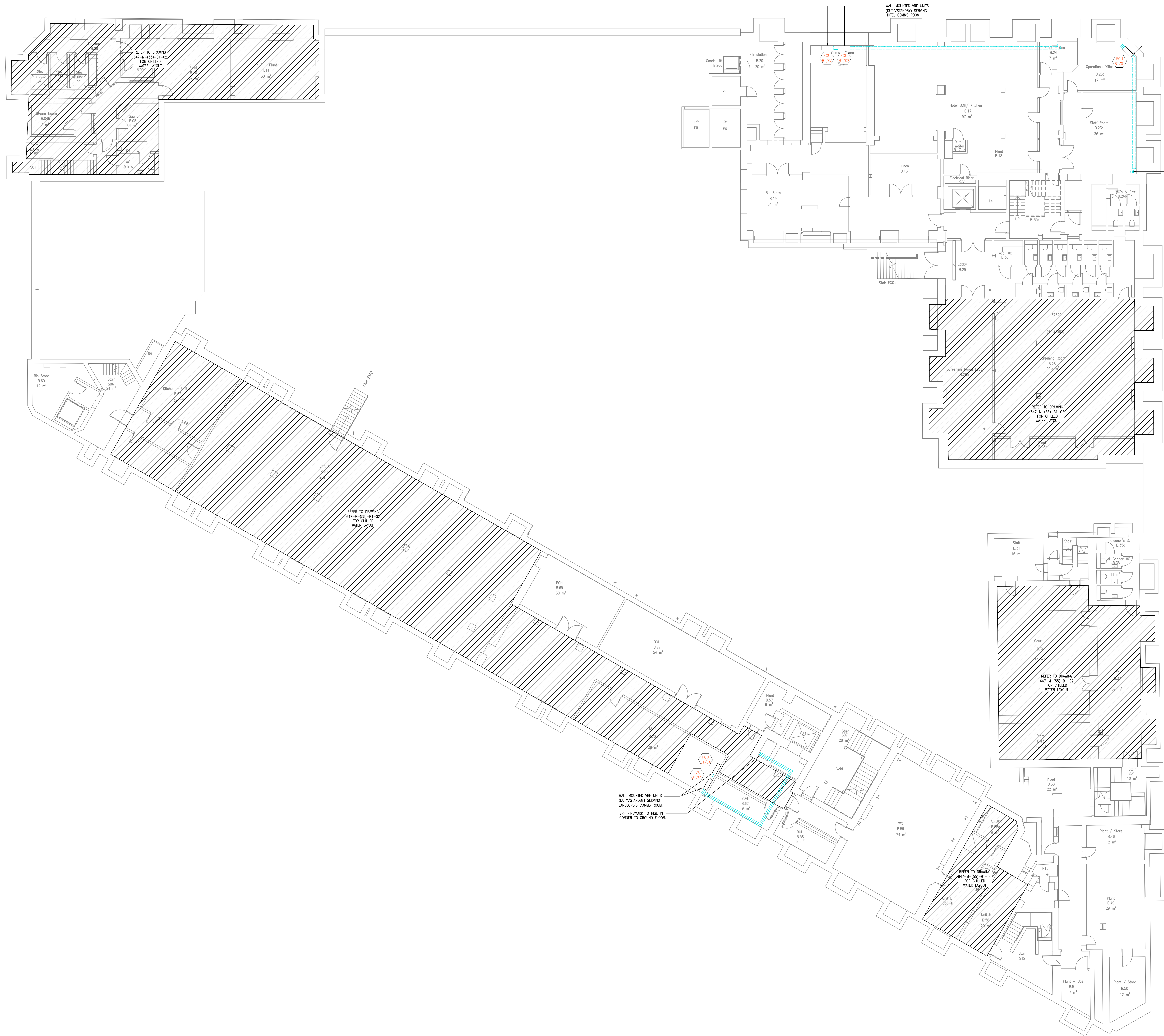




- LEGEND
- REFRIGERANT FLOW
 - REFRIGERANT RETURN
 - INDOOR FAN COIL UNIT
 - OUTDOOR UNITS
 - SUPPLY DIFFUSER
 - EXTRACT DIFFUSER
 - PIPEWORK IN CEILING VOID
 - PIPEWORK AT LOW LEVEL
 - PIPEWORK IN FLOOR VOID
 - D/A DROP FROM ABOVE
 - R/A RISE TO ABOVE
 - AH ACCESS HATCH

