**Annex IV (SOW)**

**IRENA LEVEL 1, 2, 3, 4 & 5 MODIFICATION WORKS**

**masdar head quarters**

MASDAR CITY

ABU DHABI,

UAE

*[Revision 00; 22th December 2016]*

**Prepared for:**

**Multiplex Middle East MASDAR**

D&C Main Contractor Client

masdar_city_logo.png



*Copyright: James L Williams Middle East***Document History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Revision** | **Date** | **Status** | **Review/Approval** |
| 00 | 22.12.16 | Issued for information |  |
| 01 | 18.05.17 | Issued for information |  |

**Table of Contents**

[**1.** introduction 4](#_Toc421535572)

[**2.** mep modification works](#_Toc421535573) 5

[**2.1** Mechanical Modification 5](#_Toc421535574)

[**2.2** Electrical Modification](#_Toc421535575) 7

[**2.3** BMS Modification](#_Toc421535576) 9

[***APPENDIX A:*** electrical DRAWINGs list](#_Toc421535577) 10

[***APPENDIX b:*** mechanical DRAWINGs list 10](#_Toc421535577)2

***“Every Day Since 1875; Australia’s most experienced services contractors; Specialists in delivering MEP Design & Construct solutions for the Middle East and Gulf Regions”***



# 1. introduction

The intent of this report is to clearly define the modification works for the Mechanical, Electrical and BMS associated with Level 1, 2, 3, 4 & 5 Irena (Block A) - MASDAR Head Quarters building located in MASDAR City at Plot Fa-08a.

The modification works for Irena comprises of the following:

1. **2nd, 3rd and 4th floor Office Area Modification Requirements:**

**Second Floor Office area:**

 Moving two meeting rooms # (26 & 27) to the back side area. Only equipment’s.

Converting meeting rooms # (26 & 27) to work space area by adding four free standing desks to each room.

Creating three meeting rooms in the back side area # (28, 30 and 31).

Moving all the IT equipment’s and Infrastructure from existing meeting rooms to the new.

Creating Additional store # 29 with all Infrastructure facility in the back side area.

**Third floor offices area:**

* Moving two meeting rooms # (25 & 26) to the back side area. Only equipment’s.
* Converting meeting room # (25 & 26) to work space area by adding four free standing desks to each room.
* Creating two meeting rooms in the back side area # (27, 29 and 30).
* Moving all the IT equipment’s and Infrastructure from existing meeting rooms to the new.
* Creating Additional store # 28 with all Infrastructure facility required in the back side area.

**Fourth Floor office area:**

* Moving two meeting rooms # (23 & 24) to the back side area. Only equipment’s.
* Converting meeting room # (23 & 24) to work space area by adding four free standing desks to each room.
* Creating two meeting rooms in the back side area # (25, 27 and 28).
* Moving all the IT equipment’s and Infrastructure from existing meeting rooms to the new.
* Creating Additional store # 26 with all Infrastructure facility required in the back side area.

1. **1st , 2nd, 3rd, 4th & 5th floors Common Area Modification Requirements:**

* 1st, 2nd & 5th floor Common area Pantries to be converted to rest rooms.
* 3rd & 4th floor Common area Pantries to be converted to showers.

