Mayford Estate

Architect:
Issue Status: D2 – TENDER

Table 1 Heating Components 1
Table 2 Water Services 3

Table 1 **Heating Components**

REF	DESCRIPTION/TYPE	LOCATION	DUTY	NOTES / ACCESSORIES
P.DH.1 P.DH.2 P.DH.3 P.DH.4 (quantity to meet flow performance requirements)	District heating circulation pumps to circulate between central plant equipment and dwellings	Energy Centre Plantroom Ground Floor – Requires builders work plinth, inertia pump bases and AV mounts.	Peak flow to meet peak estate wide demand. Minimum flow to match minimum building demand (allow for 5% of peak).	Staged pumps provided in parallel to function as single pump delivering the required heat demand to the network. Duty/assist/assist/standby to rotate between pumps. Speed controlled, all pumps provided with inverter speed control. Speed controlled via differential pressure sensors on network. A minimum of three pumps are to be provided with (n+1 redundancy for all load scenarios). The number of pumps will be selected to meet the calculated peak flow and turn down to 5% of the calculated peak flow. Individual pumps will not be turned down to less than the manufacturers' recommended minimum flow. The pump controller shall select the optimum of pump efficiency curve to meet the demand and constantly monitor system pressure, flow and temperature.
EV.1	Expansion vessels	District Heating Plantroom – Requires builders work plinth.	Volume: to be determined by contractor. Quantity: to be determined by contractor. Pressure rating: 10 bar	To suit spill and fill type expansion control.
PU.1	Pressurisation unit	District Heating Plantroom – Requires builders work plinth.	To be selected by contractor to meet performance requirements described in employers requirements. To allow n+1 redundancy to the existing pressurisation unit serving the district heating network.	Complete with auto/change over panel. Spill and fill type expansion control.
DAS.1	Dir Air Separator	District Heating Plantroom	Size dependent on standard winter flow rate at 5°C external temperature. To be selected by contractor to meet performance requirements described in employers requirements.	A steel (air) deaerator and dirt separator with magnet. Removes circulating air, microbubbles and particles from 5 µm. Including a magnet for removal of magnetite.
VD.1	Fully Automated Vacuum Degasser	District Heating Plantroom	Size dependent on maximum system volume.	Fully automatic vacuum degasser. System pressure 1-6 bar, maximum compression pressure 10 bar. Dimensions H × W × D 880 × 590 × 350 mm Ensure machine is compatible with system fluid chemicals.
DP.1	Dosing Pot	District Heating Plantroom	25 litres	The stainless steel dosing pot shall be supplied with a safety anti blow back valve and a venting ball valve. The filling funnel and drain valve shall be interchangeable to suit left and right handed configurations. The assembly shall have wall mounting brackets.
HM.1	Refer to Meter Schedule J6828-MXF-XX-XX-SH-E-80001.			
HM.2	Refer to Meter Schedule J6828-MXF-XX-XX-SH-E-80001.			

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REF	DESCRIPTION/TYPE	LOCATION	DUTY	NOTES / ACCESSORIES
HIU	Heat Interface Unit / 2no. plate heat exchanger	In HIU dwelling riser cupboards.	Domestic Hot water and Space Heating duty to be selected by contractor to meet performance requirements described in employers requirements. Plate heat exchanger capacity estimates (correct values shall be provided by Contractor's detailed heat loss calculation): - 37.5 kW DHW plate heat exchanger and minimum heating plate heat exchanger capacity by accommodation type: - Type A 2.5 kW - Type A1 2.5 kW - Type B 3.5 kW - Type C 6.6 kW - Type D 6.7 kW - Type E 5.9 kW	Order with fully insulated first fix valve rail and flushing bypass set. Order with electronic remote controller. The controller will be mounted remote from the unit in the dwelling corridor. HIU shall be fully electronic with space heating return temperature limiter. HIU shall be provided with ModBus connection to allow remote commissioning and operating parameter adjustment. Provide HIU with adjustable hot water delivery temperature. HIU will be provided with keep warm facility (but not activated). HIU to be factory fitted with Kampstrup heat meter. HIU shall measure and log for each plate heat exchanger secondary flow and return temperature plus primary return and calculate, record and output the volume weighted return temperature for both space heating and hot water. The heat interface units have been specifically selected based on their tested and recognised performance with BESA (Building Engineering Services Association) testing schemes. If an alternative unit is proposed it will only be considered if it is shown to have performed as well as or better than the specified unit. The alternative unit must have been tested by BESA and all aspects of the test results will be considered when reviewing the suitability of the alternative unit. The HIU will be enclosed in a fully insulated enclosure provided by the HIU manufacture. The HIU parameters shall be remotely adjustable using the heat network software (refer to J6828-MXF-XX-XX-SH-E-80001 - Meter Schedule) in order to allow remote commissioning.

