

MiC Award 2025

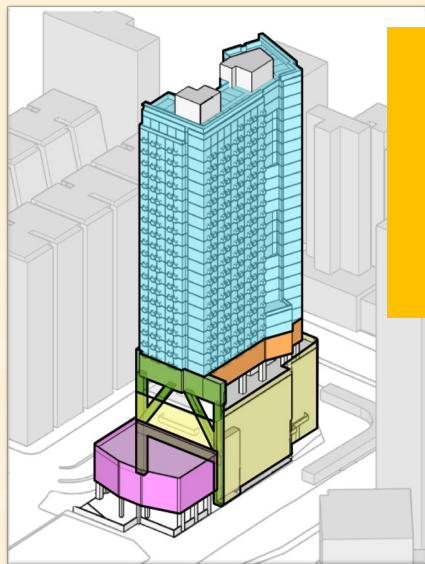
The Hong Kong Girl Guides Association Headquarters and Youth Hostel Development

Led by Mrs. Regina Leung Tong Ching Yee and the Project
Management Committee



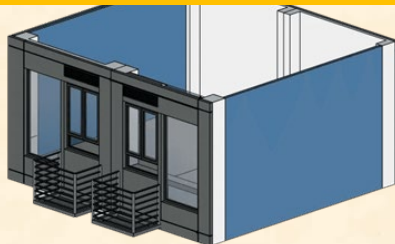
Functionality & Future Proofing

- ◆ Multi-functional integrated spaces for Youth Hostel & HQ
- ◆ Flexible non-structural partitions for future alteration
- ◆ Easy E&M access for maintenance



Integrated Design

Permanent MiC structure
with minimum 50 year
lifespan



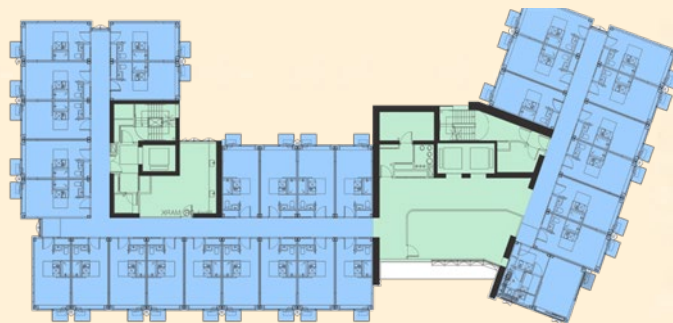
Flexible Layout



Maintenance Access

Basic Design Principles

- ◆ High repeating layout
- ◆ Volumetric pre-finished modules
- ◆ Weight control with lightweight materials



Standardized Modular Layout

■ MiC Area = $\sim 812 \text{ m}^2/\text{floor}$ ($\sim 79.7\%$)
■ In-situ Structure = $\sim 207 \text{ m}^2/\text{floor}$ ($\sim 20.3\%$)

