

MECHANICAL COVERSHEET

GENERAL INFORMATION

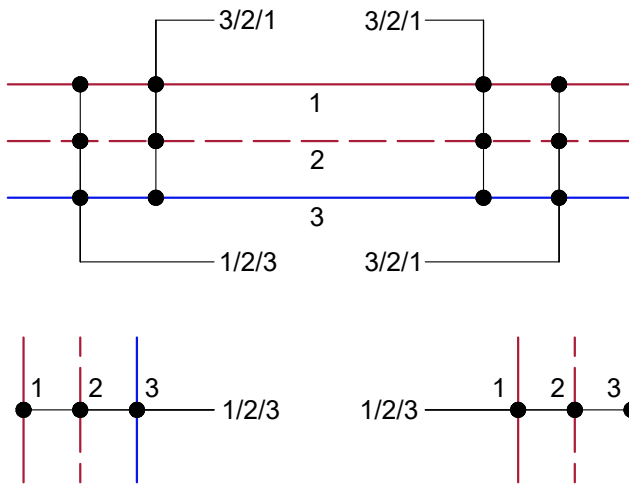
SYMBOLS

	Control / Motorized Valve
	Strainer
	Commissioning Set
	Isolation Valve
	Safety Valve
	Pump
	Flexible Connection
	Non-Return Valve
	Dynamic Flow Limiting Valve
	Temperature/Pressure Sensor
	Concentric Reducer
	Cap / Plug
	Union
	Flange
	Break in Continuous Line for Clarity
	Temperature/Pressure Gauge
	Meter
	Bend Down/Away
	Bend Up/Towards or Tee Branch Up
	Tee Branch Down
	Flow Meter
	Lockshield Valve
	Dynamic Radiator Valve
	Thermostatic Valve
	Backflow Preventor
	Water Seal Trap
	Diameter
	Approximately

ABBREVIATIONS

AFF	Above Finished Floor
AFL	Above Floor Level
AP	Access Panel
APPROX.	Approximately
C/L	Center-Line
DG	Door Grille
DG-FR	Door Grille - Fire Rated
EXT	Extract Air
EXH	Exhaust Air
FD	Fire Damper
FFL	Finished Floor Level
FSD	Fire & Smoke Damper
ID	Iris Damper
OA	Outside Air
OBD	Opposed Blade Damper
SA	Supply Air
SBD	Single Blade Damper
UFH	Under Floor Heating
U/S	Underside

TAGS & LABELS



PIPE SIZE LABELS

DBV-01	Dynamic Balancing Valve Size
0.04	Design Flow L/s
0.8	Valve Setting
10.1	Minimum Pressure Drop kPa

DYNAMIC BALANCING VALVE TAG

DRV-01	Dynamic Radiator Valve Size
65	Design Flow L/h
6	Valve Setting

DYNAMIC RADIATOR VALVE TAG

DPC-02	Differential Pressure Controller Size
25	Design DP kPa
5.3	Valve Setting

DIFFERENTIAL PRESSURE CONTROLLER TAG

FC-08	Terminal Designation
FC-1/009-01	Unique Identification
0.10 0.04	Cooling Heating Water Flow L/s

COOLING | HEATING TERMINAL TAG

RAD-03	Radiator Designation
0.08	Heating Water Flow L/s

RADIATOR TAG

R-03	Riser/Shaft Number
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RISER/SHAFT IDENTIFICATION TAG

LINETYPES

LTHW-F	Low Temperature Heating Water - Flow
LTHW-R	Low Temperature Heating Water - Return
GWS	Gray Water Services
BCWS	Boosted Cold Water Service
MCWS	Mains Cold Water Service
HWS	Hot Water Service
HWS-R	Hot Water Service - Return
DRN	Drain
DRN-CR	Drain - Chemical Resistant
GAS	Natural Gas
ACR	Air-conditioning/Refrigeration
-----	Control Link

