工程和物業管理安全研討會 2024

項目計劃施工方案心得分享

設計及建造將軍澳中醫醫院及政府中藥檢測中心

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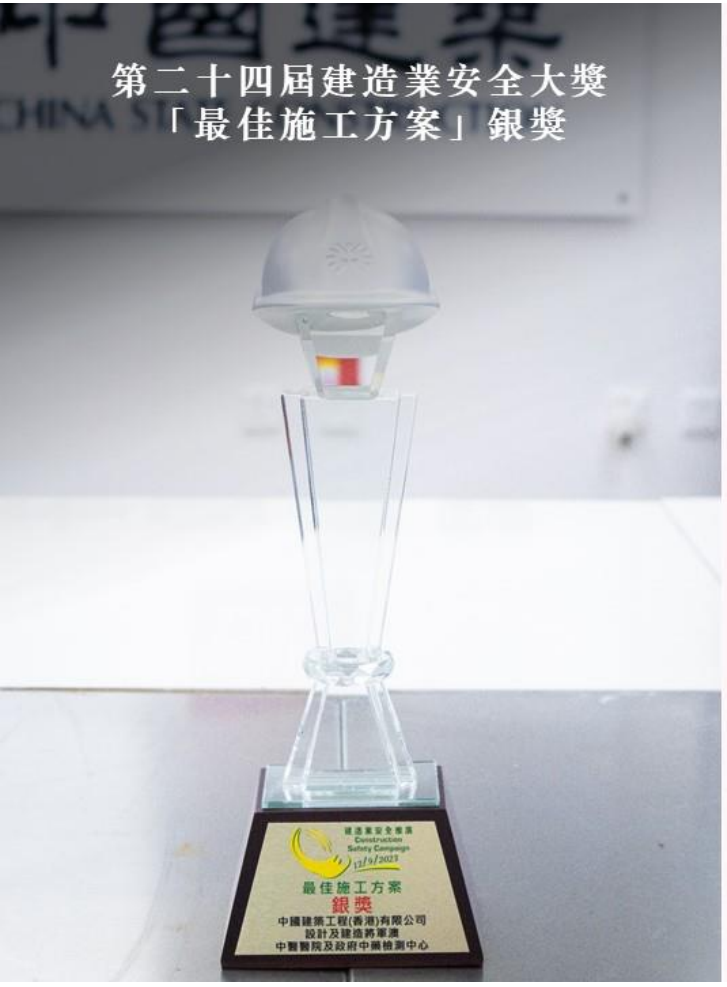
中建國際醫療產業發展有限公司 CHINA STATE CONSTRUCTION INT'L MEDICAL INDUSTRY DEVELOPMENT CO., LTD.
王歐陽(香港)有限公司 WONG & OUYANG (HK) LTD
graphia BRANDS onebite
中國海外建築科技有限公司



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項目簡介

香港中醫醫院

業主: 建築署

座落於將軍澳百勝角

- 將成為**香港首間**中醫醫院;
- 香港首間以**「組裝合成」建築法（MiC）**興建的多層醫院項目;

政府中藥檢測中心

業主: 建築署

- 專責中藥檢測科研;

