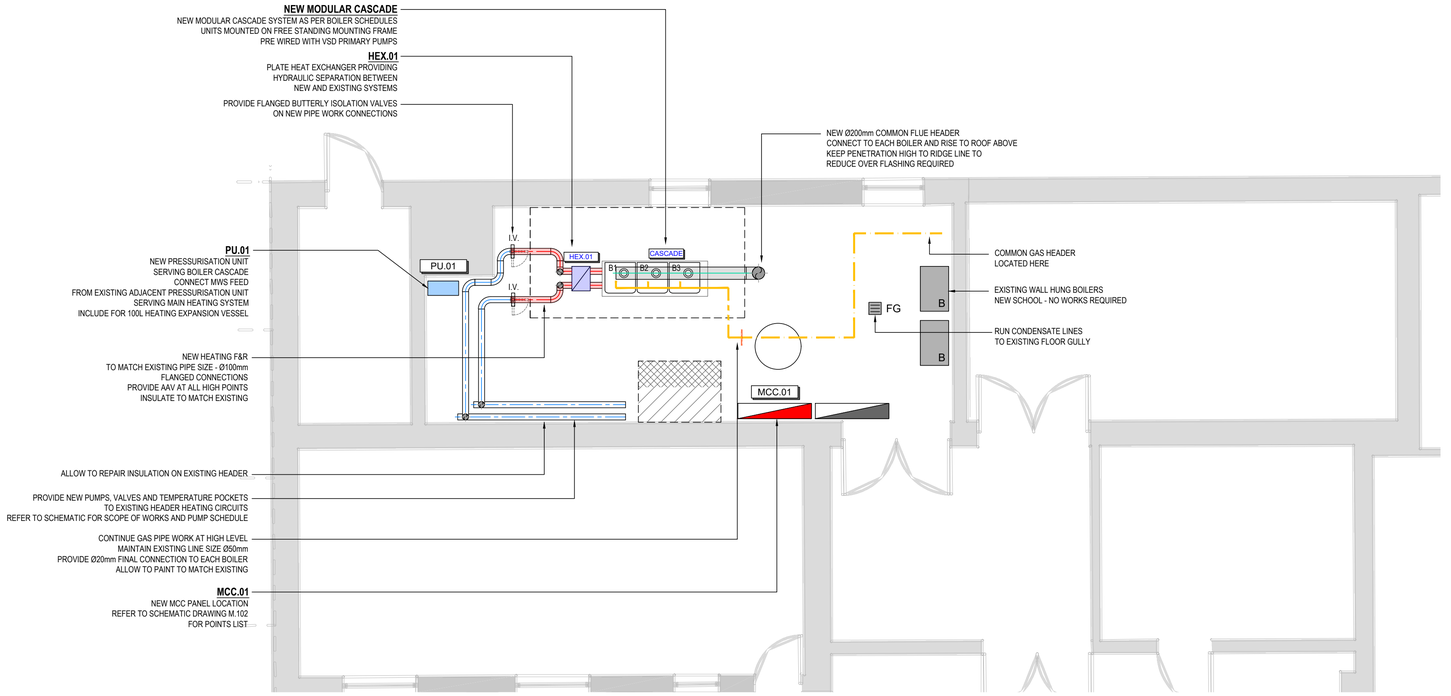
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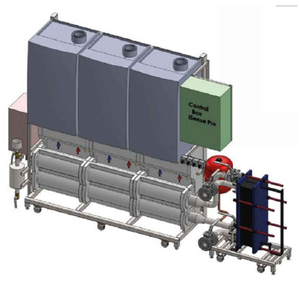

1 M.100 EXISTING BOILER PLANT ROOM LAYOUT
1:50 @ A1

## DRAWING M.102 : NEW BOILER CASCADE SCHEDULE

| BOILER REFERENCE | EQUIPMENT TYPE | QUNANTITY | BOILER OUTPUT 80/60° | TOTAL OUTPUT 80/60° | POWER V/PH/Hz |
|---|---|---|---|---|---|
| B1-B3 | HIGH EFFICIENCY CONDENSING BOILER | 3 No. | 84 kW | 252 kW | 230/1PH/50Hz |

## DRAWING M.102 : NEW HEATING CIRCUIT PUMP SCHEDULE

| PUMP REFERENCE | AREA SERVED | EXISTING MAKE / MODEL | PUMP TYPE | POWER Ø | MAX HEAD (M) |
|---|---|---|---|---|---|
| P.03 | GENERAL PURPOSE AREA | GRUNDFOS MAGNA3 50-120F | TWIN HEAD | 1Ø | 12 |
| P.02 | SOUTH WEST | GRUNDFOS MAGNA3 D 40-120F | TWIN HEAD | 1Ø | 12 |
| P.03 | LIBRARY | GRUNDFOS MAGNA3 D 50-120F | TWIN HEAD | 1Ø | 12 |
| P.04 | NORTH EAST | GRUNDFOS MAGNA3 D 50-120F | TWIN HEAD | 1Ø | 12 |