**2. MEP MODIFICATION WORKS**

## Mechanical Modification

|  |
| --- |
| **HVAC** |
| **Modification’s Brief: Relocation of FCU’s, grilles, thermostats & additional ductwork to suite new partition layout.**  **Level 2 & 3:**   * Existing VAV’s in meeting rooms (02.03 & 02.02) & (03.03 & 03.02) will be replaced by new CAV’s, **Ref** (**MHQ-01-JLW-MX-SD-0614) &** (**MHQ-01-JLW-MX-SD-0624).** * 2 of the existing VAV’s which were taken out from the meeting rooms mentioned above will be shifted to serve the new proposed meeting rooms. * 5 new cross-talk attenuators shall be installed in the walls of the new area. * New ductwork for the fresh air supply shall be installed in the new store and office area. * Existing FCU’s (FCU-A-L3.30) & (FCU-A-L2.27) associated with the ductwork and grills will be serving the new office area but they will be shifted by 500 mm due to the clashing with the new partition. * Airflow will be adjusted in the new area as shown in the drawings, **Ref** (**MHQ-01-JLW-MX-SD-0612),** (**MHQ-01-JLW-MX-SD-0622).** * Chilled water flow will be adjusted and the pipe work will be shifted by 500 mm due to the clashing with the new partition as shown in the drawings, **Ref** (**MHQ-01-JLW-MX-SD-0613),** (**MHQ-01-JLW-MX-SD-0623).** * Condensate drain pipes for (FCU-A-L3.30) & (FCU-A-L2.27) will be shifted by 500 mm due to the clashing with the new partition as shown in the drawings, **Ref** (**MHQ-01-JLW-HX-SD-1311) &** (**MHQ-01-JLW-HX-SD-1321).**   **Level 4:**   * Existing VAV’s in meeting rooms (04.03 & 04.02) will be replaced by new CAV’s, **Ref** (**MHQ-01-JLW-MX-SD-0634).** * 3 of the existing VAV’s which were taken out from the meeting rooms mentioned above will be shifted to serve the new proposed meeting rooms and the conference room. * 5 new cross-talk attenuators shall be installed in the walls of the new area. * New ductwork for the fresh air supply shall be installed in the new store and office area. * Existing FCU’s (FCU-A-L4.29) associated with the ductwork and grills will be serving the new office area but they will be shifted by 500 mm due to the clashing with the new partition. * Airflow will be adjusted in the new area as shown in the drawings, **Ref** (**MHQ-01-JLW-MX-SD-0632).** * Chilled water flow will be adjusted and the pipe work will be shifted by 500 mm due to the clashing with the new partition as shown in the drawings, **Ref** (**MHQ-01-JLW-MX-SD-0633).** * Condensate drain pipes for (FCU-A-L4.29) will be shifted by 500 mm due to the clashing with the new partition as shown in the drawings, **Ref** (**MHQ-01-JLW-HX-SD-1331).** |

|  |
| --- |
| **PLUMBING (DRAINAGE)** |
| **Modification’s Brief:** Modification to existing drainage services to suite the New Architectural layout.  **Level 1 & 5:**   * New pipe work to be installed for the drainage of the new wash hand basin and WC and to be connected to the existing headers, Ref (**MHQ-01-JLW-HX-AB-1301) &** (**MHQ-01-JLW-HX-AB-1341).**   **Level 2,3 & 4:**   * New pipe work to be installed for the drainage of the new wash hand basin and shower and to be connected to the existing headers, Ref (**MHQ-01-JLW-HX-AB-1312),** (**MHQ-01-JLW-HX-AB-1322) &** (**MHQ-01-JLW-HX-AB-1332).** |

|  |
| --- |
| **FIRE PROTECTION** |
| **Modification’s Brief: Relocation of sprinklers to suite new partition layout.**  **Level 2,3 & 4:**   * Existing sprinklers and pipe work to be relocated to suite new partition layout **(Ref MHQ-01-JLW-FX-SD-2311) (Ref MHQ-01-JLW-FX-SD-2321) & (Ref MHQ-01-JLW-FX-SD-2331).** |

|  |
| --- |
| **PLUMBING (WATER)** |
| **Modification’s Brief:** Modification to existing plumbing services to suite the New Architectural layout.  **Level 1 & 5:**   * Existing pipework serving the sink will be shifted to serve the new wash hand basin. * New additional pipework to be installed to serve the new W.C and hand spray, **Ref (MHQ-01-JLW-HX-AB-1401) & (MHQ-01-JLW-HX-AB-1441).**   **Level 2,3 & 4:**   * Existing pipework serving the sink will be shifted to serve the new wash hand basin. * New additional pipework for hot and cold water to be installed to serve the new shower, **Ref (MHQ-01-JLW-HX-AB-1411),(MHQ-01-JLW-HX-AB-1421) & (MHQ-01-JLW-HX-AB-1431).** |

