The responsible person of the contractor shall record the status of each training with their respective training records.

- The Safety Officer is required to inspect the contractor's site training records on a monthly basis to ensure that each staff member receives appropriate site safety training.

Safety training record and assessment

- The safety team keeps records of safety and health training of all site staff, checks the training of each staff member, urges all staff to complete the required safety and health training as soon as possible, and reminds employees and site managers to participate in relevant new technologies.

Training course

  - The Safety Officer and the General Manager/Deputy General Manager regularly (every six months) assess the safety performance of each employee and coworker to determine whether the employee needs to retake the training course.

  - The results of the safety performance assessment will serve as an important reference for the appointment, salary and position adjustment of the company's employees.

  - All training must be kept in a correct record so that it can be used as a reference or evidence when needed.

4.1.6. SAFETY RULES

4.1.6.1. INTRA CONTRACT SAFETY CODE

In order to ensure that the safety and health management system and the implementation of the project can fully consider and implement the safety actions for the prevention of hazards, to achieve the company's safety and health policy objectives, effective implementation in the site, the company must clearly specify The internal safety rules and penalties are mandatory in the contract provisions to fully comply with the parties.

- Any person who violates the company's internal safety code or regulations will be subject to disciplinary action: warning, deduction or departure from the site.
- The Safety and Health Committee is required to review the existing internal safety code at each meeting and, if necessary, make changes or increase or decrease the code of the Code and review it once a year.
- the contractor and his employees are required to carry out site works in accordance with the existing site safety regulations, the Factories and Industrial Undertakings Ordinance and other relevant legislation; if the contractor negligently infringes the Ordinance or causes casualties, the contractor All prosecution fines, attorney fees and criminal or civil liability are borne.
- If the employees fail to comply with the safety regulations or the safety instructions issued by the principal, the principal has the right to give a verbal warning or a written warning and take deductions to the judgment; the judgment has not been actively improved. The principal has the right to issue a suspension order to the contractor until the improvement. The repeated violation of the contract is more likely to be terminated. All losses are borne by the contractor.
- The contractor shall arrange for the company or the resident person in charge to attend the "Site Safety and Health Committee" meeting arranged by the principal in time; or participate in the relevant safety seminar; if it is absent or late without the permission of the principal, the number of deducted Hong Kong dollars was round.
- The contractor shall arrange for the employee to participate in the mandatory "introduction safety training course" provided by the principal before the commencement of work. If the contractor fails to arrange for the employee to participate in the relevant course as scheduled, the administrative fee may be levied. The judge must also provide sufficient safety work instructions to the staff.
- The contractor must actively arrange for the employee to participate in the safety and health course offered by the principal.
- The contractor shall carry out periodic inspections or tests and inspections of the machinery (including the lease) for the self-prepared (including the lease) machinery and submit a copy of the relevant certificate to the judge.
- The contractor shall install the protective cover or protective equipment of the self-provided (including leased) machinery or tools in accordance with the law to be used in the site.
- The contractor shall prepare a personal safety protection plan, provide, train and maintain appropriate personal protective equipment to the employee with reference to local and internationally recognized standards and ensure that they are worn.
- The contractor must use the power supply in accordance with the current electrical safety regulations. A suitable waterproof plug must be used within the site. All self-contained power tools, machinery, wires, etc. shall be provided with water-line or anti-leakage devices; except for indoor fixtures, household wires shall not be used within the site, and industrial waterproof wires shall be used. Wires must be hung off the ground and should not be dropped on the ground. It is strictly forbidden to use "welding machine" that does not meet safety specifications.
- Any work at a height of 2 m or more (including scaffolding, work rigs or ladders) shall have a high guardrail of 900-1150 mm high, a guardrail of 450-600 mm high and no less than 200 A millimeter-high skirting board with a pedal width of not less than 400 mm. If the working platform is not used, a suitable full-body harness and anti-smashing net facility should be used.
- The protective gates and fences and the cover fences of all materials or sarcophagus carriages (loading

shelves), floor sills and elevator slots shall be returned to their original positions immediately after loading or unloading or moving.

- The person in charge shall comply with the "fire prevention" instructions of the principal, and it is strictly forbidden to illegally produce fire (demo) in the construction site. The wind coal shovel shall be equipped with the "anti-tempering device" of the specification; and the appropriate fire extinguisher shall be provided. It is also necessary to regularly clean up the garbage in its range of steps. All dangerous goods should be labeled and stored in the designated dangerous goods, and sufficient fire extinguishing equipment should be provided.

- All materials, machines, tools, etc. shall be properly stored according to the instructions of the chief judge. It is strictly prohibited to be stacked on the scaffolding, access passage, edge of the floor, edge of the cornice, etc.

- Excavation of excavation, drainage, construction of scaffolding (including iron frame), lifting machinery, locomotives, etc. shall be regularly filled in with designated reports/forms to the principal judges in accordance with the relevant statutory requirements.

- Operators' certifications required by law shall be required for the operation of the scales, loading racks, lifting appliances, gondolas, stoning guns and load moving machinery specified in the law.

- The principal has the right to amend the relevant security clauses in accordance with the legislation or additional regulations amended by the government during the term of the contract.

4.1.7. SITE SAFETY AND HEALTH CODE

Code of Management Personnel

- Measure the site environment and all equipment to identify if special permits and procedures are required.
- Prepare the relevant construction plan documentation as the basis for the detailed engineering plan.
- Safety and health issues need to be considered when formulating the construction method description and the relevant control methods are proposed.
- Identify potential risks such as each job and construction site.
- Establish specifications for control criteria for each type of risk, including construction safety systems, protective equipment, and training.
- Establish specifications for the person responsible for implementing the risk control guidelines.
- Arrange appropriate personnel to monitor staff compliance with risk control guidelines

4.1.7.1. CODE OF SAFETY AND HEALTH FOR ALL SITE

- Legally, employees must work with proprietors and others to comply with safety regulations and codes and must not be harmful to themselves or others.
- During work (including lunch time), do not drink alcohol or alcoholic beverages.
- When handling or lifting objects, the correct posture and method must be used.
- A suitable helmet and a Y-shaped chin strap must be worn within the site.
- Appropriate eye protection must be worn when constituting an eye injury procedure.
- Appropriate approved hearing protectors must be worn when working in noisy environments.
- Appropriate respirators must be used when working in highly polluted and dusty spaces.
- Appropriate and adequate safe import and export must be provided and maintained at each workplace in the site. Workers must use appropriate access and access routes.
- For high-altitude work, use appropriate, standard and sturdy workbenches (bamboo scaffolding and railroad workbench). All work must be inspected and issued by qualified persons.
- All lifting appliances and installations must have a valid inspection certificate and be operated by a qualified person or appointed person.
- Use suitable, standard and sturdy portable work benches and ladders.
- When using tools and machinery, the correct use, maintenance and repair must be observed.
- Ensure that all electrical tools, wires, plugs or connectors are performing well and that the wiring is properly connected.
- Smoking is strictly prohibited within the local disc. If necessary, the smoking area will be set at the designated location.
- Do not smoke or open flames in any area that stores flammable or explosive objects.
- If any hazardous work environment is found, it must be reported immediately to the company's safety team and other relevant responsible persons.
- If you are unfortunate enough to encounter an accident or accident, please keep calm, if necessary, go to the emergency room for treatment, and immediately inform the supervisor and the relevant person in charge of the company; in addition, the person in charge must follow the emergency procedures the provisions within the implementation of the relevant actions.
- Appropriate codes of practice will be included as additional local safety and health codes

Since 2009, the company has implemented a safety deduction system. Anyone who fails to comply with safety rules on the site may be deducted. If the deduction is 10 points, it will be banned from working for all sites in 3 months. For details, please refer to the poster, leaflet or enquiry to the security group.

4.1.7.2. SAFETY DEDUCTION SYSTEM

The company has implemented the safety deduction system since 2006. It was updated in 2009. All workers who violated the local safety and health code in the site will be subject to the contract. In addition to the administrative fee, the worker who violated the Code will also be deducted from the deduction system and deduct the score of the project. If the worker accumulates a full debit in one year, the worker will be banned at all. The site will work for three months. In addition to the confiscation of work permits, the right to enter all the sites will also be cancelled. For details, please refer to the poster, leaflet or enquiry to the security team.

Construction Industry Safety Training Certificate

Persons working on the site must hold a valid construction safety training certificate issued by the Construction Industry Training Authority or the Labour Department's Authorized Institution.

Licensed work permit

The person operating the machinery in the construction site (lifting machine operator, scale operator, driver, material elevator operator, dredge machine operator, earthmoving machine operator, forklift operator, electrician, etc.) must hold there is a relevant license work permit.

Safety and health regulations applicable to the construction site, including but not limited to the following:

Chapter 59	Factories and Industrial Undertakings Ordinance and its subsidiary regulations
Chapter 509	Occupational Safety and Health Ordinance and its subsidiary regulations
Chapter 59AF	Factories and Industrial Undertakings (Safety Management) Regulation
Chapter 295	Dangerous Goods Ordinance and its subsidiary regulations
Chapter 59AI	Factories and Industrial Undertakings (Gas Welding and Flame Cutting) Regulation
Chapter 51	Gas Safety Ordinance and its subsidiary regulations
Chapter 406	Electricity Ordinance and its subsidiary regulations
Chapter 470	Construction site lifts and tower working platforms (Safety Ordinance)
Chapter 123	Buildings Ordinance and its subsidiary regulations
Chapter 282	Employees' Compensation Ordinance
Chapter 57 of the Laws of Hong Kong	Employment Ordinance
Chapter 582	Construction Workers Resident Regulations
Chapter 59J	Factories and Industrial Undertakings (Lifting Appliances and Lifting Gears) Regulation
Chapter 59L	Factories and Industrial Undertakings (Wheels) Regulation
Chapter 59G	Factories and Industrial Undertakings (Woodworking Machinery) Regulation
Cap 59I	Construction Sites (Safety) Regulation
Cap 59S	Factories and Industrial Undertakings (Protection of Eyes) Regulation
Cap 59T	Factories and Industrial Undertakings (Work Noise) Regulation
Cap 59AG	Factories and Industrial Undertakings (Loadshifting Machinery) Regulation
Cap 59AC	Factories and Industrial Undertakings (Gondolas) Regulation
Cap 59AE	Factories and Industrial Undertakings (Confined Spaces) Regulation
CAP 59R	Factories and Industrial Undertakings (Bullet-Boarding Tools) Regulation
Chapter 56	Boilers and Pressure Vessels Ordinance
Cap 358	Water Pollution Control Ordinance and its subsidiary regulations
Chapter 311	Air Pollution Control Ordinance and its subsidiary regulations
Chapter 400	Noise Pollution Control Ordinance and its subsidiary regulations
Cap 502	Fire Safety (Commercial Premises) Ordinance
Chapter 327	Lifts and escalators safety regulations and their subsidiary regulations
Chapter 354	Waste Disposal Ordinance and its subsidiary regulations
	Waste Disposal (Designated Waste Disposal Facility) Regulation
	Waste Disposal (Construction Waste Disposal Charges) Regulation
Construction industry council	Separation work safety guidelines
	Site safety guidelines for working in hot weather
	Bamboo scaffolding work platform arrangement guidelines
	Construction Industry Cares Guide for Newcomers' Work Safety Plan
	Tower crane safety guidelines
	Lift slot work safety guidelines

4.1.9. SKILL TEST CARD

Professional workers (paint / decorator, nail board / formworker, tie iron, mud water / batch, flat water, hose, scaffolding, joinery, welding, tile, metal scaffolding, stone work, marble masonry Etc.) You must hold a skill test or other recognized certificate in the proportion required by the contract.

- The Site Agent / Deputy Agent, Safety Team officers and the foreman are responsible for monitoring the compliance of site staff with the company's internal safety codes and regulations.
- Safety construction procedures and safety and health hazard assessment reports must be prepared prior to the construction of the site.
- The Safety Officer and the Site Agent / Deputy Agent shall instruct the contractor who violates the company's internal safety code or regulations to complete the improvement measures within the time limit. If the subcontractor does not cooperate, the company will complete the improvement measures and deduct the funds to recover the cost of the agency and related administrative expenses.
- The Safety Officer and the Site Agent / Deputy Agent shall issue a warning or a notice of administrative fees to the person/contractor who violates the company's internal safety code or regulations and carry out the relevant procedures.

4.1.10. ADMINISTRATIVE EXPENSES FOR VILOATION OF SAFETY AND HEALTH MATTERS

Involving the content of the violation	*Fine amount*
Employees smoking or throwing cigarette butts in "non-smoking areas" on the site	$HK200 each time
Personal safety protection equipment	$HK500 each time
Site finishing	$HK1000 each time
Fire prevention measures	$HK1000 each time
Excavation engineering	$HK1000 each time
Confined space	$HK1000 each time
Hoisting machinery	$HK1000 each time
Gondolas	$HK1000 each time
Woodworking machinery	$HK1000 each time
Machines and tools	$HK1000 each time
Welding	$HK1000 each time
Wind coal	$HK1000 each time
Working noise	$HK1000 each time
Expired report / submit work injury report	$HK1000 per week
Safety regulations in the contract	$HK1000 each time
Electrical Safety	$HK3000 each time
Working at Height	$HK3000 each time
Scaffolding	$HK3000 each time
Cash machine operation	$HK3000 each time
Reporting work injury deposit	$HK3000 per order
High-altitude stolen goods	$HK3000 each time
Fence	$HK3000 each time
Lift operation	$HK3000 each time
Subordinate workers absent "job" safety training	$HK500 per person
Subordinate workers failed to present a valid peace and work permit with them	$HK200 per person
Late or not attending the meeting	$HK1000 each time
Failure to follow the instructions of a qualified site safety supervisor or safety representative	$HK1000 per person per day
Not assigned to the Qualified Safety Officer	$HK2000 per person per day
Employing illegal workers	$HK10000 per person per order

Use appropriate personal protective equipment

When choosing the right personal protective equipment, you need to study the various hazards at your workplace. Therefore, a risk assessment of the work is required to determine which personal protective equipment is most appropriate. The following factors should be considered when assessing which personal protective equipment to use:

- Can personal protective equipment be effective in preventing the hazards involved and suitable for use in the work environment? For example, eye protection equipment that blocks pesticides is not enough to provide adequate facial protection for workers who use steel grinders to cut steel or stone.
- Can personal protective equipment prevent or appropriately control the risks involved without increasing the overall risk?
- Can personal protective equipment be adjusted to match the user's body shape?
- Have you considered the health of the user?
- What is the need for the job? What are the requirements for users? For example, the length of time required to wear personal protective equipment, the physical strength required for the work, and the requirements for visibility and communication.
- If more than one personal protective equipment is to be worn, can the equipment cooperate with each other? For example, does the use of a certain respirator prevent proper wearing of eye protection? Whether the selected personal protective equipment meets the requirements of the Labour Department or international safety requirements.

The safety officer shall, in accordance with the law, determine the personal protective equipment required by the staff at all levels, and calculate the required amount and storage amount, and apply to the head office procurement department for purchase of the required equipment through the head/sub-manager. The requirements of the current legislation for personal protective equipment are as follows:

Hard hat and cap

Construction Sites (Safety) Regulation

In addition to the office buildings and lounges, helmets and Y-shaped caps must be worn anywhere in the construction area.

- Do not use a hard-hitting helmet as the impact force may significantly reduce the protection provided by the helmet.
- The helmet should be of the right size and will not fall when the wearer bends. However, if the wearer's forehead has a headband mark, it means that the helmet is too tight.
- All helmets should be properly marked to prevent the user from wearing the helmet of another person.
- Before using the helmet, check for cracks or dents and do not wear a damaged helmet.
- The wearer should determine a minimum distance of 30 mm between the headband and the inner casing.
- Caps and caps should be kept in good condition and any damaged parts should be replaced immediately.
- Do not throw a helmet or use it as a support.
- Use non-flammable and non-toxic solvents to clean asphalt, paint, oil stains and other adhering stains on the helmet. As some solvents may impair the performance of the insulating helmet, consult the helmet manufacturer's comments before selecting solvents.
- Care should be taken when oiling the helmet. Consult the supplier for the choice of paint for individual helmets.
- Workers should be instructed to wipe off the dust or water on the helmet before putting it away.
- The helmet should not be placed under the rear windshield, as the sun may affect its hardness and the helmet may strike the person in the event of an emergency stop or accident.
- Sites should be provided with appropriate storage shelves or lockers for the storage of helmets.
- Stop using worn or broken helmets and destroy them immediately.
- All helmets should be selected in accordance with the requirements of the Labour Department and comply with the relevant regulations.
- The helmet should be worn directly on the head and there should be no other caps or objects in the middle.
- The helmet must be equipped with a safety Y cap.

Eye protection

Factories and Industrial Undertakings [Protection of Eyes] Regulation Appropriate eye protection must be worn when engaging in the 14 specified procedures listed in the Regulation.

- The smallest particles entering the eye can cause serious consequences.
- Find qualified people (such as resident first responders) instead of colleagues to clean up the foreign objects in your eyes.
- If you cherish your eyesight, you should ask your employer to provide goggles
- Wear goggles provided by the employer, although it may be slightly uncomfortable, but can avoid blindness.
- Make sure the goggles are comfortable to wear and keep them clean.
- Goggles should be applied to protect the eyes, not on the forehead.
- Do not look directly at the welding work unless there is protective equipment to block the spark to avoid being injured by the spark.
- Protect your eyes with goggles or a face shield when handling acidic or alkaline liquids or solids, or other dangerous or corrosive items that can cause eye damage.
- Wear goggles and a face shield when using the grinding wheel.
- Wear suitable goggles when welding and cutting.
- Wear goggles when machining cast iron and non-ferrous metals.
- Wear goggles when cutting and welding metal or triple soil with tools.
- The wearer and supplier should ensure that the relevant goggles are suitable for workers wearing the procedure.

Respiratory protection

Construction Sites (Safety) Regulation

When performing work such as sanding, cleaning, spraying, mixing, or processing, which can cause dust or smoke to harm your health, you must wear appropriate breathing apparatus.

Hearing protection

Factories and Industrial Undertakings [Work Noise] Regulation

When working in a noisy environment with a noise exposure of more than 90 decibels (calculated every 8 hours), appropriate earmuffs or earplugs must be worn.

- If the following signs occur, the noise level has reached the dangerous level:
  - When you work, speak loudly and others can hear it.
  - Hearing is slow when he gets off work.
  - The brain is like thunder or tinnitus after work.
  - I don't know what others are saying.
- Instruments such as a volume meter can be used to measure noise. They are similar to the human ear in sensitivity to noise composed of different frequencies, and measure the "A-weighted sound level" in decibels.
- Prolonged exposure to an environment with noise exceeding ninety percent will destroy vulnerable cells in the inner ear, resulting in permanent deafness that cannot be treated.
- High noise can be irritating and tired.
- Noise increases the chance of an accident, because the noise distracts people and prevents people from answering warnings or horns from others.
- Noise should be reduced from sound sources as much as possible, including enhanced maintenance, barriers to sound absorbing materials, improved processes, machine speed adjustment and maximum use of lubricants.
- If noise cannot be reduced, the employer should provide earmuffs or earplugs for workers working in noisy environments.
- Staff should be alert to noise areas in the workshop, pump room and site. Warning notices should be posted at these locations and earmuffs should be provided when needed.
- The following table lists the time that can be spent in different noise levels:

Exposure time in different noise levels

Time (hour/day)	*Amount of noise (decibel)*
8	90
5	92 (wind pump)
2.5	95 (wind drill)
1.6	97
0.8	100 (mechanical lathe)
0.5	102
0.25	105 (windmill saw)
0.025	115 (diesel engine)

- When building or repairing, think about the residents in the area and try to minimize the noise.

Construction Sites (Safety) Regulations and Factories and Industrial Undertakings [Gondolas] Regulation

- When working in high altitudes will cause the human body to squat more than 2 meters, and it is not practicable to provide a workbench, it is necessary to wear a full-body safety belt and a tight-fitting stabilizer.
- When there is no suitable stabilizing object at the work site, it is necessary to use a squat prevention device and an independent lifeline as anchors for the seat belt.

The head office procurement manager selects the required equipment according to the company's pre-qualified suppliers and qualified personal protective equipment approved by the Central Security Group, and informs the safety officer or the site administration team of the relevant information.

The site administration team shall conduct receipt inspections based on the information obtained to ensure that personal protective equipment is suitable for use.

The Site Safety Team will send personal protective equipment to the relevant staff, and all issuance will be recorded and deposited.

In order to ensure that the personal protective equipment used at the site is a compliant product, the subcontractor is required to complete a "Personal Protective Equipment Report" stating the standards and required quantities of the equipment used and submitting them to the Safety Officer for record. The safety officer will conduct an audit in accordance with the information contained therein. If the equipment is found to have no approved specifications or is not approved by the Labour Department, the subcontractor will be notified to replace it. The safety officer will check the personal protective equipment of the workers from time to time. If the sub-contractor fails to perform the replacement, the safety improvement notice will be issued or a fine will be imposed.

The security team personnel and the site administration team conduct monthly inspections of the number of physical protection equipment in order to ensure adequate application.

The management personnel at all levels of the company and the responsible persons of the contractors shall regularly check the application of personal protective equipment of their employees to ensure that the equipment is good and effective, and hand over the inspection records to the safety officer for review and filing.

When the relevant staff member applies for personal protective equipment to the administrative/security team, they will be arranged to accept the use of the equipment by the security team.

All staff members must keep their personal protective equipment and the company will provide appropriate and secure places for storage on the site. If any personal protective equipment that is not applicable (out of specification, expiration or damage) is found, the user should immediately notify the Site Safety Team or its employer to replace it immediately.

TRAINING

The user's supervisor should provide the user with a training course that describes the appropriate usage.

Regularly check the use of personal protective equipment and thoroughly investigate any reasons for not using it.

The use of safety and health notices can effectively remind staff to use personal protective equipment.

Maintenance

The equipment after use should be stored properly, for example, in a dry and clean cabinet, or in the box or in a box with similar items such as eye protection. Equipment should be kept clean and properly maintained, and the manufacturer's maintenance schedule (including recommended replacement time and usage period) should be followed as much as possible. Simple maintenance can be performed by the responsible safety supervisor, but more complex repairs can only be performed by a professional.

Storage areas should be provided for spare protective clothing and equipment.

The site should have a log book that records the issuance of personal protective equipment for employees.

In order to avoid unnecessary wastage of time, appropriate backup personal protective equipment should always be available.

Monitoring

The safety team personnel randomly check the personal protective equipment of the staff from time to time, and if they find that the contractor has not fulfilled the relevant responsibilities, they will issue a warning or impose a fine. The contractor must check the personal protection of its workers every month to ensure effective and appropriate use.

Provisions on contractors

The contractual provisions relating to safety also apply to various size contractors. The following general safety and health requirements will be included in the contract:

- The contractor shall take all reasonable steps to ensure that all personnel work in a safe manner.
- All of the staff of the contractors is required to comply with the existing, revised and new Occupational Safety and Health Ordinance, the Factories and Industrial Undertakings Ordinance, the Construction Sites (Safety) Ordinance and other applicable statutory requirements and site safety programmemers.
- All staff members of the contractor must comply with the safety requirements specified in the contract.
- All safety personnel and fire protection equipment must be kept in good condition by all the staff under the contractor. If any fault is found, it should be reported to the contractor immediately.
- The contractor must provide personal protective equipment to the person employed by him.
- The Contractor shall take all reasonable steps to ensure that the personnel employed by him are properly using the personal protective equipment provided.
- All staff members of the contractor must comply with the safety team's guidance on safety matters.
- The contractor must ensure that all staff members must have a valid construction industry safety training certificate.
- If the contractor fails to comply with the above regulations and instructions, it may be terminated.
- The contractor must submit a Method Statement, a Safety and Health Plan, a Safety and Health Hazard Assessment Report, a report on machinery, tools and materials, and other relevant documents before the process and the relevant construction procedures must be approved by the construction team and the security team. The contractor must ensure that all of its subordinate workers are fully aware of their content and that they are fully observed.
- Contractors who are more than or employed in 20 site staff are required to appoint trained safety supervisors to perform daily safety matters, and less than to assign safety representatives to perform the same duties.
- The contractor shall arrange with the principal to conduct a pre-work safety meeting with the safety team prior to entering the company, briefing the relevant safety measures and ensuring that the judgment person understands the safety requirements of the principal.
- The contractor must carry out all the safety measures required by the law for the confined space works to be carried out, including conducting risk assessments, testing the gas, providing the necessary emergency equipment (including leasing) and providing sufficient qualified persons and approved workers. Wait.
- The contractor must comply with the requirements of the law. If there are underground or overhead cables or underground gas hoses within the scope of work, it must be ensured that all reasonable steps have been taken by qualified persons to ensure that they are carried out in and around the proposed site. The process does not destroy or affect the power supply or gas.
- The judge must wear protective shoes (safety shoes/water shoes) on the site, and not wear training shoes (commonly known as white rice fish), sandals or slippers, except as permitted by the safety team of the main judge. Wait.

