

**SPECIFICATION ASSOCIATED WITH
ELECTRICAL ENGINEERING SERVICES**

for

REFURBISHMENT & ADAPTIONS PROJECT

at

**NETHER ALDERLEY PARISH HALL,
CHURCH LANE,
OFF CONGLETON ROAD,
NETHER ALDERLEY,
CHESHIRE.
SK10 4TW.**

PREPARED BY: -

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SECTION 1

GENERAL CONDITIONS & PRELIMINARIES

SECTION 1

GENERAL CONDITIONS & PRELIMINARIES.

1.1 CONTRACT

The general conditions of contract for the electrical Services Sub-Contractor will be in accordance with the Contractor's tender invitation from the Main Contractor and the preambles attached to that documentation. The Contractor shall familiarise themselves with the terms of this Contract and reflect any preliminary costs within the tender summary.

If the Electrical Contractor is unsure about the main contract preliminaries and these are not included within the Main Contractor's tender invitations, then he must request a copy of these from the respective Main Contractors for the Contractor's own reference.

1.2 SCOPE OF WORKS

The element of works within this contract comprises of providing the electrical services associated services associated with the adaptations & refurbishment at Nether Alderley Parish Hall, SK10 4TW. as indicated on the electrical tender drawings.

All of the items required to complete this installation are detailed within this documentation and upon the tender drawings. The contractor shall ensure that all items detailed in either document are included within their bid.

The definition of "works" shall include the provision of electrical engineering services, i.e. general lighting/power, emergency lighting, sub-distribution cables, fire alarms, security, supplies associated with mechanical services and earthing. This shall mean a complete installation including supply, installation, final connections, testing, commissioning, and setting to work, including full instructions to the Client as to the operation of the installation.

The Electrical Services associated with this project are to be as detailed, but not limited to, the elements listed below: -

- a) Liaison with the building user with regards to working out of hours.
- b) Liaison with Main Contractor with regards to builders' work.
- c) Liaison with Mechanical & sub-contractors with regards to containment and supplies.
- d) Removing redundant items around the existing site.
- e) Electrical containment installation.
- f) General lighting and lighting controls installation.
- g) Emergency lighting installation.
- h) Fire alarm installation.
- i) General power installation.
- j) Supply of lighting fittings and lamps.
- k) Data/telecommunications structured cabling installation.
- l) Supplies in connection with mechanical services.
- m) Testing & Commissioning.
- n) As fitted drawings & operating and maintenance manuals.

1.3 SITE VISIT

The prospective tenderer is advised to visit site to ascertain the full extent and nature of the works and to translate the information contained within this specification and detailed on the drawings to suit the particular implications of the site in general. Failure of the tenderer to acquaint themselves fully with site conditions shall not form the basis of additional claims for monies whatsoever. Arrangements to visit the site should be made via Main Contractor who has invited the Electrical Contractor to prepare their tender package.

1.4 DOCUMENTATION

To assist the preparation of a tender bid, the following documentation is provided: -

a) Tender Drawings

The following drawings, which accompany this specification to form the tender package, are to be used at this time for tendering purposes only. They are diagrammatic only and must be read in conjunction with the specification. Site dimensions must not be taken from Tender drawings. The tenderer must include for all necessary fittings, offsets, components, bends, parts etc., as may be required to provide a full, comprehensive electrical installation even though they may not be indicated on the drawings. Issued with tender package: -

102.19. E01/T1	-	Proposed Lighting & Fire Alarm Installations
102.19. E02/T1	-	Proposed Power & Data Installations
102.19. E03/T1	-	Proposed Containment
102.19. E04/T1	-	Proposed Electrical Schematic
102.19. E05/T1	-	Electrical Symbols Legend

THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PRODUCING CO-ORDINATED WORKING DRAWINGS

Queries or clarification relating to the specification and/or drawings shall be forwarded to the Consulting Engineers Messrs. J R Book Consulting Engineers, 10 Eaton Avenue, Buckshaw Village, Preston.

Contact: Mr. David Cieszynski

Tel. No. 01772 331790

Fax No. 01772 458466

Email: dc@jrbe.co.uk

All tender queries and RFIs during the contract phase are too made in writing.

b) Specification

Tenderers shall comply fully with the requirements of the Standard and Particular sections of the specification. Any anomalies or queries noted by the tenderer shall be relayed to the Consulting Engineer at tender stage.

c) Tender Breakdown & Form of Tender

A copy of the Tender Breakdown duly completed in all respects and signed, shall be submitted by the tenderer with the tender bid to the Main Contractor tendering for the works.

1.5 CO-ORDINATION OF SERVICES.

The Electrical Services Contractor shall be fully responsible for the co-ordination and integration of his installation with the mechanical services and the proposed internal arrangement of the building. In addition, the electrical contractor shall be responsible for the co-ordination of all activities and management of the Sub Contractors employed to carry out specific specialist functions.