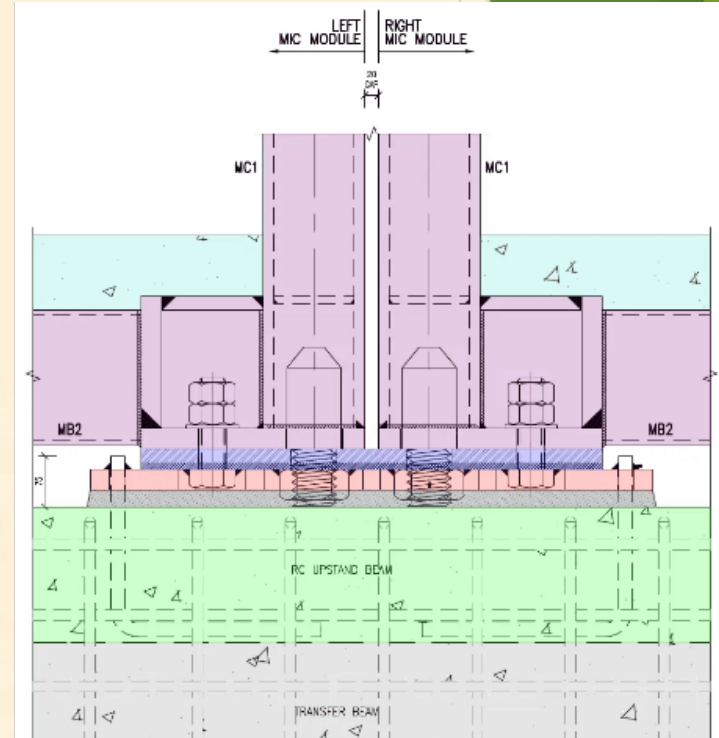
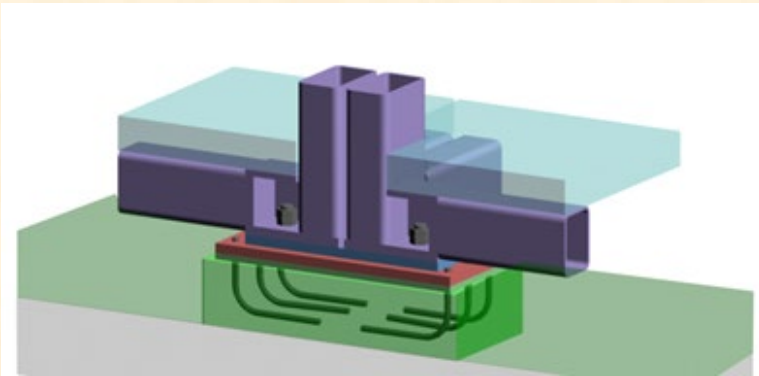
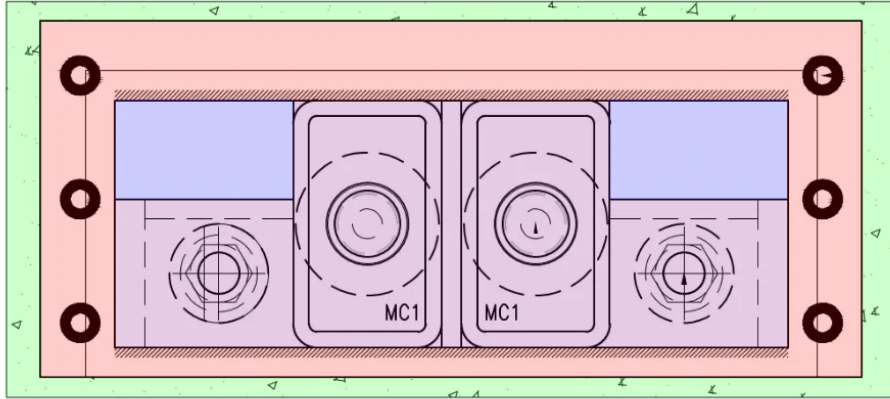
Type of Loading	Trade	Weight (Tones)
Dead Load + Superimposed Dead Load	Structural Frame Concrete Slab Nami Wall Window and Cladding Finishing + MEP	$19.8 + 3.2 = 23\text{T}$
Live Load	Door Furniture	1 T
	Total	24T



Volumetric pre-finished modules

Flexibility Design in Structural Connection

◆ 3D adjustable base connection (X, Y, Z axes)



Innovation: High Strength NAMI Wall

- ◆ >25MPa strength, 37% lighter
- ◆ 1-hour fire rating @ 80mm
- ◆ Patented acoustic insulation

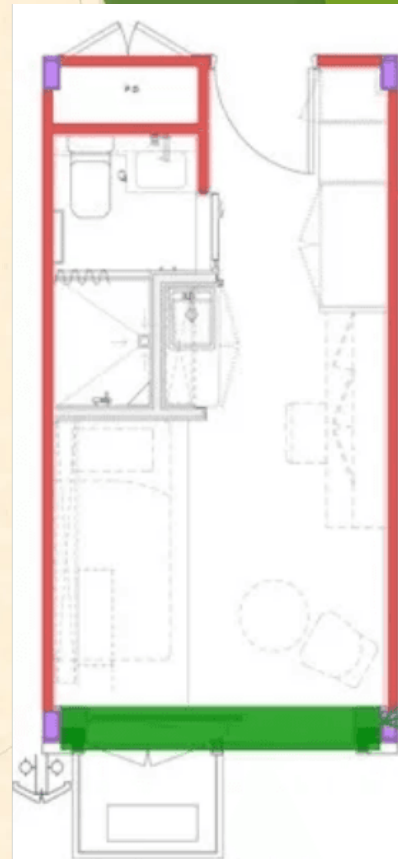


Automated
Concreting

Computerized
NAMI Mixing



Installation Robot



Automation & Quality Assurance

- ◆ Robotic welding & laser cutting in factory
- ◆ Strict tests: welds, concrete, watertightness, weight
- ◆ QR code full lifecycle tracking of every module