## Electrical Modification

|  |
| --- |
| **FIRE ALARM & VOICE EVACUATION** |
| **Modification’s Brief:** Addition of some smoke detectors and speakers within the existing loops to suite the new partition layout. **Ref: MHQ-01-JLW-FA-SD-5202\_V01, MHQ-01-JLW-FA-SD-5203\_V01, MHQ-01-JLW-FA-SD-5204\_V01).** |

|  |
| --- |
| **CCTV & ACCESS CONTROL SYSTEM** |
| No changes, **Ref: MHQ-01-JLW-TY-SD-7102\_V01, MHQ-01-JLW-TY-SD-7103\_V01, MHQ-01-JLW-TY-SD-7104\_V01).** |

|  |
| --- |
| **EMERGENCY & EXIT LIGHTING** |
| **Modification’s Brief:** Adding & Relocating of some Emergency Light fittings within the existing loops to suite the new partition layout. **Ref: MHQ-01-JLW-EX-SD-5302\_V01, MHQ-01-JLW-EX-SD-5303\_V01, MHQ-01-JLW-EX-SD-5304\_V01).** |

|  |
| --- |
| **AUDIO VISUAL** |
| **Modification’s Brief:** Modified as per the below Telecommunication changes. **Ref: MHQ-01-JLW-TA-SD-7207\_V01, MHQ-01-JLW-TA-SD-7209\_V01, MHQ-01-JLW-TA-SD-7211\_V01).** |

|  |
| --- |
| **ELECTRIC LIGHTING** |
| **Modification’s Brief:** Adding & Relocating of some Light fittings & to be connected to the existing circuits to suite the new partition layout and architectural changes. **Ref: MHQ-01-JLW-EL-SD-3205\_V01, MHQ-01-JLW-EL-SD-3209\_V01, MHQ-01-JLW-EL-SD-3213\_V01).** |

|  |
| --- |
| **TELECOMMUNICATION** |
| **Modification’s Brief:** The meeting rooms are having the following, **Ref: MHQ-01-JLW-TX-SD-6105\_V01, MHQ-01-JLW-TX-SD-6109\_V01, and MHQ-01-JLW-TX-SD-6113\_V01).** |

|  |  |  |
| --- | --- | --- |
| ***Second Floor (Wind meeting room)***   1. Two Pop-up boxes, each contain the following:            Two power socket           Two network point           One USB port           One HDMI port  2-      One Projector  3-      Smart broad screen  4-   SX20 Cisco Video conference facility – HDMI splitter to connect to the projector | ***Second Floor (Middle meeting room)***  1-     Two Pop-up boxes, each contain the following:           Two power socket           Two network point           One USB port           One HDMI port  2-    One Projector  3-     Smart broad screen | ***Second Floor (Solar meeting room)***  1-     Two Pop-up boxes, each contain the following:           Two power socket           Two network point           One USB port           One HDMI port  2-    One Projector  3-     Smart broad screen |
| ***Third Floor (Barjeel meeting room)***  1-      Two Pop-up boxes, each contain the following:           Two power socket           Two network point           One USB port           One HDMI port  2-      One Projector  3-      Smart broad screen  4-    SX20 Cisco Video conference facility – HDMI splitter to connect to the projector | ***Third Floor (Middle meeting room)***  1-      Two Pop-up boxes, each contain the following:           Two power socket           Two network point           One USB port           One HDMI port  2-      One Projector  3-      Smart broad screen | ***Third Floor (Hydropower meeting room)***  1-      Two Pop-up boxes, each contain the following:           Two power socket           Two network point           One USB port           One HDMI port  2-      One Projector  3-      Smart broad screen |
| ***Fourth Floor (Mangrove meeting room)***   1. Two Pop-up boxes, each contain the following:            Two power socket           Two network point           One USB port           One HDMI port  2-   One Projector  3-    Smart broad screen  4-    MX200 Cisco Video conference facility | ***Fourth Floor (Middle meeting room)***  1-      Two Pop-up boxes, each contain the following:           Two power socket           Two network point           One USB port           One HDMI port  2-      One Projector  3-      Smart broad screen | ***Fourth Floor (Water meeting room)***  1-      Two Pop-up boxes, each contain the following:           Two power socket           Two network point           One USB port           One HDMI port  2-      One Projector  3-      Smart broad screen |

