Bodmin Town Council

Mechanical Specification

Aston Reef Consultant Engineers
44 C Polkyth Road
St Austell
Pl25 4LW

ASTON REEF
WE ARE COMMITTED TO CARBON REDUCTION

BUILDING SERVICES ENGINEERING

MECHCANICAL SPECIFICATION

OF

The boiler plant and heating system

FOR

Bodmin Town Council

LOW CARBONCONSULTANTS

44C Polykth Road St Austell PL25 4LW 01208 811153
www.astonreef.com enquires@astonreef.com

Part A General Description

<u>The replacement of the existing low pressure heating system in the main building and the council chamber.</u>

The existing heating systems are currently split. With a boiler in the existing 1900 listed building and a boiler in the 1970's extension.

The listed building has a one pipe system that feeds cast iron radiators on one side of the building. The amount of radiators with in this part of the building are limited and do not reflect the current use of the building, but because of the listing any new radiator will need to match the appearance of the existing emitters. If at all possible the existing cast iron emitters will need to be reused.

On the ground floor there are a number of night store heaters that are to be removed.

On the other side of the main building the heating system has been extended from the newer extension below. This feeds flat panel radiators and they will be replaced as part of the refurbishment.

The ground floor of the 1970's building has the chancel chamber and meeting room with a number of small office rooms. The intension is to remove the existing heating system and replace it with a mixture of low surface temperature radiators and fan convector units so as to have the ability to heat the areas more rapidly but still remain so form of back ground heat.

The existing boiler in the main building will be removed, as there is not the required ventilation to meet the current regulations. The external boiler room will become the main heating plant room.

Program

The proposed start of the project is 1st October 2018 with an end date of 9th November.

Pricing of Individual Items

The contractor is to note that there are an additional phase to this works that will include the alteration of the existing toilets and kitchen on the first floor of the main building. The refurbishment of the basement toilets and the formation of a kitchen area. The alteration of the disabled WC and the refurbishment and alteration of the ground floor WC area. This works will be run at the same time as the heating replacement.

The contractor must price all items individually to aid the valuation of variations through the course of the contract and to assist the employer in the evaluation for and allocation of funding.

Pre-Contract Meeting

The Contractor must allow to attend a Pre-Contract meeting at a time to be agreed prior to commencement.

Measurements

The Contractor is to take all 'on site' measurements necessary to enable the ordering or fabrication of any item prior to delivery on site and liaise with the chosen fabricator/installer/supplier and check all measurements for tender purposes.

Asbestos Analysis

An asbestos analysis has been undertaken and no asbestos was detected other than areas that were unable to be accessed, which asbestos is to be presumed until proved otherwise.

A copy of the Asbestos Refurbishment Survey Report will be made available and the test reports are contained within the Pre-Construction

Information Document. But this information is limited and therefore a new survey will be required. This will include all pipe routes and additional work. The contractor will instruct a Bodmin Town Council approved asbestos surveyor to undertake this works and provide marked up drawings to help with this works. A provisional sum has been allowed for this works.

If any other material containing asbestos is suspected, immediately stop work and notify the Contract Administrator.

Shield Environmental Services Ltd
Newham Road
Newham
Truro
TR1 2SU
Tele: 01872 279904

Listed Building Consent

The main building has a grade 2 listing on some of the internal finishes and as a result of this consent will need to be provide for both the heating system and the toilet alterations. The contractor is to make themselves available to assist with this. A provisional sum has been allowed for this works.

Site Visit

The Contractor, before tendering is advised to visit the site to ascertain the extent of the works and to inspect the facilities for access and other site conditions under which the works will be carried out.

Waste Carrier Licence

The Contractor is to produce copies of the appropriate certificates to comply with the current legislation as regards disposal to the CA as described in the preliminaries.

Building Control

The main part of the heating replacement will full within the heating contractor to notify building control of the change of the energy system. The alterations will require notification and approval by building control. This application has not been applied for at the time of the tender package, but will be on the return of the tenders. A provisional sum has been allowed for in this application and the inspection.

Structure Engineers

As there are a number of pipe routes that have to be determined and that the condition of the existing structure is unknown. Also within the alterations of the disabled toilet a wall will be required to move a structure engineer will need to be employed. The structure advice and working drawings will become part of the health and safety file.

Cornwall Design Engineering Consultants Ltd

St Austell Business Park,
Saint Austell P
L25 4FD
Tele: 01208 78655

Email us: info@cdecltd.co.uk

Protection

The Contractor is to allow to protect all floor coverings, windows, doors finishes, ceilings, furniture and fitments, glazing, plant, machinery, equipment, appliances internally, external areas, block paving, roads,

playgrounds, parking areas, and all external equipment such as security cameras, fire and security alarm systems, emergency and bulkhead lighting etc. from damage throughout the contract period, as described in the preliminaries.

NOTE: The contractor is to allow to protect all the machinery/fittings that are located adjacent the windows and doors in all the rooms, and secure the entire premises throughout the contract period.

The items are fixed and not to be moved or relocated by the office staff.

The contractor is to allow to ensure adequate protection throughout the areas of work. Any computers or IT equipment will be moved by the office staff providing adequate notice is given within the agreed programme of work to prevent damage.

The offices and storerooms will not be decanted for the work.

The contractor is to allow to move all items of furniture to allow work to proceed, protect and reinstate in original positions on completion.

CDM

The Construction (Design and Management) Regulations 2015 will apply to the construction phase of this contract. The Contractor must allow to draw up the Construction Phase Plan from the pre-construction information document and design risk assessment.

All as detailed in the full within the preliminaries.

Hot Works Permits

The contractor is to allow to adhere to the procedures as detailed in the Hot Work Permit if hot works are considered necessary. The emphasis is to employ less hazardous methods that avoid hot work. This is to comprise a work assessment and specific work method statements and completion of the relevant Zurich two page permit detailing the location

and the work involved and the precautions to be taken for each time angle grinders, hot air guns or hot air strippers, blowlamps, cutting and welding or other heat producing equipment or materials are used. Adequate notice for the CA to notify insurer and programming of the work is essential.

The contractor is to allow for the appropriate fire watch inspections 30 and 60 minutes after work has been completed and found to be fire safe as the final check-up procedure and the permit signed off by the supervisor inspecting, with the permit filed for review by the Insurer's Surveyor.

Schedule of conditions

Prior to the works commencing, it will be the Contractor's responsibility to draw to the attention of the CA any areas of damage within the area of work, externally and internally and for recording such damage both by photographic and written records. Particularly where suspended ceiling ceilings tiles are to be removed, all damage should be noted. Should subsequent damage result during the course of the works, it will be made good by the contractor at no cost to the employer.

General Conditions

Developer and Client:

Bodmin Town Council
Shire House
Mount Folly
Bodmin
PL31 2DQ

Mechanical and Electrical Design Consultants:
Aston Reef Consultant Engineers
44C Polkyth Road
St Austell
PL25 4LW

Contract Administrator
Aston Reef Consultant Engineers
44C Polkyth Road
St Austell
PL25 4LW

Principle Contractor:

Is to be determined

UTILITY SERVICE PROVIDERS:

The mechanical contractor will act as the main contractor. The mechanical contractors will provide all major items of plant. He will be responsible to install these items and provide the pipe fittings, emitters all equipment and labour required to complete this project

The Services Contractor shall size and provide builders work drawings of appropriate incoming duct arrangements to suit all Supply Undertaking incoming services fully co-ordinated with the Structural Engineers design. They shall ensure installation of the ducts as the works progresses and shall co-operate and assist the Main Contractor as necessary in the provision of Utility Services to the site by the respective provider.

They shall co-ordinate the provision of the incoming services to suit their working drawings requirements and in accordance with the requirements of the programme.

They shall provide any test notices required to ensure final connections are made in accordance with the requirements of the programme.

They shall arrange installation of metering in accordance with the requirements of the programme, and co-ordinate the installations within the Construction programme such that their installations are fully complete before the metering installation is undertaken. Where the meter provider is not known the Services Contractor shall enquire with the Contract Administrator on the preference. This enquiry shall be made immediately on appointment of the Main Contract.

GENERAL:

Where used in the documentation the following definitions shall apply and shall be interpreted as such:

Works: All services shown on the drawings and described in the specification shall be deemed to be included in the contract.

Drawings: The tender drawings.

Elsewhere: Detailed or specified elsewhere in other clauses, sections, shown on the drawings or contained in the specification or Conditions of contract.

Services: Services means the inclusion of one or more system.

System: All equipment, accessories, controls, supports and ancillary items, including supply, installation, connection, testing, Commissioning and setting to work necessary for that section of the Works to function.

Design process: All the activities necessary to convert design input into design output

Review: Give notice and submit details to the CA for his comment and review, which shall be granted in writing only. In the event of the CA not accepting that submitted, resubmit alternative details for review or modify that submitted in accordance with the CA comments. Review of any submittal by the CA shall not mean that the CA is responsible for the correctness of the submittal or its suitability for purpose and does not relieve any contract responsibilities.

Competent person: A person, by reason of theoretical and practical training or actual experience or both, is competent to perform the task or function or assume the responsibility in question and is authorised to perform such a task or function.

Duct: An enclosed space specifically intended for the distribution of services, with direct access for personnel.

Trench: A covered horizontal service space in the floor or ground with access from above.

Cavity: A space enclosed within the elements of a building within which services are installed, e.g. the space between ceiling and floor above. See Building Regulations.