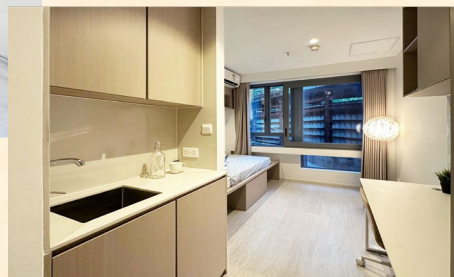
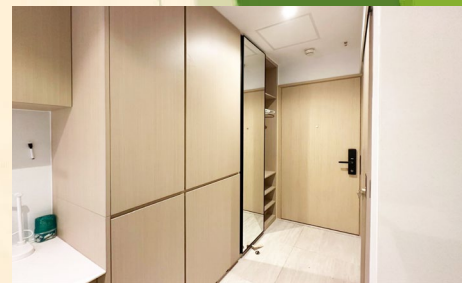
Mobile Inspection Platform with Individual QR code for off-site fabrication

1. Individual QR code setup for each MiC unit
2. Identify, track and locate the MiC modules via smart phones, tablets or computers.
3. Real time management of production progress.
4. Signed QA/QC forms uploaded to the platform for records.
5. Identify and track the MiC status both on-site and off-site (i.e. installed, pending for installation, etc.)
6. Records can be retrieved at any time.



100% Off-site Fitting Out

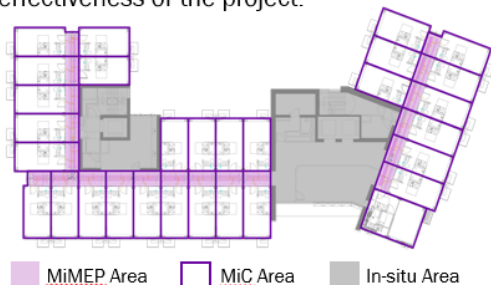
- ◆ Finishes, furniture & services 100% factory-completed
- ◆ Less waste, higher precision in controlled environment



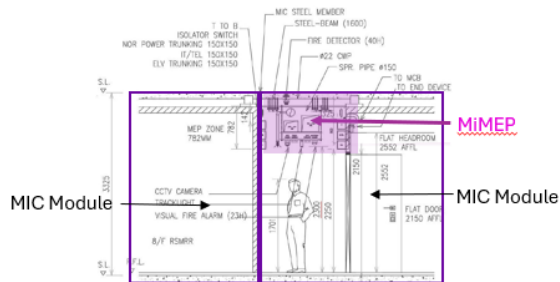
Innovation & Creativity – Adaptation of MIMEP Design

- ◆ BIM-led sequence planning reduces on-site risks
- ◆ 100% MiMEP adaptation verified by full-scale mock-ups

100% Adaptation: All MiC area is designed to adopt **MiMEP** for improving efficiency and cost-effectiveness of the project.

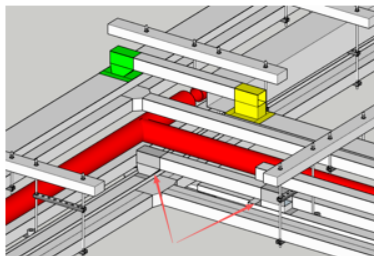


100% adaptation of MiMEP

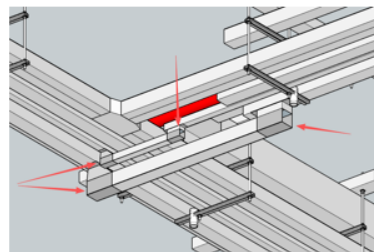


Relationship between MiMEP and MiC

Virtual Checking: BIM were utilized for the **MiMEP** design, checking, fabrication, and assembly.