If the contractor has special machinery use, the relevant information must be given to the site safety team in advance

The principal has a safety and health policy and a selection basis to assess select and control the safety and health performance of the contractor; when selecting the contractor to bid for various engineering contracts, the principal will be based on Negotiate past safety and health records as a guideline for choosing them. Contractors who have poorly performed in the past will be punished according to their poor performance. Punishment will include suspension or permanent termination of their competition.

In order to effectively carry out site safety work, in addition to the administrative fees, the principal judges will strictly adopt the following grading sanctions for the contractors and subordinate workers who violate the safety rules:

For the contractor

- ✧ Immediate stoppage.
- ✧ Termination of the relevant works contract
- ✧ Suspension of the bid for six months.
- ✧ Cancellation of the qualification of the principal in the company
- ✧ Points for the workers under the contractor
- ✧ Immediately stop work and leave the site.
- ✧ Shall not enter the original site.
- ✧ No entry into the construction site of the principal judge company.

Management and review subcontractor

The Purchasing Manager incorporates the company's safety and health requirements for subcontracting work into the terms of the subcontracting contract. When discussing the contract, it is necessary to clearly explain to the subcontractor the risks arising from the work and the corresponding safety measures. The importance of health requirements is only signed after the subcontractor fully understands and agrees to comply.

If there are changes to the safety and health requirements, the site manager shall notify the subcontractor of the changes and instruct them to continue the construction in accordance with the new regulations.

The sub-contractor owns any tools, machinery, equipment, articles and self-purchased materials in the site, whether the materials are used for temporary assistance or permanent structures, they are required to be reported to the site manager. It can only be used and stored after reviewing and recognizing its legal security, otherwise it will be removed from the site.

Safety officers, assistant safety officers, safety supervisors and foremen to monitor the performance of safety and health requirements of sub-contractors and their employees, to check the appropriateness of safety measures and to improve the areas where they do not meet the requirements. And follow up. When necessary, you can punish the sub-contractors who make mistakes repeatedly.

The safety officer will regularly rate (one month) the performance of the sub-contractor, and submit the result of the scoring to the deputy planning director for identification. Those who are not satisfied with the results will be warned, and those with the best scores will be praised.

The safety and health hazard assessment is a systematic identification of the hazards that may arise during construction and measures the risks that the hazard poses in the current safety measures, while estimating the risks encountered to the staff and others. The degree of damage caused by the official meeting, and therefore the corresponding security measures are proposed to avoid accidents.

Before a construction requires construction, the relevant engineer and/or contractor shall prepare a preliminary draft of the construction procedure for the type of work and propose the required safety measures before handing it over to the safety team in accordance with safety legislation and codes of practice. A risk assessment is required to determine safety measures that are suitable for both the construction and safety requirements. The relevant engineer and/or the contractor will prepare the final construction procedure for the type of work and confirm it by the main manager/deputy manager to ensure the safety of the construction according to the risk assessment of the operation.

The safety officer follows the steps below to perform a safety and health hazard assessment:

- Discuss the construction procedures or methods of the work with the head/deputy manager and engineer to identify potential hazards that may result in injury, illness, loss, etc.
- Use professional knowledge to assess and calculate the risk level of the hazard.
- Use the Safety and Health Hazard Assessment Form to record assessment results and develop safety measures that are necessary and in compliance with the requirements of the law.
- Send the applicable risk assessment form to the relevant personnel responsible for the work (including: the contractor) for guidance and reference.

The Site Agent/Deputy Agent and the safety officer review the feasibility of the safety measures and issue them to the relevant staff before they are approved. The head/deputy director and safety officer need to push the staff to implement the safety measures and try to avoid accidents.
Before the implementation of the work, the safety officer or the responsible person of the relevant contractor will use the contents of the safety and health hazard assessment form as safety and health training materials to explain to the relevant staff responsible for the work type so that they understand the risks and safety. Take action and then start work.

The district supervisors and security teams conduct inspections to monitor the practice of safety measures and ensure that the relevant safety measures are implemented in a practical and orderly manner.

The safety officer reviews the correctness of the risk assessment and the effectiveness of the safety measures. When the procedures or roles of the work change, it is necessary to make corresponding risk assessment and safety measures as soon as possible and notify the relevant personnel to follow up.

Safety and health hazard assessment procedures

- The safety and health hazard assessment will be carried out by the relevant contractor and the safety team will be available if there is any problem.
- The Safety Officer will collate the assessment report and develop the required risk control action plan for the results.
- The safety and health hazard asses
- Sent report will be reviewed and final approved by the Deputy Chief Planning Officer.
- The Method Statement and its safety and health hazard assessment report shall be approved by the Safety Officer and reviewed by the Deputy Chief Planning Officer. All works need to be approved and reviewed before they can be launched.
- District supervisors, foremen and safety supervisors will monitor the implementation of the action plan.
- The Safety and Health Hazard Assessment will be reviewed on a regular basis. Therefore, if necessary, amendments will be made as to whether the control measures are adequate.
- The instructions for the approved construction method should be communicated to the relevant staff and/or contractors, etc., and the relevant files should be kept in the safety group for record.

- Fire safety measures
- Working in confined spaces
- Working at heights
- Site Management
- Preventing high-altitude stolen goods
- Scaffolding work
- Underground public facilities
- Handling flammable liquids and gas enthalpy
- Pavement work
- Safety and Health in the Site Office
- Safety of crane operators
- Excavation work
- Lifting equipment
- Mechanical / Physical Processing and Lifting
- Temporary works
- Safe use of ladders
- Welding/Cutting Operations and Equipment
- Arc welding operations and equipment
- Site Transportation Procedures
- Safe use of chains, cables and lifting gear
- Safe operation of steel bending machine
- Safe operation of portable power tools
- Lighting and ventilation
- Compressed Air Tool
- Electrical installation
- Hand Tools
- Mechanical equipment
- Woodworking Machinery
- grinding wheel
- Health hazards of chemicals and dangerous goods
- Public Safety
- Safety Code for Slope Work
- Load moving machinery
- Gun Bolting Tools
- Open source operation and use rules
- Lift Slots Ordinance and Permit
- Gondola operation
- Non-road mobile machinery
- Cement Process
- Code of Practice for Mobile Lifts
- Safety Code for Terrace Work
- Installation of curtain wall safety rules
- Safety Code of Practice for Telescopic Discharge Platform
- Safety Regulations for Libra Hand Lifting
- Safety rules for the exit system

FIRE SAFETY MEASURES

Fire service installations are required to be installed in the site in accordance with the requirements of the Construction Sites (Safety) Ordinance and the Fire Services Department Fire Services Notice No. 13 "Fire Safety Measures for Construction Sites"

- Fire extinguisher: Provide a sufficient number of portable fire extinguishers suitable for the working environment in the site. Place the position of the fire extinguisher on the notice board and the place where the site is in the eye, and explain the type and use of the fire extinguisher.

- Temporary firefighting midway pump: A temporary firefighting midway pump must be installed every 30 meters of building height. The number of installation floors and locations of temporary firefighting midway pumps are indicated at the entrance of the site and at the entrance of the building.

- Fire route map: The office building on the site, the fire route map on the periphery and in the building must be posted in the eye to indicate that the designated employee can quickly evacuate the fire in the event of a fire.

- Fire Alarm Clock: Install a sufficient fire alarm clock at the appropriate location on the site to alert all employees when an alarm occurs. The fire alarm is regularly checked by the electric king to ensure proper operation.

- Fire drills: Through fire drills, train employees to escape the fire route when they encounter fire escapes and minimize casualties. Conduct at least one fire drill at regular intervals within six months.

- Fire Corruption Officer: A fire safety liaison officer is appointed by the supervisor/deputy director to perform the following duties:
  - Fire extinguisher allocation and inspection
  - Fire extinguisher training
  - Prepare fire drill time
  - Fire prevention measures at the site
  - Command firefighting operations
  - Arrange evacuation procedures
- Warning slogan: Post warning slogans in places where fires are prone to alert people to fire awareness.

- Permit Work Permit (Hot Work): When thermal work is required (including: welding, gas welding, flame cutting, etc.), you must apply to the safety team for a permit work permit (thermal work) and make sure that the thermal work is done. Fire protection measures can only be applied.

- Prohibition of fireworks: Local smoking bans are implemented on the site, and places where fires are prone to occur are designated as no-smoking areas, and no one is allowed to smoke or make fire in this area.

- Fire escape: During the construction period, it is necessary to ensure that the escape and the passage for the fire truck to go to the fire are kept unimpeded.

- Storage of flammable materials: The flammable materials stored in the site area should be stacked neatly to minimize the amount of storage and be isolated from other materials. The top and sides of each group of flammable materials should be

separated by a wide space. The storage location must be ventilated. The storage bin should be locked to prevent anyone from entering and nearby with fire-fighting equipment and warning notices.

- Site Management: Good site management can reduce the chances of fire, the speed of fire spread and the extent of casualties. Things to follow include:
  - Store materials neatly.
  - Regularly clean up discarded flammable packaging materials, wood chips, sawdust, etc.
  - Keep the escape route unimpeded.

- Store materials neatly.

- Regularly clean up discarded flammable packaging materials, wood chips, sawdust, etc.

- Keep the escape route unimpeded.

- Clean up the garbage: Regularly clean up the site waste to avoid accumulation and quickly remove flammable waste. After finishing work every night, arrange the work water to wet the unclean garbage.

- Storage of dangerous goods: All dangerous goods should be stored in the dangerous goods storage warehouse approved by the Director of Fire Services. Unused dangerous goods should be returned to the dangerous goods storage for storage. Safety guidelines for the use of dangerous goods must always be observed.

- Guards should patrol and watch for fires. If fire is found, it should be handled in accordance with the emergency procedures.

WORKING IN CONFINED SPACE

All confined spaces are clearly defined in accordance with the requirements specified in the Factories and Industrial Undertakings (Confined Spaces) Regulations; and the work sites involved in confined spaces in this project are water tanks and manholes. The definition of confined space includes (but is not limited to) the following:

- Very poor ventilation, difficulty entering and exiting;
- There may be dangerous gas accumulation or hypoxia;
- there is a danger of mud or water influx;

- Marks, warning signs and related documents (including: relevant risk assessment reports and permit work permits, etc.) must be posted at the eye of the workplace in a confined space;

- Establish a safe work system - a permit work permit system to ensure the safety of employees entering the confined space.

- All employees who need to enter the confined space must hold a valid sealed space work approved worker certificate issued by the authorized agency of the Labour Department and have the ability to perform safely.

- Each time before entering the confined space work place, a qualified person must conduct a risk assessment, and a qualified person should conduct gas testing and supervise the entire confined space.

- Sign and issue a permit work permit by an authorized person and specify the circumstances under which the construction can be carried out.

- Before entering the confined space and during the project, an approved gas tester shall be used to test the content of toxic and/or flammable gases.

- Install a ventilation system that supplies fresh air to employees working on the site.

- Develop emergency rescue procedures, provide training to employees involved, and conduct regular drills by emergency response team leaders to familiarize workers working in confined spaces with relevant rescue procedures.

- Have appropriate breathing apparatus, resuscitation equipment and rescue equipment, such as seat belts, lifelines, explosion-proof lighting, tripods, etc., in case of emergency. These devices require frequent maintenance.

- If an accident occurs in a confined space, you should immediately call the police and notify the site management personnel; do not enter the rescue yourself, otherwise the rescuer will become the next victim.

- Personnel entering the confined space must wear appropriate seat belts and tie the lifeline to quickly pull away from the danger zone in the event of an accident.
  - Approved workers entering a confined space must be at least 18 years of age and have received a one-day closed-space work training course at an accredited training institution.
  - Confined spaces (qualified persons) must be at least 18 years of age and have received a two-day confined space course at an accredited training institution to obtain a certificate or the safety officer has more than one year of confined space work experience to approve the risk assessment and test gas process .

Working at Height

Requirements as set out in the Construction Sites (Safety) Regulations and the work safety codes such as scaffolding.

- Every place where someone works in the site needs to have appropriate and sufficient safety import and export.
- Try to arrange the project to be carried out on the ground, in a building or in a building.
- If the above method is not feasible, suitable scaffolding with a suitable workbench must be provided for the staff.
- If it is not feasible to build a suitable workbench, a suitable safety net must be installed to prevent the human body from being injured due to kneeling.
- Wear a seat belt, add a suitable suspension rope, and secure the independent lifeline at any time to prevent the body from squatting. This should be the last safety measure to consider.
- The scaffolding used in the site must be inspected by qualified persons every 14 days and the results of the inspections should be reported in the specified form 5 to prove that the scaffolding is safe and usable. The inspection form must be submitted to the safety officer for filing.
- When the scaffolding is exposed to weather conditions that may affect its stability, it must be inspected by a competent person before it can be used again.
- Eligible persons responsible for inspecting scaffolding must have scaffolding skills test issued by the Construction Industry Training Authority and have over 10 years of relevant experience.
- When the scaffolding is inspected, it is found to be damaged. The person in charge of the inspection is required to report in Form 5 and report to the site management and arrange for the qualified workers to carry out the repair of the scaffold before they are inspected by a competent person. To confirm the return to a safe state, so that other workers can work in the shed.
- All scaffoldings above 15 m shall be designed and approved by a registered structural engineer.
- All places where the human body can fall more than 2 meters, such as the floor, stairs, work bench and bridge deck, must be installed with sufficient strength. The height must be between 450 mm and 600 mm (middle column) and 900 mm. 1150 mm (high column) guardrail.
- All holes lift slots and stairwells must be fitted with the above guardrails and skirting boards of not less than 200 mm high, or securely secured in the correct position with suitable covers.
- On the scaffolding workbench, the weight of the person and the weight of the material cannot be concentrated to avoid the collapse of the place due to excessive load.
- Working in the elevator slot (installing the lift)
  - Scaffolding constructed in the lift tank must be inspected by a competent person for safety and stability. The scaffolding shall be inspected by a competent person every 14 days and the results of the inspection shall be reported in the designated form 5.
  - If the scaffolding needs to be changed, it must be carried out by qualified shed workers. Do not dismantle any structure of the scaffolding to avoid affecting its stability.
  - The workbench on the scaffolding must be laid tight and installed with guardrails to avoid the use of rafts and sheds.
  - In addition to the use of the workbench, in order to prevent the body from squatting, sufficient independent lifeline must be installed in the elevator slot; all personnel entering the slot must wear seat belts and fasten the seat belt to the lifeline.
  - Do not place too much material on the scaffolding or working point to avoid excessive load and collapse.
  - The guardrail and skirting board of the elevator slot must be returned to their original position after each work.
  - Provide sufficient lighting equipment to the staff in the elevator tank.

Eligible persons

- Scaffolding, access and workbench qualified inspectors must have more than 10 years of experience in setting up/changing/removing scaffolding and be appointed by the company in writing.
- Eligible experienced persons who build/change/dismantle the scaffolding must have a bamboo shed skill test certificate issued by CITA.

Site management

Requirements as set out in the Construction Sites (Safety) Regulations.

- The site management or safety supervisor is responsible for the daily site inspection and inspection. When it is found that there are channel obstruction, unstable material placement, waste accumulation, etc., it must immediately notify the relevant contractor or arrange for manual handling to maintain the site. Smooth and safe and environmentally friendly.

- Before the contractors are required to transport the materials to the site, they must notify the Explorer/Vice Manager in advance to make the storage arrangements and follow the instructions to securely store the materials in the appropriate locations.

- Set up waste collection and temporary garbage collection at the construction site, and concentrate the waste disposal for transportation. Distribute the trash can to be regularly cleaned at the rest of the staff, and the lockers, lounges, dining halls and washrooms should be kept clean and hygienic.

- Any nails protruding from the wood must be removed or leveled immediately to avoid danger to workers on the site.

- Materials should not be placed in passageways, corridors and any escape routes to avoid obstructing escape routes or tripping over others.

- Chemical waste and greasy rags should be disposed of in metal drums and clearly labeled. If there is leakage, they should be cleaned up immediately.

- The floor of the construction site should be dry and not slippery. Clean up all areas of water and keep the drain open.

- Precautions should be taken to prevent mosquito breeding and not to repel mosquitoes.

- The scope of the project is not allowed to eat.

- Security guards, electric gates and clear signs are placed at the entrance of the site to prevent public misunderstandings.

- All passages and workplaces must be adequately illuminated to ensure the safety of site staff.

Reportable Accident Frequency Rate	RAFR = No. of Reportable Accident (>3 days) X 100,000/Man-hours Worked		
Year	2015	2016	2017
Man-hours	3600	3600	3600
Work Force	943	1921	2186
Number of Accident	17	23	26
RAFR	0.5008	0.3326	0.3304
Hong Kong Construction Industry RAFR	1.08	0.96	No data

Develop and maintain occupational safety and health awareness

During the project period, we will actively develop and promote occupational safety and health awareness, with the aim of encouraging the contractors, staff of various ranks and industry workers to take precautions for safety and health considerations; Plans for safety performance assessment, review and reference will be developed to monitor, identify, remind and recognize the good safety performance of individuals, teams, groups, departments or institutions.

In order to improve the safety and health awareness of employees at all levels of the site, the Planning Director/Deputy Planning Director and the General Manager/Deputy General Manager/General Manager, Safety Team and Site Administration Team will conduct various safety promotion activities, such as exchange of experience and holding Competition, installation of safety and health bulletin boards, posters, publication of safety and health communications, suspension of warning signs, setting up a safe and healthy book center.

Exchange of experience

At the site safety meeting, each contractor outlined the work-related injuries and causes of its employees and pointed out the implementation and effectiveness of the improvement proposals to remind other contractors to avoid repeating the same mistakes.

Safety competition

The site safety management team will select the best safety performance contractors and best safety performance model workers to be commended each month based on their safety and health awareness and positive attitude (the results will be displayed on the safety and health bulletin board). . The safety team should also organize irregular safety activities to raise workers' safety awareness.

Safety and health bulletin board

Install a bulletin board at the eye of the site, and post the safety project data determined by the safety officer according to the progress of the project and the statistical trend of the work accident, and display the accidental casualty statistics to pass the safety message to all levels of staff.

Safety and health poster

Install a bulletin board at the eye of the site to post safety project information determined by the safety officer based on the progress of the project and the statistical trend of work accident accidents, and display the accidental casualty statistics to communicate the safety message to all levels of staff.

Safety communication

The Safety Group of the Headquarters publishes a safety newsletter on a quarterly basis and distributes it to each employee and site contractors. It is also posted on the Safety and Health Notice Board.

Safety warning sign

If there is a potential hazard in certain areas, a safety warning sign should be hoisted to alert the worker.

Information and data system

The Safety Team will forward the information and data to help prevent accidents and/or continually improve the company's safety and health standards, as well as working methods, for reference.

- The Security Team shall establish an effective documentation and data management system to ensure that the information and data on hand is up-to-date.
- The site office should inform the relevant parties and the contractors of the information and data through written documents, meetings and training courses.
- For the statistics of accidents, the local offices should prepare the following information each month:
- Accident statistics
- Unexpected causes of need to be reported
- A report board will be installed at the entrance to the site to list the latest accident statistics.
- The Safety Officer shall report to the Planning Director/Report on the safety and health matters, activities and accident statistics of the previous month, including:
- Safety and health issues and remedies.
- Site management and safety inspections conducted by security personnel.
- Dangerous accidents/accidents and findings.
- Accident statistics.

Safety Inspections

All management and supervisory personnel shall carry out continual health and safety surveillance as they go about their day to day business and take immediate steps to remedy any defects or unsafe conditions and practices they observe.

Formal Site safety inspections, designed to systematically identify defects, unsafe conditions and practices and breaches of statutory or Site Safety requirements, shall be carried out regularly by Site Safety Officers & Safety Supervisors. Joint safety inspection shall also be carried out weekly by all domestic subcontractors and nominated subcontractors and senior management of the **Yee Fai** such as Project Manager, Site Agent etc.

The inspections shall be at intervals determined by Site Safety Officers.

Items that will be included during the inspection are scaffolds, ladders, cranes, grabs, winches, pulley blocks, chains and ropes, gin wheels, sheer leg, hoists, barriers, access routes, roadways, storage areas in general, fire hazards and fire prevention equipment, and first aid and emergency facilities. The inspection shall not, however, be restricted the above list.

A written report of the findings in the form of checklist shall be completed as soon as practicable after the inspection. A copy of all inspection reports shall be forwarded to the respective Project Manager upon issue. A master copy of all inspection reports shall be retained for the duration of a contract.

Inspection reports shall also be completed complying with the requirements of the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations and shall incorporate a follow up procedure to ensure that any defects identified have been promptly and satisfactorily remedied.

Any defects or weaknesses identified during an inspection shall be advised in writing to the party or parties concerned who are required to take prompt remedial action and also assessment, when made, should be given to the individuals so that they are aware of the results. This should be followed by a discussion on, and agreement of, plans for future action.

In order to facilitate the inspection of hazardous conditions on site, a monthly inspection will be carried out by the senior site management (e.g. Project Manager, Site Agent, site Safety Officer etc.) and the Safety Officer of the other site of us at the end of the month. The inspection programme is:-

A written report and a checklist will be completed and submitted to the senior site management for improvement by the Safety Officer of the other site of us.

The suggested improvement will be presented to the Director and implemented by the Project Manager and the construction team within 7 days.

The Safety Officer of the other site will check and ensure that corrective action has been taken in the next inspection

The results of the joint-site weekly safety inspections will be collated and analyzed the outstanding items at the end of the month by the Safety Officer and discussed in the site safety committee meeting.

Safety Audits

In addition to carrying out regular Site inspections, the Safety Officer shall establish and maintain a health and safety audit programme designed to provide in depth examinations of activities on a Site.

The audits shall be conducted using a comprehensive checklist and shall examine health and safety management techniques, compliance with statutory and Site safety requirements, accident and training records, working practices and any other relevant matters.The intervals between each audit of a particular activity shall be no longer than six months.

Each audit shall be subject to a written report which shall be submitted to the Project Director within ten working days of the completion of the audit and shall present a detailed assessment of the effectiveness of the general health and safety management programme and of the compliance with the requirements of the Company Health and Safety Plan.All personnel employed on a site are required to co-operate with the Auditor during the audit process and provide any assistance necessary for him to carry out the audit.

Any defects or weaknesses identified during an audit shall be advised in writing to the party or parties concerned who are required to take prompt remedial action.

Risk assessment

As an integral part of the accident prevention programme, the Project Management will implement arrangements to ensure that all construction activities are subject to a formal assessment of risk prior to the commencement of individual operations.

The criteria laid down in the BS8800 : 1996 Occupational Health and Safety Management System Annex D are the standard to be followed in carrying out risk assessment.

The foreseeable hazards operations associated with this project can be summarized follows:

- Working at height
- Excavation/confined space
- Use of machinery, construction plant and equipment
- Use of dangerous and hazardous substances
- Temporary works
- Use of electricity
- Scaffolding
- Use of circular saw machine
- Welding and cutting operation
- Use if Lifting Appliances
- Concreting
- Lifting Operation
- Erection and dismantling of Tower Crane
- Use of Gondola
- Use of Abrasive Wheel
- Noise
- Dusts
- Powered Hand tools and Hand Tools

Results of the assessment shall be submitted to the site safety management for implementation.

