



- LEGEND
- REFRIGERANT FLOW
 - REFRIGERANT RETURN
 - INDOOR FAN COIL UNIT
 - WORKS
 - OUTDOOR UNITS
 - SUPPLY DIFFUSER
 - EXTRACT DIFFUSER
 - PIPEWORK IN CEILING VOID
 - PIPEWORK AT LOW LEVEL
 - PIPEWORK IN FLOOR VOID
 - DFA DROP FROM ABOVE
 - DTB DROP TO BELOW
 - RTA RISE TO ABOVE
 - AH ACCESS HATCH

- NOTES
- DO NOT SCALE FROM THIS DRAWING.
 - ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR PRIOR TO PREPARATION OF SHOP DRAWINGS, FABRICATION OF PARTS, ORDERING MATERIALS OR COMMENCING WORKS.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS DRAWINGS, SPECIFICATIONS AND SCHEDULES.
 - ANY PENETRATION THROUGH FLOORS, SEEK STRUCTURAL ENGINEERS APPROVAL BEFORE COMMENCEMENT.
 - ALL PLANT AND EQUIPMENT SHALL BE INSTALLED FULLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- REFRIGERATION INSTALLATION
- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE VRF SYSTEM IN ACCORDANCE WITH BS EN 378. THE SYSTEM SHOWN IS INDICATIVE TO DEMONSTRATE DESIGN INTENT ONLY. THE SYSTEM SIZES AND PIPEWORK ROUTES ARE SUBJECT TO THE CONTRACTOR'S DETAILED DESIGN.
 - MECHANICAL CONTRACTOR'S AIR CONDITIONING SPECIALIST TO SUPPLY, INSTALL, TEST AND COMMISSION ALL INTERCONNECTING REFRIGERATION PIPEWORK BETWEEN THE OUTDOOR AND INDOOR UNITS.
 - ALL PIPEWORK TO BE CARRIED OUT IN REFRIGERATION QUALITY SOFT/MEDIUM DRAIN COPPER TUBING TO BS575 PART 2. VITC COMPLIES WITH THE APPROPRIATE JOINT PIPES FOR TWIN AND TRIPLE SYSTEMS.
 - PIPEWORK SHOULD BE CARRIED OUT BY AN APPROVED CERTIFICATE APPROVAL MUST BE SUBMITTED PRIOR TO INSTALLATION COMMENCEMENT. REFRIGERANT ENGINEER AND IN ACCORDANCE TO BS-EN 378 2000 SPECIFICATION. RA40A TOOLS REQUIRED FOR ALL PIPEWORK, TONGUE SPANNERS, FLARING BLOCKS ETC.
 - LONGEST POSSIBLE LENGTHS OF COPPER PIPE SHOULD BE UTILISED TO MINIMIZE JOINTS ON SITE.
 - APPROPRIATE REFRIGERATION INSTALLATION TOOLS MUST BE USED. DRY NITROGEN MUST BE UTILISED AT ALL TIMES IN THE SYSTEM DURING BRASSING.
 - ALL PIPEWORK (SUCKION AND LIQUID LINES) TO BE INSULATED WITH 25mm ON GLOBE CELL ELASTOMER PIPE INSULATION (AS MANUFACTURED BY ARMAFLEX OR EQUAL AND APPROVED) WITH A MINIMUM PERFORMANCE CLASS 5 OF THE THERMAL INSULATION REGULATIONS, HAVING A WALL THICKNESS OF NOT LESS THAN 15mm.
 - REFRIGERANT (R22) CHARGE WEIGHT MUST BE CALCULATED, TO THE ACTUAL INSTALLED LENGTH OF PIPEWORK IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.
 - THE CHARGING SHOULD BE CARRIED OUT WITH AN APPROPRIATE CHARGING STATION.
 - PIPEWORK TO BE PROPERLY TIED AND SUPPORTED AT A MINIMUM OF 1.5 METRE CENTRES AND WHERE REQUIRED SHOULD BE RUN ON GALVANIZED TRAYS. ALL PIPEWORK TO BE LABELED WITH ID NUMBER (CONDENSING UNITS REF.) AT 1.5 METRE INTERVALS.
 - JOINTS IN COPPER PIPE SHALL BE BRAZED. BRAZING SHALL BE CARRIED OUT TO THE REQUIREMENTS OF THE HPA CODE OF PRACTICE - BRAZING AND BRONZE WELDING OF COPPER PIPE AND SHEET.
 - WHERE VRF AND VENTILATION PLANT IS INSTALLED ABOVE SALE CEILING, I.E. PLASTERBOARD STUDY SIZED ACCESS HATCHES ARE TO BE INSTALLED TO ALLOW ACCESS FOR INSTALLATION, COMMISSIONING, MAINTENANCE, CLEANING AND REMOVAL.
 - DUCTED OFF UNITS SHALL BE SUPPLIED WITH AN EXTENDED RETURN AIR TEMPERATURE SENSOR WHICH SHALL EXTEND FROM THE UNIT TO PENETRATE SLIGHTLY FROM THE FACE OF THE ROOM RETURN AIR GRILLE.
 - A CONDENSATE LINE SHALL BE INSTALLED TO EACH FAN COIL UNIT. THIS SHALL BE INSTALLED AND INSULATED ALL AS PER THE STANDARD SPECIFICATION. MINIMUM SIZE OF CONDENSATE PIPES TO BE 20mm COPPER OR PLASTIC, INSULATED AND PLUMBED OR BY GRAVITY FROM EACH FAN COIL / CASSETTE, DRAINING TO RAIN 100 MM FALLS.
 - CONDENSATE PIPEWORK FROM VRF UNITS SHALL RUN WITHIN THE CEILING VOID TO THE NEAREST BELOW GROUND DRAINAGE POINT AND SHALL BE COMPLETE WITH IN LINE SELF SEALING TRAP.
 - THE MECHANICAL CONTRACTOR'S AIR CONDITIONING SPECIALIST SHALL BE RESPONSIBLE FOR THE INTERCONNECTING CONTROL WIRING BETWEEN THE INDOOR AND OUTDOOR UNITS AND CONTROL WIRING BETWEEN REMOTE CONTROLLER AND RELEVANT COMPONENTS. THIS WORK SHALL BE CO-ORDINATED WITH THE ELECTRICAL SUB CONTRACTOR FOR THE ROUTING AND TRUNKING OF THE CABLES.
 - CONTROL WIRING SHALL NOT BE RUN NEXT TO POWER WIRING. A MINIMUM SPACE OF 100mm BETWEEN BOTH CONTROL AND POWER CABLES SHALL APPLY.

VRF PIPEWORK TO RISE IN CORNER TO ROOF, BOUNDING TO BE AGREED WITH ARCHITECT.

REFRIGERATION PIPEWORK TO SPAN THE 1st FLOOR ROOF MOUNTED ON CABLE TRAY AND LABELED AT 3M INTERVALS
BRANCH CONTROLLER BOX C/M
16x CONNECTION SETS (L40)
7x CONNECTION SET SPARE

BRANCH CONTROLLER BOX C/M
16x CONNECTION SETS (L40)
8x CONNECTION SET SPARE

VRF PIPEWORK FROM BASEMENT TO RISE TO ROOF.

FOR COMMENT
NOT FOR SITE USE

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Project:
**LONDON ROAD FIRE STATION
FIRE STATION, LONDON ROAD,
MANCHESTER, M1**

Drawing Title:
**MECHANICAL SERVICES
FIRST FLOOR - HOTEL AREA
COMFORT COOLING LAYOUT**

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