TORBAY COUNCIL

Part 2A Technical Specification

Contract Reference

TTDA3720

Contract Title

Servicing of Mechanical Plant and Equipment

THE SERVICING AND MAINTENANCE OF COMMERCIAL MECHANICAL BUILDING SERVICES WITHIN TORBAY COUNCIL PROPERTIES

Particular Specification Contents

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SECTION 2:1

PARTICULAR SPECIFICATION

SECTION 2:1

PARTICULAR SPECIFICATION

The Servicing and Maintenance of Commercial Mechanical Building Services within Torbay Properties

2:1:00 General Conditions

2:1:01 Queries

Any technical queries in respect of this specification shall be addressed to:-

Mechanical Project Manager
Mr Barry Powell
Property Services
3rd Floor
Tor Hill House
Union Street
Torquay, Devon. TQ2 5QW

Telephone No 01803 207993

2:1:02 Inspection of the Works

Tenderers must satisfy themselves as to the present condition of the plant, to assess for themselves the general quality of the previous servicing, together with local conditions, accessibility of the plant, parking, admission and the conditions under which servicing and maintenance work is to be carried out.

Failure to do so will not be considered as grounds for claims, demands, loss, cost or expenses whatsoever or howsoever caused, which may be brought against the Council or TDA.

2:1:03 General Description of the Works

The work is described in the Specification and Schedules accompanying these Conditions, comprising of:-

1. The regular servicing, cleaning, lubricating and repair of the listed items of boiler plant, mechanical ventilation plant, air conditioning plant and all of their associated systems.

2. The annual cleaning and chlorination of the hot water system, cold water storage systems and associated outlets. The annual inspection and updating of Risk Assessment for Water Hygiene site based log books.

3. Twice annually testing maintenance and recording the effective operation of mixing/blending valves.

4. The annual servicing, testing and recalibration of control panels, and control equipment together with associated remote devices.

5. The regular servicing cleaning and repair of fountains, sprinkler & sump pumps.

6. The annual service & maintenance inspection of sewage pump equipment, the electric control equipment, reflux and sluice valves.

7. The annual inspection and soundness testing of all gas installations in all buildings listed in the schedules.

8. The annual testing, service and maintenance of fume cupboards.

9. The annual maintenance, servicing and cleaning of LPHW fan convectors and associated equipment.

10. The annual inspection of ventilation ductwork systems to ensure that the cleanliness complies with the requirements of the H & S Commission Code of Practice L24.

In Torbay Council Properties and other properties where “Property Services” are agents acting on behalf of other organisations.

Most Torbay Council sites are situated within Torbay Unitary Authority Boundary covering the towns of Torquay, Paignton and Brixham but properties will be included or added to the service schedule that are outside this boundary.

2:1:04 Plant Shutdown

If at any time a system or part of a system is found to be out of action and cannot be rectified immediately for any reason, this shall be reported to the contract administrator. Similarly, no component shall be removed from any premises without the prior consent of the contract administrator.

2:1:05 Bona Fide Parts

In no case shall components, other than those approved by the manufacturer of that particular item of equipment by fitted.

2:1:06 Spare Parts

The Contractor must provide all disposable and sundry materials such as grease, washers, screws, fuses, control panel or burner neons/warning bulbs, packings, gaskets, cleaning chemicals, jointing materials etc, within the price of his contract.

The supply only of any replacement parts is to be charged at cost plus the contract percentage addition.

The cost labour element will not be chargeable on such replacement parts. An allowance must be included in your initial tender price for servicing. The Contractor shall be prepared to submit suppliers’ invoices at the time of the claim to substantiate the cost of such replacement parts. Replacement parts shall therefore, not be subject to the fixed price condition, but shall be charged at the invoice rate to the Contractor from his supplier plus the percentage addition previously mentioned.

The Contractor shall arrange to have at his disposal an adequate amount of spares to provide prompt attention to the range of equipment described herein.

However, where certain parts, such as pump mechanical seals, bearings, beltdrives, burner electrodes, noisy contactors etc, can be seen to be deteriorating at the time of any service or breakdown visit, the parts can be ordered for fitting at the time of the next service or breakdown visit.

2:1:07 Use of Specialist Firms

Where it is essential that a component has to be repaired by a specialist firm the full costs of using that firm will be paid to the Contractor, including the Contractors contract percentage addition, but the specialists firms invoice must accompany the claim. The labour cost of removal and replacement of that component will not be chargeable.

2:1:08 Breakdown Callouts

Callouts will be logged via the Technology Forge Ltd. TF Cloud System. The Mechanical Services Contractor will be required to adopt and maintain the TF Cloud call logging system keeping the progress of jobs up to date.

The response times for attending breakdown calls other than those specified in Clause 2:4:0 fall into the following categories as classified by the Contract Administrator.

Reactive Standard

An engineer will require to attend and actively rectify the problem within 24 hours of the time of the call.

Reactive Urgent

This will require attendance within the half day. This should be within 4 hours i.e. If the call is passed at 08:00 hrs then attendance should be before 12:00 hrs. If the call is after 11:30 hrs attendance should be before the end of the day. Calls received after 16:00 hrs will be attended either by the end of the day or the following morning dependant upon the building usage.

Emergency

These calls relate to incidents that may have potential danger to life or property (such as Gas leaks).

This will require the engineers to leave their current assignment, after making safe, to attend this call.

Scheduled

Where attendance can be delayed until the engineers are next conveniently in the area will be classified “Scheduled”.

The cost of all breakdown callouts is to be included within your tender price. The only circumstances when additional labour costs will be paid are :-

i) False alarm, (e.g. Heating off on time switch)

ii) Extreme weather conditions – flooding etc.
iii) Vandalism.
iv) During out-of-office hours (Only the emergency rate only will apply i.e. “out-of-hours” rate minus normal rate).
v) Equipment external to the plant room and not required to be regularly serviced by the contractor, or not covered by this specification.

2:1:09 Service/Daywork Sheets

On all service visits to premises the Contractor must record the site address Asset Code and service reference number and must include the date, start and finish times on site and details of work completed, by obtaining the signature of the tenant, caretaker of other persons responsible in the premises on an electronic “service sheet” so designed for the purpose. This service record must be up-loaded into the Tech Forge system within 72 hours of the job being completed and will be required for approval of invoices associated with this work.

The service reference number will be the instruction number generated by the Tech Forge Inspection Module.

A separate Daywork Sheet shall be used to record any breakdown callouts between service visits and shall contain similar information to that on the “Service Sheet”. However instead of the service reference number it must indicate the Tech Forge Cloud instruction number.

Copies of Service Sheets and Daywork Sheets shall substantiate all applications for payment to the Contract Administrator.

The time spent travelling to and from the site MUST NOT be included on the daywork sheet as it is assumed the contractor will have sufficient engineers within the area keeping these times to a minimum. Therefore your daywork rate will be priced to allow for the travelling element.

The contractor will be required to attach unique identification label to each piece of equipment listed in the appendix. It will be the contractor’s responsibility to maintain the schedule of equipment updating, adding and deleting equipment as necessary.

Although this contract covers the maintenance of central plant, the contractor must be prepared to answer breakdown calls not necessarily associated with the plant. For example, should a breakdown occur within classroom only, of a school served by a central plant, the Contractor will be expected to respond and rectify that fault in the same way as he would if it was associated with the plant. Where items on the Schedule for the individual properties are shown external to the plant room they shall be covered by the same conditions.

2:1:10 Faulty Workmanship

The Contractor shall make good, at his own expense, any fault arising from incorrect maintenance or incorrect fitting of new parts to any unit, and be responsible for any damage caused by such defective workmanship. Any new parts that are fitted which are subsequently found to be defective within a 12 month period shall be replaced free of charge and any damage so caused by such failure made good wholly at the Contractor's expense.

2:1:11 Maintenance Audits

The contractor will be required to actively participate in regular monthly Audit Sessions intended to provide a formal framework for the Contract Administrator and Contractor to monitor the contract and assess the Quality of engineering maintenance.

The Audit sessions and documentation will require to monitor:-

i. Management
ii. Maintenance Service
iii. Communication
iv. Health & Safety
v. Technical Proficiency
vi. Invoicing

The contractor will allow the costs within his tender for attending meetings at monthly intervals.

In addition the Contractor must allow for the provision of the supervising operative attending upon the Contract Administrator during the site inspections and undertaking any performance tests as directed. Subject to satisfactory results the cost of the supervisor's time will be recoverable at the standard rate. In the event of sub standard workmanship being detected immediate action must be implemented to rectify the situation at NO ADDITIONAL COST.

2:1:12 After Hours Breakdown

The Contractor shall be prepared to offer a complete after hours breakdown service, though emergency callouts of this nature occur infrequently, they each must be treated on their merits.

The need for an engineer 'on standby' will therefore be necessary and an out-of-hours telephone number must be available, preferably a manned 24 hour Answering Service to ensure a single point of contact, to receive these calls from the emergency control centre.

The control centre routinely logs all breakdown calls and record the action taken by the duty controller. The control centre will report any breakdown requests made in respect of this contract to the contract administrator the following working day. The contract administrator will issue confirmation instructions immediately upon receipt.

2:1:13 Contract Period & Price Fluctuations

It is intended that any resultant Contract shall commence as soon after receipt of formal letter of award as may be agreed.

The Contract period for all lots to be up to a period of two (2) years with an option to extend up to a period of two (2) further years in twelve monthly increments or until the end of the allocated budget subject to termination clauses contained within either the Standard or Special Terms and Conditions, whichever prevails.

The Authority requires fixed pricing for the first two (2) years of the Contract. On the 1st April 2018 and 1st April 2019 the servicing rate will be adjusted in accordance with the conditions of contract Preliminary Clauses.

2:1:14 Variation of Contract

The Schedule of plant may be varied from time to time as a result of plant replacement, improvements & upgrades etc.
These details must be recorded on the equipment schedule (appendix B) and submitted with the service sheet. The form provides the facility to request a price adjustment.
Should this request be accepted the Contract Administrator will issue an instruction to alter the contract schedule rate.

2:1:15 Servicing Schedule

A Schedule of Servicing is included with the Form of Tender to show the breakdown of the cost of servicing for the contract. You should type the cost of the specific service, in the indicated space, rounded to the nearest pound sterling. .
All of these totals should then be added horizontally to the total box at the end. This figure will ultimately appear on the Form of Tender as your tender submission.

2:1:16 Quotations

Wherever the cost of replacement parts, or sub-contracted work referred to in Clause 2:1:07 is expected to be substantial the contractor will inform this department and when requested obtain competitive quotations from at least 3 of their suppliers or sub-contractors to ensure that the cost to the Council is no more than it should be and copies of these quotations shall accompany the invoices where applicable.

2:1:17 Plant Room Access

Generally at each property there will be a site manager/caretaker who will be able to provide access for servicing. The Contractor must arrange and give notice to the site manager to gain access, well in advance of the proposed work date. Abortive calls, therefore, for such instance where access cannot be gained will not be considered.

Within the Education properties it is anticipated the majority of the works will be carried out during school holiday periods but will need to be booked in with the school in advance. The Contractor must ensure that precise arrangements to gain access to the building and particular areas for these holiday periods.

2:1:18 Breakdowns Prior to the First Service Visit

The conditions of contract shall come into effect on the first day of April 2016. Any breakdowns on plant occurring between this date and the first service visit will be charged strictly in accordance with the General Conditions.

