

**Appendix 10 –**

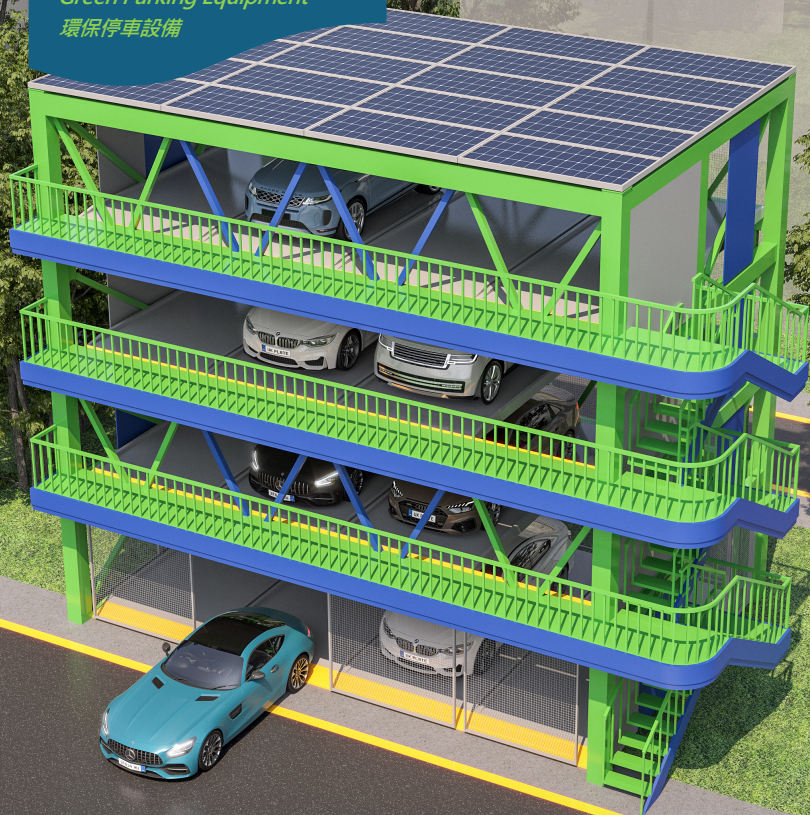
**Catalogue of the Double Rack Parking System**

# Puzzle Stacking System

## 拼圖型泊車系統

*Green Parking Equipment*  
環保停車設備

wise



# MARS

Puzzle parking series

# Company Introduction

## 公司介紹

Wise Automatic Parking System Company Limited provide one-stop solution in operation, management, automatic parking equipment, engineering and construction work for modern carpark.

Our professional team have more than 30 years experiences on European mechanical design and manufacturing. Our mainly products includes mechanized vehicle parking systems (MVPS) which are in higher quality and comply with BS EN standard.

To coordinate with the 2036 roadmap on popularisation of electric vehicles in Hong Kong. We engaged in the development and provide solution on "Smart & Green Parking" .

偉時自動化工程有限公司為現代化停車場提供一站式方案，包括營運、管理、自動泊車設備、工程建設等解決方案。

偉時的專業團隊擁有超過30年的歐洲機械設計和製造經驗。我們的主要產品包括機械化泊車系統(MVPS)，具有較高的質量和符合BS EN歐盟標準。

為配合2036年在香港推廣的電動汽車路線圖。我們正專注研發「城市智慧綠色停車」和提供合適方案。

**Manufacturing**

**Engineering &**

**Construction**



**R&D & Supply**

**W**se

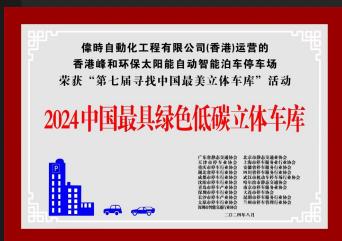
**Management Services**

# MARS Puzzle Stacking System

## MARS 拼圖型泊車系統

With increasing demand of parking space in modern city, MARS puzzle parking system, as one of the fully automated parking systems, could bring a more efficient use of parking space. It's smart and green design can get the "Environmental Design" award and the Chinese 10 best Parking System award on 2024.