|  |
| --- |
| **ELECTRIC POWER (HIGH LEVEL)** |
| No changes,  **Ref: MHQ-01-JLW-EP-SD-4213\_V01, MHQ-01-JLW-EP-SD-4221\_V01, MHQ-01-JLW-EP-SD-4229\_V01).** |

|  |
| --- |
| **ELECTRICAL POWER ( LOW LEVEL)** |
| **Modification’s Brief:** Adding floor boxes, Pop-up boxes, FGPB’s & to be connected to the existing circuits to suite the new partition layout and architectural changes. **Ref: MHQ-01-JLW-EP-SD-4209\_V01, MHQ-01-JLW-EP-SD-4213\_V01, MHQ-01-JLW-EP-SD-4217\_V01).** |

## BMS Modification

|  |
| --- |
| **BMS** |
| **Modification’s Brief:** The modification involves the relocation / addition of FCU controls, VAV controls, Thermostats, CO2 sensors, Presence detectors and change in communication loop (both KNX bus & Dali Bus)  **Level 2 & 3 (Ref. Drawing MHQ-01-JLW-NX-AB-8205, MHQ-01-JLW-NX-AB-8209)**   * Existing VAV controls in meeting rooms (02.03 & 02.02) & (03.03 & 03.02) will be removed in line with HVAC changes. * 2no.s of the existing VAV controls which were removed from the meeting rooms mentioned above will be shifted to serve the new proposed meeting rooms. * FCU controllers for FCU-A-L3.30 & FCU-A-L2.27 relocated as per the HVAC changes * Presence detectors will relocated and added so that each partitioned space will have 1 presence detector * The meeting room will be provided with wall mounted CO2 sensors and the open offices will be provided will duct mount CO2 sensors * KNX loop will be modified to incorporate the location changes and additions of FCU & VAV controllers, Thermostats, Presence Detectors, CO2 sensors * Dali loop will be modified as per the new changes in the electrical light fittings * The above modifications shall be re-programmed on the Existing BMS DDC Controllers for respective loops. * Graphics Modifications shall be done as per the final As-built layout drawings, on the existing BMS System PC, once the commissioning works are completed.   **Level 4 (Ref. Drawing MHQ-01-JLW-NX-AB-8213)**   * Existing VAV controls in meeting rooms (04.03 & 04.02) will be removed in line with HVAC changes. * 3 of the existing VAV’s which were taken out from the meeting rooms mentioned above will be shifted to serve the new proposed meeting rooms and the conference room. * Presence detectors will relocated and added so that each partitioned space will have 1 presence detector * The meeting room will be provided with wall mounted CO2 sensors and the open offices will be provided will duct mount CO2 sensors * KNX loop will be modified to incorporate the location changes and additions of FCU & VAV controllers, Thermostats, Presence Detectors, CO2 sensors * Dali loop will be modified as per the new changes in the electrical light fittings * The above modifications shall be re-programmed on the Existing BMS DDC Controllers for respective loops. * Graphics Modifications shall be done as per the final As-built layout drawings, on the existing BMS System PC, once the commissioning works are completed |