2:1:19 Chimney Cleaning

Chimney cleaning is not a requirement of this servicing and maintenance agreement, but the chimney condition is a factor in the correct operation of the plant, the internal surfaces shall be inspected superficially and any cleaning requirement reported to the contract administrator.

2:1:20 Obsolete Plant – Upgrading etc

Recommendations for major replacements and/or improvements shall be immediately reported to the contract administrator, and such work will be carried out either by open competitive tendering or by negotiation depending on the cost of such replacement/improvements.

2:1:21 Pressure Systems Safety Regulations 2000

Written schemes of examination have been prepared by the Authority for various items of plant which the contractor will need to follow rigorously when inspecting this item of plant.
Four weeks notice will be required by the Authority before any examination.

Furthermore it is the contractor's responsibility to identify any item of equipment which falls into this category that may exist or any fitted in the future and advise the Authority accordingly.

Expansion vessels and pump control vessels not requiring a written scheme shall be visually inspected and the pre-charge checked annually with the results recorded on the Major Service record sheet.

2:1:22 Identification of Plant and Equipment

The Contractor will be required fix an identification label to each scheduled item of equipment and provide it with a unique identification number . The label shall display the TDA logo, website address and telephone number, but NOT the contractors name, logo or telephone number.
It will be the contractors responsibility to maintain the schedule of equipment updating, adding and deleting equipment as necessary.

2:1:23 Conduct of Work

The Contractor is to arrange his work as to avoid interference with routine use of occupied premises and must co-operate with persons occupying or using the premises whilst in the execution of their work.

The Contractor shall remove or cover up to protect all furniture, fittings and the like if in a position affected by the works, upon completion, replace or remove protection as relevant, any loss or damage must be made good.

The Contractor shall supply all requisite watching, lighting and barriers during the progress of the work.

2:1:24 Disposal of Waste Materials

The Contractor shall ensure that all waste arising from the works Including redundant plant, materials and equipment where replacement has been required is properly disposed of by a registered waste carrier. The Contractor must register as a licensed carrier if waste is removed by the Contractor.

The Contractor shall be deemed to be the owner of all waste arising from the works and shall ensure that its disposal meets with the requirements of the Local Authority and of the waste Disposal Authority.

SECTION 2:2

COMMERCIAL HEATING PLANT AND SYSTEMS

SECTION 2:2 (A)

2:2:0 Commercial Heating Plant Maintenance

TWO minor service visits shall be carried out by the Contractor to all central boiler plants at approximately the end of November and the end of January but will be dictated by the Technology Forge, TF Cloud “Inspections Module” comprising of the following:-

2:2:1 Boiler House/Plant Room (General)

A. Check all fresh air inlets etc clear of obstructions.
B. Check and report any combustible materials in boiler house.
C. Wipe down all equipment.

2:2:2 Boilers (Gas & Oil)

A. Examine sectional boilers for leaks between sections and report any recommended re-nippling.
B. Check and adjust damper control gear where fitted.
C. Check all boiler mountings, gauges, stats etc, and adjust safety valve-spring if required. Report any faulty items requiring replacement together with an estimate. Replace any item without reference to the Supervising Officer where the safety of the plant could be suspect if not completed quickly. Immediately shut down and label any boiler where the safety requirements are not being met in accordance with the Gas Safety Regulations current at the time of the services.
D. Change boiler sequence.

2:2:3 Flues

A. Clean all boiler flueways on oil fired appliances only.
B. Check all flues for air leaks and seal where necessary.
C. Check and adjust draught stabilisers, explosion relief doors, etc.
D. Check flue gas temperature and record.
E. Check smoke level and CO2 on oil fired boilers and CO and CO2 on gas fired boilers; calculate efficiency and record.
F. Inspect external louvres and bird guards of flue dilution systems and clean if necessary.

2:2:4 Atmospheric Gas Burners

A. Check and adjust draught apparatus if applicable.
B. Check the safety shut-off valve for gas tightness in a de-energised state and check for safe operation.
C. Check all other gas controls for safe operation and adjust pilot flame if necessary.
D. Measure and record on service sheet gas pressure available at meter and on burner when running and adjust gas governor if necessary.

2:2:5 Blown Gas Burners

A. Clean UV-cell or flame rectification probe where fitted and measure detector current; replace or adjust gap as necessary.
B. Check the safety shut-off valve for gas tightness in a de-energised state and check for safe operation.
C. Clean or replace as necessary H.T. ignition electrodes and leads. Check spark gap and adjust as necessary.
D. Check all other gas control for safe operation.
E. Lubricate burner motor bearings, ensuring that no grit enters lubricator cap; grease motors having ball bearings, Check motor bearing for noisy operation.
F. Check and adjust pilot gas governor if necessary.
G. Measure and record gas pressure at meter and on burner when running and adjust gas governor if necessary.
H. Adjust secondary air damper to produce efficient combustion.

2:2:6 Pressure Jet Oil Burners

A. Clean photo-electric cell and measure detector current; replace or adjust as necessary.
B. Clean or replace add necessary HY ignition electrodes and leads. Check spark gap and adjust as necessary.
C. Check all other oil controls for safe operation.
D. Lubricate burner motor bearings, ensuring that no grit enters lubricator cap; grease motors having ball bearings. Check motor bearings for noisy operation.
E. Measure and record oil pressure and adjust if necessary.
F. Clean and examine burner nozzles; replace as necessary.
G. Adjust secondary air damper to produce efficient combustion.

2:2:7 Oil Handling Equipment

A. Draw-off any accumulated water form oil storage tanks.
B. Check, adjust or replace fuseable links, wire and pulley system manual quick release mechanism and fire alarm on dead weight fire valve.
C. Check for leaks in oil lines and valves and repair as necessary.

2:2:8 Pumps (All services)

A. Inspect all pumps, motors and couplings etc, for correct and quiet operation.
B. Ensure all safety guards are in position and secure.
C. Examine, adjust tension or replace belt drives, check alignment of pulleys, and/or shafts. Check bearings for noisy operation and replace as necessary.
D. Adjust gland packing where necessary. Inspect mechanical seals where appropriate. Vent end bearings, scroll or stuffing box cover where appropriate.
E. Oil and grease as necessary.
F. Check drip pipes are connected and clear of obstructions.
G. Change over to standby pump at each visit.
H. Check operation of all isolating regulating valves and non return valves.

2:2:9 Cylinders and Calorifiers

A. Check all vessel mountings and adjust safety valve springs if required; report any recommended replacements.

B. To avoid any possible risk of legionella being present in any of our hot water systems please ensure on every service visit to all buildings that the hot water storage temperature control is et sufficiently high (commonly about 60ºc (140ºF) to provide an outlet temperature, at the index tap, of at least 46ºc (115ºF).

2:2:10 Feed and Expansion Tanks

A. Check and adjust ball valves and rewasher if necessary.
B. Check that overflow and vent pipes are not blocked; clean out if necessary

2:2:11 Valves (All Services)

A. Inspect valves, cocks, taps and automatic air vents associated with the plant. Clean, ease, lubricate and repack glands or replace 'o' ring seals where spindle leaking has occurred. Clean all spindle or pipe connection crusting and repair of adjust to prevent further leakage.

2:2:12 Controls and Sundry Electrical Apparatus

A. refer section 2:7 for detailed requirements of the control system operation that shall be carried out at a major service visit in addition to checks for correct operation all control valve motors, burner control boxes, thermostats and associated relays, starters, panels compensated control equipment, timeswitches, hours run meters, optimum start controllers and boiler control and limit thermostats etc. Replacement of spent bulbs/neons in control panels and where mounted on burners. Check overload settings on all contractors and adjust as required.
B. Lubricate as necessary control valve motors, etc.

2:2:13 Unit Heaters

A. Where unit heaters are listed within the particular building details, they shall be classed as small air handling units and maintained and serviced in accordance with the requirements of the Mechanical Ventilation Plant Schedule. They will require only one minor service visit.

2:2:14 Showers and Basins in all changing rooms & toilets

A. Check the temperature and adjust if necessary the thermostatic mixing valves accordingly where strainers are fitted – remove, clean with chlorine solution and refit.
B. Remove all spray buttons to basin taps, shower atomisers, and shower spray heads clean with chlorine solution and refit.

SECTION 2:2(B)

MAJOR SERVICE VISIT

Commercial Heating Plant Maintenance

ONE major annual overhaul shall be carried out by the Contract to all central boiler plants in the month dictated by the Technology Forge, TF Cloud “Inspections Module” comprising of the following:-

2:2:15 Boiler House/Plant Room (General)

A. Check all fresh air inlets etc. Clear of obstructions and no
B. Check and report any combustible material in boiler house.
C. Wipe down all equipment.
D. Check for any physical alterations that may have taken place that could affect the performance, or conflict with current regulations.

2:2:16 Boilers (Gas & Oil)

A. Open up and clean all furnace side surfaces, including flueways. Where standby boilers are installed they shall be operational during the service.
B. Examine, repair and replace refractory brickwork as necessary.
C. Clean and replace broken fire doors, Ashpit doors and flueway door. Replace damaged door gaskets as necessary.
D. Examine sectional boilers for leaks between sections and report any recommended re-nippling.
E. Check and adjust damper control gear where fitted.
F. Check all boiler mountings, gauges, stats, etc, and adjust safety valve-spring if required. Report any faulty items requiring replacement together with an estimate. Replace any items without reference to the Supervising Officer where the safety of the plant could be suspect if not completed quickly. Immediately shut down and label any boiler where the safety requirements are not being met in accordance with the Gas Safety Regulations current at the time of service.
G. Change boiler sequence.
H. Sample water quality for suitable levels of concentration of corrosion inhibiter and adjust / add inhibitor as required.

2:2:17 Flues

A. Clean all flues.
B. Check all flues for air leaks and seal where necessary.
C. Check and adjust draught stabilisers, explosion relief doors, etc.
D. Check flue gas temperature and record.
E. Check smoke level and CO2 on oil fired boilers and CO and CO2 on gas fired boilers; calculate efficiency and record.
F. Strip down, overhaul and lubricate induced draught fan or flue dilution fans and control, where applicable. Temporarily disconnect supply to motor to ensure that the boilers shut down through the air proving switch.
G. Clean external louvres and bird guards of flue dilution systems.

2:2:18 Atmospheric Gas Burners

A. Clean jets, nozzles, firing tubes and pilot burner.
B. Check and adjust draught apparatus. Adjust pilot flame if necessary.
C. Check the safety shut-off for gas tightness in a de-energised state and check for the safe operation.
D. Remove and clean lint arrester.
E. Check that gas plug cocks are free moving; grease where necessary.
F. Check all other gas controls, gas governor and dead weight gas shut-off valve, for safe operation. Manually release dead weight gas shut-off valve and reset.
G. Measure and record on service sheet the gas pressure available at meter and on burner when running and adjust if necessary.

2:2:19 Blown Gas Burners

A. Clean firing tube, fan cage and volute.
B. Clean UV-cell or flame rectification probe where fitted and measure and record detector current; replace or adjust gap as necessary.
C. Check the safety shut-off valve for gas tightness in a de-energised state and check for safe operation.
D. Clean or replace as necessary HT ignition electrodes and leads. Check spark gap and adjust as necessary.
E. Check that gas plug cocks are free moving; grease where necessary.
F. Check all other gas controls, gas governor and dead weight gas shut-off valve for safe operation. Manually release dead weight gas shut-off valve and reset.
G. Lubricate burner motor bearings; ensuring that no grit enters lubricator cap; grease motors having ball bearings. Check motor bearing for noisy operation.
H. Check air pressure switch setting and adjust if necessary.
I. Measure and record on service sheet the gas pressure available at meter and on burner when running.
J. Adjust gas governor and secondary air damper to produce efficient combustion. Adjust pilot gas governor if necessary.