隨著現代城市對停車位的需求不斷增加，MARS 拼圖停車作為全自動化停車系統之一，可以更有效地利用停車位，其智慧及環保設計獲得“2024中國最具綠色低碳立體車庫”獎項及“2024年中國十大最美立體車庫”獎項。



MARS puzzle parking system is a fully automated system featuring combination pallets that enable horizontal and vertical movement of parking spots just like a puzzle to park and retrieve cars. A fully automatic independent system, it can be easily configured and customised to any premises.

MARS 拼圖型立體停車間是一個採用結合水平和垂直移動停車平台的全自動系統。可以輕易停放和取回車輛。它是一個全自動、很容易地配置和定製到其他場所的獨立系統。



# Smart Design

## 智慧設計

- Fast pick up - Vehicles can be picked up in an average of 2 minutes  
快速取車 - 平均2分鐘內提取車輛



- The COMET automatic safety gate system not only covers the entrance and exit of the garage comprehensively, preventing any object from entering and leaving the garage, but its innovative sliding gate design eliminates the risk of gate falling, and also provides anti-pinch function to avoid injury to users.

COMET自動安全閘門系統，既能全方位封閉車庫進出口，防止任何物體進出杜絕意外發生，其創新橫移式閘門設計不單免除閘門墜落風險，而且還提供防夾功能，避免對使用者產生傷害。



# Smart Design

## 智慧設計

- Automatic lighting system - the entrance lighting is control by timer and garage inner lighting is control by sensor.  
自動照明系統 - 進出口燈光用時間器控制開關，車庫內燈光用感應器控制開關。



- Install CCTV on each floor of APS and monitor by the carpark officer.  
車庫每層都有安裝CCTV系統，由車場管理員負責實時監控。



- Each controller is equipped with the alarm system to indicate each incorrect operation, and the intercom is available for immediate assistant from the carpark officer.

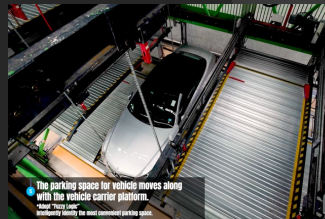
每個控制器設有警示燈，提示各種錯誤操作，同時設有對講機可即時向車場管理員尋援求助



# Smart Design

## 智慧設計

- “Fuzzy logic” the system not be limited to moving the vehicle to a preset designated location, but automatically select the best parking space in the system at that time.  
 “快思邏輯”讓系統不限於將車輛移至預設的指定位置，而是自動選擇當時系統內的最佳停車位。



- Its PLC system has the network communication function which can connect with other management system under Profinet, Modbus tcp.... Operator can read the instant data during parking process all the time. This system can store 500 sets date record of the parking process, includes data such as : plate number of vehicle, parking in/out time, daily occupancy rate, fault record, reminder of maintenance etc. Those information can assist the cooperate to have the better management with data analysis.  
 搭載的PLC系統具有網絡通信功能，可與其他管理系統在 Profinet、Modbus tcp....下進行連接。操作員可以隨時讀取停車過程中的即時數據。該系統可存儲500組停車過程的日常記錄，包括：車輛號牌、停車進出時間、每日使用率、翻查故障記錄、維修提醒顯示等等。這些信息可以幫助企業進行更好的管理和數據分析。

MARS4*4		2000.12.31 10:59:39	
24小時車位使用效率			
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MARS4*4			
車位	單位使用效率	所有車位總數	時間百分比
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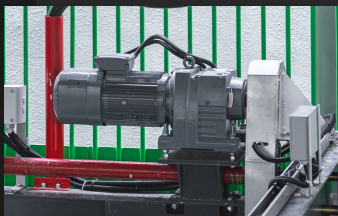
# Green Factor

## 綠色環保原素

- Install solar panel system to obtain energy power from nature.  
安裝配太陽能儲電系統獲取天然能源。



- APS is driven by high-grade frequency converter motor, energy saving and environmental protection.
- APS車庫採用高等級變頻電機驅動，節能環保。