Project Manager and Site Agent shall be notified the preventive and protective measures recommended in the risk assessment report for follow-up.

Project Manager or Site Agent to eliminate the unsafe condition with the recommended control measures within agreed period.

All risk assessments should be continuously reviewed and up-dated where the process or working procedures has been changed or at six months interval.

All risk assessments will be continuously reviewed and monitored by Safety Officer.

Implementation of Risk Assessment

Before the commencement of any work activity, related method statement and / or working procedures will be received by the Safety Officer together with the Project Team Staff to assess and identify the risks which will be presented in the work environment.

Assessment shall be included details of the necessary precautions, identify types of PPE used. Formulate clear instructions for the personnel supervising and undertaking the work. During each stage of the project a review of the identified hazards listed will be taken and construction will be given to any other hazard which may be identified.

Risk Categories and Action:

- Low - for low risks no further action is required.
- Medium or High - action is required.

Control of Chemical Substance:

Every chemical substance that will be used in this project must have Safety Material Data Sheet to identify its risk categories.

Should there be a risk of these categories that may appear the following action shall be taken:

- Attempt to avoid the risk - to change material / process to a non-hazardous.
- Reduce by taken action - change material / operation to a less hazardous one.

Based on the hazard analysis, safe code of practices and distinct safe working procedures will be adopted in method statement to eliminate / mitigate hazards. In order to ensure the implementation, the frontline staff (e.g. site Forman, safety supervisor etc.) is delegated to check the recommended control measures in the risk assessment. The procedure is:-

- The site Forman/Safety Supervisor will check the control measures in accordance with the risk assessment while they take a site walk.
- A checklist is completed and submitted to Project Manager for further action.
- A warning letter will issue to the relevant parties by Project Manager for rectification
- Site Foreman/Safety Supervisor will follow the suggested improvement and ensure that corrective actions have been taken.
- Site Safety Officer will review this tailor-made system at six months interval.

Statutory requirement:

- Cap 509: Occupational Safety and Health Ordinance.
- Cap 509: Occupational Safety and Health Regulations.
- Cap 59: Factories and Industrial Undertakings Ordinance
- Cap 59: Factories and Industrial Undertakings Regulations.
- Cap59: Factories and Industrial Undertakings (Fire Precautions in Notifiable Workplaces) Regulations.
- Cap 59: Factories and Industrial Undertakings (Dangerous Substances) Regulations
- Cap 295: Dangerous Goods Ordinance

Fire prevention management and measures are an important element in the project to effectively improve, reduce and avoid any fire and human casualties. Our company will take the following 4 points as the main control measures.

Fire exits, evacuation channel settings

Through the overall planning of the project, due to the progress of the project, appropriate fire escape routes and emergency meeting points will be developed at different times.

Place an escape instruction at the workplace in the workplace.

The escape route is provided with a sufficient number of lighting systems with backup power, and the fire emergency evacuation procedure is displayed within a reasonable range of the route.

A sufficient number of sirens are set throughout the site to notify all persons on the site to evacuate the emergency meeting point as soon as the fire occurs.

Keep fire escape route free from any obstructions.

Maintain good house-keeping will reduce the chances of a fire.

Hydrants, pump and potable equipment

Fixed fire pump

A fixed fire pump must be installed to supply water to the concrete above 30 meters. When the height of the building is high

When approaching 30 meters, you should check with the local fire station for details on installing a fixed fire pump

The position of the fire pump must be close to the ladder, but the fire escape path must not be blocked.

Each fire pump must be fitted with a standard in accordance with British Standard 336.and 65 mm diameter water in / water out. Each inlet/outlet shall be operated independently by a spiral-type screw switch, opening the spiral the switch does not need to be turned counterclockwise. The opening and closing points should be clearly opened in both Chinese and English.

The fire pump must be fitted with a bleed valve

The fire pump shall output not less than 900 liters of water per minute while maintaining all outlets. Operating pressure is not less than 350 kPa, but in any case cannot exceed 850 thousand Pascal.

A plan shall be displayed at the entrance of the site to show the location of the fixed fire pump.

The entrance to the underground ladder and every suitable distance must be hung in the eye. To the sign, the route to the fixed fire pump is displayed.

Fixed fire pump power supply

Each fixed fire pump must be connected to the main power source at the site.

The power supply must be sufficient to handle the simultaneous operation of fixed fire pumps installed in each building.

The wires must be fixed to the wall. Each fire pump must be connected to the duplicate wire of the split line to avoid complete interruption of power supply in the event of mechanical damage. It is best to install the wires in a metal conduit or wire way for protection so that there is no need to separate the wires.

One of the composite wires shall be connected from the main power supply and the other shall be connected from the front. These wires must be connected to an automatic transfer switch installed near each fixed fire pump. If the normal power supply fails for any reason, the switch will automatically switch to the auxiliary power supply to supply power to the fire pump.

Portable fire extinguisher

A 9 liter water-based portable fire extinguisher shall be placed for every 200 square meters of built-up area. There should be no more than one fire extinguisher per layer. The fire extinguisher must be placed near the ladder. Each site office must have a 9 liter water dispenser portable fire extinguisher.

Training and Fire Drill

Provide safety training on the use of fire extinguishers and contingency measures in case of emergency through the site guidance course (intake safety training).

Emergency evacuation drills are conducted approximately six months to ensure clear evacuation of workers and procedures for evacuation.

The Safety Officer will assist the site manager in conducting emergency evacuation drills and will immediately ensure that all industry workers have reported at the assembly point.

The emergency response team members and the safety officers are required to review the relevant emergency procedures, preventive safety measures and rehabilitation procedures at the site safety meeting to improve the contents of the existing emergency response plan and enhance the emergency response the efficiency of the accident.

Fire Fighting Plan

Fire service installations are required to be installed in the site in accordance with the requirements of the Construction Sites (Safety) Ordinance and the Fire Services Department Fire Services Notice No. 13 "Fire Safety Measures for Construction Sites".

Fire extinguisher:

Provide a sufficient number of portable fire extinguishers suitable for the working environment in the site. Place the position of the fire extinguisher on the notice board and the place where the site is in the eye, and explain the type and use of the fire extinguisher.

Temporary firefighting midway pump: A temporary firefighting midway pump must be installed every 30 meters of building height. The number of installation floors and locations of temporary firefighting midway pumps are indicated at the entrance of the site and at the entrance of the building.

Fire route map: The office building on the site, the fire route map on the periphery and in the building must be posted in the eye to indicate that the designated employee can quickly evacuate the fire in the event of a fire.

Fire Alarm Clock: Install a sufficient fire alarm clock at the appropriate location on the site to alert all employees when an alarm occurs. The fire alarm is regularly checked by the electric king to ensure proper operation.

Fire drills: Through fire drills, train employees to escape the fire route when they encounter fire escapes and minimize casualties. Conduct at least one fire drill at regular intervals within six months.

Fire Corruption Officer: A fire safety liaison officer is appointed by the supervisor/deputy director to perform the following duties:

- Fire extinguisher allocation and inspection
- Fire extinguisher training
- Prepare fire drill time
- Fire prevention measures at the site
- Command firefighting operations
- Arrange evacuation procedures

Warning slogan: Post warning slogans in places where fires are prone to alert people to fire awareness.

Permit Work Permit (Hot Work): When thermal work is required (including: welding, gas welding, flame cutting, etc.), you must apply to the safety team for a permit work permit (thermal work) and make sure that the thermal work is done. Fire protection measures can only be applied.

Prohibition of fireworks: Local smoking bans are implemented on the site, and places where fires are prone to occur are designated as no-smoking areas, and no one is allowed to smoke or make fire in this area.

Fire escape: During the construction period, it is necessary to ensure that the escape and the passage for the fire truck to go to the fire are kept unimpeded.

Storage of flammable materials: The flammable materials stored in the site area should be stacked neatly to minimize the amount of storage and be isolated from other materials. The top and sides of each group of flammable materials should be separated by a wide space. The storage location must be ventilated. The storage bin should be locked to prevent anyone from entering and nearby with fire-fighting equipment and warning notices.

Site Management: Good site management can reduce the chances of fire, the speed of fire spread and the extent of casualties. Things to follow include:

- Store materials neatly.
- Regularly clean up discarded flammable packaging materials, wood chips, sawdust, etc.
- Keep the escape route unimpeded.

Clean up the garbage: Regularly clean up the site waste to avoid accumulation, and quickly remove flammable waste. After finishing work every night, arrange the work water to wet the unclean garbage.

Storage of dangerous goods: All dangerous goods should be stored in the dangerous goods storage approved by the Director of Fire Services. Unused dangerous goods should be returned to the dangerous goods storage for storage. Safety guidelines for the use of dangerous goods must always be observed.

The guards should patrol and pay attention to the presence of fire. If fire is found, it should be handled in accordance with the emergency procedures.

Site office

- The environment provides adequate lighting, ventilation, no smoking, keep it tidy, etc.
- The passageway is unobstructed and suitable escape routes are provided to the site entrance and exit. The contractor shall be provided with a covered walkway from the entrance of the site wall (i.e. the entrance guard room) to the site office.
- Facilities provide safety and construction report boards, first aid supplies, self-service drinking water equipment, etc.
- The slogan notice board provides escape instructions, safety and environmental promotion, making good use of resources, etc.
- The public access provides an automated emergency lighting system that maintains adequate lighting when the power is interrupted and is equipped with adequate fire extinguishers.
- The lighting requirements of the office are not less than 500Lux from the brightness of the lamp to the ground.

Worker rest area

- The environment provides adequate lighting, keeps neat, etc.
- The layout requires a sufficient number of dining tables and seats, with unobstructed access and suitable escape routes.
- Facility adequate hand washing and cleaning equipment, such as hand washing trays, etc.
- Place a covered trash can and collect and clean up the garbage properly.
- Provide automatic drinking water equipment
- Equipped with adequate fire extinguishers
- Mobile lounge in the upper construction floor
- Self-service drinking water facilities and suitable fire extinguishers in the lounge, etc.
- Fixed worker rest area with air conditioning equipment

Subcontractor's Office

- The environment provides adequate lighting, ventilation, no smoking, keep it tidy, etc.
- Arrangement requirements
- It is recommended to use metal materials and it is forbidden to use flammable materials.
- Provide electricity and lighting, power systems must meet regulatory requirements
- Centralized subcontractor's office in designated areas for easy management and efficiency
- Standardized construction
- Provide an independent office to the subcontractor
- Unobstructed passage and suitable escape route
- Properly separate the passage between the person and the car
- Place a covered trash can and properly collect and clean up the garbage
- Self-service drinking water equipment
- Equipped with adequate fire extinguishers
- Set up a notice board outside the office, and post the name, person in charge, contact number, etc. of the office.

Anti-mosquito measures

- Drainage system properly treats sewage and removes stagnant water
- If you can't remove the water, spray mosquito oil or mosquito killer.
- Proper use of mosquito killers to avoid damage to health and the environment, and to carry out no less than one anti-mosquito work and spray related mosquito killers every week
- It is recommended to use anti-mosquito equipment and record the time of mosquito killing

On-Site PPE showroom

Fire Booster Pump

Safety Alert & Safety Banner

Ice Making Machine

Washing Facility

Safety Railing and Toeboard

Fully Boarded Planking

Air Conditioning
Worker Rest Area

Safety Netting at Building Envelop

Pedestrian / vehicle segregation

Noise Barrier

Lift Shaft Gate Door

Shower Room

Designated road crossing point

First Aid Station

Recycle Bins

Wheel Washing Facility

Material Storage Area

Environmental protection measures

- The drowning water must be sediment and separated before it can be discharged.
- Oil slag, engine oil, etc. must be stored on the metal chassis to prevent oil from spreading in the construction site, to reduce the spread of dust, especially the location of the underground driveway.
- Slogan notices promote environmental protection, make good use of resources, etc.
- Set the car wash pool at the gate of the vehicle entering and exiting the vehicle to reduce the pollution of the road on the street.

Waste, garbage, sewage treatment

- Garbage buckets are installed on the floor during construction, and garbage is properly collected and cleaned.
- Covered trash cans for each main channel and properly collect and clean up garbage
- Stairs shall be installed with temporary sump and corresponding drainage system to drain rainwater and stair water
- Properly provide temporary water, provide collection wells and corresponding drainage systems, and regularly clean up stagnant water

Temporary power supply and lighting system

- Waterproof equipment for distribution boxes, electric systems, plugs, etc.
- Distribution box post responsible for electrician name and contact number and lock
- All cables are suspended from the ground
- Provide adequate lighting and automated emergency lighting systems in every floor of the lift lobby, corridors, etc.
- LED spotlight illumination at the patio location
- Provide adequate lighting and automated emergency lighting systems in floors, stairs and passageways during construction

Other

Minimum regular management inspection every 3 months

Welfare facility

Temporary toilet

- Setting up lighting and ventilation systems
- Set up enough restrooms (one for every 50 people, the minimum two; the smallest flush toilet in every 5 floors)
- Temporary toilets should be well managed and maintained
- Place it outdoors and use solar power to provide ventilation and lighting

Punching equipment

- Bathroom notice
- Setting up lighting and ventilation systems
- Provide hot and cold water equipment and clothes storage rack
- One for every 100 people, the minimum setting is 2, and then one more for each 200 people on the site.

Clothes equipment

- There must be a clothes drying area in the village, and a 3 meter long drying hanger should be set up in each of the 5 steps.
- Set sun or ventilated place
- Provide clothes area instructions

Drinking water equipment

- Set enough drinking water points (every 50 people, the minimum number of sites is 2, and each additional 200 people must add another one)
- Provide drinking water machine notice
- Daily clean drinking water equipment
- Drinking water equipment provides good management and maintenance
- Setting up ice machine

First aid room

- Set up a first aid kit and first aid supplies, stretcher bed, rescue cage, wheelchair, automatic cardiac defibrillator device (AED)
- Resident registered nurses assist in the treatment of the injured and provide blood pressure services

Report and investigation of accidents and dangerous accidents

- In the event of injury, the person in charge of the injured person or the supervisor shall notify the site owner and first responder present at the manner indicated on the emergency handling procedure (Annex VII).
- The responsible person in charge of the seat/area shall report the injury to the main/sub-manager and the safety team. The first-aid shall bring the required first-aid equipment to the incident site.
- First-aid personnel should make appropriate rescues to the injured. If the injury is considered serious, they should immediately contact the relevant government departments for assistance.
- After receiving the notice of work injury, the preliminary accident report must be submitted to the main office building and security team within 24 hours.
- Submit the completed Form F.2(A) to the Labour Department within 14 days of the issue under section 17 of Part III of the Factories and Industrial Undertakings. If any person is killed, they will be submitted within seven days. Proper Form F.2(B). The F.2(A)/(B) form or other statutory report submitted to the government department is also required to be submitted to the Manager/Security Section.

Accident investigation

A thorough investigation should be conducted as soon as possible after each accident to determine the cause and take corrective action to prevent accidental recurrence. The main work is as follows:

- In the event of a dangerous accident or accident that causes death, serious injury, or serious loss, an investigation must be initiated immediately to determine the cause and measures are in place to prevent repeating the same mistake.
- Near miss cases and minor accidents should also be recorded and investigated immediately, as these situations reveal a deficiency in the safety management system.
- The investigation should be conducted in an open and positive atmosphere to encourage witnesses to speak freely. The main purpose of the investigation is to determine the truth of the facts in order to prevent the occurrence of similar or even more serious accidents in the future.

The frontline staffs of the general manager/deputy chief, security team, foreman and first responder who handle the accident are required to receive proper training on the accident investigation and reporting so that they can act quickly and correctly on the incident.

When the accident occurred in the local disk is not serious, the relevant personnel must follow the following procedures.

- If the first aid kit is used, the first aid should write the situation on the "First Aid Record Book" and immediately notify the Explorer/Deputy General Manager.
- The relevant foreman needs to record any accidents in the "site log" and notify the security team immediately.
- The safety officer shall report to the safety team of the head office on the same day with a preliminary accident report, and complete the investigation report within 14 days and submit it to the supervisor/deputy general manager for follow-up.

Accident investigation and follow-up

The Safety Officer shall lead the accident investigation work in accordance with the following procedures:

Data collection

- Shoot and draw down the scene of the accident;
- Check the relevant equipment, work location or materials and site environmental factors;
- Inquire about the injured, witnesses and other relevant persons;
- Consult professional advice when necessary;
- Identify individual sub-contractors related to the event;
- Study the objects found at the scene of the accident.

Analysis

- Determine the original construction plan;
- Analyze the responsibilities of the injured person;
- Reorganize the situation at the time;
- Reorganization of the incident;
- Determine the moment of departure from the original plan;

- Consider all possible causes and identify the most important causes, identify the actual behavior or negligence that led to the accident, and make recommendations for improvement.

The general manager/deputy chief, the plumber, the amnesty and the relevant contractors must assist the safety team in conducting the accident investigation. The safety officer completes the investigation report, outlines the accident occurrence and causes, and proposes improvement suggestions. The general manager confirms the proposal and sets the execution deadline. The report will be submitted to the relevant authorities and, if necessary, to the parties to the incident.

The Safety Officer follows up on the implementation of the improvement recommendations made and confirmed in the accident investigation report to avoid the same incident.

The safety officer should report the findings and immediate preventive measures to the Safety and Health Committee. In any case, report to the head office manager and the head office safety team.

Record and report accidents

Record the information that must be included in the accident: Details of the employer; details of the injured person or the deceased, such as name, age, sex, address, occupation, ID number, etc.; date and cause of the accident; the situation of the injured, List whether the injured person has caused death or incapacity due to injury.

- Serious injury or death: The Company must report to the Labour Department within 24 hours after the accident.
- Death due to serious injury: The Company must report to the Labour Department within 24 hours of the employee's death.
- Fatal Accidents: The Company must report to the nearest police station within 24 hours of the incident.
- Unemployed accidents for more than one day: The Company must report to the Labour Department within 14 days after the incident.

Record and report dangerous accidents

The Factories and Industrial Undertakings Ordinance requires that every dangerous incident, whether or not it involves casualties, be reported to the Labour Department in writing within 24 hours of the incident. The Labour Department's standard Hazard Accident Report Form can be used.

Record the cause of a dangerous accident. A dangerous accident can be caused by the following factors:

- The power rotating container, the boring wheel, the grindstone or the grinding wheel burst.
- The crane, the truss crane, the winch, the hoist, the equipment carrying the passenger or the cargo collapse or fail in whole or in part, and the crane is tipped over.
- Explosion or fire damages the premises, premises, machinery or equipment and may result in personal injury or death or complete suspension of normal work.
- Short circuit or fault of electric machine, electrical equipment or electrical equipment has both explosions, fire, structural damage, so that it may be stopped or not applied.
- Explosion of containers or receptacles used to store any gas, liquid or solids above atmospheric pressure.
- All or part of the roof, wall, floor, structural frame or foundation belonging to a part of the site collapses, resulting in casualties or work stoppages.
- Other factors.

Employees at all levels should pay close attention to the occurrence of dangerous accidents and notify the supervisor/deputy chief and safety officer immediately. The company must report to the Labour Department within 24 hours after the occurrence of the dangerous accident. The safety officer is required to report the monthly accident record to the head office safety team on a regular basis.

Unexpected trend analysis

The Safety Officer conducts an "accident trend analysis" of the accidents that have occurred on a regular basis (every three months), analyzes the nature of the injury, the location of the injury and the type of accident, and reports the results of the analysis at the meeting of the Safety and Health Committee to remind Workers pay attention to work-related injuries and avoid accidents.

All accident records are reported to the site personnel and the head office safety team on a monthly basis and displayed on the industrial accident statistics board of the site to let the staff know the safety status of the site.

The main purpose of this site security plan is to set up a general physical site security system for the Commercial Development project which located at LOT No. 240, HOW MING STREET KWUN TONG ,KOWLOON.

Objective of the Site Security Plan-

The objective of the site security plan is to establish an effective and efficient site security system in the above said construction site, in order to reduce the security risk and provide sufficient protection site assets during the construction period *(Estimated the whole construction development phase is from . 2018 to 2022)*.

Site Security Team

A sizable security team is the main skeleton of the whole site security system. The site security personnel are to carry out all site security measures in order to safeguard entire construction site assets and enforce site security rules throughout the whole construction period.

Security Team Manpower Projection- The present manpower projection of the site security team is developed under the current tentative construction planning. Due to the dynamic and unexpected aspects of the construction works, the number of the site security guards ought to be flexible to fulfill unforeseen site security needs.

Projected Security Postings and Duties- A site security team manpower projection was designed according to the different construction phases. Maximum 30 day security guards and 14 guards are suggested to deploy to different security posts and tasks by the end of the construction works. The site security team is to provide security services on site including public holidays. To provide 24 hours on site security services, a two-shifts 12 hours duty system will be implemented throughout the construction period.

Security Patrol- Security guard will conduct routine site security patrol every two hours. Patrol routing (to be confirmed) will be setup upon the strategic point is established.

Security Guard Qualification Requirements- All on site security guards must be a valid security guard permit (Blue Card) holder that issued by the Hong Kong Police Department under the Security & Guarding Services Ordinance (Cap460) and who must possessed a valid Construction Industry Safety Training Certificate (Green Card) as well.

Safety Training & Personal Protective Equipment- All on site security guards must attend site safety induction and other compulsory trainings that provided by site safety officer. Safety helmets, safety shoes, reflective vests, and electrical torches must be equipped, wear and used by the security guards.

Emergency, evacuation, typhoon and rainstorm procedures

- The following procedures are general rescue and protection arrangements for emergency and/or weather conditions.
- The 24-hour emergency response contact form (Annex 2), the Emergency Response Team (Annex 6), the Emergency Procedure (Annex VII) and the Fire Evacuation Procedure (Attachment) should be clearly posted on the site notice board and other eye-catching positions. Eight).

Emergency procedures

If someone is injured or feels unwell, he needs to be sent to hospital for medical treatment.

- Immediately contact the site office based on the 24-hour emergency response contact form.
- The emergency response team and first responder should be present immediately after receiving the report.
- The head of the emergency response team shall decide whether to call for help based on the circumstances.
- The first aid provider shall perform appropriate first aid for the injured person/patient until the ambulance/medical personnel arrive at the scene.
- If the location of the incident is within the site, the emergency response team should lead the government rescue personnel to the site.
- If the location of the incident is within the site, the head/deputy director shall ensure that the access to the site is unimpeded.
- If necessary, the main/deputy mains should further determine that appropriate lifting equipment is available to assist in removing the heavy objects that are being tilted.
- If necessary, the Explorer/Deputy General Manager shall provide appropriate and sufficient means of transport to meet/deliver the injured/patient.
- The Chief Focal Point of the Emergency Response Team will be responsible for coordinating coordination with government rescue personnel.

Fire or explosion

- Immediately contact the site office according to the emergency contact form.
- Start the nearby fire bell.
- Use nearby fire-fighting facilities to fight fires where feasible and safe.
- The emergency response team and first responders should arrive immediately after receiving the report.
- The head of the emergency response team shall decide whether to call for help based on the circumstances.
- The first aid provider shall perform appropriate first aid for the injured person until the ambulance/medical personnel arrive at the scene.
- If the location of the incident is within the site, the emergency response team should lead the government rescue personnel to the site.
- If the location of the incident is within the site, the head/deputy manager shall ensure that access to the site is unimpeded.
- If necessary, the main/deputy will further determine that appropriate lifting equipment is available to assist in removing the heavy objects that are being tilted.
- If necessary, the Explorer/Deputy General Manager shall provide appropriate and sufficient means of transport to meet/deliver the injured.
- The Chief Focal Point of the Emergency Response Team will be responsible for coordinating assistance with government rescue personnel.
- The safety officer should notify the head office and the fire prevention officer as soon as possible.

The excavation project found buried bombs/historical monuments left over from the war.