2 M.101 SAMPLE BOILER CASCADE ARRAGEMENT
NTS

## SCOPE OF WORKS - NEW HEATING SYSTEM

CONTRACTOR SHALL ALLOW FOR THE FOLLOWING:

- INSTALL A NEW BOILER CASCADE CONSISTING OF 3 NO. GAS CONDENSING BOILERS, COMPLETE WITH FREESTANDING FRAME, PRIMARY PUMPS, COMMON HEADERS, CONTROLS, Ø200 MM COMMON FLUE, GAS CONNECTIONS AND ALL ASSOCIATED PIPEWORK AND FITTINGS.
- PROVIDE A NEW PLATE HEAT EXCHANGER TO HYDRAULICALLY SEPARATE THE BOILER CASCADE FROM THE EXISTING HEATING SYSTEM, TOGETHER WITH NEW BOILER-SIDE PRESSURISATION UNIT, EXPANSION VESSEL, AUTOMATIC FILL ARRANGEMENT, SAFETY DEVICES, DOSING POT, AIR VENTS, DRAIN POINTS, GAUGES AND TEMPERATURE SENSORS.
- MODIFY THE EXISTING FLOW AND RETURN HEADERS TO ACCOMMODATE THE NEW PLATE HEAT EXCHANGER CONNECTIONS. REPAIR DISTURBED INSULATION AND PROVIDE NEW INSULATION TO PLANTROOM PIPEWORK.
- PROVIDE NEW PLANTROOM CONTROL PANEL MCC.01, BOILER SEQUENCING, PUMP CONTROLS, MOTORISED VALVE CONTROLS, PRESSURISATION ALARMS, TEMPERATURE SENSORS, FROST PROTECTION, FIRE ALARM INTERLOCK AND REMOTE HEATING CONTROLS.
- TEST, FLUSH, CHEMICALLY CLEAN, DOSE, BALANCE AND COMMISSION THE COMPLETE INSTALLATION. PROVIDE ALL COMMISSIONING RECORDS, CERTIFICATES, AS-INSTALLED DRAWINGS AND O&M DOCUMENTATION

## SCOPE OF WORKS - HEATING HEADER MODIFICATIONS

CONTRACTOR SHALL ALLOW FOR THE FOLLOWING:

- PROVIDE NEW FLANGED CONNECTIONS, TEMPERATURE POCKETS, SENSORS, GAUGES, DRAIN POINTS AND AUTOMATIC AIR VENTS AS INDICATED.
- REPAIR OR REPLACE DAMAGED INSULATION TO THE EXISTING HEADERS AND FULLY REINSTATE THE SYSTEM FOLLOWING COMPLETION OF THE WORKS.
- REMOVE THE EXISTING HEATING CIRCUIT PUMPS AND REPLACE THEM WITH NEW GRUNDFOS MAGNA3 PUMPS IN ACCORDANCE WITH THE PUMP SCHEDULE.
- INCLUDE ALL MATING FLANGES, ISOLATION VALVES, NON-RETURN VALVES, SUPPORTS, LOCAL ISOLATORS, WIRING AND RUN/FAULT INTERFACES TO MCC.01.
- REMOVE ALL EXISTING 3-PORT VALVES (3 NO.)
- CONTRACTOR TO PROVIDE AN ALLOWNCE TO CHANGE OUT 1NO. GATE VALVE SHOULD VALVES FAIL TO HOLD DURING WORKS.
- COMMISSION EACH PUMP TO THE REQUIRED DUTY AND RECORD FINAL SETTINGS.

## GENERAL NOTES

1. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE ENERJ SPECIFICATION TOGETHER WITH THE REQUIREMENTS AND BUILDING REGULATIONS OF ALL STATUTORY AUTHORITIES, STANDARDS AND CODES RELEVANT TO THE WORKS.
2. THE MECHANICAL CONTRACTOR SHALL CO-ORDINATE ALL SERVICES FULLY WITH ALL TRADES BEFORE COMMENCING WORK.
3. DO NOT SCALE THIS DRAWING. ALL DIMENSIONS SHALL BE TAKEN ON SITE.
4. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY INFORMATION TO ALLOW PROPER CO-ORDINATION OF ALL SERVICES.
5. EXTRA COSTS INCURRED DUE TO THE CO-ORDINATION EXERCISE NOT BEING COMPLETED WILL NOT BE ACCEPTED BY THE ENGINEER.
6. EXACT LOCATION OF ALL SERVICES SHALL BE AGREED WITH THE EMPLOYERS REPRESENTATIVE PRIOR TO COMMENCEMENT ON SITE.
7. ALL SERVICES AS SHOWN ON THIS DRAWING SHALL BE INCLUDED IN THE FINAL TENDER PRICE.
8. SAMPLE OF ALL EQUIPMENT SHALL BE APPROVED BY CLIENT, ARCHITECT AND BUILDING SERVICES ENGINEER PRIOR TO ORDERING.
9. ALL DIMENSIONS IN MILLIMETERS, UNLESS STATED OTHERWISE.