工程情況

工程內容為興建一座9層高的中醫醫院大樓及一座6層高的政府中藥檢測中心大樓。

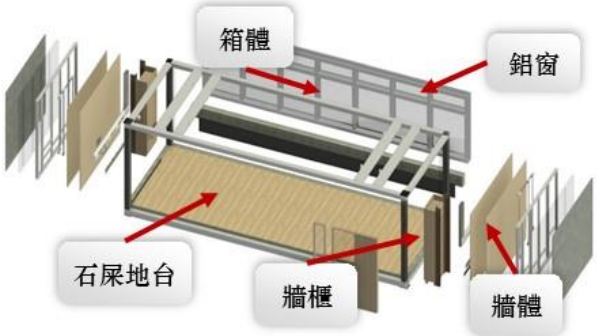
占地面積	60,000 ㎡
建築面積	190,000 ㎡

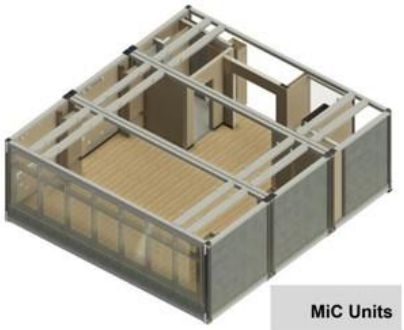
02

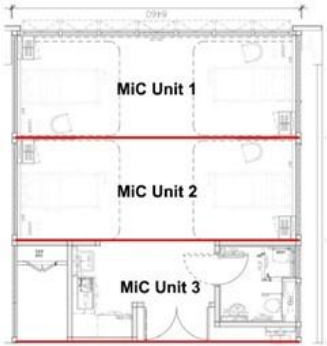
MiC設計

鋼箱 Steel MiC

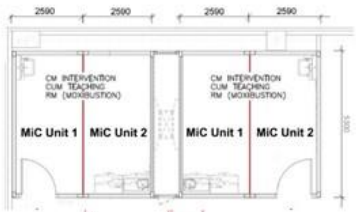
鋼結構MiC分為**吊裝式**及**推入式**兩種不同的安裝方法。







吊裝式



推入式

03

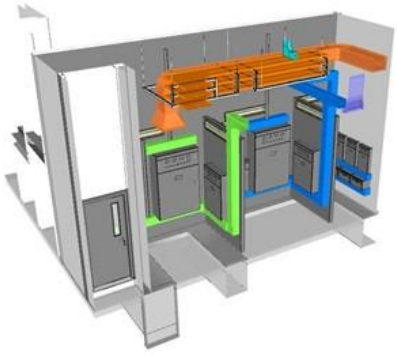
計劃施工方案

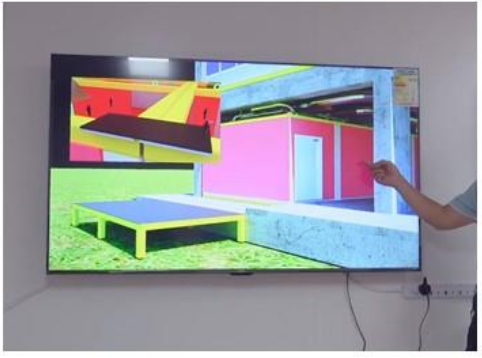
管理團隊制定了
一套完整的方案
確保施工流程每一個環節
都得到精準控制
更高效、更安全

1. 前期準備工作

➢ 創新科技

全流程使用創新科技，協助計劃整個MiC的運輸、吊運及安裝安排，構施整個安裝過程，尋找安全隱患，讓施工團隊對安裝過程有直觀了解，提高項目管理及安全水平。





BIM信息模擬技術

使用BIM模擬整個吊運、安裝過程及後期工序，從而令團隊更加清晰掌握安裝要訣及安全風險。動畫亦令人容易理解安裝流程。

1. 前期準備工作

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3D打印技術

3D打印技術可以協助進行培訓，令安裝人員更易容理解裝方案及進行溝通。

AR技術

使用擴增實境(AR) 技術方便現場安裝和檢查。

1. 前期準備工作

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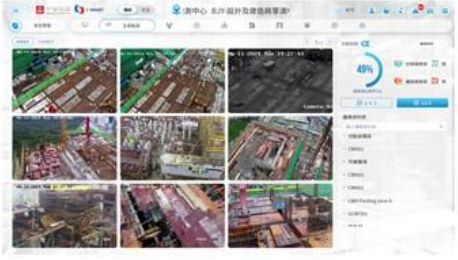
AR MAP 鷹眼系統

鷹眼系統可令管理者全面地監控MiC組件安裝進度



CCTV 全景監控

監控安裝上不安全行為。

無人機技術

全方位監察地盤環境，方便安排MiC到貨運輸。

1. 前期準備工作

➢ 示範模組

項目建造了一座兩層的示範模組，試裝MiC組件，將未來建設時所需面對的設計、生產、運輸、安裝及後續裝修等場景一一進行了模擬。

示範模組特意挑選最具代表性及安裝難度較大的房型進行試驗，通過模擬安裝檢視潛在挑戰，並及早準備解決方案，以便未來正式安裝工作順利進行。

2. 運輸安排

- **C-SMART智慧工地管理平台**

項目建立起一套以智慧工地管理為核心的數字化管理體系，大大提升建造可視化水平及信息處理效率，提高安全管理效率，實現智慧建造。

通過此集成平台，可實時查看MiC的全流程進度，協助各方進行生產計劃、物流協調及安裝安排。

C-SMART

2. 運輸安排

➢ 跨境運輸

清晰了解境外運輸細節，行車路徑，報關安排，掌握所有運輸情況，靈活應變各種特殊狀況。

➢ 地盤內運

設計地盤內行車路線，配合MiC以外其他工序的道路使用情況，從而決定內運最佳路線，使用<非繁忙時間>進行到貨及吊運，舒緩交通及吊運緊張。

Location	Minutes
海龍廠	0
HZMB -珠海口岸	60
過關	60
Scenic Hill Tunnel	30
HZMB- Hong Kong Port	10
Project Site	45
運輸時間	3 Hrs 25 mins