- Immediately contact the site office on the basis of a 24-hour emergency response.
- The emergency response team should be present immediately after receiving the report.
- Completely enclose the suspected bomb/historic site and do not let anyone enter.
- The supervisor of the emergency response team shall decide whether to call for help according to the circumstances.

- The head/sub-manager shall decide, based on the circumstances at the time:
  - Call for help
  - Request additional assistance
- If the location of the incident is within the site, the emergency response team should lead the government rescue personnel to the site.
- If the location of the incident is within the site, the head/deputy manager shall ensure that the access to the site is unimpeded.
- The Chief Focal Point of the Emergency Response Team will be responsible for coordinating coordination with government rescue personnel.

An accident has occurred and a dangerous situation has occurred

- Dangerous conditions include flooding, discovery of unidentified gas, discovery of buried bombs and ground traps during the excavation.
- Immediately contact the site office on the basis of a 24-hour emergency response.
- The emergency response team should be present immediately after receiving the report.
- Completely enclose the area suspected of having an unknown gas, and do not let anyone enter.
- The head/sub-manager shall decide, based on the circumstances at the time:
  - Take remedial works immediately
  - Call for help
  - Request additional assistance
- If the location of the incident is within the site, the emergency response team should lead the government rescue personnel to the site.
- If the location of the incident is within the site, the head/deputy manager shall ensure that the access to the site is unimpeded.
- If necessary, the main/deputy will further determine the appropriate lifting equipment to assist in removing the heavy objects that are being tilted.
- If necessary, the Explorer/Deputy General Manager shall provide adequate and appropriate means of transport to the site.
- The Chief Focal Point of the Emergency Response Team will be responsible for coordinating coordination with government rescue personnel.

Evacuation

Emergency evacuation should be carried out immediately if the situation requires immediate danger to the person present.

Emergency evacuation procedure

- The head/sub-manager shall order evacuation when:
  - Out of control in an emergency
  - Immediate danger to the people present
- The general manager/deputy director or his representative shall initiate an evacuation horn to instruct all personnel to evacuate immediately to the designated assembly point.
- Supervisors should assist each person in evacuating along an emergency evacuation route.
- The Emergency Response Team shall ensure that all personnel are evacuated as directed.
- When evacuating, the machine/equipment operator should immediately stop working and turn off the machine/equipment and evacuate as directed.
- The general manager/deputy director must name/number of people at the meeting place.
- At the same time, the person in charge of each negotiation shall count the number of employees under it and report to the Chief Focal Point of the Emergency Response Team.
- If a person is suspected to be missing, the general manager of the head/deputy/emergency response team should report immediately to the government rescue staff.
- All persons should remain in the meeting place until the Director/Deputy General announces "returnable position" or "dissolution".

Typhoon and heavy rain

- When the typhoon signal or rainstorm warning is hoisted at the observatory, the administrative team will use the communication equipment such as walkie-talkie and telephone to notify all emergency response team members and contractors.
- The site office should be designed to block the wind and be a suitable shelter.

Typhoon signal No. 3 or red rainstorm warning

- Clean all drainage systems, pits and drainage pits on the site.
- All loose objects and temporary buildings should be covered and tied.

- Check and tie the ropes of the structure.
- Consolidate temporary structures that are unstable or have no support.
- Consolidate or aggravate all flow signs, notices, fences, etc.
- Test the backup power supply system.
- Test all emergency equipment and materials for backup.
- Remind the duty engineer.
- Arrange for the emergency response team to wait.
- Lower and stabilize all booms after work.
- Each station/district manager shall inspect the entire site and report to the head/deputy.
- During the red rainstorm warning, the head/deputy manager should consider the individual circumstances and decide whether it is necessary to suspend the work of the outdoor workers and arrange for temporary evacuation to the indoors.

10 Typhoon signal or black rainstorm warning

- Stop all projects immediately, and all outdoor workers must take shelter in a safe place as soon as possible.
- Secure all machines.
- Fix and tie all the formwork with the support.
- All manholes, caves, and passages should be covered to prevent water ingress.
- Lock the doors and windows before leaving.
- The general manager/deputy director/or his representative shall make sure that everything has been arranged before leaving and that no one other than the security guard remains on the site.

After a typhoon or rainstorm

The Site Agent/deputy Site Agent shall inspect the entire site and report to the responsible Project director.

The heatstroke information and code are as follows:

Heatstroke symptoms

- Very thirsty;
- Easy to get tired;
- Weak limbs;
- Nausea, headache;
- dizziness or short-lived confusion;
- The skin is wet and pale;
- Rapid pulse and weak emblem, even muscle pain;

Prevent heat stroke measures, hot weather warning

- Prompt the daily weather conditions of the workers. When the hot weather warning is hoisted, there must be special arrangements in the process to prevent the heat stroke of the workers.
- Any discomfort in the body must be reported to the foreman;
- If you have to take medicine, you must report it to the foreman;
- It is strictly forbidden to drink beverages containing alcohol;
- Provide adequate drinking water.
- Working in hot weather for a long time, any discomfort must be reported to the foreman;
- Work long hours in hot weather, use canvas to make tents, and reduce the body's exposure (when reasonably practicable);
- When working in a sealed place for a long time, there must be sufficient ventilation equipment and measures in accordance with the closed air;
- Adequate ventilation must be provided on low-lying or unventilated environments;
- Sun umbrellas or canvas shades must be provided in an exposed environment;
- Wear light-colored clothes to reduce heat build-up;
- Develop rest periods and reduce long-term physical exertion, such as a 15-minute break in the morning and a 30-minute break in the afternoon;
- Excessive sweating should not be wiped off immediately with a towel, otherwise the body will sweat and sweat, causing severe dehydration and heatstroke or shock;

Treatment after heat stroke

- Quickly evacuate the high temperature environment that causes heat stroke, and choose to rest in a cool and ventilated place.
- Replenish water, preferably a salty drink, or mineral water.
- Sprinkle water for the patient instead of letting him immerse in cold water. The water splashed on the skin evaporates faster to increase the efficiency of cooling. Or wet the patient with a freezer or cold towel and, if possible, move the patient to a location with air conditioning.
- In the forehead, apply moisturizing oil, wind oil and so on.
- If there is a drop in blood pressure, it should be placed supine immediately after being collapsed and sent to hospital for treatment.

4.8. HELATH CARE STATION

- Health Care Station has a registered nurse resident to assist with injured workers. And provide blood pressure services. Store all first-aid items and regularly inspect and maintain all first-aid items. First aid equipment includes the following, but not limited to (stretcher bed, wheelchair, AED, rescue cage, rescue hanging blue, medicine box, resuscitator), etc.

- Health Care Station has information on the real-time monitoring of the status of all workers wearing smart helmets on the site and the environmental monitoring index of each district.

- Intelligent display alarm system works with telecom operators and the telecommunications operator checks once a month to ensure normal operation.

- When the index reaches a dangerous level, the radio broadcast system can be used to immediately notify the workers in the relevant areas to coordinate accordingly (e.g. increase rest time, fill water, carry out rescue work, etc.)

4.9. SMART DASHBOARD

An intelligent monitoring system was set up at the site to assist management staff in monitoring all staff and personnel on the site. System settings mainly include:

- various types of sensors;
- Wireless / Iot Technology (Lte) System
- I Cloud Central System
- NFC System
- Bluetooth System

This intelligent monitoring system is mainly divided into four major functions.

Access Control

- We provide each worker with a smart helmet and connect with the designated smart work permit.
- Through the smart helmet and smart work permit, it is possible to monitor whether the worker has entered the disc authority, the location and the personal health status of the worker.
- The scope of construction that workers can enter, such as general areas, mechanical operation areas, and Danger Zone, can be used to control the range accessible to workers in a more efficient manner;
- Through the system, we can effectively know that the workers are concentrated in the construction of the surrounding areas and the number of people in each type of work, so that our company can effectively use resources and management;
- The intelligent system can also monitor the operation and access of waste disposal vehicles. It can effectively know whether vehicles handling waste have left the site and whether they have gone to the designated legal waste disposal area to dispose of industrial waste according to statutory requirements;

Environment Condition

- Various types of sensors are installed in the construction area of each district, real-time monitoring (temperature, humidity, wind strength, noise, air quality, and UV index), etc.
- Through smart helmet positioning, workers can download information from the iCloud to know the environmental information of the area in which they are located, allowing workers to take different construction procedures or take corresponding measures.
- The system data is uploaded to the site system in real time, allowing us to make the best environmental improvement plan or make process change arrangements in response to changes in the process.
- A display panel is set up in each area to display the sensor data. Allow all people to consider the environmental impact during construction, and also remind workers to work with appropriate personal protective equipment.

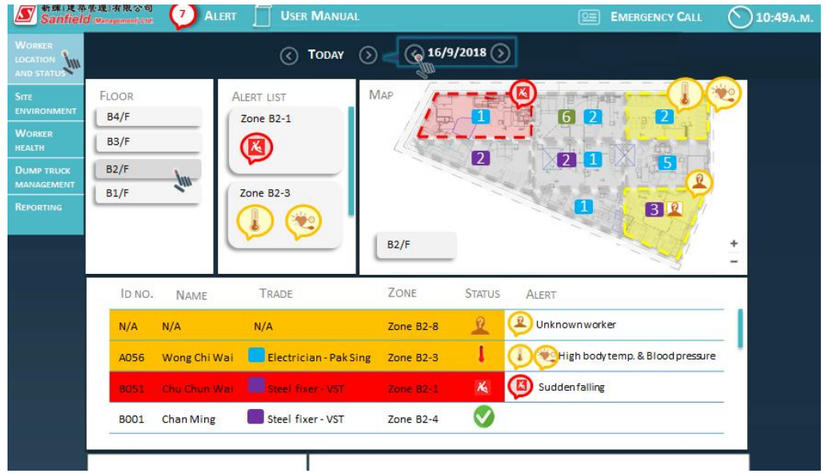
Worker Status

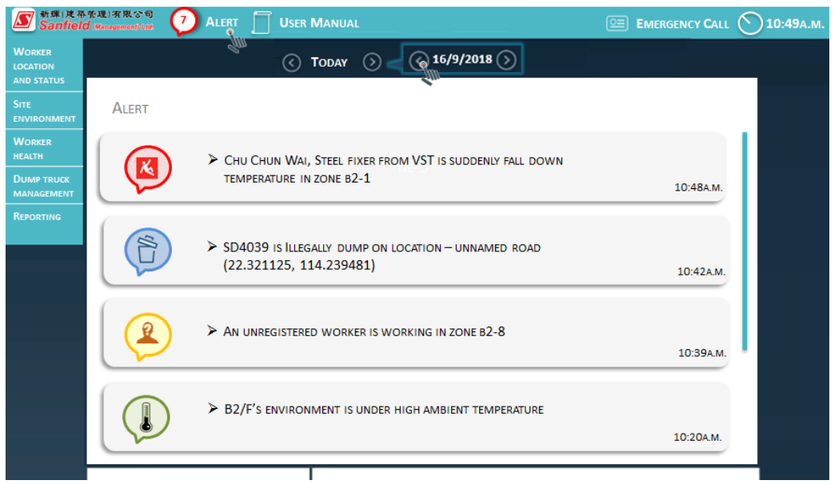
- The personal safety data and general physical condition of the worker have been contained in the smart helmet system in conjunction with the smart work permit.
- In the event of reaching a dangerous level, an alert will be issued to remind the worker to suspend work and seek relevant assistance.

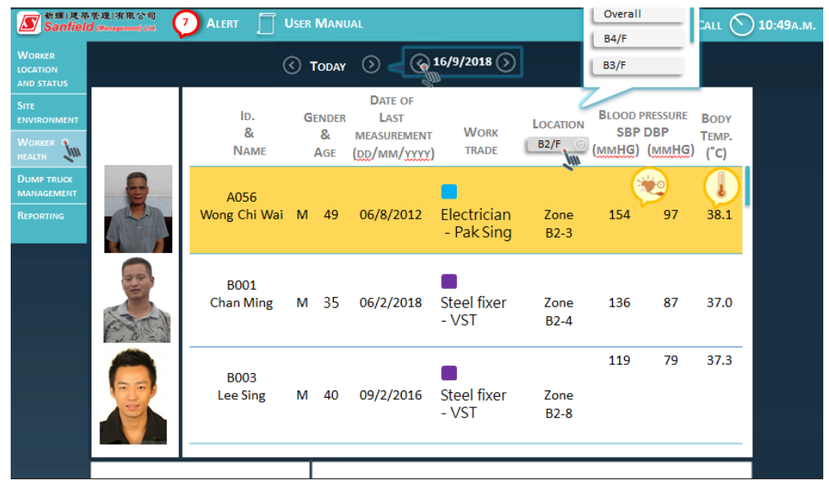
- When workers are physically fit, they can send out distress signals through smart phones. The site monitoring system can know the information of help workers and the exact location. They can contact the resident workers of the workers in the quickest way and provide assistance to workers in the shortest possible time.
  - If the worker is unwell or fainting or heatstroke, the body stops working for a period of time and the intelligent system automatically uploads the data to make an alarm in the central system.
  - In the event of an emergency, if the fire needs to be evacuated to an emergency meeting point, the number of people can be reviewed to confirm that all people have left safely or to confirm if someone is trapped.

Danger Zone Alarm

- An intelligent control system is set up in each of the dangerous areas to restrict access to authorized persons. The entry of each authorized person will also trigger the alarm system to let the insiders know about the activities of the people in the dangerous area. Arrangement.
- For heavy machinery in operation, when the alarm system sounds, the heavy machinery will automatically stop working together.
- In addition to the flashing lights, the Hazardous Area Warning System will also make a sound, and at the same time, all persons on the site will be reminded by hearing and visual, not to enter the danger zone.







5. ENVIRONMENT RELATED MANAGEMENT

5.1. LEED/BEAM PLUS IMPLEMENTION

Yee Fai will take all necessary action to comply with the credits which are stipulated in the specifications of Building Environmental Assessment Method (BEAM Plus v.1.2 NB) and Leadership in Energy and Environmental Design (LEED v4). we shall also complete all related pre-assessment reports, checklists and provide all supplementary information as required to ensure that each credit is achieved.

We commits to conduct effective site environmental management and carry out good construction practices, including the provision of mitigation measures to control different site emissions (i.e. noise, dust, effluent, waste and soil management), as well as selection of green building material.

An experienced employee shall be nominated and responsible for management and co-ordination of all BEAM Plus & LEED submission. The BEAM Plus / LEED coordinator shall be with LEED GA/ LEED AP / BEAM Pro qualification and conform the site environmental performance to comply with the BEAM Plus and LEED requirements specifications.We will provide effective environmental management system and prepare the implementation plan for the project to fulfil the scheme requirement. The implementation plan includes but not limited to the following:

We provides effective environmental management system and prepares the implementation plan for the project to fulfil the scheme requirement. The implementation plan includes but not limited to the following:

- Organization Chart of the work flow
- Environmental Management Plan (EMP) / Erosion and Sedimentation Control (ESC) Plan
- Construction Waste Management Plan
- Baseline Monitoring Measurement and Report
- Monthly Environmental Monitoring and Audit Report
- Temporary Timber Works Record
- Construction Indoor Air Quality Management
- Water Quality Survey
- Material Selection
- Energy Efficiency Performance

Credit cateaorv in BEAM Plus & LEED certification

BEAM Plus v.1.2 NB	*LEED v4*
Site Aspects (SA)	Location and Transportation (LT)
Material Aspects (MA)	Sustainable Site (SS)
Energy Use (EU)	Water Efficiency (WE)
Water Use (WU)	Energy and Atmosphere
Indoor Environmental Quality (IEQ)	Material & Resources (MR)
Innovation and additions (IA)	Indoor Environmental Quality (EQ)
	Innovation (IN)
	Regional Priority (RP)

5.1.14. ENVIRONMENTAL MANAGEMENT PLAN (EMP) /EROSION AND SEDIMENTATION CONTROL (ESC) PLAN

Yee Fai will prepare and submit a project-specific Environmental Management Plan for the project. The plan will be aware significant environmental impact arising during demolition and construction. The EMP is reference to the generic 'Environmental Monitoring and Audit Guidelines for development project in Hong Kong'; 'Recommended Pollution Control Clause for Construction Contracts' and; 'Practice Note for Registered Contractors 17 – Control of Environmental Nuisance from Construction Sites'. The EMP includes the following but not limited to:

- Environmental Policy Statement
- Organization of the environmental team
- Environmental management responsibilities
- Inventory of licenses, registration particulars and permits
- Identify pollution sources
- Alternative environmental mitigation measures
- Emergency and contingency plan

5.1.15. IMPACT MOINITORI

Yee Fai will provide the mitigation measures to reduce pollution from construction activities by controlling soil contamination, construction wastewater, noise emission and airborne dust. Impact monitoring shall carry out by weekly to monitor the site environmental performance and apply mitigation measures.

Air pollution

The site shall monitor and comply with the Air Pollution Control Ordinance and its subsidiary regulations, particularly the Air Pollution Control (Open Burning) Regulation and Air Pollution Control (Construction Dust) Regulation and Air Pollution Control (Smoke) Regulation.

An independent qualified laboratory shall be appointed to conduct the construction dust monitoring. All equipment and instruments to be adopted for the monitoring should have valid calibration certificates. The monitoring assessment is according to EPD Generic Environmental Monitoring and Audit Manual. A baseline monitoring shall conduct for 14 consecutive days at the representative air sensitive receivers prior to the demolition work or construction work commenced. 1-hour TSP monitoring shall undertake with a sampling frequency of at least three times in every six days after construction commencement. The air quality monitoring data shall be checked against the action and limit levels, event and action plan should be followed if monitory data exceed Limited Levels.

Noise pollution

The site shall monitor and comply with the Noise Control Ordinance and its subsidiary regulations. An independent qualified laboratory shall be appointed to conduct the construction noise monitoring. All equipment and instruments to be adopted for the monitoring should have valid calibration certificates. The monitoring assessment is according to EPD Generic Environmental Monitoring and Audit Manual. A baseline monitoring for noise level L_{Aeq} (30 minutes) shall conduct for 14 consecutive days at the representative noise sensitive receivers prior to the demolition work or construction work commenced. Impact noise monitoring for noise level L_{Aeq}(30 minutes) shall be carried out once per monitoring station by weekly during normal construction working hours(0700-1900 Monday to Saturday) after construction commencement. The construction noise monitoring data shall be checked against the action and limit levels, event and action plan should be followed if monitory data exceed the Action or Limited Levels.

The BEAM Plus / LEED coordinator shall control the noise emission from site has complied with the requirements with reference to 'Environmental Protection Department Practice Notice for Professional Persons ProPECC PN2/93' and 'Best Practice Guide for Environmental Protection on Construction Sites'.

Water pollution

The site shall monitor and comply with the Water Pollution Control Ordinance and its subsidiary regulation. All necessary measures stated in 'Environmental Protection Department Practice Note for Professional Persons' shall be undertaken to reduce water pollution generated from the site to the surroundings. Monitoring should be conducted with reference to the requirement in wastewater discharge license and Environmental Monitoring and Audit Guidelines. Laboratory test shall be carried out every month by HOKLAS accredited laboratory for the parameters given on Water Discharge License after construction commencement. Event and action plan shall be developed in order to mitigate the environmental impacts.

5.1.16. CONSTRUCTION WASTE MANAGEMENT PLAN (WMP)

Yee Fai will prepare and submit a project-specific construction Waste Management Plan for the project to recycle and/ or salvage non-hazardous construction and demolition waste. The plan shall indicate a Waste Management System that essentially in accordance with the guidelines provided in 'ETWB Technical Circular 19/2005'; 'Waste Disposal (Chemical Waste)(General) Regulation'; 'Practice Note for Authorized persons and Registered Structure Engineers 243'; and 'ETWB Technical Circular 21/2002'. The WMP includes the following but not limited to:

- All excavated materials to be sorted for recovering the inert portion of C&D materials
- All metallic waste to be recovered for collection by recycling contractors;
- All chemical waste to be collected and properly disposed of by specialist contractors; and
- Template of Waste flow table.

5.1.17. CONSTRUCTION INDOOR AIR QUAILITY PLAN

We will prepare and submit a project-specific Construction Indoor Air Quality Plan for the project. The plan shall specify proper management measure during construction, followed by cleaning and replacement strategies can significantly reduce air pollution caused by construction. The Plan shall include the following but not limited to:

- Checklist, worksheet and activities schedule
- Ventilation system components and air pathways protection measures to against contamination during construction
- Cleaning procedures of ventilation system component and air pathways to be employed prior to the building being occupied
- Control measures for HVAC system and component protection
- Contaminant source control measure
- Ensure provide adequate outside air continuously during installation of materials and finishes
-

5.1.18. INDOOR AIR QUALITY ASSESSMENT

An indoor air quality assessment shall be carried out after construction and before occupancy to ensure good living quality in terms of indoor air quality, indoor background noise and vibration performance. For the indoor air quality, the contaminant to be controlled including particulates, ozone, carbon monoxide, total volatile organic compounds (TVOCs), formaldehyde(HCHO) and Radon which must be accredited under ASHRAE/ISO/IEC 17025 for the test methods they adopted. The criteria for air-conditioned buildings shall be those defined under Good Class or above in HKSAR IAQ Certification Scheme as well as within the maximum concentration levels in LEED IAQ Assessment.

5.1.19. WATER QUALITY SURVEY

Yee Fai shall submit a report to demonstrate the compliance of water quality survey and samples taken from the selected sampling points shall be agreed with BEAM Plus/ LEED consultant. The testing shall show compliance with governing utility requirements including WSD Waterworks Ordinance, Plumbing Regulations, Water Services Application Procedure and Circular letter. An accredited laboratory shall be selected for water sampling based on Water Supplies Department's requirement. The supporting document in the report shall include the following but not limited to:

- Plumbing and drainage schematic drawings and layout plans
- Layout drawing highlighting the pipe routing and sampling locations
- Method Statement of Water Sampling
- Method Statement and Checklist for Cleansing and Disinfection of the Water System

5.1.20. MATERIAL SELECTION

Site Records of Cleaning and Disinfection of the water system **Yee Fai** shall purchase building materials following the the Employer's and architect's instruction to fulfil the BEAM Plus / LEED requirements by providing the catalogue and technical data sheet. The building materials includes the use of sustainable certified timber, low VOC emission sealants and adhesives, roofing materials, water saving appliance, energy saving appliance, recycled content materials, regional materials.

5.1.21. ENERGY EFFICIENCY PERFORMANCE

We shall carry out proper construction practices and provide supporting document to demonstrate the compliance with the Building Energy Codes under Building Energy Efficiency Ordinance. The supporting document to demonstrate compliance with the pertinent sections of the latest BEC version that include but not limited to:

- Building envelope, As-built plans
- Engineering data, material's test data, manufacturer's data
- Engineering analysis report prepared and certified by a qualified professional person

5.2. PUBLIC RELATION (PR) PLAN

5.2.14. INTRODUCTION

KT Real Estate Limited and Turbo Result Limited propose to develop the premises at 98 How Ming Street, Kwun Tong into a retain and office commercial development. The Project Architect is AGC Design Ltd. and the Project Structural Consultant is Ove Arup & Partners H.K. Ltd. The Authorized Person (AP), Registered Structural Engineer (RSE) and Registered Geotechnical Engineer (RGE) of the project are Ms. Grace Cheng, Mr. Lau Chi Kin and Mr. James Sze respectively. If we are being appointed, the Registered General Building Contractor (RGBC) responsible for basement and superstructure works is **Yee Fai**.

Large diameter bored piles and socketed steel H-piles have been constructed as the foundation while pipe piles have been completed as the retaining walls for excavation works. Top-down construction would be adopted in this site. While basement structure is being constructed, the tower structure is going up at the same time.

A tentative programme showing the planned Works was enclosed in Chapter 3.

The main objectives of this PR Plan:-

- ✧ Enhance communication channel with adjacent community;
- ✧ Exhibit our awareness on adjacent community;
- ✧ Formulate the route in handling compliant from adjacent community.

The above can be achieved by setting an action system to be enforced prior to the commencement and during the course of the works.

