ELECTRICAL SERVICES SPECIFICATION FOR

REFURBISHMENT AND ALTERATIONS

OF

HELLESDON COMMUNITY CENTRE, WOOD VIEW ROAD, HELLESDON, NORWICH, NR6 5QB

August 2021
TENDER ISSUE

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Revision Summary

Revision	Date	Description
T1	August 2021	T1 Tender Issue

HELLESDON COMMUNITY CENTRE, WOOD VIEW ROAD, NORWICH

SPECIFICATION FOR ELECTRICAL INSTALLATION

5.01 EXTENT OF WORK

This specification covers the requirements of the electrical works and associated specialist services required for the refurbishment and alterations at Hellesdon Community Centre, Wood View Road, Norwich.

This document and associated drawings are provided to convey the requirements of the final installation to the electrical contractor to enable them to complete the submission of a fully inclusive tender sum including any Contractor Design Portion (CDP) items noted.

The electrical contractor will be responsible for the design (where required), supply and installation of the complete works as shown on the drawings and detailed within this specification.

The electrical contractor shall submit any CDP design information for approval a minimum of 4 weeks prior to commencement on site for approval.

The installation must comply with the 18th Edition of the IEE Wiring Regulations insofar as they are applicable to the contract, the contract drawings, Health and Safety Regulations and all relevant British Standard Codes of Practice.

5.02 CONTRACT DRAWINGS

The following drawing forms part of this specification:

DRAWING NUMBER	TITLE
EL 60-01 – T1	Schematic
EL 62-01 – T1	Power & Ancillary Services
EL 63-01 – T1	Lighting
EL 68-01 – T1	Fire & Security

Inclusions in the specifications not shown on the drawing, and vice versa, shall be deemed to be set forth in both.

5.03 VISIT TO SITE

Electrical contractors should visit the site to assess the extent of the work involved, and to familiarise themselves with site conditions and any other matters that may influence the cost. No additional claims will be entertained on lack of knowledge of the site. Arrangement to visit site shall be made with the client.

5.04 BUILDERS WORK & BUILDING CONSTRUCTION

Builder's work, i.e., chases, holes, making good, trenching, ducts etc shall be carried out by the main contractor or as agreed between the parties. The electrical contractor

shall be responsible for production of a schedule of required builders works and for all 'marking out'.

5.05 METHOD OF INSTALLATION

The electrical contractor shall be responsible for the strip out, removal and disposal of all existing lighting, cabling, containment, alarms, accessories and equipment.

All new lighting and power circuits shall be wired using LSF Insulated and sheathed cables installed above ceiling finishes, with all drops concealed within the wall finishes and terminating in flush metal accessory boxes wherever possible. Cables are not to lie directly on the ceiling and should be run in basket tray where main routes occur and within metal band type supports where cable quantities reduce. Routes are to be determined by the contractor on site to suit the cable routes required. All cabling supports are to be fire retardant.

New sub-mains shall be run using XLPE/LSF/SWA cables and affixed to suitably sized tray on main runs and securely cleated to the building fabric where one cable is run alone.

5.06 LIGHTING INSTALLATION

a) LIGHTING SWITCHES

Lighting switches shall be of the flush mounted 'grid' type with 20 amp rated SP switches fitted into metal boxes with moulded front plates and ganged as shown on the drawings.

Where multigang switch assemblies occur, these shall be arranged to provide a clear and logical relationship with the luminaries being controlled.

Lighting controls are to be installed as shown on the drawing. Controls shall be by CP Electronics and commissioned to suit the requirements of the individual room.

Where rooms/areas have just presence detection (WC’s, Stores, Corridors, Changing Rooms etc.) these are to be controlled by the detector and programmed with a 10-minute time out.

Where additional switching is shown (absence detection) these shall be configured for manual on and timed off after 10 minutes.

The main rooms with dimmable luminaires are to be connected to CP LCM units as indicated and switched in dimmable groups as detailed. Suitable pre-sets shall be selected within the LCM at commissioning to achieve the switched grouping shown.

A UHS5 Infrared programming handset shall be provided to the client on completion (complete with instruction manual and demonstration) to enable them to adjust the devices (non-Vitesse Plus) in future.

(b) **LUMINAIRES**

Lighting shall be supplied and installed as detailed on the design drawing. Luminaires shall be as specified and all tenders shall include for the manufacturer and types detailed, any deviation will be deemed a non-compliant tender and rejected.

Sylvania Lighting Contact – Adam Peach, Tel: 07771 974610.

The contractor shall include for the assembly and flexing of luminaires as may be required on delivery from the manufacturers, and for all fixing to the ceilings. The metalwork of all luminaries is to be efficiently bonded to the wiring system.

Luminaires within suspended ceilings shall have a plug-in ceiling rose or LCM connection boxes installed as shown/required for a complete installation.

All luminaires fixed to boarded ceilings shall have the final circuit wiring terminated at the luminaire terminal block.

(c) **EMERGENCY LIGHTING**

The electrical contractor shall supply and install the emergency lighting installation as shown on the drawing.

The 3-hour emergency lighting units shall be either the stand-alone LED ‘lens’ type or integral with the mains luminaires as shown on the drawings. A key switch for testing purposes shall be fitted either within in area with emergency lighting or a labelled grid switch adjacent the distribution board serving the lighting. Switches shall be engraved 'EMG LTG TEST'.

(d) **EXTERNAL LIGHTING**

The new external lighting is to be controlled by time clock and photocell as detailed on the drawing. Where multiple circuits are to be controlled from the same set of controls, these shall be wired through contactors housed within a DIN rail enclosure above/adjacent the DB.

Controls shall be set to operate from dusk to set off time in the evening, then to come on again in the morning at a set time and turn off at dawn.

(e) **LIGHTING INSTALLATION**

The new lighting circuits shall be wired from the distribution board position to the new luminaires and control equipment as required.

Lighting circuits shall generally be protected by 10 Amp rated Type C devices complete with 30ma protection.

5.07 POWER INSTALLATION

General accessories shall be of the flush moulded type to suit the area fitted into metal accessory boxes.

All circuits shall have 30mA RCBO protection fitted within the distribution board.

Connection units, 20-amp switches etc. shall be switched or unswitched as indicated with cable outlet as appropriate to the equipment and engraved to indicate the equipment controlled.

Dado trunking shall be of the 3-compartment type and suitable for the installation of CAT 6 data cabling. Proprietary bends, T's and corners shall be installed as required. The trunking shall rise in suitable locations to the ceiling where applicable.

Hand dryer supplies are required where shown, these shall be a high-level isolator with flush conduit to the rear of the dryer for final connection using heat resisting flexible cable. Dryers shall be reconnection of existing or left for future dryer installation where no dryer currently installed.

Each lighting switch, socket outlet and fixed power outlet plate shall be fitted with a label indicating the distribution board and circuit references from which the accessory is fed.

5.08 SWITCHGEAR & INCOMING SUPPLY

The existing incoming three phase 100A supply enters the building in Store Room 13 below DB/A.

The existing switchgear, equipment and sub-mains are to all be completely removed and replaced with new as detailed on the proposed drawings.

It is proposed that an Eaton 'High Load' Memshield 3 MCB board complete with 2no. ways for outgoing devices up to 125A be installed as outlined on the schematic drawing be installed at DB/A. This will in turn then feed local final circuits and also standard Memshield 3 DB's at position B & C.

The complete installation is to have a complaint surge protection system and devices installed to meet the requirement of BS7671, 18th edition.

New MCB distribution boards are to be installed in the positions shown to serve the relevant areas. Each DB shall include:

- Main Isolator.
- Integral meter.
- Lockable door.
- RCBO's and MCB's as required.

On completion, each new board shall be labelled using typed circuit charts and have the completed test certificate for that board within a plastic wallet fixed to the inside of the door.

5.09 FIRE ALARM INSTALLATION

A new L2 addressable fire alarm system is to be installed to cover the whole building, voids and roof spaces where applicable.

The devices shown on the drawing are indicative only and the specialist contractor shall be responsible for ensuring the new installation is to current standards.

The system shall be open protocol (Kentec, Advanced Electronics panel or similar) with suitable devices as required.

The system shall be capable of off-site communications to a receiving centre or named person notification.

Wiring shall be of a 'fire protected' type throughout the installation of Delta 'Firetuf' or approved equal. Cables shall be installed above the finished ceilings and dropped flush within the wall finishes where possible but within surface galvanised conduits in plant and services cupboards.

Cables shall be coloured red and be of minimum size 1.5mm² and generally be of the 2-core+earth type.

Equipment and installations shall be to all relevant British Standards, all call points shall be complete with tamper proof covers.

The contractor shall include for 5no. detectors with remote indicators for ceiling voids containing plant. Final locations and detail to be confirmed on site during the installation.

The electrical contractor shall provide the appropriate completion certificates to the client and the local authority on completion of all works.

The contractor shall provide a report regarding sound levels within all areas of the building.

A detailed zone chart shall be installed within a glazed frame adjacent to the new panel.

Full training and demonstration shall be provided to the client on completion.

5.10 INTRUDER ALARM

A new intruder alarm system shall be installed to cover the complete building with devices to cover the areas as noted on the drawings. The device positions are indicative of the areas required to be covered and the type and quantity of devices shall be subject to the detailed design proposal.

