

St. Oliver's CC – EWS 2026 – Building
Management System, Heating, Cold Water
Services and Roof Replacement Project
Drogheda,

Co. Louth

Volume A.2.3 Mechanical Specification

Part 4 of 4: Equipment Schedules

Tender

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1 HEATING CENTRE (51)

1.1 LPHW CIRCULATION PUMPS

Reference: P1, P2, P3

Location: Heating Plantroom

MAGNA3 D 50-150 F



Typical Image

Twin head inline pump as per technical specification below.

Element	Specification	Proposal
Description	Twin head c/w integral variable speed drives & BEMS connectivity	
Design Duty	See Pump Schedule Below	
Pump Housing Material	Cast Iron	
Impeller Material	Composite	
Maximum Operating Pressure	10 bar	
Pressure Rating	PN 10	
Electrical Power Supply	1ph / 230V / 50Hz	
Max Power Input	See Pump Schedule Below	
Enclosure Class	X4D	
Insulation Class	F	
Energy (EEI)	0.18	
On-board VSD	Required	
Volt Free Contacts	Required for BEMS enable/fault	

Differential Pressure Transducer Kit for sealed circuits	Required	
Standards/ Conformity	CE, VDE, EAC, EN 12756, EN 1092-2 & ISO 7005-2, WEEE	

Heating Pump Schedule – Primary School

Ref	System	Flow (kg/s)	Head (kPa)	Electrical Supply	Notes
P1	Heating Circuit Pump	5.5	80	230/1/50	Variable speed pump c/w differential pressure controls & BMS link
P2	Heating Circuit Pump	5.5	80	230/1/50	Variable speed pump c/w differential pressure controls & BMS link
P3	Heating Circuit Pump	5.5	80	230/1/50	Variable speed pump c/w differential pressure controls & BMS link

Notes:

1. All heating circulating pumps to be the single head inline type with pressure transducer kits for sealed circuits and on board speed controllers.
2. All pumps shall be selected to match pipework line sizes. No reduction in pipe diameter for pump connections.

1.2 MAGNETIC FILTRATION UNIT

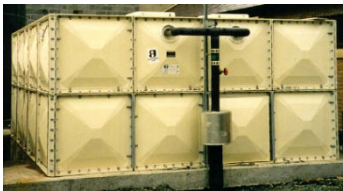
Reference: Magnetic Filtration Unit Location: New Boiler House		
 <i>Typical Image</i> Details as per technical specification below.		
Element	Specification	Proposal
Benchmark	MagnaClean	
Material	304 Stainless Steel	
Max Working Pressure	10 bar	
Lid Seal	EPDM	
Maximum Temperature	140°C	
Sight Glass	Integral	
Connection Details	80mm	
Connection Sizes	3"	
Filter Diameter	210 mm	
Magnet Length	206 mm	
Drain	1 ¼ " BSPT Drain	
Flow Rate	Minimum 6 l/s	

1.3 DOSING POTS

Reference: Dosing Pot Location: New Boiler House		
 Typical Image Details as per technical specification below.		
Element	Specification	Proposal
Benchmark	Boss	
Capacity	11 litres	
Construction	Stainless Steel	
Mounting	Wall mounted c/w wall mounting brackets	
Finish	Stainless Steel	
Connection Details	• Tundish • 1" fill valved connection • 1" drain valved connection • 1" flow valved connection • 1" return valved connection • Air vent	
Connection Sizes	1"	
Typical Height	865 mm	
Typical Diameter	320 mm	
Weight	16.3 kg	

2 PLUMBING EQUIPMENT (53)

2.1 COLD WATER STORAGE TANK

Reference: Potable Cold Water Storage Tank Location: Water Tank Room		
 <i>Typical Image</i> Sectional storage tank as per technical specification below.		
Element	Specification	Proposal
Benchmark	Killarney Plastics (Tricell)	
Description	GRP pre-insulated sectional water Storage Tank	
Location	Internal	
Contents	Potable Cold Water	
Specification	Format 30	
Actual Capacity Req'd	18,000 litre	
Dimensions (LxWxH)	4.15m x 3.15m x 1.5m	
Internal Divider	Required	
Drip Tray	Required	
Inlet Connection	2 no. DN 22	
Outlet Connection	2 no. DN 50	
Overflow Connection	2 no. DN 50	
Vents	2 no.	
Access Hatch	2 no. 600 x 600	
Internal Ladder	Required	
External Ladder	Required	
Tank Cover Description	Heavy duty and pre-insulated c/w internal flanges	