In carrying out the Works, nuisances will unavoidably be generated to adjacent community. The following measures shall be implemented:-

The Contractor shall set up an organization comprising competent management and supervision staff for executing the Works of this project. In particular, the Contractor shall appoint a Public Relationship Officer (PR Officer) who shall attend and respond to every complaint. The project organization chart of **Yee Fai** is attached in Chapter 4

Prior to carrying of the Works, adjacent buildings which may be sensitive to the Works are identified. Targeted buildings are listed:-

- Millennium City 1
- Millennium City 6
- Landmark East
- Crystal Industrial Building
- Wai Kee Industrial Building
- Hung To Centre
- Billion Trade Centre
- Wong's Building
- Fun Tower
- Hung Tai Industrial Building
- Wah Hung Building
- Hung Tat Industrial Building
- Wang Kwong Industrial Building

The Contractor shall give prior notice of the commencement of the Works to near-by owners/tenants by posting. The notices shall include notification on work programme. Standard notification memo in Chinese and English are attached in 5.2.20.

The Contractor shall arrange briefing sessions to the concerned groups / near-by owners / tenants, if necessary and agreed with related parties. The sessions will focus on nature, programme and other related details of the Works to be carried out on site.

The compliant shall be registered in a Complaint Register and Complaint Record Form which contain the following information;-

- Address of Compliant
- Contact telephone of complaint
- Date and time of complaint
- Date of inspection
- Date of monitoring works
- Date of repair works
- Written and photo record of any spalling and cracks at time of first inspection and after any repair work as well records of any vibration monitoring taken

The Records shall be kept on site for inspection by AP/RSE/ RGE. The Complaint Register and Complaint Record Form as attached in 5.2.18

The PR Officer shall take the following actions to resolve the compliant;
React positively and fast to complaint.
Identify the nature of complaint with respect to structural or non-structural aspects.
Take monitor measurement on the related compliant subject like vibration and noise at spot and explain explicitly the implication of the statutory requirements and the follow-up actions. The statutory requirements shall include:-
Carry out works within the working hours permitted by the Law;
Carry out works fulfilling the AAA levels for monitoring works. The AAA levels for Excavation & Lateral Support Works are given in monitoring plan.
Identify any physical defect on structural / non-structural elements, new or old.
Propose follow-up actions and method to remedy the physical defects.
Carry out remedial works to items of immediate danger.
Record all information in the Complaint Record Form.
Review the defect locations bi-weekly upon the consent from the complaint.
Review all new defects at end of Works and carry out remedial works. The actions to be taken by the PR Officer in handling the complaint are summarized in a flow chart given in 5.2.19
A list of telephone hotlines and contact persons for public enquiries shall be maintained and posted on the notice boards on the site hoarding. The table of telephone hotlines is enclosed in 5.2.19


Chan Ka Ming
Senior Project Manager
9455-9891
Law Chung Man
Project Manager
9643-3781
Sham Wing Sing
Site Agent
9133-9971
Danny
Lock Sze Keung
Sub Site Agent
6019-6860
Lau Chun Lung
Site Administrator/
PR Officer
9579-5151

觀塘巧明街 K.T.I.L.240

本公司將於 2019 年 4 月在觀塘巧明街 K.T.I.L.240 地盤進行工程，為期大約 個月，工程時段為早上 7:00 至晚上 7:00，工程期間如造成任何不便，敬請原諒。
如有任何問題，可致電地盤負責人岑永成(聯絡電話:9133-9971)或公共關係主任劉進龍 (聯絡電話: 9579-5151)聯絡。

此致

怡輝建築有限公司
日期:

Date:

How Ming Street, Kwun Tung, K.T.I.L. 240

Our company will commence the construction works at the captioned site on April 2019. The project period will last for around months and the duration for carrying out the works will be 7:00a.m. to 7:00p.m. We apologized for any inconvenience caused for carrying out the works during the project period.
Should you have any enquiries, please contact our Site Agent Sham Wing Sing (Tel: 9133-9971) or Public Relation Officer Lau Chun Lun (Tel: 9579-5151).

Regards,
Yee Fai Construction Co. Ltd.

Sample of Complaint Registration Form

Received Date	Action Date	Location	Activity	Action	Remark

5.2.6. AAA LEVELS OF MONITORING WORK

TYPE OF MONITORING		CUMULATIVE LIMIT									PIPE PILE NO.
		FOUNDATION AND PIPE PILE INSTALLATION			PUMPING TEST			BULK EXCAVATION			
		ALERT LEVEL	ALARM LEVEL	ACTION LEVEL	ALERT LEVEL	ALARM LEVEL	ACTION LEVEL	ALERT LEVEL	ALARM LEVEL	ACTION LEVEL	
GROUND AND UTILITY SETTLEMENT		3mm	4mm	5mm	6mm	8mm	10mm	15mm	20mm	25mm	N/A
UTILITY ANGULAR DISTORTION		1:1000	1:750	1:600	1:1000	1:750	1:600	1:1000	1:750	1:600	N/A
BUILDING SETTLEMENT		3mm	4mm	5mm	6mm	8mm	10mm	15mm	20mm	25mm	N/A
BUILDING TILTING		1:1600	1:1250	1:1000	1:1600	1:1250	1:1000	1:1600	1:1250	1:1000	N/A
VIBRATION		5mm/s	10mm/s	15mm/s	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GROUNDWATER DRAWDOWN		0.5m BELOW LOWEST MEASURED GROUNDWATER TABLE			1.0m BELOW LOWEST MEASURED GROUNDWATER TABLE			0.7m	0.85m	1m	N/A
								BELOW LOWEST MEASURED GROUNDWATER TABLE			
INCLINOMETER	INC/01	N/A			N/A			23mm	30mm	38mm	PP033
	INC/02							25mm	33mm	41mm	PP151
	INC/03							22mm	30mm	37mm	PP213
	INC/04							24mm	32mm	40mm	PP241
	INC/05							23mm	31mm	39mm	PP272
	INC/06							23mm	30mm	38mm	PP330
	INC/07							23mm	30mm	38mm	PP359

Sample of Complaint Record Form

PUBLIC ENQUIRY/ COMPLAINT RECORD FORM

Project: _____ **Project No.:** _____

Date of Incident: _____ **Time of Incident:** _____

Means of Communication: ☐ Telephone ☐ In-Person ☐ Written ☐ Email

Details of Contact Person:

Name: _____ **Contact Number:** _____

Identity: ☐ Resident ☐ Pedestrian ☐ Others (Please Specify): _____

External Parties Involved: ☐ Yes ☐ No

☐ Media: _____ ☐ Police ☐ Environmental Protection Department

☐ Client ☐ Main Contractor ☐ Others: _____

Area of Enquiry/ Complaint * (Delete when appropriate):

☐ Obstruction, damage, crack or contamination on footpath/ public road	☐ Damage or disturbance to adjacent buildings/ structure/ Public utilities	☐ Worker's behavior issue (Smoking, sleeping and assembly in public area etc.)
☐ Dust/ Exhaust	☐ Visual impact	☐ Waste dumping
☐ Vibration	☐ Falling/ Flying object	☐ Noise
☐ Wastewater	☐ Others (Please Specify: _____)	

Brief Description of Incident:

.....

.....

.....

.....

Causes of Enquiry/ Complaint:

.....

.....

.....

.....

Follow up Actions:

Actions	Action by	Target Completion Date	Actual Completion Date
1)			
2)			
3)			

Form Completed by:

Name: _____ **Position:** _____

Copy to: Director/ Contracts Manager / Safety Manager / Quality Manager

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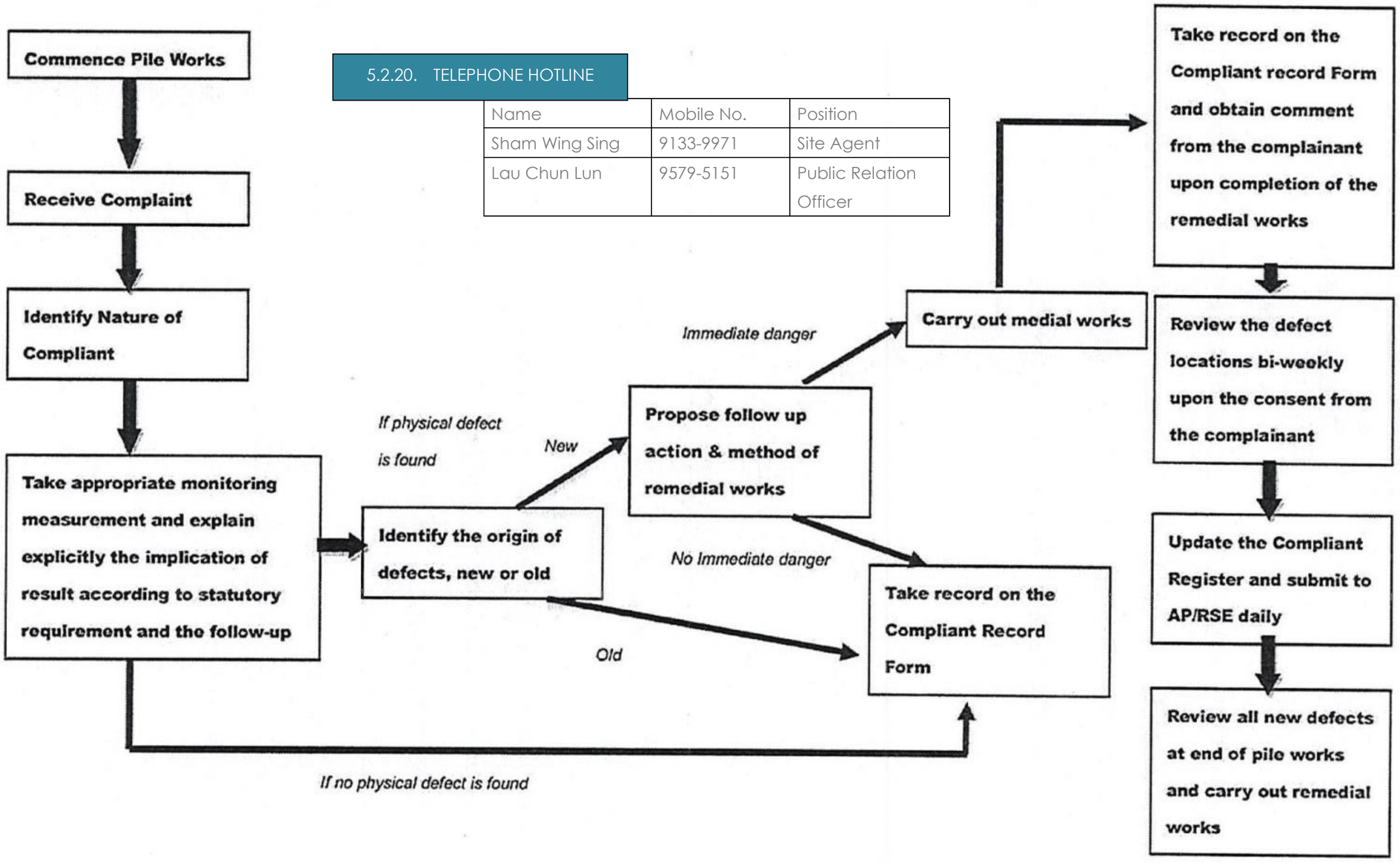
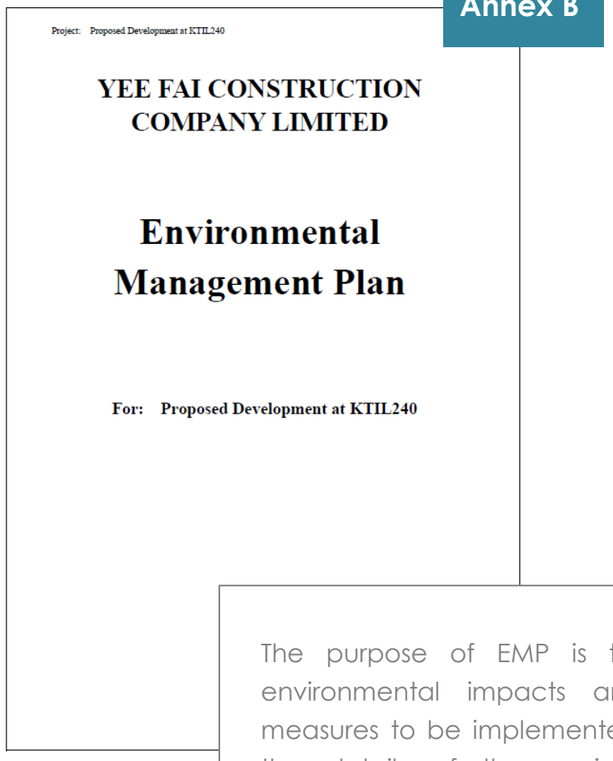


5.2.20. TELEPHONE HOTLINE

Name	Mobile No.	Position
Sham Wing Sing	9133-9971	Site Agent
Lau Chun Lun	9579-5151	Public Relation Officer

5.3. ENVIRONMENTAL MANAGEMENT PLAN


Project: Proposed Development at KTIL240

YEE FAI CONSTRUCTION
COMPANY LIMITED

Environmental
Management Plan

For: Proposed Development at KTIL240

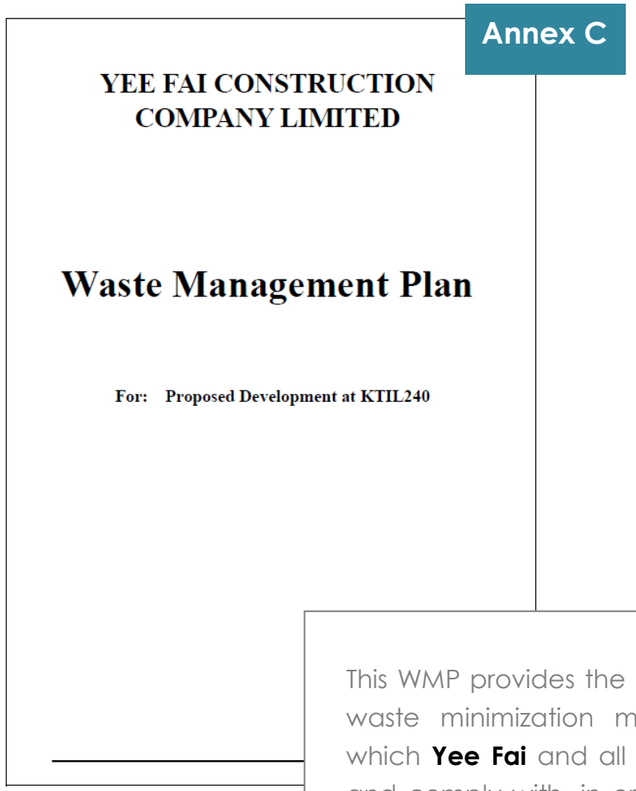
Annex B

The purpose of EMP is to list out the potential environmental impacts and necessary mitigation measures to be implemented. This plan also provides the details of the environmental measures and requirements which **Yee Fai** and all subcontractors shall implement and comply with in order to achieve a high standard of environmental performance during superstructure construction works.

In accordance with KTIL240, we had a set of Plan to systematically arrange and set out the Environmental Policy for the commitment of environmental protection and how the protection would be accomplished i.e. The measures against the impact.

Remarks:
Refer to Annex 1

5.4. Waste Management Plan


YEE FAI CONSTRUCTION
COMPANY LIMITED

Waste Management Plan

For: Proposed Development at KTIL240

Annex C

This WMP provides the details on waste management, waste minimization measures and requirements of which **Yee Fai** and all subcontractors shall implement and comply with, in order to reduce and/or minimize the generation of construction and demolition (C&D) materials/wastes throughout the construction period.

In accordance with KTIL240, we had a set of Plan to systematically arrange and set out the waste handling and arrangement, as well as the mitigation measures against the real-practice

Remarks:
Refer to Annex 2

6. INSPECTION AND QUALITY CONTROL

6.1. SCAFFOLDING

6.1.1. BASIC REQUIREMENT

All erections of scaffolding must comply with the Building Regulations and related safety guidelines which are written and published by the Hong Kong Government. Also, the erection of scaffolding must follow 4 principles: **Stable, Safe, Practical and Convenient**. Otherwise, the main contractor may be required to demolish and redo the erection and bear all incurred cost.

Before the commencement of the scaffolding work, whether it is erection of demolition, the main contractor shall need to submit a method statement which is able to demonstrate the element of safety to the Safety Officer under the The Employer for approval. The main contractor shall also be responsible for ensuring that the worker, for both erection and demolition, is well aware of the content of the method statement and all related information. In case of any misconduct at work, the main contractor shall take responsibility for all corrective work until the Employer's satisfaction is met. Otherwise, the the Employer, within his right, can stop the work, and any incurred loss shall be taken by the main contractor.

The main contractor shall comply with the company's regulation regarding the handover system in between trades, and shall attend all necessary meetings for construction purpose.

Tower crane or material hoist will be provided by the the Employer to assist the sub-contractor for the delivery of scaffolding materials (except special circumstances), the main contractor therefore needs to coordinate, in advance, with the site about the time. The main contractor shall be responsible for getting the necessary materials to the place in need of work, bearing all incurred costs.

6.1.2. MATERIAL REQUIREMENT

6.1.2.1. BAMBOO SCAFFOLDING

(*All diameters are measured from the external side)

The bamboo used in the bamboo scaffolding must have sufficient growth, dimensions as well as good surface condition, on which crack, pest attack, crust or any other defects which may affect the strength are not accepted.

The diameter of the main bearing vertical bamboos should at least be 75mm and other non-bearing vertical bamboos should at least be 40mm. As for the bamboo scaffolding on the external wall, on the first level, which means the supporting level for the vertical bamboo such as ground level or steel bracket, the smallest diameter for a horizontal bamboo cannot be smaller than 75mm. Other than that, the diameter of all other bamboo, including horizontal and sloped bar and strut, should not be smaller than 40mm.

All bamboo cannot have too much bending in all directions. Usually for 5000mm long bamboo, between the vertex of the curved surface and the un-curved surface, the acceptable distance is 75mm and 40mm for vertical bamboo and horizontal bamboo, respectively.

The main contractor shall be responsible for cutting the end of the bamboo up to the joint before the delivery to the site, to prevent water accumulation, leading to pest growth and rotting.

6.1.2.2. METAL SCAFFOLDING

All components in the metal scaffolding must comply with British Standard BS1139 or any other equivalent international standard and requirement.

All the components in the metal scaffolding, such as steel tubes and couplers, must be kept in good condition, which means that crack, splits, distortion, excessive corrosion are not accepted, and steel tube must be straight.

The main contractor shall be responsible for the design and method statement in which structural calculation needs to be done and endorsed by a registered structural engineer, and sending it to the The Employer for approval. During that time, the The Employer, within his right, can raise any questions regarding the design and method statement.

6.1.2.3. WORKING PLATFORM SCAFFOLD

All the board used in the working platform of scaffold must be firm timber board, which cracks, split, pest attack or any other defects which may affect the strength are not accepted. Also, paint should not be applied to the surface of the timber board in order to spot the defects. Other than that, the timber board must not be broken, bended or in a bad shape. If the working platform of metal scaffold consists of interstices, its area should not exceed 4000mm^2.

For timber toe board and metal toe board, the thickness should not be smaller than 20mm and 1.5mm, respectively. Its height should not be shorter than 200mm. For nylon strip, the width, thickness and length should at least have 5.5mm, 0.5mm and 2000mm, respectively. Pulling strength and elasticity of nylon strip should exceed 50kg and less than 20%, respectively. Also, nylon strip should be in good condition when in use.

For nylon net, there must be a layer of dust-proof high density net and a layer of nylon net with 12mm mesh. The main contractor is responsible for conducting checking the condition of the net and maintaining the net in a good condition. When canvass is used, it has to be flame retardant and comply with British Standard BS5867-2:2008.

6.1.2.4. EXTERNALLY SUPPORTED SCAFFOLDING

For steel bracket supporting bamboo scaffolding on the external wall, the height spacing should not exceed 15m. As for the horizontal spacing, it needs to base on the bamboo scaffolding design. The main contractor is responsible for the structural calculation which needs to comply with safety regulation, endorsed by registered structural engineer and approved by the The Employer. The steel bracket needs to be fixed to sound concrete of external wall by anchor bolt and the hole drilling for the anchor bolt must be exact and safe. When doing the structural calculation, it must comply with Code of Practice for Bamboo Scaffolding Safety and Guideline on Planking Arrangement for Providing Working Platforms on Bamboo Scaffolds by Construction Industry Council.

For bamboo scaffolding on the external wall, the spacing for vertical bamboo, long horizontal bamboo and short horizontal bamboo should be smaller than 1300mm, 1200mm and 750mm, respectively. Also, for X-shaped sloped bamboo, the spacing between two cross points should be smaller than 9000mm. For every connection, it needs to be tied tightly, where long horizontal bamboo

needs to be tied on top of vertical bamboo, then short horizontal bamboo can be tied on top of the long one, and X-shaped sloped bamboo needs to be tied on top of vertical or long horizontal bamboo.

There must be two layers of scaffolding on the external wall in order to have working platform in between two scaffoldings. The working platform should have width of at least 400mm. There must be toe boards of at least 25x200mm on the front and back side and timber board of at least 25mm thick for worker to stand on. Also, on top of the 25mm thick timber board, nylon cloth or canvass needs to be put to prevent materials or waste from falling. Apart from that, all scaffoldings on the external wall must have a safe access which there must be at least 1000mm handrail on both sides.

When the scaffolding on the external wall is raised and it is higher than the slab formwork, the maximum height of the scaffolding should not be more than one floor level or 3500mm. Also, when the height of the scaffolding on the external wall is more than 7000mm, measures or devices must be installed to pull the scaffolding so as to increase the stability of the scaffolding. After having finished fixing the slab and beam steel reinforcement bar, 6mm mild steel bar needs to be used to tie to the structural elements of the floor and it should offset from the external wall at least 2000mm. Also, after casting concrete, the 6mm mild steel bar needs to be tie to the intersection of vertical and long horizontal bamboo, and a short bamboo should be fixed perpendicular to the external wall in order to prevent the scaffolding from moving towards the structure.

When hanging the nylon net on the scaffolding on the external wall, it should strictly follow that the net needs to be tied to the scaffolding using wire, that the net is totally intact and that the connection between nets needs to handled properly. The connected area between nets should be more than 200mm and tied to the scaffolding every 1500mm interval. The main contractor should consistently maintain the net in a good and qualifying condition.

Before Plastering and Tiling on the external wall start, the main contractor should conduct at least one checking to ensure the safety and that the scaffolding complies with the current regulation, such as the vertical spacing between two working platform should not exceed 2000mm. Also, in order to let plastering and tiling workers to be able to work on external wall., 900mm wide wood planks need to be placed in the scaffolding to create an area for the workers to work and at least put every three floors. On top of the wood plank, a piece of wood of at least 12mm and zinc metal sheet should be put, and the zinc metal sheet should include the vertical sides for at least 300mm.

For catch fan, its width should at least be 3000mm or 1500mm if the scaffolding is near the road, and it needs to be built every 3 floors. The main contractor should be responsible for making sure of the safety of the scaffolding.

When the height of the floor exceeds 3800mm, ceiling scaffolding is needed. And 900mm - 1150mm high fencing is needed when there is no protection on the sides of the working area.

For the vertical bamboo, the maximum spacing is 2000mm, and for the long horizontal bamboo, it is 1200mm. And the minimum diameter for the vertical bamboo is 40mm. For the working platform, the wood planks need to closed put together and there cannot be more than 100mm. Also, there must be an access with hand rail.

For the column in the interior, when the height of the floor exceeds 5200mm, double-row scaffolding needs to be built, which the maximum spacing the vertical bamboo should be 1300mm, and that for the long horizontal bamboo is 1200mm. The diameter of any bamboo should not be smaller than 40mm. Also, an access with hand rail is also needed.

6.1.3. QUALITY AND MAINTENANCE

All relevant regulations and guidelines must be followed when building the scaffolding, including ensuring the stability and sufficient support. Also, the erection of scaffolding needs to be well-coordinated with the current situation on site.

