CIC & HKFEMC – DfMA MiMEP Tradeshow 2021 Mic & MiMEP Webinar Forum 05 March 2021

DfMA MiMEP in West Kowloon Government Office(WKGO) & Tsing Yi Vehicle Examination Centre(Tsing Yi VEC)

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Content

- 1. DfMA can be Widely Used
- 2. Project Introduction
- 3. Planning for DfMA MiMEP
- 4. Workflow for MEP Modularization
- 5. Quality Control DfMA MiMEP
- 6. Photos for DfMA MiMEP



Why DfMA can be Widely Used?

10 years before

20 years before

30 years before

Now.....



How to bring the BIM to field?



How to bring the BIM to field?



Spooling



Visualization



3D scanning

DfMA MiMEP



RTS - Accurate Positioning



Clash Analysis



Hanger Design

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Data extraction

Project Background

Project Name	West Kowloon Government Offices (WKGO)					
Location	11 Hoi Ting Road, Yau Ma Tei					
Site Area	te Area 10 000 m ²					
Construction Floor Area	115 000 m ²					
No. of Storeys 16 (North Tower), 18 (South Tower) & 2 Basement						



Project Name	Tsing Yi Vehicle Examination Centre(Tsing Yi VEC)
Location	Sai Tso Wan Road, Tsing Yi
Site Area	30 750 m ²
Construction Floor Area	64 530 m ²
No. of Storeys	4 (30 inspection lanes for different kinds of vehicles, 2 chassis dynamometers for commercial vehicles & ancillary facilities for vehicles examination.)

Summary of Adoption for Design & Build Projects

Trade	DfMA MiMEP	WKGO	VEC
HVAC	Modular Cooling Tower and Pre-fabricated Pipework for Cooling Tower Plant	\checkmark	\checkmark
	Pre-fabricated Pipework for Chiller Plant	\checkmark	\checkmark
	Integrated Air Handling Unit	\checkmark	\checkmark
EL	Pre-fabricated MCB Board Panel Module	\checkmark	\checkmark
	Pre-fabricated Trunking / Cable Tray Riser		\checkmark
	Pre-fabricated Pressure Switch Assembly for F.S. / Sprinkler System	✓	✓
FS	Pre-fabricated Sprinkler Test and Drain Facilities	✓	✓
	Pre-fabricated Pressure Reducing Valve Assembly	✓	✓
	Modular Water Pump Set	\checkmark	\checkmark
PD	Pre-fabricated Pressure Reducing Valve Assembly	\checkmark	\checkmark



Planning for DfMA MiMEP



Workflow for MEP Modularization



Comparison of Installation Timeline between Traditional & Prefabricated Cooling Tower Pipe Module



Quality Control of Integrated AHU Installation



Overview Matrix of responsibilities for off site Integrated AHU/PAU (DfMA)

Item	Activities (Witness/ Checking/ Test)	Assembling Sub-contractor - PRC workshop	Internal QA/ QC (CP - YEC) HK	Internal QA/ QC (CP - YEC) - stay in PRC	CP (HH)	Inspector	RE	Remark
Α	Materials							
1	Material handover Checking (Check Model, Size, Origin and Designation)	Checking (100%)	N/A	Checking (5%)	Witness	Inspection (5%)	Inspection (% TBA)	
В	Assembling processes							
	For AHU Items							
2	AHU and PAU Fabrication (Frame, Coil, EC fan, Drain Pan)	Checking (100%)	N/A	Checking (5%)	Witness	Inspection (5%)	N/A	
	For Integrated Items							
3	Pipework Installation (Valve and accessories)	Checking (100%)	N/A	Checking (5%)	Witness	Inspection (5%)	N/A	
4	Pipework Insulation Installation	Checking (100%)	N/A	Checking (5%)	Witness	Inspection (5%)	N/A	
5	Electrical Panel Installation (LMCP, DDC and IAQ control Panels)	Checking (100%)	N/A	Checking (5%)	Witness	Inspection (5%)	N/A	
6	IAQ Equipment Installation (UV Light, Plasma Generator)	Checking (100%)	N/A	Checking (5%)	Witness	Inspection (5%)	N/A	
7	Cable Containment Installation	Checking (100%)	N/A	Checking (5%)	Witness	Inspection (5%)	N/A	
8	Control and Power Cable Wiring Work	Checking (100%)	N/A	Checking (5%)	Witness	Inspection (5%)	N/A	
9	Drawing Compliance (Refer to Integrated AHU Shop Drawing)	Checking (100%)	N/A	Checking (5%)	Witness	Inspection (5%)	Inspection (5%)	
	Final Product							
10	Electrical Testing (Insulation Test, Continuity Test)	Checking (100%)	N/A	Checking (10%)	Witness	Inspection (10%)	N/A	
11	CCMS Point Test	Checking (100%)	N/A	Checking (10%)	Witness	Inspection (10%)	N/A	
12	Motor Test	Checking (100%)	N/A	Checking (10%)	Witness	Inspection (10%)	N/A	
13	AHU Final Checking (Outlook and Components)	Checking (100%)	N/A	Checking (10%)	Witness	Inspection (10%)	N/A	
С	Delivery							
14	Package checking	Checking (100%)	N/A	N/A	N/A	N/A	N/A	
15	Product Delivery-on-site (Designation, Visual Check for apparent defect and factory QA record)	N/A	Checking (100%)	N/A	Witness	Inspection (100%)	Inspection as according to ITAP	

DfMA MiMEP in West Kowloon Government Office(WKGO) & Tsing Yi Vehicle Examination Centre(Tsing Yi VEC)

13











HVAC DfMA MiMEP (WKGO)









HVAC DfMA MiMEP (Tsing Yi VEC)









HVAC DfMA MiMEP (WKGO)









HVAC DfMA MiMEP (Tsing Yi VEC)

17











HVAC Integrated AHU

18

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EL PQM / MCB Board Prefabrication











FS Pre-fabricated Sprinkler Test and Drain Facilities Pre-fabricated Pressure Reducing Valve









PD Pre-fabricated Pressure Reducing Valve Pre-fabricated Pump Set

21

Thank you