

SPECIFICATION

for

**ELECTRICAL SERVICES
INSTALLATION**

At

**Bodmin Town Council
BOILER REPLACEMENT**

Summer 2018

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| PROPERTY MAINTENANCE - DOCUMENT CONTROL SHEET | Job Reference No |

MODIFICATIONS TO EXISTING BOILER CONTROL PLANT

ELECTRICAL SERVICES INSTALLATION

SPECIFICATION

Prepared by

| Issue / Revision No. | Date | Originator * | Checked * | Issued by * | Purpose for Issue / Nature of Change |
|-------------------------|------|--------------|--------------|-------------|--------------------------------------|
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* Initial required

SF 225/2/97

Bodmin Town Council

**MODIFICATIONS TO EXISTING
BOILER CONTROL PLANT**

ELECTRICAL SERVICES INSTALLATION

**METHOD OF
WORKS**

You will be contacted by Mechanical contractors who will ask for a quote for the electrical controls works detailed below.

CONTRACT

If successful you will be nominated by the Mechanical contractor carrying out the boiler plant upgrade.

You will be the nominated specialist contractor and become a sub contractor to the Mechanical contractor.

There will be two mechanism for payments:

- (1) Payment for the manufacture of the EMS panel Alan Martin controls and all internal panel components, which will need to be, fixed onsite before an interim payment can be made. Payment will be made by the mechanical contractor.
- (2) Final Payment when all EMS system systems installed, commissioned and fully operational. This is to include all technical information and NICEIC test results. Payment will be processed through the contact via the mechanical contractor.
- (3) Any variation to the specified works carried out will be covered by a variation order and are to be invoiced with a complete breakdown for payment.

The Mechanical contractor will raise an order directly on you.

The Mechanical contractor will inform you of contract dates.

**GENERAL
INFORMATION**

The existing Heating plant and defined mechanical equipment will be replaced by others as part of programmed improvements. The boilers are being upgraded. As well as the heating plant the controls are to be upgraded including the energy management system. The existing boiler room is to have the lighting and power upgraded including emergency lighting in the boiler room. As part of the refurbishment the gas supply is to have a solenoid valve fitted, this is to be interlocked with a knock off button by the entrance and with a fire panel this will have heat, gas and carbon monoxide detection, and interlock with the school fire alarm and the BMS controls.

The site is located at:

Bodmin Town Council Offices
Bodmin
Cornwall

The Electrical Contractor is instructed to visit site prior to tendering to fully familiarise himself with the works and any special requirements.

Appointments to visit site must be made through the head teacher.

SCOPE OF
ELECTRICAL
WORKS

Disconnection of existing electrical services to the heating plant to allow others to safely remove the mechanical plant.

Install a new boiler control panel and relocate Alan Martin Controls as per the points list prepared by

Contact John Ball

Alan-Martin Conservation Limited
504 Dudley Road
Wolverhampton.
West Midlands
WV2 3AA

Tel: 01902 560065
Fax: 01902 560066

Install new Neuron Control Unit and associated controls

Connection of new plant

Install new trunking and conduit systems in boiler plant room

Installation of new ACM/S to defined area

Commissioning of heating control system.

Install new distribution board and armoured cable to accommodate new control panel and power, lighting.

Install new enclosed lighting for boiler area and emergency access routes

Install RCD sockets in boiler area for safe operation of maintenance plant

Reconnection of existing main bonding conductor to service pipework

Commissioning of new controls

Install gas heat and carbon monoxide sensors and interconnections to new boiler room detect control panel.

Supply 13 amp fuse supply for fire panel

Install two 13 amp fused supplies for hot water anodes where needed

All works shall be carried out in accordance with BS 7671(IEE Wiring Regulations) and the Cornwall County technical specification by an NICEIC approved electrical contractor listed on the Cornwall County Council tender list.

OVERTIME No day-work will be allowed unless supported by the Contract Administrator's signed official Instruction Form, authorising the work to be carried out on a daywork basis.

SAFETY, HEALTH & WELFARE The Contractor shall comply with the Construction (Health Safety and Welfare) Regulations and all subsequent amendments thereto.

The Employer utilises the services of the an approved Health and Safety Section to ensure the health and safety of his Employees and visitors to the site. Members of this Section will visit the site on behalf of the Employer to monitor compliance with all relevant legislation and should be permitted access.

THE CONTRACTOR SHALL DESIGNATE ALL SITES AS HARD HAT UNLESS THE WORK IS BEING CARRIED OUT INTERNALLY AMIDST AN OCCUPIED PREMISE.

Any operatives not complying with the health & Safety policy will be asked to leave site.

PROTECTING FROM BUILDING OPERATIONS The Contractor shall protect the existing premises, furniture and fittings from the building operations. Dust and debris shall be confined to the working area by sealing doors/openings. Existing flooring shall be protected using hardboard / polythene / dust sheets. All furniture and equipment shall be protected with polythene or dust sheets. On no account shall furniture, equipment or utensils be used for benches/tools in carrying out the building works.

PROTECTING PERSONS FROM BUILDING OPERATIONS The Contractor is required to protect the building occupants, users and members of the public visiting the building from the building operations, in particular from any hot bitumen falling from the perimeter of the roof and to this end shall erect and maintain barriers, fences or the like to prevent anyone from being close enough to the building operations to be in danger from such hazards.

Where this work takes place over entrances or exits which cannot be sealed off because of the effect upon the running of the building, then work shall only be undertaken at times to be agreed with the Officer-in-Charge of the building. Alternatively, scaffolding may be erected and a tarpaulin draped over to form a protected tunnel to beyond the danger zone.

Any loss or damage to the building will be the responsibility of the contractor to replace or repair.

Liaison with other trades

The contractor is expected to liaise with other trades, to supply any information needed and to program sited attendance.

EXTENT OF
WORKS

Refer to Drawing number

SUPPLY AND FIT ALL MATERIALS AS REQUIRED.

Refer to: STANDARD C.C.C PANEL SPECIFICATION
ABOVE DRAWING
POINTS LIST

CLEANLINESS

The contractor is to exercise care when working in the school areas.
Dust sheets are to be used etc as detailed in the protection of the building

DELIVERIES TO
SITE

Liaise with the site agent as there may/will be restrictions.

DISCONNECTION
OF EXISTING
PLANT BEING
REMOVED

Disconnect and remove all wiring to plant being removed.

Ensure all electrical services to plant being removed are isolated and de energised to allow safe removal by others.

To ensure mechanical contractors are confident the wiring to the plant being removed is to be completely removed back to source.

ISSUE OF
CERTIFICATE -
DISCONNECTION
OF EXISTING
SERVICES

The contractor is to issue a certificate to prove that the electrical services to the mechanical plant being removed are disconnected and de energised. **This is part of the Health and Safety Plant and No Work will be able to proceed with out the document.**

The certificate is to be forwarded to the Mechanical contractor and the main contractor so that it can be entered

MODIFICATIONS
TO EXISTING
TRUNKING AND
CONDUIT
SYSTEMS IN
BOILER PLANT
ROOM

To accommodate the new plant, trunking and conduit systems are to be installed to serve new plant locations (pumps/valves/boilers/sensors as appropriate). The data and sensor cable are to be terminated in adaptable box before entering the trunking.

Install galvanised trunking and conduits as required.

Trunking to be TWO-compartment type and to run the length of the boiler room. Only mains rated cable to be run in this trunking.
NO TELEPHONE CABLES

Data cables are to be terminated in a suitable galv box. This should include din rail mounted terminals. The cables are to be labelled at both ends. The lid for this terminal box will be labelled Data.

All cables that have to be jointed because of reconnection to existing. Cables are to be terminated in a suitable galv box. This should include din rail mounted terminals. The cables are to be labelled at both ends. The lid for this terminal box will be labelled

The new lighting (weather pack) is to be installed independently from the existing lighting as this is in imperial and of a questionable age. The existing lighting is to be made safe after the new lighting is installed. All wiring is to be routed in galv trunking or conduit.

SURVEY OF
EXISTING PLANT
TO BE RESERVED
BY NEW EMS
PANEL

The contractor is to survey the existing plant and Alan Martin controls to allow for the control of the new valves/pumps, boilers etc.

INSTALLATION OF
NEW WIRING /
SERVICES TO
DEFINED
EQUIPMENT

Refer to drawing for details of the new boiler plant equipment being installed, which requires new electrical services.

Supply and install new immersion sensors and CT's and outstation

No Alan Martin equipment is to be supplied by the Project Manager

The main contractor will detail locations and numbers of new sensors to be installed.

Install new wiring to sensors and plant and connect to new / existing outstations.

Where new pump(s) are to be controlled the main contractor details electrical loads (running current)

Install local (commando style) socket outlets to new pumps complete with plug tops. Sockets to be installed plug facing down.

Unless otherwise detailed assume all NEW pumps are single-phase 230v AC type.

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| NEW BOILER TYPE AND CONTROL PANEL | The boiler supply should be isolated with a multi-poled isolator. Install all wiring to the boiler and outstation. |
| HOT WATER HEATERS | The new hot water heaters where fitted are to have back up immersion heaters fitted, they are to be control via the energy management controls. The water heaters are glass lined steel cylinders and will be fitted with an electronic anode in each. This anode is to be fed from the new distribution board. The contractor is to supply all MCB,s as required. |
| GAS INTERLOCK | <p>The contractor is to install two combined heat, gas and carbon monoxide detectors and a knock off control by the entrance. Wire all the interconnections between the sensors, knock off and the gas solenoid valve to the detection panel and the EMS controls. Any alarm is to be interlock with the control panel and a alarm relay.</p> <p>All cable routes to be in conduit or trunking.</p> <p>The electrical contractor is to supply all sensors and knock off as required.</p> <p>The fire detection panel is to be feed from the new distribution board by the electrical contractor.</p> |
| ELECTRICAL SUPPLY TO NEW EMS PANEL | <p>The contractor is to install a new SWA cable from the new Distribution board to the new control panel.</p> <p>Make all final connections.</p> |
| CONNECTION OF EXISTING PALNT TO NEW EMS PANEL | Reconnect all existing and new controls wiring to the new outstation positions and test. |
| INSTALLATION OF ACM/S TO EXISTING SCHOOL AREA | <p>Rewire the existing sensor to the new outstation position.</p> <p>The contractor is to supply and fit an RCD socket and a suitable weather proof and emergency light fitting.</p> <p>Make all final connections to the new unit and test.</p> |
| RECONNECTION OF MAIN EQUIPOTENTIAL BONDING CONDUCTOR TO PIPEWORK | Disconnect existing main bond termination and reconnect on completion of work |
| LABELLING OF NEW PLANT | <p>Install labels to new pumps and valves</p> <p>Install either engraved type labels or use an electronic label maker</p> |

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| COMMISSIONING | <p>Allow for site attendance to commission system with the Project Management staff.</p> <p>Allow for making changes to connections and testing as directed.</p> <p>Test system, connections and plant operation as far as practicable upon completion of system components.</p> <p><i>Pre Commissioning</i></p> <p>Allow for 1-day site attendance to test and verify systems with Project Management Electrical & Mechanical Clerks of Works.</p> <p>Make any modifications as required and /or instructed by the cow and covered by a variation order.</p> <p>Any additional components or work required will be instructed by the C.O.W. and covered by a variation order</p> <p><i>Final Commissioning</i></p> <p>Allow for 1-day site attendance to carry out a final commissioning with the Project Management.</p> <p>Make any modifications to connections as required / or instructed.</p> <p>Any additional components or work required will be instructed by the C.O.W. and covered by a variation order.</p> |
| O&M MANUAL | <p>On completion of works provide 2No O&M manuals which are to include the following:-</p> <p>Electrical test certificates for installed work As installed drawings Panel Drawings/schematics Test certificates Other relevant information</p> <p>THE PROJECT WILL NOT BE COMPLETED WITHOUT THE MANUAL.</p> <p>Test certificates are part of the Health and Safety Plan, which is a Legal Document.</p> <p>All to be presented in an indexed ring folder</p> |
| SAFE WORKING PRACTICE | <p>The contractor is to produce a Health and Safety Plan and a Method statement on how he is to undertake the project.</p> |
| HIGH LEVEL WORKING | <p>The contractor is to provide suitable ladders/access towers to allow the new works to be carried out safely.</p> |

There will be a mechanism for 2no payments:

- (1) Payment for manufacture of EMS panel and all internal components, which will need to be fixed on site before an interim payment can be made. MAIN CONTRACTOR will make payment.
- (2) Final payment when all EMS system is installed, commissioned and fully operational, including test data. Payment will be processed through the contract via the mechanical contractor.
- (3) Any variations to the specified work will be covered by a variation order and are to be invoiced with a complete breakdown for payment through the main contract.

**Bodmin Town Council
REBOILER**

INSTALLATION OF ELECTRICAL SERVICES

GENERAL SUMMARY

| ITEM | | TOTAL PRICE |
|--|---|------------------------|
| 1. | Manufacture of control panel | £ |
| 2. | Installation of New control panel and boiler room wiring | £ |
| 3. | Installation of lighting, power | £ |
| 4. | Installation of gas sensors and interconnections to detection panel | £ |
| 5. | Fire/gas detection control panel | £ |
| 6. | Protection of Property. | £ |
| 7. | Final Commissioning, O&M Manuals | £ |
| TOTAL CARRIED TO FORM OF TENDER | | £ |

Name of Company

Address

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Signature

Date