Service Areas: Includes areas within a building with limited finishes such as loading bays, car parks etc.
Concealed Services: Includes installations within ducts, trenches or cavities.
Exposed Services: Includes installations outdoors or unprotected within service or occupied areas.
Terminal Units: Terminal units such as radiators, convectors, fan coil units, induction units, variable or constant volume air boxes and other like equipment.
Ancillaries: All specified fittings, accessories, inserts, test points, bracketing, terminal equipment connected to and installed in the engineering services system.
CIBSE: The Chartered Institution of Building Services Engineers
BSRIA: The Building Services Research and Information Association
IET: The Institution of Engineering and Technology
IOP: Institute of Plumbing
FRS: Fire Research Station
HSE: Health and Safety Executive

DEFINITIONS OF TECHNICAL TERMS

The definitions of technical terms associated with the engineering services installations are those included the latest edition of:
CIBSE - Guides; Commissioning Codes; Technical Memoranda; Building Energy Codes; Lighting Guides; Application Manuals;
IOP - Plumbing Engineering Services Design Guide
BSRIA - Technical Publications
Loss Prevention Council - Rules for Automatic Sprinkler Installations
BS 7671 Requirements for Electrical Installations (IET Wiring Regulations)
British Standards, including Codes of Practice.
Statutory Acts.
Department of Health

TENDERING INSTRUCTIONS

GENERAL:
This section outlines the tendering procedures and requirements.

SCOPE:
These conditions are supplementary to those stated in the invitation to tender and on the Form of Tender and Agreement.

TENDER DOCUMENTS

The tender documents consist of the following:

- The Main Contractors enquiry document.
- Set of tender drawings for the Works.
- The Building Mechanical and Electrical Services Specification for the Works.
- Invitation to tender.
- Form of tender.
- Project health and safety plan.
- Pricing schedule for the Works.
- Declaration of non-collusion.
- Contract programme.
- Warranty.

The tender drawings are Schedule reference

PRIVACY OF INFORMATION:

The information contained in the tender documentation shall be treated as private and confidential.

CHECKING DOCUMENTS:

Check the tender documentation for obvious errors and omissions. Should any such errors or omissions be discovered inform the consultant engineer's office issuing the documents immediately in writing in order that a correction may be issued before the date for submission of the tender.

PERIOD OF VALIDITY:

Tenders must remain open for consideration (unless previously withdrawn) for a period from the date fixed for submission of tenders of not less than six months.

ACCEPTANCE OF INSTRUCTIONS:

The submission of a tender will denote the acceptance of an undertaking to comply with all the clauses contained in the tender documentation unless items of non-compliance are identified as part of the tender submission.

ACCEPTANCE OF TENDER:

The Employer / Contractor and his representatives:
Offer no guarantee that the lowest, or any tender, will be recommended for acceptance or accepted.
They will not be responsible for any cost incurred in the preparation of any tender.

INSPECTION OF SUPPLEMENTARY DOCUMENTS:

Supplementary documents relating to the contract may be available for inspection prior to the submission of the tender.

No adjustment shall be made in the tender sum or claim for additional monies or an extension of time allowed due to failure to inspect the above documents and to make due allowance for the information contained therein.
All contract documents are available for inspection at the offices of the client.

SITE VISIT:

Before tendering, ascertain the nature of the site, access thereto and all local conditions and restrictions likely to affect the execution of the Contract Works. Inspect any existing installations relevant to the works and study any relevant existing records.
No claims will be allowed after submission of a tender for lack of information or other reasons which could have been resolved by such a visit to the site.
Arrangements for visiting the site must be made with prior agreement through the office issuing the tender documentation.

ALTERATIONS TO TENDER DOCUMENTS:

No alterations or erasures to the text of any part of the tender documentation shall be permitted.
Any tender containing such alterations or erasures may be rejected.

TENDER ERRORS:

In the event of a tenderer discovering a genuine error in their tender after it has been deposited, attention in writing may be drawn to the

error and an amendment submitted. The amendment may be accepted if deposited on or before the time fixed for receipt of tenders.
No adjustment shall be permitted to the sum inserted in the form of tender after the date and time fixed for receipt of tenders.

UNQUALIFIED TENDERS:

Other than as part of an alternative offer as described elsewhere, no account will be taken of any qualification or special conditions that a Tenderer may impose on their tender. Any tender containing such additional conditions may be rejected.

ALTERNATIVES:

Alternative equipment, specialists or methods of carrying out the works in addition to those described in the tender documents may be submitted. Alternative offers shall be indicated on the appropriate document and include:
Details of the alternative equipment, specialist or method proposed.
Full technical data for each such alternative together with details of any consequential amendments to the design and/or other parts of the works. Demonstrate compliance with any stated British (or other equivalent recognised International) Standards.
A detailed breakdown of any omissions or additions to the basic tender sum indicated on the appropriate document.
The impact of all proposed alternative equipment or materials on Part L compliance including: The CO2 Target Emissions Rate.
The final 'as constructed' CO2 Buildings Emissions Rate.
Confirm equivalence in quality, operation and space requirements to those items which have been specified by name. Demonstrate the proposed alternative is fully equivalent to the specified item and identify any constructional, cost, programme, maintenance or other differences

Include for all necessary measures to ensure alternative manufacturer's equipment and the total installation is equivalent to that specified. The Tenderer shall include the costs necessary for re-sizing and reselection of associated equipment (including pipework, ductwork and cable sizes) resulting from the proposed alternative together with all resulting design and coordination. Alternative offers will only be considered if accompanied by a compliant tender.

EXCLUSIONS:

If any part(s) of the Works cannot be tendered as defined in the tender documents, the CA must be informed as soon as possible, defining the relevant part(s) and stating the reasons for the inability to tender.

INTERPRETATION OF THE TENDER DOCUMENTATION:

Should there be any doubt about the precise meaning of any item for any reason whatsoever, the tenderer must inform the office of issue of the tender documents in writing in order that the correct meaning may be given. Any clarification of the meaning or intent shall be issued in writing only and no other means of communication shall be valid. All Tenderers will be notified of any such explanation. No liability will be admitted, nor claim allowed, in respect of errors in a tender due to mistakes that should have been rectified in the manner described above.

PROCUREMENT OF MATERIALS:

Allow for the procurement of materials and equipment from suppliers at such a time, and in such a manner as may be necessary to allow for the completion of the Works in accordance with the contract programme and BS 8534: Code of practice for Construction procurement policies, strategies and procedures. Clearly state in the

tender submission any foreseen difficulties with delivery periods for selected equipment or proposed alternatives. No additional costs resulting from non-compliance will be accepted.

A LIST OF PROPOSED MANUFACTURERS/SUPPLIERS:

A list of proposed manufacturers/suppliers of products, equipment and plant, including all items for which the choice of manufacturer/supplier is at the discretion of the Subcontractor, must be submitted with the Tender. Within two weeks of appointment before commencement of the Works.

SELECTION OF MANUFACTURERS/SUPPLIERS:

Where manufacturers, suppliers or installers of products are not identified by name select products that comply in all respects with the specification and demonstrate such compliance on appointment. Where manufacturers, suppliers or installers of products are identified by name, or names, but no reference is made to "or approved" equivalent use these exclusively. Where manufacturers, suppliers or installers of products are identified by name, or names, but reference is made to "Or approved" equivalent the submitted tender must include the named or one of the named suppliers. Alternatives may be selected and shall be submitted to the CA for approval, separately

SUBLETTING:

Where it is proposed to sublet any portion(s) of the Works a schedule must be submitted with the tender including the portion(s) of subletting and give for each the details of the proposed company.

TENDER SUBMISSION

This section details the particular tender submission requirements

TENDER SUBMISSION DELIVERABLES:

To be compliant the tender submission must include the following deliverables as detailed elsewhere:
A tender summary schedule completed in full.
A fully quantified Schedule of Rates with section summaries according to the completed tender summary. Method statements, Outline programme, Form of tender, Declaration of non-collusion

TENDER STAGE METHOD STATEMENTS:

Method statements must be submitted:

With the Tender, within two weeks of the Tender return date, before the execution of the Contract, when requested by the CA.
Provide the following method statements in addition to those stated elsewhere:
Health and safety statement to include:
Management procedures.
Any significant and unavoidable risks that might arise as a result of executing the Works. An outline of the health and safety procedures to be undertaken to safeguard the operatives and of any person who may be affected by the Works. A copy of the company's health and safety policy document including risk assessment procedures Accident records for the last five years Details of any Health and Safety Executive enforcement action Details of staff responsible for health and safety on this project with details of their qualifications and duties. Management procedures to be adopted for the project.

Managing and resourcing of design duties and responsibilities including design capability. Commissioning and testing procedures and management. Quality control management and procedures, including: Indicate the quality control programme Demonstrate compliance with the contract in regard to materials and workmanship. Demonstrate the establishment of standards by means of sample installation and submission of samples prior to installation. Statement outlining the management team, stating the definition of each person's role, and the commitment to the project. Curriculum vitae and references for each of the key personnel that will be used on the project, including:
A line management diagram starting at the site supervisors and rising through the management levels. Details shall be provided for both site and office based teams' staff. The Tenderer, at his discretion and at the same time, can submit method statements for other parts of the Works.

PROGRAMME:
Submit with the tender a programme indicating the sequence and timing of the principal parts of the works including periods for planning, design, procurement, installation and commissioning.

MAINTENANCE CONTRACT:

Provide a maintenance contract for twelve months, from the date of Practical Completion allowing for seasonal commissioning of the plant and there controls.

PROPOSALS FOR ANNUAL MAINTENANCE CONTRACT:
Submit with the Tender a supplementary proposal for an annual maintenance contract.

TECHNICAL INFORMATION:

Technical information relating to the tender must be submitted with the Tender. Within two weeks of appointment.

PRICING AND COSTS

This section details particular requirements for the pricing of the tender documentation and cost procedures during the contract.

BASIS OF CONTRACT:

The contract shall be: on a lump sum basis and accordingly shall not be subject to re-measurement, on a lump sum based on the specifications and drawings, fluctuating price, with a base month of December 2017. The non-adjustable element and labour/material weighting shall be specified by the Tenderer.

TENDER PRICING DOCUMENT:

Alterations and qualifications to the specification must not be made without the written consent of the CA. Tenders containing such alterations or qualifications may be rejected.
Costs relating to items in the specification that are not priced will be deemed to have been included elsewhere in the tender.
The Tenderer shall complete all sections of the tender pricing document in full.
Items described in the pricing document are abbreviated for the purpose of the schedule. The Tenderer is to make full allowance for all works associated with the installation of a particular element. Items entered in the pricing document shall be deemed to include all costs involved in carrying out the Works. Where required the Tenderer must identify separately the cost of all items specifically described under preliminaries.

Provisional items will be adjusted at the final agreed rates when information is issued in respect of these items.

SUBMISSION OF PRICED CONTRACT SPECIFICATION:

The priced contract specification must be submitted with the Tender.

SCHEDULE OF RATES:

A fully quantified Schedule of Rates with section summaries according to the completed tender summary must be submitted with the tender or within 2 working days of request. The schedule of rates must include rates for all significant items of work.

A quantified schedule of rates accepted by the CA shall only constitute part of the contract in the following respects:

The descriptions of the works and the rates and prices contained therein shall be used for the purpose of adjusting variations

The quantities contained therein shall be used to facilitate the preparation and the checking of interim applications for payment

The provisional and prime cost sums contained therein shall be subject to adjustment in accordance with the rules and procedures contained in the contract conditions.

PROVISIONAL SUMS:

Include in the contract price the provisional sums detailed in the tender summary. Any part or the whole of these sums unexpended will be deducted from the final amount due.

PRIME COST SUMS:

The term Prime Cost (PC) Sum shall mean the nett cost paid for an item or items of equipment or material or work executed.

The Tenderer shall indicate the percentage addition required for any profit and costs for handling, ordering and Main Contractor's discount, in addition to PC Sum in the tender summary. Where prime cost sums are included these shall be at the disposal of the CA who shall give written instructions for their expenditure and the CA shall have the

power to nominate persons or firms to execute work or supply goods against such sums.
All prime cost sums shall be adjusted by the CA in the final account, the work undertaken or goods supplied against such sums being charged on the basis of the net accounts of the installers or suppliers, plus the percentage addition stated in the tender to cover profit.

OVERTIME AND ALLOWANCES:
Include for all necessary overtime and other expenses in the contract price that may be necessary in order to complete the Works in compliance with the contract programme. Payment will be made for the extra cost of overtime only if a prior written CA instruction to work such overtime has been issued together with agreement to accept the costs involved.

SUBMISSION OF FINAL ACCOUNT:
Submit a draft final account using the contract procedures for checking purposes together with all the necessary supporting documents immediately after the practical completion of the contract Works.
Prepare the valuation of variations, omissions and provisional work forming part of the Works and where appropriate in accordance with principles defined in this sub-clause.
The basis for the determination of such valuation shall be the Quantified Schedule of Rates prepared and submitted at the time of ender and accepted by the CA. All valuations as aforesaid prepared shall be submitted using the contract procedures to the CA for approval.

INSTRUCTIONS AND VARIATIONS:
All instructions shall be issued in writing and confirmed in a similar manner. Submit the cost of each variation showing the quantities and rates applicable for all materials, etc. employed in accordance with the agreed contract schedule of rates within 10 working days of the receipt of written instructions. No work will be certified for payment until all the necessary information is provided.

DAY WORKS:

Where authority is given for work to be executed on a day work basis, original vouchers giving the full particulars of hours worked, names of craftsmen and labourers, description of work executed and materials and plant used, must be forwarded to the CA. Submit to the CA using contract procedures not later than the end of the week following that in which the work has been executed. The day work sheets shall be numbered in sequence, and all sheets are to be signed by the:

Agent/foreman responsible.

Site representative of the CA.

Such signatures are only to be taken as certifying that the time, materials and plant are correct, and shall not be held to justify a claim that the work shall be so charged or that it cannot be measured and priced according to the terms of the contract. The value of work accepted by the CA to be paid on a day work basis shall be calculated in the manner and in accordance with the rates quoted in the day work schedule. Day works shall be allowed only in the case of works that cannot be measured and valued.

INSURANCES:

Under the terms and conditions of the Main Contract the Contractor is required to secure certain policies of insurance, the benefits of which extend to the Sub-Contractor, either partly or in whole. Examine these policies and obtain such supplementary cover as shall be necessary. The successful Tenderer will be required to insure and indemnify the Main Contractor against such obligations in respect of the Sub-Contract as those for which the Main Contractor is liable and must produce insurance policies on demand.

EMPLOYER/SUB-CONTRACTOR FORM OF AGREEMENT:

The Sub-Contractor will be required to enter into an Employer/Sub-Contractor Form of Agreement. The agreement shall be The Agreement shall be signed under seal prior to commencing work on site. The Sub-Contractor will not, on this contract, be required to enter into an Employer/Sub-Contractor Form of Agreement.

WARRANTIES:

The Service Contractor shall enter into the warranties as identified within the Main Contract documentation.

PARTICULAR CONDITIONS

GENERAL:

This section details particular conditions and requirements for the project.

INFORMATION PROVIDED BY OTHERS:

Instructions, drawings, or other information required to be provided by the CA will be provided in due time upon written request provided always that such information is not requested unreasonably distant rom nor unreasonably close to the date upon which it is necessary. Provide written request to the CA in good time for any information required.

PROVIDE EVERYTHING NECESSARY:

Provide everything necessary for the proper execution and completion of the contract works to the true intent and meaning of the contract documents.

Details of construction or materials which have not been referred to in the contract documents but the necessity for which may reasonably be implied or inferred from the said documents or which are usually or essential to the completion of the Works, shall be installed with no additional cost.

SUPPLY OF INFORMATION:

The CA will provide supplementary information from time to time as may be necessary to enable the completion of the Works in accordance

with the contract conditions. Allow for such progressive release of further information by the CA during the course of executing the Works. In order to facilitate the orderly and timely production of all further information that shall be considered necessary, submit to the CA for approval a programme indicating the progressive release of such information to enable the completion of the Works in accordance with the contract conditions.

CO-ORDINATION OF TRADES:

Allow for co-ordinating the contract works with the works of other trades and installations which may be on site during the period of the contract.

CO-OPERATION WITH OTHERS:

Ensure that the contract works integrates with that of others and that full co-operation is maintained during the execution of the Works with that of others. Co-operate with the Contractor, other subcontractors, suppliers, local authorities and statutory undertakings in the execution of the Works.

In the event of any extra costs being caused by failure to programme and arrange the execution of the Works so that it fully integrates with that of others, the installer of the Works may be liable for any additional costs thereby incurred.

NOTICE OF OPERATIONS:

Work that requires interruption or interference with the operation of any existing services or buildings shall not be commenced without prior written permission of the CA.

NOISE AND NUISANCE:

Ensure that the contract works are undertaken with as little noise as possible. Ensure no nuisance by noisy working is caused to the Employer, occupants of premises or adjacent properties next to the site

boundary. Take all necessary precautions to prevent nuisance from smoke, rubbish and other causes. Fit all compressors, percussion tools and vehicles with effective silencers of a type recommended by the manufacturers of the equipment.

SUPPRESSORS:

Ensure all internal combustion engines used in the execution of the contract works are fitted with efficient suppressors in the ignition system in accordance with the recommendations of British Standards so as to prevent electrical interference to radio or television receiving equipment in the vicinity.

All temporary electrical installations, such as motors or the like, shall be prevented from creating such interference and shall be fitted with suppressor equipment in accordance with British Standards and to the satisfaction of the CA.

PROGRAMME:

Provide a detailed programme(s) clearly illustrating how the overall programme will be achieved within the contract period.

Demonstrate compliance with the Main Contract programme.

Provide the detailed programme within one month of the award of the contract, Due allowance is to be made in the programme(s) for, but not limited to, the following:

Statutory authority approvals including Building Regulations. The latest dates for release of final information required from the CA.

Required method statements. Ordering dates and manufacturing periods. The proposed delivery to site for each item of major plant to be clearly defined. The period required for the production, approval and issue of: builder's work information co-ordinated working drawings installation drawings manufacturer's drawings.

Allow adequate time for the examination and approval by the CA.

Actual activities of production, adjustment, resubmission and review must be identified installation periods for each system. Work resulting from instructions issued in respect to the expenditure of provisional

sums. Concurrent work by other trades. Any temporary works necessary for the completion of the engineering services installations. Period required for operating the systems, load simulation tests and final adjustment. Environmental load testing. Period for instructing the employer training. Pre-commissioning, commissioning and performance testing of the engineering services installations. The period required and latest dates for the production, approval and issue of record drawings and operating and maintenance instruction manuals. Provide programme information as simple bar chart type, critical path network. Provide a separate and detailed commissioning programme for agreement with the CA. Make due allowance for the following.
Commissioning, demonstration and instruction procedures.
Provision of written notice before each (or series of) test, inspection, commissioning or demonstration procedures are to be carried out, not less than demonstration to the CA that test instruments and equipment are accurate

PROGRESS:

At regular intervals as agreed with the CA provide progress reports during the execution of the contract works in addition to any other similar information required by the contract conditions.
The reports shall include:
Particulars of materials and equipment on site, or installed site labour employed progress of the works, record progress of the Works weekly on a copy of the programme.
Mark up for inspection and record purposes a set of the latest drawings as the works progress. The progress drawings shall be available for inspection by the CA at any time.

ORDERING SCHEDULE:

Prepare an ordering schedule for submission to the CA that shall indicate the following data:

Item of material or plant
Manufacturer
Date of order and reference number
Acknowledgement of order and reference
Delivery period quoted
Date required on site
Allowable programme float
Date delivered to site

Update and modify and submit the ordering schedule on a regular basis as agreed with the CA. Indicate on the schedule any possible problems and when delivery to site has been achieved.

CONTINUITY OF THE WORKS:

No undertaking is given that the works will necessarily be able to proceed continuously. No claim will be allowed for discontinuity of work due to the necessity to conform to the contract programme.

DRYING OUT:

Make due allowance in the sequence of the work to provide heat for drying out. This activity shall not relieve any responsibilities to handover the installation in good order. The interim period from the time of commencement of use for drying out to the handover shall not be considered as constituting any part of the defect liability period.

WORKING HOURS:

Working hours will be 8:00 to 17:00 Monday to Friday, weekends and additional hours that require additional opening will be at the expensive of the Main Contractor.

ACCESS TO THE SITE:

Access to the site shall be by the rear door, a site compound will be available on the adjoining public car park. This will need to be contained with a steel wire fencing that will be locked off from the public.

POLICE REGULATIONS:
Ascertain and comply with any Police regulations or requirements as may affect the contract works.

USE OR DISPOSAL OF MATERIALS:
Remove from the site any rubbish and debris arising out of the execution of the contract works on a daily basis.
Do not discharge any oil, noxious liquids or gases and all water discharged shall be reasonably free from impurities.

STORAGE:
Weather-proof, safe and secure storage shall be provided by the contractor for all materials and equipment.
All materials and equipment and materials shall be offloaded, stored and transported in accordance with manufacturer's recommendations.
All electrical equipment and components shall be kept dry and free from dust. Plug, cap or seal open ends on all ductwork, tubes, conduit, trunking and associated equipment whilst in storage and during transportation to site. Provide racks to prevent distortion of pipes, conduit and similar materials.

PROTECTION AND PACKAGING:
All plant, equipment, materials and prefabricated elements of the Works shall be properly packaged and protected against damage during delivery, storage and until fully, finally and properly installed and set to work. Submit to the CA a method statement on protection proposals for both stored and installed plant, equipment and materials.
Protection shall also include adverse effects of environmental conditions prevalent in the stored and installed location.
Any plant or equipment subject to incorrect storage or inadequate protection will be deemed unacceptable for incorporation into the works and new plant or equipment will be required as a replacement.

Damaged plant, equipment and materials or that suffering from deterioration shall be replaced prior to handover.
All plant, equipment and materials shall be protected against ingress of water and dust, formation of condensation, extremes and rapid changes of temperature, building works and operations of others.
All open ends of pipes, ducts, conduit, and trunking shall be capped except when being worked upon.
After removal of any temporary protection paint parts liable to corrosion. Filter media shall only be installed when the plant items concerned are commissioned and tested. Install items such as grilles, diffusers, light fittings, switches, and electrical accessories as near to practical completion as practicable.

CONFIDENTIALITY:
No information related to the contract works shall be given to the press or other media without the written permission of the CA or Employer.

PHOTOGRAPHS:
Provide progress colour photographs of the contract works. The frequency, location, and photograph size shall be agreed with the CA. All photographs shall be dated and location stated. No unauthorised photographs of the site or the Works or any part thereof shall be taken except with the permission in writing of the CA. Photographs shall not be published or otherwise circulated without the permission of the CA. Provide photographs of all areas in which the Works are to be installed prior to the commencement of the contract works. All photographs are to be numerically identified and cross- referenced to marked up plans showing the position, direction and field of view for the respective photograph. Submit photographs to the CA within weeks of commencement of the contract. Photographs shall record the condition of: Mechanical services and building fabric.

MATERIALS USED:

No acoustic insulation or thermal insulation or sound attenuation materials shall be manufactured with any form of animal hair.
All materials supplied shall be a type that will not support bacteria.
Substances publicised by the Health and Safety Executive, Building Research Establishment, British Standards Institution or other authorities or professional bodies as being deleterious to Health and Safety shall not be incorporated into any part of the Works. Deleterious materials shall not be utilised on any part of the Works. Deleterious materials include but not limited to: Halon /CFC's, Asbestos or products containing asbestos, Urea formaldehyde or materials which may release formaldehyde; materials comprised in whole or part of man-made and/or naturally occurring mineral fibres which have a diameter of 3 microns or less and a length of 200 microns or less or which contain fibres not sealed or otherwise not stabilised to ensure that fibre migration

PROGRESS:

At regular intervals as agreed with the CA provide progress reports during the execution of the contract works in addition to any other similar information required by the contract conditions.
The reports shall include: particulars of materials and equipment on site, or installed site labour employed, progress of the works, record progress of the Works weekly on a copy of the programme. Mark up for inspection and record purposes a set of the latest drawings as the works progress. The progress drawings shall be available for inspection by the CA at any time.

ORDERING SCHEDULE:

Prepare an ordering schedule for submission to the CA that shall indicate the following data:

Item of material or plant
Manufacturer
Date of order and reference number

Acknowledgement of order and reference
Delivery period quoted
Date required on site
Allowable programme float
Update and modify and submit the ordering schedule on a regular basis as agreed with the CA. Indicate on the schedule any possible problems and when delivery to site has been achieved.

All plant, equipment, materials and prefabricated elements of the Works shall be properly packaged and protected against damage during delivery, storage and until fully, finally and properly installed and set to work.
Submit to the CA a method statement on protection proposals for both stored and installed plant, equipment and materials.
Protection shall also include adverse effects of environmental conditions prevalent in the stored and installed location.
Any plant or equipment subject to incorrect storage or inadequate protection will be deemed unacceptable for incorporation into the works and new plant or equipment will be required as a replacement.
Damaged plant, equipment and materials or that suffering from deterioration shall be replaced prior to handover.
All plant, equipment and materials shall be protected against ingress of water and dust, formation of condensation, extremes and rapid changes of temperature, building works and operations of others.
All open ends of pipes, ducts, conduit, and trunking shall be capped except when being worked upon.
After removal of any temporary protection paint parts liable to corrosion.
Filter media shall only be installed when the plant items concerned are commissioned and tested.
Install items such as grilles, diffusers, light fittings, switches, and electrical accessories as near to practical completion as practicable.

ADVERTISING:

No form of advertising will be allowed on any part of the site or the Works without written CA approval.

PATENT RIGHTS:

Indemnify against all claims, costs or expenses in connection with any patented, copy righted or protected articles supplied and used on or in connection with the Works. Any payments or royalties payable in one sum or by instalments shall be included in the contract price and paid to whom so ever they may become due.

In the event of any claim being made in connection with such patented or protected articles, conduct any negotiations or litigation in connection with such claim at own expense.

BENEFICIAL USE OF INSTALLATIONS:

Systems shall not be used before practical completion without prior approval of the CA.

Systems used before practical completion not for the benefit of the Employer must have all defective consumable elements replaced by new including: lamps and tubes, filters Replacement of consumable elements shall be not more than 5 days prior to practical completion.

If instructed by the CA operates the installations or any part of them prior to practical completion, provided that such operation is practicable and does not prejudice the responsibilities and obligations under the contract.

DEFECTS LIABILITY:

Liability for making good defects in the Works shall be for a period of 12 months from the date of issue of the certificate of practical completion for the installations.

If it is necessary to replace or renew any portion of the contract works as part of liability for defects, the defects liability period in respect of

that portion of the contract Works shall be deemed to commence from the date of such replacement or renewal.
The CA may require that new tests be carried out to demonstrate that the plant is continuing to work satisfactorily if the replacement or renewal may affect the efficiency of the Works or any portions thereof.
In the remedying of defects in the contract Works take all necessary precautions to minimise the risk of damage to the buildings, the decorations, the fittings and the equipment.
In the event of such damage occurring bear the cost of replacement or making good, subject to the proviso of being granted the benefit of any settlement in respect of such damage accepted by the insurers under the insurance policies taken out in accordance with the requirements of the contract.
Agree with the CA a programme for the carrying out and the completion of any work not finally finished at the time of the contract Works being offered for acceptance and which does not prejudice the issue of a practical completion certificate. This work may be requested to be executed out of normal hours and no additional costs will be accepted for this action.
Prior to practical completion submit a method statement for the approval of the CA outlining how the defects which arise during the defects liability period will be rectified to ensure that disruption to the use of the building is kept to a practical minimum.
No additional costs will be accepted for undertaking works executed out of normal hours.
Prepare and submit records of failures or malfunctions of any part of the contract Works during the defects liability period, together with details of remedial action taken, subsequent re-testing and the results.
Notify the CA of damage, failures or malfunctions to the contract Works demonstrably caused by incorrect operation of the installations, vandalism or other actions by a third party.
Inform the CA in writing when all defects are finally rectified so that an inspection may be carried out prior to the issue of a Final Certificate.

RIGHT OF ACCESS DURING DEFECTS LIABILITY PERIOD:
Right of access will not be unreasonably withheld, at all reasonable working hours and at own risk and expense, to any part of the contract works for the purpose of inspecting the working of the installations or to the records of the working and the performance thereof.
Subject to CA approval, that shall not be unreasonably withheld, undertake any tests considered necessary at own risk and expense.
During the defects liability period and all necessary remedial works and/or rectification of defective materials and equipment liaise closely with the Employer's staff. All such work shall be carried out in such a manner as to avoid or minimise shut-down time and inconvenience to the Employer.

RATIONALISATION OF COMPONENTS:
Similar items of apparatus and equipment shall be made and provided by the same manufacturer where practicable and corresponding parts of all apparatus and equipment shall be interchangeable to reduce the need for different attention and spares.

SUPPLY OF COMPUTER HARDWARE AND SOFTWARE:
Obtain on behalf of the end user all appropriate licences, permissions, copyright waivers, rights of use and the like from the owners of the software rights. Ensure that the end user is properly registered with the software supplier for support and appropriate updating. Ensure that application software is written in compliance with BS 7649.

FIRE PRECAUTIONS:
Take all reasonable fire precautions in respect of stores, workshops and other installations. Where it is necessary to use any naked flame or welding equipment in executing the contract works and where

combustible materials are in use, adequate protection shall be given to is prevented;
lead where the metal or its corrosion products may be directly ingested, inhaled or absorbed, polyurethane or polyisocynate foam, polychlorinated biphenyls (PCBs) or similar compounds, pentachlorophenol, lindane or tributyltin (TBT) oxide, extruded polystyrene other than low ozone depletion materials, any other substances generally known to be deleterious at the time of installation,
All jointing materials shall be of a type approved by the respective authority, warrant that deleterious materials are not incorporated in the Works, notify the CA, in writing, as soon as reasonably practicable of any material designated by the Building Research Establishment, British Standards or codes of practice as deleterious at any time during the contract filters

DAMAGE TO STRUCTURE:
Exercise due care and attention in carrying out the contract works and be fully responsible for any damage caused to the structure or building finishes. Obtain permission from the CA before any holes are cut in floors, walls or steelwork.

METHOD STATEMENTS:
Submit method statements to the CA prior to commencement of the contract works for each item of work.

INSPECTION BEFORE CONCEALMENT:
Whenever work requiring inspection or testing is subsequently to be concealed give the following the notice to the CA so that inspections may be made or tests witnessed before concealment

EQUIPMENT GUARANTEES:

Plant and equipment guarantees shall commence at the date of practical completion and run for a minimum of 12 months after this date.

Any costs associated with this requirement shall be included in the contract price.

SITE MODIFICATIONS:

Site modifications to assemblies shall not be made without written approval of the CA. Where site modifications to assemblies are authorised undertake in accordance with manufacturer's certified drawings and instructions. Ensure that all modifications undertaken comply with the relevant standards and all test certification obtained.

DIMENSIONS:

Where installations are dependent upon site dimensions ensure that these are available before proceeding with the Works.

Dimensions should not be scaled from drawings. Where dimensions are indicated on drawings check these on site, as appropriate, to ensure building construction tolerances and manufacturing tolerances can be accommodated. Equipment should not be ordered or manufactured using dimensions indicated on the Tender drawings.

FIXING PIPE BRACKETS AND SUPPORTS

The Services Contractor shall be responsible for the design, supply and installation of all anchors, supports and brackets required for the complete installation. The pipework shall be routed as to float accordingly utilising suitable fixed point brackets (anchor points) & pipework supports comprising of; two piece rubber lined pipe clips suspended from drop rod with swivel type joint - to control the risk of failure due to the effects of thermal expansion/contraction.

Where pipework is exposed and surface mounted the pipe brackets shall be two piece rubber lined (allowance for movement) pipe clips fixed securely to the building structure, and shall be of a suitable material to provide a robust installation.
All brackets and supports shall be in accordance with HVCA TR20 Installation and Testing of Pipework Systems.

STOPPING UP AND SEALING HOLES, MAKING GOOD, WATERPROOFING

The Services Contractor shall appoint a Specialist Contractor to undertake the stopping up, fire stopping, making good and decoration of all builders work penetrations associated with the existing and new installations. Where applicable service penetrations shall be suitably weather proofed by a specialist to prevent the ingress of water.

SPECIAL FIRE RESISTANT STOPPING UP OF HOLES

The Services Contractor shall appoint a Specialist Contractor to undertake the fire stopping of all penetrations to fire compartments/barriers.
Where pipes have to be extended through fire compartment walls, oversized pipe sleeves shall be provided and suitably fire stopped to maintain the integrity of the compartments fire rating.

SYSTEM PLANT

Supply, install and commission all plant and equipment in accordance with the standards listed, Commissioning and Testing and manufacturer's instructions. Install pipework to discharge overflows, condensates, temperature/pressure relief, and safety vents from all plant in accordance with the standards listed Quality, manufacturer's requirements and Building Regulations Part G.
The Services Contractor shall be responsible for producing detailed equipment schedules for issue to the Client's Technical Advisors.

Pipework & Fittings

Supply and install all pipework, fittings, valves, insulation and supports in accordance with this specification, BS 8000-13, BS EN 12056-2 and manufacturer's instructions. Where applicable all vertical stacks shall be insulated to reduce noise transfer utilising 25mm insulation as rockwool or equal and approved, and as confirmed by the acoustic engineer prior to installation.

Pipework Materials

Soil and vent pipes shall be installed in un-plasticised PVC jointed with solvent welds and ring seal joints to OS 4514, fixed with screws to wall holder bats or purpose made supports to suit the application. Waste branch pipework shall be installed in white, high temperature MUPVC pipe and fittings jointed with solvent welded joints to BS 5255. Overflows from WC cisterns shall discharge to the Local Water Authority's requirements. Deep seal waste traps shall be installed in white polypropylene to BS 3943 Access Pipes and Cleaning Eyes Adequate access doors and cleaning eyes on the pipework installation shall be provided. Generally, each soil and waste stack shall be provided with oval access doors at above flood level at low level, installed in an accessible position. Soil and waste pipework shall be provided with cleaning eyes on changes of direction.

Roof Terminations

The soil and waste stacks shall terminate above roof level with a proprietary vent terminal. Roof terminals shall be supplied and installed by the others to suit the roof manufacturers weathering details.

WC Connections

WC pans shall be connected to P trap pan outlets with WC connector and black rubber sealing ring

Fire Stopping

Proprietary intumescent collars shall be fitted around pipes where they penetrate fire compartment walls. Vertical soil waste and vent stacks passing through floors shall be made good and fire stopped to the requirements of BS 476 Part 20 and the Fire Officer.

Horizontal soil waste and vent pipes passing through fire protected walls shall be made good and fire stopped to the requirements of BS 476 Part 20 and the Fire Officer. In order to protect the timber frame all horizontal soil waste and vent pipes passing through structural walls shall be made good and fire stopped to the requirements of BS 476 Part 20 and the Fire Officer.

Expansion Joints and Pipe Brackets

Expansion joints shall be installed at each floor level on vertical stacks to accommodate any building movement.

Vertical soil and waste stacks shall be provided with ring sealed joints at each floor level to allow for thermal expansion and fitted in accordance with the manufacturer's fixing instructions.

CLEANING AND WATER TREATMENT

The foul drainage above ground system shall be flushed upon completion of the system to ensure freedom from obstruction.

TESTING AND COMMISSIONING

The installation shall be fully commissioned in accordance with the CIBSE Commissioning standards and relevant third party

The Services Contractor shall carry out all tests and inspections to demonstrate that the installation meets with the requirements of the Building Regulations and British Standard EN 12056 Gravity Drainage Inside Buildings. The Services Contractor is to undertake all tests required by the Building Control Officer, giving adequate notice with

regard to the timing of tests; and issue certificates prior to practical completion of the works.

WORKMANSHIP

The complete installation, commission and setting to works shall be undertaken fully in accordance with the parameters included in the relevant third party documents scheduled in this specification

PRODUCTS/MATERIALS

TRAPS:

Type: bottle

Manufacturer and reference: Terrain, Giberit or equal & approved

Standard: plastic to BS EN 274-1, BS EN 274-2, BS EN 274-3.

PLASTICS WC PAN CONNECTOR:

Type: manufacturers standard Application: WC connection to horizontal soil Manufacturer and reference: Terrain, Giberit or equal & approved For horizontal outlet and shrouded pans: BS 5627 for pans to BS EN 33, BS EN 37, BS EN 997 Figure 1 'S' or turned 'P' traps

SINGLE STACK PLUMBING:

Type: PVC or Cast Iron (where mechanical protection required)

Application: vertical stacks Manufacturer and reference: Terrain, Giberit or equal & approved Ensure that there is a change of gradient at stack connections. Use swept branches on small diameter pipes. Use swept inlet or 45 degree branch connections for pipe 75mm diameter or over. All stacks to be 100mm (I.D.)

