

Reference	Equipment Type	Description/ Accessories	Duty/ Size (For pricing purpose only. All final calculations + sizing to be undertaken by contractor)	Manufacturer (or equal approved)	Notes & Model (or equal approved)
<b>COLD WATER BOOSTER SETS</b>					
DCW-BS-01	Cold water booster set	For Imperial Hotel Variable speed booster set Fitted with 4 x variable speed multi-stage pumps each rated at 25% of design duty Skid mounted C/w control panel, expansion vessel, valves & flexible conns C/w low level sensors fitted in tank CWT-01 Controls operate on duty/assist/assist/assist with auto duty rotation Control panel suitable for linking to BMS	9.5 Litres/s @ 6.2 Bar	Dutypoint	Model: VR4-1011-LHT Quotation Reference No: 0000437708/GP Contact: Garth Ponsford Tel: 01452 313324 Email: garth.ponsford@dutypoint.com  NB outlet pressure to be set at 5.2 Bar at commissioning and increased to 6.2 Bar when Phase 1 opens
DCW-BS-02	Cold water booster set	For President Hotel Variable speed booster set Fitted with 4 x variable speed multi-stage pumps each rated at 25% of design duty Skid mounted C/w control panel, expansion vessel, valves & flexible conns C/w low level sensors fitted in tank CWT-02 Controls operate on duty/assist/assist/assist with auto duty rotation Control panel suitable for linking to BMS	12.0 Litres/s @ 5.6 Bar	Dutypoint	Model: VMV4-05-H55 Quotation Reference No: 0000437708/GP Contact: Garth Ponsford Tel: 01452 313324 Email: garth.ponsford@dutypoint.com  NB outlet pressure is less than Imperial because President Hotel is lower and has no appliances above Level 7. Maximum pressure to be adjusted at commissioning stage
<b>WATER SOFTENERS</b>					
WS-01	Water softener	For Imperial Hotel Base exchange water softener	Progressive flow duplex water softener Soft water capacity 37 m <sup>3</sup> at 300 ppm hardness per resin tank at maximum salt setting Design flow 14.4m <sup>3</sup> /hr (4.0 litres/s) 2.0" control valve 1.0 Bar pressure drop at design flow Salt storage capacity 636kg  C/w progressive flow kit & local fault and low salt alarm with capacity for extension to future building management system.	Culligan	Model CTM210 Duplex Water Softener Quotation reference IW-01951 Rev 2 Contact: Ian Walters Tel: 01494 441286 Mobile. 07771 730443 Email: IanWalters@culligan.co.uk  NB controls to be set up so that softener system WS-01 cannot re-charge at the same time as softener system WS-02. This is to prevent the basement drainage sump from being overwhelmed.
WS-02	Water softener	For President Hotel Base exchange water softener	Progressive flow duplex water softener Soft water capacity 64 m <sup>3</sup> at 300 ppm hardness per resin tank at maximum salt setting Design flow 21.6m <sup>3</sup> /hr (6.0 litres/s) 2.0" control valve 1.0 Bar pressure drop at design flow Salt storage capacity 636kg  C/w progressive flow kit & local fault and low salt alarm with capacity for extension to future building management system.	Culligan	Model CTM450 Duplex Water Softener Quotation reference IW-01951 Rev 2 Contact: Ian Walters Tel: 01494 441286 Mobile. 07771 730443 Email: IanWalters@culligan.co.uk  NB controls to be set up so that softener system WS-01 cannot re-charge at the same time as softener system WS-02. This is to prevent the basement drainage sump from being overwhelmed.