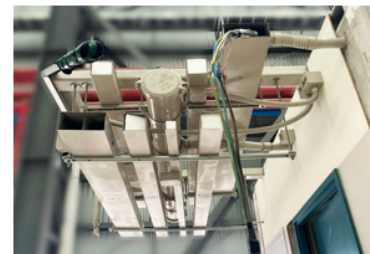


BIM for MiMEP Design



Visual MIMEP Design in BIM

MiMEP mock-up: Full scale MiMEP mock-up were constructed together with the MiC module, to improve the design, and review the fabrication, packaging, delivery and assembly.



Full Scale MIMEP Mock-Up



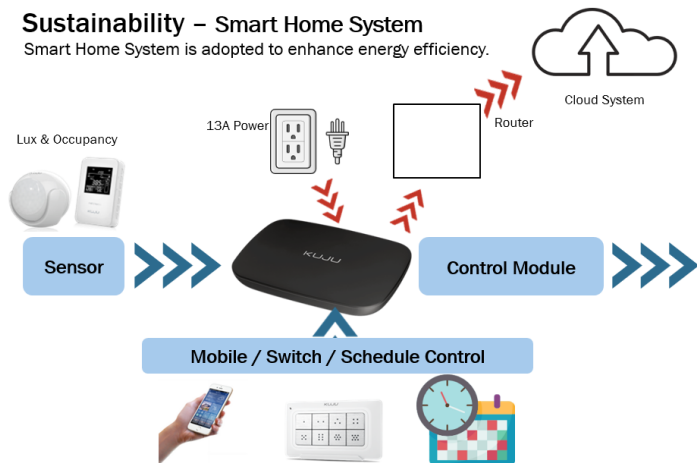
RFID for MiC and MiMEP

Sustainability & Smart Living

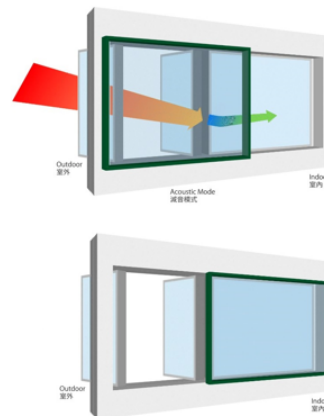
- ◆ Cloud smart home: lighting, HVAC, curtains & door locks
- ◆ Baffle windows cut traffic noise by 84% (~7dB)

Sustainability – Smart Home System

Smart Home System is adopted to enhance energy efficiency.



The Design of Baffle-type Acoustic Window:



- Inner layer acts as a baffle to screen off noise from entering the room.
- Outer layer could be opened during noise reduction mode letting air pass through from the side of the baffle layer, reducing energy consumption for HVAC at the same time.
- 2 layers of windows creates air gaps for extra sound insulation.

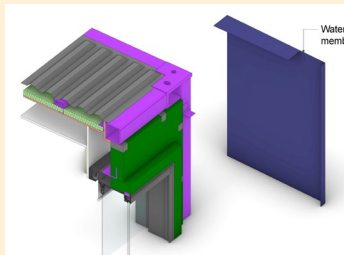
Mock-up of Baffle-type Acoustic Window (Open & Close Position)



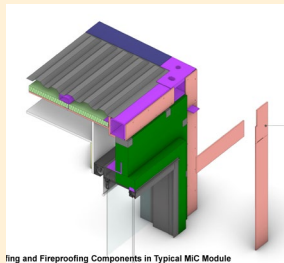
The baffle-type acoustic window could effectively **reduce 84% of noise** induced by traffic ~7dB.

Weatherproofing & Fire Protection

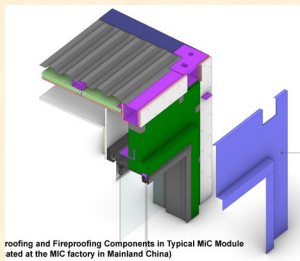
◆ Factory-integrated multi-layer weather & fire protection