The main contractor is responsible for assigning qualified and experienced person for the checking. If anything which does not comply with the safety requirement or potential danger is found, repairing and strengthening of the scaffolding are needed.

According to the current regulation, all scaffoldings, under any circumstances, should be inspected by a competence person, and scaffolding inspection report (Form 5) should be signed and submit to the The Employer. Also, the inspection report needs to be done once in 14 days, after big moderation or after adverse weather which posts big influences to the scaffolding. If the scaffolding is broken by typhoon, the sub-contractor shall fix it as soon as possible.

6.1.4. SCAFFOLDING DEMOLITION AND CLEARING

Before the commencement of demolition, it has to be ensured that all rubbish or debris have been cleared, the strength and stability of the scaffolding are sufficient and add some strengthening to the place in need. Apart from that, changing of location of scaffolding pulling device should be done as well.

During demolition, it should be done horizontally in the same height level. The bamboo or steel tube should be passed by hand and then delivered to the lower level by tower crane. Coordination with the tower crane should be ensured before doing the demolition.

The sub-contractor is responsible for taking away the nylon net after clearing the rubbish and debris.

6.1.5. SCAFFOLDING FOR CURTAIN WALL AND FACADE

All scaffolding on the external side would be mixed scaffolding. For externally inclined façade at podium, we will use mutli-layer metal scaffolding. Erection or demolition of scaffolding shall follow the schedule of the installation of curtain wall and façade. And, safety green net needs to be added after demolition of scaffolding.

6.2. SETTING OUT

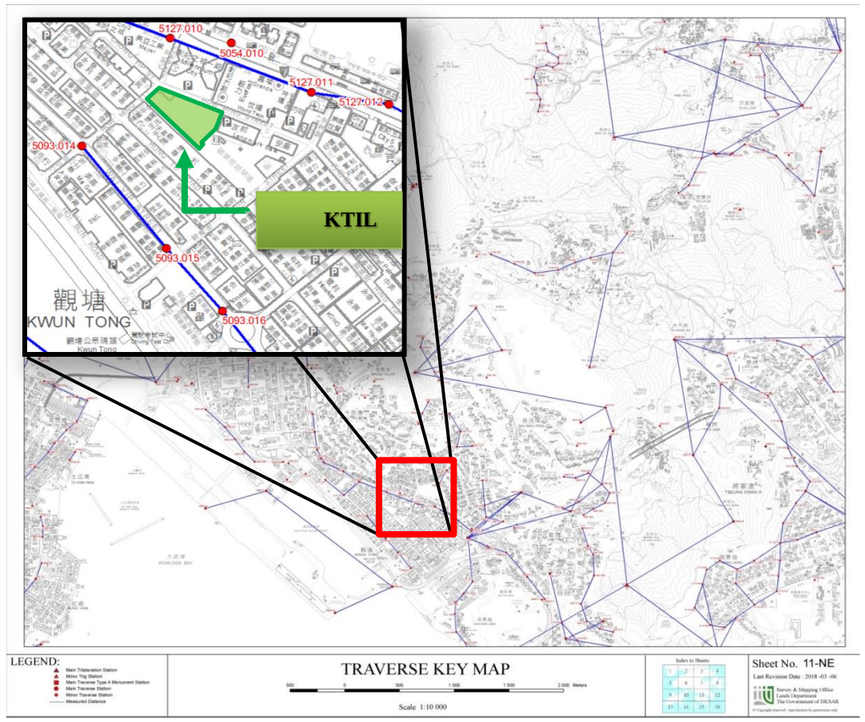
Setting out is a very precise process that determines the exact position of the building and site boundary on the property and the base measurements that all other workers will strictly follow. Any errors made when setting out a building will affect the outcome of the entire project. It is extremely important to get the accurate information and instructions about how to complete a setting out task effectively and safely.

When a building is constructed, it is essential that the land being built on is correctly identified and that the perimeter of the land is accurately determined before the setting out process begins.

Before starting the setting out work, survey team will first prepare the material required to conduct the job such as collecting sufficient background information related to the construction site *KTIL 240* to interpret site plans and specification. For example, investigation on the Traverse Key Map issued by the Lands Department can assist the setting out works since it can help the surveyor to identify the site surrounding Benchmark and traverse station which can be utilized for the site boundary and building setting out works. Site plan and specifications are compared with other available plans to ensure accuracy of information.

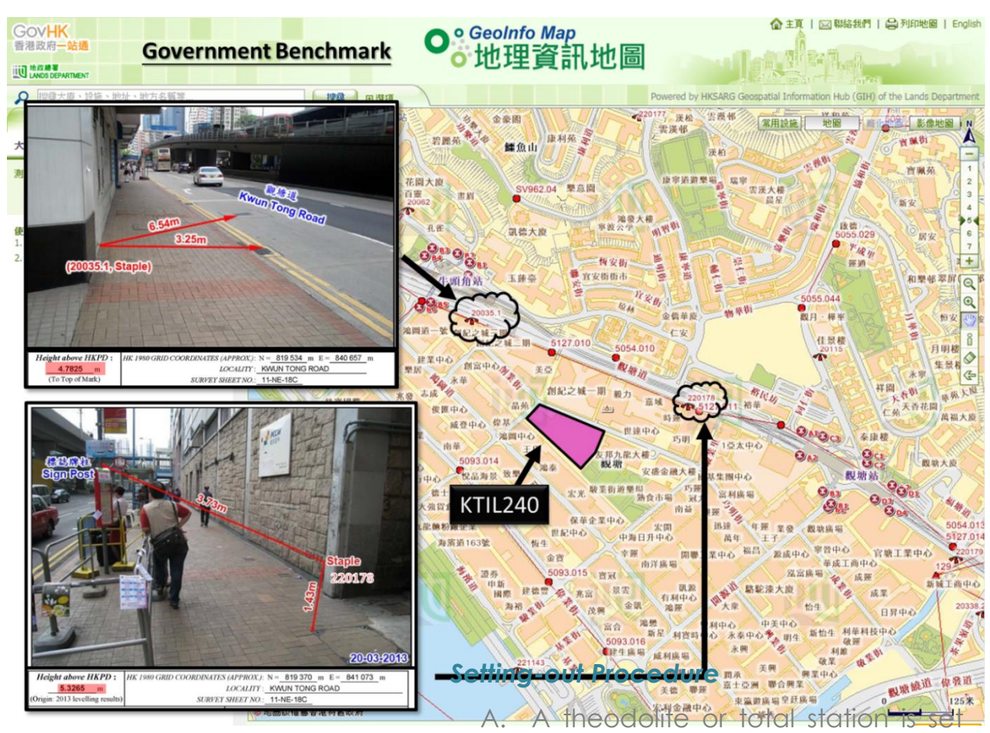
Equipment required for the setting out of construction works is determined from the site plan and specifications. Environmental impact of proposed construction works is also considered in the interpretation of site plans. Moreover, OHS hazards associated with the setting out of construction works are assessed for potential risks, and controls implemented accordingly.

In this site KTIL240, Government traverse station points 5093.014, 5093.015 and 5093.016; Government Benchmark 20035.1, 220178 are chosen for the setting out works which traverse station is used for locating coordinates of site boundary point and the Benchmark is used for referring the height of building. In order to increase the accuracy, three traverse station points will be utilized. One of the stations will be used for verifying the purpose of the above strategy. As a result, existing site features and position of proposed construction works is located from the site plan



Traverse Key Map (Sheet No. 11-NE)

Location of Government traverse station points chosen



Location of Government benchmarks chosen.

up over a control point which has known co-ordinates.

B. The instrument is then pointed at another control point in order to orientate the instrument to north. If a conventional theodolite is being used, it is normal to turn the instrument to north and reset the horizontal angle to zero.

C. The distances and bearings from that control point to those points which require setting out are now located and fixed with pegs.

D. A control point which is located near to the structure to be set out will ensure maximum accuracy.

E. If a total station is used, the co-ordinates are entered into the software and the prism target will allow the bearing and distance to be located for each point.

F. If a conventional theodolite is used the co-ordinates of the control point are compared with those of each point to be set out. This will require whole circle bearings and distances to be calculated for each point.

G. The procedure is then to simply turn to the required bearing and measure the distance ensuring that the tape is held as near horizontal as possible

H. Finally, scale measurements of lines, shapes, angles and dimensions are transferred from the site plan to site.

I. Verification and recordation in accordance with established datum point and survey benchmarks.

After that, upon the commencement of the construction work, every three floors, we will perform a setting out line checking. Surveyor team, the main contractor and sub-contractor will join together in this setting out checking process. This process will ensure that the building is going up straight, with small tolerance.

With these two measures, the location of the building and all the relating works can be ensured. Also, as the building is going up, it can be sure that the building perimeter will not deviate too much.

6.3. SUB-CONTRACTOR REVIEW

In **Yee Fai**, we take the performance of sub-contractors seriously that we have certain measures that aim to maintain and even improve the performance of sub-contractors. Every week, we, as the main contractor, will have a meeting with all sub-contractors. In the meeting, problems regarding work progress, work quality, workmanship and safety and environmental problems will be addressed. Then, through discussion, we and all the sub-contractor will find out the solutions and improve the work quality.

Other than weekly sub-contractors meeting, all the sub-contractors will be scored based on their performance on site, including workmanship, cooperation with the main contractor, attitude towards safety and environment-friendliness, and work quality. The sub-contractor scoring system will have a direct influence in the tendering process, which means that it will directly affect the sub-contractor. Therefore, this provides a great incentive to them to maintain their performance in a high standard.

Other than focusing on their own performance, we will make sure the handover between sub-contractors will be done in a satisfactory and responsible manner. Since we, as the main contractor, want to keep the workflow as smooth as possible, ensuring that the work is completely finished and ready for the next to carry out the work is crucial. Therefore, our staff, such as foremen, will be responsible for doing the inspection work and filling in a Handover Form, and the Form needs to be signed by all relevant parties.

6.4. KNOWLEDGE BASE

Yee Fai, there are a number of databases which house a great deal of knowledge about construction. For example, in the intranet there is platform for all staff to share construction knowledge. In the knowledge sharing platform, all staff can share and take *Site Incident Report, Site Daily Operation, Human Resources and Administration Management, Internal Training Courses, Information Technology FAQ and M&E daily Sharing*.

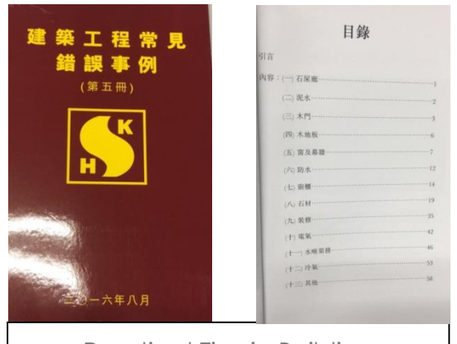
A knowledge platform in the intranet

Common mistake for different trades in the construction works

Other than knowledge sharing platform, we have another database which allows staff to get some tips, which were collected from our own experienced staffs). For example, there are some tips regarding factory visit and on-site construction work. Also, some international standards or guidelines are put there for staff to view.

Apart from the development in the software, we also produce booklets which contain content of different construction knowledge. like common mistakes for different trades in the construction works.

With the knowledge base, software and hardware, our staff can utilize it to carry out inspection. Since it contains the most common practice or the correct practice for a particular construction work, our staff can check the workmanship or the work done to control the quality of the work.



Practical Tips in Building Construction system.

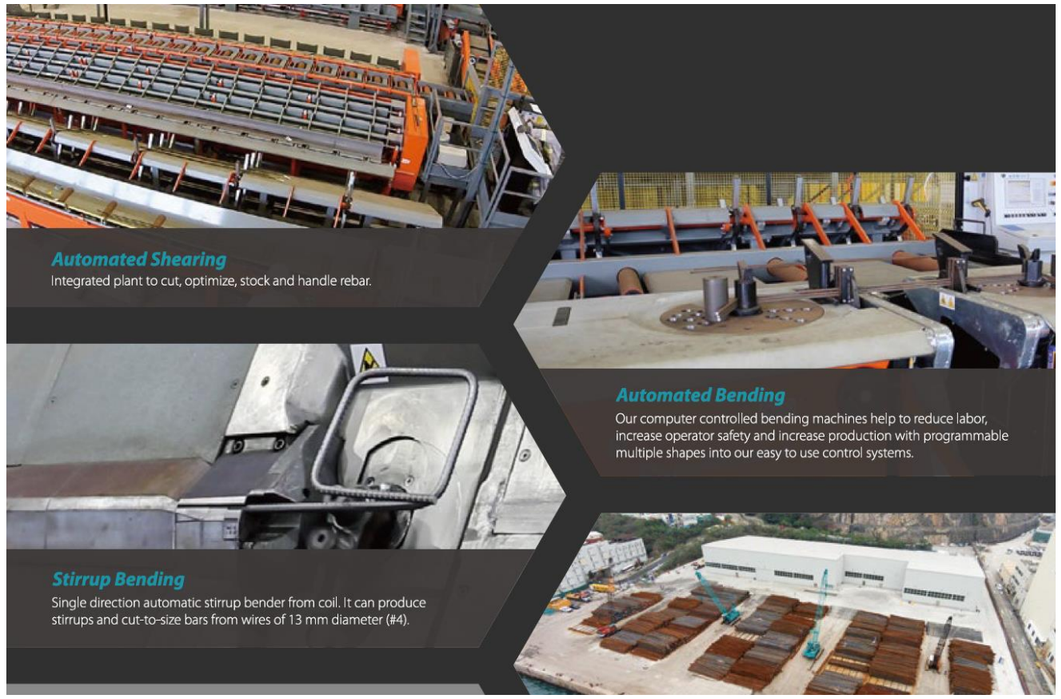
6.5. CONSTRUCTION QUALITY MANAGEMENT SYSTEM

6.5.1. PLAN GRID

In order to increase productivity on the job sites, we utilize a mobile based, web hosted, collaborative software solution (PlanGrid) for all storage of the applicable documents. Utilization covers the course of preconstruction, construction and continues after final completion.

We have focused on three areas to increase productivity: access, collaboration and insights. Access means anyone on a project can view a digitized set of records and information on the project in real time and making the process better. Collaboration means being able to communicate and coordinate quicker and share information on and off the job site. Insights mean using data to build a better project and understand potential risks.

6.5.2. OFF-SITE CUT AND BEND OF REINFORCEMENT



The off-site yard would comply with the requirements of ISO 9001:2008 quality management system standard applicable to Stockholding, handling, fabricating and supply of reinforcement steel bars. Reinforcements delivered to site are tested and properly labelled. Full traceability of reinforcements can be achieved.

Quality Assurance Scheme – Reinforcement Sampling and Testing

- Reinforcements received shall be verified against delivery docket and visually inspected for surface defects, quantity and for conformance in order and specifications.
- Reinforcements that passed the initial verification are segregated into batches at the quarantine area and labelled "QC pending". The quarantined reinforcements shall be locked away until testing is completed. Keys will be kept by the Quality Assurance Team (QA Team). The QA Team is an independent body reporting directly to the Director of CEDD and fulltime stayed at the yard. Their role and responsibility include sampling, inspection, monitoring and auditing. Minimum qualifications of the QA Team Leader and Quality Supervisors shall at least be equivalent to the Registered Contractor's Technically Competent Persons of grades T4 and T3 respectively. They will also be appointed as T3 and T1 of the RSE and RGBC stream respectively to comply with BD's supervision requirement. RSE-T3 shall provide at least 30% inspection on the reinforcement used while RC-T1 shall provide full time continuous supervision.
- Samples are then selected for purchaser's test in different batches. Sampling rate and testing method shall comply with CS2:2012. The process is supervised by the QA Team. The collected samples for each batch shall be properly tagged by the QA Team

and sent for testing.

- The QA Team shall witness the collection of the tagged samples by HOKLAS accredited testing laboratory.
- For the batch of raw material that passed the testing and inspection requirement, Raw material identification tags (herein refer as "RM tags") shall be generated and fixed on each reinforcement bundle or batch by the operations staff. The "QC pending" label shall then be removed. All reinforcement used for production must be identifiable to the RM tag. The reinforcement can then be released for production use by the QA Team.
- Each of the RM tags shall be traceable to the supplier, mill certificates and HOKLAS accredited testing laboratory testing certificates.
- For the batch of reinforcement that failed the test, another sample may be taken by the QA Team and sent to the HOKLAS accredited testing laboratory for re-test as per the provision of CS2, PNAP APP-45 and BS4449. The "QC Pending" label shall remain fixed.
- If the re-test fails, then the reinforcement shall be returned to the supplier and disposed under the supervision of the Q&E Team. A disposal report verified by the QA Team shall be submitted to the relevant parties.

Quality Assurance Scheme – Cut and Bend of Reinforcement

- Cut and bend of rebar shall comply with BS8666:2005.
- Bar bending schedule (BBS) are planned and processed. Production tags are printed for each item on the BBS.
- The production tags details can be downloaded directly onto the machine computer and tags printed as the reinforcements are being cut.
- Tested reinforcements are loaded to the machine and the RM tags are scanned and recorded. The RM tag identification are then recorded in the computer system.
- To start cut and bend process, the production tags details are downloaded onto the machines. The production tags will be captured by the computer and linked to the RM tags scanned earlier. In this way, each production tag can be identified with the raw material used to produce the finished product. A report can be generated from the system for all the raw material used for the manufacturing of the BBS.
- Reinforcements are transferred directly onto designated trailers, flat racks or holding area when finished.
- The QA Team shall conduct checks in accordance with the approved testing and inspection schedule.

Quality Assurance Scheme – Loading and Delivery of Finished Products

- Finish reinforcements shall be checked and loaded onto truck or trailer assigned in accordance to the loading sequence.
- Loaders shall do a final inspection on the reinforcement bundles before loading it onto the assigned vehicle by checking the BBS number and tag number against the loading list.
- The loaders shall ensure that all bundles for the order are loaded. Where there are missing items that cannot be located, the loaders shall inform the Production Supervisor and corrective action shall be taken to ensure that the items are made for the load to be delivered.
- The loaders shall initial on the loading list or validate on the scanner upon completion of the loading to release the vehicle for delivery.
- Once the loaded vehicles are ready for dispatch, the Delivery Co-ordinator shall print a set Delivery Docket, BBS and corresponding Raw Material Test Certificate for the reinforcements.

7. BUILDING INFORMATION MODELING (BIM)

References

Table 7-1 References

Reference	Source
CIC Building Information Modelling Standards	http://www.cic.hk/cic_data/pdf/about_cic/publications/eng/reference_materials/CIC%20BIM%20Standards_FINAL_ENG_v1.pdf

Acronyms and Abbreviations

Table 7-2 Acronyms and Abbreviations

Acronyms & Abbreviations	Definition
2D	Two dimensional
3D	Three dimensional
4D	Four dimensional
AM	Asset Management
BIM	Building Information Modelling
CBWD	Combined Builder's Work Drawings
CIC	Construction Industry Council
CSD	Combined Services Drawings
EMSD	Electrical and Mechanical Services Department
HKIBIM	The Hong Kong Institute of Building Information Modelling
HVAC	Heating, ventilation, and air conditioning
LOD	Level of Development

This Building Information Modelling (BIM) Implementation Plan (Plan) defines requirements for construction team and Project Teams implementing BIM on the project construction stage.

In accordance with this Plan, a BIM Execution Plan is required. The Contractor provides the required BIM Execution Plan and associated worksheets. Once approved, the BIM Execution Plan can be implemented by the construction team.

The BIM Execution Plan will be presented internally to the Designer's or Contractor's teams for review, clarification, and verification of model technology workflow and process functionality.

7.1.2. SCOPE

The project scope is to adopt the BIM design models from design stage (at LOD 300) and further develop BIM models in construction stage (LOD 400) to final as-built model (LOD 500) and handover to the Employer. All the BIM process and model standard shall follow the CIC BIM Standards (Phase One), dated Sept. 2015 and EMSD BIM-AM Standards and Guidelines v1.0. This plan describes the uses of BIM during construction stage and identifies how BIM data will be managed and shared among team members.

7.1.3. ORGANIZATION

This plan is composed of the following sections:

- Project Team and Planning – Section 2 outlines the roles and responsibilities of required team members, and specifies required project activities.
- BIM Infrastructure – Section 3 specifies the required BIM software to be used, as well as specific standards to be followed, such as folder structures, file naming, and BIM standards.
- Drawing Production Strategy – Section 4 outlines the drawing production strategy using BIM models.
- Model-based Coordination – Section 5 outlines the procedures to be followed for design reviews, as well as clash detection checks and reporting processes.
- Model-based Quantity Take-off and Cost Estimating – Section 6 provides guidance on processes to be used so that accurate quantification and cost estimates can be produced using the model.

Record Modelling – Section 7 provides directions on as-built information recording procedure for model handover

7.2.1. PROJECT TEAM

All BIM project team members and their roles and responsibilities will be clearly defined prior to project kick-off. There are four primary roles required in this project as described below.

BIM Manager

BIM Manager is responsible for overall planning and management of all the BIM duties listed in the scope of work. He/she will ensure the quality, time and accuracy of all BIM deliverables, chair BIM coordination meetings to drive all stakeholders in BIM process, and also attend to project meetings to report for BIM progress.

The BIM Manager is a Professional member of the Hong Kong Institute of Building Information Modelling (HKIBIM) and not less than 7 years' experience in BIM management and coordination.

BIM Coordinator

BIM Coordinator is responsible for day to day execution for all duties listed in the scope of work below. He/she will be responsible for coordination with all parties to perform BIM production and BIM coordination, lead the modelling team and responsible for progress and quality of discipline BIM models.

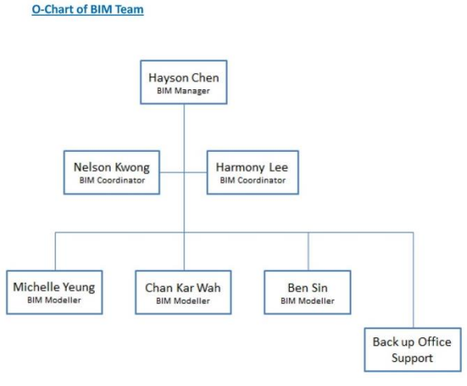
The BIM Coordinator is a Professional member of the Hong Kong Institute of Building Information Modelling (HKIBIM) and not less than 5 years' experience on site BIM coordination.

BIM Modeller

BIM Modellers are responsible for creating and updating the building information model based on the updated information. The BIM modellers need to be not less than 2 year modelling experience, it is his/her core duty to ensure the model is created as according to the quality and modelling standard required.

Model User

The Model User is any individual or entity authorized to use the model for the construction contract. Since a BIM model can be used in variety of ways, skill sets of each Model user can vary. Sufficient trainings should be provided to the Model User.



7.2.2. BIM LEVEL OF DEVELOPMENT

Building Information Models will be developed from design stage (LOD 300) to construction stage (LOD 400) to final as-built model (LOD 500). The BIM Level of Development (LOD) describes the level of completeness to which a model element is developed. This project reference CIC BIM LOD specification, which specifies and articulates the content of Building Information Models required in the construction process.

LOD Notations	***Definition***
LOD 100	The model element may be graphically represented in the model with a symbol or other generic representation. Information related to the model element (i.e. cost per square foot, tonnage of HVAC, etc.) can be derived from other model elements.
LOD 200	The model element is graphically represented within the model as a generic system, object or assembly with approximate quantities, size, shape, location, and orientation.
LOD 300	The model element is graphically represented within the model as a generic system, object or assembly in terms of quantities, size, shape, location, and orientation.
LOD 350	The model element is graphically represented within the model as a generic system, object or assembly in terms of quantities, size, shape, orientation, and interfaces with other building systems.
LOD 400	The model element is graphically represented within the model as a generic system, object or assembly in terms of quantities, size, shape, location, and orientation with detailing, fabrication, assembly and installation information.
LOD 500	The model element is a field verified representation in terms of quantities, size, shape, location, and orientation.