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<b>COLD WATER STORAGE TANKS</b>					
CWT-01	Cold Water tank	For Imperial Hotel GRP hot press moulded pre-insulated tank Nominal 38mm thickness Internally flanged base Externally flanged sides Heavy duty cover to support personnel Stainless steel bolts Directly sat on prepared concrete base and levelling steels (steels by tank supplier) NB Check manufacturer's specification for base flatness Clearance required at least 500mm perimeter and 750mm headroom	45,000 litres nominal storage capacity Assumed actual min. capacity 85% or 36,000 litres Nominal size 6m long x 5m wide x 1.5m high External dimensions 6150L x 5150W x 1580H Split into two equal sections 2 x raised ball valve chambers for type AB air gap 2 x Keraflo KAX 2" SF valves 2 x 100mm screened overflows 2 x 20mm screened warning pipes 2 x 100mm outlets 2 x 50mm drain connections 2 x bosses for booster set low level sensors 1 x Keraflo Tanktronic TT43 controller to register high & low level, contents and temperatures 2 x access manholes 2 x external aluminium or galv. steel access ladders 2 x internal GRP access ladders	Dewey Waters	Quotation Reference No: DW-126676-501461 Contact Details: Andrew Brunt Tel: 07824 887788 Email: andrewbrunt@deweywaters.co.uk
CWT-02	Cold Water tank	For President Hotel GRP hot press moulded pre-insulated tank Nominal 38mm thickness Internally flanged base Externally flanged sides Heavy duty cover to support personnel Stainless steel bolts Directly sat on prepared concrete base and levelling steels (steels by tank supplier) NB Check manufacturer's specification for base flatness Clearance required at least 500mm perimeter and 750mm headroom	60,000 litres nominal storage capacity Assumed actual min. capacity 85% or 51,000 litres Nominal size 8m long x 5m wide x 1.5m high External dimensions 8150L x 5150W x 1580H Split into two equal sections 2 x raised ball valve chambers for type AB air gap 2 x Keraflo KAX 2" SF valves 2 x 100mm screened overflows 2 x 20mm screened warning pipes 2 x 100mm outlets 2 x 50mm drain connections 2 x bosses for booster set low level sensors 1 x Keraflo Tanktronic TT43 controller to register high & low level, contents and temperatures 2 x access manholes 2 x external aluminium or galv. steel access ladders 2 x internal GRP access ladders	Dewey Waters	Quotation Reference No: DW-126676-501462 Contact Details: Andrew Brunt Tel: 07824 887788 Email: andrewbrunt@deweywaters.co.uk

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<b>HOT WATER PLANT</b>					
DHW-BV-1	Plate heat exchanger and buffer vessel package	<p>For Imperial Hotel</p> <p>3 x packaged domestic hot water heating systems, each comprises of 3 x buffer vessels, 1 x brazed plate heat exchanger, 1 x domestic circulating pump, flow regulator, valves and breeze controller</p> <p>All plateheat exchangers, buffer vessels and pipework stainless steel</p>	<p>Each Evoplate system comprises 6900 litres of storage capacity (configured as 3 x 2300 litre vessels) with 1 x 267kW plate heat exchanger</p> <p>There are 3 x Evoplate systems and thus 20,700 litres of storage and 801kW of plate heat exchanger capacity for the Imperial Hotel</p> <p>Each of the 3 no. Evoplate systems is capable of producing 1.275 litres/s of hot water at 50 degrees C rise (10 to 60 degrees C) which is 3.825 litres/s in total for the Imperial Hotel</p> <p>Each buffer vessel is approx 1500mm diameter x 1575mm high (9 no. vessels in total for Imperial Hotel)</p>	Ormandy Rycroft Engineering	<p>Ormandy Rycroft "3-port Evoplate" packaged hot water systems</p> <p>Quotation Reference No: F121760 (revision number to be advised)</p> <p>Contact Details: Callum Holmes Tel: +44 1274 490911 Email: callum.holmes@ormandygroup.com</p>
DHW-BV-2	Plate heat exchanger and buffer vessel package	<p>For President Hotel</p> <p>3 x packaged domestic hot water heating systems, each comprises of 3 x buffer vessels, 1 x brazed plate heat exchanger, 1 x domestic circulating pump, flow regulator, valves and breeze controller</p> <p>All plateheat exchangers, buffer vessels and pipework stainless steel</p>	<p>Each Evoplate system comprises 6900 litres of storage capacity (configured as 3 x 2300 litre vessels) with 1 x 267kW plate heat exchanger</p> <p>There are 3 x Evoplate systems and thus 20,700 litres of storage and 801kW of plate heat exchanger capacity for the President Hotel</p> <p>Each of the 3 no. Evoplate systems is capable of producing 1.275 litres/s of hot water at 50 degrees C rise (10 to 60 degrees C) which is 3.825 litres/s in total for the President Hotel</p> <p>Each buffer vessel is approx 1500mm diameter x 1575mm high (9 no. vessels in total for President Hotel)</p>	Ormandy Rycroft Engineering	<p>Ormandy Rycroft "3-port Evoplate" packaged hot water systems</p> <p>Quotation Reference No: F121760 (revision number to be advised)</p> <p>Contact Details: Callum Holmes Tel: +44 1274 490911 Email: callum.holmes@ormandygroup.com</p>

