

SCOPE OF WORKS

for

**The Lighting and Small Power Works
and
The Alterations to Heating & Ventilation**

at

**Parish Council Offices
Lady Ella Drive
Chorleywood**

on behalf of

Chorleywood Parish Council

Produced by

The logo for eCal Consulting Limited, featuring the word 'eCal' in a bold, sans-serif font. The 'e' is a dark purple color, and 'Cal' is a lighter purple color.

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PART A CONTRACT PRELIMINARIES**A1.0 Contract Overview**

This scope of works is concerned with the Electrical and Mechanical Engineering Services for the improvement of the MEP services within the Parish Council Offices of Chorleywood Parish Council

The complete installation shall be in accordance with the standard National Engineering Specification, relevant Codes of Practice, British Standards, legislation, regulations, etc., together with this Scope of Works and tender drawings. Any conflict between this specification and the National Engineering Specification, the NES will take precedence.

The contractor shall include for the supply and installation of all necessary materials and equipment for the MEP services installation described within this Scope of Works.

A1.1 Form of Contract

The form of Contract shall be as detailed in the Contract Administrators documentation or the invitation to tender letter.

A1.2 Names of Parties

Client	Chorleywood Parish Council
Contract Administrator	Ashridge Surveyors
Quantity Surveyor	Ashridge Surveyors
Structural Engineer	TBA
M&E Consultant Engineers	eCal Consulting Ltd
Principal Designer	Ashridge Surveyors
Contractor	The company or persons to whom the main Contractor has sub-let the work as described within this Scope of Works and has successfully tendered the works.

A1.3 Description of Site

The site of the proposed works is at the Parish Council Offices, Chorleywood Parish Council, Lady Ella Drive, Chorleywood, Herts.

For the purposes of this Contract the extent of the works relates to those areas designated in the scope of works and by the tender drawings.

The existing offices are to be refurbished with a new entrance and with a re-planned interior office layout. Some of the electrical installation is to remain however the lighting and most of the general small power is to be replaced. The exact extent is as shown on the tender plans issued with this document.

The heating installation is to be altered as shown on the tender drawings to accommodate the changes in partition planning and the use of the offices.

A1.4 Tender Period

The Tender Period is as defined by the invitation to tender letter issued by the Client or the Quantity Surveyor or as documented in the invitation to tender letter.

A1.5 Contract Period

The Contract Period is stipulated in the invitation to tender as issued by the Quantity Surveyor. In the absence of further information, a six week programme is to be assumed.

A1.6 Working Hours

Working hours on site shall be restricted as directed in the main contract documentation as issued by the Quantity Surveyor. The contractor shall make all due allowances for any out of hours working specified in section B or considered necessary at Tender stage based on the assessment of work required in the programme duration.

A1.7 Tender Drawings

This Scope of Works shall be read together with the drawings listed and the main contract documentation used as an indication of the Client's requirements. The contractor is responsible for the co-ordination, installation, commissioning and setting to work of the full installation.

The Contractor shall note that no other drawings will be produced. Any additional scheme drawings shall be prepared by the successful tenderer for approval by the Contract Administrator or his appointed agents.

A1.8 Safety Precautions

The Contractor shall ensure that all safety and welfare measures required under or by virtue of any enactment or regulation are strictly complied with and these shall include but not be limited to:

1. The Construction (Lifting Operations) Act.
2. The Construction (General Provisions) Act.
3. The Construction (Health and Welfare) Act.
4. The Construction (Working Phases) Act.
5. The Factories Act.
6. The Health and Safety at Work Act.
7. Electricity at Work Regulations 1989.
8. Control of Substances Hazardous to Health Regulations 1988 (COSHH).
9. The Construction (Design & Management) Regulations 2015
10. I E E Wiring Regulations (18th Edition - BS7671) including latest amendments.
11. Waste Electrical and Electronic Equipment (WEEE) Regulations
12. Restriction of Hazardous Substances (ROHS) Regulations.
13. BS8300 Disabled Persons Discrimination Act.

All necessary precautions shall be taken to safeguard against damage by fire or explosion where the execution of work involves the presence of flame or sparks.

Flammable or vaporising liquids shall only be used in accordance with the regulations applicable to the storage and use of these products.

A1.9 Contractor to Inform Himself Fully

The Contractor shall be deemed to have examined the site, if access thereto has been made available to him. If any particulars required cannot be obtained from this examination together with the Conditions of Contract, Scope of Works, schedules and drawings, application for the information shall be made to the Contract Administrator during the tender period. The Contractor shall have no claim because of want of knowledge in any respect to the contract.

A1.10 Provisional and Prime Cost Sums

The Contractor shall include in his tender for the provisional and/or prime cost sums where listed in the Scope of Works, Section E.

The words "provisional sum" shall mean a sum to be spent (or not), at the discretion of the Contract Administrator. No guarantee is given or implied that the expenditure of such sums will be authorised in whole or in part. The sums stated shall be deemed to include establishment charges and profit etc., and shall be included in the contract price as they stand without addition of any kind.

The full amount of all such provisional sums shall be deducted from the final account to which there shall be added the actual cost of such work as is carried out against the "provisional sum".

The words "prime cost" or initials P.C. applied to goods to be supplied and/or fixed by the Contractor shall mean, unless otherwise stated, the net sum paid to the merchant or manufacturer after deducting carriage and the cost of fixings where so stated in the Scope of Works. To this sum the Contractor shall add separately for establishment charges and profit, all of which must be included for in his estimate at the time of tendering.

Any part of the whole of any P.C. sum unexpended will be deducted from the contract price, together with same proportion as is allowed for establishment charges and profit etc. in the Contractor's original estimate.

A1.11 Schedule of Rates

The Contractor, within fourteen days of being requested to do so, shall submit a Schedule of Rates showing in detail the quantities, prices and extensions used in the calculations of the tender price. The Contractor must accept the responsibility for the accuracy of any quantities and extensions contained therein.

No adjustment will be made to the tender price in respect of any alleged inaccuracies and the exclusion of any item in the Schedule will not relieve the Contractor of his obligation under the contract as set out in this Specification and associated drawings.

If it is not practical to apply net rates, such alterations, additions and omissions as are ordered, shall be valued at rates or prices as may be agreed with the Contract Administrator but where the valuation of the said alterations, additions and omissions cannot be agreed, then on the basis of the value of the materials used and labour employed thereon in daywork at the rates in the Schedule of Daywork contained in this Scope of Works.

A1.12 Schedule of Labour and Material Daywork Rates

The Contractor is required to submit with his form of tender, the schedule of labour and material daywork rates in section E, duly completed, on which he will be prepared to carry out his work authorised to be done on a daywork basis. The labour rates may be on a fixed rate per hour, or on standard time rates laid down by the rate fixing body of the industry, plus a stated percentage.

A1.13 Assessment of Interim Valuations and Final Account

The Contractor shall provide, when required, a competent surveyor to co-operate with the Clients Quantity Surveyor in any measuring that may be necessary and in connection with the preparation of the Final Account and Interim Valuations.

The Contractor will be required to submit to the Quantity Surveyor on a monthly basis a detailed valuation application including details of materials on site.

The Contractor will disclose which of the unfixed materials and goods on site are free from and which are subject to, any reservation of title inconsistent with the passing of property as required by the Conditions of Contract, together with their respective values. When requested, the Contractor is to provide evidence of freedom from reservation of title.

The preliminaries element of the Contract Sum will be included in Interim Valuations on a pro-rata basis to the value of the work executed.

Reimbursement of Electric, Water and Sewerage Infrastructure charges will only be included in Interim Valuations following receipt of satisfactory evidence of payment to the appropriate Water Authority.

A1.14 Final Account Agreement

Any agreement made on the Final Account between the Contractor, Quantity Surveyor and Project Manager will be made subject to any audit or check, which the Employer wishes to make on the document.

A1.15 Insurances

The Contractor shall have a minimum of £5M Professional Indemnity (each and every claim) or Product Liability on design work, and £10M Employers Liability insurance. Before starting work on site, the Contractor shall submit documentary evidence and/or policies and receipts for the insurances required by the Conditions of Contract.