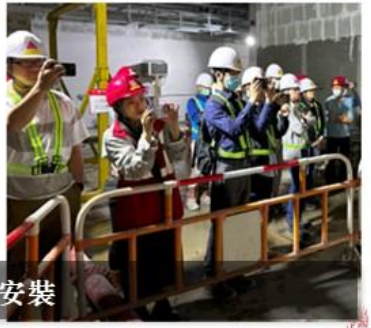
MiC生產商: 中國海龍科技有限公司

3. 具體施工流程

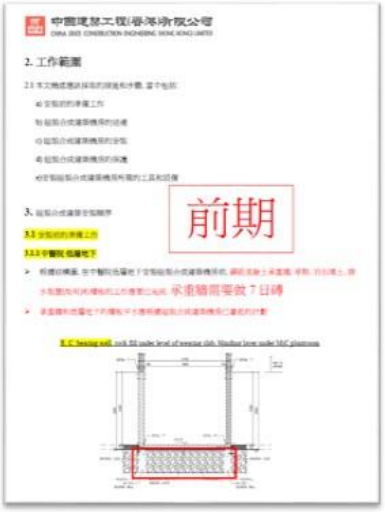
- **施工方案發放、執行及監察**

為確保所有地盤前線管理人員、分判商、前線施工工友都能夠完全明白整個施工方案及流程，工程團隊召開多次安裝交底會議、提供中文版施工方案、技術訓練、試行安裝。

安裝交底會議



試行安裝



中文版施工方案

3. 具體施工流程

- **施工方案發放、執行及監察**

鑒於多變的安裝環境，團隊舉行**超過** 100 **次**現場安全工作簡介，加強安全措施的執行。

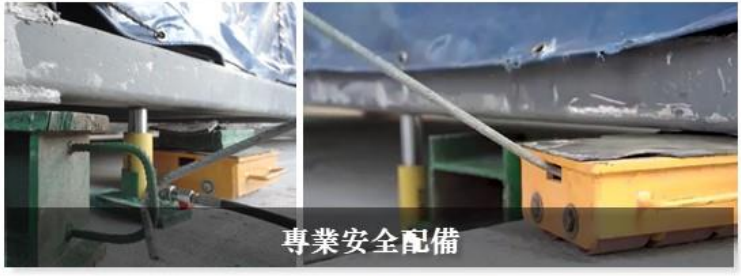
現場安全工作簡介

3. 具體施工流程

➢ 專業工具

安裝團隊使用合適工具、機械、專業安全配備，如<離手>工具，裝有危險警告燈的專用鏟車、專屬吊具、等等。


安裝工具


專業安全配備


專用鏟車

專屬吊具


測量儀器

3. 具體施工流程

- **MiC 團隊**

團隊緊密合作充足溝通，即時迅速解決問題。前線工友亦屢獲安全之星獎勵。

MiC 團隊

安全之星

4. 回顧及檢討

➢ 監督及檢討

地盤會因應施工的過程中所遇到的不同情況定期更新施工方案及作出動態風險評估。

另一方面，地盤亦會每次施工完成後檢討施工方案的實施情況及安全措施是否有妥善執行，持續作出監督及檢討。

現場監察施工


檢討會議

04

結 語

採用「組裝合成」建築法(MiC) 能大大減少需涉及工友施工的高危工序，創造安全施工環境。再配合智慧工地系統，主動進行監察，便能更保障工友的安全。

我們將全力以赴，選擇及運用安全施工方案，高效及安全地打造中醫醫院及政府中藥檢測中心。

全心奮進 領潮前行

謝謝！

This is a clip from the 31 July 2024 recording of the

Hong Kong Housing Authority

"Safety Forum 2024 for Works and Property Management Services"