GENERAL NOTES

- DO NOT SCALE FROM DRAWINGS
- ALL DIMENSIONS ARE IN mm
- INSTALL EQUIPMENT AND SERVICES ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND IN HARMONY WITH APPLICABLE CODES & STANDARDS
- LAYOUT IS COORDINATED WITH EXISTING CONDITIONS, ARCHITECTURAL DETAILS AND OTHER SERVICES; DO NOT DEVIATE WITHOUT DESIGN APPROVAL
- FIRE RATE PENETRATIONS TO MATCH SURROUNDING STRUCTURE OR AS REQUIRED BY THE FIRE STRATEGY AND CURRENTLY APPLICABLE REGULATIONS; REFER ARCHITECTURAL
- INSTALL VENTS AT HIGH POINTS AND DRAINS AT LOW POINTS; VENTS ARE DN15 AND DRAINS ARE DN20 UNLESS INDICATED OTHERWISE
- NOT ALL VALVES, CONTROL DEVICES, PIPE SIZES AND ACCESSORIES ARE SHOWN ON PLANS, SECTIONS AND DETAILS; REFER FLOW DIAGRAMS
- PIPELINE ACCESSORIES SUCH AS COMMISSIONING SETS, MOTORIZED VALVES, ISOLATION VALVES, NON-RETURN VALVES, STRAINERS, BYPASS CONNECTIONS AND THE LIKE ARE LINE SIZE UNLESS INDICATED OTHERWISE
- PIPE SIZES ARE GENERALLY SHOWN AS NOMINAL DIAMETER (DN); REFER PIPE SIZE TABLE FOR CONVERSION TO ACTUAL OUTSIDE DIAMETER
- ENSURE ALL VALVES, DEVICES AND EQUIPMENT ARE EASILY ACCESSIBLE FOR COMMISSIONING, OPERATION, MAINTENANCE, REPAIR AND REPLACEMENT
- INSULATE, CLAD AND TRACE HEAT EXTERIOR LTHW, MCWS AND BCWS PIPEWORK; FOR PRODUCT DETAILS REFER SPECIFICATIONS
- CLAD ALL INSULATED PIPEWORK & DUCTWORK WITHIN PLANT SPACES AND EXPOSED PIPEWORK & DUCTWORK BELOW 3.0m IN GENERAL SPACES; FOR PRODUCT DETAILS REFER SPECIFICATIONS
- SLEEVE UNINSULATED PIPEWORK THAT PASSES THROUGH FLOOR OR WALL PARTITIONS; PIPE SLEEVES ARE OF THE SAME MATERIAL AS THE PIPE BEING SLEEVED; AT LEAST ONE SIZE LARGER THAN THE PIPE AND FINISH FLUSH WITH THE OUTSIDE FACES OF THE PARTITION
- MAINTAIN AT LEAST 100mm BETWEEN SERVICES AND FROM SERVICES TO BUILDING ELEMENTS AFTER INSULATION
- ELEVATIONS ARE FROM FINISHED FLOOR TO PIPE CENTER, DUCT CENTER (CIRCULAR DUCTS), DUCT UNDERSIDE (RECTANGULAR DUCTS) AND EQUIPMENT UNDERSIDE UNLESS INDICATED OTHERWISE

DEMOLITION

- COMPLETELY REMOVE AND DISPOSE OF RESPONSIBLY ALL HEATING, COOLING, AIR-CONDITION, VENTILATION & DOMESTIC WATER SERVICES EQUIPMENT & MACHINERY THAT IS OR BECOMES REDUNDANT AS A RESULT OF THE WORKS
- COMPLETELY REMOVE AND DISPOSE OF RESPONSIBLY ALL PIPES, DUCTS, INSULATION, SUPPORTS, CONTAINMENT & COMPONENTS THEREOF THAT ARE OR BECOME REDUNDANT AS A RESULT OF THE WORKS
- REMOVE ALL REDUNDANT TEES & DEAD-LEGS ON HOT & COLD WATER SERVICES
- COMPLETELY REMOVE AND DISPOSE OF RESPONSIBLY ALL ELECTRICAL & CONTROLS EQUIPMENT, CABLING & CONTAINMENT THAT ARE OR BECOME REDUNDANT AS A RESULT OF THE WORKS
- COMPLETELY DEMOLISH AND DISPOSE OF RESPONSIBLY ALL PLINTHS & BASES THAT ARE OR BECOME REDUNDANT AS A RESULT OF THE WORKS
- MAKE GOOD TO MATCH EXISTING ALL OPENINGS & DAMAGE TO FINISHES & SURFACES RESULTING FROM DEMOLITION WORKS