2:2:20 Pressure Jet Oil Burners

A. Clean firing tube and fan cage and volute.
B. Clean photo-electric cell; measure and record detector current; replace or adjust as necessary.
C. Clean or replace as necessary HT ignition electrodes and leads. Check spark gap and adjust as necessary.
D. Check all other controls and dead weight oil shut-off valve for safe operation.
E. Lubricate burner motor bearings, ensuring that no grit enters lubricator cap; grease motors having ball bearings.
F. Measure and record oil pressure and adjust if necessary.
G. Clean and examine burner nozzles; replace as necessary.
H. Remove and replace disposable oil filter elements or clean perforated metal and mesh filter element.
I. Adjust secondary air damper to produce efficient combustion.

2:2:21 Oil Handling Equipment

A. Desludge oil storage tanks, and draw-off any accumulated water.
B. Check external condition of all oil tanks, and report recommendations for repair, painting, need to inspect internally etc.

C. Check calibration and operation of oil contents gauges, fill alarms, etc, and adjust or repair as necessary.
D. Check that oil vent pipe is not blocked; clean out if necessary.
E. Check, adjust or replace fuseable links, wire and pulley system, manual quick release mechanism and fire alarms on dead weight fire valve. Manually release dead weight fire valve mechanism and reset.
F. Check for leaks in oil lines and valves and repair as necessary.
G. Inspect the internal and external condition of the tank and bund and record the findings on the Major Service sheet

MAJOR SERVICE VISIT

SECTION 2:2(B)

2:2:22 Pumps (All services)

A. Allow to strip down and overhaul all pumps and motors, when necessary.
B. Check security of holding-down bolts, sliding motor frame bolts, etc, and adjust if required.
C. Examine and replace motor brushes as necessary.
D. Examine, adjust or replace belt drives, check alignment of pulleys and/or shafts, check motor/pump bearings for play and noise – replace as necessary.
E. Adjust or replace gland packing where necessary. Replace where necessary mechanical seals. Vent end bearings; scroll or stuffing box cover where appropriate.
F. Oil and grease as necessary.
G. Check drip pipes are connected and clear of obstructions and run to gulley.
H. Change over to standby pump at each visit.
I. When motor replacement is found necessary on a glandless pump a labour claim will not be chargeable. If isolating valves are found not to hold and draining down has to take place then a labour claim for that lost time will be considered.

2:2:23 Cylinders and Calorifiers

A. Allow to remove bolted top, hand holes or tube plate cover an thoroughly clean inside of vessel if found to be necessary.
B. Examine primary heating coils and report findings.
C. Fit new joint rings if found to be necessary.
D. Check all vessel mountings and adjust safety valve springs if required; report any recommended replacements.
E. Check setting of thermostat if fitted and ensure it is operating the control device. Check also that the primary supply is maintaining the required secondary temperature.
To avoid any possible risk of legionella being present in any of our hot water systems please ensure on every service visit to all buildings that the hot water storage temperature control is set sufficiently high (commonly about 60ºC to provide an outlet temperature, at the index tap, of at least 50ºc.
F. Check security of supports.
G. Where systems are un-vented, expansion vessels are to be checked for pre-charge is at the correct pressure and that safety valves are of suitable pressure and are functioning correctly.

2:2:24 Feed and Expansion Tanks

A. Check condition of tank internally and externally and report findings.
B. Check and adjust ball valves and rewasher if necessary. Check water tightness of float; replace or repair if required.
C. check that overflow and vent pipes are not blocked; clean out if necessary. Check that there is no pumping over and that water is not continuously entering the tank indicating a leak.
D. Check security of supports.

2:2:25 Valves (All services)

A. Check the operation of all valves, cocks, taps and automatic air vents associated with the plant, clean, ease or lubricate, and repack glands or replace 'o' ring seals or floats where leaking has occurred. Clean all spindle or pipe connection crusting and repair or adjust to prevent further leakage.

2:2:26 Controls and Sundry Electrical Apparatus

A. The Contractor will be required to be fully conversant with Schneider Sigma and Schneider SmartStructure Building management Systems and have the technical ability to amend and adjust the programming to accommodate replacement plant and equipment without requiring the engaging external controls companies.
B. Check for correct operation all control valve motors, burner control boxes, thermostats and associated relays, panels, compensated control equipment, timeswitches, hours run meters, optimum start controllers and boiler control and limit thermostats. Replace spend bulbs/neons in control panels and where mounted on burners. Check overload settings on all contactors and adjust as required.
B. Lubricate as necessary control valve motors, etc.
C. Check that all electrical gear and wiring, relative only to the above plant, complies with current IEE Regulations.
D. Replace all damaged flexible conduits and terminations connected to all plant covered by this specification.

2:2:27 General Condition of Plant Room and Pipework

A. Report on general condition of plant and pipework if considered to be critical to replace within one year from date of visit. Also comment on state of pipework, lagging, and decoration of plantroom, inadequate lighting, ventilation and plant room drainage.
B. Repair any water leaks as found within the plantrooms. Where draining down is required a labour claim for this lost time will be considered.

2:2:28 Showers and basins in all Changing Rooms and Toilets

A. Check the temperature of water and adjust the thermostatic mixing valves accordingly where strainers are fitted remove clean with chlorine solution and refit.
B. Remove all spray buttons to basin tops shower automisers, and shower spray heads clean with chlorine solution and refit.

2:2:29 Direct Gas Fired Hot Water Storage Heaters/Instantaneous Multipoint Water Heaters

A. Light-up water heater and note any irregularities requiring attention. Test for unsatisfactory circulation with circulators, test for minimum water flow with

instantaneous heaters. Test and prove flame failure equipment, replace if suspect.

B. Turn off gas and water cocks and check cocks, grease gas cocks and tighten as necessary.
C. Test flue with lighted match or taper at the draught divertor for satisfactory operation. Clean and make repairs or replacements as necessary.
D. Remove main burner and pilot assemblies. Clean, check and repair or replace as necessary, paying particular attention to filters and pilot tap.
E. Withdraw any loose baffles in combustion chamber. Clean combustion chamber and inner flueways and uptakes of appliances.
F. Drain down water from instantaneous heaters and remove as much casing as necessary for access. Disconnect and remove heating body and wash out. Check for scale in water ways and describe as necessary. Change scale reducer, if fitted.
G. Clean dust and condensation tray.
H. Reassemble. Clean exterior of water heater, valves etc. Repair or replace any corroded or deteriorated component.
I. Turn on gas supply, check for soundness and freedom from leaks.
J. Check gas rate, by burner or meter rate.
K. To avoid any possible risk of legionella being present in any of one hot water systems please ensure on every service visit to all building that the hot water storage temperature control is set sufficient high (commonly about 60ºC to provide an outlet temperature, at the index tap, of at least 50ºc).
L. In accordance with the recommendations of the manufacturer, every 24 months, inspect the sacrificial Anodes and replace as necessary.

2:2:30 Direct Gas Fired Natural Convector Space Heaters

A. Check that manual or time-switch is on and that inbuilt or remote thermostat is calling for heat. Check burner for visually satisfactory flame. Check thermocouple flame failure device, replace if suspect.
B. Turn off gas, check and grease gas cocks and tighten as necessary.
C. Test flue; check condensate drain if fitted. Check seal of balanced flue if fitted. Clean and make repairs or replacements as necessary.
D. Remove main burner and pilot assemblies. Clean, check and repair or replace as necessary.
E. Clean combustion chamber and inner flueways of appliance.
F. Reassemble. Clean exterior of heater and guards. Repair or replace any corroded or deteriorated component.
G. Turn on gas supply, check for soundness and freedom from leaks.
H. Check all controls; flame failure, overheat control automatic/manual reset, control thermostat and switch setting – as fitted. Test and rectify temperature settings, time if necessary.

2:2:31 Inspection of Ventilation Provision

A. Ensure adequate provision is made for the inlet of fresh air for combustion purposes in accordance with the Gas Safety regulations and relevant British Standards.
B. Ensure no air inlets or transfer grilles, if provided, are blocked or likely to be blocked.

SECTION 2:3

MECHANICAL VENTILATION PLANT AND SYSTEMS

SECTION 2.3 (A)

2:3:0 Mechanical Ventilation Plant (Minor Service Visit)

One minor annual overhaul shall be carried out by the Contractor to all Mechanical Ventilation Plant as indicated, comprising of the following.

2:3:1 Fans (All supply, extract, centrifugal, axial, roof units and air handling units)

A. Grease or oil as appropriate all fan shaft bearings. Replace work bearings causing undue shaft wear, noise or vibration.
B. Grease or oil as appropriate all motor shaft bearings and top up any oil reservoirs, particularly on slip ring motors.
C. Inspect belt drives for wear, tension and alignment; adjust and/or replace as necessary.
D. Examine anti-vibration mountings and flexible ductwork connections for splits or deterioration – report all defects.
E. Measure motor current using a clip-on ammeter and compare with rated current – record on service sheet. Check overload settings on motor contactors where appropriate and adjust as necessary. Rectify any defect causing excess current consumption.

2:3:2 Filters

A. Remove all filter trays in air handling units and supply ventilation systems where the filter media is a polyurethane foam. The pad shall be removed from the filter tray and vacuumed (in the opposite direction to normal air flow). Where a pad is contaminated with grease deposits, in addition to vacuuming, it shall be sprayed with water containing a mild detergent. Replace any damaged filter media.
B. Check all access hatch deals for air tightness and replace as necessary.

2:3:3 Heater Batteries

A. Open manual air cocks on water side of heater batteries and remove any air.
B. Repair any water leaks to isolating valves motorised control valves or pipework connections.

2:3:4 Grilles, Diffusers and External Louvres

A. Inspect all grilles, diffusers and external louvres, and thoroughly clean.

2:3:5 Silencers

A. No action required on minor service visit.

2:3:6 Smoke Detection Equipment

A. Clean the optics of the radiovisor receiver and lens of the light beam generator and test the system for correct operation.

2:3:7 Controls and Sundry Electrical Apparatus

A. Check for correct operation all control valve motors, thermostats and associated relays, panels compensated control equipment, check and amend timeswitches if required, hours run meters and optimum start controllers. Replace spent bulbs/neons in control panels. Check overload settings on all contactors and adjust as required.
B. The Contractor will be required to be fully conversant with Schneider Sigma, Schneider SmartStructure and Trend Building management Systems and have the technical ability to amend and adjust the programming to accommodate replacement plant and equipment without requiring the engaging external controls companies.
C. Lubricate as necessary control valve motors etc.
D. Check that all electrical gear and wiring, relative only to the ventilation plant complies with current IEE Regulations.
E. Replace all damaged flexible conduits and terminations connected to all plant covered by this plant.