The speaker on stage is Mr Chan Chun Kit

Deputy Project Manager, China State Construction Engineering (Hong Kong) Limited

His topic is

"Design and Construction of Chinese Medicine Hospital and Government Chinese Medicines Testing Institute in Tseung Kwan O"

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(00:27)

Hello everyone, I am Chan Chun-kit

I represent China State Construction Engineering (Hong Kong) Limited

The site I am responsible for is the Design and Construction of Chinese Medicine Hospital and Government Chinese Medicines Testing Institute in Tseung Kwan O

I serve as the Deputy Project Manager for this project

Our team is honoured to have received

the Silver Award for Best Method Statement at the 24th Construction Safety Award

We are also very grateful to the Hong Kong Housing Authority

the Construction Industry Council and Occupational Safety and Health Council

for inviting us to share our experience here today

Time is limited, so I will complete the sharing as quickly as possible

Let's start with an overview of the project

First, let me discuss the hospital component

The building in the upper image

is owned by the Architectural Services Department

Upon completion, it will be Hong Kong's first Chinese Medicine Hospital

and the first multi-storey hospital constructed using MiC methods

It is located at Pak Shing Kok in Tseung Kwan O

The contract includes two buildings

The lower image shows the Government Chinese Medicines Testing Institute

The owner is also the Architectural Services Department

Our scope includes

constructing a nine-storey hospital block and

a six-storey testing institute

As you can see, the site is situated next to Wan Po Road

adjacent to the Fire and Ambulance Services Academy

Next, I will explain the modular integrated construction methods design

The design uses steel modules

with two installation methods

On the right you can see

the first is lifting method

the second is pushing method

The lifting type is mainly used for wards

which are larger in size

Three steel modules are combined to form a six- or four-bed ward

The pushing type is used for consultation rooms, offices, etc.

which are smaller in size

Multiple small rooms or modules are combined into a large room

Now I will explain how we planned the method statement

Our method statement had four main directions

I will get straight to the content

First is the preparatory work

We adopted several innovative technologies

to help us plan and design the transportation

lifting and installation processes

We designed the most ideal, suitable, and safest

installation steps and method statement

This also allowed us to identify potential safety hazards

to improve our management level

We used BIM technology

to simulate the entire installation process

We use animation to help workers better understand and visualize

and grasp the safety risks involved

We also used 3D printing technology

to print a model of the MiC structure

to assist in safety training

and used Augmented Reality for ease of installation and inspection

Other technologies included the Eagle Eye system

CCTV and drone technology

Next is the demonstration module

The project has constructed a two-storey demonstration module

to trial install the MiC components

This allows for real testing of all designs, transportation, installation

and most importantly, safety considerations

The demonstration module allowed us to grasp installation details at an early stage

such as the number of workers required, standing positions

locations and assembly methods for temporary working platforms

The demonstration module specifically selected more challenging

room types with the highest installation difficulty for testing

We hope that through this trial installation

we can gain real experience

to ensure the actual installation is smoother and safer

For transportation, we used the C-SMART Smart Site Management Platform
to enhance the installation process
We also considered cross-border transport
to manage transport details and customs arrangement
and being flexible to adapt to various special circumstances
Next is the overall installation procedure
To ensure frontline staff, subcontractors and workers
fully understood the method statement
the engineering team conducted numerous installation briefings meetings
and provided Chinese versions of the method statement
as well as mock-up arrangements
Given the variable installation environments for MiC

we held over a hundred on-site safety briefings
to strengthen safety implementation
Our team also used appropriate tools, machinery
and professional safety equipment
such as hands-free tools
We also equipped the site with forklifts featuring hazard warning lights
and specialized lifting equipment
Also, we thanks to our MiC team
who worked closely together with ample communication
to quickly resolve issues
Our frontline workers also received multiple safety star awards

Finally, point four is supervision and review
Based on different construction environments and situations

we regularly review the method statement

and conduct dynamic risk assessments

After each completion

we check the feasibility of the method statement

and ensure that it was implemented properly

In summary

by using the MiC method

we significantly reduced high-risk procedures

and created a safer work environment

This approach minimizes risks for workers

and incorporates smart platforms for monitoring

to safeguard workers safety

We fully committed to implementing this method statement

to effectively and safely construct the Chinese Medicine Hospital

and the Government Chinese Medicines Testing Institute

Thank you all

Thank you for watching

(06:39)