In several areas, the electrical services will remain exposed it is therefore imperative that the Electrical Contractor not only liaises with Mechanical Contractor, but carefully plans their containment routes to avoid clashes with light fittings, pipe and duct work. Alterations to the lighting scheme will not be accepted due to poor co-ordination or planning. Consideration to the aesthetics of the electrical services is to be taken, in relation to the routeing of trunking and conduits etc.

1.6 SCHEDULE OF RATES WITH QUANTITIES.

As part of the tender the successful contractor is required to supply prior to the award of the tender a **quantified schedule of rates** for the electrical works. This schedule will be used to value in accordance with the contract any instructions raised. **Without this document the consulting engineer will not carry out any authorisation of claims for monies or variations.**

This schedule should incorporate all major elements of the scheme and contain a level of detail that is deemed appropriate by the contract administrator; it should also reflect any phasing of a scheme. The quantities within the quantified schedule of rates shall not form part of the tender. The schedule is a strict requirement of the appointment to the contractor. Failure to produce this information in timely fashion will result in the tender being rejected.

1.7 WORKING PROGRAMME.

The Electrical Contractor shall arrange his works to comply with an agreed programme of works with the building contractor. The Electrical Contractor shall issue a draft programme with his tender return followed by a more detail programme after order placement for discussion prior to any works being undertaken.

1.8 COMPLIANCE WITH REGULATIONS.

All parts of the installation shall comply with the following regulations current at the date of tender: -

- 1) The 18th Edition of the I.E.E. Wiring Regulations BS7671: 2018 (Blue Cover) including all current amendments and site guidance notes issued by the Institute of Electrical Engineers as applicable at the date of tender.
- 2) The Health & Safety at Work Act 1974 and CDM Regulations 2015 current at the date of tender.
- 3) The Factories Act 1961.
- 4) Electricity at Work Regulations 1989.
- 5) The Electrical Supply Regulations 1988 (including the Electrical Supply Amendment 1990).
- 6) British Standard Codes of Practice taking special note of requirements associated with Fire Alarm Installations BS 5839 Part 1: 2008 A2+ so far as they apply to this installation.
- 7) BS EN54-23 2010 – Fire Alarm Devices – Visual Alarm Devices
- 8) Emergency lighting Installation – BS 5266 Part 1 in so far as they apply to this installation.
- 9) Specification 34 formerly The P.S.A. Standard Specification M&E No.1
- 10) BS EN 50131 relating to intruder alarms installation.
- 11) NACOSS NACP20 relating to CCTV installations.
- 12) British Standard BS 8300: 2001 – Design of Buildings associated with Codes of Practice for Disabled People, taking special note of sections: -
 - i. 10 : 5 : 2 Location of Outlets, Switches, Controls & Meters
 - ii. 11 : 1 : 10 Induction Loops
 - iii. 12 : 4 : 10 Alarm Systems
- 13) BS 6701 – Design and installation of data cabling infrastructure
- 14) BS 5839 – Part 9 – Emergency voice communications systems (disabled refuge alarms).
- 15) The Water Regulations.
- 16) The Gas Regulations
- 17) The building regulations in all parts referring to the electrical installation and in particular Part B and Part M
- 18) British Standards ruling at time of tender.
- 19) WEEE Directive 2006 and subsequent amendments.

1.9 BUILDERSWORK & ELECTRICAL WORKS.

The Electrical Contractor shall be responsible for providing all necessary information for builder's work and mechanical works to enable the services to be installed and to enable the Main Contractor to carry out the work, as applicable. This shall apply to bases, holes through walls, floors, roofs etc., chases, trenches, boxings and any other specific items.

In addition, the Electrical Contractor shall be responsible for the co-ordination of all activities and management of Sub Contractors.

1.10 INFORMATION TO BE PROVIDED DURING THE CONTRACT

From receipt of instructions to proceed with the electrical services, the contractor shall prepare and submit installation / working drawings, diagrams, and schedules for the following purposes: -

- a) To illustrate in detail the arrangements of the various systems.
- b) To identify and describe the particular components and obtain approval for their acceptability into the scheme.
- c) To enable the works to be properly integrated within the detail of the building and with the work of the other trades.
- d) To furnish other trades such information that may be necessary to allow them to carry out works on behalf of the services contractor i.e., builders work, mechanical details etc.
- e) To illustrate that all stated standards, regulations, British Standards, etc. have been complied with and will be reflected in the installation.

Such drawings and documents shall be made available as requested and in good time to allow other interested parties to make full use of the information and to discharge their own responsibilities. This shall be no longer than two weeks from the project commencement and availability of information and access to site.

Three copies of all drawings and documents called for in this clause shall be submitted for approval and subsequently up to ten copies of each may be requested for distribution. This also applies to any subsequent revisions.

The services contractor shall be responsible for the accuracy of the information he provides and shall be liable for all costs arising from any errors in such information.

The scales for which the working drawings are to be prepared are as follows: -

- | | |
|--------------------------------|-------------|
| a) General Layouts | 1:50 |
| b) Switch Room Layouts/Details | 1:20 |
| c) Room Layouts | 1:50 |
| d) Specific details | as required |

1.10 OMISSION OF WORKS

Omission of the works whether in part or whole shall not entitle the contractor to claim for anticipated overhead recovery and/or loss of profit.

