The contractor have to submit a safety plan, which include the following:

- Safety Organization Chart
- Safety Use of Gondola
- Management of Suspended Working Platform
- Risk Assessment on Use of Gondola
### Safety Management for the Use of Gondola in Construction Site

### Risk Assessment on Use of SWP

#### 風險評估報告

**Project:** 彩雲道地盤2區1期

**Assessment Conducted By:**
- 区明昌(項目經理) / 胡家升(地盤代表) / 陳志滿(總管) / 周繼瑜、黃國華(管工) / 彭嘉明(安全主任) / 徐環芝(助理安全主任) / 麥若谷

**Engineering Construction Activities:** 吊船的安裝及維修

<table>
<thead>
<tr>
<th>項目/Item</th>
<th>活動/工序 Activities/Processes</th>
<th>危害識別 Hazard Identified</th>
<th>所影響之人及環境/財產 Affected Person/Environment/Property</th>
<th>危機評級 Risk Ranking</th>
<th>控制對策 Control Measure</th>
<th>預算及檢討日期 Proposed Review Date</th>
<th>負責人/組織 Responsible Person/Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>施工前的準備</td>
<td>錯誤的施工位置</td>
<td>地盤職員及地盤範圍附近人士</td>
<td>C</td>
<td>高</td>
<td>高空工作者及安裝吊船工作安全守則</td>
<td>1 低 地盤工程/地盤代表及管理</td>
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<tr>
<td></td>
<td>實地觀察環境及施工要求</td>
<td>不適合的設置/工具或工序程序</td>
<td></td>
<td>L</td>
<td>低</td>
<td>安全帽、反光衣、安全鞋</td>
<td></td>
</tr>
<tr>
<td></td>
<td>拆卸程序</td>
<td>不適當的人員數目或技術要求</td>
<td></td>
<td>R</td>
<td>高</td>
<td>安全守則</td>
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<td>物料排放</td>
<td>不適當的安全措施</td>
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<td>P</td>
<td>高</td>
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<td>吊運路線</td>
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<td>人手安排</td>
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<td></td>
<td>施工前會議</td>
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</tr>
</tbody>
</table>
Contractor to Comply with legal requirements

- After every installation and during the immediately preceding 12 months before it’s use:
  - Test and thorough examination by a competent examiner. A certificate in an approved form (Form 3)
  - 由合資格檢驗員進行負荷測試和徹底檢驗，並須由該合資格檢驗員以認可表格發給證明書（表格三）
Daily Inspection:

Prior to commencement of daily work, all suspension ropes and safety ropes shall be inspected by a competent person.

每日開工前，合資格的人必須檢查所有懸吊纜索，以確保它們處於安全操作狀態。
Safety Management for the Use of Gondola in Construction Site

Weekly Inspection:

Every suspended working platform shall be inspected immediately preceding 7 days before its use by a competent person. A certificate in an approved form (Form 1)

每部吊船必須在緊接使用前七天內由合資格的人檢查，而該合資格的人亦須將檢查結果載入認可表格內(表格一)

<table>
<thead>
<tr>
<th>Name of Owner</th>
<th>FACTORIES AND INDUSTRIAL UNDERTAKING(SUSPENDED WORKING PLATFORMS) REGULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address of Installation</td>
<td>靈篤建築工程有限公司</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of suspended working platform and identification mark</th>
<th>Date of inspection</th>
<th>Result of inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>吊船結構：鋼架, 吊船吊架, 鋁腳板</td>
<td></td>
<td>包括所有起吊機構及裝置, 工作平台, 平衡系統, 鋼索等</td>
</tr>
<tr>
<td>撞擊部位：電器部件, 自動傾側安全機構</td>
<td></td>
<td>(covering all lifting appliances and gear, the working platform, counter-balancer, ballast, outriggers, anchoring, supporting or fixing arrangements, all mechanical and electrical appurtenances and safety devices)</td>
</tr>
<tr>
<td>電源線及接頭</td>
<td></td>
<td>安遜及在安全工作狀態</td>
</tr>
</tbody>
</table>

Name, signature and designation of the competent person who made the inspection: LIM BURAMAL

Form 1

表格一
Six Months Thorough Examination:
Every suspended working platform shall be thoroughly examined by a competent examiner in the immediately proceeding 6 months before it is put into use. A certificate in an approved form (Form 2)