All cabling shall be installed above the finished ceilings and dropped flush within the wall finishes but within surface trunking/conduits in plant and services cupboards.

The system shall be activated/deactivated by keypad codes to suit the client requirements.

The system shall be designed, supplied, installed and commissioned by a NACOSS approved contractor.
The system shall be capable of off-site communications to a receiving centre or named person notification.

Full training and demonstration shall be provided to the client on completion.

5.11 ACCESS CONTROL

Access control is to be installed to the doors as shown on the drawings.

Each door is to have a suitable electric lock facility of a type to suit the door and agreed with the architect and client.

The new system is to be a Paxton NET2 (or similar) networked type system. The contractor is to supply 50no. fobs/cards as required by the client and provision for the client to program new users themselves on site. All software, licensing and installation onto the client's system shall be included.

The system shall be complete with the following at each door:

- Controller connected to network.
- External reader.
- Electronic lock to suit door type.
- Internal 'press to exit' button.
- Emergency green exit break glass.

Full training and demonstration shall be provided to the client on completion.

5.12 DISABLED WC ALARM

Each Disabled WC is to have an emergency call system installed. Each system is to include the following:

- Pull switch,
- Reset unit with activation indicator,
- An over door visual and audio indicator,

All alarms are to be linked to a master indicator panel installed in main reception with labels to detail which alarm has been activated.

5.13 DATA & TELEPHONE

The electrical contractor shall be responsible for the installation of CAT 6 cabling to all the data and telephone points shown on the proposed drawings. These are to be terminated in a suitably sized cabinet in the position shown on the drawing.

The cabinet shall be sized to house the patch panels, switches and other equipment as required.

All cables are to be patched into patch panels and be tested and certified on completion. The cabinet shall be complete with integral cable containment and power distribution units to suit the cabinet size.

The electrical contractor or their specialist shall supply, install and configure the Wi-Fi access points as shown on the drawings to provide a building wide system. Access points shall be as Ubiquiti or approved equivalent.

The electrical contractor will be responsible for all containment associated with the data and telephone installation as required.

The existing incoming phone & data shall be altered to the new cabinet position and terminated within the cabinet as required for a complete installation.

Data face plates shall be the Euro type with outlet modules installed within. These shall match the general accessories used elsewhere.

5.14 MECHANICAL SUPPLIES AND WIRING

The electrical contractor shall provide supplies, wiring and final connections for all mechanical equipment as shown on the drawing, detailed below and as required by the mechanical services contractor: -

- Power supply to main mechanical panel in Plant Room.
- Wiring and control to extract fans
- Supplies to local Fan Coil Units.
- Supplies to MVHR units.
- Supplies to all mechanical plant and ventilation equipment.

All field wiring for control and sensors etc. shall also be included as agreed with the mechanical services contractor.

5.15 WIRING ACCESSORIES

Wiring accessories shall be of the following types:

- General use accessories throughout:
  - Crabtree Instinct (Grey) or
  - MK Logic (Grey)

- Plant and Service Cupboard areas:
  - Crabtree Metalclad or
  - MK Metalclad Plus

- External:

- Crabtree Ingress Protected or
- MK Masterseal Plus

Manufacturers shall not be mixed on the project; all accessories shall be from a single manufacturer.

5.16 PV

The roofing contractor will be responsible for the supply and installation of a 34kw PV system and associated equipment as part of a separate contract. The electrical contractor shall allow a provisional sum of £1,000 to cover any re-feeding or alterations to the PV installation as part of the main contract works.

5.17 STAGE LIGHTING & AUDIO

The contractor shall include for a provisional sum of £5,000 for works to supply and install the stage lighting and audio system. Further details will be provided in future.

5.18 CCTV

The existing 16 camera system is to remain. A provisional sum of £1,250 shall be included for any alterations required as part of the contract works.

5.19 TV OUTLETS

At each of the positions shown a terrestrial TV outlet shall be installed. All outlets are to be wired back to a suitable location complete with amplifier/control equipment as required. An aerial shall be installed in a suitable location as determined by a specialist contractor and agreed with the client and contract administrator. Include for all power supplies etc. as required for a complete installation.

On completion provide certification detailing signal strength test results at each outlet position.

5.20 AV LINKS

Where shown on the drawing, display screens shall have hard-wired links for the signal and audio input. These are proposed to be HDMI input plates at low level wired to output plates at the screen/projector position.

5.21 CABLES AND CONDUITS

Cables shall be Draka or approved equal all to BASEC approvals.

Plastic conduits and trunking shall be MK Ega, Marshall Tufflex or Mita manufacture.