1.11 OPERATING & MAINTENANCE INFORMATION.

The Electrical Contractor & Tyco Integrated Fire & Security shall include for instructing the Clients representatives on the operating and maintenance of the installations and shall provide three copies of 'As Installed' drawings and operating / maintenance manuals at the time of handover. Due to the specialist nature of the equipment being installed the Electrical Contractor shall allow within his tender for a full teaching and training of all items within his tender.

This shall include but not be limited to: -

- General electrical installation.
- Lighting control.
- Data & telephone installations.
- Mechanical supplies.

All "As Fitted" drawings shall be provided in AutoCAD format (minimum release 2007), on CD, with A1 size paper copies of all drawings included within the O&M Manuals. The Electrical Contractor shall email the As Fitted drawings in AutoCAD format to the Consulting Engineer.

O&M manuals shall be available for inspection and approval 14 days prior to handover. Documentation shall be provided as follows.

- Full contract particulars of the contract sub contractors and disciplines etc
- The original particular specification of the works
- Details of main distribution systems indicating cable sizes and types
- Details of all components and equipment used within the installation in an easy-to-follow referencing system
- Details of all lighting fittings and lamps which shall be referenced to the drawing for easy identification
- Details of all items that have specialist needs for maintenance and servicing
Include all manufactures literature supplied with the equipment (not photocopied inserts from catalogues) which includes installation and dismantling information.
- Details from all specialist sub contractors on their operation of each item of equipment and short form quick start guides if applicable.
- Details of all test results and information with all readings required under BS 7671
- Typed NICEIC final certification must be completed for all installed electrical equipment including Fire alarms and emergency lighting.
- Final commissioning equipment from all specialist installers including all test results and comments relating to the system.

Drawings supplied shall be as installed drawings and shall bear no reference to the "future tense". All phrases such as "shall, approximate etc." must be removed. The drawings shall contain all information appertaining to all cable routes and positions of equipment. All circuit schedules shall be updated upon the drawings to match circuit schedules provided.

A full set of drawings shall be left adjacent to SB01 within an 1100mm galvanised trunking with a traffolytte label screwed to the lid.

1.12 HARMONISED WIRING COLOURS

All cabling shall comply with BS7671 2008 with Amendment no.3:2015 and shall utilize the harmonized colour standards to comply with section 514. This shall mean circuits phase conductors shall be identified by the labels L1, L2, L3 & N and colours shall be as follow:

Phase Conductor	Sheath Colour
L1	Brown
L2	Black
L3	Grey
N	Blue
E	Green & Yellow

1.13 MONITORING OF THE WORKS, COMMISSIONING & INSTRUCTION ATTENDANCE

The Electrical Contractor shall ensure all allowance is made within his tender to liaise with the Clients Inspecting Representative and give all facilities required to carry out liaison, inspection of the installation and witnessing of testing as and when required.

The Electrical Contractor shall also ensure that adequate time is provided within the main contract programme to allow for full commissioning of all systems, witnessing and inspection prior to handover.

The Electrical Contractor shall allow for demonstrating all systems and equipment to the Client and their Representatives prior to contract completion. In addition, he must allow for visiting site after the Development has opened to repeat the exercise to the necessary site personnel. The Electrical Contractor is to ask the building users to sign & date forms confirming that they have been instructed / demonstrated on the various electrical services. The Electrical Contractor is to forward a scanned copy of the completed form(s).

1.14 DEFECTS / CALL -OUT RESPONSIBILITIES

The Electrical Contractor shall be responsible for the correct operation of the works for twelve months from the date of practical completion and shall make good at his own expense any defects, which arise, fair wear and tear excepted. The Electrical Contractor shall provide a 24-hour, one port of call, contact telephone number for response to all breakdown / emergencies. All emergencies, which would affect the operation of the premises, should be responded to within 4 hours of notification.

1.15 NAMED SPECIALISTS & EQUIPMENT PROVIDERS

The documents and drawings associated with this project contain specific Manufacturers and Specialists Sub Contractors. These have been made to ensure a common and co-ordinated approach is made with the client's own relationships and requirements.

In cases where materials are to be supplied and / or services are to be provided by a specific manufacturers / Specialist Sub Contractor detailed within this specification or on the drawings, the contract tender must be based on these materials / Sub Contractor. If he so desires the Electrical Contractor may submit a Schedule of Alternatives indicating the cost implications and any other factor which affects the execution of the works however these must have been given prior approval by the designer before submission.

The Electrical Contractor will be asked to provide detailed calculations to prove what they are proposing will comply with current regulations, legislations, electrical drawings & specification and the Clients' design brief.

Prior to ordering materials, plant and equipment the Electrical Contractor is to confirm with the manufacturer / supplier that the reference numbers within this specification and on the drawings are still current and will form a complete and functional system upon installation.