# APPENDIX A: ELECTRICAL DRAWINGS list

| **SL NO** | **AS MODIFIED**  **DRAWING REFERENCE** | **AS BUILT**  **DRAWING REFERENCE** | **DRAWING TITLE** |
| --- | --- | --- | --- |
| **TELECOMMUNICATION DRAWINGS** | | | |
| **1** | MHQ-01-JLW –TX-SD-6105\_V01 | MHQ-01-JLW –TX-AB-6105 | Level-2 Floor Plan Irena Block A (Overall) Telecommunication Plan |
| **2** | MHQ-01-JLW –TX-SD-6109\_V01 | MHQ-01-JLW –TX-AB-6109 | Level-3 Floor Plan Irena Block A (Overall) Telecommunication Plan |
| **3** | MHQ-01-JLW –TX-SD-6113\_V01 | MHQ-01-JLW –TX-AB-6113 | Level-4 Floor Plan Irena Block A (Overall) Telecommunication Plan |
| **BMS DRAWINGS** | | | |
| **4** | MHQ-01-JLW –NX-SD-8311 | MHQ-01-JLW –NX-AB-8205 | Level-2 Floor Plan Irena Block A (Overall) BMS Layout |
| **5** | MHQ-01-JLW –NX-SD-8321 | MHQ-01-JLW –NX-AB-8209 | Level-3 Floor Plan Irena Block A (Overall) BMS Layout |
| **6** | MHQ-01-JLW –NX-SD-8331 | MHQ-01-JLW –NX-AB-8213 | Level-4 Floor Plan Irena Block A (Overall) BMS Layout |
| **CCTV DRAWINGS** | | | |
| **7** | MHQ-01-JLW –TY-SD-7102 | MHQ-01-JLW –TY-AB-7102 | Level-2 Floor Plan Irena Block A (Overall) CCTV Plan |
| **8** | MHQ-01-JLW –TY-SD-7103 | MHQ-01-JLW –TY-AB-7103 | Level-3 Floor Plan Irena Block A (Overall) CCTV Plan |
| **9** | MHQ-01-JLW –TY-SD-7104 | MHQ-01-JLW –TY-AB-7104 | Level-4 Floor Plan Irena Block A (Overall) CCTV Plan |
| **FIRE ALARM DRAWINGS** | | | |
| **10** | MHQ-01-JLW - FA-SD-5202 | MHQ-01-JLW - FA-AB-5202 | Level-2 Floor Plan Irena Block A (Overall) Fire Alarm Plan |
| **11** | MHQ-01-JLW - FA-SD-5203 | MHQ-01-JLW - FA-AB-5203 | Level-3 Floor Plan Irena Block A (Overall) Fire Alarm Plan |
| **12** | MHQ-01-JLW– FA-SD-5204 | MHQ-01-JLW - FA-AB-5204 | Level-4 Floor Plan Irena Block A (Overall) Fire Alarm Plan |
| **LOW LEVEL POWER DRAWINGS** | | | |
| **13** | MHQ-01-JLW- EP-SD-4209 | MHQ-01-JLW-EP-AB-4209 | Level-2 Floor Plan Irena Block A (Overall) Low Level Power Plan |