Where the Quantity Surveyor documents require greater cover this shall be the level required.

A1.16 Insurance claims

If any event occurs which may give rise to any claim or proceeding in respect of loss or damage to the Works or injury or damage to persons or property arising out of the Works the Contractor shall, forthwith give notice in writing to the Employer, the Architect and the Insurers & indemnify the Employer against any loss that may be caused by failure to give notice.

A1.17 Access to the site

Access to the site shall be restricted to the routes agreed with the Contract Administrator. No other access route to the site will be made available. Access for viewing during the tender period shall be arranged via the Contract Administrator.

A1.18 Use of the site

The site shall not be used for any purpose other than the carrying out of the Works.

Do not display or permit advertisements to be displayed on site without the written consent of the Contract Administrator.

Vehicles and personnel are restricted to specific approval to the area of the Works and the specified access route and shall not trespass on other areas.

A1.19 Materials Installations and Designs

All materials shall comply with the current relevant British Standard Specification unless otherwise specified and installations shall comply with the relevant Code of Practice.

Materials, installations and designs shall comply with all Acts of Parliament, statutory rules and regulations, Gas Safety Regulations, I.E.E. Regulations Latest Edition and Insurance Company requirements.

A1.20 Rejection of Unsuitable Materials

The Contract Administrator shall be at liberty to reject any plant, materials etc., and workmanship, which are in any way unsuitable, and to order the removal and replacement without any extra cost to the employers of any faulty materials or inferior work. The above shall apply notwithstanding that the Engineer may have previously nominated a particular make or type of plant or material. The Contract Administrator's decision as to what constitutes compliance with the requirements of suitability shall be final and binding.

A1.21 Sub-Letting

The Contractor shall not without the prior written approval of the Contract Administrator, sub-let the supply or installation of any part of the works, except where sub-letting is expressly called for in the Specification, or on the contract drawings, then such sub-letting shall be permitted only to the named company.

A1.22 Installation and Co-Ordination

All services, equipment and plant shall be readily accessible for maintenance purposes.

The exact positions of the plant and equipment shall be determined from the installation drawings, which shall be prepared by the Contractor with a scale of not less than 1:50.

Adequate care shall be taken to ensure uniform and tidy arrangements of all equipment and plant particularly where exposed to view.

A1.23 Alternative Manufacturers

Manufacturers names are given in the specification or drawings to indicate the standard of materials required and the Contractor shall include in his tender price for the plant and equipment specified.

The contractor may offer for consideration alternative manufacturers of equal standard if he so wishes which must be submitted on the appropriate schedule, together with the alteration in price, which the substitution if accepted will incur.

No equipment other than that specified shall be used without the prior written approval of the Contract Administrator and costs for use of equipment as specified are to be included in the tender cost.

A1.24 Workmanship

All work shall be installed in a neat and workmanlike manner, with due consideration to the design intent.

The tradesmen employed on the work shall have received good training in their work and shall be of a high standard of skill and fully qualified to be employed on the work. Where, in the opinion of the Contract Administrator any workman is not qualified, the contractor shall replace him.

The proportion of skilled and unskilled labour employed on the work shall be as approved by National Agreement.

If in the opinion of the engineer any member of the Contractors staff is considered undesirable due to conduct or other misdemeanour then the Contractor will be required to remove this person from site immediately & permanently.

A1.25 Noise and Disturbance

The works shall be carried out with the minimum noise and disturbance to the site. The use of noisy mechanical tools or equipment will only be permitted by prior arrangement within agreed periods of time. Transistor radios and cassette recorders & personal music players are not to be operated on site.

For the purpose of the tender, noisy working hours will be restricted to 08:00 - 18:00.

A1.26 Defects Liability Period

For a period of 12 months after the date of the Contract Administrator's certificate of practical completion the Contractor, notwithstanding the use of the installation by the Client, shall at his own cost make good all defects in any portion of the works, due to defective materials or workmanship or design (other than a design made, furnished or specified by the Contract Administrator and for which the Contractor has disclaimed responsibility within a reasonable time after receipt of the Engineer's instructions) which shall become apparent at any time within the said period of 12 months and shall replace such parts as do not properly fulfil the purpose for which they are specified or intended.

This clause excludes replacements that in the opinion of the Contract Administrator are due to the fair wear and tear or required maintenance. If it becomes necessary for the Contractor to replace or renew a defective portion of the installation under this clause, the provision shall apply to the portion so replaced until the expiration of 12 months from the date of acceptance by the Contract Administrator of such replacement or renewal.

A1.26 Equipment Guarantee

The Contractor in quoting for a specific piece of equipment or apparatus whether specified by name, or of a make selected by the Contractor, shall be deemed to guarantee its satisfactory performance under all working conditions that may be encountered. The duration of the guarantee shall be in accord with the defects period.

The Contractor shall be responsible for any defect that may arise during the defects liability period.

A1.27 Plant and Equipment Ratings

The duties of all plant and equipment described in the Scope of Works, or shown on the contract drawings, are nominal and the Contractor shall check with the Contract Administrator, taking into account any variations that may be made to the schemes during the progress of the works.

The Contractor will be required to demonstrate at site that the duties required of the equipment are obtainable.

A1.28 Site Accommodation

The Contractor shall allow in his tender for providing reasonable accommodation, if required, at the site to be used as offices for his site staff and the storage of his materials and shall also allow for moving such offices and stores and plant etc., from time to time, as may be required to enable the contract to proceed in accordance with the programme.

A1.29 Fire Precautions

The Contractor shall take all reasonable fire precautions in respect of his site accommodation and stores, workshops etc.

Where it is necessary for the Contractor to use any naked flame or welding equipment in the carrying out of his work, adequate protection shall be given to all other materials and personnel. The Contractor shall ensure that the employer's standard requirements for protection are observed at all times. A resilient fire watch regime shall be employed to ensure there are no risks at the close of business each day.

A1.30 Photographs

No photographs of the site or of the works or of any part thereof shall be taken, published or otherwise circulated except with the permission, in writing, of the Contract Administrator. Intimate details of the project are not to be disclosed to third parties under any circumstances.

A1.31 Contractor's Organisation

The Contractor shall designate a senior member of his office staff to be the Contractor's representative. Such a representative shall be an experienced Engineer/Designer and shall be competent and duly authorised to co-ordinate the work in the Contractor's office between his office and the site and between the Contractor and his suppliers and sub-contractors. The representative shall also maintain liaison with the Employer, the Contractor, the Contract Administrator and other parties, shall attend progress meetings and generally represent the Contractor on all aspects of his contract.

It shall be a condition of the contract that the Contractor shall maintain a full time competent representative on site at all times when work is being carried out. This representative must be able to deal with the other related aspects of the contract as specified.

A1.32 Co-operation with other Contractors

The Contractor shall, upon appointment, acquaint himself with the general arrangement and layout of the site and proposed works, including the layout of all other services.

The Contractor shall co-operate with other Contractors to ensure that service ducts, ceiling voids, trenches, plant rooms and all equipment and service distribution spaces are most economically used to accommodate the services to be installed. Where specifically indicated on large-scale detail drawings, all services must be located in the positions shown.

Any discrepancies shall be brought to the attention of the Contract Administrator before the installation is carried out. If due to failure to comply with this requirement it becomes necessary to modify or reinstall any equipment, pipework, ducting, conduits or cables, to avoid obstructing other services, the installation of which the Contractor may, in the opinion of the Contract Administrator reasonably have been expected to foresee, the Contractor shall remove, modify or reinstall such work at his own expense.

A1.33 Instructions

All instructions shall be confirmed in writing, where these instructions are used to inform, agree, confirm or vary the contracted works. All cost claims for variations will not be considered unless accompanied by a formal authorised written instruction.

"Authorised instructions" shall be deemed to be Architect or Contract Administrators instructions.

A1.34 British Standard Institution Documentation

Where reference is made to British Standards and Codes of Practice or European Harmonised Documentation, the Contractor shall assume that the standard referred to is the latest year of issue.

