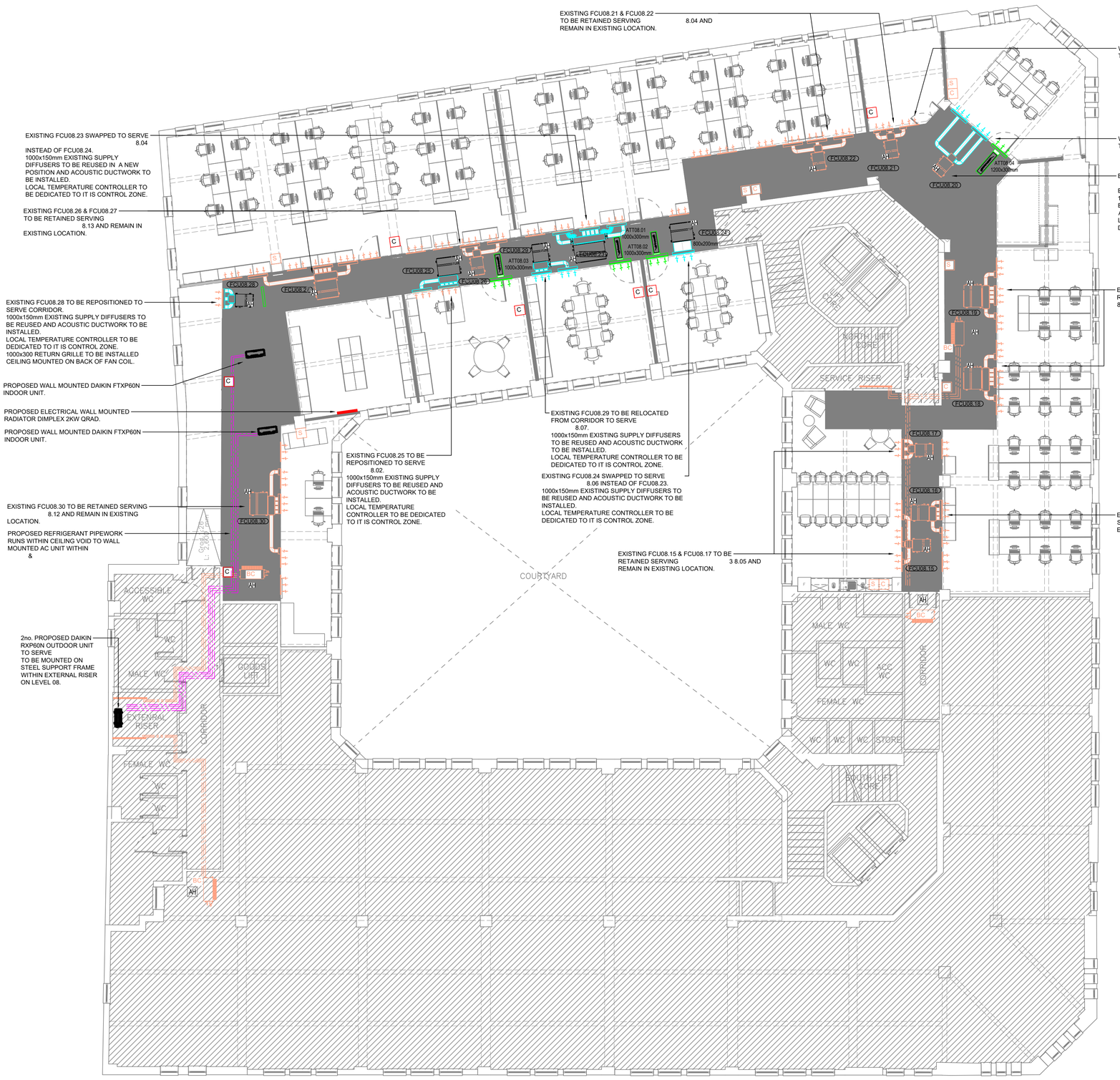


REFRIGERATION NOTES

1. ALL PIPEWORK TO BE CARRIED OUT IN REFRIGERANT QUALITY SOFT/MEDIUM DRAWN COPPER TUBING TO B.S.2871 PART 2: 1972 AND COMPLETE WITH THE APPROPRIATE HEADERS AND JOINTS.
2. PIPEWORK IS TO CARRIED OUT BY AN APPROVED MITSUBISHI / DAIKIN BUSINESS SOLUTIONS PARTNER COMPANY (CERTIFICATE APPROVAL MUST BE SUBMITTED PRIOR TO INSTALLATION COMMENCEMENT) THE REFRIGERANT ENGINEER ASSIGNED TO THE CONTRACT MUST HAVE AN UP-TO-DATE MITSUBISHI / DAIKIN APPROVAL CERTIFICATE (CERTIFICATE APPROVAL MUST BE SUBMITTED PRIOR TO INSTALLATION COMMENCEMENT) AND MUST BE IN ACCORDANCE WITH THE BSEN 378 2000 SPECIFICATION AND MITSUBISHI / DAIKIN DESIGN AND INSTALLATION INSTRUCTIONS. ALL PIPEWORK MUST BE SUITABLE FOR THE REFRIGERATION BEING USED
3. LONGEST POSSIBLE LENGTHS OF COPPER PIPE ARE TO BE UTILISED TO MINIMISE JOINTS ON SITE.
4. APPROPRIATE REFRIGERATION INSTALLATION TOOLS ARE TO BE UTILISED. DRY NITROGEN IS TO BE UTILISED AT ALL TIMES IN THE SYSTEM DURING BRAZING.
5. ALL PIPEWORK (SUCTION AND LIQUID LINES) TO BE INSULATED WITH SLIP ON CLOSE CELL ELASTOMERIC PIPE INSULATION (AS MANUFACTURED BY ARMAFLEX OR EQUAL AND APPROVED) WITH A FIRE PERFORMANCE CLASS 0 OF THE 1985 BUILDING REGULATIONS, HAVING A WALL THICKNESS OF NOT LESS THAN 13 MM. EXTERNALLY ALL PIPEWORK SHALL HAVE A VENTURECLAD TAPE COVERING