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Table 2 **Water Services**

REF	DESCRIPTION/TYPE	LOCATION	DUTY	NOTES / ACCESSORIES
BS.01	Packaged booster set	Tower 1 Water Plant Room – Requires builders work plinth.	Peak flow: 4.3 l/s Pressure rating: 3.1bar To be confirmed by contractor.	Duty/standby/assist to rotate between pumps. Speed controlled, all pumps provided with inverter speed control. Accumulator vessel to be provided within package. BMS Alarm Kit (Connect to BMS).
BS.02	Packaged booster set	Tower 2 Water Plant Room – Requires builders work plinth.	Peak flow: 6.6 l/s Pressure rating: 3.1 bar To be confirmed by contractor.	Duty/standby/assist to rotate between pumps. Speed controlled, all pumps provided with inverter speed control. Accumulator vessel to be provided within package. BMS Alarm Kit (Connect to BMS).
BS.03	Packaged break tank and water booster set with AB air gap.	Tower 1 and 2 Water Plant rooms.	To be confirmed by contractor.	A Break Tank and Booster set with a hygienic Type AB air gap for Fluid Category 5 protection. The unit shall be supplied as a complete package on a base plate ready for installation. The cistern shall include a screened overflow and weir. The packaged unit shall contain a centrifugal pump, anti-vibration rubber feet and flexible stainless braided connection.
WT.01	Water Tank	Water Tank Plant Room Tower 1 – requires builders work plinth	Useable tank capacity: $4m^3$ To be confirmed by contractor.	Internally flanged base, externally flanged sides (IFB). 2 compartment sectional tank Screened vents, overflow and stainless steel fastening Supplied with Keraflo (or equal alternative) delayed action float valve Order with level controls. Insulated.
WT.02	Water Tank	Water Tank Plant Room Tower 2 – requires builders work plinth	Useable tank capacity: $6m^3$ To be confirmed by contractor.	Internally flanged base, externally flanged sides (IFB). 2 compartment sectional tank Screened vents, overflow and stainless steel fastening Supplied with Keraflo (or equal alternative) delayed action float valve Order with level controls. Insulated.
TMV.01	Thermostatic Mixer Valve	All dwelling hot water outlets apart from kitchen sinks.		TMV2 type. Note Hot water supply temperature of 52 degrees. Select a TMV suitable for operation with 52°C supply temperature.
WM.01	Water Meters	Block entry points, pressurisation units and cold water tanks.		Provide mains powered unit along with accessories to collect and collate all meter readings. Provide with manufacturers' insulation jackets. Provide with manufacturers' meter reading software to collate all meter readings. Complete with Modbus output.

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Notes

1. All equipment to be selected to ensure that the total harmonic distortion is less than 15%.
2. To be read in conjunction with all other Max Fordham LLP schedules, specifications and drawings.

Rev	Date	Status	Description	Engineer	Project Leader
P05	26/08/22	D2	TENDER	EO	DL
P04	08/07/21	D2	TENDER	EO	DL
P03	07/06/21	S2	For Information	EO	DL
P02	19/04/21	S2	For Information	EO	DL
P01	15/02/21	S2	Draft for Information	EO	DL

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Mechanical and Public Health Equipment Schedule
J6828-MXF-XX-XX-SH-M-10002 Rev P05

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