Underwater Bolts, Tie Bars, Joiners, etc	Stainless steel, grade 316 S16	
External bolts	Mild steel to BS 3692 and galvanised to BS 729	
Mesh Screen Details	All vents, warning pipes, overflows, shall have mesh screens of maximum 0.65mm x 0.65mm holes	
Standards/ Conformity	BS 3692, BS 729, BS4211 1994	

2.2 COLD WATER BOOSTER PUMPS

Reference: WBP001 Location: Tankroom		
Typical Image Booster Pump as per technical specification below		
Element	Specification	Proposal
Description	Electronically speed controlled Duty Assist Pressure Boosting pump set with control panel	
Design Duty	9.0 l/s @ 430 kP	
Integral Frequency Converter and PID Controller with adjustable PI parameters	Required	
Integral Expansion Vessel, Pressure Transducer & Pressure Gauge	Required	
Integral Non-return Valve	Required	
Variable Speed Drive	Required	
Pump Housing Material	304 Stainless Steel	
Impeller Material	304 Stainless steel	
Rubber Material	EPDM	
Shaft Seal Material	Service Friendly HQQE	
Max. Operating Pressure	10 bar	
Rated Power	Contractor to Confirm	

Electrical Requirements	1ph / 50 Hz / 230V	
Rated current	Contractor to Confirm	
Enclosure class (IEC 34-5)	IP55	
Insulation class (IEC 85)	F	
Volt Free Contacts	Required or BEMS enable/fault	
Manufacturer's Warranty	2 years (minimum)	
Packaged Unit	Yes	
Dry Run Protection	Required	
Standards / Conformity	DIN Standard 1988/T5, CE Marked	

3 SPACE HEATING EQUIPMENT (56)

3.1 THERMOSTATIC RADIATOR VALVE

Reference: TRV / LSV Location: As indicated *		
 <i>Typical Image</i> Differential Pressure Control Valve as per technical details below		
Element	Specification	Proposal
Benchmark	Herz	
Description	Thermostatic Radiator Valve & matching Lock Shield Valve	
Coupling	Female Threaded	
Size	15mm	
Temperature Range (Maximum)	2°C - 120°C	
Operating Pressure (Maximum)	10 bar	
Valve Body	Iron/Nickle Plated	
Standards / Conformity	EN 1254-2	

4 BUILDING MANAGEMENT SYSTEM (58)

4.1 BMS CONTROL PANEL

Reference: BMS Panel Location: Boiler House		
 <i>Typical Image</i> BMS Panel as per technical specification below.		
Specification	Quantity	Proposal
Door interlocked isolator	1	
Control circuit MCB	1	
Control panel live lamp	1	
Fire relay complete with status lamp	1	
GSM Module	1	
Selection Switch for Holiday Settings	1	
Selection Switch for Winter/Summer Settings	1	
240/24V Transformer complete with MCB	1	
Touch-screen interface panel mounted at 1500 AFFL	1	

This schedule should be read in conjunction with the Mechanical Specification Part 1 which gives a full description of the BMS requirements and the BMS Mechanical Wiring drawings.

4.2 BMS REMOTE PANEL

Reference: Remote Panel

Location: Main Office



Typical Image

Panel as per technical specification below.

Specification	Quantity	Proposal
Maximum Front Dimensions	500mm x500mm	
Run-on Timers	6 no.	
Heating Programme Active Lamp	1	
Fault Status Lamp	1	
Energy Monitoring Status Lamps	3	

4.3 BOILERHOUSE DEVICES

4.3.1 Immersion Sensor

Reference: Ts

Location: See Drawings



Typical Image

Immersion Temperature Sensor as per technical specification below.

Element	Specification	Proposal
Output Type	Thermistor Resistive	
Measurement range	-30 °C to +110 °C	

Accuracy	±1.28 °C	
Probe	Brass	
Probe length	150mm	
Housing	Material ABS Ambient temp -10 °C to +40°C	
Cable entry	M20	
IP Protection	IP67	
Pocket	316 Stainless steel	
Conformance	EU Directive 2004/108/E	

4.3.2 Immersion Thermostat

Reference: Immersion Frost Thermostat

Location: Plantroom



Typical Image

Immersion Frost Thermostat as per technical specification below.

Element	Specification	Proposal
Switch rating	230Vac	
Sensing element	Copper	
Measurement range	0°C -35°C	
Reset function	Automatic	
Temperature differential	0.5 °C	
Probe	Brass	
Probe length	120mm	
Housing	Material ABS Max Ambient temp 80 °C	
Cable entry	M20	
IP Protection	IP43	
Pocket	Brass	
Conformity	CE Marked	

4.3.3 Outside Frost Thermostat

Reference: Outside Frost Thermostat

Location: Plantroom



Typical Image

Outside Frost Thermostat as per technical specification below.