- Can apply with electronic charger  
可裝配電動車充電設備





# Feature of MARS

## MARS 特點



EN 14010:2003+A1  
EN 60204-1:2018

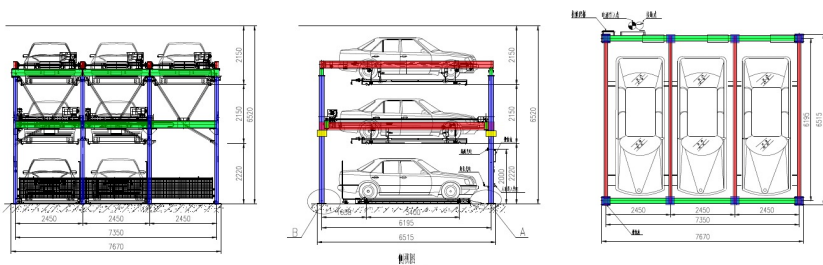
- Modular standard design
  - Convenient combination
  - Can built up to 2-4 layers
  - Can lifting vehicle up to 2500kg
  - Spaces saving
  - Electric chain lift system
  - Varity security detector
  - Computer programming
  - Suitable for indoor and outdoor
  - Can install solar panel
  - Easy installation
- 模塊化標準設計
  - 方便組合
  - 能建到2-4層
  - 能承受2500公斤的車輛
  - 節約空間
  - 電動鏈提升系統
  - 各種安全探測器
  - PLC電腦編程
  - 室內外均可使用
  - 可安裝太陽能板
  - 安裝快捷方便

Product Name 設備名稱	MARS Puzzle Stacking System MARS 拼圖型泊車系統	
Vehicle Specification 停車規格	Length 長	< 5000mm
	Width 寬	< 2000mm
	Height 高	< 2000mm
Loading for Vehicle 承載重量	≤ 2500kg	
Control Method 操作方式	PLC Touch Screen 電腦觸摸屏操作方式	
Vertical Lifting Speed 升降速度	4.5m/mins	
Horizontal Moving Speed 橫移速度	7m/mins	
Rated of Power 功率	5.5 kW	
Voltage 電源	3-phase 5-wire 380V/50Hz 三相五纜 380V 50Hz	

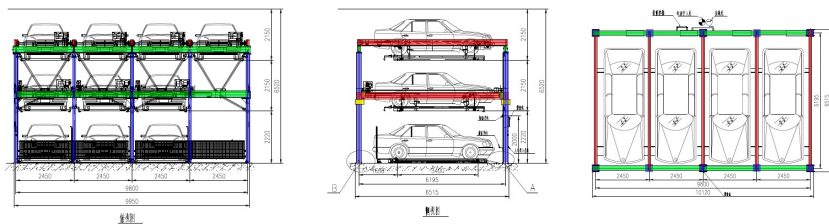
# Drawing of MARS

## MARS 圖示

### MARS 3 x 3



### MARS 3 x 4



\* Size and specification will be subject to the final proposal

# Drawing of MARS

## MARS 圖示

MARS 3 x 4



MARS 2 x 4



*\* Size and specification will be subject to the final proposal*

# Safety Device

## 安全裝置

Emergency stop switch

緊急停止按鈕

In case of emergency or malfunction, the emergency stop button can be pressed to immediately stop all mechanical action.

設備運轉中如遇突發狀況，可即刻停止所有機械動作。

Transverse slide sensor

橫移逾限防止裝置

The transverse positioning of the platform is precise to prevent the excess movement.

控制橫移車台定位精確，防止移位行程逾限。

Caution light

運轉警示器

When in operation, the caution light will flash to alert other drivers. If there is an abnormality, the alarm will sound.

正常運轉時警示燈閃動告示其他人車，若有異常則發出鳴響。

Upper/Lower limit sensor

上下極限開關

The vertical positioning of the platform is precise to prevent the excess movement.

控制升降車台定位精確，防止升降行程逾限。

Emergency braking system

斷電制動剎車

In the event of a power interruption, the platform will automatically halt, preventing any vehicle from falling.