| **14** | MHQ-01-JLW- EP-SD-4217 | MHQ-01-JLW- EP-AB-4217 | Level-3 Floor Plan Irena Block A (Overall) Low Level Power Plan |
| **15** | MHQ-01-JLW- EP-SD-4225 | MHQ-01-JLW- EP-AB-4225 | Level-4 Floor Plan Irena Block A (Overall) Low Level Power Plan |
| **HIGH LEVEL POWER DRAWINGS** | | | |
| **16** | MHQ-01-JLW- EP-SD-4213 | MHQ-01-JLW-EP-AB-4213 | Level-2 Floor Plan Irena Block A (Overall) High Level Power Plan |
| **17** | MHQ-01-JLW- EP-SD-4221 | MHQ-01-JLW- EP-AB-4221 | Level-3 Floor Plan Irena Block A (Overall) High Level Power Plan |
| **18** | MHQ-01-JLW- EP-SD-4229 | MHQ-01-JLW- EP-AB-4229 | Level-4 Floor Plan Irena Block A (Overall) High Level Power Plan |
| **EMERGENCY LIGHTING DRAWINGS** | | | |
| **19** | MHQ-01-JLW-EX-SD-5302 | MHQ-01-JLW-EX-AB-5302 | Level-2 Floor Plan Irena Block A (Overall) Emergency Lighting Plan |
| **20** | MHQ-01-JLW-EX-SD-5303 | MHQ-01-JLW-EX-AB-5303 | Level-3 Floor Plan Irena Block A (Overall) Emergency Lighting Plan |
| **21** | MHQ-01-JLW-EX-SD-5304 | MHQ-01-JLW-EX-AB-5304 | Level-4 Floor Plan Irena Block A (Overall) Emergency Lighting Plan |
| **ELECTRICAL LIGHTING DRAWINGS** | | | |
| **22** | MHQ-01-JLW-EL-SD-3205 | MHQ-01-JLW-EL-AB-3205 | Level-2 Floor Plan Irena Block A (Overall) EL Plan |
| **23** | MHQ-01-JLW-EL-SD-3209 | MHQ-01-JLW-EL-AB-3209 | Level-3 Floor Plan Irena Block A (Overall) EL Plan |
| **24** | MHQ-01-JLW-EL-SD-3213 | MHQ-01-JLW-EL-AB-3213 | Level-4 Floor Plan Irena Block A (Overall) EL Plan |
| **AUDIO VISUAL DRAWINGS** | | | |
| **25** | MHQ-01-JLW-TA-SD-7207 | MHQ-01-JLW-TA-AB-7207 | Level-2 Floor Plan Irena Block A (Overall) AV Plan |
| **26** | MHQ-01-JLW-TA-SD-7209 | MHQ-01-JLW-TA-AB-7209 | Level-3 Floor Plan Irena Block A  (Overall) AV Plan |
| **27** | MHQ-01-JLW-TA-SD-7211 | MHQ-01-JLW-TA-AB-7211 | Level-4 Floor Plan Irena Block A (Overall) AV Plan |