1.16 WASTE MATERIALS

The Electrical Contractor should also consider as part of their contractual obligations the procurement of materials in achieving minimal waste production on site. This should at least consider the following areas: -

- Recycling of materials such as cardboard and packaging.
- Consideration in measuring cables lengths to avoid unnecessary wastage.
- Accurate measurement of trunking and containment systems to avoid wastage.
- Reduction in lengths of cut ends of cable for termination as accessory points to avoid waste.
- Cable drums from larger cable runs to be supplied on returnable drums.
- Reduction in packaging for lamps (lamps included within fittings).

This is by no means exhaustive, and the contractor should consider other ways in conjunction with the construction team to prevent unnecessary site waste requiring disposal.

The Electrical Contractor is to allow for within their tender to isolate, remove and dispose of redundant electrical accessories, cabling, plant & equipment for example but not limited to lamp posts, electrical feeder pillars, existing electrical services with redundant buildings etc.

All waste items removed from site are to be disposed of in accordance with the WEEE Directive 2006 and subsequent amendments.

1.17 ASBESTOS

Due to the age of the building the Electrical Contractor and their sub-contractors are to be mindful of the possible presence of asbestos.

1.18 COVID-19 WORKING PRACTICES.

The works detailed within this specification are potentially to be undertaken during the Covid-19 restricted working practices period. On this basis it is the Contractors responsibility to ensure that works can be completed whilst adhering to the strict Government guidance in relation to travel, social distancing, site segregation, hand washing facilities, cleaning regime, etc.

SECTION 2

PARTICULAR ELECTRICAL SPECIFICATION

SECTION 2

PARTICULAR ELECTRICAL SPECIFICATION

2.1 PHASING OF THE WORKS

It is envisaged that the works will be carried out in a continuous phase, the contractor shall liaise with the main contractor and agree all sequencing for the works in line with the main contract programme.

The contractor shall include for submitting a detailed programme in line with this document and issue for comment.

The Electrical Contractor shall note that all sub-contractors employed under the electrical services contract shall be the responsibility of the Electrical Contractor, who shall ensure that all items of works are carried out to allow the building programme to be met.

The Electrical Contractor shall ensure that their specialist sub-contractors are given a programme of the works to allow them to meet the dates required. The consulting engineer may monitor the progress and dialogue with these specialists to ensure that the contractor has fulfilled his obligations under this clause. Any relevant information not given to the specialist or unrealistic call off times given to these sub-contractors will not be tolerated.

2.2 REMOVAL OF EXISTING INSTALLATION

The Electrical Contractor is to allow for within their tender to isolate, remove and dispose of redundant electrical accessories, cabling, containment, plant & equipment etc. within the area of works.

All waste items removed from site are to be disposed of in accordance with the WEEE Directive 2006 and subsequent amendments.

Any items which are in working order are to be offered back to the Building User, if declined the Electrical Contractor is to dispose the items.

2.3 MAIN DISTRIBUTION

The existing electrical distribution board is to be retained, and all new circuits are to be supplied from this distribution board.

The Electrical Contractor is to allow for supplying and installing all MCBs & 30mA RCBOs and blanks rated as indicated on the electrical drawings. If there are blanks missing on the existing distribution boards the Electrical Contractor is to allow for supplying and installing blanks.

The Electrical Contractor shall note that each distribution board shall be provided with separate earth continuity conductors from the “BW” gland earth tag connection to the distribution board main earth bar. The separate conductor shall be a minimum of 50% of the phase conductor size. This is in addition to the general earthing carried out at the gland location and all earth continuity links to the main earth bar shall be a minimum of half cross-sectional area of the main current carrying conductors.

All distribution boards shall be manufactured by Merlin Gerin c/w either type B or type C 15kA rated circuit breakers, blanks, sized to the distribution schedules indicated on the drawings.

The Electrical Contractor is to allow for updating the distribution board schedules on the relevant distribution boards. The schedules shall also contain all circuit references, cable sizes, type of MCB/RCBO and Zs levels of the relevant circuit. This schedule shall be typed and not handwritten.

On the inside of doors A4 circuit schedules (portrait page orientation) shall be provided with all circuits’ references. The chart shall also contain all cable sizes, type of MCB/RCBO and Zs levels of the relevant circuit. This schedule shall be typed and not handwritten.

Unless stated otherwise on the electrical drawings all RCBOs are to be 30mA.

2.4 GENERAL SYSTEM OF WIRING

The wiring system is to be predominantly 3-core black FP200 'P' clipped every 300mm to the building structure. Cables routed within partition walls, flushed into walls is to be contained in uPVC conduits.

As stated above in Section 1.5 the majority of the electrical services will be exposed resulting in the electrical services being installed in an aesthetically pleasing manner. Circuit conductor sizes have been indicated on the electrical drawings, **where the wiring system is 6491B cables the CPC sizes are to be the same size as the phase conductors. All electrical services cabling is to be low smoke (lsf).**

As indicated on the drawings all new circuits are to be protected by 30mA RCBOs.

External cabling supplying external lights and sockets are to be wired in swa/xlpe/lsf cabling, buried direct.