6. AFTER INSTALLATION OF PIPEWORK, AND PRIOR TO SEALING OF INSULATION JOINTS AND STARTING OF EQUIPMENT, PIPEWORK SHOULD BE PRESSURE TESTED. 3 BAR TEST FOR 3 MINUTES MINIMUM, THEN 15 BAR FOR 3 MINIMUM, THEN 33 BAR FOR 3 MINUTES MINIMUM, THEN STRENGTH TEST TO 41.5 BAR CHECK THE SYSTEM FOR LEAKS AND DEFORMATION, THEN LOWER THE PRESSURE BACK TO 33 BAR AND PRESSURE TEST 24 HOURS AND CHECKED FOR LEAKS. VACUUMED/DEHYDRATED TO (-752MM HG) 2 TORR, AND HOLD AT THAT SETTING FOR 12 HOURS (MINIMUM)
7. REFRIGERANT (R410A) CHARGE WEIGHT MUST BE CALCULATED, TO THE ACTUAL INSTALLED LENGTH OF PIPE WORK IN ACCORDANCE TO MITSUBISHI / DAIKIN RECOMMENDATIONS.
8. THE CHARGING SHOULD BE CARRIED OUT WITH AN APPROPRIATE CHARGING STATION.
9. PIPEWORK TO BE PROPERLY FIXED AND SUPPORTED AT A MINIMUM OF 1.5 METRES CENTRES AND WHERE REQUIRED SHOULD BE RUN ON GALVANISED TRAYS. ALL PIPE WORK TO BE LABELLED WITH ID NUMBER (CONDENSING UNIT'S REF.) AT 3 METRE INTERVALS.
10. JOINTS IN COPPER PIPE ARE TO BE BRAZED. BRAZING IS TO BE CARRIED OUT TO THE REQUIREMENTS OF THE HVCA CODE OF PRACTISE – BRAZING AND BRONZE WELDING OF COPPER PIPE AND SHEET.
11. A CONDENSATE LINE IS TO BE INSTALLED TO EACH FAN COIL UNIT / DX COOLING COIL / EVAPORATOR. THIS IS TO BE INSTALLED AND INSULATED ALL AS PER THE STANDARD SPECIFICATION. MINIMUM SIZE OF CONDENSATE PIPES TO BE 25MM ABS PLASTIC GRAVITY FROM EACH CASSETTE. DRAINS TO RUN 1:80 MIN FALLS AS INDICATED ON DRAWINGS.
12. WHERE THE CONTRACTOR CONNECTS THE CONDENSATE DRAINS INTO SOIL VENT STACKS THEN THE CONTRACTOR SHALL INSTALL A HEPWORTH HEPVO WASTE VALVE (32MM). IN RESPECT OF AHU DRAINS AND EVAPORATOR DRAINS THEY SHALL HAVE REFILLABLE GLASS TRAPS.