- 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 OF COMMENSAL WORKS
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS DRAWINGS, SPECIFICATIONS AND SCHEDULES
 - ANY PENETRATION THROUGH FLOORS, DECK, 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 RFE 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 CONTRACTORS DETAILED DESIGN
 - MECHANICAL CONTRACTORS 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 DRAWN COPPER TUBING TO BS87 PART 2. FITZ COMPLETE 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) REFRIGERATION ENGINEER AND IN ACCORDANCE TO BS-EN 129-200. SPECIFICATION. PANDA TOOLS REQUIRED FOR ALL PIPEWORK, TORQUE SPANNERS, FLARING BLOCKS ETC
 - LONGEST POSSIBLE LENGTHS OF COPPER PIPE SHOULD BE UTILIZED TO MINIMIZE JOINTS ON SITE
 - APPROPRIATE REFRIGERATION INSTALLATION TOOLS MUST BE UTILIZED. DRY NITROGEN MUST BE UTILIZED AT ALL TIMES IN THE SYSTEM DURING BRAZING
 - ALL PIPEWORK (SUCTION AND LIQUID LINES) TO BE INSULATED WITH SELF ON CLOSE CELL ELASTOMERIC PIPE INSULATION (AS MANUFACTURED BY HANWELL OF EQUAL AND APPROVED) WITH A FIRE PERFORMANCE CLASS 0 OF THE FIRE BUILDING REGULATIONS, HAVING A WALL THICKNESS OF NOT LESS THAN 13mm
- AFTER INSTALLATION OF PIPEWORK, AND PRIOR TO SEALING OF INSULATION JOINTS AND STARTING OF EQUIPMENT, PIPEWORK SHOULD BE PRESSURE STRENGTH TESTED TO 42 BAR. CHECKED FOR DEFORMATION, AND THEN LEAK TESTED AT 33 BAR AND HOLD FOR 24 HOURS AND CHECKED FOR LEAKS. THEN VACUUM/DEHIDRATED TO (-750MM HG) 2 FOM, AND HOLD AT THAT SETTING FOR 12 HOURS (IMMEDIATE VED DOCUMENT GSA SHOULD BE FOLLOWED DURING PRESSURE TESTING PERIOD)
- REFRIGERANT (R450) CHARGE WEIGHT MUST BE CALCULATED, TO THE ACTUAL INSTALLED LENGTH OF PIPEWORK IN ACCORDANCE TO MANUFACTURERS RECOMMENDATIONS
 - THE CHARGING SHOULD BE CARRIED OUT WITH AN APPROPRIATE CHARGING STATION
 - PIPEWORK TO BE PROPERLY FIRED AND SUPPORTED AT A MINIMUM OF 15 METRE CENTRES AND WHERE REQUIRED SHOULD BE RUN ON GALVANIZED TRAYS. ALL PIPEWORK TO BE LABELLED WITH ID NUMBER (CONDENSING UNITS NOT) AT 3 METRE INTERVALS
 - JOINTS IN COPPER PIPE SHALL BE BRAZED. BRAZING SHALL BE CARRIED OUT TO THE REQUIREMENTS OF THE HVCA CODE OF PRACTICE - BRAZING AND BRONZE WELDING OF COPPER PIPE AND SHEET
 - WHERE VRF AND VENTILATION PLANT IS INSTALLED ABOVE SOLID CEILING (E. PLASTERBOARD SATISFIED ACCESS HATCHES ARE TO BE INSTALLED TO ALLOW ACCESS FOR INSTALLATION, COMMISSIONING, MAINTENANCE, CLEANING AND REMOVAL
 - QUOTED VRF UNITS SHALL BE SUPPLIED WITH AN EXTENDED RETURN AIR TEMPERATURE SENSOR WHICH SHALL EXTEND FROM THE UNIT TO PROTRUDE 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 25mm COPPER OR PLASTIC INSULATED AND PIPED OR BY GRAVITY FROM EACH FAN COIL / CASSETTE, DRAINING TO MIN 1:80 MIN 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 CONTRACTORS AIR CONDITIONING SPECIALIST SHALL BE RESPONSIBLE FOR THE INTERCONNECTING CONTROL WIRING BETWEEN THE INDOOR AND OUTDOOR UNITS AND CONTROLS WIRING WITHIN 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 CONTROLS AND POWER CABLES SHALL APPLY

FOR COMMENT
NOT FOR SITE USE

11.04.23	TENDER ISSUE	14	AM	MD
07.02.23	TENDER ISSUE	13	AM	MD
02.04.21	TENDER ISSUE	13	CT	MD
21.05.21	TENDER ISSUE	11	CT	MD
Date	Description	New	Old	Rev

CONSOLUX
CONSOLUX M&E CONSULTING LTD.
MECHANICAL & ELECTRICAL CONSULTING ENGINEERS

London Office
25 Poultry
London EC3N 1JY
Tel: +44 (0)207 734 3030
Fax: +44 (0)207 417 7385
mail@consolux.co.uk

Liverpool Office
The Cotton Exchange
Liverpool L3 9JH
Tel: +44 (0)151 708 9469
Fax: +44 (0)151 707 7186
www.consolux.co.uk

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

Drawing Title:
**MECHANICAL SERVICES
BASEMENT LEVEL
COMFORT COOLING LAYOUT**

Date	Design By:	Drawn By:	Scale:
APR 2021	GT	GT	1:100

Issue Status:
TENDER

Drawing Number:
647-M-(55)-B1-01

Rev:
14

XREF Updated on: 04.11.21

NOTE: This drawing is the copyright of Consolux M&E Consulting Limited and may not be used without its prior written consent. Written dimensions to be taken in preference to scaled dimensions. Do not scale these drawings.