表格二

The six-month thorough examination certificate shall be issued before the platform is put into use. The certificate is the evidence of the platform's safety and operability.
Safety Management for the Use of Gondola in Construction Site

Inspection by HD Staff

Notices in English and Chinese to be displayed prominently on a gondola

吊船須於顯眼處展示一張中英文告示
Safety Management for the Use of Gondola in Construction Site

Inspection by HD Staff

- Check of Form 1, 2, & 3 and record in for DASM-F6202
- The personnel on the working platform are wearing and using proper personal protective equipment, such as a safety harness and a helmet with chin strap.

工作平台上的人員須穿戴和使用適當的個人防護裝備，如全身式安全吊帶和配有下顎索帶的安全頭盔等。
Safety Management for the Use of Gondola in Construction Site

Inspection by HD Staff

Safe Means of Access

Safe access and egress

有合適而安全的途徑進出工作平台
Inspection by HD Staff

The condition of guide rails and toe-boards of the working platform

工作平台的護欄及底護板的狀況
Safety Management for the Use of Gondola in Construction Site

Inspection by HD Staff:

- **PASS (Performance Assessment Scoring System)**

  按季度由工程項目小組和評分小組進行工地安全評估

  - Record check and surveillance Checking on the following:
    記錄審查和監視檢查事項如下:
  - Provide, maintain and operate gondola properly;
    適當地提供，維修及操作吊船;
  - All gondola to be operated by 4 wire system with arrestors;
    每部吊船要有四條懸吊繩索系統及與防墜装置一併安裝;
  - Gondola to be marked with SWL and No. of passenger allowed;
    所有吊船必須標明其安全操作負荷及可載的最高人數;
  - Independent lifelines to be provided for anchorage of safety harness;
    提供合適的安全帶及獨立救生繩;
  - Workers must wear safety harness properly tied to independent lifelines;
    吊船所載的每一個工人都應吊佩帶救生繩及繫繫於獨立救生繩;
  - Persons working on or operating the gondola must be aged 18 or above, have been properly trained and obtained a relevant certificate;
    在吊船上工作和操作吊船的人士必須年滿十八歲，並曾接受適當的訓練和取得相關證書;
  - Provide maintenance record of gondola for checking
    提供吊船的維修記錄，以供檢查。
Inspection by HD Staff:

Quarterly Independent Safety Audit conducted under the Housing Authority Safety Auditing System (HASAS)

The system is managed by the Housing Department’s appointed consultant. Under the system, each audit assessed by an appointed independent auditor is to be checked and verified by the Occupational Safety and Health Council (OSHC).

該系統由房委會任命的顧問管理，在系統下每次稽核都由職康局核實的獨立稽查員執行。
Safety Management for the Use of Gondola in Construction Site

Contractor Practice about Management of Safety Operation of the Suspended Working Platform

- Comply with legal and HD requirements of suspended working platform as said above
- Gondola provider issue a certificate of operation of the gondola to user
Safety Management for the Use of Gondola in Construction Site

工地使用吊船的安全管理措施

- Establish register system for users of gondolas

吊船使用者登記冊

<table>
<thead>
<tr>
<th>分辨名稱</th>
<th>進行的工作</th>
<th>吊船編號</th>
<th>借用人姓名</th>
<th>聯絡電話</th>
<th>借匙時間</th>
<th>借用人簽署</th>
<th>還匙時間</th>
<th>負責人簽署</th>
</tr>
</thead>
<tbody>
<tr>
<td>陳伯燊</td>
<td>清水</td>
<td>144</td>
<td>陳志華</td>
<td>95189516</td>
<td>08:15</td>
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<td></td>
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<tr>
<td>陳伯燊</td>
<td>清膠紙</td>
<td>151</td>
<td>林日榮</td>
<td>98765432</td>
<td>08:20</td>
<td>17:35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>金日</td>
<td>水管</td>
<td>102</td>
<td>施永達</td>
<td>95866250</td>
<td>08:20</td>
<td>17:35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

備註：借用吊船必須即日歸還鎖匙及在登記冊註銷；違失鎖匙收取行政費 500 元。
Safety Management for the Use of Gondola in Construction Site