CODES & STANDARDS

- DESIGN & INSTALL ABOVE GROUND DRAINAGE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE BUILDING REGULATIONS, BS EN 12056, CIBSE GUIDE G, THE CIHPE DESIGN GUIDE AND ALL OTHER APPLICABLE GUIDANCE, CODES & STANDARDS
- DESIGN & INSTALL HOT & COLD WATER SERVICES IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE BUILDING REGULATIONS, THE WATER REGULATIONS & LOCAL BYLAWS, BS EN 806, BS EN 1717, HSE ACOP L8, CIBSE GUIDE G, THE CIHPE DESIGN GUIDE, BESA TR70 AND THE BESA GUIDE TO GOOD PRACTICE: SUPPORTS & FIXINGS AND ALL OTHER APPLICABLE GUIDANCE, CODES & STANDARDS
- ALL COMPONENTS THAT COME INTO CONTACT WITH HOT & COLD WATER SERVICES ARE TO BE WRAS APPROVED
- DESIGN & INSTALL DUCTWORK SYSTEMS IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE BUILDING REGULATIONS, BESA DW144, DW145, DW172, TR19; CIBSE GUIDE B2, THE CIHPE DESIGN GUIDE, DFE BB101 AND ALL OTHER APPLICABLE GUIDANCE, CODES & STANDARDS
- DESIGN & INSTALL HYDRONIC HEATING SYSTEMS IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE BUILDING REGULATIONS, CIBSE GUIDE B1, THE CIHPE DESIGN GUIDE, BESA TR70, THE BESA GUIDE TO GOOD PRACTICE: SUPPORTS & FIXINGS AND ALL OTHER APPLICABLE GUIDANCE, CODES & STANDARDS
- DESIGN & INSTALL AIR-CONDITIONING & REFRIGERATION SYSTEMS IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE BUILDING REGULATIONS, BS EN 378-2, CIBSE GUIDE B3, BESA TR70, THE BESA GUIDE TO GOOD PRACTICE: SUPPORTS & FIXINGS AND ALL OTHER APPLICABLE GUIDANCE, CODES & STANDARDS
- INSULATE PIPES, DUCTS, TANKS, VESSELS & EQUIPMENT IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE BUILDING REGULATIONS, BS 5422 AND ALL OTHER APPLICABLE GUIDANCE, CODES & STANDARDS
- IDENTIFY CONTENTS AND FLOW DIRECTION OF PIPES & DUCTS ACCORDING TO THE CURRENT EDITION OF BS 1710
- IDENTIFY UNDERGROUND UTILITIES WITH BS EN 12613 DETECTABLE WARNING MARKER TAPE
- LIMIT HOT & COLD WATER FIXTURE FLOW RATES ACCORDING TO THE FOLLOWING TABLE:

FIXTURE FLOW RATES

Fixture	Maximum Flow
Shower	0.10L/s
Wash Basin	0.08L/s
WC Cistern	0.10L/s
Kitchen Sink	0.10L/s
Cleaner's Sink	0.12L/s