2:3:8 Air handling Units/Unit Heaters

A. Air Handling Units:- Carry out service in accordance with Clauses 2:4:1, 2, 3 and 4 and the relevant sub-clauses.
B. Fan convectors:- Carry out service in accordance with Clause 2:4:1, 2, 3 and 4 and the relevant sub-clauses.
C. Unit Heaters:- Carry out service in accordance with Clauses 2:4:1, 3 and 4. If filters are fitted then Clause 2:4:2 should also be completed.

MAJOR SERVICE VISIT

SECTION 2:3(B)

Mechanical Ventilation Plant

One major annual overhaul shall be carried out by the Contractor to all Mechanical Ventilation Plant as indicated, comprising of the following:-

2:3:9 Fans (All supply, extract, centrifungal, axial, roof units and air handling units)

A. Grease or oil as appropriate all fan shaft bearings. Replace worn bearings causing undue shaft wear, noise or vibration.
B. Grease or oil as appropriate all motor shaft bearings and top up any oil reservoirs, particularly on slip ring motors.
C. Examine and replace if necessary motor brushes, slip rings, motor bearings etc.
D. Inspect belt drives for wear, tension and alignment; adjust and/or replace as necessary.
E. Check holding-down bolts, sliding motor frame bolts, weatherproof domes, lid clasps, etc, for security. Tighten or replace insecure fixings.
F. Check security of shaft/impeller bolts or keyways – tighten or replace as necessary.
G. Inspect external weathering louvres for damage or leakage. Remove accumulated dirt and debris.
H. Examine anti-vibration mountings and flexible ductwork connections for splits or deterioration – report all defects.

I. Clean all fan casing surfaces including blades and impellers either by spraying with chemical emulsifiers or by using manual means. Wire brush any corroded metal parts and treat with a corrosion neutraliser and protective paint.

J. Measure motor current using a clip-on a meter and compare with rates current – record on service sheet. Check overload settings on motor contactors where appropriate and adjust as necessary. Rectify any defect causing excess current consumption.

2:3:10 Filters

A. Remove all filter trays in air handling units and supply ventilation systems.

B. Where the filter media is a polyurethane foam the pad shall be removed from the filter tray and vacuumed (in the opposite direction to normal air flow). Where a pad is contaminated with grease deposits in addition to vacuuming, it shall be washed with water containing a mild detergent. Replace any damaged filter media.

C. Where the filter media is a fabric or fibrous material it shall be unclipped from the retaining frame and completely replaced with a material having the same relative and dust holding capacity.

D. Where the filter is in a cardboard frame, the whole pad shall be replaced.

E. The Contaminated filter media shall be completely removed from site by the Contractor.

F. The contaminated filter media/pads etc, for the following year's replacement and leave in a suitable position on site.

G. Clean all metal filter frames and trays. Wire brush all corroded parts and treat with a corrosion neutraliser and protective paint.

H. Check all access hatch deals for air tightness and replace as necessary.

2:3:11 Heater Batteries

A. With the filter trays removed, the heat exchange surfaces shall be vacuumed to remove any accumulated dust and debris. Where dust is of a greasy nature the surfaces should be sprayed with a chemical emulsifier or sprayed with water containing a mild detergent.

B. Report any damage to heater battery fins or situations where by-passing or leakage is found to be occurring.

C. Open manual air cocks on water side of heater batteries and remove any air.

D. Repair any water leaks to isolating valves, motorised control valves or pipework connections.

2:3:12 Grilles, Diffusers and External Louvres

A. Clean all grilles, diffusers and external louvres.

B. Allow to check air flow rates where air distribution difficulties have been reported, but only adjust dampers where it is obvious that these have been incorrectly set. After adjustment check other grilles/diffusers on system to ensure that this action has not unbalanced the rest of the system.

2:3:13 Silencers

A. Where silencers are fitted their internal surfaces shall be vacuumed to remove all accumulated dust.

2:3:14 Smoke Detection Equipment

A. Where fitted, clean the optics of the radiovisor receiver and lens of the light beam generator and test the system for correct operation.

2:3:15 Controls and Sundry Electrical Apparatus

A. Check for correct operation all control valve motors, thermostats and associated relays, panels compensated control equipment, timeswitches, hours run meters and optimum start controllers. Replace spent bulbs/neons in control panels. Check overload settings on all contactors and adjust as required.
B. Lubricate ad necessary control valve motors etc.
C. Check that all electrical gear and wiring, relative only to the ventilation plant complies with current IEE Regulations.
D. Replace all damaged flexible conduits and terminations connected to all plant covered by this plant.

2:3:16 Air Handling Units

A. Carry out visual check of complete unit including drive belts and safety guards. Check for:
   i) Fan vibration and running noise;
   ii) Air flow pressure (manometer reading);
   iii) Water temperature to and from internal coils.
B. Inspect and change filters as necessary.
C. Examine drive belts for tension and wear, adjust or replace from site stock.
D. Change over lead/lag fans where applicable.
E. Check air intake/outlets for obstructions and clear as necessary.
F. Check the operation of the inlet and recirculation dampers and lubricate as necessary.
G. Examine all bearings checking for cool, smooth running and lubricate as necessary.
H. Check condition of all filters. Change from site stock as necessary.
I. Check drive pulleys for alignment, adjust as necessary.
J. Examine all holding down bolts and tighten as necessary.
K. Clean, inspect/test fire dampers.
L. Clean, check ran impeller and scroll.
M. Vent coils.
N. Inspect fan drive belts retention.
O. Examine and clean fan impellers. Report any defects.
P. Check condition of heating and cooling batteries and report any defects.
Q. Clean and examine all gauges and instruments.
R. Check all door/access seals and report any deterioration.
S. Examine all flexible connections to ductwork and report any defects.
T. Clean air register outlets, louvres, etc.
U. Clean and inspect all sensor probes.
V. Test fan motor insulation and earth continuity resistance.
W. Inspect condition of all wiring.

2:3:17 Unit Heaters

A. Visually ecamine unit to ensure correct operation and report and undue noise or vibration.

B. Ensure that pipework connections are sound.
C. Check operation of all unit controls and thermostats. Report any faults.
D. Check condense tray and rain connections are clear. Clean or clear as necessary.
E. Check that all isolating or regulating valves oeprate and are free from leaks.
F. Thoroughly clean unit interiors.
G. Examine all filter sections.

2:3:18 Run Around Coils/Heat Reclaim

A. Coils shall be classed as heater batteries and serviced accordingly.
B. Circulation pumps shall be serviced in accordance with Clause 2:3:8 of the Boiler Plant Schedule.
C. Make up tanks shall be classed as F & E Tanks and be covered under Clause of the Boiler Plant Schedule, Clause 2:3:10.
D. Check specific gravity of glycol/water mixture and top up make up tank to maintain a minimum concentration of 30% glycol (or as otherwise specified).

2:3:19 General

A. Report on the general condition of all ventilation plant and any shortcomings mentioned by the occupants.

SECTION 2:4

AIR CONDITIONING PLANT

SECTION 2:4

2:4:0 Service Visits

The Contractor shall carry out two service visits per year, normally to coincide with the start of the heating and cooling seasons and dictated by the TF Cloud Inspections Module.
The contractor must have available specialised and competent Air Conditioning Engineers who have served a recognised apprenticeship. The engineers must be qualified to a least the levels of Refrigeration and A/C NVQ levels II and III or city and Guilds 2077 1 & 2 with at least 5 years relevant experience in the field of trouble shooting and servicing.
All servicing must be carried out in compliance the “F Gas” regulations 2020 or latest amendment.

All breakdown calls must be attended within the following criteria.

NORMAL Calls made before 12 noon attendance will be required before 16:00 hrs and calls made after 12 noon must be attended by 09:00 hrs the next working day.

RAPID RESPONSE Attendance will be required within 3 hours of the breakdown call regardless whether normal working hours or not.

Rapid response call requests will only apply to the CCTV control station or the Main IT Computer Room Suite.

2:4:1 Manufacturer’s Instructions

These maintenance instructions are to be taken as a guide for tender purposes. The Contractor shall obtain all other relevant maintenance instruction booklets from the manufacturers in order to be fully conversant with the operation of the equipment and have at hand all the necessary diagrams and fault-finding charts etc.

2:4:2 Condenser Units

Note: Carry out only the operations relevant to the type of condensing unit.

A. Visually inspect unit for correct operation and water leaks. Report any undue noise or vibration.

B. Check that all electrical connections are clean and tight. Report any sign of damaged cables or overloading.

C. Check the condition of coils and report.

D. Check the operation of all safety switches and unit controls.

E. Inspect and clean (or replace from site stock) all filters as necessary.

F. Inspect the unit casing and report any damage.

G. Check the operation of the compressor and inspect the refrigeration circuit for leaks.

H. Check the operation of all isolating and regulating valves on the water circuit. Ensure the regulating valves are reset to their original position.

I. Inspect all fans and clean impellers.

J. Thoroughly clean all coils.

2:4:3 Computer Room Air Conditioning Units

A. The contractor will be responsible for the continuous functioning of the air conditioning plant for the computer suite at Torquay Town Hall.

In the event of a breakdown you will be called in directly by I.T. personnel, during their normal working hours and you will be expected to make early attendance for repair.

B. The contractor shall have at his disposal adequate spares (other than those held by the Council in the Computer Plant Room) to provide attention to all the ranges of equipment.

C. Routine Maintenance

1. Visually inspect unit for correct operation. Report any undue noise or vibration.

2. Electrical Connections. Check all wiring, terminals and fuses.

3. Contactors and relays. Check operation.

4. Controls. Check operation of all valves and operating controls. Check calibration and adjust as necessary.

5. Safety controls. Check operation.

6. Refrigerant Charge. Check pressures. Top up charge as necessary.

7. Condenser. Check operation and coil condition.

8. Fan. Check motor mounts, belts, bearings. Lubricate as necessary.

9. Framework. Check coil, drip pan and internal components for condition.

10. Filters. Check condition, clean compartment.

11. Drains. Check, clean and clear if necessary.

2:4:4 Split Air Conditioning Units

A. Visually check unit and report undue noise or vibration.

B. Switch off and isolate electrically. Isolate water and electrical supply to batteries.

C. Remove front cover.

D. Clean fan, motor and heat exchanger using vacuum cleaner.

E. Carry out phase load test on motors and record.

F. Lightly lubricate motor bearings using a light machine oil.

G. Filter Replacement/Cleaning

a) Washable Filter.

Remove filter from room to outside or to workshop n plastic bag. Gently tap out dirt and if dirt cannot be readily removed by this method, wash in water containing mild detergent and allow to dry.

b) Disposable Filter.

Remove filter from room to outside or workshop in plastic bag. Fit new filters.

H. Clean case and grilles.

I. Re-assemble and reconnect and check operation of unit and associated controls.

J. Where appropriate check all refrigerant lines and liquid and suction line pressures.

K. Check the condition of grilles, filter and battery.

L. Check pipe connections, valves, drains and air cocks for leaks.

M. Report condition of case.

N. Check security of all controls and electrical connections.

2:4:5 Drinking Water Coolers and Fountains

A. Examine units for any undue noise or vibration and report.

B. Check operation of all fountains and clean as necessary.

C. Check operation of units.

D. Check temperature of water.

E. Check operation of compressor.

F. Check condenser fan for correct operation and cool smooth running of bearings.

G. Check operation of all safety devices.

H. Top up refrigerant charge as necessary.

I. Check all electrical connections.

J. Examine thermal insulation and report condition.

K. Remove and clean trap.

L. Examine all pipework connection for leaks and tighten as necessary.

M. Check security of all hold-down bolts, etc.

N. Clean air cooled condenser.

2:4:6 Ductwork and Insulation

A. Inspect for leakage, deterioration and security of brackets.

B. Lubricate damper pivots and linkages.

C. Clean all air register outlets and louvres.

D. Inspect all thermal cladding and simulation for damage or deterioration.

E. Inspect and clean all sensors and control systems components.

F. Check all access doors and panels are not damaged or missing.

G. Lubricate all hinges and fastenings where appropriate.

2:4:7 Dampers

A. Mark as found position.

B. Check for free movement and where possible that blades are securely attached.

C. Inspect linkage.

D. Lubricate bearings and linkage as necessary.

2:4:8 Fresh Air Intake

A. Inspect louvres for obstructions and clean if necessary.

B. Alter for summer/winter use as required.

2:4:9 Disposable Filters

A. Inspect filters and advise need for replacement as required.

B. Inspect and report if site stock is available.

C. Inspect condition of holding frames, door gaskets and fittings.

D. Inspect operation of manometer. Top up fluid as required.

E. Change filters as required.

F. Advise re-ordering in order to maintain stock.

2:4:10 Washable Filters

A. Take manometer reading.

B. Inspect condition of filters and advise need for cleaning/changing.

C. Inspect condition of holding frames, door gaskets and fixings.

D. Check operation of manometer.

E. Inspect and advise if no washing facilities or spare filter cells available.

F. Systematically replace filters with spare cells.

G. Wash dirty cells with approved detergent and leave to dry.

Note:-

Protective clothing must be worn at all times.

2:4:11 Automatic Roll Filters

A. Inspect and advise need for new media.

B. Check inching mechanism.

C. Check auto advance mechanism by simulating pressure drop.

D. Lubricate all advance mechanism as required.

E. Lubricate and adjust end of roll indicator.

F. Change roll if necessary re-order spare roll.

SECTION 2:5

CHLORINATION OF STORED WATER

SECTION 2:5

2:5:0 Chlorination of Stored Water Systems

In order to comply with the requirements of the health and Safety at Work Act 1974 and the Control of Substances Hazardous to Health Regulation 1988 (COSHH) the treatment and control of water systems, to eradicate the organism know as LEGIONELLA PNEUMOPHILA, must be established.

The method adopted will be in accordance with the practical guidance of the Code of Practice BS6700 (new installations) and HS(G) 70 (existing layout). In the case of Elderly Persons Homes the Control of Legionellae in health care premises. A Code of Practice, consolidated edition Dept. Health.

The CIBSE publication – Technical Memorandum (TM 13) minimising the risk of Legionaires' disease. Or any other authorative guidance available.

2:5:1 Risk Assessment

Torbay Council will require the successful contractor to identify and assess the risk where there is Plant/Equipment likely to sustain Legionella to ensure the safe protection of:-

A. Persons cleaning/maintaining the equipment.
B. Persons working in the vicinity.
C. The public who may be affected by emissions.

This will include all areas where water is used/stored and where dispersed as an aerosol, primarily:-

i) All hot water systems of 300 litres or more.
ii) Hot and cold water systems where there is a susceptible population.
iii) Humidifiers which create a spray where the water temperature is greater than 20°C.
iv) Spa pool and baths where the water is deliberately agitated and recirculated.
v) Other plants/systems where water temperature is over 20°C and which produces a spray (e.g. sprinkler fire systems, irrigation systems in greenhouse, fountains and vehicle washers etc).

The Contractor must allow to clean and treat the water systems identified within the properties listed in Section No. 3.

2:5:2 Routine Maintenance

All work must be undertaken by competent personnel fully trained in the procedures of works for cleaning and chlorination.
As a matter of routine two water samples will be required to be taken monthly for testing for contamination and bacteria. Unless directed by the contract administrator the samples shall be taken from random outlets across the portfolio. The test results shall be forwarded directly to the contract administrator.

All observations, test and treatment processes must be fully documented and submitted to the Contract Administrator on a regular basis and in any case these reports will be required to substantiate any payment.

SECTION 2:5

Each property shall require a report indicating the following information (Please note that this is included within this Appendix A – Particular Specification for information purposes only):-

WATER STORAGE TANK REPORT

SITE ADDRESS ……

……..

BLOCK NAME ……

TANK LOCATION ……

PHYSICAL DIMENSIONS (MM) ……

COMPOSITION OF MATERIALS ……
(i.e. Galvanised steel etc.)

CONDITION OF TANK STRUCTURE ……

EXTENT OF SULDGE/GROWTH ……..

NAME OF CONTRACTOR ……

ADDRESS……..

……

DATE OF INSPECTION……..

SECTION 2:5

ANNUALLY
- Record the water temperatures after one minute at the outlets both nearest and furthest.
- Check the interior of the storage tanks, cisterns and calorifiers.
- Condition of accessible pipework.
- Chlorination of the systems identified in Schedule 3.

In addition to the annual disinfection the system will be required to be re-cleaned and disinfected should the system or part of it has been substantially altered or entered for maintenance purposes in a manner which may lead to contamination. Additional cost for this service may be justified, in which case, the Contract Administrator will issue a Contract Administrator's Instruction for this work to be undertaken.

2:5:3 Chlorination where applicable using the method as detailed in HS(G) 70

Chemical disinfection is to be carried out after cleaning by chlorinating the water in the header tank to 20 to 50 mg/litre (ppm), allowing it to flow to all parts of the system (by successively opening the outlets in the system such as taps and showers until there is a smell of chlorine), then closing them and leaving to stand for an appropriate period. The period depends on chlorine concentration (from at least one hour at 50 ppm to at least two hours at 20 ppm). The required concentration will be maintained in header tank throughout the chlorination procedures and building occupants must be warned that the water is heavily chlorinated. This treatment must not be carried out by untrained personnel and be closely supervised. The system must be thoroughly flushed following chlorination. It is important to ensure that all parts of the system are disinfected, not just those which are readily accessible. Chlorine concentration must be monitored throughout disinfection to ensure that there is a sufficient residual chlorine level.

If tanks and calorifiers are heavily contaminated by organic materials, the system should be disinfected before and after cleaning and it may be necessary to add chemical dispersants to remove organic fouling from pipework, etc. chemical descaling may also be necessary. Where possible cleaning methods should not create an aerosol.

Amendment – it has been advised by the WTI that chlorination strengths are to be from 30 ppm to 50 ppm at relevant periods.

2:5:4 Systems requiring to be disinfected in accordance with:-

BS6700 – Design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages

Water services needing disinfecting before being taken into use to remove contamination which may have occurred during construction or alternatively:-

a) if routine inspection shows it to be necessary, normally annually;
b) if the system of part of it has been substantially altered or entered;
c) following an outbreak or suspected outbreak of legionellosis.

The above paragraph applies to those water services where there is a risk or Legionnaires ' disease i.e. hot water services and, exceptionally, cold water services. However, cleaning and disinfection of cold water services is also required by BS6700 for reasons other than of controlling legionnaire's disease.

Water services to be disinfected by the use of chemical disinfections, in particular by chlorination, shall be undertaken as follows:-

Installations within buildings – all visible dirt and debris shall be removed from the cistern. The cisterns and distributing pipes shall be filled with clean water and then drained until empty of all water. The cistern shall then be filled with water again and the supply closed. A measured quantity of sodium hyprochlorite solution of know strength shall be added to the water in the cistern to give a free residual chlorine concentration of 50mg/L (50 ppm) in the water. The cistern shall be left to stand for one hour. Then each draw-off fitting shall be successively opened working progressively away from the cistern. The

cistern shall not be allowed to become empty during this operation. If necessary it shall be refilled and chlorinated as above. The cistern and pipes shall then remain charged for a further hour.

The tap furthest from the cistern shall be opened and the level of free residual chlorine in the water discharged from the tap shall be measured. If the concentration of free residual chlorine is less than 30mg/L (30 ppm) the disinfecting process shall be repeated.

Finally, the cistern and pipes shall remain charged with chlorinated water for at least 16 hours, e.g. overnight, and then thoroughly flushed out with clean water until the free residual chlorine concentration at the taps is no greater than present in clean water from the water supplier's mains.

2:5:5 Documentation

All sites are provided with an exclusive job number to ensure its own identity and relevant site an ongoing history enabling close monitoring and instant recall to works carried out. Certification must be produced for each chlorination and where a site contains a Log, all visit and works are also entered, enabling on-site history. Self adhesive tank labels are provided allowing for immediate checks on:-

a) when tanks were last cleaned and chlorinated;
b) next treatment due;
c) what specification was used;
d) closed down or re-commissioned information;
e) temperature recording.

SECTION 2:6

HWS

MIXING/BLENDING VALVES

SECTION 2:6

2:6:0 HWS Mixing/Blending Valves

2:6:1 SCOPE OF THE WORKS

The testing, maintenance and recording the effectiveness of mixing/blending valves controlling the hot water issuing from taps and showers in buildings where very old, very young, or handicapped people are at risk from scalding. This is a requirement over and above the precautions taken to eliminate Legionella Pneumephilia in hot water systems as detailed with Section 2:5 i.e. testing and recording tht hot water is generated at a minimum of 60^{o}c and distributed at /on near this temperature to the furtherst (index) outlet; (before the mixing blending valve).

2:6:2 Routine Service Requirement

(A) All works must be in compliance with the requirements of the Department of Health NHS Estates Health guidance Note “Safe Hot Water and surface Temperatures” 1998 Edition (ISBN 0-11-322/58-4), and the Approved code of Practice “L8”

(B) Every 6 months all hot water mixing/blending control valves must be “fail-safe” tested to ensure that they shut off safely i.e. the hot water flow is cut off when the cold supply is interrupted.

(C) The mixing devices must be checked to ensure compliance with the requirements of British Standard 1415 : Part 2 1986 “Specification for Thermostatic Mixing Valves” or NHS Model Engineering Specification DO8, and A.C.O.P. L8

(D) The mixing devices must be maintained in accordance with the manufacture’s instructions and MUST limit the temperature of water issuing from taps to a maximum of 43^{o} centigrade.

2:6:3 Documentation

The results of each routine service visit must be recorded in an approved tabular form which must identify every thermostatic device within each property, fail-safe result, temperature issuing from tap after one minute of continuous maximum flow, date of test and any remarks.

SECTION 2:7

HEATING & VENTILATION

CONTROL SYSTEMS

SECTION 2:7

2:7:0 Heating & Ventilation Control Systems (including *loose* controls systems and *BMS* Systems)

The contractor will be required to carry out the controls tests and checks to coincide with Annual Major Service of the plant being controlled. The date of the major service shall be provided by the TF Cloud Inspection Module.

2:7:1 Labour

The Contractor will be required to demonstrate to the responsible officer that the contractor has sufficient qualified personnel available to meet the requirements of the Contract.

2:7:2 Test Equipment

The Contractor will be required to demonstrate to the responsible officer that the contractor is in possession of approved and calibrated test, and environmental monitoring equipment to meet the requirements of the Contract.

Megger Testing

Under no circumstances shall any controls cable be subjected to megger or other high voltage insulation testing unless it is completely disconnected at each end and at any interconnecting joints at which the particular cable is connected.

2:7:3 Service and Inspection

The work required at each establishment shall be according to the equipment and control system that is installed.

If the respective manufacturer of control equipment/system has provided an approved servicing and testing procedure schedule this shall be adhered to in preference.

(i) Visual Inspection of System

The Contractor shall carry out a visual inspection of the entire control system – including control panel, sensor, control, and supply cables and wiring, sensors, mixing and diverting valves, dampers, exhaust and intake fans, ducting, registers/diffusers, thermostats, frost thermostats (including protective guards), pressure switches, differential pressure switches, flow (paddle) switches, and all other associated equipment.

The contractor shall undertake minor adjustments to controls settings, cable fixings etc., as may be necessary during the visual inspection.

(ii) Functional Tests of Control Panel Controllers and System

The Contractor shall carry out function tests in order to establish the correct operation and integrity of each controller and system. The Contractor will be required to be fully

conversant with Schneider Sigma and Schneider SmartStructure Building management Systems and have the technical ability to carry out all of the requirements contained herein without requiring the engaging external controls companies.

Controllers shall be tested for operation and function to determine the correct performance of all connected equipment, calibration and settings of controllers including all time and holiday scheduling set within the controller.

Some BMS controllers will need to be operated remotely or by means of plugging in a suitable portable device such a laptop or tablet in order to determine and confirm the correct operation of all equipment connected to and forming part of each individual system. The contractor must allow to provide such devices for carrying out this part of the contract.

The testing of the equipment connected to each BMS system shall include – operating each item of equipment controlled by the system to confirm correct operation - boilers, pumps, valves, dampers, frost thermostats, and all other equipment connected to and controlled by the BMS. (It will not be required to test BMS sensors at the time of service because these are constantly monitored by the BMS).

There will also be the requirement for programming of the BMS to accommodate new or replacement plant that may utilise an existing controllers or the installation of new controllers.

(iii) Sensors

Room, outside air, duct and pipework sensors measuring temperature, humidity and flow shall be checked for mechanical damage and correct fitting and readings displayed or checked against calibrated test equipment where controllers do not have display.

(iv) Control, limit, dissipation, shunt and other thermostats

Shall be tested and checked for correct operation and calibration, and all settings recorded.

(v) Frost thermostats and Protective Systems

Shall be tested and checked for correct operation and calibration and the settings recorded. Frost protection systems shall be tested in their entirety and reports included on operation and condition. External frost thermostats should be set at 2ºC. Internal (air) frost thermostats at 8ºC and 2nd stage pipe frost thermostats at 10ºC.

(vi) Mixing, Diverting, heater battery & Zone Valves

Shall be tested for: -

(a) Correct mode of operation.

(b) Electrical calibration (0-10v systems).

(c) Mechanical condition of valve, actuator and linkage.

(d) Extent of travel and calibration.

(e) Control circuit operation i.e. thermostat or other control device.

(vii) Dampers

Shall be tested for: -

(a) Correct mode of operation.

(b) Electrical calibration (0-10v systems).

(c) Mechanical condition of actuator and linkage.

(d) Extent of travel and calibration.

(viii) Auxiliary Switches

Shall be tested for correct operation. Where these are associated with switching boiler control circuits the contractor shall check the controller parameters/settings and ensure that the correct value is operational and is set correctly as required – settings to be recorded.

In all cases the setting of the switching operation in relation to flow temperature shall be recorded.

(ix) Time Switches/Programmers

(a) Shall be checked for correct operation on/off, day omit, early on etc. – all details to be recorded – electro mechanical time switches shall be treated with an approved spray lubricant at each visit.

(b) Time switches and programmers/controllers which are fitted with rechargeable battery back up for mains failure protection of real time/programme times shall be

subjected to battery replacement per the manufacturer's written instructions for each item of equipment. Batteries shall be charged extra as consumables.

In the first year of the contract all units shall be provided with replacement batteries.

At battery replacement a stick on label detailing the battery type, date, and the initials of the operator shall be affixed inside the unit – labels to be supplied by the Contractor (the design of which shall be approved by the responsible officer).

During subsequent years of this contract the manufacturer's requirements for battery replacement shall be adhered to.

The cost of batteries and fitting/labelling shall be included in the contract figure priced according to the schedule of equipment.

(x) Alarms

Alarms that are associated with the heating control system such as remote lock out warning systems, fuel oil dumping, free fall oil/gas valves, electrically operated oil/gas valves and any associated direct connection to the fire alarm system, or to the individual control panel control circuit shall be tested and details of function/operation recorded.

(xi) Sump Pumps

Operation of sump pumps shall be tested, the water level at which operation commences shall be tested and checked to be below any danger level.

(xii) Control Panel

Control panel internals shall be inspected and checked specifically for:-

(a) Condition of contactors, relays and overloads.

(b) Overload currents to be measured and recorded and overloads to be reset if appropriate.

(c) Fuses shall be checked to ensure correct rating against the fuse chart – if no fuse chart is existing, the Contractor shall provide and complete suitable typewritten form providing all necessary details – this shall be stored in the panel complete inside a clear plastic envelope

Spare fuses shall be maintained a 2 No. per rating required – these shall be charged separately and detailed on the report form.

(d) Terminals shall be checked for loose connections – any found to be loose must be tightened at time of inspection.

(e) Panels shall be cleaned internally as required.

(xiii) Other Consumables

All other consumables shall be charged in accordance with the tendered materials rate.

2:7:4 Reporting and Report Forms

The contractor shall report to the responsible officer any defects within the system and component parts therein.

The Contractor shall allow for the supply of suitable report forms on which all the details of each particular control system (including manufacturer/model/type etc.) shall be recorded.

On completion of testing at each individual property/building a report form(s) shall be signed by the premises representative/building manager and a copy left at the respective property in the control panel in a clear plastic envelope.

The report form shall be complete with space for property/building information, records of settings, results of tests, calibrations etc. and all details concerning the general condition and overall operation of the system.

Report forms shall adhere to Torbay Council's Quality Assurance System and procedures, details of which will be provided to the successful tendering contractor when the contract order/instruction is issued/placed.

A detailed report form for each property/building/controls system shall be submitted to the responsible officer with the monthly accounts. Accounts will **not** be passed for payment without complete documentation.

The Contractor shall allow for regular meetings with the responsible officer by the contractor's inspecting/supervising engineer in order to ensure continuing and satisfactory progress of the contract.

2:7:5 Repairs/Replacement

In addition to the requirements of clause **2:1:06** the following shall apply.

All repairs and replacements of defective items of equipment shall be carried out at the time of inspection wherever possible.
This shall **not** include controllers, or any other individual item of plant or equipment for which the cost of materials and labour to carry out the replacement exceeds a chargeable value of £100.00 (ONE HUNDRED POUNDS).

For work required exceeding a chargeable value of £100.00 (ONE HUNDRED POUNDS) a quotation shall be attached to the report form.

2:7:6 General

All works undertaken to control panels, controls systems or associated wiring must comply in all respects with the Torbay Council Standard Building Engineering Services Specifications -–copies of which are in the tenderer's possession or available for inspection at Torbay Council offices.

Works undertaken associated with the Building Electrical Services shall meet the requirements of the Regulations for Electrical Installations Current Edition including all amendments to date.

2:7:7 Schedule of Equipment

A schedule of installations to be tested within this contract is enclosed with this specification. The schedule is presented as accurate to the best of known records. It is to this schedule which tenders must be priced.

The Contractor must include in the tender price to update this schedule on a regular monthly basis, and at the completion of the contract in order that on completion the schedule is an accurate record of controls systems.

(There will be areas of the current schedule that are incomplete due to the location of additional items, the removal of various items, or other changes to systems that may have occurred since the schedule was formed).

The Schedule is presented in printed form for the purpose of tendering.
At the commencement of the contract the current schedule (on which the tender was based) will be provided to the contractor in electronic format. The contractor must allow for the regular updates to be recorded electronically and follow Torbay Council's Quality Assurance System and procedures, details of which will be provided to the successful tendering contractor when the contract order/instruction is issued/placed.

Properties/buildings must be individually priced at Tender Stage

2:7:8 Unknown controls installations

Properties where the detail of the control systems are unknown ond do not appear in the schedule, should be priced on the basis that each property is provided with the following:-.
A single zone heating optimum start controller with weather compensation acting directly on the boiler, 1 no. outside air temperature sensor, 1 no. flow sensor and 1 no. room sensor.

SECTION 2:8

FOUNTAINS, WATER FEATURES, SPRINKLER & SUMP PUMPS

SECTION 2:8

2:8:0 Fountains, Water Features, Sprinkler & Sump Pumps

2:8:1 Sump Pump & Fountain Inspection & Service Frequency

Sump Pumps

Sump pumps must be inspected for correct operation monthly. (The first working day of each calendar month).
Every 6 months the sump pump, sump pit, electrical components & controls must be serviced, thoroughly cleaned, carefully checked & tested.

Fountains & Water Features

Torbay Council's water features are an important tourist attraction and it is most important that they are displayed to their best advantage in pristine condition to the public.
Each Monday all fountain filters and strainers must be removed and cleaned. During the months of July and August daily inspections will be necessary to ensure that ponds are clear of debris and rubbish and the fountains are working correctly. In addition the water level in the pond at Torre Abbey Meadows will checked and topped up as required. A note will be taken and entered onto the service sheet of the amount of water added to the pond.

Monthly service visits will be required to be co-ordinated with the councils Natural Environment Services Department to drain the ponds of water to allow the thorough cleaning of pond and fountain components together with the full servicing of all associated pump and fountain equipment.

It should be noted that some fountain and water features are operational throughout the year.

2:8:2 Pumps

A. Carry out only the operations relevant to the type of pump. Inspect all pumps, motors and couplings etc. for correct and quiet operation.

B. Examine adjust tension or replace belt drives check alignment of pulleys and/or shafts. Check bearing for noisy operation and replace as necessary.

C. Adjust gland packing where necessary. Inspect mechanical seals where appropriate. Vent and bearing scroll or stuffing box cover where appropriate.

D. Oil and grease as necessary.

E. Ensure all safety guards are in position and secure.

F. Check operation of float or level switches and ensure that pump operates correctly.

G. Remove and clean strainers associated with pump sets.

H. Examine pump casing for damage or corrosion and report.

I. Inspect pump panel interior for condition of components, operation of contactors etc.

J. Inspect and test insulations and earth continuity resistances.

K. Inspect drive – motor terminal connection for tightness.

L. Check operation of all isolating or regulating valves and non return valves.

M. Check operation and settings of timeswitch where appropriate.

2:8:3 Fountain Pond and Features

A. Remove and check all filters and strainers for debris and damage.

B. Remove and check all non return valve for debris, damage and operation.

C. Check, clean and re-align all fountain nozzles.

D. Where appropriate check operation, inspect for damage and re-align all decorative lighting, cables and fittings.

2:8:4 Automatic Sprinkler Installation

2:8:4(a) A weekly test of the sprinkler installation must be carried out in compliance with the Insurance Company requirements.

In addition to the above a quarterly overhaul of the system, a summer/winter changeover and winter/summer changeover must also be implemented.

TEST CARD TO BE HUNG NEAR

THE INSTALLATION MAIN CONTROL VALVES

It is a condition of the Policy covering these premises that the Sprinkler Installation is maintained in good order and that the Weekly Inspection and Test are regularly and properly carried out.

2:8:4(b) Weekly Inspection and Test

The test should be made weekly (preferably on each Friday) to ensure that the Water Supplies, Valves, Gong and Fire Appliances are in proper order.