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<b>HOT WATER PUMPS</b>					
MHW-P1A	DHW primary pump	For Imperial Hotel Domestic hot water primary circulation pump (duty) In-line air-cooled pump (contractor may use end-suction pump if pipework layout makes this preferable) Pump housing - cast iron Pump impeller - cast iron or stainless steel Maximum operating pressure - 10 bar	9.6 Litres/s @ 100 kPa Final pressure drop to be confirmed by contractor after pipework detailed design is completed	Grundfos Pumps	Model: TPE 65-150/4 Contact Details: K Edmunds Tel: 07767 163216 Email: kedmunds@grundfos.com
MHW-P1B	DHW primary pump	For Imperial Hotel Domestic hot water primary circulation pump (standby) In-line air-cooled pump (contractor may use end-suction pump if pipework layout makes this preferable) Pump housing - cast iron Pump impeller - cast iron or stainless steel Maximum operating pressure - 10 bar	9.6 Litres/s @ 100 kPa Final pressure drop to be confirmed by contractor after pipework detailed design is completed	Grundfos Pumps	Model: TPE 65-150/4 Contact Details: K Edmunds Tel: 07767 163216 Email: kedmunds@grundfos.com
MHW-P2A	DHW primary pump	For President Hotel Domestic hot water primary circulation pump (duty) In-line air-cooled pump (contractor may use end-suction pump if pipework layout makes this preferable) Pump housing - cast iron Pump impeller - cast iron or stainless steel Maximum operating pressure - 10 bar	9.6 Litres/s @ 100 kPa Final pressure drop to be confirmed by contractor after pipework detailed design is completed	Grundfos Pumps	Model: TPE 65-150/4 Contact Details: K Edmunds Tel: 07767 163216 Email: kedmunds@grundfos.com
MHW-P2B	DHW primary pump	For President Hotel Domestic hot water primary circulation pump (standby) Variable speed in-line air-cooled pump (contractor may use end-suction pump if pipework layout makes this preferable) Pump housing - cast iron Pump impeller - cast iron or stainless steel Maximum operating pressure - 10 bar	9.6 Litres/s @ 100 kPa Final pressure drop to be confirmed by contractor after pipework detailed design is completed	Grundfos Pumps	Model: TPE 65-150/4 Contact Details: K Edmunds Tel: 07767 163216 Email: kedmunds@grundfos.com
DHW-P1A	DHW circulating pump	For Imperial Hotel Domestic hot water return recirculation pump (duty) Variable speed canned rotor pump suitable for domestic hot water Pump housing - Stainless steel Pump impeller - plastic or stainless steel Maximum operating pressure - 10 bar	0.20 Litres/s @ 105 kPa Final pressure drop to be confirmed by contractor after pipework detailed design is completed	Grundfos Pumps	Model: Magna3 25-120 N Contact Details: K Edmunds Tel: 07767 163216 Email: kedmunds@grundfos.com

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DHW-P1C	DHW circulating pump	For Imperial Hotel Domestic hot water return recirculation pump (duty) Variable speed canned rotor pump suitable for domestic hot water Pump housing - Stainless steel Pump impeller - plastic or stainless steel Maximum operating pressure - 10 bar	0.20 Litres/s @ 105 kPa Final pressure drop to be confirmed by contractor after pipework detailed design is completed	Grundfos Pumps	Model: Magna3 25-120 N Contact Details: K Edmunds Tel: 07767 163216 Email: kedmunds@grundfos.com
DHW-P2A	DHW circulating pump	For President Hotel Domestic hot water return recirculation pump (duty) Variable speed canned rotor pump suitable for domestic hot water Pump housing - Stainless steel Pump impeller - plastic or stainless steel Maximum operating pressure - 10 bar	0.20 Litres/s @ 105 kPa Final pressure drop to be confirmed by contractor after pipework detailed design is completed	Grundfos Pumps	Model: Magna3 25-120 N Contact Details: K Edmunds Tel: 07767 163216 Email: kedmunds@grundfos.com
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