工地使用吊船的安全管理措施

- Establish guideline on safety use of gondolas

訂立安全操作吊船的工作守則

操作吊船安全工作守則

1. 確保吊船的設備（包括：懸吊工作台、自動及手動安全保護網、纜索及獨立救生繩等）已稳固地安裝及防護，並由具合資格之檢驗員進行負荷測試及絆地檢測後，並發出符合安全證明書（表格一、三），每週由合資格人士檢查吊船並報告（表格一），吊船方可使用。
2. 吊船內人仕須年滿 18 歲，體魄強健，沒有高血壓、精神障礙或病歴等疾病。
3. 吊船內人仕必須接受吊船使用及操作訓練，並且掌握吊船之操作方法及安全懲戒，以及持有吊船公司發出之操作証書。
4. 吊船每次接載人數不超額（250公斤），各吊船使用人仕必須嚴格遵守吊船公司於吊船船身上展示之英文安全告示之限制規定。
5. 每次使用吊船前，應檢查吊船之纜索及安全繩，並於當日完工後立即交還。
6. 每日開工前吊船操作人仕必須檢查吊船之繩索，有沒有明顯損壞及處於安全操作狀況。
7. 各工地上吊船應儲設備在地面或指定平穩位置上，以便安全進出。
8. 吊船應於施工時，吊船內人仕不得隨意進出吊船，以免發生人體掉落事件。
9. 吊船內人仕使用的全閉式安全帶，全部式安全帶須有合適的下腰扣及獨立救生繩，（嚴禁兩人同時使用一條獨立救生繩）。
10. 吊船升降或下降時，操作吊船人仕須面向繩索及留意吊船行程有沒有障礙物伸出。此外，亦須留心電線有否被纏繞。
11. 吊船操作人仕使用吊船公司提供的吊船鋼索開動吊船，不得擅自改裝控制箱內的線路及電器設備。
12. 各工地上吊船應保持清潔，不可儲存任何物料，以免防止物料及工具從高處墜下。
13. 吊船工作平台應保持清潔，不可儲存任何物料，並配備合適的滅火器，吊船內人仕不得生火或吸煙。
14. 使用易燃物品時，禁止在易燃物品存放於適當的容器內，並配備合適的滅火器，吊船內人仕不得生火或吸煙。
15. 留意天氣狀況，若遇雷暴、大雨或強風，應停止使用吊船。
16. 收工後應將吊船降回地面或指定平穩位置上，吊船內人仕不得進出吊船。
17. 若發生事故，吊船操作人員應保持冷靜，利用通訊設備通知地盤管工及吊船公司管工及安全人員支援，切勿試圖自高空跳回接龍。
18. 每位操作吊船進行任何工序人仕須嚴格遵守此安全工作守則的各項要求，以確保自己及他人健康及安全。

Caring Customer-focused Creative Committed

相關為本、顧客為本、創新為本、盡心為本
Safety Management for the Use of Gondola in Construction Site
工地使用吊船的安全管理措施

Specific Training for Gondola Operators and Workers
訓練操作員及工作人員
The training of the persons operation or working on the suspended working platform should cover areas including:
吊船操作員及在吊船上工作的行的訓練內容應包括下列各方面：
(a) The basic construction of the suspended working platform and its system;
吊船的基本構造及系統；
Specific Training for Gondola Operators and Workers

(b) The operational features including all safety devices;

運作特性，包括所有安全裝置；
Safety Management for the Use of Gondola in Construction Site

Specific Training for Gondola Operators and Workers

(c) The anchorage and suspension systems; 繫繩物及懸吊系統；
Specific Training for Gondola Operators and Workers

(d) The proper use of safety belts, independent lifeline and other suitable fittings; &

適當使用安全帶、獨立救生繩，以及其他合適裝配；以及
Specific Training for Gondola Operators and Workers

(e) The emergency procedure and the precautionary measures to be taken in cases such as malfunction, locking of safety device, manual cranking of the working platform in case of power failure etc.