WORKMANSHIP

The complete installation shall be carried out in accordance with the standards listed Quality, and the Manufacturer's recommendations.

PERFORMANCE CRITERIA:

Install pipework fittings and accessories to ensure that:

Appliances drain quickly, quietly and completely at all times without nuisance or risk to health Discharge is conveyed without crossflow, backfall, leakage or blockage, Air from drainage system does not enter building, Pressure fluctuations in pipework do not vary by more than plus or minus 38mm water gauge and traps retain a water seal of not less than 25mm System can be adequately tested, cleaned and maintained

ROUTES:

Ensure pipe routes are shortest practicable, with as few bends as possible and no bends in wet portion of soil stacks, unless indicated otherwise on drawings, where passing through fire zones Intumescent Pipe Collars will be installed to provide the required fire protection
All duct, pipe routes that work bridges a fire break will require Intumescent Pipe Collars fitted to comply with the level of fire protection required

COATED PIPES:

Make good damaged coatings and cut ends, or recoat, as recommended by manufacturer.

INSTALLATION GENERALLY:

Install pipes, fittings and accessories in accordance with BS 8000-13, BS EN 12056-2 and manufacturer's recommendations. Obtain all components for each type of pipework from the same manufacturer, unless otherwise indicated. Inspect components carefully before fixing and reject any which are defective
Ensure cut ends of pipes to be clean and square with burrs removed.
Allow for thermal and building movement when jointing and fixing.
Form junctions using fittings intended for the purpose, ensuring that jointing material does not project into bore of pipes, fittings and appliances.

Avoid contact between dissimilar metals and other materials which would result in electrolytic corrosion.
Provide access covers and cleaning eyes as necessary in convenient locations, to permit adequate testing and cleaning of pipework.
Prevent entry of foreign matter into any part of system by sealing openings during construction. Fit all access covers and cleaning eyes as work proceeds.

CONNECTIONS BETWEEN PIPES OF DIFFERENT MATERIALS:

Plastic;

Connect plastic pipework to pipework of other materials using approved connectors and methods in accordance with plastics pipework manufacturer's recommendations, to form a watertight joint.
All wastes to be socket welded

Wastes:

Bed in waterproof jointing compound and fix with resilient washer between appliance and back nut.

WASTE CONNECTORS:

Join to traps as manufacturer's recommendations.

WC PANS: Plastic;

Connect all soil pipe spigots with plastic connectors in accordance with manufacturer's recommendations.

TRAP TEST REQUIREMENTS:

Ensure there is retention of 25mm water seal in every trap, and that no air is blown through the trap seal when performance is tested.

ACCESS POINTS:

Provide rodding and access points at all changes of direction to enable whole system to be maintained.
Provide square door type access points as indicated on drawings at foot of all soil and ventilation pipes. Where practicable, locate access points and horizontal anti-syphon pipes above fitment flood level.
In general make WC connections to drain points and soil pipes via flexible connectors.

HOT & COLD WATER

PERFORMANCE OBJECTIVES

Supply, offload, install, test and commission all necessary components to provide safe and fully operational hot and cold water systems to satisfy the performance requirements as described in this specification equipment schedules and accompanying contract drawings.

The systems will be installed using the minimum pipework and fittings necessary to convey water quietly, efficiently and with freedom from nuisance or risk of injury to health. It is essential that all high points are vented to maintain system performance. All pipelines will be identifiable in accordance with BS 1710.

All domestic cold water pipework shall be insulated to reduce heat gains/losses in accordance with the current Building Regulations L2A and associated TIMSA Guidance. Pipework insulation shall comprise of phenolic foam and incorporate finishes appropriate to the exposure to reduce mechanical damage.

Hot and cold water shall be delivered to each outlet to satisfy the minimum flow and pressure requirements of the fitting served.

Develop Coordinated Working Drawings of appropriate detail for the installation. Provide all necessary testing and commissioning certificates prior to practical completion demonstrating compliance with all statutory requirements.

SYSTEM DESCRIPTION

The Services Contractor shall supply, offload, install and test complete hot and cold water systems to satisfy the performance requirements of various items of sanitary ware/plant, appliances and water fittings, in accordance with parameters specified

The installation of hot and cold water systems shall be fully coordinated with the Mechanical and Structural Engineer's drawings. There will be additional works within the second phase of the works that will run at the same time as the heating system replacement. This will involve the installation of some new toilets, the alteration of others and the

installation of a new kitchen in the main building. With the alteration and modernisation of the disabled, female and male toilets in the public area of the council chamber. The heating system renewal will involve the replacement of the existing hot water system and storage vessels in both buildings and the alteration of some of the pipework.

The Services Contractor shall be responsible for supplying, off-loading, storing, installing and commissioning all sanitary ware (including taps and thermostatic mixing valves) and fittings, and domestic appliances as scheduled in the specification and shall refer to the drawings to coordinate final locations, fixing heights and agreed arrangements. The Services Contractor shall liaise with the Main Contractor to ensure the installation is fully coordinated with all fit-outs by others and is carried out in accordance with the requirements of the programme of works. Wherever possible, existing water fittings, sanitary ware, appliances and equipment are to be retained unless stated otherwise. As such the Services Contractor shall be responsible for testing the functionality of the existing water fittings, sanitary ware, appliances and equipment to be retained, and shall report any defects to the Contract Administrator for further consideration and instruction, as required.
Where connecting to existing water fittings supplied from tanked cold water the Services Contractor shall make due allowance to limit the dynamic pressure in the pipework to ensure that the maximum operating pressure of any existing water fitting(s) retained for re-use are not exceeded (i.e. ball valves). The complete installation shall be undertaken by a WRAS approved engineer.

INCOMING MAINS COLD WATER

The Services Contractor shall undertake intrusive investigations to the existing incoming mains cold water serving the building.

INSULATION

All pipework shall be insulated utilising glass fibre foil-faced Class O pipe insulation system (0.021 W/m.K at 10°C mean) as Kooltherm

manufactured Kingspan, Tarec or equal and approved, incorporating pre-fabricated bends and tees, where the thickness applied shall be in accordance with BS 5422:2001 and TIMSA guidance.
All pipework shall be labelled in accordance with BS 1710 to ensure clear identification of services within the plant room.
The complete installation shall be undertaken by either a TICA registered Thermal Insulation Contractor or suitably qualified engineer.
Use insulating materials with a Global Warming Potential (GWP) of zero.

THERMOSTATIC MIXING VALVES

All hot water outlets, unless specifically stated otherwise shall be blended to comply with HSE guidance and the current building regulations

CLEANING AND WATER TREATMENT

The Services Contractor shall flush out, and cleanse the hot and cold water services systems, including underground mains, storage cisterns and all distribution pipework in accordance with Section A64 clause "Quality" and 740.040 Commissioning and Testing.
Appoint an approved water treatment specialist as Hydro-Environmental Services Ltd, Tel: 01752 662 280 or equal and approved; to flush and disinfect the complete system in accordance with the requirements of BS6700 and Water Regulations. Carry out purity tests from water samples and obtain laboratory analysis to ensure compliance with Water Regulations prior to handover to the Client. Repeat disinfection and purity analysis until appropriate quality is achieved. Repeat analysis on a seven day cycle thereafter until handover to the Client. The system shall be maintained in a chlorinated condition until handover to the Client to ensure compliance with HSC ACOP L8, The Control of Legionella Bacteria in Water Systems and CIBSE TM13 Minimising the risk of Legionnaire's disease.

TESTING AND COMMISSIONING

The installation shall be fully commissioned in accordance with the standards referenced in clause 100.200 above and relevant third party documents scheduled in this specification, prior to practical completion of the works.

Appoint a specialist commissioning engineer to undertake the complete testing, pre-commissioning and commissioning of the hot and cold water system

The Services Contractor shall appoint a commissioning agent to commission hot water circulators to achieve the required design flow rates

The commissioning results shall be recorded and issued to the Consultant Engineers prior to practical completion of the works.

The Services Contractor shall carry out onsite testing and re-calibration of thermostatic mixing valves to verify blended water temperatures are not exceeded, record the results at each outlet and issue to the Client's Technical Advisors prior to practical completion of the works.

The Services Contractor shall measure the HWS return temperatures to verify the operation of automatic thermostatic temperature regulating valves, record the results and issue to the Client's Technical Advisors prior to practical completion of the works.

PIPELINES

COPPER PIPES AND FITTINGS:

Type: copper tube

Application: all Hot and Cold Water Services Fluid conveyed: potable hot and cold water Working temperature: up to 70°C for hot water, and 10°C for cold water Copper pipe, half hard (R250); capillary fittings for copper tubing, general potable range Yorkshire with integral solder ring, and compression fittings for copper tubing.

Due to the construction of the building hot works will not be permitted and crimped joints will be preferred.

Alternative pipework systems such as Uponor, MLC Pipe and Giberit Mapress, or equal & approved, may be acceptable subject to agreement from the Consulting Engineers. Where applicable the Services Contractor is to allow for this as a separate cost option within the tender. Where alternative pipework systems are agreed by the Consulting Engineers the system shall have equivalent internal bore and be installed by suitably trained engineers, utilising valves and fittings either manufactured or approved by the system manufacturer. The complete system shall be installed in strict accordance with the manufacturer's instructions, ensuring proprietary tools and methods of installation are employed.