# APPENDIX b: mechanical DRAWINGS list

| **SL NO** | **AS MODIFIED**  **DRAWING REFERENCE** | **DRAWING TITLE** | **REV** |
| --- | --- | --- | --- |
| **FIRE FIGHTING DRAWINGS** | | | |
| **1** | MHQ-01-JLW-FX-SD-2311 | LEVEL 2 PART PLAN BLOCK A - OFFICE AREA FIRE FIGTHING | V01 |
| **2** | MHQ-01-JLW-FX-SD-2321 | LEVEL 3 FLOOR PLAN BLOCK A FIRE FIGTHING | V01 |
| **3** | MHQ-01-JLW-FX-SD-2331 | LEVEL 4 FLOOR PLAN BLOCK A FIRE FIGTHING | V01 |
| **4** | MHQ-01-JLW-FX-SD-2361 | LEVEL 2 DEMOLITION PLAN BLOCK A - OFFICE AREA FIRE FIGHTING | V01 |
| **5** | MHQ-01-JLW-FX-SD-2371 | LEVEL 3 DEMOLITION PLAN BLOCK A FIRE FIGTHING | V01 |
| **6** | MHQ-01-JLW-FX-SD-2381 | LEVEL 4 DEMOLITION PLAN BLOCK A FIRE FIGTHING | V01 |
| **HVAC DRAWINGS** | | | |
| **7** | MHQ-01-JLW-MX-SD-0611 | LEVEL 2 FLOOR PLAN BLOCK A IRENA (OVERALL) NEW MECHANICAL LAYOUT | V01 |
| **8** | MHQ-01-JLW-MX-SD-0612 | LEVEL 2 FLOOR PLAN BLOCK A IRENA (PART 2) MECHANICAL LAYOUT | V01 |
| **9** | MHQ-01-JLW-MX-SD-0613 | LEVEL 2 FLOOR PLAN BLOCK A IRENA (PART 2) CHILLED WATER LAYOUT | V01 |
| **10** | MHQ-01-JLW-MX-SD-0614 | LEVEL 2 FLOOR PLAN BLOCK A IRENA (PART 2) MECHANICAL LAYOUT | V01 |
| **11** | MHQ-01-JLW-MX-SD-0621 | LEVEL 2 FLOOR PLAN BLOCK A IRENA (OVERALL) NEW MECHANICAL LAYOUT | V01 |
| **12** | MHQ-01-JLW-MX-SD-0622 | LEVEL 2 FLOOR PLAN BLOCK A IRENA (PART 2) MECHANICAL LAYOUT | V01 |
| **13** | MHQ-01-JLW-MX-SD-0623 | LEVEL 3 FLOOR PLAN BLOCK A IRENA (PART 2) CHILLED WATER LAYOUT | V01 |
| **14** | MHQ-01-JLW-MX-SD-0624 | LEVEL 2 FLOOR PLAN BLOCK A IRENA (PART 2) MECHANICAL LAYOUT | V01 |
| **15** | MHQ-01-JLW-MX-SD-0631 | LEVEL 4 FLOOR PLAN BLOCK A IRENA (OVERALL) NEW MECHANICAL LAYOUT | V01 |
| **16** | MHQ-01-JLW-MX-SD-0632 | LEVEL 2 FLOOR PLAN BLOCK A IRENA (PART 2) MECHANICAL LAYOUT | V01 |
| **17** | MHQ-01-JLW-MX-SD-0633 | LEVEL 2 FLOOR PLAN BLOCK A IRENA (PART 2) MECHANICAL LAYOUT | V01 |
| **18** | MHQ-01-JLW-MX-SD-0634 | LEVEL 4 FLOOR PLAN BLOCK A IRENA (PART 2) MECHANICAL LAYOUT | V01 |
| **19** | MHQ-01-JLW-MX-SD-0651 | LEVEL 2 DEMOLITION PLAN BLOCK A IRENA (OVERALL) DEMOLITION LAYOUT | V01 |
| **20** | MHQ-01-JLW-MX-SD-0652 | LEVEL 2 DEMOLITION PLAN BLOCK A IRENA (PART 2) MECHANICAL LAYOUT | V01 |
| **21** | MHQ-01-JLW-MX-SD-0653 | LEVEL 2 DEMOLITION PLAN BLOCK A IRENA (PART 2) CHILLED WATER LAYOUT | V01 |
| **22** | MHQ-01-JLW-MX-SD-0654 | LEVEL 2 DEMOLITION PLAN BLOCK A IRENA (PART 2) MECHANICAL LAYOUT | V01 |
| **23** | MHQ-01-JLW-MX-SD-0671 | LEVEL 2 DEMOLITION PLAN BLOCK A IRENA (OVERALL) DEMOLITION LAYOUT | V01 |
| **24** | MHQ-01-JLW-MX-SD-0672 | LEVEL 2 DEMOLITION PLAN BLOCK A IRENA (PART 2) MECHANICAL LAYOUT | V01 |
| **25** | MHQ-01-JLW-MX-SD-0673 | LEVEL 3 DEMOLITION PLAN BLOCK A IRENA (PART 2) CHILLED WATER LAYOUT | V01 |