The British Standards Codes of Practice and European Harmonised Documents latest versions shall be those prevailing at the time of tendering and the Contractor shall ensure that at the time of tender up to the point of tender submission that the latest version is adhered to.

The whole of the work and materials to be supplied shall be in accordance with British Standards specifications.

A1.35 Drawings Generally

The Contractor shall ensure that when appointed orders are placed in good time for all materials to prevent site delay and the delivery of materials which would cause delay to completion of this contract.

Specific attention is drawn to the items that may be on extended delivery periods and the Contractors shall be responsible for any delayed and/or additional costs whatsoever occasioned by failure to comply with this requirement.

All drawings prepared by the Contractor are to be issued to the Contract Administrator and the Contract Administrator for approval. Once the approval has been obtained in writing or by means of suitably annotated drawing returns, the Contractor shall progress to the next stage of approval.

A1.36 Record Drawings

The Contractor shall submit for initial comment two copies of the proposed operation and maintenance record drawings suitably annotated as "as fitted" for the installation in question.

The documents shall then be returned with any comments relevant to facilitate the issue of final accepted drawings at the time of anticipated handover. At the time of handover the Contractor shall be responsible for providing two copies of the record drawings in print form. In addition computer aided design drawings are to be produced and the handover information shall include two CD-Roms with copies of the drawings in DXF and PDF format.

Generally the scope and number of the as fitted drawings shall be equal or greater than the number of tender drawings.

The Contractor's attention is drawn to the fact that the issue of record drawings to the satisfactory standard is part of the contract works and retentions commensurate with the outstanding works will be made until such information has been received by the Contract Administrator.

A1.37 Operation and Maintenance Manuals

The Contractor shall provide one draft copy of the anticipated operation and maintenance manual for approval. This will then be returned with comments within two working weeks to facilitate the issuing of two fully bound and indexed copies of the final operation and maintenance manuals suitably amended with the full document replicated on CD ROM in PDF & DWG file format (for drawings). These manuals shall fully describe the start-up and shut down sequences, normal operating techniques and shall provide a fault diagnosis section identifying non-critical and critical alarms.

The drawings shall show the complete installation including the sizes and runs of all services, the precise location of all services that may be buried within the structure and those sections of any external distributing services that are laid solid in the ground. The positions of all underground electric, communication, cold water and gas service points at the entry to buildings shall be clearly indicated, together with their depth and the locations of the service isolators.

A1.38 Training

The Contractor shall allow for training of the employer and the Contract Administrator or the appointed agents on completion of the installation to ensure Client personnel are fully acquainted with the correct operation and routine maintenance of the services. This shall allow for inspection and training on all aspects of breakdown procedures. This training shall also include a basic description and introduction to the control systems and the position of each item of equipment.

A1.39 Tests on Completion

The Contractor shall provide to the Contract Administrator a minimum of seven working days' notice of the proposed test dates on which the "tests on completion" will commence.

If any section of the work fails to pass these tests the said portion shall be re-tested at a later agreed date and all reasonable expenses and losses to which the employer or the Contract Administrator or his selected agents may be put by the repetition such tests shall be deducted from the contract sum.

A1.40 Removal of Rubbish

The Contractor shall remove from the site all rubbish, waste and surplus materials as they accumulate and shall as far as is practicable leave working areas in a clean and tidy condition.

A1.41 Connections to Equipment

Service connections shall conform to the items of equipment to which connections are to be made.

Before any service is first operated, safe operating conditions, pressures and temperatures shall be confirmed by the Contractor with the manufacturer.

A1.42 Segregation

Throughout the installation care shall be taken to ensure that all parts of the electrical installation are adequately segregated from other metalwork such as air or water pipes or the building structure. Where this is not possible the metalwork shall be efficiently bonded to the electrical earthing system in accordance with the current I.E.E. Regulations Latest Edition latest amendments.

A1.43 Identification of Plant

All plant 'items' including boilers, fans, pumps, associated isolators, distribution boards, all switches and control items of equipment shall be provided with white Traffolyte or equal and approved engraved labels. Labels shall be fixed on or adjacent to the equipment in an approved manner and in the most suitable positions to ensure labels can be easily read. Self-adhesive labels will not be acceptable.

Operating positions of dampers, handles and levers shall be suitably indicated.

A1.44 Painting

All plant, pipework and ironwork, other than galvanised, stainless steel, chromed or vitreous enamelled surfaces or that fabricated from copper, brass or gunmetal, shall be given protective coats of paint at the manufacturer's work or immediately after site manufacture and a second coat after erection.

In addition to the above all exposed metalwork in plant rooms and switch rooms, other than that given the requisite number of coats of paint at the manufacturer's works, shall be given one coat of primer, one of undercoat and two finishing coats to an approved colour.

Metal surfaces shall be wire brushed and thoroughly cleaned before painting.

Bright or machined surfaces that have become pitted or marked by rust shall be replaced.

Damaged paintwork on plant or equipment shall be made good to the manufacturer's finish.

All metalwork, supporting steelwork, fixing lugs, etc., supplied by the contractor shall be cleaned free of rust and grease and treated with one coat of primer and two coats of gloss paint to an approved colour.

Paint applied to hot surfaces shall be suitable for use at the appropriate temperature.

Insulation on pipework shall be painted to approved colours as described elsewhere in this specification.

A1.45 Installation Access and Plant Removal

The Contractor shall ensure that all plant and equipment is manufactured in unit sizes that can be taken through the openings provided for the installation of the plant and for its future replacement.

All items of plant including switch panels, trunking, tray etc shall be provided with facilities for disconnection without undue disturbance to adjacent elements including building fabric and fitments. This shall be achieved via suitable union or flange connections or by suitably located access hatches.

A1.46 Plant Operation

Upon satisfactory completion of the works the Contractor shall put the installation into service and from thence the Clients representative shall superintend and assume responsibility for the proper operation of the plant and equipment for a period of one week from the certified date of completion, and after the production of the maintenance documents and as-installed drawings. During this period the employer will be instructed as to the proper use of the systems.

The Contractor shall be responsible for the proper lubrication and routine maintenance of all items of plant and moving machinery during this period. The Contractor shall also instruct the employer's Engineer in the proper operation and maintenance of the installation during this period. The Contractor should note that the employer shall be at liberty to use any part of the installation which the Services Engineer may deem fit for use without in any way relieving the contractor from his responsibility under the Terms of Contract.

A1.47 Responsibility for Works

The Contractor shall be responsible for all sections of the trade contracted works whether in use, under test, or under construction until such sections of the works are formally taken over by the Contract Administrator on behalf of the Employer. Notwithstanding the above the conditions of the trade contract documentation for the supply and installation of the installation shall take precedent in this clause.

A1.48 Handover

On completion of the works to the satisfaction of the Contract Administrator a formal handover meeting is to be convened such that the installation can be formally handed over and a Practical Completion Certificate issued. At this formal meeting the list of spares, the approved operation and maintenance manuals and "as fitted" drawings shall be passed over to the Contract Administrator. Signatures for receipt of such elements shall be obtained by the Contractor.

A1.49 Tools and Spares

The Contractor shall provide and hand to the Employer before completion of the works tools and spares including one set of good quality spanners to fit all sizes of nuts, bolts etc., used throughout the plant, two sets of keys to all locks and any special tools for testing and dismantling plant and equipment.

A1.50 C D M Regulations

The Contractor shall make due allowance for full compliance with "The Construction (Design & Management) Regulations 2015" in his Tender. This shall include, but is not limited to, liaison with the Principal Designer in co-operation with Principal Contractor in maintaining the Health & Safety file producing necessary risk assessments and related documentation and complying with all Health and Safety directives.

A1.51 Working platforms

The contractor shall provide his own site access equipment for working on level floors internally within the building to access high levels up to a maximum of 3.0m.

Generally podiums are to be used for main installation works. The use of step ladders shall be limited for minor works of short duration.

All equipment to be in accordance with the main contractors site safety requirements and the Principal Designers Health and Safety Plan.

PART B Particular Specification**B1 Basis of Tender****B1.1 General Description**

The Contractor shall be responsible for the procurement, installation, co-ordination, testing, commissioning and setting to work, of the engineering services, as generally described in this Scope of Works.