LOCAL CONTROLS

UNDERFLOOR HEATING SYSTEMS

- UNDERFLOOR HEATING SYSTEMS ARE SUPERVISED BY THE GENIUS HUB CONTROL SYSTEM
- DURING THE HEATING SEASON SPACE TEMPERATURES ARE CONTROLLED TO THE OCCUPIED, UNOCCUPIED & PROTECTION HEATING SETPOINTS ACCORDING TO A TIME SCHEDULE
- OCCUPIED HEATING SETPOINT: 21°C
- UNOCCUPIED HEATING SETPOINT: 17°C
- PROTECTION HEATING SETPOINT: 12°C
- A MANUAL OVERRIDE BUTTON IN EACH SPACE ENABLES USERS TO SET THE LOCAL SYSTEM TO OCCUPIED FOR 2 HOURS DURING SCHEDULED UNOCCUPIED OR PROTECTION PERIODS

COMMISSIONING

- MANAGE THE COMMISSIONING PROCESS IN ACCORDANCE WITH CIBSE GUIDE CCM
- COMMISSION SYSTEMS & EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS
- TEST ABOVE GROUND DRAINAGE IN ACCORDANCE WITH THE CURRENT EDITION OF BS EN 1610
- TEST, FLUSH, DISINFECT, CERTIFY & COMMISSION HOT & COLD WATER SERVICES IN ACCORDANCE WITH THE CURRENT EDITIONS OF BS EN 806-5, BS 8558, BS PD 855468 AND CIBSE GUIDE CCW
- TEST & COMMISSION DUCTWORK SYSTEMS IN ACCORDANCE WITH THE CURRENT EDITIONS OF BESA DW143 AND CIBSE GUIDE CCA
- TEST, FLUSH & COMMISSION HYDRONIC HEATING & COOLING SYSTEMS IN ACCORDANCE WITH THE CURRENT EDITIONS OF BSRIA BG29 AND CIBSE GUIDE CCW
- CHEMICALLY DOSE HYDRONIC HEATING & COOLING SYSTEMS WITH SUITABLE CHEMICALS AND CONCENTRATIONS TO PREVENT BIO-FOULING, SCALING AND CORROSION
- THOROUGHLY DOCUMENT COMMISSIONING DATA AND EQUIPMENT SETTINGS FOR REVIEW AS PART OF THE COMMISSIONING PROCESS
- SYSTEMS & EQUIPMENT ARE NOT CONSIDERED COMMISSIONED UNTIL THE CLIENT DESIGN TEAM HAS ACCEPTED THE COMMISSIONING DATA AS COMPLETE & SATISFACTORY AND WITNESS TESTING HAS BEEN CARRIED OUT
- COMMISSIONING OF CRITICAL SYSTEMS & EQUIPMENT IS TO BE CARRIED BY THE NOMINATED SPECIALISTS; REFER SPECIALIST COMMISSIONING TABLE

CRITICAL COMMISSIONING	
ITEM	SPECIALIST
Grundfos Pumps	Grundfos Technician
Flamco Pressurisation Units	Flamco Technician
Daikin Systems & Equipment	Daikin Technician
ENWA Water Treatment	ENWA Technician
Air Source Heat Pumps	Manufacturer's Approved Technician
Terminal Units	M&E Contractor
Building Controls	Controls Specialist
Water Hygiene Units	Kemper Technician
HydroTec Water Conditioners	HydroTec Technician
DutyPoint Booster Pumps	DutyPoint Technician
Sensor Taps	M&E Contractor
Thermostatic Valves	M&E Contractor
Air & Water Flow Balancing	Specialist Contractor
Air Processing Units	Nilan Technician
System Flushing & Dosing	Specialist Contractor
Genius Hub Controls	Genius Technician
Underfloor Heating Systems	Manufacturer's Approved Technician

Rev	Description	Date
T00	For Tender	23/10/30

Client	Bedford College
Site	Shuttleworth College Old Warden Park Biggleswade SG18 9DX
Project	PSDS3b & HoR Fit Out

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Drawing Title General Information	
Drawing Ref 02-15 M-CS-01	
Revision T00	Date 2023/10/30
Scale NTS	Status For Tender