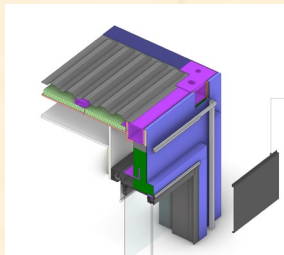
Waterproofing
Membrane Installation



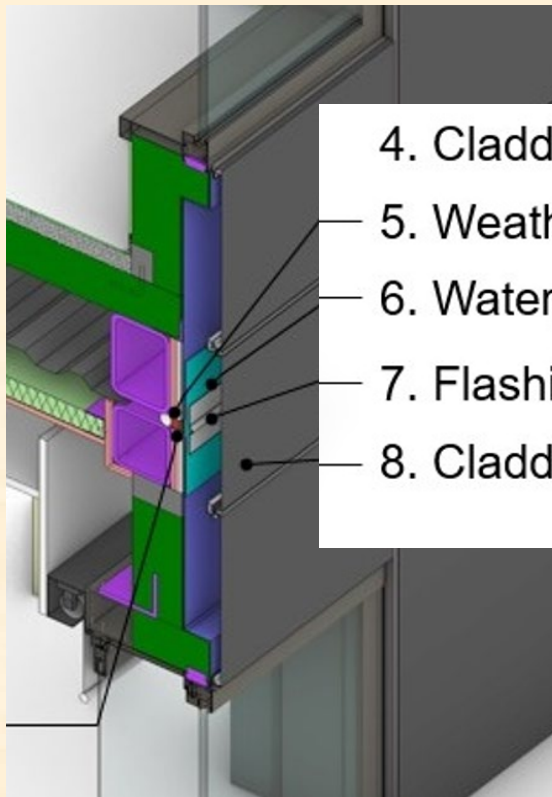
FRR Board Installation



Waterproofing
Layer Installation



Cladding Installation



4. Cladding

5. Weather sealant (On-site)

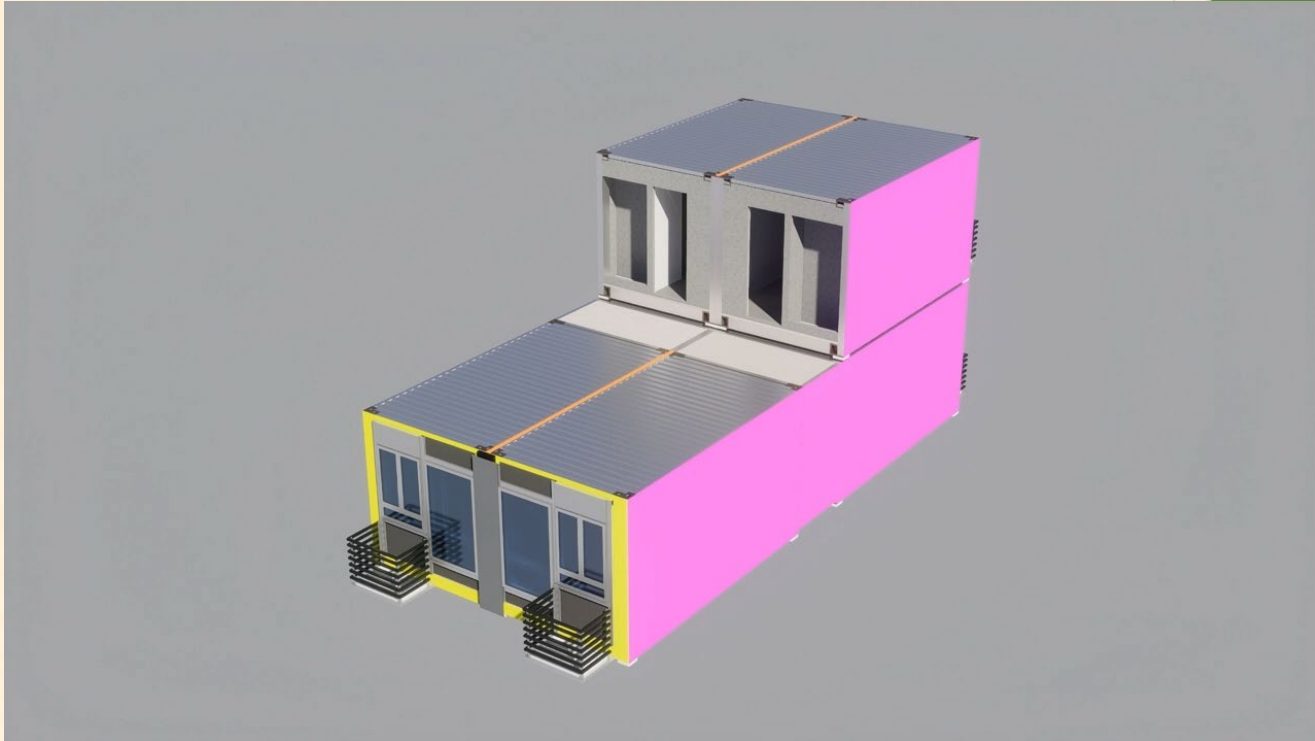
6. Waterproofing layer (On-site)