The Contractor shall be responsible for maintaining compliance with the Construction (Design and Management) Regulations 2015, including the provision of Health & Safety files, relevant insurance and liaison with other members of the design professional and contracting team, to ensure that a safe working environment is maintained. Allowance shall be made to liaise with the Principal Designer at all stages, making any paperwork available to him upon request. The contractor shall also include the costs for the preparation and issue of all necessary operating, maintenance and record documentation at the completion of the works, to the satisfaction of the Principal Designer.

The installation shall be carried out in compliance with the latest editions of the following documents, applicable to all relevant elements of the works.

BS 7671 - IEE Wiring Regulations 18th Edition (latest amendments)
CIBSE Code for Interior Lighting
Electricity at Work Regulations 1989
Control of Substances Hazardous to Health (COSHH) Regulations
Health and Safety at Work Act
District Surveyor & Building Control Officer Requirements
Building Regulations Requirements
Relevant British Standards to the Construction Industry
Construction (Design & Management) Regulations 2015
WEEE Regulations
BS 8300 - Disabled Discrimination measures

The Contractor shall be responsible for the preparation of working drawings, which shall demonstrate the method of co-ordination of the electrical and mechanical engineering services with other services and with the building structure. The Contractor shall be responsible for providing all necessary information, including drawings, to allow the main contractor and any other relevant artists and tradesmen to produce co-ordination drawings to fully co-ordinate the services installation as a whole. The tendering contractor shall produce builderswork drawings and schedules illustrating all co-ordinated builderswork requirements for approval by the Structural Engineer prior to start on site.

All equipment shall be new and compatible with operating with other systems where appropriate.

The extent of works is generally as detailed in the following scope of works, and as shown on the tender drawings.

B1.2 Drawings

The contractor shall refer to the latest revision of the following drawings:

Consulting Services Engineer's Drawings

Drawing No.	Description
19003/E200	Proposed Lighting, Emergency Lighting and Fire Alarm Layout
19003/E300	Proposed Small Power & Ancillary Services Layout
19003/E500	Existing Electrical Services Layouts
19003/M200	Proposed Ventilation Layout
19003/M300	Proposed Heating Layout
19003/M400	Proposed Domestic Water Services Layout
19003/M500	Existing Mechanical Services Layouts
19003/PH200	Proposed Drainage Layout
19003/PH500	Existing Drainage Layout
19003/F500	Proposed Furniture Plan and Layout

B2 Summary of Scope of Works

The engineering services installation shall generally comprise the following items:

- a) Sub-main low voltage distribution switchgear minor alterations.
- b) Lighting installation and local controls.
- c) Emergency lighting.
- d) External lighting installation alterations.
- e) Small power installation and containment.
- f) Fire alarm installation, testing and commissioning.
- g) Earthing and bonding throughout to BS7671.
- h) Alterations to heating radiators and local pipework
- i) Alterations to hot and cold water pipework systems
- j) Alterations to the above ground drainage.
- k) New ventilation fans to kitchen and toilets

B3 Electrical Engineering Services Scope of Works**B3.1 Existing Installation**

The offices are currently in use and some of the existing installation will be retained. The extent of change is shown on the tender drawings. The existing services due to be replaced shall be carefully removed and the retained services carefully protected and prepared for re-use.

B3.2 Phased Removal of Electrical Services

The project will be undertaken as one phase and will be as per the Quantity Surveyors details.

Mechanical and electrical services are to be removed as depicted on the drawings and the contractor shall be responsible for the recycling of all removed materials. This is especially relevant to products containing polychlorinated bi-phenals (PCB) asbestos, mercury from fluorescent-lamps etc.

The contractor is responsible for making safe all electrical equipment prior to its removal.

B3.3 Incoming Utility Services

The existing electrical service to remain as existing to the rear of the property as shown on the plans and as such there are no requirements to liaise with statutory authorities.

B3.4 Metering Facilities

The existing REC meter is to be retained and no works are proposed to this element under this contract.

B3.5 Sub-Mains Distribution

The existing consumer unit located at high level in the kitchen area is to be retained and is served directly from the REC incoming service at the rear of the property. As such there are no sub-main works required under this contract other than de-energisation to facilitate protective device changes and local sub-circuit alteration.

B3.6 Earthing & Bonding

The contractor shall be responsible for the procurement, supply, installation, testing and commissioning of an earthing system, in accordance with IEE Wiring Regulations 18th Edition (BS 7671).

The incoming REC electrical service is presently provided on a TN-C-S (PME system).

The electrical system as a whole shall be fully compliant with BS 7671, with all extraneous metal work provided with supplementary bonding conductors connected to the customer's main earthing terminal (CMET) via the sub-main cabling.

The contractor shall also provide sufficient earth equipotential bonding between simultaneously accessible conductive parts to ensure that no potential touch voltages or voltage differences exist. This shall include cross bonding between pipework services, large elements of metallic screens, fixings or equipment.

B3.7 Small Power Distribution

The contractor shall be responsible for the procurement, installation, testing, commissioning and setting to work of the small power installation, as described hereunder. The small power shall generally be in accordance with the approved equipment schedules contained within Appendix D2, and mounting height details given in Appendix D3 of this Specification.

The system of wiring shall be by means of two core and earth double insulated cable (6242Y LSF) routed laterally above ceiling joists to pick up existing conduit points and new vertical dado trunking to be installed from floor to ceiling at desk positions as shown on the tender drawings.

The dado shall be as MK Prestige UPVC three compartment finished in white or of equal and approved manufacture, and shall be complete with stop ends, end feeds, back boxes and sockets compatible with the system as a whole.

Conduit drops from high level above the ceiling to low level, shall be recessed within the building fabric. This shall apply to new walls or ones due to be fully plastered and painted. Generally, conduits shall be recessed, unless otherwise identified on the drawings or in the rear stores or plantrooms.

All sockets are to be fully bonded from socket to back box, and general CPC conductor in a triangular fashion.

The contractor shall ensure that for the trunking all covers are neatly cut. Where cables cross over compartments, the specific cable divider and cross over bridges shall be used.

In general, all ring circuits shall be standard configuration 32A rated with 4.0mm live, neutral and earth cables, using 6242Y cables. All radial circuits shall generally be 20A rated with 4.0mm live, neutral and earth cables or as detailed in D4. Where the distribution board schedules contradict with the above, the distribution board schedules shall take precedence.

All of the circuits required under this tender are as detailed in the distribution board charts, Section D4.

Other miscellaneous small power supplies, such as water heaters, local extract fans, domestic appliances such as hand dryers etc., shall be provided with fused spur units, as detailed on the tender drawings, and shall have an extension conduit to the rear of each device to allow for a fully concealed wiring system. Where final connections are by means of flexible cable, the extension from the spur unit shall terminate in a flex outlet plate.

B3.8 Lighting Installation

The contractor shall provide and install a full lighting installation in accordance with the specification details and drawings. The types of luminaires are as specified in Schedule D1, with accessory mounting heights in Section D3 of this Scope of Works, unless otherwise detailed on the tender drawings.

All luminaires specified are to be confirmed in writing by the Client or representative prior to ordering.

The lighting installation shall in all instances emanate from the local distribution board as detailed on the tender drawings and the distribution board schedules in Section D4. From the ceiling space switch drops shall route via recessed 20mm or 25mm HIP conduits to recessed metal back boxes.

Any conduits shall be fixed by proprietary metal spacer saddles if not plastered in.

Generally, the method of switching shall be by one way, two way or intermediate multi-gang switching, as detailed on the tender drawings.

Within circulation areas and toilet/ablution areas, the lighting is to be controlled by means of passive infrared detection, as generically shown on the drawings. The system to be utilised is the Mode Lighting - Setsquare IRL4 units or similar for toilets etc. The contact number for Setsquare Ltd is 01732 851 888. Where multiple luminaires are to be controlled by one passive infrared detector this shall be provided for by means of the distribution boxes manufactured by the supplier of the PIR system. The system shall operate on absence detection.

The contractor shall ensure that for ceiling mounted presence detectors, a flush mounting kit is provided.

Upon completion of the installation, the contractor shall ensure that the detectors are commissioned to maximum delay (35-40 mins).

All luminaires to the building are to be considered to be new and in accordance with Schedule D1 of this Specification - subject to confirmation.

The contractor shall ensure that all lamps are supplied suitable for the luminaire concerned, in accordance with the schedule in Section D.

The lighting installation shall be fully re-wireable through the containment systems identified above, to allow for changes, modifications etc. without damaging final finishes.

Multiple gang switch plate of more than 3 gangs shall again be engraved, but shall be finished as the schedules in section D.

All lighting switches are to be as the MK Logic Plus, white or the grid switch equivalent c/w modular front plates.

The contractor shall be aware that there are a number of extract fans located throughout the building. These are to be supplied and installed by the contractor. The electrical supplies via fan controllers are also to be provided by the contractor. Generally, these are connected to the power circuitry and controlled via time clock only.

Generally, all luminaires within wet areas containing water facilities or damp atmospheres shall be adequately gasketed to avoid ingress of moisture and shall be a minimum of IP56.

At the completion of the works, the contractor shall fully test and certify the lighting system in accordance with the requirements of BS 7671 generally as identified.

B3.9 Emergency Lighting System

The building shall be provided with emergency and escape lighting in accordance with BS 5266 and as shown on the tender drawings. The system generically shall be independent self-contained battery units and shall be ICEL approved. Each battery and charger unit shall be suitable for three hour duration operation once mains have failed. Throughout the building, escape routes have been designated and these have been provided with either exit lights with Euro Running Man legends or standard illumination lights utilising, in general terms, the normal lighting lamp but on battery inverter units. For each changeover unit, the battery and inverter/charger unit shall be located adjacent to the luminaire fixed to the underside of the soffit. The luminaire shall be properly converted such that a green light emitting diode is installed in the ceiling flange of the luminaire to identify mains present and charging healthy.

The types of luminaire are as specified on the tender drawings and in Section D1 of this Specification.

In principle, the emergency lighting live circuit shall emanate from the circuit feeding the requisite area of normal lighting, either from the miniature circuit breaker at distribution board, or at the live side of any wall switch. Each emergency lighting circuit shall be provided with an emergency lighting test switch, which shall break the permanent live to the luminaire for testing purposes.

Where the emergency lighting test switch is part of the main bank of light switches for that area, the electrical contractor shall take the permanent supply from the live side of the lighting switch for the area of emergency lighting controlled.

The emergency lighting shall be installed in the same containment systems compliant with Section B3.9 (Lighting Installation) as appropriate.

The contractor shall ensure that all emergency exit signs are illuminated with green LED's as dictated above, and provided with the EEC Directive Running Man Legend type transfers with direction arrows as shown on the tender drawings or as required by Building Control.

Where emergency exit signs are shown on the tender drawings above exit doors, they shall be fixed directly above the top of the architrave. All luminaires for emergency purposes are pre-fixed E and the type of luminaire is as detailed on the schedule of luminaires in Section D1.

The contractor shall test and commission all of the emergency lights at the completion of works in accordance with BS 5266, and he shall provide logbook records and certification to verify this. The contractor shall also allow for witnessing of testing of the emergency lighting system on a sample basis by the Contract Administrator.

B3.10 Fire Alarm Installation

The contractor shall allow for replacing all existing fire alarm and detection devices which is presently by means of standalone combined smoke/heat detectors with the NEST system devices to allow for remote signalling to comply with BS 5839 (2002). These NEST units are to be mains fed from their own dedicated 6 ampere circuit from the local consumer unit.

The contractor shall make due allowance for full commissioning and certification to the satisfaction of the Client's representative together with a full functional test of all devices on the system, including audibility readings on a pre-calibrated test instrument, in accordance with BS 5839 (2002). These calibration certificates and test results are to be provided and issued to the Contract Administrator for inspection and deliberation.

Allowance is to be made for a Client training exercise to be carried out at the end of the works.

B3.11 Mechanical Services Wiring

The contractor shall be responsible for all wiring of mechanical plant of control and power supplies to small motors, local fans and independent pumps as detailed on the tender plans. The contractor is to include in the cost for all terminations, cabling, switchgear etc, as well as final terminations onto each item of plant in this respect.

B3.12 Voice & Data Communications

The contractor is to provide Cat 5e LSOH supplies to all voice and data points as indicated on the tender drawings (one cable per port). These cables are to be routed above the ceiling to the data switch position in the small interview office, and terminate at high level in a 6U wall mounted termination rack and drop from above to the points of utilisation.

The wall cabinet is to be complete with mounting rails, glass door, two 24 way patch lead racks and a 6 way pdu internally.

The cables shall be fully terminated and tested with a Fluke/Pentascan tester with full results issued to the client.

B.13 TV and FM Aerials

No requirement.

B3.14 Disabled Persons Call Alarm

No requirement.

B3.15 Hand Dryers

The contractor shall procure, supply, install, commission and test electric supplies for hand dryers in toilets as shown on the tender drawings. The hand dryers shall be procured, installed and commissioned by the electrical contractor and shall be of the of the Biodrier Business drier with brushless motor and antibacterial filter. The hand dryers themselves shall be serviced electrically via a 13A double pole fused connection unit at high level above the hand dryer served via recessed conduit from the ceiling. The connection between the spur unit and the hand dryer shall be by means of a recessed 20mm HIP conduit terminating in a stop end conduit box behind the hand dryer location. The electrical contractor shall supply, fit and test the hand dryer, cabling and terminations and shall supply test certification for fit for use.

B3.16 Intruder Alarm System

No requirement.

B3.17 CCTV Installation

No requirement.

B3.18 Access Control System

No requirement.

B3.19 External Lighting

The contractor shall be responsible for retaining the existing points but to provide new luminaires as per the tender drawings and this scope of works.

B3.20 Lightning Protection

No requirement.

B3.21 Accessories

The contractor shall ensure that the accessories specified in Section D1, D2 and D3 are as per specification. No alternatives will be accepted. With regard to details etc. contained within Section B, the contractor is at liberty to offer alternative for consideration to the Contract Administrator. However, no change to the specification will be accepted without prior approval in writing from the Contract Administrator directly.

With regard to any accessories specified, this scope of works has not been intended to identify every last element that goes to make up the "whole" and it is assumed that the tendering contractor by tendering understands that certain component parts, which may not have been directly specified, are required to facilitate a safe and working installation. An example of such is the use of back box grid plate screws, front plate, rocker switch and phase barrier etc for any given light switch.

B4.0 Mechanical Engineering Services Scope of Works**B4.1 Existing Installation**

The offices are currently in use and some of the existing installation will be retained. The extent of change is shown on the tender drawings. The existing services due to be replaced shall be carefully removed and the retained services carefully protected and prepared for re-use.

B4.2 Phased Removal of Mechanical Services

The project will be undertaken as one phase and will be as per the Quantity Surveyors details.

Mechanical and electrical services are to be removed as depicted on the drawings and the contractor shall be responsible for the recycling of all removed materials.

B4.3 Ventilation

The contractor shall supply and install extract air fans to provide ventilation to the toilets and kitchen. The fans shall be provided with speed controllers and the fans shall be activated via the lighting control PIR's and shall be complete with a run-on-timer in accordance with the tender drawings.

The external louvres shall be positioned on the external face of the building as indicated on the drawings. The louvre finishes colour to be agreed with the Client.

Any ductwork shall be of rigid construction with solid ductwork connections to air terminals.

B4.4 Heating Installation

The contractor is to alter, re-balance and commission the existing heating system which is a boiler/LTHW based system. The existing is to be largely retained other than local modifications to the position of some radiators as shown on the tender drawings.

The system of copper pipework is to be retained and locally extended to feed the new radiators and those locally re-sited as per the tender drawings.

On completion the system is to re-filled and treated with inhibitor such as Fernox and fully air bled and returned to full functionality.

Further details of the means and methods are as shown on the tender drawings.