As previously advised within Section 1 of this specification the Electrical Contractor is advised to liaise with the Main Contractor to ascertain the building conditions. The information contained in this specification is given as general guidance only and the Electrical Contractor will be responsible for obtaining precise building construction details from drawings available from the main contractor.

The Electrical Contractor shall install **ALL** 400V / 230V supplies and containment systems for their sub-contractors, mechanical services, mechanical controls cabling, and specialist contractors employed directly and by the Client. The use of Hoops, cable hangers, tie wraps, catenary wire to string up any type of cable will NOT be accepted.

When installing the Electrical Services, the contractor shall make due allowances for the other services which will cross and/or be installed in the building and in this connection all other trades, services drawings must be studied on site before the fixing of any equipment.

Furthermore, the contractor shall liaise with all parties/trades to ensure that all agree to routes and installation methods before the work commences. **The first in best dressed policy will not be tolerated.**

The contractor is responsible for installing a complete working scheme which shall include all containment, cabling requirements and final connections.

The works shall be carried out to a good engineering practice to provide a well-engineered installation. The Consulting Engineer retains the right to have cables redressed or reinstalled if this is not the case. Any cables installed in an unsatisfactory manner that fail to meet the requirements of BS7671:2018 or this specification (whichever is the most stringent) shall be reinstalled at the expense of the Electrical Contractor.

Any accessories which are recessed for instance lights, PIRs are to be supported by plywood pattresses. Accessories which are surface mounted are to be supported by timber battens.

Unless stated otherwise on the electrical drawings' accessories are to be:

- | | |
|--------------------------------------------|-------------------------------|
| • When recessed in walls | MK Edge Antique Brass. |
| • When surface on walls | MK Edge Antique Brass. |
| • Within ceiling voids, plant areas | MK Metal Clad. |
| • External accessories | MK Masterseal. |

Final Connections

The Electrical Contractor is to allow for carrying out **all** final connections for all disciplines, for instance PVC insulated metallic flexible conduits, compression glands, flexes, electrical connections / terminations etc.

Barriers & Safety Notices

Where works are being carried out in public areas the Electrical Contractor will be responsible for providing safety barriers, applicable Health & Safety warning notices.

Access Equipment

The Electrical Contractor is to include for supplying suitable access equipment, for instance mini-scaffolding, tower scaffolding etc.

Electrical Services Cabling

All cabling related to the electrical services for instance but not limited to data, A.V, security, door access etc. is to be fire rated (lsf).

Fire Stopping

The Electrical Contractor will be responsible for providing the Main Contractor with a marked-up drawing, indicating points where fire stopping is required for instance between floor levels and through fire rated walls, and suspended ceilings etc.

Fire Rated Ceilings and Walls

The Electrical Contractor is to install fire hoods for all recessed lights, PIRs etc. which are installed within fire rated ceilings. And where electrical accessories are to be recessed within partition walls, the back boxes are to be complete with fire rated putty pads, which will help with minimising acoustic cross-over between rooms.

The fire rating of the hoods and putty pads are to be same or greater than the ceiling / walls.

2.5 GENERAL LIGHTING INSTALLATION

The Electrical Contractor is to rewire and install the new light fittings as indicated on the electrical drawings. The Electrical Contractor is to allow for all boosters necessary to allow the lights to be dimmed via Bluetooth.

Each light fitting is identified with a reference letter/number of details of which are shown on the tender drawings. The contractor shall inform the Consulting Engineer prior to ordering the light fittings and formerly notify him of the order date. The light fittings specified shall be used and no deviations from this specification will be allowed without **written** confirmation from the consulting engineer.

All lighting shall be installed in accordance with the manufacturer's method of supporting, Surface fittings secured to plasterboard ceilings shall be fixed with 4 8s gauge screws into timber pattresses. The use of ready drive fixing devices will not be permitted.

Suspended lights are to be adequately supported to the false ceiling structure / main building fabric.

All final connections to suspended light shall be carried out with a Greg type plug in rose fitted with heat resistant LSF cable e.g. Ashley Rock or MEM Ltd and final flexes shall be limited to a maximum distance of 1800 mm. Within areas where the lights are to be surface mounted on plasterboard / MDF ceilings cables are to be routed within the ceiling voids. Where lights are to be surface mounted direct to the building fabric (no false ceiling) surface mounted conduits are to be installed with all cable passing through light fittings being heat resistant flex.

All switches shall be of the grid switch pattern and rated at 20 amp. All switches shall be complete with a suitably sized cover plate.

All final circuits are to be provided with an independent C.P.C as detailed within the circuit schedules. All switch positions shall be fitted with an earthing terminal and flying lead for the connection of the grid earthing plate.

Where multi-gang grid switches are being used the Electrical Contractor shall allow for the correct number of blanks. All light switches shall be 20amp rating single pole type and shall be 1-way, 2-way, intermediate or double pole key as indicated on the drawings.

All light switches, PIR units, fan isolators, etc shall be externally labelled as applicable; the external labels are to be dymo tape type, transparent tape with black lettering with the circuit reference, and the name of the item they control, as applicable.