Examine first all the Main Valves, Drain Valves, Cocks on feed pipe to turbine and gong and Test Cocks. All Main Valves-feed and delivery – on incoming cold water main, Elevated Tank, Pressure Tank, Automatic or non-Automatic Pump, Hydraulic Injector.

Main Stop Valves on Installations must be strapped **OPEN.**

Cock on Gong Feed Pipe must be strapped **OPEN**.

2"diameter Waste Cock and ½" diameter Test Cock must be strapped **CLOSED.**

TEST AS FOLLOWS:-

(a) Record the Pressure registered by the Gauge fixed above the Alarm Valve, and enter it in Column 2.

(b) Open the ½" diameter Test Cock and note the time taken to sound the Gong; let the Gong ring for fully 20 seconds; record time taken to ring.

(c) Close the Test Cock and again note the pressure registered by the Gauge fixed above the Alarm Valve.

(d) Drain water from Compressor. Run Compressor back up to working pressure.

(e) Clean and Oil the Turbine and Gong Hammer on completion of test.

(f) Inspect and record Fire Appliances to ensure that they are in good condition and ready for use.

WHEN THE INSTALLATION IS CHARGED WITH AIR FOR THE WINTER PERIOD THE ALARM SHOULD **NOT** BE TESTED BY ALLOWING THE AIR TO ESCAPE, BUT BY THE USE OF THE VALVE SPECIALLY PROVIDED FOR THE PURPOSE.

(Record only relevant information)

2:8:4(c) Quarterly Sprinkler Tests

A) Proceed with the weekly test instructions.

B) Close alarm stop valve on the pipework immediately before the water motor alarm.

C) At water motor alarm strainer located on the pipework immediately before the water motor alarm. Remove the square and plug. Take out and clean the strainer element. Refit the two items.

D) Open alarm stop valve strap and buckle the valve in that position.

E) Remove drain plug to allow access to 3 mm orifice in drip union. Remove any obstructions using a length of suitably strong wire. Refit plug into position.

F) Record the standing pressure and running pressure readings on installation pressure gauge and supply pressure gauge.

G) Complete Insurance test card.

2:8:4(d) Summer – Water

To Test

A) Check two way valve (J) is in bottom turbine feed pipe position.

B) Open valve (E) – gong should ring.

C) Close valve (E).

To Change-over to Air for Winter

A) Shut main 6" valve (A).

B) Open valve (D) and all drain valves on sprinkler.

C) Ensure water has drained off & remove cover marked "Hoffman patent" on air valve (C).

D) Take out clack valve, check for corrosion, wipe clean, lightly coat with Vaseline.

E) Hold back latch, replace clack on lower seat **Gently.**

F) Replace cover.

G) Close valve (D)

H) Open valve (G)

I) Pour two buckets of water in dish.

J) Close valve (G)

K) Close all drains on sprinkler system.

L) Open valve (K)

M) Switch on compressor with switchfuse and allow pressure on right hand gauge to rise to 30 psi.

N) Gently open and close each drain valve in turn, (mentioned in 4 and 5) to blow out any surplus water which may have collected.

O) Allow pressure to return to 30 psi on gauge and ensure compressor switches off automatically, close to this pressure.

P) Turn 3-way valve (J) to top turbine feed pipe position.

Q) Slowly open main 6" valve (A), re-fix padlock and chain.

Change-over date 1st of May each year.

2:8:4(e) Winter – Air

To Test

1. Turn two-way valve (J) to bottom turbine feed pipe position.
2. Slowly open valve (F) – gong should ring.
3. Close valve (F)
4. Return two-way valve (J) to top turbine feed pipe position.

To Change-over to Water for Summer

A) Close main 6" valve (A) after removing padlock and chain.

B) Close valve (B)

C) Switch off compressor with switchfuse in adjacent cupboard.

D) Close valve (E) on pipe to compressor.

E) Slowly open valve (D) to release air.

F) When air has been released, remove cover marked "Hoffman patent".

G) Lift internal air valve clack by rotating until latched in the highest position.

H) Replace cover.

I) Close drainvalve (D).

J) Crack open main 6" valve (A) to slowly fill system with water.

K) When needle on right hand gauge is steady at about 60 psi, open valve (A) fully and refix padlock and chain.

L) Turn 3-way valve to bottom turbine feed pipe position.

Change over date 1st of October each year.

2:8:4(f) Legend

(A) Main Stop Valve

(B) Alarm Valve

(C) Differential Air Valve

(D) Main Drain Valve

(E) Test Valve *(Used only when the installation is on **water**.)*

(F) Test Valve *(Used only when the installation is on **ai**r.)*

(G) Stop Valve **Normally Closed** *(Used to create a water seal on the top clack of the air valve.)*

(H) Outlet to atmosphere from the Air Valve *(O**pen** on air -C**losed** on water.)*

(J) 3-Way Valve *(Adjusted to enable the alarm turbine to be driven by the alarm valve or the air valve.)*

(K) Isolating valve *(On pipework from the compressor to installation.)*

(L) Spring loaded catch at the front of the Air Valve *(To prevent the Air Valve re-seating when the valve lifts.)*

(M) Accelerator Isolating Valve.

2:8:5 Other Water Features

The Hydram (This is a Hydraulic Ram and is a masterpiece of 18th Century technology).

Essentially it is a water driven pump which utilise the force supplied by the head of water from the stream through a 6" diameter drive pipe and forces a smaller quantity of water through a 2" diameter delivery pipe to the Grotto Gardens in Oldway Mansion Grounds.

The mechanism operates by a pulse valve being forced to open and close rhythmically. When shut water at speed and force flows back through the pump body and through the delivery valve into an air vessel. The air within the vessel acting much like a spring – absorbs the momentum of the water until the pressures reverse in the form of a shock wave. This travels back through the water, out through the ram and drive pipe then the pulse valve (or waste valve) reopens and the delivery valve closes. The water trapped in the air vessel is pushed out through the delivery pipe. The complete cycle then repeats once again.

The action being continuous, some of the water is always flowing through the delivery pipe.

The working parts are limited to rubber valve discs and maintenance is simply a matter of ensuring waterways are clear and flowing freely.

The Hydram works continuously all day and every day. Weekly inspection visits will be required to check that the unit is operating.

In the event of the service engineer failing to reinstate the flow the Contract Administrator must be immediately be informed.

It is essential to note that the mechanism is located below ground level and as such special safety precautions must be observed for working in confined spaces. Therefore before undertaking your first service visit a full risk assessment must be undertaken by a competent person and a copy presented to the Contract Administrator.

Should it be necessary for the maintenance engineer to climb into the pump chamber or header tank it will be necessary to have additional personnel in attendance to ensure the safety of the person entering the chamber. The engineer will be required to be equipped with all necessary safety equipment that may be identified in the risk assessment. These considerations must be accommodated within your tender bid.

SECTION 2:9

SEWAGE PUMP & ASSOCIATED EQUIPMENT

SECTION 2:9

2:9:0 Sewage Pumps and Associated Equipment

2:9:1 Scope of Works

The annual service and inspection of sewage pumping equipment and associated plant and controls.
In addition some sewerage pumping stations have automated alarm features that send alarm messages should the system go into alarm. The contractor will be required to provide a monitored telephone number to respond in the event of one of these alarms.

2:9:2 Routine Service Requirement

(A) SUMP - To be thoroughly washed down with hosepipe from suitable water outlet on site.

(B) PUMP - Each pump to be lifted out, for inspection.

i) Check seal housing oil bath and top up.
ii) Remove volute casing and check the impellor for wear.
iii) Check impeller diameter
iv) Check impeller is correctly secured to the shaft
v) Check volute casing and mating flanges for wear.
vi) Adjust suction cover as necessary
vii) Check wear ring clearance
viii) Check all securing bolts

(C) PUMP MOTOR ELECTRICAL CHECKS

i) Check power supply cable to pump for damage
ii) Inspect all electrical junction boxes; clean and report condition
iii) Test motor for insulation and continuity
iv) Test motor for correct rotation
v) On dry motors (not oil filled) check for ingress of oil or water

(D)PUMP & EQUIPMENT TESTS

i) Run motor – pump and listen for bearing noise or wear
ii) Check all guide rails and rail fixings for wear or corrosion
iii) Run pump and ensure all non return valves are holding correctly
iv) Check all gate valves are free to operate and are open, oil as necessary.

(E) LEVEL DEVICES

i) Clean all float switches and inspect for damage
ii) Check all float brackets are secure
iii) Test all float switches for correct operation and sequence
iv) Where no floats are fitted, clean rods and test for correct operation and sequence

(F) CONTROL PANEL

i) Inspect control panel. Check fixed and moving contacts and contactor coils
Check overloads for correct setting. Remove all fuse holders; check and ensure fuses are correct.

ii) Carry out running tests on both manual and automatic operation.

(G) ON COMPLETION BEFORE LEAVING SITE

i) Ensure all pumps are left on automatic control

ii) Check condition of all sump manhole covers for damage and correct fitting

iii) Secure all locks and leave site **CLEAN AND TIDY**

2:9:3 DOCUMENTATION

The service sheet for this section of works must have a tick list for each of the operations listed in Clause 2:9:2 and have specific provision for recording the following information.

(A) CONDITION OF SUMP (i.e. Good/Poor/Urgent Attention Required)
(B) PUMP AND MOTOR NAME PLATE DETAILS
(C) CONDITION OF ELECTRICAL JUNCTION BOXES
(D) CONDITION OF CONTROL PANEL AND
  i) NAME PLATE DETAILS
  ii) LIST MAKE, TYPE AND SIZE OF
    Contactors
    Overloads
    Fuses

2:9:4 RISK ASSESSMENT

Torbay council require that only personnel properly trained and supervised are permitted to undertake the works detailed in Clause 2:9:1, 2:9:2 and 2:9:3

Furthermore, the contractor must ensure that their employees “so far as is reasonably practicable” health and safety of his employees and provide an undertaking that as far as is reasonably practicable non-employees are not exposed to risks to health and safety.

It will be necessary before commencing the first service visit to undertake a full risk assessment by a competent person and present a copy to the Contract Administrator.

SECTION 2:10

GAS SYSTEM

SOUNDNESS TESTING

SECTION 2:10

2:10:0 Gas System Soundness Testing

2:10:1 Contractor/Operator

The Contractor or the operative carrying out the soundness test must be a registered member of the Gas Safe Scheme under the terms of The Gas Safety (Installation and Use) (Amendment) Regulations.

In addition the Contractor must satisfy himself and Torbay Council that the Operative can communicate and give accurate information to third parties.

The operative must be trained in testing and inspection and be able to recognise the installation relative to the regulations to which it was installed.

2:10:2 Soundness Test Property Schedule

The Contractor shall annually carry out the soundness testing at the properties detailed in the list of properties Section 3. For properties that require a line distribution drawing the contractor will be required to maintain these drawings and ensure their accuracy.

2:10:3 Testing of Existing Installation

The testing of the existing gas installations within the properties listed shall be carried out in the manner prescribed and recommended in the following publications.

i) Domestic Premises

"Guidance notes for soundness testing for domestic gas installations" published by the Council for Registered Gas Installers. Domestic installations are to be classified by meter size and will be installations supplied by meters badged below U16.

ii) Commercial Premises

"Soundness testing procedures for Industrial and Commercial Gas Installation" 3rd Edition (2nd Impression) 1989 published by British Gas Cat IM/5. Industrial and commercial premises will be classified by meter size and will be installations supplied by meters badged U16 and above.