B4.5 Domestic Water Services

The Contractor, shall supply, install and commission the cold and hot water distribution within the toilets and kitchen as detailed on the drawings and Scope of Works.

The existing gas fired water combination type boiler shall be retained to re-supply the toilets and the kitchen areas.

Hot and cold water supplies shall be installed to serve all sanitary fittings with the main distribution routed at low level as per existing. Full bore ballfix type isolation valves complete with flow regulators shall be provided to each water service

connection on each sanitary appliance. All high points to be fitted with air vents and low points drain cocks. All valves shall be selected following the manufacturer's recommendations for individual fittings.

TMV3 compliant thermostatic mixing valves (fail-safe) shall be provided to all wash hand basins to limit hot water temperature to 41°C. Thermostatic mixing valves shall be accessible.

Pipework shall be copper to BS EN1057 R250. Pipework shall be assembled using copper or copper alloy, soft solder capillary fittings to BS EN1245 Part 1. Capillary joints shall be made following the fitting manufacturer's recommendations.

The sanitaryware shall be supplied free issue to the Contractor by the Main Contractor in accordance with the Contract Administrator's sanitaryware schedule. When installing sanitary fittings on walls and partitions care shall be taken not to over tighten fixings.

The water services installations shall be installed in accordance with BS8558; 2011, The Water Supply Regulations 1999 and HVCA Standard for Installation Work TR10 as a minimum.

On completion of the installation of all-new plant and pipework shall be flushed and sterilised in accordance with BS8558;2011, Water Regulations and HSE document L8.

B4.6 Above Ground Drainage System

The Trade Contractor shall provide a complete installation of sanitary plumbing from the existing below ground drainage through to termination to atmosphere at roof level to the sizes, routes and positions as indicated on the tender drawings.

The system shall be installed, tested, commissioned and set to work, strictly in accordance with BS 12056:2000 and current Building Regulations approved doc 'H'.

All soil, waste, anti-syphon and ventilation pipework material shall be in PVC-U and MUPVC to BS 4514 and BS 5255 as manufactured by Polypipe Terrain. Joints shall be solvent welded.

Appliances shall be fitted with sealing traps. Shower and sink wastes shall have 50mm deep seal, all other appliances shall have 75mm deep seal.

All 90° bends on wet sections of the soil and waste systems shall be either long radius fittings or 2 N° 45° short radius bends. 90° short radius bends shall not be permitted.

All 100mm x 100mm x 100mm 90° branches to wet sections of soil and waste pipework shall be with a radius curve. For all other sizes, branches shall be made using 1 N° 45° short radius bend and 1 N° 135° obtuse branch.

Rodding access shall be provided to the above ground drain system as indicated on the drawings. Rodding access shall be located in accessible locations.

Soil, waste and vent stacks shall be provided with full bore access of each floor level in accessible locations (i.e. behind removable access panels) above the spill over level of fittings. Access shall also be provided at all bends and branches and as necessary for carrying out testing and commissioning.

Where Air Admittance Valves are specified on the drawings they shall comply with BS EN12380:2002 Class A1 as manufactured by Messrs Mcalpine or equal.

Pipework passing through the roof shall be fitted with a weathering slate and vent guard.

Setting out of pipework shall be undertaken with reference to the Contract Administrator's details.

B4.7 Thermal Insulation

Pipework and ductwork as previously described shall be insulated as follows:-

- All mains cold water and hot water pipework concealed in ceiling voids, plant rooms and storerooms shall be insulated.
- To meet the requirements of building regulations Part L.

Insulation shall be foil faced mineral wool pipe sections or slab, with foil taped joints.

All insulation shall bear identification on the finish indicating the direction of flow and the service carried, except where exposed in public areas.

All mains cold and hot water pipework, insulated condensate drainage, fresh air and extract ductwork to be provided with service identification at 3.0m intervals and within 0.5m of each change of direction.

B4.8 Automatic Controls

All power supplies will be provided from local distribution boards by the contractor.

The extract fans shall be provided with speed controllers and the fans shall be activated via the lighting circuit and shall be complete with a run-on-timer.

PART D APPENDICES**D1 Schedule of Luminaires**

Ref	Description	Lamps	Manufacturer	Cat. Ref.
A	Slimline suspended LED luminaire finished in white c/w up/down (40/60) component.	1x LED 26.3W 3427 Lumen Ra 85 CCT 4000K	Dextra Lighting	ELL BD 12L 40
B	Recessed shallow LED downlight with white ceiling bezel & opal diffuser c/w non-dimming driver.	1 x LED 17W 1885 Lumen Ra 85 CCT 4000K	Dextra Lighting	BTECM 22 L84
C	Surface drum luminaire with removable gear tray, white body & opal diffuser.	1xLED 13.4W 1636 Lumen Ra 85 CCT 4000K	Dextra Lighting	AMED L20 C84
D	Recessed LED downlight with white ceiling bezel & specular reflector/c/w non-dimming driver.	1xLED 9.4W 937 Lumen Ra 85 CCT 4000K	Dextra Lighting	Pro-Light Mini PL-RF L14 40 C84 SP W
E	Changeover inverter for normal mains luminaire manual test provision.		Dextra Lighting	ME3
E1	Recessed Circular emergency non-maintained luminaire with white bezel and local battery.	1x3W LED Ra 85	Dextra Lighting	LED3 RO NM3
EX1	Wall mounted emergency exit sign - maintained c/w LED lamp.	1x2.7W LED Ra 85	Dextra Lighting	HBE2 LED M3 WMK + Legend
X1	Surface hooded wall mounted LED bulkhead luminaire connected to existing cabling.		Dextra Lighting	

D2 Schedules of Apparatus Mounting Heights

Unless otherwise specified, the mounting heights for accessories and apparatus shall be as follows:-

Mains & Sub-Mains Switchgear

Main Panel	- Floor mounted on metal frame.
	- Wall mounted minimum 200mm to floor.
Distribution Boards	- 1500mm affl. to CL, or as shown.
Consumer Units	- 1500mm affl. to CL, or as shown.
Isolators/Fuse Switches	- 1400mm affl. to CL, or as shown.

Lighting

Wall Lights (general)	- 1850mm affl. to CL, or as shown.
Wall Lights (stairs)	- 2000mm affl. to CL, or as shown.
Ceiling Lights (surface)	- to u/s ceiling , or as detailed.
Ceiling Lights (recessed)	- Supported by ceiling, or as detailed.
Ceiling Luminaires (suspended)	- Supported by drop rods (M8) wiring, or as detailed by manufacturer.
Light Switches*	- 1200mm affl to CL, or as shown.
Shaver Lights	- 1700mm affl. to CL or as shown.

** Where wall panels are present, advice to be sought.*

Small Power Ancillaries

Sockets (trunking)	- Centre compartment.
Sockets (wall)	- 500mm affl. to CL, or as indicated.
Sockets (kitchen)	- 1100mm to CL, or to fall on tiled joint.
Shaver Sockets	- 1200mm affl. to CL, or as shown.
Hand Dryers	- 1000mm affl. to CL, or as shown.
Spur Units for Hand Dryers	- 2200mm affl. to CL, or as shown.
Spur Units for Extract Fans	- 2200mm affl. to CL, or as shown.
Spur Units for Thermostat/Zone Valves	- 2200mm affl. to CL, or as shown.
Spur Units to Kitchens	- As sockets.
Switches (32A/45A) Kitchens	- As sockets.

- | | |
|--------------------------|--------------------------------|
| Data/Voice Comms | - To match associated sockets. |
| Voice Comms (wall phone) | - 1200mm affl. |

Fire Alarms

- | | |
|--------------------------|-----------------------------------------------------------------------------|
| Smoke Detectors | - U/s ceiling, 150mm from nearest lateral obstacle. |
| Heat Detectors | - U/s ceiling, 150mm from nearest lateral obstacle. |
| Sounders (separate wall) | - 2400mm affl. or 200mm from u/s ceiling whichever lower. |
| Manual Break Glass Units | - 1200mm affl.

- (Note: 75mm projection on parallel means of escape) |
| Loop/Isolators | - 100mm from u/s ceiling. |
| Input/Output Devices | - 100mm from u/s ceiling. |
| Fire Alarm Panels | - 1500mm affl. to CL, or as shown. |
| Spurs for F.A.P.'s | - 1200mm affl. to CL, or as shown. |

D3 Details of Service Outlets & Accessories

Note: Not all configurations are listed below.

Manufacturer	Novar MK Electrical Ltd Shrubbery Road Edmonton London N9 0PB Tel: 0208 803 3355
Socket Outlets	Finish - White Logic Plus Plastic BS 1363 Standard pin configuration Recessed galvanised back box Lighting switch and data outlet cover plates to match.
Socket Outlets (External)	Finish - Grey polycarbonate Masterseal Single unswitched 13A socket outlet Constructed to IP56
Lighting Switches	Finish - White Logic Plus Plastic 2-way, 1-way, intermediate 20A rated inductive Contractor to assess requirements for grid, pattress, plate and back box etc. Recessed galvanised back box
Sockets & Lighting Switches (plantrooms)	Finish - Grey metalclad 2-way or 1-way as shown 20A rated inductive Surface painted back box
Telephone Outlets RJ45	Finish - White Logic Plus Plastic Plain 86mm x 86mm blank plate Recessed back box or proprietary box
Data Outlets RJ45	Finish - White Logic Plus plastic Plain 86mm x 86mm blank plate Recessed back box or proprietary box

UHFTV/FM Outlets	Finish - White Logic Plus plastic Isolated double outlet with FM/TV diplexer
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All spur/connection units shall be common finish to socket outlets located within the same area and shall be complete with neon indicators and flex outlets where appropriate (as indicated).

All accessories for surface installations such as within plant rooms shall be carried out using M.K. Electric Limited surface Metal clad.

Where three phase voltages exist within any lighting switch plate, the contractor shall allow for "DANGER 400V" labels and fully shrouded phase barriers.

All equipment specified is on an equal and approved basis. Alternatives must comply with relevant British Standards and be equal in terms of quality and fitness for purpose. The tender sum however must include the units specified.

D4 Schedules of Distribution Charts

Single Phase Distribution Board Schedule



Consulting Limited

Reference:	CSU1 - Existing Consumer Unit	Client:	Chorleywood Parish Council
Location:	High Level Kitchen	Project:	Parish Offices
Size & Type:	14 Way SP & N 'A-pan' Split Load	Project No:	19003
Z(e):	Z(s):	Date:	Jan-20 Revised:
Ipsc:		Prepared by:	GCE Ch'ked by: GCE
Cable No:	1	Cable Size:	Existing retained
	Phase:		

CCT REF	PROT RATING	RCD	TYPE	CIRCUIT DESCRIPTION	CONNECTED LOAD	DIV FACTOR	DIVERS'D LOAD	CABLE TYPE	SIZE	
									Phase	C.P.C
Split Load 100A 30mA RCD module										
1	32A	-	B	Ring - Office Sockets			0			
2	32A	-	B	Radial - Oven/Cooker			0			
3	16A	-	B	Radial - Boiler			0			
4	6A	-	B	Lighting - External			0			
5				Blank Way			0			
6				Blank Way			0			
7		-	B	Spare Way						
Split Load 100A 30mA RCD module							0			
8	32A	-	B	Radial - Garage			0			
9	16A	-	B	Ring - Sockets			0			
10	6A	-	B	Lighting - Offices			0			
11				Blank Way			0			
12				Blank Way			0			
13	20A	-	B	Spare Way			0			
14	6A	-	B	Spare Way			0			
TOTALS										
					0	AMPERES				
DIVERSIFIED LOAD:										

Single Phase Distribution Board Schedule



Consulting Limited

Reference:	CSU1 - Existing Consumer Unit changes	Client:	Chorleywood Parish Council
Location:	High Level Kitchen	Project:	Parish Offices
Size & Type:	14 Way SP & N 'A-pan' Split Load	Project No:	19003
Z(e):	Z(s):	Date:	Jan-20 Revised:
Ipsc:		Prepared by:	GCE Ch'ked by: GCE
Cable No:	1	Cable Size:	Existing retained
	Phase:		

CCT REF	PROT RATING	RCD	TYPE	CIRCUIT DESCRIPTION	CONNECTED LOAD	DIV FACTOR	DIVERS'D LOAD	CABLE TYPE	SIZE Phase	C.P.C
Split Load 100A 30mA RCD module										
1	32A	-	B	Ring - Office Sockets - rewire full circuit			0	6242B/uPVC dado	4	2.5
2	32A	-	B	Radial - Oven/Cooker - rewire circuit			0	6242B/uPVC dado	10	6
3	16A	-	B	Radial - Boiler - retain and test			0	As existing		
4	6A	-	B	Lighting - External - retain and test			0	As existing		
5	6A	-	B	Radial - Smoke Detectors			0	6242B/LSF	1.5	1
6				Blank Way			0			
7		-	B	Spare Way						
Split Load 100A 30mA RCD module							0			
8	32A	-	B	Radial - Garage - retain and test			0	As existing		
9	16A	-	B	Ring - Sockets -rewire full circuit			0	6242B/LSF & dado	4	2.5
10	6A	-	B	Lighting - Offices - rewire full circuit			0	6242B/LSF	1.5	1
11	10A	-		Lighting - Toilets etc - new circuit			0	6242B/LSF	1.5	1
12				Blank Way			0			
13	20A	-	B	Spare Way			0			
14	6A	-	B	Spare Way			0			
TOTALS										
					0	AMPERES				
DIVERSIFIED LOAD:										

D5 Valves, Stopcocks, Draincocks and Aircock

Location Isolation	System	Flow	Return	From To	Manufacturer	Fig No
Regulating	LPHW	*	*	15 - 50	Hattersley	33X
				65 & above	"	M511
	HWS	*		15 - 28	Hattersley	30C
				15 - 54	"	30
	Ballvalves			15 - 28	"	100CT
	CWS	*		15 - 28	Hattersley	30C
				15 - 54	"	30
	Ballvalves			15 - 28	"	100CT
	MWS	*		15 - 54	Hattersley	BS 1010
						Stopcock
Regulating	Ballvalves			15 - 54	"	200M
	LPHW	*	*	15 - 28	"	100CT
				15 - 50	Hattersley	1432
				15 Lowflow (0.01 - 0.04 L/S)	"	1473
Draincocks	HWS		*	15 - 54	Hattersley	1432
				15 Lowflow (0.01 - 0.041 L/S)	"	1473
	All Services	*	*	15 - 40	Hattersley	81HUCC
All Services	Plantroom & on major plant	*	*			
	Generally through out building	*	*	15 - 25	Hattersley	371
Aircocks	All Services	*	*	1/2" BSP	Hattersley	425
Automatic	All Services	*	*	1/8" BSP	Spirax Sarco	AE30CU
Air Vents						
Non-Return	LPHW	*	*	15 - 50	Hattersley	47
Valves		*	*	65 & above	"	M651
Combined Vent & Drain Valves	HWS	*		15 - 50	Hattersley	47
	CWS	*		15 - 50	Hattersley	47
	MWS	*		15 - 50	Hattersley	47
	LPHW	*		15 - 50	Hattersley	85TQ
Double check valve	HWS			15 - 50	Hattersley	85TQ
	HWS	*		15 - 80	Hattersley	322
	HWS, HWS &	*		15 - 22	Hattersley	249
	CWS			15 - 22	"	249
Radiator	LPHW		*	15 BSP	Hattersley	2386 LS
Circuits						
Isolation						
Strainers				15-50	Hattersley	1053
Strainers				65-100	Hattersley	911

D6 CHLORINATION & STERILISATION**Hot and Cold Water Services**

The Contractor shall be responsible for the sterilisation of the following services:

Mains and Cold Water Services
Hot Water Service

The works shall be carried out in accordance with British Standard BS 8558 and Health and Safety Executive ACOP L8.

The Contractor shall provide a 22mm injection point after the incoming mains water stopcock or local Isolation valves to the distribution pipework for the introduction of water treatment into the mains cold water supply.

The Contractor shall provide a 22mm injection point at local Isolation valves to the cold water distribution pipework for the introduction of water treatment into the cold water supply.

The Contractor shall provide 22mm injection points to the hot water distribution to enable the introduction of water treatment to the hot water flow and return pipework.

15mm injection points to be used where the flow pipe is 15mm.

The Contractor shall have undertaken a flushing exercise after the installation and final fix of all sanitaryware before the contractor undertakes the cleaning and chlorination exercise.

The equipment, chemicals, testing and report issue shall be by the following specialist water treatment company.

Goodwater Ltd
24 Ivanhoe Road
Hogwood Lane Industrial Estate
Finchampstead
RG40 4QW

Tel: 0118 973 8268
Fax: 0118 973 5004

or equal and approved

D7 INSULATION**Pipework**

All heating and water services pipework internally and to external locations will be insulated with phenolic foam to the following thicknesses:-

Pipe mm diameter	Size	Internal Locations		External Locations	
		Insulation mm	Thickness	Insulation mm	Thickness
15		15		25	
20		15		25	
25		20		25	
32		20		25	
40		25		30	
50		25		30	

All insulation to pipework will be foil faced by the manufacturer.

All cold water pipework insulation to be vapour sealed.

Phenolic foam insulation to be obtained from and installed in accordance in full accordance with the manufacturers specifications:

Kooltherm
P.O. Box 3
Charlestown Glossup
Derbyshire SK13 8LB
Telephone No: 01457 861611

Ductwork

All fresh air ductwork between the terminal unit and external louvres shall be insulated.

Labelling

All pipe and ductwork services will be labelled in accordance with BS1710 together with text indicating the service.

All pipework services to be labelled at 3.0m intervals and within 0.5m of change of direction.

All room conditioners, ventilation units, and heat pumps to be labelled with unique reference No's as the as fitted drawings.

All valves to be labelled.

D8 PAINTING REQUIREMENTS

All pipework other than galvanised, stainless steel, chromed or vitreous enamelled surfaces or that fabricated from copper, brass or gunmetal, shall be given protective coats of paint at the manufacturer's work or immediately after site manufacture and a second coat after erection.

In addition to the above all exposed metalwork in plantrooms and switchrooms other than that given the requisite number of coats of paint at the manufacturer's works, shall be given one coat of undercoat and two finishing coats to an approved colour.

Metal surfaces shall be wire brushed and thoroughly cleaned before painting.

Bright or machined surfaces, which have become pitted or marked by rust shall be replaced.

Damaged paintwork on plant or equipment shall be made good to the manufacturer's finish.

All metalwork, supporting steelwork, fixing lugs etc, supplied by the Contractor shall be cleaned free of rust and grease and treated with one coat of primer and two coats of gloss paint to an approved colour.

Paint applied to hot surfaces shall be suitable for use at the appropriate temperature.

All services will be labelled in accordance with BS1710.

All exposed pipework within rooms to be painted by the main contractor to the Contract Administrator's specification.

D9**EXTRACT VENTILATION FANS**

The Contractor shall select all fans to meet the required duty in terms of volume flow rates, pressure drops and noise criteria.

Ref.	System/	Vol (L/S)	Res (pa)	Model	Electric Supply	Details
Toilet 1	Toilet	6 (trick) 15 (boost)	50	Lo-Carbon Tempra SELV-T	230v, 1Ph.	Continuous trickle extraction with boost facility activated via a 230v PIR sensor. Run on timer set for 20 minutes.
Toilet 2	Toilet	6 (trick) 15 (boost)	50	Lo-Carbon Tempra SELV-T	230v, 1Ph.	Continuous trickle extraction with boost facility activated via a 230v PIR sensor. Run on timer set for 20 minutes.
Toilet 3	Toilet	6 (trick) 15 (boost)	50	Lo-Carbon Tempra SELV-T	230v, 1Ph.	Continuous trickle extraction with boost facility activated via a 230v PIR sensor. Run on timer set for 20 minutes.
Kitchen	Kitchen	90	50	Lo Carbon TX9WL + wired controller	230v, 1Ph.	Continuous trickle extraction with boost facility activated via wall mounted switch.

The contractor shall be responsible for installing the speed controllers and interconnecting cables to the fans.

Fans to be manufactured by:

Vent Axia
Fleming Way
Crawley
RH10 9YX

Tel: 029 2085 8200

PART E TENDER RETURN SCHEDULES

E1 Form of Tender

Clerk of the Council
 Chorleywood Parish Council
 Lady Ella Drive
 Chorleywood
 Herts

Chorleywood Parish Council Offices, Chorleywood.

Having read the Conditions of Contract and Schedules of Work delivered to us, and having examined the drawings referred to therein, we hereby offer to execute and complete in accordance with the Conditions of Contract.

Whole of the works as described for the sum of £

(in words)

in the period stated on the invitation to tender from the agreed Date of Possession of the site phased as described in the Preliminary Sections of the Schedules of Work (where relevant).

Our offer will remain fixed and open for acceptance for a period of six months from the date for return of Tenders.

Should obvious errors in pricing or errors in arithmetic be discovered before acceptance of this offer in the priced Schedules of Work submitted by us, we agree that these errors will be dealt with in accordance with Alternative 2 of Clause 6.4 of the 'Code of Procedure for Single Stage Selective Tendering, January 1996'.

Dated this day of 20

Name Position

Company

Address

.....

Signature

Note: This tender is fixed by the employer.

E2 TENDER SUMMARY

E2.1	Disconnection, making safe and stripping out	£
E2.2	Alterations to power systems including all wireways and fixings.	£
E2.3	Alterations to lighting installation including all wireways and fixings.	£
E2.4	Alterations to emergency lighting including test facilities etc.	£
E2.5	Alteration to fire alarm system.	£
E2.6	New voice & data system including patch panel & containment.	£
E2.7	Alterations to hot and cold water systems	£
E2.8	Alterations to heating system.	£
E2.9	New ventilation systems	£
E2.10	Earthing and bonding system.	£
E2.11	Alterations to above ground drainage	£
E2.12	Testing, commissioning and setting to work all lighting and power systems.	
E2.13	Testing, commissioning and setting to work all mechanical systems.	£
E2.14	Testing, commissioning and setting to work fire alarm systems.	£
E2.15	Production and provision of record documentation and as fitted scheme drawings.	£
E2.16	Liaison with Client/Client Representative to fully demonstrate each system function.	£
E2.17	Provision of spares to Client handover.	£
E2.18	Preliminary Costs	£
E2.19	Any item not included above	£
	Specify	
	
	
	Total	£

Company

Signed on behalf of

Company

Name

Signature

Date

Note: The Contractor shall note that if he is successful a schedule of rates will be required to be provided within two working weeks of his appointment.

The Contractor shall return this specification and scope of works at the same time. Further Contract issues will be issued to the successful Contractor.

E3 DAYWORKS DECLARATION

OVERHEADS AND PROFIT

MEP SERVICES

Percentage addition on net cost of basic rate to cover establishment charges and profit.

Labour	%
Materials	%
Plant	%
Sub-contractors	%
Fares and allowances	%

SCHEDULE OF LABOUR RATES

Foreman	£	/hr
Chargehand	£	/hr
Electrician	£	/hr
Electricians Mate	£	/hr
Fitter	£	/hr
Fitters Mate	£	/h
Labourer	£	/hr

Company

Signed on behalf of

Company

Name

Signature

Date

E4 DETAILS OF SUB-LET WORK

MEP SERVICES

The contractor shall list below (and on separate sheets if necessary) details of any and every element of sub-let works included in this tender. Failure to disclose may render the tender void.

<u>Element to be Sub-let</u>	<u>Name & Address</u>
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Company	
Signed on behalf of	
Company
Name
Signature
Date

E5 SCHEDULE OF DEVIATIONS/ALTERNATIVE MANUFACTURER PROPOSALS

MEP SERVICES

The contractor shall provide a comprehensive list of Deviations and Alternatives to those specified in the standard specification and scope of works documents.
Alternatives may not be accepted after tender.

Component

Manufacturer

Company

Signed on behalf of

Company

Name

Signature

Date