Boiler and Heating

Supply, offload, install, test and commission all necessary components to provide safe and fully operational heating system to satisfy the performance requirements of the building and English Heritage

The existing heating system is not meeting the current and future use of the building and so that addition use of the space can be achieved the system is to be removed in the whole and a new system will be installed. This will take the form of the old building heating system with cast iron sectional radiators to match the existing this will be run at a lower temperature so that they will not need to be covered to conform to DDA requirements. This heating system will be divided up into additional zones what will have heat meters installed for re-charging tenants. The existing hot water cylinder is to be move to the ground floor so at to make room for additional storage and its services extended to suit this new position.

The existing plant room within the newer building will house two new boilers, the heating pumps, low loss heater and the systems controls as well as a smaller mains pressure hot water cylinder and pressure set and explanation vessel.

The 1970's building with have its heat emitters replaced with a mix of low surface temperature radiators and fan convector units.

All pipework will be continues with no joints within any service void. All pipe work will be insulated along its length. Where passing through fire zones, Intumescent Pipe Collars will be installed to provide the required fire protection

The Services Contractor shall provide Builder's Work Information of appropriate detail within the requirements of the programme of works affecting the building structure, fabric and external works; to assist the

Main Contractor giving adequate notice for comments/approvals prior to the commencement of any works.

The Services Contractor shall produce Record Drawings prior to practical completion of the works and commissioning reports

Boilers:

Remeha
Innovation House
3 Oaklands Business Centre
Oaklands Park
Wokingham
RG41 2FD
Tel: 0118 978 3434

Pumps/pressure set:

Grundfos Pumps Ltd
Grovebury Road
Leighton Buzzard
Beds LU7 4TL
Tel: 01525 850000
Email: grundfos-uk@sales.grundfos.com

Gas Interlock: SEC-B
Medem UK limited
Project House
19 Dallimore Road
Roundthorn Industrial Estate
Manchester
M23 9NX
Tel: +44 (0) 161 233 0600
Fax: +44 (0) 161 233 0601

Mixing valves & Actuators:
Siemens Controls UK Ltd

Fan convector heaters:
SPC Belgravia
SPC House
Evington Valley Road
Leicester
LE5 5LU

Tele: +44 (0)116 2490044
E:spc@spc-hvac.co.uk

Low Surface Temperature Radiators: Stelrad LST
Stelrad House
Marriott Road
Mexborough
Rotherham
S64 8BN

Sales & Merchant enquiries:
T:0844 543 6200 E:sales@stelrad.com

Cast Iron Radiators: Priory
The Radiator Company
Units 13-14, Charlwoods Road
East Grinstead,
West Sussex
RH19 2HU
T: 01342 302250

F: 01342 302260

sales@theradiatorcompany.co.uk

Radiator values

Cast radiators:

Castrads

Windsor Polished Brass TRV
1 Kenwood Road
North Reddish
Stockport
SK5 6PH
info@castrads.com

Tele: 0161 4399350

Ventilation System

PERFORMANCE OBJECTIVES

Supply, offload, install, test and commission all necessary components to provide safe and fully operational ventilation systems to satisfy the performance requirements with in the current building regulations approved document F.

The building ventilation systems will provided by a mechanical ventilation extract system that will extract air from the wet and food preparation areas to outside.

The location of this varies between buildings. The duct work will run within the floor voids and the service ducts. The routes of the duct work will avoid all structural steel and electrical services.

The system will be installed using rigid duct for the majority of the duct route. The installer is to plan the route carefully to avoid unnecessary bends over and above the design drawings. Ensure ducts are mechanically fixed to surface securely, silicon seal and tape joints to ensure an airtight seal

• Condensate must be discharged into a trap which is then connected to the foul water system of the dwelling.

• Discharge pipe must enter the U trap far enough to enter the water within the trap

• Where these terminals pass through the structure they should be positioned so any water penetrating through external grilles will run back to the outside of the dwelling

• It is important that the recommended grillage free area is maintained

The system will be off operation with boosts operation in wet areas and food preparation areas on the trigger of a PIR or remote switch.

The Services Contractor shall provide Builder's Work Information of appropriate detail within the requirements of the programme of works affecting the building structure, fabric and external works; to assist the Main Contractor giving adequate notice for comments/approvals prior to the commencement of any works.

All termination and where duct work bridges a fire break Intumescent Pipe Collars will be fitted to comply with the level of fire protection required

The Services Contractor shall produce Record Drawings prior to practical completion of the works and commissioning reports.

Vent-Axia Limited,
Fleming Way,
Crawley,
West Sussex,
RH10 9YX,
United Kingdom

Domestic and Commercial Enquiries

Tel: +44 (0)344 856 0590
Fax: +44 (0)1293 565169

Hot Water Services

PERFORMANCE OBJECTIVES

Supply, offload, install, test and commission all necessary components to provide safe and fully operational hot and cold water systems to satisfy the performance requirements as described in this specification equipment schedules and accompanying contract drawings.

The systems will be installed using the minimum pipework and fittings necessary to convey water quietly, efficiently and with freedom from nuisance or risk of injury to health. It is essential that all high points are vented to maintain system performance. All pipelines will be identifiable in accordance with BS 1710.

All domestic cold water pipework shall be insulated to reduce heat gains/losses in accordance with the current Building Regulations and associated TIMSA Guidance.

Hot and cold water shall be delivered to each outlet to satisfy the minimum flow and pressure requirements of the fitting served.

Develop Coordinated Working Drawings of appropriate detail for the installation.

Provide all necessary testing and commissioning certificates prior to practical completion demonstrating compliance with all statutory requirements.

SYSTEM DESCRIPTION

The system comprises of a two 100 litre hot water cylinder sited in the proposed build plant room within the building and on the ground floor old boiler room. The hot water system will feed a number of outlets across the floors with a secondary pump reducing the amount of energy required. The primary side of the system will be heated via the heating boilers with the cylinders being fitted with 3Kw immersions heaters providing both a secondary heat source when the summer months when the heating has low demand and for pasteurisation.

Where basins are to be installed they are to be fitted thermostatic mixing valves limited to 48°C will be required to meet the current

Building Regulations. The location of this unit will have to be accessible for maintenance but will not spoil the clean lines of the wet room walls. The final position will need to be decided on site with the aid of the main contractor and the architect. The installation of hot and cold water systems shall be fully coordinated with the Architect and Structural Engineer's drawings.
The complete installation shall be undertaken by a WRAS registered engineer and Unvented Hot Water Systems certificate of competence, which complies with G3 of the Building Regulations, Approved Document G and is recognised by Competent Person Schemes for both Plumbing and Heating Installation.

Safety valve outlets will be run to outside drain gullies as laid out in the current building regulations G3 of via a Hep trap into the drainage. Both methods still require a Tung dish.

All exposed hot water pipework is to be concealed in purpose built ducts by the Main Contractor, as detailed in the Builders Work Specification (by Architect) to maintain low surface temperatures in accordance with HSE guidance; the Services Contractor shall liaise with the Main Contractor to fully coordinate this element of the works.

The Services Contractor shall provide Builder's Work Information of appropriate detail within the requirements of the programme of works affecting the building structure, fabric and external works; to assist the Main Contractor giving adequate notice for comments/approvals prior to the commencement of any works.

The Services Contractor shall produce Record Drawings prior to practical completion of the works and commissioning reports.

Hot Water Cylinder:

Heatra Sadia

t: +44 (0)344 871 1535*
(option 1, then option 2)
e: customer.support@heatraesadia.com

Thremostatic Mixing Valve:

Pegler Yorkshire Group Ltd

St. Catherines Avenue
Balby
Doncaster
South Yorkshire
DN4 8DF

Phone 01302 560 560
Fax 01302 560 203

Heating and Hot Water Controls

The contract is to provide a control panel that will interlink all of building services equipment. This controller will optimum start and eco off functions as well as being remotely accessed with the internet for all of the zones and the hot water.

Zone sensors will be require and in most part they will need to wireless relayed via a mesh system. Immersion temperature sensors to monitor and control the heating and hot water will be hard wired:

Building Management System:
Allen Martin Eco Hub 2

All pumps will be installed with commando type sockets

Quotations for this work can be provided by:

Bonney and Jarman electrical
90 Treverbyn Road
Carclaze Industrial Estate
St Austell
Cornwall
PL25 4EW

Office: 01726 70066

Allen Martin Conservation Ltd.
504 Dudley Road
Wolverhampton
West Midlands
WV2 3AA
Tel: 01902 560065

Fax: 01902 560066
Email: help@allen-martin.co.uk
Web: http://www.allen-martin.co.uk

Ground Floor toilet Alterations and Refurbishment

The Services Contractor shall supply, offload, install and test a complete systems to satisfy the performance requirements of various items of sanitary ware/plant, appliances and water fittings, in accordance with parameters specified

The existing ground floor public toilets in the council chamber main hall have not been upgraded since the building was built and now the disabled toilet/ baby changing room does not comply with the current regulations.

Because of the works to make this space compliant the Council has seen the opportunity to improve all of the toilet facilities.

The wall adjoining the male toilet and the disabled WC, after a structural survey will be removed. This will include the door into the male toilet and its return. The door of the male toilet will be reused and its door furniture. The disabled toilets area will be extended into the male toilet, with a new block wall that will have a plastered finish.

The all of the toilet areas will re-floored with Altor. This will have rounded edges with fusion joints, metal strips will finish off the door thresholds. All of the existing tiles and wall mirrors will be removed and the walls made good.

