SPECIFICATION
FOR
MECHANICAL SERVICES INSTALLATION

FOR

BOILER REPLACEMENT

AT

Medbourne Pavilion
Pascal Drive
Medbourne
Milton Keynes
MK5 6LS

M&E Consulting Engineer
Heaton Design and Engineering Ltd
14 Church Green
Witney
Oxon
OX28 4AW
www.heatonde.co.uk

Client
Shenley Church End Parish Council
The Cartshed
19a Shenley Road
Shenley Church End
Milton Keynes
MK5 6AB
www.shenleychurchend-pc.co.uk

HEATON D&E PROJECT NO.: **1351**

SPECIFICATION: **Mechanical Services Specification**

AT: **Medbourne Pavilion, Pascal Drive, Medbourne, MK5 6LS**

FOR: **Boiler Replacement**

DOCUMENT VERIFICATION:

Prepared by: **Edward Heaton**

Approved: **Edward Heaton**

Issue Purpose	Issue Date	Prepared by	Reviewed By	Approved By
Tender (T)	January 2019	K Gibbens	E Heaton	E Heaton

CONTENTS

Page №

1 TECHNICAL SPECIFICATION

1.1 GENERAL

This particular specification is for the removal of the existing heating boilers, hot water calorifier, hot water expansion vessel and the relocation of the existing LTHW pressurisation unit and expansion vessel. As well, as the provision and installation of new heating boilers, flues, circulation pumps, pipework, distribution pipework, gas, insulation, control and isolating valves, and the modification of the existing control panel to suit the new installation in the boiler-room at Medbourne Pavilion, Pascal Drive, Medbourne, MK5 6LS

There is vehicular access close to the boiler room access point.

Allow to include for all the builders work associated with the mechanical services contract and detailed in this specification and as shown on the drawings.

Installed and commissioned to latest issues of relevant British Standards, Water Regulations and Gas Safety Regulations.

1.2 ASBESTOS & HAZARDOUS MATERIAL

Medbourne Pavilion was built in 2009 and as such there are no known asbestos containing materials within the building.

If during the progress of the works the Contractor becomes aware of the presence of material thought to contain asbestos he must stop work and immediately inform the Shenley Church End Parish Council representative Jane Webb – 01908 502808 / Medbournepm@shenleychurchend-pc.co.uk.

1.3 DESIGN INTENT

It is proposed that under this project the Contractor will supply and install new heating boilers, associated pipework, flues, control and isolation valves, controls, control panel modifications and insulation as required for a complete installation.

1.4 ELECTRICAL WORKS

The new boilers and pump sets will be powered from a new MCCP within the plant room. Therefore, the electrical works for this project will all be carried out by the controls specialist Controls-Services Ltd – 01933 667638 / jon.grime@controls-services.co.uk.

Generally electrical works are to be carried out as per the information set out in section 1.13. However, it should be noted that any old power and control conduit and cables that have been made redundant by the new installation shall be removed from site. Furthermore, all existing bonding and conduit etc. shall be visually checked to ensure it is up to latest standards and upgraded/replaced where necessary.

The Contractor shall employ a fire alarm specialist to carry out the fire alarm interface works. Contractor to state their nominated fire alarm specialist at tender stage.

1.5 PROGRAMME OF WORKS

The works will need to be complete in a single phase in order to minimise disruption to the building's users.

The installation will aim to start May 2019 with completion during July 2019. The duration of the contract shall be approximately 8 weeks.

The following sequence of events details the suggested/proposed action points required on this project. The list is not definitive and the Contractor may wish to expand on these items or schedule the work differently.

(a) Survey the existing installation – part of the tender process.
(b) Isolate the existing/redundant electrical services.
(c) Isolate and drain down existing heating system.
(d) Erect scaffolding to enable the external works.
(e) Strip out redundant boilers, redundant hot water buffer vessel, pipework, boiler shunt pumps, valves etc. to enable the works to be carried out within the boiler room.
(f) Modify new gas pipework locally to suit new boilers as per mechanical schematic.
(g) Install the new heating boilers, boiler F&R pipework, flues, new heating pipework, new isolation and control valves, gas safety system, condense pipework, gas pipework & valves, flues, insulation, circulation pumps, isolation valves, safety valves, thermometers, sensors and sensor pockets etc.
(h) Supply and install new 500x500 opening in wall complete with new external louvre to be positioned above existing double door circa 300mm from the internal ceiling level.
(i) Install new S&S Northern GDP2 gas panel and link to existing control panel.
(j) Modify the existing control panel to suit new boiler configuration and connect to new gas panel.
(k) Complete fire alarm modifications.
(l) Complete the new control wiring and final control panel/plant commissioning.
(m) Insulate pipework and valves within the plant room
(i) Carry out final builders work – making good, decoration etc.
(j) Continue with final completion of the installation and commissioning flow rates etc. Allow to employ a specialist to carry out independent final heating flow rate measurements.
(k) Handover to client.

If for any reason the Contractor doubts his capabilities to meet this basic programme or has any comment, he shall do so at the time of tender submission.

A full and unqualified tender submission implies acceptance of this basic programme.

The Contractor will be required to provide his own fully detailed programme of works and installation drawings within 14 days of receiving an order to proceed.

The contractor shall allow for attendance at a pre-contract meeting and weekly site meetings until contract completion.

1.6 SITE VISIT

Before submitting a quotation, the Contractor is advised to visit site and fully acquaint himself with all aspects of the building, its construction, access, the extent of the existing installation and the implications on deliveries and positioning of plant for the proposed project.

Tenderers are to arrange to visit site by contacting: -

Jane Webb - 01908 502808
Email: Medbournepm@shenleychurchend-pc.co.uk

Any claim for extra monies due to lack of all available information will not be accepted.

1.7 ACCESS FOR MAINTENANCE ETC

It is essential that a clear space is provided in front of all plant that meets the manufacturers minimum requirements.

The Contractor is required to lay out in advance of installation all major items of plant to show that the maximum use of available space is being provided.

Proposed installation drawings will need to be prepared by the Contractor prior to ordering equipment.

1.8 SCOPE OF WORK

The extent of the works covered for in this specification which are to be fully allowed for within the tender sum are as follows:-

- Remove redundant plant and any redundant pipework
- Install new plant in the boiler room including boilers and gas panel.
- Relocation of existing pressurisation unit and expansion vessel
- Modify existing control panel.
- Provide all materials, labour, plant and sundries etc. necessary to ensure provision of a complete working installation as indicated and implied within this specification and shown on associated drawing
- Install new flues to terminate above roof level.

- New ventilation opening at high level complete with external louvre.
- Make good builders work and flue penetration
- Co-ordinate Builders and Electrical Works.
- Clear site of all redundant materials and leave in tidy condition.
- Provide 3 copies of Record Drawings and complete Operating and Maintenance Manuals (including a CD copy) and include on-site instruction to staff

All new control panels, wiring and containment shall be the responsibility of the contractor as part of this contract.

1.9 DRAWINGS

The drawings accompanying this specification have been prepared to show all reasonable details of the intended works and are as follows: -

M001 – Existing and Proposed Mechanical Services Layouts
M002 – Proposed Plant Room Schematic

At an early stage of the contract the successful contractor will be required to attend a meeting on site to discuss the project in detail and ensure they are fully conversant with all related requirements.

If, as a result of this meeting or for any other reason, the Contractor considers it necessary to prepare his own working drawings or any additional details, they shall be submitted for approval prior to general issue and before implementation.

1.10 BUILDERS' WORK

The main items of builders' work associated with the works include:-

- Scaffolding for associated roof works and flue works
- New 500mm x 500mm external louvre above existing door (circa 300mm from internal ceiling level)
- Making new holes through structure – where required
- Painting the boiler room floor– Floor paint to be two coats water tight Bradite EW99
- Sealing and making good redundant openings in the structure
- Any other specific items as found necessary.
- All fire stopping as required

The Contractor may propose their own choice of builder to complete the installations. The proposed builder who is to complete the works shall be named as part of the Contractor's tender submission.

The successful contractor will be required to instruct the builder to provide all necessary details, programme works within the overall contract period and be fully responsible for payment.

1.11 DISPOSAL OF REDUNDANT MATERIALS

All redundant materials are to be removed via the boiler room exit to be removed from site.

It is envisaged that the removed redundant materials shall be removed from site on a daily basis – preferably early in the morning or at the end of the day – to minimise inconvenience for the staff.

The Contractor will be responsible for providing adequate protection to all surfaces of the building to prevent damage. Such protection must be in place before removal of any plant and be accepted by a representative of Shenley Church End Parish Council.

An inspection shall be made before the start and after the completion of the project and any damage caused by the Contractor or any of his sub-contractors must be repaired at no cost to the client. Photographic records must be made prior to the removal works.

1.12 HEATING AND DOMESTIC HOT WATER PLANT

Prior to the works the contractor shall allow to attend site and identify the locations and extent of each individual zone. This shall be recorded on a site layout plan.

Erect scaffolding for roof / flue works.

Isolate and drain down the existing heating system and strip out boilers, boiler shunt pumps, motorised valves etc. to enable the works to be carried out.

Install new gas pipework to the location of the new boilers.

Supply and install in the position shown on the drawings 2 No heating boilers.

Commissioning by manufacturers engineers. Details shown on the drawing.

Manufacturer – Lochinvar
Contact – Steve Ingram –
Tel: 07966288780

Heating Boilers – 2 No frame mounted Lochinvar CPM 116kW. The boilers are to have individual vertical conventional flues. The new flues shall rise through the existing roof. Allow to weather proof penetrations. Allow to provide manufacturers primary pipework and header kit.

The boilers cascade arrangement shall be controlled via the BMS and the manufacturer cascade controller is not required. The cascade control of the boilers

shall be controlled via new immersion type detectors to be installed in the common "system side" heating flow & return pipework.

The boilers shall be commissioned to deliver a flow temperature of 80°C. The boiler shall run at a temperature difference of 20°C. Boiler commissioning shall be by the boiler manufacturer

It is proposed to retain the existing primary Magna 1 50/120. New connections shall be made to the inlet side of the existing pump. The existing single head magna 1 50/120 will connect the new cascade low loss header with the existing low loss header.

Allow for new isolation valves, regulation and commissioning valves.

Allow to supply, install and commission the following new heating circulation pumps. Each pump shall have new isolation and non-return valves fitted where shown.

New heat detectors shall be installed above the new boilers and connected back to the new gas safety system via control panel and existing gas solenoid valve.

Allow to install **all** new flow and return sensor pockets **and** sensors in **all** the locations as indicated on the drawings. The sensors shall be used for monitoring and control purposes.

The contractor shall allow to relocate the existing pressurisation unit and expansion vessel as indicated on the tender drawings.

The complete new installation shall be controlled from the existing control panel which shall be modified to suit.

Allow to supply and install the complete discharge flue systems as shown on the drawings.

Allow to supply and install the new condense collection system.

Allow to remove the existing domestic hot water buffer vessel as indicated on the drawing complete with hot water pipework, valves, fittings and expansion vessel within the plantroom.

1.13 ELECTRICAL WIRING & CONTROLS

The existing boiler control system comprises an existing control panel serving the boilers. The existing control panel is to be modified to suit the new plant.

Allow to employ a controls specialist to carry out all necessary modification of the control and power wiring to enable the new boilers and pumps to run via the existing control panel. Allow for the required new input/output modules as required.

Installation Details

General

The contractor shall modify the existing control system.

Allow to employ the control specialist Controls-Services Ltd – 01933 667638 / jon.grime@controls-services.co.uk.

Allow to install new sensors on the system side F&R pipework conns to and from the new low loss header and on each boiler flow circuit – see drg for sensor pocket/sensor locations.

The modified control panel shall provide a link/power supply to the new heat detectors located above each boiler, and solenoid valve via the new gas panel/gas sniffer and fire alarm interlock panel.

The redundant electrical equipment shall be removed.

All wiring shall be carried out by the contractor.

The contractor shall note strap on sensors shall **NOT** be used.

Control Panel Wiring

As required, screened cable must be used. The screening must be of non-ferrous material and connected to the earth terminal, at the outstation or controller. All screened cable is to be Type 16-2-4C to defence standard 61-12 part 5. This is PVC insulated (440v rated) PVC sheathed (440v) four core screened cable.

All wiring shall be carried out on the front surface of the mounting plate, in plastic cable trunking of ventilated type with clip-on covers and purpose made connector pieces and accessories.

All plastic trunking and plastic straps used shall be of a fire resistant, self-extinguishing type.

Cable conductor sizes must be rated taking into account all grouping, bunching and enclosing factors. Wiring outside the trunking or loom shall be neatly set for connection to terminals or equipment.

When large wiring looms are carried onto a door/switch section a mechanical fixing device must be used; self-adhesive devices may only be used on small looms up to 10 cables.