緊急應變程序及預防措施，以應付發生故障、安全裝置緊鎖、在發生電力故障時以人手降下工作平台、使用適當的通訊裝置要求協助等的情況。
Safety Management for the Use of Gondola in Construction Site

Check, Inspect and Maintain Gondola

安排由合資格人仕測試及徹底檢驗吊船

Daily Check

每天檢查

• Daily visual check by Trained Operators and Workers:
  每天開工前，由曾受訓練的操作員和工作人員進行目視檢查。
• Electrical System and Components:
  電氣系統及組件
Safety Management for the Use of Gondola in Construction Site

Daily Check

Lifelines and Safety Belts

救生繩和安全帶

The minimum diameter is 15.9mm for fiber rope.

救生繩直經不小於15.9mm

- Properly and independently secured to permanent structures of the building and they do not pass over sharp edges

適當及獨立地繫穩於建築物的固定結構物上及沒有繞過鋒尖角位。

- No signs of excessive wear and tear, deformation or distortion

救生繩有否出現過度磨損、變形和扭曲等現象。

- Safety belts/safety harnesses together with their arresting devices should be checked to ensure that they are in good condition

安全帶/安全吊帶亦應連同防墜裝置一併作檢查，以確保它們處於良好的狀態。
Safety Management for the Use of Gondola in Construction Site

Daily Check

Anchorage and support:

- In proper position, securely tightened and in good condition
  確保它們設於適當的位置，並已穩固地繫緊及處於良好的狀態
- The structure for supporting the suspended working platform have no deformation, corrosion or dislocation
  支撐吊船的構築物有否出現明顯的裂痕、變形、腐蝕或移位等情況
- Where the SWP is counterbalanced by counterweights, there are sufficient counterweights and they are in proper position
  若吊船以衡重物作平衡用，則須確定有足夠數量的衡重物及擺放位置正確
Daily Check

Wire ropes

- There is no signs of wear and tear, kinks, distortion, abrasion, flattening, strand nicking or corrosion, etc.
- Its end is properly finished and is sufficiently long

查看有否出現耗損、扭結、變形、磨損、扁平、斷口或腐蝕等情況。
檢查鋼絲纜索的尾端是否完整良好及有否足夠的長度。

In any length of 10 diameters, the total number of visible broken wires exceeds 5% of the total number of wires in the rope

查看有否於10倍纜索直徑的長度內，可見破斷鋼絲的數目與在纜索內的鋼絲總數之比例超過5%。
Safety Management for the Use of Gondola in Construction Site

Daily Check

- Functional / operational tests

功能/操作測試
Safety Management for the Use of Gondola in Construction Site
工地使用吊船的安全管理措施

- **Weekly Inspection (Form 1)**
  每週檢查(表格一)
- The Inspection should cover the following:
  檢查應該包括查看：
  (a) Any apparent defect in the hoist mechanism, wire ropes and shackles
  吊重機械裝置、鋼絲纜索和吊環的任何明顯欠妥之處；
Weekly Check (Form 1)

(b) Any abnormal function of the braking system, the automatic safety device
制動系統和自動安全裝置的任何功能異常；
Safety Management for the Use of Gondola in Construction Site

Weekly Check (Form 1)

(3) The condition of the outriggers, socket for the davit arm, parapet wall clamp, the tie-back

外伸支架、吊臂架插座、護牆鉗和錨定裝置的狀況；
Safety Management for the Use of Gondola in Construction Site

Weekly Check (Form 1)

(d) Any defect in the power cable, control button, and plug

電力電纜、控制按鈕和插頭的任何欠妥之處；
Safety Management for the Use of Gondola in Construction Site

工地使用吊船的安全管理措施

Weekly Check (Form 1) 每週檢查(表格一)

(e) Incorrect fitting of lifeline and safety harness and their anchorages

救生繩、安全吊帶和它們的繫繩物的不當裝配
Safety Management for the Use of Gondola in Construction Site

Weekly Check (Form 1)

(f) The condition of guide rails and toe-boards of the working platform

工作平台的護欄及底護板的狀況
Weekly Check (Form 1)

Functional test of the following items should also be carried out by the competent person in accordance with the manufacturer’s instructions:

(a) All operational control including emergency stop

所有操作控制器，包括緊急停機裝置
Weekly Check (Form 1)

(b) Manual descend facility

(c) All limit switches
Safety Management for the Use of Gondola in Construction Site

Weekly Check (Form 1)