*For LOD 200 to 500, Non-graphic information and data may also be attached to the model elements.

7.2.3. BIM IMPLEMENTATION TASKS

The following is a basic, sequential list of BIM-related activities is to be performed in this project:

- Contractor will provide BIM workspace and conduct initial construction BIM meeting to review BIM Execution Plan and associated documents.
- Address any BIM infrastructure issues including hardware upgrades, software installs, network upgrades and multi-office systems etc.
- Coordinate and collect all disciplines' input to produce the BIM Execution Plan.
- Conduct BIM coordination meeting to report BIM progress and review issues found.
- Provide training to stakeholders.

7.3. BIM INFRASTRUCTURE

7.3.1. BIM PLATFORM

Information in the form of documents, drawings and models are to be uploaded / logged via a BIM platform. This process will ensure consistent and accessible information is provided to the project team and also accountability can be determined. The models should be exchanged at regularly intervals and should be purged of unnecessary data prior to issue.

An exploration of the use of electronic mark-ups to ensure better communication and tracking of required changes to the design will be carried out and adopted using models on the platform.

7.3.2. GOVERNING BIM STANDARD

The governing BIM standards are the CIC BIM Standards (1st version).

7.4. DRAWING PRODUCTION STRATEGY

BIM models will be used to generate shop drawings, CSDs and CBWDs. All drawings should be a direct output BIM model, exporting layouts or sections in other drawing format and editing in other drawing software will not be allowed. For detail generation there are four approaches:

- ***Model-based details*** – These are 2D wall sections and elevations that are linked directly to the 3D model and that update as the model changes.
- ***Hybrid details*** – These are details that might have their major components generated from the model (such as a wall detail), with smaller components (such as framing, fasteners, and vapour barriers) drawn on top of the model-based elements.
- ***2D details*** – These are created completely from 2D geometry and have no real link to the model. Things that would be detailed at a scale of around 1:.
- ***3D details*** – These are details that combine Plan, Elevation, and Section cut-planes into a single representation. These details are extracted directly from the BIM model

7.5. MODEL-BASED COORDINATION

7.5.1. MODEL REVIEW

Project team members will review the 3D model progressively and provide their feedbacks to validate multiple construction aspects include evaluating meeting the programme, reporting constructability issues addressed and layout in a virtual environment etc.

Any decisions made during reviews should be documented and incorporated into the BIM model.

These reviews can help to mitigate conflicts prior to being built in the field, and will streamline the construction process.

7.5.2. CLASH DETECTION

It is the responsibility of the Contractor's BIM Manager to perform the clash detection and report.

The BIM Manager will distribute a log of hard interferences (for example, mechanical vs. structural or mechanical vs. mechanical overlaps in the same location) and soft interferences (for example, conflicts regarding service access, fireproofing, and insulation) in a written report, in addition to the clash detection model, to all disciplines involved.

The documentation will be completed, and resolutions will be documented prior to any submission, and included as part of quality assurance and quality control documentation

7.6. MODEL-BASED QUANTITY TAKE-OFF AND COST ESTIMATING

The estimating team and project manager will identify key Project estimate milestones, and the group will develop a schedule for providing quantity reports to the estimating team. Estimators will agree to a base unit of measure and a secondary unit of measure for all elements they wish to quantify from the BIM.

The BIM quantification process is described as follows:

- Coordinate a project-specific material take-off methodology with the project team to confirm that the construction model is suitable for quantification.
- Assign intelligence to selected objects in the model to extract some specific quantities that the estimators require.
- Use the model to extract basic estimating quantities.
- Project Team reviews quantities with the Estimating Team.
- Conduct on-going tracking of design quantities that are extracted from the model.

7.7. RECORD MODELING

The record model is the culmination of all the BIM modelling throughout the project, including linking operation, maintenance, and asset data to the as-built model (created from the design, construction, 4D coordination models, and sub-contractor fabrication models etc.) to deliver to the owner or facility manager. Additional information including equipment and space planning systems could also be included if the owner intends to utilize the information in the future.

7.7.1. AS-BUILT MODEL

Since an as-built BIM model is required from the contractor, the design-phase BIM model will be modified by the Contractor so that it incorporates project-specific detailed information.

For a successful as-built model at the end of the construction phase, the Contractor will confirm that the model is updated and revised throughout the project phases. By doing this, accurate as-built drawings can be provided immediately at the close of construction. The BIM model, as it is updated throughout the project's duration, actually represents in electronic format of the physical design and construction of the Project, including all trades.

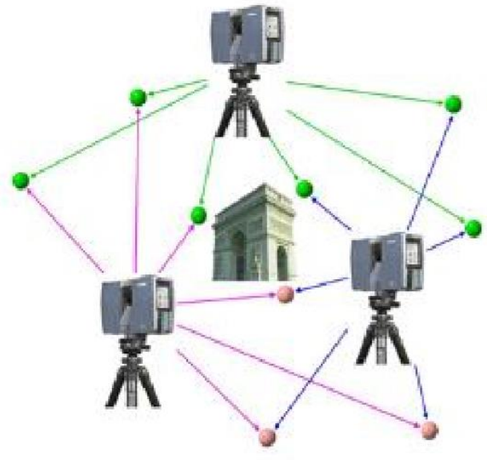
7.7.2. LASER SCANNING

Laser scanning will be applied in this project to achieve accurate as-constructed information, especially for checking the accuracy on embedded supports for curtain wall and façade.

The 3D laser scanners used will send out a high density of laser beams for the purpose of positional measurement. These high density beams result in a "point cloud" that includes millions or even billions of data to reflect the physical environment being scanned.

To make use of these point clouds data for analysis, they will need to be converted to object-based BIM models following below steps:

- Multiple scans will be captured from different scanning stations.
- Data from multiple scanning stations will be stitched together in what is commonly known as the post processing or registration stage.
- BIM software will then be used to author object models while referencing the point cloud.



CONCEPT OF LASER SCANNING

A scan plan will be made which outlines the scope and approach that will be taken to capture the data on site. This plan will identify the exact scope of elements to be scanned and help the on-site team to prioritize their efforts and mitigate time spent capturing unnecessary elements. It will also indicate the optimum equipment location necessary to capture the desired information.

Scanning can be a time consuming endeavour, resulting in very large and/or complex datasets, so this process will be performed only on selected areas

Building Information Modelling (BIM) is the process of generating and managing building data during its life cycle. While to us we treat BIM as a tool which makes the project information more transparency through model-centric collaboration and help us providing a more accountable and integrated deliverable.

BIM Applications

We have applied BIM process into over 20 projects, and our BIM team has deep experience in various projects cover commercial building, residential building, theme park and public transportation etc. The BIM models have been utilized for variously of applications as describe below which could also meet the requirement of BIM uses in this project:

- BIM modeling – Build up models with sufficient parameters and information for easy model review and coordination. These information including content that defines a component, properties of element, geometry representing physical characteristics and functional data that enables the object to be positioned and behave.
- Visualization – Visualization data will be given to provide a recognizable appearance, which can be further used to generate specific views or walkthrough animation for design validation of architecture, façade and landscape etc. Multiple visualization tools are used including Lumion, Enscape, Fuzor, 3DsMax and Adobe Creative Cloud etc.
- Clash detective – Clash detection is essential for helps in recognizing, assessing and reporting of conflicts in a project model, and BIM replaces the time consuming manual process and automate the clash detection process. Different sets of disciplines will be assigned regarding the clash matrix defined in BIM Execution Plan with different rules and condition such as hard clash, clearance check or even 4D clash checks. With tolerance control, we could easily focus on major issues and narrow down clash issues progressively.
- Documentation – BIM models will be developed with families from our library, these families increase the efficiency in extracting element information from models. Design or construction drawings could be directly produced in BIM model. These BIM-specific documents provide information that ensures all project team members are aligned, and these data will be produced and shared throughout the lifecycle of the project.
- Quantification – The take-offs, counts and measurements can be generated directly from the underlying model. These information therefore will be always consistent with the design, and when a change is made in the design, it will ripples to all related construction documentation and schedules, as well as the take-offs, counts and measurements to be used by quantity surveyors. Glodon products are our QTO solutions, which could directly analyze Autodesk Revit models and generate results that match SMM4 standards for further BQ and procurement procedure.
- 4D/5D/6D Simulations –BIM models will be linked with construction programme to produce dynamic animation with Navisworks/Fuzor, so as to evaluate construction sequence or logistic, site safety assurance. Actual and planned sequence could also be compared, or in addition to include cost and labour information, to help project planning.

BIM Solutions

Autodesk series is our primary BIM solution. We are familiar with common multi-discipline coordination workflow and clash mitigation process on Revit and Navisworks series authoring platform, as well as BIM 360 collaboration platform.

Modelling Standards

To produce an accurate information model, we have in-house standards and modelling guideline ensuring our design to be created with managed specifications to maintain good performance for various applications and to better implement with project BIM standards and execution plan.

Collaboration

BIM model as an information centralized platform require a close sharing and collaborating digital workflow. We have set up a Virtual Desktop Infrastructure (VDI) to enable BIM collaboration internally, and we also experienced in popular cloud collaboration solutions such as Autodesk's Collaboration for Revit.

- Virtual Desktop Infrastructure – Worksharing will be enabled in a Revit project, and the project will be placed onto VDI so that multi-discipline team members could access and work on the model simultaneously over internet and without high specification requirements of computers.
-
- Collaboration for Revit – As this is a cloud worksharing process, the centralized model will be put onto cloud and all team members could access the cloud model. Besides even without Revit our team members could review, upload and download models through a web browser to access Autodesk BIM 360 platform.

BIM Resources

We have comprehensive M&E parametric components for accurate modelling, and there are suppliers that provide manufactured components to enrich our library continuously to match required level of detail/development and produce a high quality BIM process.

A BIM supporting team consists of a BIM Manager (HKIBIM professional member), BIM Coordinators and BIM Modelers which will facilitate the model creation and coordination process, whilst our engineers are already participating in collaboration workflow with BIM involved.

7.9. BIM PROJECT EXPERIENCES

Date	*Project Name*	*BIM Applications*
3/9/2013 to Present	Residential Development at Lot No. 1927, Sha Po North, Kam Tin, Yuen Long, N.T. Phase 1 & 2	Clash Detection, Design Review, 3D Coordination, Record as-built Modelling
10/2013 to10/2015	Residential Development at Lot No. 66A, Tseung Kwun O, Sai Kung, N.T.	Clash Detection, Design Review, 3D Coordination, Record as-built Modelling
01/2014 to 01/2016	Residential Development at Lot No. 66D2, Tseung Kwun O, Sai Kung, N.T.	Clash Detection, Design Review, 3D Coordination, Record as-built Modelling
03/2014 to 04/2016	Residential Development at Lot No. KIL 11175, Ho Man Tin, Kowloon	Clash Detection, Design Review, 3D Coordination, Record as-built Modelling
02/2014 to Present	Proposed Comprehensive Development at Inland Lot No.9027, Java Road and Tin Chiu Street, North Point, Hong Kong (Phase 1 & 2)	Clash Detection, Design Review, Site analysis, 3D Coordination, 4D Construction Sequence, Modelling Record as-built Modelling
03/2015 to Present	Proposed Commercial Redevelopment at Lot No.5103, 33 Tseuk Luk Street San Po Kong, Kowloon.	Clash Detection, Design Review, Site analysis, 3D Coordination, Record as-built Modelling
07/2015 to 01/2018	Proposed Hotel at Lot No. STTL 248, Siu Lek Yuen Road, Shatin, N.T.	Clash Detection, ELS Structure Analysis, Design Review, Site analysis, 3D Coordination,
04/2015 to 07/2018	Residential Development at Sha Tin Town Lot No.566, Kau To Shan, NT	Clash Detection, Design Review, Engineering Analysis, 3D Coordination, Record as-built Modelling
7/2015 to 01/2017	Proposed Hotel Development at North Point Lot No.9020, Java Road North Point, Hong Kong	Clash Detection, Design Review, 3D Coordination, Record as-built Modelling
12/2016 to 01/2018	Proposed Commercial Redevelopment at Lot No.617, Shatin Shek Mun, NT	Clash Detection, ELS Structure Analysis, Design Review, 3D Coordination, Record as-built Modelling
10/2016 to Present	Proposed Residential Development at T.M.T.L. Lot No. 539, Hoi Wing Road, Area 16 Tuen Mun, N.T.	Clash Detection, ELS Structure Analysis, Site Analysis, Design Review, 3D Coordination, Record as-built Modelling

7.8. BIM PROJECT EXPERIENCES

Date	*Project Name*	*BIM Applications*
11/2016 to Present	Proposed Commercial Development at Aberdeen Inland Lot No. 360, 4 Yip Fat Street	Clash Detection, ELS Structure Analysis, Site Analysis, Existing Conditions Modelling, Design Review, 3D Coordination, Record as-built Modelling
02/2017 to Present	Proposed Commercial Development at Lot No. KCTL 522, Kwai Chung, N.T.	Clash Detection, ELS Structure Analysis, Design Review, 3D Coordination, Record as-built Modelling
02/2017 to Present	Residential Development at Lot No. STTL 609, To Shek Street, Shatin, N.T.	Clash Detection, ELS Structure Analysis, Design Review, 3D Coordination, Site Analysis, Existing Conditions Modelling, Cost Estimation, 3D Site Planning, Record as-built Modelling
06/2017 to Present	Proposed Residential Development at LRT Tin Wing Stop Lot No. TSWTL 23, Tin Shui Wai, Yuen Long, N.T.	Clash Detection, ELS Structure Analysis, Design Review, 3D Coordination, Site Analysis, Existing Conditions Modelling, 4D Construction Sequence, Record as-built Modelling
10/2017 to Present	Proposed Comprehensive Development at Lot No. TSWTL 33, Area 112, Tin Shui Wai, Yuen Long, N.T.	Clash Detection, Design Review, 3D Coordination, Record as-built Modelling
10/2017 to Present	Proposed Comprehensive Development at Lot No. TSWTL 33, Area 112, Tin Shui Wai, Yuen Long, N.T.	Clash Detection, Design Review, 3D Coordination, Record as-built Modelling
05/2017 to 06/2017	Proposed Industrial Building at Nos. 212-214, Texaco Road, Tsuen Wan, N.T.	Clash Detection, ELS Structure Analysis, Design Review, 3D Coordination
09/2017 to 06/2018	Proposed Residential Development at Lot No. KIL 2341 SE, Pak Tai Street, Ma Tau Kok, Kowloon	Clash Detection, ELS Structure Analysis, Design Review, 3D Coordination, 4D Construction Sequence,
09/2017 to 06/2018	Proposed Residential Development at Lot No. KIL 2341 S.E, No. 195 Prince Edward Road West, Kowloon	Clash Detection, Steel Blanker Structure Analysis, Design Review, Existing Conditions Modelling, 3D Coordination,
12/2017 to 01/2018	Proposed Industrial Redevelopment at Lot No. 284 In D.D 446, Nos. 250-254, Texaco Road, and 24-30 Wang Lung Street, Tsuen Wan, N.T.	Clash Detection, ELS Structure Analysis, Design Review, 3D Coordination

Mixed-use

Zhuhai Youte Square

The mixed development consists of shopping centre of GFA 64,000m² (including 10 theatre screening halls), office development of GFA 80,000m², commercial basement of GFA 18,000m² and basement carpark of GFA 96,000m². Total GFA is approximately 257,000m².

Commercial

Qianhai International Energy and Financial Center (QIEFC), Shenzhen

The project includes 1 no. 57-storey office building with 300m high, 1 no. 22-storey office building with 120m high, 1 no. 42-storey service apartment / residential building with 230m high which all on top of a 2-level podium. Total GFA is approximately 297,580m².

Transportation

Hong Kong International Airport Midfield Development

The Midfield Concourse is located to the west of Terminal 1 and between the two existing runways at Hong Kong International Airport. As a core part of the airport's Midfield Development, the project is a five-level concourse with a total floor area of 105,000 square meters and ceiling heights comparable to those of Terminal 1.

This project won Autodesk Hong Kong BIM Award 2013.

Leisure

Tai Shue Wan Waterpark Development at Ocean Park, Aberdeen

The project comprise Indoor-cum-outdoor waterpark with the facilities of Indoor and outdoor wave pool and lazy river, various water slides, wave rider, children's play area, retail space, food and beverage and parking spaces. The peak capacity of the Waterpark is 7000 persons.

Casino & Hotel

Macau Studio City

Studio City is situated in the heart of master planned Cotai, adjacent to the Lotus Bridge Immigration Point and the light rail station. Total GFA is approximately 28,000 square meters and consists of casino, hotel, over 20 restaurants, nearly 60 retail stores, entertainment and leisure attractions.

Residential

So Uk Estate Redevelopment

7 nos. of domestic towers with 3,694 units with 20-40 storey. Total development area 28,360 square meters with retail shops, kindergarten, parking and loading and unloading facilities, social welfare facility.

Hotel & Residential

Comprehensive Development at Oil Street, North Point, Inland Lot No.8920

The Proposed Development comprises a total of not more than 400 dwelling units ranging from 40 sqm to over 160 sqm with a maximum of 40,200m2 domestic GFA. In addition, ancillary facilities in the form of, for instance, residents' clubhouse, recreational area and private open space are proposed for the future residents. A Hotel with GFA of 30,000m2 and approx. 800 guestrooms are also proposed within the Proposed Development.

BIM is utilized in this project to produce construction documents (CSD/CBWD) directly from models.

8. OFF-SITE ARRANGEMENT

8.1. TABLE SYSTEM FORMWORK

For the construction of podium and tower, we will adopt Table System Formwork for different components, such as wall, slab and beam. In podium, Table System Formwork will be used on walls, while in tower it will be used on walls, slabs and beams, basically most of the elements for one floor. With the adoption of the Table System Formwork, some off-site preparatory works need to be done before the on-site operation. First, the designs for those elements have to be fixed before the production of the Table System Formwork. For example, the thickness or length of the wall needs to be decided, or, dimensions for one section of slab needs to be decided before manufacturing the Table System Formwork for slab. Also, the planning of using the Table System Formwork, including means of transportation or incorporation with the floor cycle, needs to be done before the on-site operation. During the on-site construction, good planning can lower the on-site sudden changes, on the design or on the construction operation. The incorporation with the floor cycle can minimize the need of space for storage. And because of that, the effect on the site traffic by the

8.2. CUT AND BEND

Table System Formwork can be lowered
In this project, we will adopt technology of automated off-site processing for reinforcement steel bar cutting and bending. It makes use of automated machinery for lifting and placing the steel bar to different places. After getting them into the designated places, they will automatically be cut and bended by the machines. During the process, only few people are required for the operation of machines. In order to ensure the supply of reinforcement steel bar, this technology is therefore selected because it offers a number of advantages over the traditional on-site processing.

First, it offers a higher level of safety standard. In the plant, there are standard procedures and automated machineries for the workers in the plant to follow. Plus, the workers will be carrying out the operating work from a safe distance from the machines. Therefore, the working environment is much safer than on-site operation, and the dependence on human force is reduced, leading to lower possibility for accident to happen. For on-site operation, operation of equipment by workers and congested and crowed working environment can increase the risk of inquiry.

Second, efficiency can be boosted up to save time and cost. In the plant, efficient and fast production of standard shapes can be achieved by utilizing coil while reducing the wastage, usually only three to five percent scrap will be produced. Also, BS8666 and Bar Bending Schedule will be strictly followed. As contrast to on-site operation, steel cutting and bending are operated manually, and it is disadvantageous because the equipment is inefficient, leading to generation of processing error, hence, time and materials will be wasted.

Last but not least, one of most benefits making use of the off-site processing for reinforcement steel bar is elimination of storage problem. All the uncut and un-bended steel bar will be stored in the plant and warehouse, and they will be processed and delivered to the site when needed. As opposed to on-site steel bending yard, it does not occupy a large area of space which could have been used as many other purposes. Also, it

8.3. FOODBRIDGE

makes the site less congested and crowded.

One of the Works in this project is to construct a footbridge, and we will construct the footbridge in an off-site location. After having finished the construction the footbridge in an off-site location, it will be transported to the site for installation.

In this way, the on-site footbridge construction time can be shortened, leading to less effect on the site storage and traffic problem. From the production stage to installation stage, it is not necessary to store the footbridge components on site, and, the installation will take place after site working hours. Apart from that, the construction quality of the footbridge may be higher because the on-site uncertainties, such as bad weather, severe working condition, etc., will be reduced in an off-site production. Therefore, this off-site arrangement for the footbridge construction can pose benefits to the construction process.

9. TEMPORARY WORKS MANAGEMENT

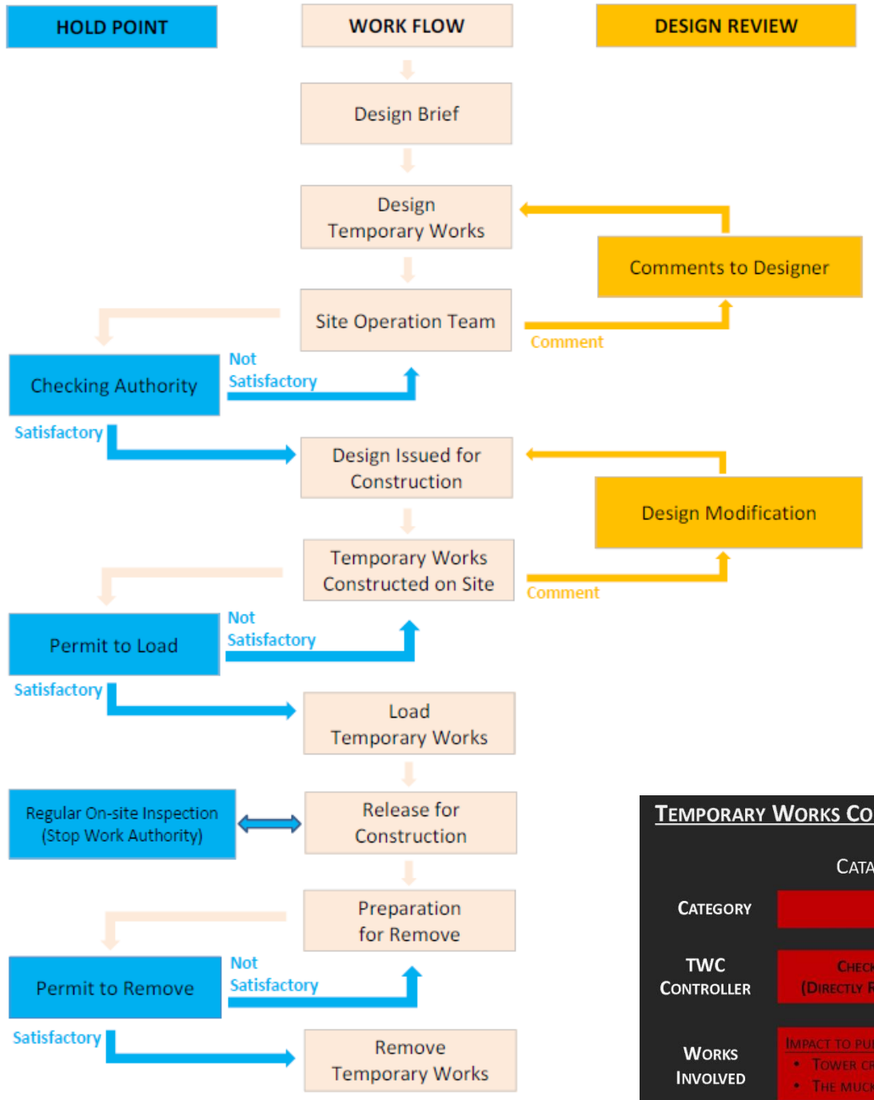
9.1. STRUCTURAL

Temporary works are classified into the following three categories according to the specification:

1. Heavy duties temporary works
2. Simple generic temporary works
3. Temporary works which require BD submission

Yee Fai has subdivided Item 1 and 2 into Category A, B and C. The three categories are classified by risk level. The risk level is descending from Category A to Category C. Corresponding checking and inspection responsibilities are tabled on the following page. No temporary works should be loaded prior to receiving the "Permit to Load".