Minimum cable size on all motor drives 1.5 sq. mm.

Minimum cable size on control circuits 0.75 sq. mm. Neutral cables are not to be shared. Every circuit will have its own circuit protective conductor which will be made

off in sequence of order on a multiple earthing bar.

The edge of the door opening or the hinge assembly on the door, will contain a micro switch which will illuminate "panel alive" light when the panel door is open and the main isolator is over- ridden. The actual position and type of switch will be such that the degree of protection IP 54 is not impaired.

All cables within the panel are to be numbered to assist with any subsequent circuit tracing. Selector switches are to be “off”/”auto”/”hand”.

All indicator LED’s are to be of the transformer fed type with a lamp voltage no higher than 24v AC. Indicator LED’s are to be the following colours:

Green - mains healthy, plant run lights.
Red - boiler lockout, pump trip, internal panel alive lamp.

A common lamp test facility shall be provided with a lamp test button located on the control panel.

As required, screened cable must be used. The screening must be of non-ferrous material and connected to the earth terminal, at the outstation or controller. All screened cable is to be Belden 8761 NH or Belden 8723 NH PVC insulated (600v rated) PVC sheathed (600v) four core screened cable.

All wiring shall be carried out on the front surface of the mounting plate, in plastic cable trunking of ventilated type with clip-on covers and purpose made connector pieces and accessories.

All plastic trunking and plastic straps used shall be of a fire resistant, self-extinguishing type.

Cable conductor sizes must be rated taking into account all grouping, bunching and enclosing factors.

Earthing and Bonding

The controls sub-contractor is to check for the earthing facility at the Pavilion. The earthing should be in full accordance with BS7671 : 2008 and all subsequent amendments. If found not to be in full accordance with BS7671 2008 the Controls sub-contractor is to notify the contract administrator in writing.

The entire installation is to be effectively earthed and bonded in accordance with the BS7671: 2008 and the Supply Authority requirements.

Provide supplementary bonding to meet the requirements of the BS7671: 2008 as follows:

(1) Simultaneously accessible extraneous metal points including water, gas and similar pipe work, sinks, ductwork, ventilation and exposed metalwork of the

building structure. All connections are to be accessible.

(2) Simultaneously accessible exposed conductive parts.

Supplementary bonding conductors will be PVC insulated green/yellow single cables with stranded copper conductors of a minimum size of 4mm² and not less than half the cross-sectional area of the nearest associated protective conductor. Cables are to be low smoke and fume insulated.

The locations of all bonding and supplementary bonding conductors are to be included on the Record Drawings when they are supplied at the end of the contract.

Provision is to be made to test all earthing and bonding for correct impedance to permit protective devices to operate within the correct time and to carry prospective fault current in safety and to prevent the establishment of dangerous potential under normal or abnormal conditions on exposed conductive surfaces.

Boiler House Wiring

All new wiring (including sensor wiring) will be low smoke and fume LSOH PVC insulated cables enclosed in steel conduit and galvanised trunking (installed on the surface).

Local Isolators

All equipment at voltages in excess of 24v AC mounted remote from the control panel will be provided with an isolator situated as close to the equipment which it serves as practicable subject to a maximum distance of 1000mm.

The isolators will be of the rotary type, to IP 65 with the main switches lockable in the off position. Each isolator shall have a combined commando socket outlet for equipment connection.

Final Connections

Final connections from local isolators to plant will be PVC insulated cables enclosed in flexible conduit.

Incoming Services

Ensure that incoming gas and water services are suitably bonded and cross-bonded.

Wiring to Plant

All plant associated with the installation is to be connected to the new control panel.

In addition a new power supply shall be provided to the existing sump pump.

Sensors

The contractor shall install compatible sensors and connect them back to the control panel in each case.

(i) Common boiler flow (primary) temperature sensor

To be of the immersion type inserted in a new pocket in the common boiler flow pipe work.

(ii) Common boiler return (primary) temperature sensor

To be of the immersion type inserted in a new pocket in the boiler return (primary)pipe work.

Gas proving and detection system fault

A fault signal is to be input to the controller.

Gas detection and proving system

The contractor shall supply and install a gas detection system that will isolate the gas supply in the event of natural gas or CO detection, operation of the emergency stop or fusible link.

The system should be supplied by S&S Northern Ltd or equal and approved and must incorporate natural gas and CO detectors.

The gas solenoid valve is to be controlled from an emergency stop button located by the entrance door and new fusible links located above the boilers. These will be integrated with the gas protection system.

The integral fault alarm is to be input to the controller.

The contractor is to employ the manufacturer to calibrate and commission the gas detection and proving unit. The contractor will obtain all supporting documentation and certificates for incorporation into the operation and maintenance manuals.

Boilers

The current plant operation regime is to remain.

The redundant electrical equipment shall be removed.

1.14 FIRE ALARM

Allow to adapt and extend the existing fire alarm system as indicated on the drawings and detailed within this specification.

Allow to extend the existing system to allow for the new fire alarm interface linked to the new control panel, as indicated on the drawings.

Allow to extend the system using fire rated multi-core cabling 1.5mm² as Draka FT30 or equal and approved. Cabling shall be installed on metal cable tray where running horizontally and within steel conduits for vertical drops down walls.

All works shall be undertaken in accordance with BS 7671 and BS 5839.

Allow to test and commission the modifications to the system following the works.

The contractor shall employ a fire alarm specialist to carry out the fire alarm interface works. The nominated fire alarm specialist shall be stated by the contractor within their tender return.

1.15 PIPEWORK INSTALLATION

All new heating pipework shall be heavyweight black mild steel manufactured to BS EN 10255 with screwed and socketed or plain ends as necessary.

Joints on screwed pipe are to be made with approved compound.

Flanged joints are to incorporate full face corrugated Taylor's' rings which shall be used without any additional jointing paste. Should special gaskets be required they shall be asbestos free.

Weld all joints 65mm and over. All welding shall be undertaken to the requirements of HVCA code of practice TR/5. Welders shall hold current certificates of competency. Brazing shall be undertaken to the requirements of HVCA code of practice TR/3. Brazers shall hold current certificates of competency.

Use only butt joints and weld all joints. Workshop fabricate pipe sections/spools with flanged ends for site installation. Site made welds are only acceptable where unavoidable and few in number compared to the workshop made welds.
Do not install flanges in concealed locations.

All surplus jointing material is to be cleaned from all joints before testing.

Pipework up to 50mm dia is to be screwed with conical ground seat hexagon unions fitted adjacent to all items of plant and valves.

All pipes shall be free from burrs and swarf, kept internally clean and protected during erection by the use of screwed plugs or caps.

Allow to sleeve all pipework passing through walls and floors. Sleeve material to be same as pipework encased. Allow to 'caulk' all sleeves passing through walls and floors in order to form a fire resistant barrier.

To avoid a reaction between existing galvanised steel domestic water services pipework and new pipework thus preventing galvanic corrosion; all new hot and cold water pipework shall be stainless steel.
The contractor shall ensure that pipework shall be installed with due allowance made for natural venting and thermal expansion. Drain cocks are to be provided at all low points.

Install thermometers, strainers, pressure and altitude gauges where shown on the drawings.

All gauges to be 100mm dia brass face.

Due allowance shall be made by the contractor for pipework expansion. The contractor shall consult a specialist to ensure that pipework expansion is catered for.

1.16 PIPE SUPPORTS

All pipework shall be supported in accordance with current HVCA practice with regard to spacing.

Pipes shall be supported via adjustable brackets or hangers rawl bolted or coach screwed to the wall. Note – ceiling fixings will not be allowed in this contract. Where possible proprietary support systems are preferred.

Plastic clip type pipe supports/brackets shall not be used on this contract.

1.17 VALVES & PIPELINE EQUIPMENT

New ¼ turn isolating, control and calibrated regulating valves shall be installed in the pipe runs where indicated. Valves are to be either of Hattersley or Crane manufacture (but NOT a mixture) flanged or screwed, cast iron or bronze to suit size, location and service.

Wheel valves will not be acceptable.

Supply and install line size commissioning and double regulating valves where shown on the drawing.

Allow to install 1no. new line size air and dirt separator on the circuit between the two low loss headers. To be Dutypoint or equal and approved. The discharge from the drain shall be piped to low level to allow a bucket to be placed underneath.

Allow to supply and install a new suitably sized dosing pot. To be Dutypoint or equal and approved.

Supply and install line size commissioning and double regulating valves where shown on the drawing. Note – existing isolation and regulating/commissioning valves are to be removed and replaced.