The disabled toilet will have a new doc m packet, this will include hand rails as detailed. There will be a new disabled alarm, fire alarm strobe light, and lights. The splash backs will be white brick tiles with quarter round aluminium edges.

The baby changing fold down table will be replaced and new hand dryer will be installed. The low surface temperature heating will for part of the main contract.

The existing male toilet will be completely removed and because of the reduction in size this will become the female toilet.

The existing cubicles and sanitary ware will be replaced and the position of the sink units and the toilets will be moved. The waste pipe and cisterns for the new toilets will be house behind a remove able partition. Any addition exposed pipework will be boxed in. the contractor is to allow to connect back into the existing soil vet pipe.

The existing wash hand basins and its counter top will be replaced with new. The counter top will have a return that will cover the waste fittings. The walls will be tiled with white brick type tiles will mirrors above each basin. The cubical side panels will be of a different colour to the doors, the counter top will be stone and the boxing above the sinks will be the same colour as the side panels. This boxing will have down lights installed within and will be controlled by a PIR. The hand drier will be replaced with a Dyson blade unit and splash back in white PVC.

The space is currently not ventilated and a new extract fan will be installed this will be controlled via a PIR sensor.

The existing female toilet will be completely removed and because of the reduction in size of the existing male toilet this will become the new male toilet.

The existing cubicles and sanitary ware will be replaced and the position of the sink units and the toilets will be moved. An additional urinal system will, be installed this will be controlled by a water saver solenoid valve. The waste pipe and cisterns for the new toilets will be house behind a remove able partition. Any addition exposed pipework will be

boxed in. the contractor is to allow to connect back into the existing soil vet pipe.

The existing wash hand basins and its counter top will be replaced with new. The counter top will have a return that will cover the waste fittings. The walls will be tiled with white brick type tiles will mirrors above each basin. The cubical side panels will be of a different colour to the doors, the counter top will be Stone and the boxing above the sinks will be the same colour as the side panels. This boxing will have down lights installed within and will be controlled by a PIR. The hand drier will be replaced with a dyson blade unit and splash back in white PVC.

The space is currently not ventilated and a new extract fan will be installed this will be controlled via a PIR sensor.

Allow for eight stainless steel elements toilet roll holder by Dolphin

Frist Floor toilet Alterations and Refurbishment

The Services Contractor shall supply, offload, install and test a complete systems to satisfy the performance requirements of various items of sanitary ware/plant, appliances and water fittings, in accordance with parameters specified

The original house has two bathrooms and a smaller toilet. One of the bathrooms is currently being used as a staff room. The current arrangement does not reflect the current use of the building. As a result in this the bath rooms are to be re-designed and the smaller toilet will be converted into a galley kitchen.

The front bath room will have the bath removed. An 80mm stud and plaster board partition will be installed to isolate the toilet. This wall will be 2.4m high and finished off with a wooden plank capping. This will provide some natural light into this space. Skirting will match the original but will not be full height so as to show that this wall is an addition. The

door to the toilet will be a 6 panel pine door that will be painted white. The door furniture is to best match the original doors.

The original wash hand basin and its services will be moved, a thermostatic mixing valve will need to be installed, and if at all possible this will need to be concealed but accessible for maintenance. The splash backs will be white brick tiles with quarter round aluminium edges.

The contractor is to install a urinal in the space that the bath once occupied, this will be a high level cistern on meal period brackets, copper or stainless flush pipe and ceramic bowel. The cistern will have a battery power water saver solenoid valve installed.

The walls will be painted white and the floor replaced with Altro, a metal strip will be installed at the threshold.

The back bath room will have the bath removed. An 80mm stud and plaster board partition will be installed to form two toilet cubicles. This wall will be 2.4m high and finished off with a wooden plank capping. This will provide some natural light into this space. Skirting will match the original but will not be full height so as to show that this wall is an addition. The door to the toilet will be a 6 panel pine door that will be painted white. The door furniture is to best match the original doors.

A new wash hand basins will be installed, this will need to match the existing wash hand basins. A thermostatic mixing valve will need to be installed, and if at all possible this will need to be concealed but accessible for maintenance. The splash backs will be white brick tiles with quarter round aluminium edges.

The walls will be painted white and the floor replaced with Altro, a metal strip will be installed at the threshold. Allow for one stainless steel maxi paper towel dispenser and elements toilet roll holder by Dolphin

The existing back toilet and wash hand basin is to be removed and reused if at all possible. The existing waste pipe will need to be extend to

feed the new toilets. This will run of the surface as the joints directions are not known. This will be boxed in and this mirror the finish of the new partition walls. New skirting will be the best match to the original high skirting.

A ne butlers sink and 600mm cupboard will be installed along the back wall. The style of the cupboard door will be Howdens Greenwich Shaker, final colour is to be decided post tender. Within the 600mm cupboard will house a small integrated fridge. The units may have to stand proud of the wall as the soil pipe will run behind the units. To accommodate this the contractor is to allow to install a 950mm oak block worktop which will be cut down to size. Draining board groves will be routed out of the worktop an additional shelf will be installed from the worktop off cut. This will be supported by a square wooden leg

Above the base unit there will be a microwave & unit, this will have a cornice to match the skirting. Additional power outlets will be required for the microwave, fridge and kettle. Along the perimeter of the work and wall junction will be tiled up to the underside of the microwave unit. This will be white brick type with aluminium quarter round edging, the ninety degree corners will be mitred.

The walls will be painted white and the floor replaced with Altro, a metal strip will be installed at the threshold.

Basement Refurbishment and Alterations

The Services Contractor shall supply, offload, install and test a complete systems to satisfy the performance requirements of various items of sanitary ware/plant, appliances and water fittings, in accordance with parameters specified

The basement currently has a ladies and gents toilet, but they have not been refurbished since they had been installed and they are not appealing of use. The lighting is to be replaced with round flush LED fittings, the existing extract fans are to be replaced as well as the flooring. The flooring will be the same as the other toilet areas.

The existing cubicles are in good order but there is a lack of colour and as a result they are to be replace.

The tiles will need to be re-grouted and damaged tiles replaced.

There is an existing cupboard with the basement which will be converted into a kitchen. The contractor is to install a Stockbridge super matt stone Howden's base and wall units along the back wall. A space will be left to accommodate a fridge unit. Additional power points will to be extended for the existing final ring circuit to feed the under counter fridge and kittle.

The splash back is to be tiled up to the underside of the cupboards and to the outer edge of the work top.

The work surface is the be a quartz stone grey smooth bullnose laminate (38mm)

The hot and cold water services will be extend from the adjacent toilet area. There is currently no extract fan within this space and the contractor is to install a new unit and run the solid ductwork to the outside within the ceiling void.

Flooring:

Altro Limited.

Works Road,

Letchworth Garden City,

Hertfordshire.

SG6 1NW

Tele: 01462 489 516

Email enquiries@altro.com

Cubical

Dunhams Washroom Systems

The Granary Business Park,
School Road,
Neatishead,
Norwich
NR12 8BU

Email info@dunhamswashrooms.com

Tele: 01603 424855

Kitchen:

Howdens Joinery Bodmin

Dunmere Road
Bodmin
United Kingdom,
PL31 2QN

Tel: 01208 783 62
Fax: 01208 783 65

Toilet furniture

Dolphin Solutions

Southpoint,

Compass Park Junction Road 5BS,

Bodiam,

Robertsbridge

TN32 5SB

Tele: 01424202224

Email: info@dolphinsolutions.co.uk

TENDER SUMMARY

MECHANICAL SERVICES

Boiler and plant room

Labour	£
Material	£
Boilers	£
Controls	£
Pumps	£
Motorised valves	£
Isolation Valves	£
Low Loss Header	£
Gas proving system	£
Testing and Commissioning	£

Pipe work and emitters

Labour	£
Material	£
SPC Fan convectors	£
LST Radiators	£
Cast iron radiators	£
Insulation	£
Boxing	£

Heat Meters and zone valves	£
Testing and Commissioning	£
<u>Ventilation</u>	
Labour	£
Material	£
Testing and Commissioning	£
<u>Hot and Cold Water Services</u>	
Labour	£
Material	£
Testing and Commissioning	£
<u>Services Control Panel</u>	
Labour	£
Material	£
<u>Ground floor toilets remodelling</u>	
<u>Builders work</u>	
Labour	£
Material	£
Testing and Commissioning	£
Decorations	£
Flooring	£
Tiles	£
Sanitary ware	£

Cubical and counter top	£
Lighting/power	£
Hand dries	£

<u>Basement WC and kitchen remodelling</u>

Labour	£
Material	£
Flooring	£
Lighting/power	£
Kitchen	£
Testing and Commissioning	£

<u>First Floor WC alteration and Kitchen alterations</u>

Labour	£
Material	£
Kitchen	£
Sanitary Ware	£
Builders work	£
Electrical	£
Testing and Commissioning	£

Operating & Maintenance Manual		£
Building User Guide		£
Structural Engineer PC Sum		£ 650.00
Building Control Application		£ 350.00
Asbestos Survey		£
Mechanical Sub-Total		£
Toilet Alterations		£
	VAT	£
PC Sum		£5000.00
	TOTAL	£

DAYWORK RATES

Identify below the percentage additions to the HVCA/RICS and CA/RICS rates for work carried out under Daywork:

Labour + %	£
Materials + %	£
Plant + %	£