| **26** | MHQ-01-JLW-MX-SD-0674 | LEVEL 2 DEMOLITION PLAN BLOCK A IRENA (PART 2) MECHANICAL LAYOUT | V01 |
| **27** | MHQ-01-JLW-MX-SD-0681 | LEVEL 4 DEMOLITION PLAN BLOCK A IRENA (OVERALL) DEMOLITION LAYOUT | V01 |
| **28** | MHQ-01-JLW-MX-SD-0682 | LEVEL 4 DEMOLITION PLAN BLOCK A IRENA (PART 2) MECHANICAL LAYOUT | V01 |
| **29** | MHQ-01-JLW-MX-SD-0683 | LEVEL 4 DEMOLITION PLAN BLOCK A IRENA (PART 2) CHILLED WATER LAYOUT | V01 |
| **30** | MHQ-01-JLW-MX-SD-0684 | LEVEL 4 DEMOLITION PLAN BLOCK A IRENA (PART 2) MECHANICAL LAYOUT | V01 |
| **PLUMBING DRAINAGE** | | | |
| **31** | MHQ-01-JLW-HX-AB-1301 | LEVEL 1 FLOOR PLAN BLOCK A (PART 2) PLUMBING DRAINAGE | V01 |
| **32** | MHQ-01-JLW-HX-AB-1312 | LEVEL 2 FLOOR PLAN BLOCK A (PART 2) PLUMBING DRAINAGE | V01 |
| **33** | MHQ-01-JLW-HX-AB-1322 | LEVEL 3 FLOOR PLAN BLOCK A (PART 2) PLUMBING DRAINAGE | V01 |
| **34** | MHQ-01-JLW-HX-AB-1332 | LEVEL 4 FLOOR PLAN BLOCK A (PART 2) PLUMBING DRAINAGE | V01 |
| **35** | MHQ-01-JLW-HX-AB-1341 | LEVEL 5 FLOOR PLAN BLOCK A (PART 2) PLUMBING DRAINAGE | V01 |
| **36** | MHQ-01-JLW-HX-SD-1311 | LEVEL 2 FLOOR PLAN BLOCK A IRENA (PART 2) PLUMBING DRAINAGE | V01 |
| **37** | MHQ-01-JLW-HX-SD-1321 | LEVEL 3 FLOOR PLAN BLOCK A IRENA (PART 2) PLUMBING DRAINAGE | V01 |
| **38** | MHQ-01-JLW-HX-SD-1331 | LEVEL 2 FLOOR PLAN BLOCK A IRENA (PART 2) PLUMBING DRAINAGE | V01 |
| **39** | MHQ-01-JLW-HX-SD-1361 | LEVEL 2 DEMOLITION PLAN BLOCK A IRENA (PART 2) PLUMBING DRAINAGE | V01 |
| **40** | MHQ-01-JLW-HX-SD-1371 | LEVEL 3 DEMOLITION PLAN BLOCK A IRENA (PART 2) PLUMBING DRAINAGE | V01 |
| **41** | MHQ-01-JLW-HX-SD-1381 | LEVEL 4 DEMOLITION PLAN BLOCK A IRENA (PART 2) PLUMBING DRAINAGE | V01 |
| **PLUMBING WATER** | | | |
| **42** | MHQ-01-JLW-HX-AB-1401 | LEVEL 1 FLOOR PLAN BLOCK A (PART 2 ) PLUMBING WATER | V01 |
| **43** | MHQ-01-JLW-HX-AB-1411 | LEVEL 2 FLOOR PLAN BLOCK A (PART 2) PLUMBING WATER | V01 |
| **44** | MHQ-01-JLW-HX-AB-1421 | LEVEL 3 FLOOR PLAN BLOCK A (PART 2) PLUMBING WATER | V01 |
| **45** | MHQ-01-JLW-HX-AB-1431 | LEVEL 4 FLOOR PLAN BLOCK A (PART 2) PLUMBING WATER | V01 |
| **46** | MHQ-01-JLW-HX-AB-1441 | LEVEL 5 FLOOR PLAN BLOCK A (PART 2) PLUMBING WATER | V01 |
| **47** | MHQ-01-JLW-HX-AB-1451 | LEVEL 1 DEMOLITION PLAN BLOCK A (PART 2 ) PLUMBING WATER | V01 |
| **48** | MHQ-01-JLW-HX-AB-1461 | LEVEL 2 DEMOLITION PLAN BLOCK A (PART 2) PLUMBING WATER | V01 |
| **49** | MHQ-01-JLW-HX-AB-1471 | LEVEL 3 DEMOLITION PLAN BLOCK A (PART 2) PLUMBING WATER | V01 |
| **50** | MHQ-01-JLW-HX-AB-1481 | LEVEL 4 DEMOLITION PLAN BLOCK A (PART 2) PLUMBING WATER | V01 |
| **51** | MHQ-01-JLW-HX-AB-1491 | LEVEL 5 DEMOLITION PLAN BLOCK A (PART 2) PLUMBING WATER | V01 |