1.18 CLEANING AND TESTING

All new pipework, installed on this contract, shall be thoroughly flushed out with clean water prior to testing and connection to existing distribution pipework. Allow to refill with clean water and subject to a hydraulic pressure test of 3.5 bar and maintain for a period of 30 minutes.

On completion of the new installation isolate the boilers and other heating systems and locally flush and drain the new heating system pipework. Allow to refill with clean water.

Any defects that manifest under the pressure test shall be made good and the test re-applied until proved sound.

All testing shall be carried out prior to the application of thermal insulation and connection to existing distribution.

Allow to re-treat and test the dosing of the complete existing heating system with an approved water treatment product.

Provide pressure test certificates within the O&M Manual.

Allow to re-treat and test the dosing of the complete heating system with an approved water treatment product. Contact Ideal for the approved treatment product.

1.19 PAINTING

All new mild steel heating pipework shall be degreased and painted one coat of red/grey oxide primer before the application of insulation or final approved finish. All exposed pipework, flanges and cast iron valve bodies and wheel heads to be painted a further two coats of heat resistant gloss paint. Colours to be agreed.

All supporting steel work etc shall also be degreased, painted one coat of red oxide and two top coats of best quality gloss paint.

Painting shall be carried out by a qualified painter, employed by the builder, and shall be carried out with due care and attention.

1.20 INSULATION

The Contractor shall employ a specialist contractor to carry out the insulation section of the works. Allow to employ a specialist contractor to remove **all** of the existing pipework insulation in the boiler room at the start of the contract.

Thermal insulation shall be applied to all new and existing heating as required, and mains cold water pipework within the boiler room.

New insulation shall comply with the requirements of current editions of BS 3533, BS 5421, BS 3927 and BS 5970.

All insulation work shall be carried out by a reputable specialist contractor such as a member of the Thermal Insulation Contractors Association.

All materials delivered to site shall be new and dry and be maintained in good condition throughout the progress of the work.

Shenley Church End Parish Council shall not accept poor quality, badly finished work or irregularities in the thickness of insulation or in the protective finish.

All pipework shall be insulated separately, and adjacent parallel runs of pipework shall not be married together in one insulation covering. All insulating materials and associated products shall be applied strictly in accordance with the manufacturer's recommendations and instructions, and work failing to comply with these will not be accepted by the consulting engineers.

All joints, surfaces, edges and overlaps shall be neatly finished and where possible overlaps shall be arranged to be on the blind side or on the water shedding side.

Where allowance has to be made for pipe expansion or contraction the insulation shall be finished in a neat and approved manner permitting easy access and disconnection or removable of items without disturbing the insulation.

No insulation shall be applied to any part of the work until that particular part has undergone successful inspection and pressure testing.
All pipework shall be insulated with Class O foil faced plain, pre-formed pipe sections, close butted and secured with three self-adhesive tape bands per metre section. All insulation to be Phenolic Foam, CFC free as "Koolphen K".

All new insulation within the plant room shall be covered in Isogenopak secured with plastic rivets and tape.

Identification bands shall be applied to all pipework in accordance with BS 1710.

Contractor to provide sample for approval before fixing.

Insulation thickness as follows:
15mm to 32mm dia pipe - 20mm thick
40mm to 80mm dia pipe - 25mm thick
100mm to 200mm dia pipe - 30mm thick

Allow to install proprietary insulation covers to strainers, valves, flanges etc. of 50mm diameter and above.

1.21 COMMISSIONING

Allow to commission and balance the flow rate through the revised heating system on completion of the installation.

1.22 CDM

It is not currently anticipated that this project will be notifiable to the HSE; however, to comply with the Construction (Design and Management) Regulations 2015 a principal designer and principal contractor must be appointed. Thus, the contractor shall allow to carry out duties as the principal contractor. The role of principal contractor includes but is not limited to creating a written construction phase plan.

Edward Heaton from Heaton Design and Engineering Ltd shall act as principal designer for the project and as such any questions regarding CDM should be raised with him in the first instance. Tel: 01993 357337, email: edward@heatonde.co.uk.

1.23 OPERATING AND MAINTENANCE (O&M) MANUALS

A draft copy of the manual shall be submitted to the Engineer for approval. Upon approval of the draft manual the Contractor shall issue 1no. hard copy and an electronic copy to the Client one week before Practical Completion.