The Electrical Contractor shall agree a format for the labels with the Consulting Engineer before placing the order.

All luminaries shall be installed in accordance with the manufacturer's method of supporting.

The supply of light fittings shall be as detailed, the supply shall mean all items required to form a complete installation with lamps, starters, diffusers, drivers and fasteners no deviation shall be made to the specified fittings whatsoever. Lights recessed into ceiling tiles are to be supported by 595mm x 595mm wooden pattresses.

Prior to ordering the Electrical Contractor is check with the manufacturer that the ballast(s) and switches will be compatible i.e. analogue, Dali or digital ballasts with standard, re-tractive dimmer switches as detailed on the electrical drawings.

External Lighting

The Electrical Contractor is to allow for replacing the existing lamps within the existing external lights with 9W 4000K LED lamps. A new external light is to be installed at the new main entrance.

The external lights are to be rewired and controlled from a new photocell and time clock configuration.

2.6 EMERGENCY LIGHTING INSTALLATION

The emergency lighting shall be provided by integral non-maintained emergency exit signs or separate twin spotlights, which are to be wired onto local lighting circuits.

All the fittings are as indicated within the lighting schedule on the tender drawings. The general method of installation shall be as per the general lighting installation.

Remote 3-hour 230V non-maintained battery packs are to be provided for the spotlights and external wall lights. The battery packs are to be contained in a fire-proof enclosures located in discreet locations. All cabling from the battery packs to the lights is to be in black FP200.

Double-pole test key switches have been indicated on the electrical drawing, the cover plate or each individual switch unit shall be engraved with the words "Emergency Test Switch" on each of the individual switch plates, or switches. The use of an adhesive label will not be permitted. The Electrical Contractor shall install the key "test" switches as indicated on the electrical drawings. The keys for the test key switches are to be handed over to the Client upon handover.

2.7 SUPPLY OF LIGHT FITTINGS

The supply of light fittings shall be as detailed on the tender drawings. The supply shall mean all items required to form a complete installation with lamps, starters, drivers, diffusers and fasteners as applicable.

No deviation shall be made to the specified fittings without prior **written** consent from the Consulting Engineer. The contractor shall place all orders within good time to allow the lighting fittings to be provided at the correct stage within the programme of works and shall notify the consulting engineer once the order has been placed.

2.8 GENERAL POWER INSTALLATION

The power requirements shall comprise of general-purpose socket outlets, fused spurs, radial circuits as detailed and located as per the tender drawings. These shall be installed as per the general system of wiring with cables installed as previously noted within the general wiring system.

- a) Installation of general power sockets to wall areas
- b) Installation of power to specialised sub-contractors' equipment.
- c) Installation of Client provided equipment.

All socket outlets shall be positioned as detailed on standard drawing mounting height drawing unless otherwise indicated upon the tender drawing. As stated earlier all new circuits are to be protected by 30mA RCBO units.

Socket outlets shall be as noted within the equipment schedule detailed within Section 3 Appendix A as indicated on the electrical drawing.

All power accessories shall be externally labelled as applicable; the external labels are to be dymo tape type, transparent tape with black lettering with the circuit reference, and the name of the item they control, as applicable. The Electrical Contractor shall agree a format for the labels with the Consulting Engineer before placing the order.

The external sockets are to be wired in 3-core swa/xlpe/lsf buried direct at a minimum depth of 450mm, with the 3rd core and armourings being the CPC. The Electrical Contractor is to install a double-pole key switch which will allow the building user to isolate the sockets when they're not in use.

2.9 SUPPLIES TO MECHANICAL SERVICES.

Throughout the area there are a number of Mechanical items requiring power supplies. These are generally fans, and kick space heaters. These are indicated upon the tender drawings. The method of installation shall be as per the general method of wiring with the cabling contained in earthed conduits.

The Electrical Contractor is to allow for **all** containment, 400V / 230V wiring, terminating, final connections i.e., PVC coated metallic flexible conduits, electrical terminations etc. and testing associated with the mechanical services. The Electrical Contractor is to obtain wiring diagrams from the Mechanical Contractor. The minimum cable size for the mechanical wiring is 2.5mm.

It is the Electrical Contractors responsibility to liaise with the Mechanical Contractor in all aspects of their disciplines, to ensure they are fully aware of the electrical requirements associated with the mechanical services and all costs must be included for within the tender summary. No claims for additional monies will be entertained if there are any discrepancies between the items.

Boilers

The Electrical Contractor is to wire, terminate and test all boiler supplies according to the boiler manufacturers installation instructions.

Extract Fans

All toilet extract fans are to be controlled by local lighting circuits c/w run-on timers, fans in all other areas are to be controlled via fan controllers.

Controls Wiring Containment

The Electrical Contractor is to wire, terminate and test all mechanical controls wiring. They are to obtain wiring schematics from the Mechanical Contractor.

2.10 FIRE ALARM INSTALLATION

The Electrical Contractor is to employ the services of a accredited Fire Alarm Installer who shall undertake the works indicated on the electrical drawings.