Element	Specification	Proposal
Output Type	Thermistor Resistive	
Measurement range	-20 °C to +30°C	
Accuracy	±1.0 °C	
Electrical Rating	230VAC, 50Hz	
Max. Switching Current	3A (inductive load) 10A (resistive load)	
Housing	Material ABS	
Operating Temperature Range	-25 °C to +60 °C	
Cable entry	M20	
IP Protection	IP65	
Mounting	Wall-mounted on standard UK single gang box	
Accessories	Opaque tamperproof cover	
Conformance	CE mark, complying with standards EN60730-1 (1995), EN55014-1 (1997), EN55014-2 (1996).	

4.4 FIELD DEVICES

4.4.1 Run-on Timer

Reference : Electronic Run-on Timer (Over-ride Timer)

Location: See Drawings



Typical Image

Electronic Run On Timer as per technical specification below.

Element	Specification	Proposal
Power Supply	24VAC – 230VAC	
Relay contact rating	230VAC 10A	
Time selection	1-5hrs	
Max restriction times	1-2-3hrs	
Accuracy	<+/-1s/h	
Indication	LED	
Dimensions	85mm(W) x 86mm(H) x 14mm(D)	
Housing	White ABS	
Mounting	Flush mounting to electrical trunking/ control panel or surface mounting to single gang electrical socket box.	

4.4.2 Room Temperature Sensors

Reference: Space Temperature Sensor (T) Location: See Drawing		
 <i>Typical Image</i> Space Temperature Sensor as per technical specification below.		
Element	Specification	Proposal
Output Type	Thermistor Resistive	
Measurement range	-10°C to 40°C	
Accuracy	±0.2°C (0 to 70°C)	
Housing	Material ABS Ambient temp -10°C to 60°C	
Cable entry	M20	
IP Protection	IP30	
Add on options	Setpoint adjustment knob Override button Fan control switch Led indication Digital display	
Conformance	EU Directive 2004/108/E	

4.4.3 Zone Valves

Reference: 2-port Solenoid Valve & Actuator

Location: See Drawings



Typical Image

Solenoid Valve & Actuator as per technical specification below.

Element	Specification	Proposal
Description	Assisted Lift Servo Operated Valve	
Control Function	On/off: Normally Closed	
Application	LPHW Heating	
Coupling	As per Part 3: Standard Specification	
Size	As per drawings	
Max. Differential Pressure	10 Bar	
KVS	37 m ³ /h	
Valve State	Normally closed	
Valve Body	Brass	
Spindle	Stainless steel	
Media	Low Pressure Hot Water	
Media Seal	Ethylene Propylene	
Media Temperature	-10 °C to +140 °C	
Max Pressure	16 Bar	
Motor Supply Voltage	230Vac	
Power Consumption	8 W	
Max. Ambient Temp	+50°C	
IP rating	IP65	

4.5 UTILITY METERS

4.5.1 Water Meters

Reference: Water Meter Location: New Boiler House		
 <i>Typical Image</i> Cold Water Meter as per technical specification below.		
Element	Specification	Proposal
Description	Volumetric water meter	
Media	Mains water	
Visible Display	5 roller counter	
Pulse Output Requirements	Switch type - reed Contacts - VFC Pulse value – 1 per litre Load current - 500mA Max switch voltage - 180Vdc Contact rating – 10W Flying lead - 2m	
Connection Type	As per Part 3: Standard Clauses	
Inline Strainer	Required	
Installation Positions	Horizontal & vertical	
Valve Body	Epoxy resin coated brass to DIN 50 930 part 6	
Max Pressure	16 Bar	
Media Temperature	0 °C - 30°C	
Operating Temperature	-20 °C - 50 °C	
Conformance	IS EN 14154	

4.5.2 Gas Meters

Reference: Natural Gas Meter

Location: New Boiler House



Typical Image

Natural Gas Meter as per technical specification below.

Element	Specification	Proposal
Description	Diaphragm gas meter	
Fluid	LPG	
Visible Display	5 roller counter	
Pulse Output Requirements	Pulse value – 1 per 0. 1m ³ Load current - 100mA Max switch voltage - 24Vdc Contact rating – 0.6W Flying lead - 2m	
Connection Type	Screwed unions	
Meter Model	As Per BMS requirements	
Peak Burner Loading	N/A	
Installation Positions	Horizontal / Vertical	
Meter Body	Epoxy resin coated steel	
Max Pressure	16 Bar	
Operating Temperature	0 °C - 40 °C	
Conformance	EEC 71/318 UNI-CIG 7987/7988 norms OIML Regulations	