The preparation and supply of the Operating and Maintenance Manual shall be carried out by:

O&M Technical Services Ltd
Suite 35
Manor House
Wrest Park Silsoe
Bedfordshire
MK45 4HR

Contact Daniel Biswell, telephone number 01525 861260.

2 TENDER DOCUMENTS

2.1 TENDER SUMMARY – Medbourne Pavilion

The following is an analysis of the quoted figure as entered on the Form of Tender and must be completed by the Tenderer at the time of Tender and must be arithmetically correct.

The Contractor shall note that if after receipt of tenders there is a shortfall of funding, various elements of the work will be omitted to comply with the funding limit. Accordingly the Contractor shall price each element of the work on the above basis including any loss of profitability consequent on a reduced contract value.

Each sum shall include for all work necessary to complete that particular section of work.

Medbourne Pavilion – Boiler Replacement

1	Compliance with Preliminaries and Standard Specification	£
2	Stripping Out and Removal of Redundant Services	£
3	Installation of new boilers, heating pumps and associated plant making up the complete new boiler installation	£
4	Flue Installation (excluding scaffolding)	£
5	Automatic Controls and Electrical Services	£
6	Fire Alarm modifications	£
7	Protection of building fabric and specialist equipment	£
8	Builders Work including scaffolding	£
9	Sterilisation and Cleaning Systems	£
10	Thermal Insulation	£
11	Testing and Commissioning	£
12	Demonstration	£
13	Record Documentation	£
14	Any other items not included but above but required to complete the contract, please list:	
	_____	£
	_____	£
15	Provisional Sum for Contingency	£ 3,000.00

Total to be Carried Forward to the Main Contract Tender £ ___

Signed: _____ Date: _____

Position: _____

Company: _____

Address: _____

2.2 DAYWORK DETAILS

State percentage additions to be added to the nett cost of variations carried out under daywork instructions inclusive of profit, overhead charges, insurance, supervision, employer's liability, provision of tools, plant and scaffolding and all other incidental expenses and "on costs" including all taxes and discounts, including that to the main contractor where appropriate.

Labour

For which the nett cost will be the actual nett sums paid to workpeople inclusive of guaranteed overtime travelling, holidays with pay and employer's contributions for National Insurance always provided that all such do not exceed the sums generally payable in the district concerned _____%

Materials

For which the nett cost will be the actual nett sum paid to supplies after deducting discounts other than that for early cash settlement _____%

Fares and Allowances

For which the nett cost will be the actual nett sums paid to workpeople _____%

Sub Contractors

For which the nett cost will be the actual nett sum paid to approved sub-contractors after deducting all discounts _____%

Note: Work people means all site and/or shop workers but excludes supervision, draughting, store, secretarial, and similar personnel who are to be included in the overhead charges.

Signature: _____

Date: _____

2.3 TRADESPEOPLE, RATES & HOURS

State the various categories of tradespeople proposed to be employed, the actual hourly rates payable and as would be applicable for net daywork costs, the actual net hours the tradespeople would be engaged on the works unless specifically working outside normal hours, and the rates and hours applicable to authorised overtime. It will not be sufficient to state 'in accordance with national agreements', etc., unless a full copy of such agreement is submitted with the Tender.

The tradespeople are to include foremen, charge-hands, fitters, welders, electricians, joiners, mates, apprentices, labourers, etc.

Tradespeople **Rate - £/hour**

1 _____ _____

2 _____ _____

3 _____ _____

4 _____ _____

5 _____ _____

6 _____ _____

7 _____ _____

8 _____ _____

9 _____ _____

My/our tradespeople would normally be engaged on the works and would require additional payment for any authorised overtime I/we are instructed to work as follows:

Day	Monday - Thursday	Friday	Saturday	Sunday	Bank Holiday
Start					
Finish					

2.4 ALTERNATIVES

State any alternative material the tenderer would wish to put forward, the cost effect on his Tender, particularly for any items mentioned in this Section or elsewhere but is invited to mention any item that would lead to mutual advantage.

Item	Increase	Decrease

Signature: _____

Date: _____

2.5 DETAILS

2.5.1 Sub Letting

The specialist firms that I/we propose to employ are:

_____

_____

_____

_____

2.5.2 Site Electricity

The electricity supply that I/we wish to have made available is:

Number of phases: _____

Capacity-amps per phase: _____

Signature: _____

Date: _____