The system shall be in full compliance with BS 5839 & BS EN54-23 2010 and subsequent amendments and shall be commissioned by the manufacturers approved agent.

The fire alarm installation shall be based on the general method described above; all new fire alarm cabling is to be FP200 either installed on the existing containment or P clipped direct to the building fabric every 300mm. All cabling within partitions, recessed in walls shall be contained in uPVC conduits.

The Fire Alarm Installer will be responsible for providing the Electrical Contractor with marked up drawings indicating all cable routes, device positions etc. allowing the Electrical Contractor to include this information on their As Fitted drawings.

Final connection to devices shall be carried out with proprietary cable glands and conduit boxes to provide a complete system. To allow smoke / heat sensors to be fixed, the cables shall be terminated via a conduit box fixed behind / through the ceiling to finish flush with the underside of the ceiling so that the sensors fix close to the ceiling, when terminating onto a device fixed to the suspended ceiling.

Conduit boxes shall be supported with timber battens to ensure that no stresses are place upon the fire alarm connections.

All circuit wiring shall be provided, installed, and connected in accordance with the requirements of the panel manufacturer and to suit the system indicated on the drawings. The Electrical Contractor shall obtain all the necessary information, schematic wiring diagrams etc., direct and shall pay any charges made by the Equipment Manufacturer for the information diagram etc.

The Electrical Contractor is to allow for additional lengths of trunking; conduits etc. bunches of cables tie-wrapped to screwed rod will not be accepted.

At the appropriate stage of the works the Electrical Contractor shall draft a schedule of equipment giving the proposed “address” zone, sensor, loop, location, text for display etc., with the assistance of the equipment manufacturer and submit the schedule for comment to the Client through the Consulting Engineer.

All devices shall be clearly labelled to indicate the information described above.

This schedule must be produced in sufficient time (minimum of 4 weeks) to allow it to be considered, commented upon and approved prior to the programming of the software for the system by the equipment manufacturer where applicable, the Specialist Contractor will be responsible for providing the software / system programming as part of this section where applicable.

A copy of the final schedule shall be included in the manufacturer’s manual.

The Electrical Contractor shall protect all automatic sensors etc., from contamination by dust etc., up to the time the fire alarm system is handed over to the Client.

Every device on the fire alarm system shall be fitted externally with a label, which shall give the loop number to which the device is connected, the address of the device and the zone to which it is connected. In the case of automatic sensors two labels shall be fitted one to the base of the device and one to the head of the device. The exact details of the labelling shall be agreed with the contract administrator / engineer. During the execution of the works the contractor shall mark up a set of drawings indicating the route taken by the loop wiring to the associated devices, this shall assist in the commissioning of the system.

The “As Fitted / Record Drawings” shall include line diagrams indicating the wiring arrangements, schematic diagrams and wiring diagrams indicating connection details etc. The reference given to each device shall be indicated on the record drawings.

The Electrical Contractor shall provide a loose-leaf detailed Logbook which shall list every device including sounders together with its address, identification, reference, type, location and where applicable the temperature setting of the device. The Logbook shall be available in its final form for the “Hand Over” meeting. In all other aspects the logbook shall comply with the British Standard Specification.

The Electrical contractor shall include for all costs and shall arrange all work as necessary for the panel manufacturers to prepare and install all the necessary software and /or equipment into the fire alarm panel.

The tender shall include all costs for the testing and commissioning of the installations to be carried out in accordance with the procedures set down by the panel manufacturer and to suit the programme of works.

The tests shall include smoke and heat detector tests on all sensors in addition to the operation of the test facilities at all manual call points. Testing shall include between the network panels. The testing and commissioning shall be carried out in accordance with the British Standard Specification and Codes of Practice.

Typed copies of the Testing & Commissioning Certificates shall be included in the Maintenance Manuals and a copy of each shall be sent to the Contract Administrator following the testing and commissioning operations.

No additional costs will be allowed in respect of abortive visits to site made by the commissioning personnel; therefore, the Electrical Contractor must ensure that his work & the Specialist Sub-contractors work is in order prior to calling the commissioning personnel to site.

The Electrical Contractor will provide and fix a true to scale, zone indicator location plan showing all zones adjacent to all the fire control panels. All rooms’ corridors and points of exit from the building shall be shown on the plan. The plan shall be mounted on the wall with the correct orientation to the wall in question.

The plans shall be manufactured from ivorine type material with the engraving in red on white background. The plan shall be produced to a practical and realistic overall size. The proposals for the plan shall be approved Contractor Administrator prior to manufacture.

The Electrical Contractor shall carry out testing and commissioning in accordance with Part 6 of the I.E.E. Wiring Regulations BS 7671 2018. All copies of the completed **NICEIC** test certificates shall be forwarded to the Consulting Engineer who may wish to witness the testing. To this end a minimum of 7 days’ notice shall be provided to allow the Consulting Engineers opportunity to visit site at a mutually and convenient day to both parties.

The Electrical Contractors attention is drawn to Regulation 641.1 where he will be expected to carry out during erection, on completion and before putting into service inspections and tests of his work.