7. Flashing (On-site)

8. Cladding (On-site)

Project Innovation Highlights

- ◆ Video: construction process & modular assembly



Logistics & Uplifting Strategy

- ◆ Dual routes: HZMB land + Gaolan Port sea backup
- ◆ Approved TTA at Man Wai Street
- ◆ Tested lifting points; 25-34t tower cranes

Planning of MiC Delivery Route



Transit Line: Zhuhai Factory; Hong Kong-Zhuhai-Macau Bridge; North Lantau Highway; Lantau Link; Tsing Sha Highway; West Kowloon Highway; Lin Cheung Road; Jordan Road; Construction Site (**Total 131.6km**)

Transit Time: ~3 hours

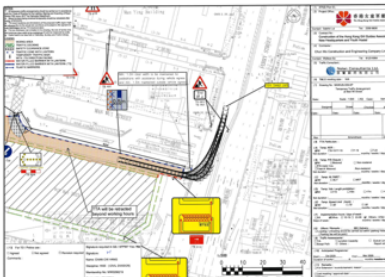
MiC Delivery Route (Back Up Plan – Sea Route)



As the MiC factory of this project is close to pier (高欄港). Shipping is planned as the alternative MiC delivery approach if land transport faced congestion.

Temporary Traffic Arrangement (TTA)

TTA has been approved in principle to allow for hoisting of MiC modules at Man Wui Street. This will be a huge improvement in site logistics during MiC installation



Selection of Trailer Truck for MiC Delivery

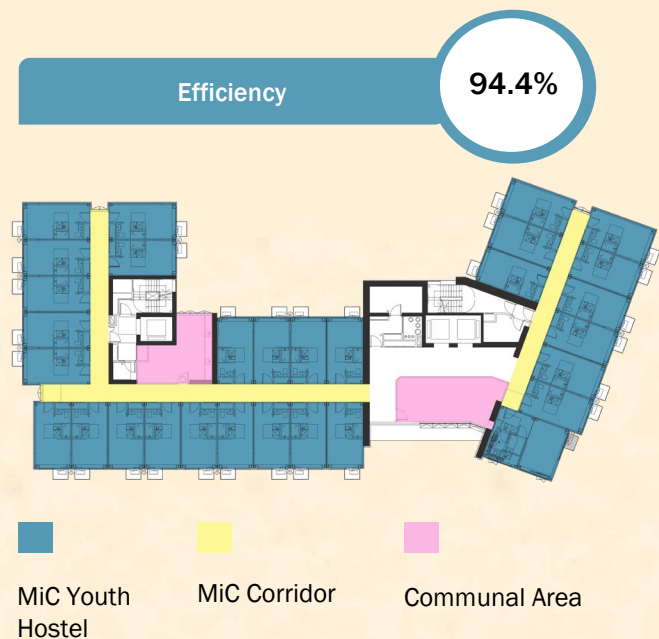
Comply HyD's and TD's statutory requirements

- Vehicle Selected : 9m Trailer Truck
- Total Length of Truck = 17m
- Width of Truck = 2.5m
- Height of Truck (with/without MiC) = 4.5/1m



Efficiency & Cost Effectiveness

- ◆ 5 months faster — 4-day cycle per floor
- ◆ 94.4% floor efficiency



Work Area



Machinery



Labour Cost



Time



Construction Cost

On-Site Construction

Off-Site MiC Fabrication

Limited Work Area

Work Area could be Increased as required

High

Lower

Expensive and Limited by Work Area

Comparatively Less Expensive
Not Limited by Work Area

Limited Construction Time
(7:00am to 7:00pm)

24 Hours Factory Production

N/A

Reduction by 8%

Thank You