5.22 EARTHING AND BONDING

The installations shall be earthed and bonded in accordance with the IEE Wiring Regulations.

5.23 INSPECTION AND TESTING

Upon completion of the works detailed in this specification and shown on the accompanying drawings, and before the installation or sections of the installation are energised, the electrical contractor shall carry out a complete visual inspection together with those tests as detailed within the relevant sections of the 18th Edition of the IEE Wiring Regulations which do not require the supply to be connected.

The electrical contractor shall provide labour and all materials and instruments to affect these and any other tests that may be required by the Engineer during the progress of the work.

The electrical contractor shall carry out a secondary visual test once the installation is energised to ascertain that all accessories, luminaires, (lamps inserted), and equipment are functioning correctly.
Tests requiring the electrical supply (i.e. earth fault loop impedance and the operation of RCD's), shall also be carried out at this stage.

On completion of the required test the electrical sub-contractor shall submit duplicate copies of the results to the Engineer by use of the completion and inspection certificates in the form laid down in the IEE Wiring Regulations, by the NICEIC or by the ECA.

5.24 'AS FITTED' DRAWINGS

'As fitted' drawings shall include the contractors original design drawings updated to reflect the actual as installed installation and any other drawings that the Engineer considers necessary to augment the originals.

The electrical contractor shall arrange to keep on site a full set of drawings showing the progress of the work and which shall be kept up to date and available for viewing by the Electrical Engineer.

5.25 INSTRUCTIONS TO CLIENTS STAFF

After the installation has been completed, tested and handed over to the client, the electrical contractor shall be responsible for pointing out to the client's representative the positions of the various pieces of equipment and demonstrate their operation. All keys shall be supplied with plastic labels to indicate their purpose.

5.26 OPERATING MANUAL

The electrical contractor shall provide an operating and maintenance manual upon completion of the works and to be in the form of a ring binder.

Manufacturer's data sheets and all other relevant information shall be included in single leaf clear plastic sheets.

The original copies of all completion and test certificates shall be included within the manual.

A USB drive with the complete manual in electronic format shall also be included. Files shall ben in PDF format with the addition of all electronic .dwg files for all drawings. These shall include relevant X-Ref files as required.

SCHEDULE NR 1 – TEST SHEETS

TEST CERTIFICATES AND COMMISSIONING REPORTS FOR ELECTRICAL SERVICES

AT HELLESDON COMMUNITY CENTRE, WOOD VIEW ROAD, NORWICH

On completion of the works, or any defined phase or section of the works the following Test Certificates and Commissioning Reports are to be submitted and approved before the Practical Completion Certificate is issued and the area concerned can be occupied.

1	NICEIC/ECA Electrical Installation Completion Certificate	✓
2	Energy Saving Lighting System Commissioning Report	✓
3	NICEIC/ECA Emergency Lighting System Installing Engineers Certificate	✓
4	Emergency Lights Central Battery Commissioning Report	
5	Norfolk Fire Services Fire Warning System Installing Engineers Certificate	
6	Fire Alarm Commissioning Report	✓
7	Security System Commissioning Report	✓
8	Lightning Protection Test Certificate	
9	Emergency Generator Commissioning Report	
10	Nurse Call System Commissioning Report	
11	CCTV Commissioning Report	
12	Lift Installation Commissioning Report	
13	Data Cabling	✓

Where applicable the box is ticked.

Electrical Tender Summary
Hellesdon Community Centre, Wood View Road, Norwich

Item	Description	Price
1.	Strip Out, Removal & Disposal of existing installation	£
2.	Switchgear & Sub-Mains	£
3.	Containment	£
4.	General power installation	£
5.	Internal Luminaires	£
6.	Internal Lighting installation	£
7.	External Luminaires	£
8.	External Lighting installation	£
9.	General power	£
10.	Fire Alarm system	£
11.	Intruder Alarm system	£
12.	Access Control system	£
13.	Disabled WC Alarm system	£
14.	Data/Telephone installation	£
15.	Mechanical Services	£
16.	Hand Dryers	£
17.	TV System	£
18.	AV Links	£
19.	Earthing & Bonding	£
20.	Testing and commissioning	£
21.	Provision of O & M manuals and ‘As fitted drawings’	£
	Sub Total of above	£
22.	Provisional Sum for PV Alterations	£ 1,000
23.	Provisional Sum for CCTV works	£ 1,250
24.	Provisional Sum for Stage Lighting & Audio	£ 5,000
25.	Provisional Sum for additional unknown works	£ 5,000
	Sub Total of provisional sums	£ 12,250
	Grand Total	**£**

Amount in words .....

Signature of Contractor .....

Name of Contractor .....

Address .....

Telephone No.....