(d) All electrical wiring and earthing component

所有電線及接地組件
Safety Management for the Use of Gondola in Construction Site

(e) Automatic safety devices

自動安全設備
Weekly Check (Form 1)

(f) Breaking System

制動系統
Six Months Examination (Form 2)

六個月徹底檢驗（表格二）

- Through examination my competent examiner
  由合格檢驗員作徹底檢驗
- A ‘test and thorough examination’ is basically composed of the following steps:
  「測試及徹底檢驗」基本上包括以下各步驟：
- Verification of the design and construction;
  吊船設計與構造的核實；
- Examination and testing of the electric system and components;
  電氣系統及組件的檢驗及測試；
- Physical examination of mechanical components/parts;
  機械組件/構件的外觀檢驗；
- Functional/operational testing; and
  功能/操作測試；及
- Re-examination.
  再次檢驗。
Six Months Examination (Form 2)

Physical examination of mechanical components/parts; Should include, but not limited to, the following:

- Anchorage and Support
  錨定及支持
- Working Platform
  工作平台
- Wire Ropes & Rope Terminations
  鋼絲纜索及纜索末端
- Drums, Winches and Pulleys
  鼓、絞車、滑輪
- Power Transmission Mechanism
  傳動系統
- Primary Brake
  主制動器
- Climbers
  爬升器
- Lifelines and Safety Belts
  安全帶及救生繩
Six Months Examination (Form 2)
功能/操作測試
- No Load Functional/Operational Tests
  無負荷的功能/操作測試
- Functional/Operational Tests of Other Safety Devices
  其他安全装置的功能/操作測試
- Overload Tests
  超載測試
- Dynamic Test
  動態測試
- Static Test
  靜態測試
Safety Management for the Use of Gondola in Construction Site

六個月徹底檢驗(表格二)
Some example of Thorough examination is as follow:
測試吊船傾側安全裝置

![Safety inspection images]
Safety Management for the Use of Gondola in Construction Site

Six Months Examination (Form 2)

Examine electric cables and components

検查電力電纜、控制按鈕和插頭
Six Months Examination (Form 2)
Condition of Wire Ropes

Examine Working platform structural member, guard rails, and toe boards

検験吊船鋼絲纜索

検験工作平台結構，吊船護欄及底護板
Six Months Examination (Form 2)
Examine Lifelines

Measuring width of working platform, guard rails and toe board
量度工作平台、護欄及底護板面積
Load Test and Thorough Examination by a Competent Examiner (Form 3)

- After every installation and during the immediately preceding 12 months before its use
  每部吊船完成安裝後，在緊接其使用前的12個月內，須經由合資格檢驗員進行負荷測試及徹底檢驗
- Load Test and Thorough Examination by a competent examiner
  由合資格檢驗員進行負荷測試及徹底檢驗
- A certificate in an approved form (Form 3)
  按認可表格而發出證明書(表格三)
Safety Management for the Use of Gondola in Construction Site

Load Test and Thorough Examination by a Competent Examiner (Form 3)

Some example of Load Test are as follow:

Accurate Test weight should be used

Weights evenly distributed on working platform
Safety Management for the Use of Gondola in Construction Site

Load Test and Thorough Examination by a Competent Examiner (Form 3)

由合资格检验员进行负荷测试及彻底检验（表格三）

**Overload Tests**
吊船超载测试

**Install remote Control**
安装无线遥控装置於吊船

**Gondola operated by remote control**
以无线遥控装置操作测试吊船
Safety Management for the Use of Gondola in Construction Site

Conclusion of the Management of Safety Operation of the Suspended Working Platform:

1. All wire ropes shall be inspected prior to commencement of daily work.
   每天開工前必須檢查所有懸吊纜索

2. No wire ropes of gondolas are found with wear, corrosion and any kink or distortion.
   確保纜索沒有耗損、銹蝕、扭結和變形

3. Every person riding on a SWP shall wear a safety belt properly attached an independent lifeline or an appropriate anchorage.
   確保吊船上工作人員佩帶安全帶及繫穩於獨立救生繩或穩固的繫繩物上

4. Clearly and legibly marked with its safety working load and maximum person permit.
   顯眼處展示安全操作負荷及可載的最高人數

5. Display prominently valid Form 1, 2 and 3.
   顯眼展示有效之證明書表格一，二，三