## HEATING SERVICES NOTES

1. THE CONTRACTOR SHALL SUPPLY AND INSTALL THE HEATING SYSTEM COMPLETE WITH ALL VALVES, CONTROLS MAGNETIC FILTRATION AND SYSTEM EXPANSION VESSEL TO FORM A COMPLETE SYSTEM.
2. LOCATIONS OF EQUIPMENT AND PIPEWORK SHOWN ARE DIAGRAMMATIC ONLY AND SHALL BE COORDINATED WITH THE ARCHITECTURAL DRAWINGS, EXISTING SERVICES, AND BUILDING WORK.
3. UNLESS OTHERWISE STATED ALL ITEMS OF PLANT PIPEWORK, VALVES ETC, SHALL BE SUPPLIED & INSTALLED UNDER THE MECHANICAL CONTRACT.
4. THE CONTRACTOR MUST ATTEND SITE TO VERIFY THE EXISTING INSTALLATIONS, TIE INS ,DRAIN DOWNS ETC. LACK OF KNOWLEDGE OF EXISTING INSTALLATION WILL NOT BE ACCEPTED FOR ANY COST IMPLICATIONS,
5. MECHANIGAL CONTRACTOR WILL VERIFY BY ON SITE INSPECTION AND WITH ASSISTANCE OF CONTROL SPECIALIST. THE EXISTING CONTROLS POINTS LIST SERVED FROM EXISTING MCC PANEL SHALL BE RETAINED.
6. THE MECHANICAL CONTRACTOR SHALL VERIFY THE ACTUAL WORKING PRESSURE OF THE SYSTEM. THE NEW INSTALLATION SHALL NOT EXCEED THIS OPERATIONAL PRESSURE.
7. ALL MECHANICAL AND ELECTRICAL MODIFICATIONS TO BE AGREED WITH ENGINEER AND IBTS FACILITIES TECHNICAL SERVICES PRIOR TO COMMENCING ON SITE.
8. ALL SHUT DOWNS, TIE INS AT WILL REQUIRED RAMS TWO WEEKS IN ADVANCE TO FACILITATE APPROVALS PRIOR TO WORK COMMENCING ON SITE.
9. ALL PIPEWORK WITHIN THE BOILER PLANTROOM SHALL BE INSULATED & CLADDED IN STUCCO ALUMINUM TO MATCH EXISTING.
10. ALL AUTOMATIC AIR VENTS TO BE SUPPLIED COMPLETE WITH INLINE LEVER ACTION ISOLATION
11. MECHANICAL CONTRACTOR TO VISIT SITE AND ASCERTAIN EXACT SYSTEM PRESSURE FOR LPHW HEATING SYSTEM.
12. NEW HEATING SYSTEM TO OPERATE WITHIN SAME PRESSURE PROFILE.
13. ALL VALVES ABOVE 32Ø MUST BE INSULATED WITH PROPRIETARY JACKETS WITH VELCRO FIXINGS.
14. ALL PIPEWORK SIZES NOTED ARE INTERNAL PIPE DIAMETER.
15. TESTING, COMMISSIONING AND BALANCING OF THE INSTALLATION IN ACCORDANCE WITH STANDARD SPECIFICATION "TESTING AND COMMISSIONING".
16. PROVIDE LABELS ON EQUIPMENT INCLUDING CONTROLLERS, PUSH BUTTONS, TEMPERATURE SENSORS AND SIMILAR EQUIPMENT. THE LABEL SHALL BE A NON TARNISHABLE CAST OR ENGRAVED LABEL OF APPROVED SIZE, WORDING AND DESIGN, CLEARLY INDICATING THE FUNCTION AND/OR CIRCUIT DESIGNATION OF THE COMPONENT CONCERNED AND SECURLEY FIXED.
17. PROVIDE AUTOMATIC AIR VENTS ON ALL HIGH POINTS ON PIPEWORK SYSTEMS

| REV | DESCRIPTION | DRN | ENG | APP | DATE |
|---|---|---|---|---|---|
| T1 | ISSUED FOR TENDER | JH | JH | JH | 26.08.26 |

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PROJECT
COLÁISTE MHUIRE
BOILER UPGRADE EMERGENCY WORKS

CLIENT
KILKENNY AND CARLOW
EDUCATION AND TRAINING BOARD

DRAWING TITLE
MECHANICAL SERVICES
LPHW BOILER SYSTEM
BOILER HOUSE NEW HEATING SYSTEM WORKS

| SCALE | SHEET SIZE | PROJECT No. | DRAWING No. | REV. |
|---|---|---|---|---|
| 1:50 | A1 | 26-020 | M-101 | T1 |