LEGEND:

- PROPOSED REFRIGERANT PIPEWORK
- EXISTING REFRIGERANT PIPEWORK
- EXISTING SERVICES THAT REMAIN AS EXISTING
- CIRCULAR/RECTANGULAR SUPPLY DUCTWORK
- CIRCULAR/RECTANGULAR EXHAUST DUCTWORK
- CIRCULAR/RECTANGULAR EXISTING DUCTWORK
- C — PROPOSED FCU TEMPERATURE CONTROLLER
- C — EXISTING FCU TEMPERATURE CONTROLLER
- S — PROPOSED IAQ SENSOR LINKED TO BMS
- S — EXISTING IAQ SENSOR LINKED TO BMS
- RETURN CROSS TALK ATTENUATOR
- RETAINED1000X150mm EXISTING SUPPLY DIFFUSER
- RETAINED1000X150mm EXISTING RETURN DIFFUSER
- AH — ACCESS HATCH

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE INDICATED.

DO NOT SCALE FROM THIS DRAWING. IF IN DOUBT ASK.

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATION AND ALL OTHER PROJECT DOCUMENTATION.

VENTILATION NOTES:

1. THIS IS A TENDER ISSUE DRAWING ONLY.
2. THE MECHANICAL SUB-CONTRACTOR SHALL PREPARE HIS OWN CONSTRUCTION/WORKING DRAWINGS BASED UPON THIS AND OTHER ARCHITECTURAL AND STRUCTURAL ENGINEERING DRAWINGS (AVAILABLE FROM OTHERS).
3. ALL PLANT AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURES INSTRUCTIONS.
4. ALL DUCTWORK SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH HVCA DW144.
5. DUCTWORK SHALL HAVE ACCESS PANELS IN ACCORDANCE WITH THE REQUIREMENTS OF DW144. THE CONTRACTOR SHALL INCLUDE FOR THE INSTALLATION OF ACCESS DOORS AS NECESSARY TO AID DUCTWORK CLEANING. (SEE NOTE 11 BELOW).
6. FIRE DAMPERS/SMOKE DAMPERS SHALL BE PROVIDED WHERE DUCTWORK PASSES THROUGH ANY FIRE RATED STRUCTURE. ACTIONAIR FIRE SHIELD/ACTIONAIR SMOKE SHIELD TYPE WITH BLADES OUT OF THE AIRSTREAM. (REFER TO SPECIFICATION FOR DETAILS).
7. ALL VENTILATION INSTALLATIONS SHALL COMPLY WITH THE REQUIREMENTS OF BUILDING REGULATIONS PART F.
8. DUCTWORK INSTALLATION SHALL BE TO BESA/TR19 PROTECTION, DELIVERY AND INSTALLATION (PDI) (ADVANCED) CLEANLINESS QUALITY CLASS (MEDIUM).
9. CONTRACTOR TO INCLUDE FOR DUCTWORK CLEANING IN ACCORDANCE WITH HVCA/TR19 BY AN APPROVED SPECIALIST CONTRACTOR & CERTIFIED ACCORDINGLY.
10. ALL FIRE & SMOKE DAMPERS TO BE INSTALLED STRICTLY IN ACCORDANCE WITH DW145

NOTE:

1. DRAWING BASED ON AS FITTED DRAWINGS INFORMATION.
2. EXISTING INFORMATION ON DRAWING MAY VARY SLIGHTLY FROM SERVICES ON SITE.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS & INFORMATION.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ARCHITECTURE & STRUCTURAL ENGINEERING DRAWING.

EXISTING MECHANICAL SERVICES INFORMATION TAKEN FROM 30279810-ARC-MAN-08-DR-ME-05600 & 30279810-ARC-MAN-ZZ-DR-ME-05602

Revision	Date	Description
P04	03.07.26	UPDATED TENDER ISSUE
P03	29.05.26	TENDER ISSUE
P02	17.04.26	ATTENUATOR SIZES ADDED & FIRE PROTECTION ADDED
P01	10.04.26	PRELIMINARY ISSUE

Client & Site

SUNLIGHT HOUSE
LITTLE QUAY STREET
MANCHESTER
M3 3HP

Title

PROPOSED HEATING & COOLING LAYOUT
8TH FLOOR

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Scale: 1:100 Size: A1 Drawn: AH Chkd: NB

ISO19650 Compliant

Drawing No.

Project	Origin	Zone	Level	File Type	Role	Number	Suitability	Rev:
4745	SHA	XX	08	DR	M	1000	S2	P04

PRELIMINARY

Y:\4745 - Sunlight House\03 Drawings\01 Mechanical Engineering\01a Drawings\4745-SHA-XX-08-DR-M-1000 - Proposed 8th Floor Heating and Cooling Layout.dwg
Plot Date: 3 July 2026 Layout Name: A1 Plot Scale: 100% Paper Size: ISO A1 (841.00 x 594.00 MM)