Procedures for dealing with temporary works would also be strictly in accordance with Section 4.7 of Code of Practice for Site Supervision 2009.



Role

AP:

Authorized **P**erson employed by Main Contractor and approved by the Architect

ICE

Independent **C**hecking **E**ngineer directly report to Executive Committee

RSE:

Registered **S**tructural **E**ngineer employed by Main Contractor and approved by the Architect

CSE:

Competent **S**ite **E**ngineer employed by Main Contractor who is a registered professional in Civil or Structure discipline

TCP:

Technical **C**ompetent **P**erson as defined in Technical Memorandum for Supervision Plan and employed by Main Contractor

CP:

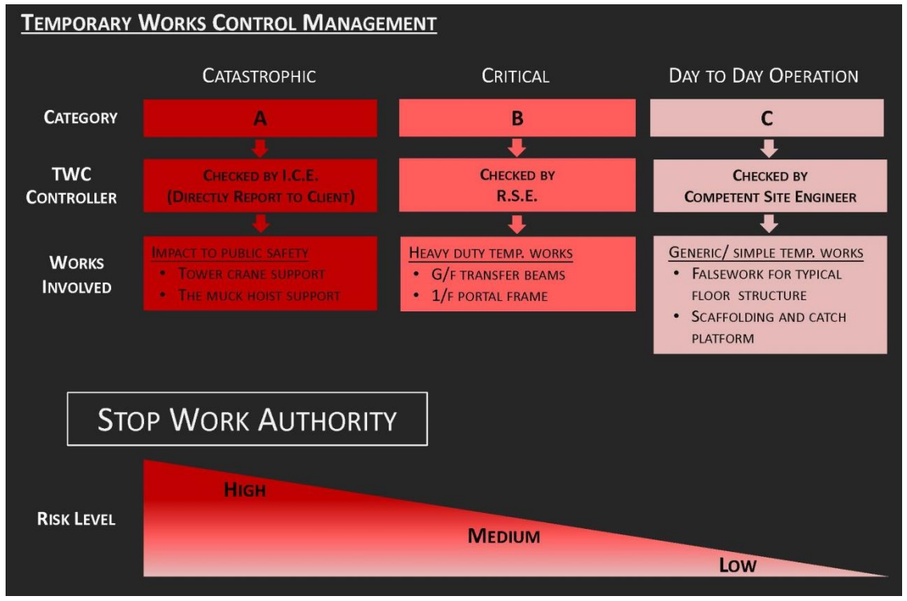
Competent **P**erson as defined in Code of Practice for Safe Use of Tower Cranes

RPE(Mechanical):

Registered **P**rofessional **E**ngineer (Mechanical) employed by Main Contractor and approved by the Architect

EMSD:

Approval for **E**lectrical and **M**echanical **S**ervices **D**epartment



Item	**Temporary works having Impact Public Safety (Category A – Catastrophic)**	**Checking and Endorsement**	**Inspection upon completion**
A1.1	Tower crane supporting structures	ICE	ICE
A1.2	Tower crane mechanical requirement	RPE (Mechanical)	RPE (Mechanical)
A2	Falsework of transfer plate	ICE	ICE
A3	Temporary frames supporting the Muck Hoist	ICE	ICE

Item	**Heavy Duties Temporary Works (Category B – Critical)**	**Checking and Endorsement**	**Inspection upon completion**
B1	Falsework supporting construction load greater than 10kPa (in addition to the dead weight of permanent structure)	RSE	RSE
B2	Falsework for construction of long span permanent structures (Span of permanent structure greater than 15m)	RSE	RSE
B3	Falsework supporting horizontal elements with structural depth greater than 1.5m	RSE	RSE
B4	Falsework with span greater than 12m	RSE	RSE
B5	Falsework for transfer beams at G/F	RSE	RSE
B6	1/F Portal Frames	RSE	RSE

Item	**Simple/ Generic Temporary Works (Category C – Day to Day Operation)**	**Checking and Endorsement**	**Inspection upon completion**
C1	Falsework supporting horizontal elements with structural depth equal to or smaller than 1.5m	CSE	CSE
C2	Lift shaft working platform (shall also comply with requirements in PNAP ADV-10)	RSE	TCP T4
C3	Debris catch platform	CSE	CSE
C4	Temporary site office	CSE	CSE
C5.1	Material hoist supporting parent structure	RSE	RSE
C5.2	Material hoist mechanical requirement	CP	RPE(Mechanical)
C6.1	Passenger hoist supporting parent structure	RSE	RSE
C6.2	Passenger hoist mechanical requirement	CP	RPE(Mechanical) & EMSD
C7.1	Monorail device supporting parent structure	RSE	RSE
C7.2	Monorail device mechanical requirement	CP	RPE(Mechanical)
C8	Mobile telescopic crane mechanical requirement	RPE(Mechanical)	CP
C9	Scaffold and catch fence	CSE	CSE
C10	Façade lifting device	CSE	CSE
C11	Any other works not belongs to "Heavy Duties Temporary Works"	CSE	CSE

Item	**Temporary Works Design which require BD Submission**	**Checking and Endorsement**	**Inspection upon completion**
D1	Any works which require BD submission	AP/ RSE	AP/RSE
D1	ELS alternative proposal	RSE	RSE

Notes

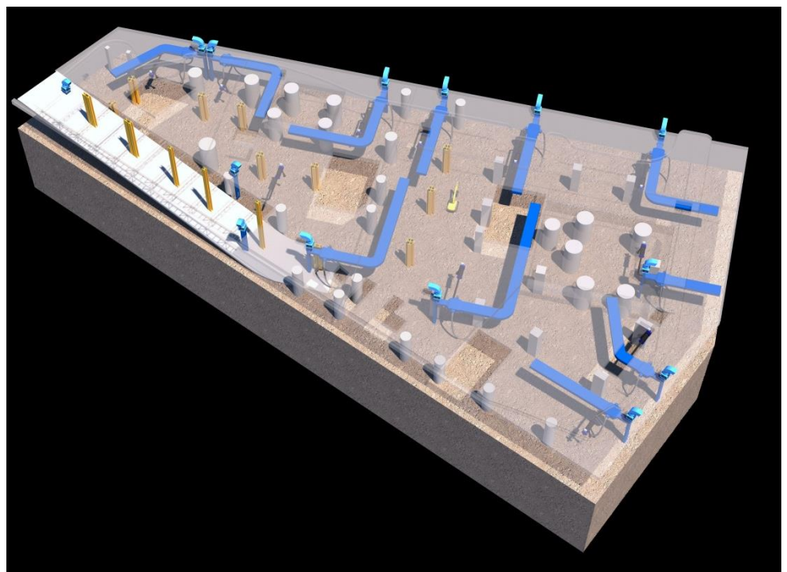
1. Requirements in Buildings Ordinance, relevant Building Regulations and all practice notes issued by Buildings Department shall be complied with. ***Temporary Works Control Framework***

In order to provide a safety & health environment at basement floors, a 2-meter height "smoke-free" zone will be designed. Mechanical ventilation for 8 Air Changes per hour for the total compartment volume at the Basement floors B4/F – B1/F will be provided.

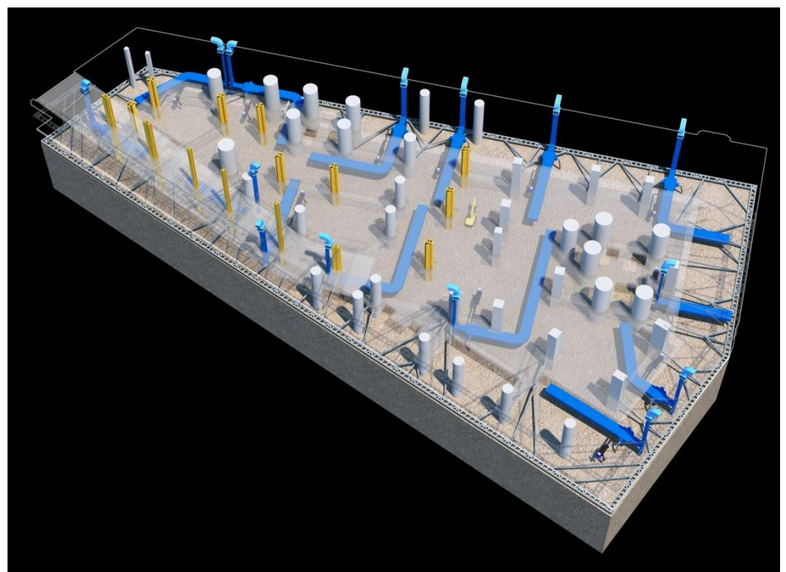
Exhaust air grille shall be installed at high level of each basement floors.

80% Make-up Air by mechanical ventilation shall be provided, and make-up air grille shall be installed at low level of each floor.

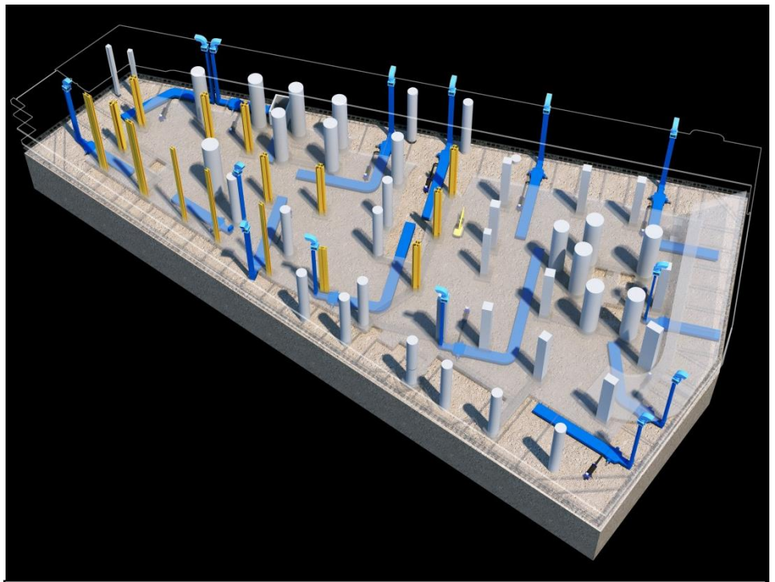
A group of propeller ventilator should be evenly distributed at ground floor for better air circulation.



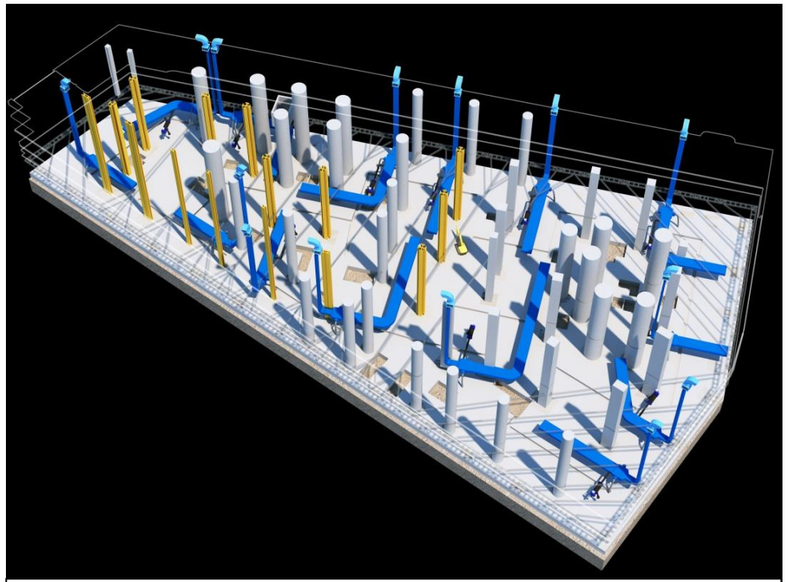
Ventilation System Arrangement for B1/F construction



Ventilation System Arrangement for B2/F construction



Ventilation System Arrangement for B3/F construction

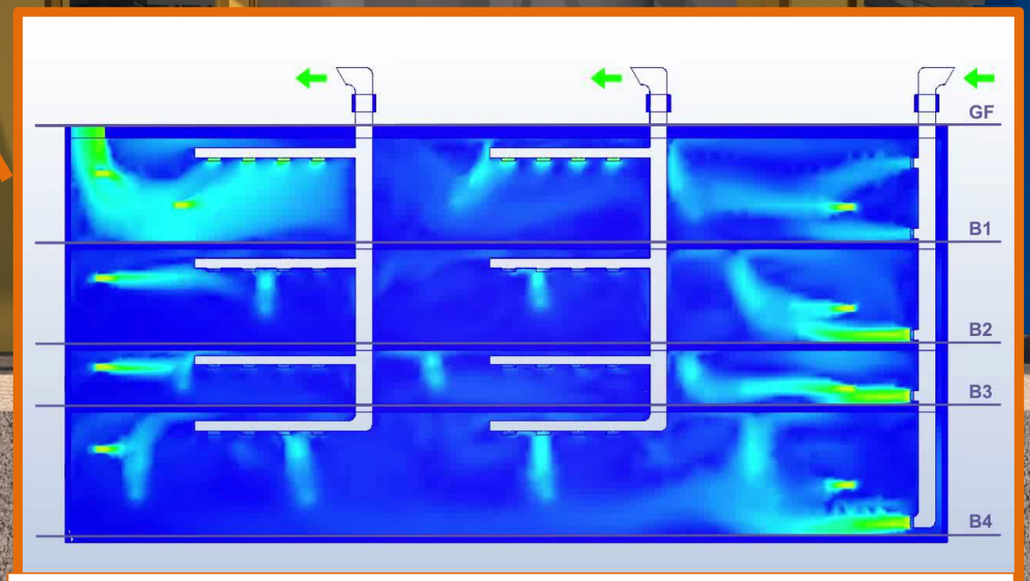


Ventilation System Arrangement for B4/F construction

15m flexible exhaust pipe

Fixed exhaust

Retractable exhaust pipe (10m² coverage area)



Computational Fluid Dynamics (CFD) Analysis

9.3. FIRE SERVICES

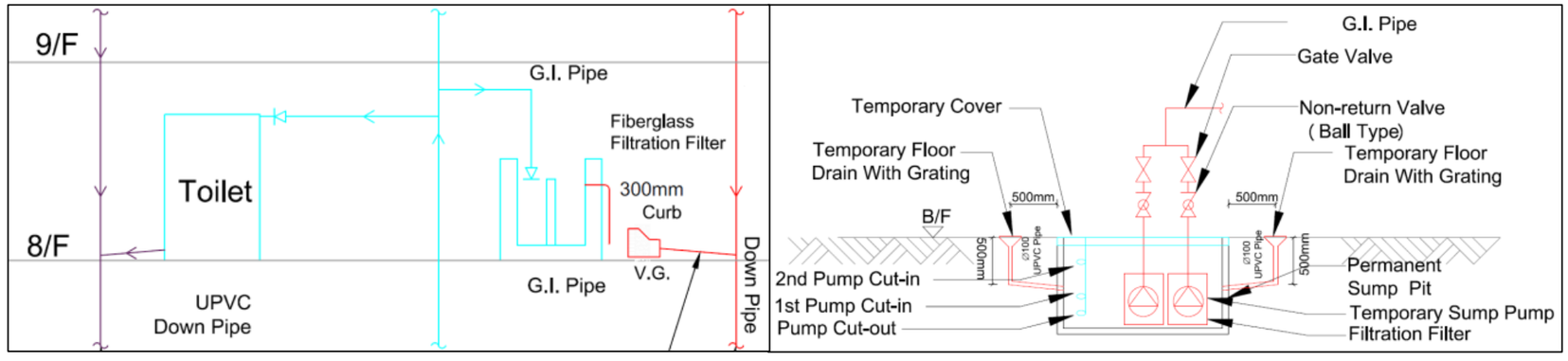
Permanent fire hydrant pipe risers shall be utilized, which connect to temporary intermediate fire pump per less than 30m from G/F to R/F and temporary F.S. Inlet at G/F according FSD Circular Letter No. /2008 (Fire Protection Measures in Construction Site).

In addition the site shall be provided with temporary hose reels at each floor fed by temporary plumbing system.

Temporary flashing light and break glass which connect and trigger alarm bell system shall be provided at all Exit Points on each floor.

9.4. PLUMBING AND DRAINAGE

Plumbing and Drainage System



Temporary water tank with water pump set / intermedia pump set shall be located at Basement or reasonable location. Potable water shall serve the podium and tower side, such as temporary toilets, car washing bay and refuse chute sprinkler etc. Water point shall be provided at each floor with fiberglass filtration filter. In order to keep the construction site dry and clean, 300mm kerb shall be formed to surround the fiberglass filtration filter area; vertical grating shall be casted in the kerb and connected to nearly drainage pipe. There are two temporary toilets at each 5 storeys. For the waste water from temporary toilets, it shall be delivered to waste water collection points and desilting tank that located at Basement. Thus, all the waste water shall be pumped to sewage treatment system and to be treated before further discharging into EPD approved discharge & disposal points.

Rainwater outlet and pipework shall be installed at the open area to collect the rainwater and discharge to rainwater collection and desilting tank that located at Basement. All rainwater shall also be discharged into EPD approved discharge point.

To prevent flooding in construction site, permanent sump pit shall be incorporate with temporary sump pumps, temporary floor drains and water level sensors to constitute a temporary sump pump automatic control system. Moreover, flooding sensors shall be installed where temporary sump pump system is located, and connected to the monitoring panel that located at site security guard for alarming purpose.

Power Supply

One 400A temporary electricity supply with meter provision shall be applied for construction site. It is facilitated to site office, hoarding and essential light, basement sump pump, site entrance gate facilities, temporary audio/ visual fire alarm, temporary FS pump, portable hand tools central charging station and RFID & online CCTV camera.

Temporary generators shall be provided to facilitate the tower crane, material / passenger hoisting machine, tools and lighting system etc.

In order to mitigate the chances of electric shock, power supply for all portable tool during ELS would be stepped down to 110V

Temporary power supply to all floors would be shut off after 19:00 to eliminate unauthorized use of electricity. Whereas charging of all portable tools would be centralized at designated charging station to prevent fire hazard.

Lighting System

High energy efficient lighting fittings shall be used in this construction site such 110V as LED tube, LED spot light, LED fluorescent lamp and LED floodlight etc. Motion sensor shall be completed with the lighting in order to further minimize the power consumption in the temporary lighting system.

To provide the safety workplace, lighting system in construction site shall be operated at 110V. Sufficient lighting fittings shall be installed to provide minimum 100 lux light intensity at general work areas and 200 lux light intensity at excavation areas as to suit lighting density in the trade practices. Moreover, portable spot light shall be provided at the inaccessible workplace. On the other hand, battery back-up LED tube per 10m^2 shall also be provided.

Cellular Network

The antenna for cellular network shall be installed at the basement area to ensure the people who working at the basement area could keep contact with others.

10. HANDOVER CONTROL AND MAINTENANCE

Handover Control Requirements

In this project, **Yee Fai** will refer to the Flowchart and set up a handover team and closely work with the Project team to check the units' readiness for handover/ T&C for both tenancy area and common area.

Firstly, we will submit a detail handover procedures and handover team proposal, including clear definition both in terms of the following to the Project Team for approval at minimum 3 months before O.P inspection:

- ✧ The extent of the areas;
- ✧ Handover dates of these areas;
- ✧ Time schedule with specific areas; and
- ✧ Parties involved for joint inspection.

During the handover process, a defect list would be issued by the Project Team. We will submit a programme and working method to the Project Team for agreement on the rectification of the defective items.

Upon the expiry of the DLP, we will conduct a site visit together with the Project Team. Defect list with rectification programme shall be prepared for the Project Team's approval. We will rectify the defects within 2 months except those defects concerning safety or essential operation shall be rectified immediately.

Lastly, we will carry a final inspection for completion of rectification of all defects (as list in the final defects list) shall be arranged and acceptance by the Project Team on satisfactory completion of rectification before issuance of certificate of making good defects.

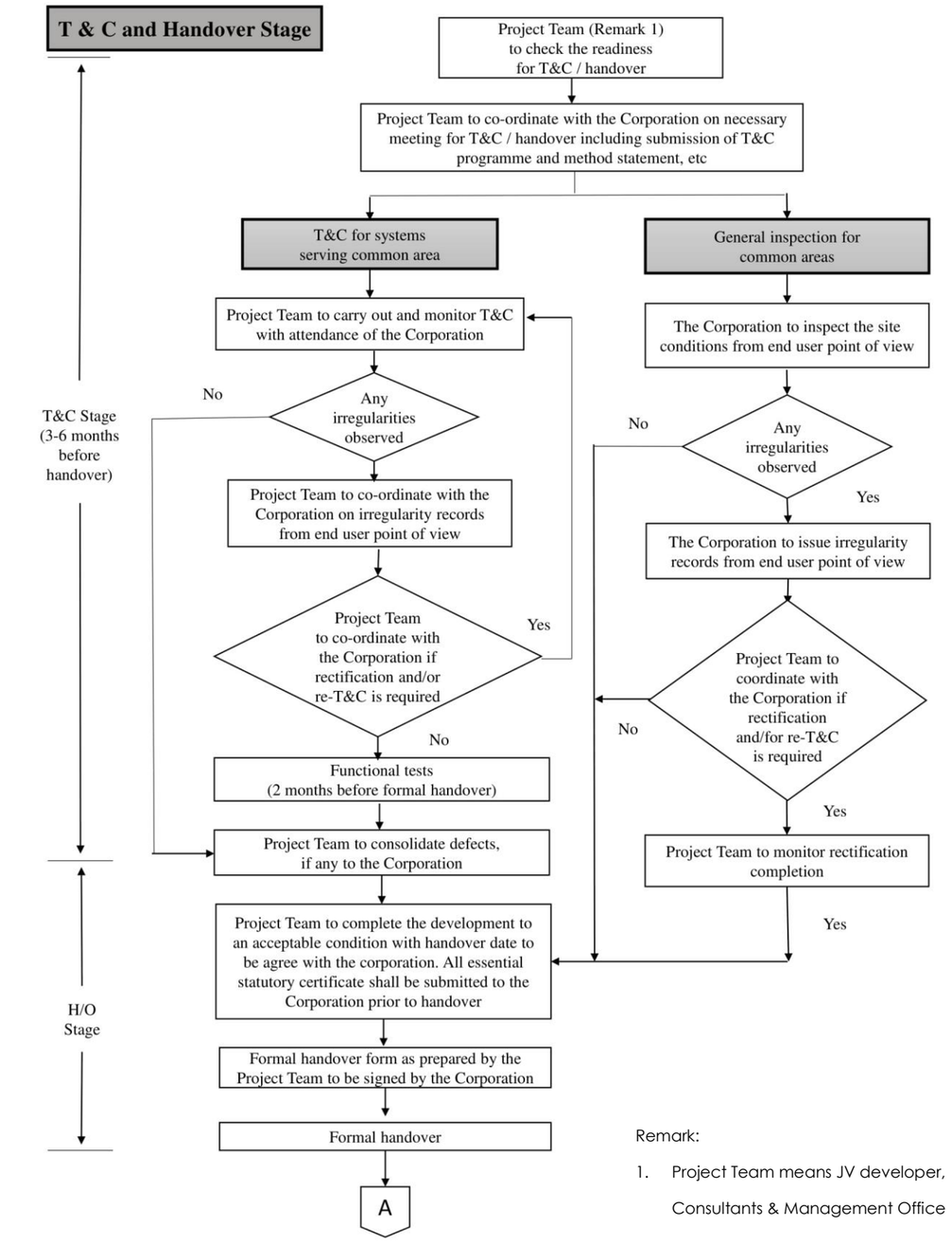
Pre-Handover and Handover Procedure:

We will allow minimum 8 no. of staff for follow up the tenancy area and common area for coordination with the project team and follow up with the rectification process.

Tenancy area and Common Area (Include but not limit to common area/car park (Basement floor)/ landscape/retail)

Flowchart 1

Defects Rectification / Handover Flowchart for Common Area of New Development



Remark:

1. Project Team means JV developer, Consultants & Management Office