The fire alarm Contractor is to include for the first 12 months maintenance confirming this within their quote.

As Fitted Drawings and O&M Manual

The fire alarm installer will need to provide marked up drawings in order for the Electrical Contractor to include the information on their As Fitted drawings

At the end of the 12-months defects period the Fire Alarm Installer is to test and inspect the fire alarm installation, providing all relevant certification to the Architect, Consulting Engineer.

2.11 DATA & TELEPHONE INSTALLATION

A provisional sum has been included for the Wi-Fi installation.

2.12 SECURITY INSTALLATION

N/A

2.13 AUDIO-VISUAL INSTALLATION

N/A

2.14 EARTHING & BONDING

The Electrical Contractors attention is drawn to the IEE Wiring Regulations 18th Edition 2018 upon which all earthing and bonding requirements for the installation must relate. All earthing conductors and any equipotential bonding conductors shall be installed in accordance with the IEE Wiring Regulations, and it will be the Electrical Contractors responsibility to provide and install ivory labels reading “Safety Electrical Connection Do Not Remove” and these will be installed utilising engraved labelling with characters of not less than 4.7mm high and be fixed adjacent to permanently fixed to any particular earth terminal.

As part of their works the Electrical Contractor is to update the main earth bonding conductors to the gas, water, structural and lightning protection installations.

2.15 TEST & COMMISSION

The Electrical Contractor shall carry out testing and commissioning in accordance with the 18th Edition of the IEE Wiring Regulations 2018.

The Electrical Contractor shall carry out testing and commissioning in accordance with Part 6 of the I.E.E. Wiring Regulations. All copies of the completed NICEIC test shall be forwarded to the Consulting Engineer who may wish to witness the testing. To this end a minimum of 7 days' notice shall be provided to allow the Consulting Engineers opportunity to visit site at a mutually and convenient day to both parties. The Electrical Contractors attention is drawn to regulation 641.1 where they will be expected to carry out periodic inspections of his work in accordance with this Regulation.

All new accessories i.e., light switches, socket outlets are to be suitably labelled with their circuit reference.

Existing Distribution Boards

The Electrical Contractor is to allow for carrying out full periodic inspections and tests on all existing circuits and provide typed NICEIC test certificates detailing any faults.

2.16 "AS FITTED" DRAWINGS.

The Electrical Contractor is to provide As Fitted Drawings and Documents in accordance with Section 22 of the P.S.A. M&E No. 1 Standard Specification and as detailed within Section One of this document. These drawings shall be provided prior to handover for checking during on site inspections. On approval the contractor shall supply the relevant copies required by this specification.

Any changes to the existing electrical services including supplies to the mechanical services are to be indicated on the As Fitted Drawings.

2.17 OMISSION OF THE WORKS.

Omission of the works whether in whole or part shall not allow the Contractor to claim for loss of profit, and or anticipated overhead recovery.

2.18 BUILDERSWORK.

All builders work i.e., cutting out of holes, chases, slots through floor slabs etc., shall be carried out by the Main Contractor. The Electrical Contractor must liaise carefully with the Builder and if necessary, prepare any detailed builders work drawings that may be necessary.

SECTION 3
APPENDIX A

ELECTRICAL EQUIPMENT SCHEDULES

Distribution Boards	Existing Schneider Electric (formally known as Merlin Gerin)
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30mA RCBO'S as indicated on the electrical drawings.

Lighting Switches	MK
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Socket Outlets	MK
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Electrical accessories	MK
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Dado trunking	REHAU Profila Data Version (180mm) 2-compartment Complete with all bends and accessories or Equal
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Isolators schedule

Fan Units in voids	MK
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Local fan isolators	MK
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Rotary Isolator	MEM
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SECTION 4

SUMMARY OF TENDER

NETHER ALDERLEY PARISH HALL
ELECTRICAL TENDER SUMMARY

<u>To Be Completed in Full</u>		<u>As Specification</u>	
1.	Main Contract Preliminaries	£	
2.	Disconnection and strip out of Existing Installations	£	
3.	Supply and install new RCBOs	£	
4.	Supply of light fittings	£	
5.	General lighting installation	£	
6.	Emergency lighting installation	£	
7.	General power installation	£	
8.	Containment installation	£	
9.	400V / 230V Supplies and containment for mechanical services	£	
10.	Disabled toilet alarm	£	
11.	Fire Alarm Installation	£	
12.	Access equipment i.e. scaffolding including barriers & safety notices	£	
13.	Earthing & Bonding	£	
14.	Test & Commission	£	
15.	As fitted drawings & manuals	£	
a.	Any other items not included above		
a.		£	
b.		£	
c.		£	
Sub-total:		£	
<u>Provisional Sums</u>			
16.	Additional Client requirements	£	1,500.00
17.	Additional mechanical services requirements	£	500.00
18.	Wi-Fi- Installation	£	2,500.00
19.	Contingency Sum	£	1,500.00
Total Electrical Services Tender		£	_____
		Exclusive of VAT	

Tender Figure (in words)

Name: Signed:

Date: Company: