

Alterations to the Anglican Chapel, London Road Cemetery, Coventry

Contacts

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 The Project Manager: Pulse Consult - dan.mason@pulseconsult.co.uk
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Drawings

A new refurbishment project as indicated on layout drawing No's:

- GBSC-2102-E200
- GBSC-2102-M100

Scope

The works detailed are to be carried out as a Design and Build contract with The Contractor having full design responsibilities. To this end, The Contractor will be responsible for the complete design, supply, installation, testing, and commissioning of both Mechanical and Electrical services as indicated on the layout drawings and as detailed below:

- Extension to Small Power To Include Floor Boxes And Containment And Electrical Supplies In Association With The Mechanical Equipment.
- Provision Of O&M Manuals And As Fitted Drawings

Health and Safety

The Contractor will be required to carry out a site induction and will be required to provide risk assessments and method statements for each element of the work. The Contractor shall implement all regulations, bylaws or other legislation relevant to the health, safety and welfare of all persons likely to be affected by the execution of the works. The Contractor shall take all necessary measures to satisfy that any Subcontractors, appointed directly or not, are competent and have allocated sufficient resources.

Site Visit

The Contractor must contact The Client and arrange to visit the site prior to tender to fully survey the scope of works involved. The Contractor is responsible for including within his tender the costs involved in the removal or re-routing of existing electrical services to enable the project to proceed. Within his tender the Contractor must allow for the costs related to the nature of the site accessibility, the nature and extent of operations, the supply of and conditions affecting labour and the storage space for materials.

Site Progress

The Contractor shall include within his tender for all necessary overtime to ensure the works are carried out in a manner which minimizes interruption of existing site services and disturbance to The Client. The Contractor may be required to start immediately and shall ensure sufficient resource onsite to keep pace with building progress, however the works may not be continuous and claims for breaks in continuity shall not be considered.

Materials, Workmanship and Manufacturers

The Contractor shall include for the supply and fixing of all materials whether specified herein or not, to provide a complete installation. The work shall be carried out by skilled tradesman under the supervision of a competent foreman. All material and workmanship shall be in-line with the current respective CIBSE Guidelines, British Standard specifications, and industry standard codes of practice. Manufacturers have been specified to indicate the level of quality desired. For tender purposes The Contractor shall use the manufacturers identified on the tender documents. Where manufacturers are not detailed The Contractor may select a good quality compatible manufacturer of his choice. Once appointed The Contractor may suggest alternative manufacturers where a cost saving or benefit can be offered to The Client. Alternatives must be presented in written form and in the form of samples with adequate time for The Client to approve prior to order and the alternatives are not guaranteed to be accepted.

Co-ordination, Liaison

The indicative routes and locations of services and equipment are shown on the tender drawings for guidance only. Prior to installation, The Contractor shall co-operate with: The Client, The Engineer, The Clients other Contractors and his own Subcontractors, to agree the detailed arrangement and sequencing for the purposes of onsite co-ordination of his equipment and his Subcontractors equipment. The Contractor shall be responsible for providing detailed information of any temporary works required to enable their works. It is the responsibility of The Contractor to liaise with others prior to the works starting to ensure the full allowance for works/attendances associated with the services installation. Any costs arising at a later date due to lack of co-ordination will be borne by The Contractors.

Regulations and Design Standards

All works are to be designed, installed and commissioned in strict accordance with the current Building Regulations, CIBSE Guidelines, The 18th edition of the IEE wiring regulations, The Electrical Safety, Quality and Continuity Regulations, and The Electricity at Work Act. Particular attention must be paid to; the additional requirements of special locations, the mechanical and electrical protection of cables, the earthing of exposed conductive parts and the bonding of extraneous conductive parts. As well as the regulations detailed above the following guidance standards are to be followed where applicable:

- The CIBSE guides, Technical Memorandum and Codes
- The SLL guides and codes
- BS6701: Telecommunications equipment and telecommunications cabling-specification for installation, operation and maintenance.
- BS EN 50173 series: Information Technology - Generic Cabling Systems.
- BS EN 50174 series: Information Technology - Cabling Installation.
- BS 5266 Emergency Lighting, Code of Practice for the Emergency Lighting of Premises.
- BS 5839 Fire Detection and fire alarm systems for buildings.
- All other relevant British Standards
- The BSRIA Commissioning Codes
- The Health and Safety at Work Act
- The Electricity at Work Regulations
- The COSHH Regulations
- NICEIC guidance standards
- The ICEL Guides
- The Electricity Safety, Quality and Continuity Regulations
- The Factories Act with amendments
- Offices, Shops and Railways Premises Act
- Control of Pollution Act
- Fire Precautions Act
- The Regulatory Reform Act (Fire Safety)
- The Construction (Design and Management) Regulations
- Current editions at time of Tender

Working and Construction Drawings

The Electrical Contractor shall provide working drawings within sufficient time for approval prior to installation. These shall be provided in the form of a single electronic copy. The Electrical Contractor shall amend the drawings following comments from the design team and a traffic light drawing status system shall be used. This shall be as follows; Status C - Rejected - major alterations required, Status B - Accepted with minor alterations - construct at risk, Status A Accepted as shown. Once the the drawings have been accepted The Electrical Contractor shall produce Construction drawings for use onsite.

Electrical Inspection and Testing

The Contractor shall be responsible for the full inspection, testing and initial verification of newly installed electrical services and existing services relied upon/affected by the new install. The inspection and testing procedure shall be carried out following the guidelines set out in the IEE 18th edition wiring regulations (with amendments) and the IEE's Guidance Note 3. The visual inspections shall be carried out to verify that; the installation works conform to the latest wiring regulations and design specification, the installation materials conform to the specification and British Standards, equipment and materials are undamaged and correctly installed. Visual inspections shall be carried out at each stage of the installation (1st fix, 2nd fix, 3rd fix) and prior to validation. The testing will follow the procedure laid out in the IEE wiring regulations and shall include; continuity tests of protective conductors, continuity tests of final ring circuit conductors, Insulation resistance tests, earth electrode resistance tests, Insulation resistance of site built assemblies, electrical separation resistance tests for SELV circuits, insulation tests for non-conducting floors and walls, polarity tests, earth fault loop impedance tests, RCD tests (manual and operational), phase rotation confirmation tests, functional tests of wiring accessories and equipment, functional tests of points of isolation, functional tests of motors.

O&M Manuals, As Built Drawings and Hand Over

The Contractor shall provide operation and maintenance manuals for the installation works including 'As Built' drawings. This shall be provided in the form of 3 No. hard copies and a single electronic copy. The manuals shall detail the full purpose and method of operation of systems and equipment and shall in detail set out the extent and frequency of maintenance required. The Contractor shall allow within his tender for 2 No. visits of his commissioning engineer/specialist engineers to demonstrate to the clients and the clients maintenance team the operation and maintenance procedures for the newly installed or modified systems.

Electrical Distribution

The Contractor shall allow to wire out from the existing distribution board to the floor box locations as shown each floor box being a custom manufactured unit from Cable Duct UK. See drawing for quantities and make up for each box required.

Between each of the floor boxes and main distribution cupboard multiple runs of conduit shall be installed as detailed terminating securely at each floor box and rising in the distribution cupboard and made off into the general lighting and power board.

Final Circuits

Except where indicated otherwise the general system of wiring for internal final circuits is to be low smoke halogen free single core cables drawn into the conduit network, sized and protected as detailed on the circuit arrangement shown on the electrical tender issue drawing.

Except where otherwise indicated the general system of wiring for external final circuits is to be BS5476 XLPE-SWA-PVC cables buried in ducts. All circuits serving 13A socket outlets rated up to 32A are to be protected by 32A type B 30mA BS61009 RCBO's for ring type circuits and 20A type B 30mA BS61009 RCBO's for radial type circuits. Ring type circuits are to be wired in a minimum conductor size of 2.5mm² and Radial circuits are to serve a maximum of 10 points and have a minimum conductor size of 4mm². Except where otherwise indicated all new final radial circuits supplying pieces of fixed equipment are to be protected by 16A BS60898 MCB's or 16A 30mA BS61009 RCBO's with a minimum conductor size of 4mm².

MECHANICAL WORKS

Each individual UF Zone Heating controller is to be standalone, fully programmable with integral thermostat and with multiple timed and day controls.
 The underfloor heating is to be zoned to allow the individual control of temperature and comfort settings in each room, hall or space.

The LPHW for the new building is to be provided by a 12KW Air source Heat Pump (ASHP).
 The ASHP will be located externally to the chapel to ensure the ASHP is worked to its maximum capacity.

The underfloor heating shall be installed to all areas and in zones that will be shown on the Greenways drawings.
 The complete system shall include all necessary manifolds (with control valves and commissioning stations. The manifold sections shall also include the secondary circulation pumps.

Matching Room controllers / thermostats and connecting control wiring is also to be installed by the MEC.
 All power supplies and electrical connections are to be included.

Pipework

Install all internal low temperature hot water distribution pipework as indicated on the design drawings in pipework to match the existing and using adequate pipework fittings

Insulation

All LPHW pipework where in ceiling voids or boxed shall be insulated with 25mm foil faced phenolic foam insulation as kingspan kooltherm or equal and approved.

Controller

Mechanical contractor shall be responsible for supply and installation of necessary sensors/thermostats to enable the complete operation of the heating system.

Wiring Accessories and Equipment

Further to the white moulded accessories installed in the floorboxes all other outlets shall be of the metal clad surface fixed type complete with engraved labels indicating the circuit they are wired on.

Heating Installation

The following should be read in conjunction with the original mechanical project specification in respect of general standards, the services now being installed forming part of the additional works scheme.

As detailed on the drawing the Mechanical Contractor shall allow to provide under floor heating to three zones in the building these zones being controlled by a heating manifold and associated internal / external thermostats and the Samsung Control module located within the building in the Chancel.

The systems heated water shall be derived from the externally located air source heat pump, located as shown. The electrical supply to this and the associated system components ie Pump and EFD installed by the electrical contractor as part of his works package.

EQUIPMENT

Underfloor Heating

This shall be installed in the floor of the new build area as shown on the drawing.

The system shall be designed to provide 70w/m2 output.

It shall be a proprietary system as supplied and installed by Oventrop or equal and approved.

The manifold shall be complete with a pump.

It shall include the following:

- Thermal insulation with integral pipe fixing system
- Membrane to prevent moisture transfer
- Either PE-RT, PEX or Polybutylene based pipework with co-extruded oxygen diffusion barrier, which is resistant to ultra violet light and to abrasion, manufactured specifically for underfloor heating. This pipework shall be guaranteed as suitable for the purpose and shall have a projected life of 50 years minimum. Pipework will be installed at centres to suit output required.

- Main isolating valves and commissioning valves.

- underfloor heating controller.

The system shall be pressure tested prior to screeding of the floor.

The manufacturer shall provide detailed calculations, material specifications and drawings to the consultant for approval prior to installation.

The underfloor pipework shall be installed on a membrane over 70mm high density polystyrene insulation board supplied and installed by others, the pipes being fixed in position with a system of proprietary clips or channels. Where multiple run-outs occur from manifolds the pipework shall be insulated to avoid excessive floor temperatures. The pipework shall be installed strictly in accordance with the manufacturers requirements and shall be pressure tested prior to the concrete being laid.

The system shall be commissioned by the installer whose representative shall be present on the site during the "warming up process".

The underfloor heating contractor shall provide wiring diagrams to the mechanical contractors.

The Mechanical Contractor shall provide double pole switch fused connection units at the control valve for the underfloor heating contractor to connect to.

The Mechanical Contractor shall provide wiring between the control valve and room thermostat but shall leave the final connections to be made by the underfloor heating contractor.

COMMISSIONING VALVES

Provide commissioning valve sets in accordance with the following guidelines:
 Provide orifice flow measuring devices close coupled to a double regulating valve for measurement and regulation.
 Select commissioning sets and double regulating valves suitable for the flow rates to be achieved

FLUSHING VALVES

Flushing valves are to be installed in the locations required and of an adequate diameter as detailed in the CIBSE Commissioning Code and BSRIA application guide "Flushing and Cleaning of Water Systems".

TESTING AND COMMISSIONING

Pressure test pipework.
 Flush out cleanse water distribution system
 Regulate and balance water distribution system
 Chemically treat water distribution system
 Regulate and check all water flow rates using individual commissioning sets and regulating devices.
 Set up all TRV's.

GENERAL NOTES

No client equipment shall be used. (I.e. stepladders, kettles, etc.) Throughout the duration of the works. The contractor shall be expected to clear and dispose of any waste materials accumulated during a working day.
 The contractor shall notify the engineer of any variations for approval.

Mechanical contractor to allow within his cost for the wiring to and the connection of the actuators associated with the underfloor heating system

Defects Liability

The contractor shall provide 12 months defects liability period.

Notes

- If any of the information in these tender documents or elsewhere is conflicting or ambiguous The Contractor shall raise a formal query during the tender period or allow for the most economically onerous option.
- The drawings accompanying this specification are conceptual and are for tender purposes only.
- No client equipment shall be used (i.e. stepladders, kettles, etc.).
- The Contractor shall be expected to clear and dispose of any waste materials accumulated during a working day.

NOTES

- Do not scale. All dimensions are in millimetres unless stated otherwise.
- This drawing to be used only for the specific services intended.
- This drawing to be read in conjunction with all other relevant drawings, engineering and architectural specifications.
- This drawing should be viewed & printed in colour.

TENDER



greenways
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Client	
COVENTRY CITY COUNCIL LONDON ROAD CEMETERY - -	
Title	
COMBINED M&E SPECIFICATION - - -	
Designed	Approved
Scale at A2	CAD NAME
NTS	GBSC-MESPEC
Drawing No	Rev
2102-MESPEC	T1

T1	12.02.21	SD	TENDER ISSUE	SD	SD
Rev	Date	Drawn	Description	Ch'k'd	App'd