遇電源中斷即制止車台繼續行走，避免升降車台於靜止時自然下降。

Overcurrent protection device

過電流保護裝置

If the motor is overloaded during operation, the power to the motor is automatically cut off.

設備運轉中若馬達運轉過度負荷，即自動切掉馬達電源。

Vehicle positioning device

車輛定位裝置

The car needs to be parked within the set parking limitation in order to not exceed the capacity of the equipment.

限制車輛停放位置，防止停放車長超出設備容量範圍。

Front and rear car length photoelectric

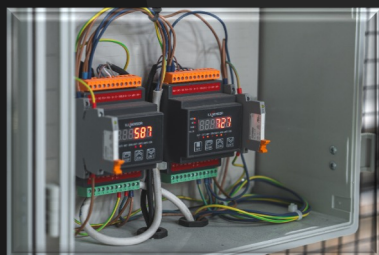
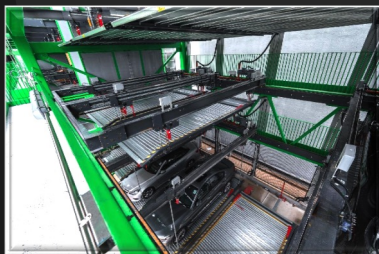
前後車長光電偵測

When the front and rear vehicle photoelectric switches are blocked, the equipment will automatically stop running and beep.

前後車長光電開關遭遮斷時，自動停止設備運轉併發出鳴響。

# Safety Device

## 安全装置



# Job Reference

## 實體案例

Project 項目：香港政府項目 HK Government project

Location 地點：ShamShuipo Hong Kong 香港深水埗

Aim：To introduce the first set of 4 level MARS in HK.

Increase the parking lots from existing 170 to 210.

改造目的：配置全港首套MARS 四層升降橫移機械停車設備，從原有170個車位增至210個車位

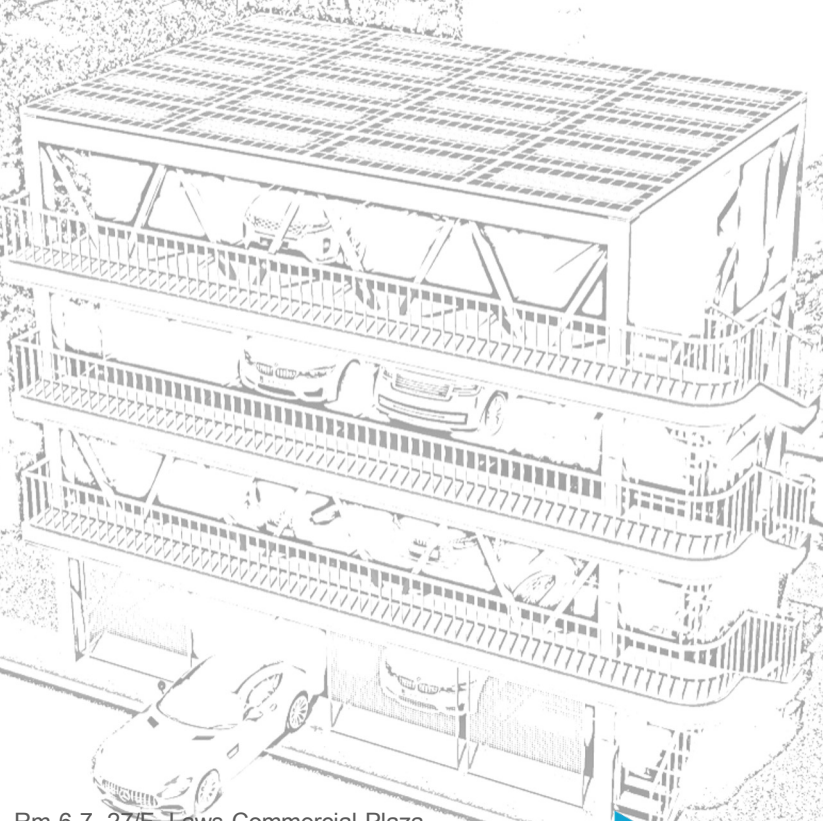
### Before 改造前



### After 改造後



# MARS



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