Unless otherwise stated the Natural Gas installations shall be tested and pressure drops assessed with a water pressure gauge in accordance with the relevant publications.

The installations which are to be tested are all those that are supplied from the consumers isolation valve which includes the gas meter and associated fittings. This includes any sub meter which may be installed.

The Contractor shall where necessary install gas pressure test points into the gas installation pipework to allow the soundness test to be carried out.

2:10:4 Turning Off of Gas Supplies

No gas supplies are to be turned off without prior approval from the Property Manager. The turning off of gas supplies are to be made at precise agreed times.

All gas supplies are to be reinstated as soon as testing is completed and the Property Manager advised, unless found to be unsafe.

2:10:5 Acceptable Pressure Drop

Torbay Council will only accept a 'nil' pressure drop to each installation. If a pressure drop is recorded and the gas escape cannot be easily found and repaired, the Contractor must immediately inform the Contract Administrator to decide what action is to be taken. All repairs will be undertaken. All repairs will be undertaken on a dayworks basis with Variation Orders being raised following verbal instructions to proceed.

2:10:6 Test Certificate

The Test Certificate to be used for commercial and industrial premises is the Certificate issued by British Gas "Soundness testing procedure for existing small commercial and industrial gas installations up to $1m^3$ capacity with a maximum pipe diameter of 100mm". Ref1M/5.2 available from British Gas Technical Publications.

The test certificate to be used for domestic premises shall be in accordance with the "Gas Safe" register scheme.

2:10:7 Completion of Test Certificates

The Contractor shall submit to the Contract Administrator 2 No. copies of the Test Certificate for each soundness test, fully filled in and signed.

A Test Certificate must be filled in for each soundness test carried out at a property and for each separate gas installation and will be identified on the Test Certificate by gas meter number and site location within the property. All Test Certificates and reports are to be forwarded with the monthly accounts.

2:10:8 Condition of Gas Installation

The Contractor shall carry out at the time of soundness test a site inspection of each gas installation in each property detailed and submit a written report and cost to remedy; non compliance with the following: (as per the model site report sheet).

a) Gas pipework not identified in accordance with BS 1710.

b) All isolation valves have handles fitted and are identified with signs.

c) All isolation valves are operative.

d) The general condition of the gas installation including bracketing.
e) The meter cupboard is in good condition and adequately ventilated.

f) The contractor will be required to verify and update where required the line diagram is sited in the meter cupboard detailing pipe runs, sizes, isolation valves with the property being served by the meter. The contractor will be required to calculate the system volume for the purpose of the soundness test.

g) Specific comments on the gas installation the Contractor wishes to raise.

2:10:9 Testing

The Contractor shall produce a programme of work detailing the site location and the dates on which works are to be carried out.

The programme of works will be submitted to the Contract Administrator annually.

2:10:10 Annual gas soundness test & recommendation for upgrading installation.

MODEL COST SHEET REPORT FORM (Please note that this is included within this Appendix A – Particular Specification for information purposes only. This is not for Pricing purposes. Please refer to Part 5 – Pricing Schedules, for all required pricing):

SITE ADDRESS: ……

……

GAS METER NUMBER ……

a) Gas pipework to be identified to BS 1710 with pipeline tape or painting £……..

b) Isolation valve handles to be fitted and identified with signs £……..

c) Isolation valves to be serviced or replaced £……..

d) Condition of installation and requirements to upgrade £……..

e) Meter house condition and requirements £……..

f) Line diagram requirement £……..

g) Specified comments and recommendations £……..

Name of Contractor: ……

Address: ……..

……..

Date: ……

SECTION 2:11

FUME CUPBOARDS

SECTION 2:11

2:11:0 Fume Cupboards Annual Examination

2:11:1 Scope of the Work

The Contractor must include to test each piece of equipment as listed on the Schedules once every twelve months. All as instructed within this Specification.

The Contractor must check the fume cupboards to be in compliance with CLEAPSS G9 Fume Cabinets in Schools latest edition.

The Contractor must be fully conversant with these requirements, a copy will be available for reading at the Environment Services Directorate offices, Torbay Council.

2:11:2 Schedule of Equipment

The attached schedules are listed as the most recent information available.

The Contractor must include to update these schedules during the work period.

2:11:3 Report Forms

The Contractor shall complete a fume cupboard annual examination record sheet (sample enclosed see Clause 2:7:8) for each property for each service visit. This record sheet must be endorsed by the on-site representative and be submitted with the monthly accounts.

Special Note: All test and report forms are to be supplied by the Contractor, the cost being included within the tender figure.

2:11:4 Work Resulting from the Test and Inspection

Defects and shortcoming resulting from the inspections are to be reported in writing to the Contract Administrator with a quotation indicating the cost to correct each defect.

2:11:5 Visual Examination

A visual inspection shall be carried out with guidance from the above documents and in conjunction with preliminary examination summary sheets, see Appendices A & B of this specification.

Items for inspection shall include:

Work surface and linings – construction material and signs of damage. In your opinion does this material contain asbestos, if so report its presence in order that the Council specialist contractor may carry out tests.

Glazing – construction material and signs of damage. In your opinion is this material safety glass?

Sash Mechanism – does it function and signs of damage, corrosion or brittleness of cables.

Sash Limits – if stops are fitted, do they function correctly?

Gas outlet(s) and controls – do they function safely and signs of damage?

Water outlet and controls, catchpot, trap and drain – do they function and signs of damage?

Electrical sockets, switches and luminaries – do they function safely and signs of damage?

Connecting pipes and cables – construction material and signs of damage?

Ventilation ducting – construction material and signs of damage? Particularly to seals, any report of smells along its route?

Duct exit (cowl) – construction material and signs of damage? Is it clear of anything which might eventually block it?

Fan and Motor – is there sound of excessive vibration or evidence of overheating of motor or bearings?

Any other defect which is likely to affect the safe and effective functioning of the fume cupboard should be reported.

Any works found necessary following the visual examination shall be costed against the schedule of rates within this specification, and a quotation for such works shall be attached to the inspection reports submitted to this office.

2:11:6 Face Velocity

The face velocity tests in Appendix B of Design 29 should be used. Generally as detailed as follows for the annual examination procedure for preliminary face velocity measurements and calculations. (All readings to be recorded on the record form see Clause 2:7:8)

PROCEDURE

A. Do not attempt measurements on a windy day.

B. Arrange the ventilation of the room so that it is most unfavourable to extraction by the fume cupboard concerned, i.e. shut all doors and windows and switch on any other fume cupboards and extraction fans.

C. Do some air flow measurements to see if, with the sash at maximum height, the minimum face velocity is likely to be over 0.3ms-1. Adjust the maximum sash height until it is. It should be greater than 400mm, but the fume cupboard could be temporarily with it at a lower value as long as it is not less than 300mm. If this is not possible, the fume cupboard fails. The maximum sash height should be fixed by stops, markings can be ignored.

D. Set the sash for maximum working opening. Record the sash opening ……mm.

E. Imagine the face of the fume cupboard divided into nine equal rectangles as shown:

A	b	c
D	e	F
G	h	I

Stand as far as is practicable from the fume cupboard with the sensing head in the plane of the sash and take airflow readings at approximately the centres of the nine rectangles. It may be necessary to turn the head at each point to obtain the maximum reading.

F. Record for each rectangle the approximate average reading over a ten second period. Fluctuations in wind outside often make this quite difficult and it may be necessary to repeat readings.

Calculations

G. Minimum face velocity

Record which of a, b, c, d, e, f, g, h, I is the smallest. Minimum face velocity is ……..ms-1.

It is above or below 0.3ms-1? If below, the fume cupboard fails.

H. Variation

Add a, b, c, d, e, f, g, h, I and divide by 9 to get the average. Average face velocity is …….ms-1.

Find the biggest and smallest out of a, b, c, d, e, f, g, h, i.

Work out: biggest minus average. Divide the answer by average and multiply by 100 ……%

Is this less than 30%? If not, the fume cupboard fails.

I. <u>Second Air flow Test</u> (e.g. pressure in duct or smoke test)

A pressure test is useful for the annual check but is not necessary. A smoke test should be used if the air flow meter reads the same whether air is flowing in or out.

2:11:7 The Airflow Meter

The Contractor must inform the Contract Administrator of the make and type of airflow meter, to be used for the face velocity tests, along with the instruments accuracy. It is expected that the airflow meter shall have an accuracy of about 10% over the range 0.2 to 0.5ms-1. The airflow meter used should have recently been calibrated and corrections should be applied from the calibrated certificate. It is recommended that the instrument is fitted with some averaging or damping which evens out the fluctuations of airflow which some fume cupboard systems are liable. If a meter which does not indicate the direction of flow is used, it must be supplemented with a smoke test.

2:11:8 Model Record Form:

Fume Cupboard Annual Examination Record

School/College: ……

Location of fume cupboard ……..

Manufacturer and model: ……

Preliminary examination

Carried out by: ……

Date: ……..

Wind conditions and approximate direction: ……..

A flow meter used: ……

Height of sash opening: …… mm

Minimum face velocity: …… ms-1

Average face velocity: …….. ms-1

Variation:

Upper: ……. %

Lower: ……. %

If the airflow meter is non-directional, does a second test (pressure measurement, smoke test) confirm that air is flowing into the fume cupboard?

Yes or No? …….. (If the pressure measurement is made, what is it? ……)

Does the fume cupboard pass Design Note 29 face velocity recommendations?

(Minimum face velocity above 0.3ms-1, variation less than 30% with sash opening

400mm or more?).

Yes or No? ……

Are any other features unsafe or potentially unsafe? (Work surface, linings, glazing, sash mechanism, sash stops, services, ducting).

Report on any features which are: ……

……...

……...

……...

……...

Signature: …… Date: ……

SECTION 2.12

L P H W FAN CONVECTORS

&

ASSOCIATED EQUIPMENT

SECTION 2:12

2:12:0 L.P.H.W. Fan Convectors & Associated Equipment

2:12:01 Scope of the Work

This specification details the work required for the programmed maintenance, servicing and cleaning of Fan Convector heaters. The tender figure must include all costs of labour, plant cleaning and servicing, materials, equipment, travelling, insurance and all overheads required to fulfil the contract as details in the following paragraphs.

Report forms must be completed for each site giving details of the service and details of the maintenance repairs and renewals and of any new parts fitted. One of these forms must be forwarded to the Contract Administrator with the monthly accounts.

The servicing at each property shall be carried out at intervals as dictated by the TF Cloud Inspections Module as set out in the minor and major service specification

The Contractors Operative must report to the facilities / site manager (as applicable) on arrival and the departure from each property.

At least one full working weeks notice must be given to the building occupier of an intended service visit.

Service visits to schools must be made out of school hours or whenever practicable during the school holiday periods.

During the school holidays certain of the schools are closed, although the Caretaker is often available in the event of a school visit being desired or necessary the Contractor shall made an application to the school. No charges will be allowed for abortive journeys if the Caretaker has not been advised.

2:12:02 Schedules of Equipment

Every reasonable effort has been made to ensure that the schedules represent a true and accurate record of the equipment to be serviced and the Contractor shall inform the Contract Administrator of any errors or inaccuracies therein on the report sheet supplied.

The Council may amend the schedules of properties and equipment during the period of this contract.

2:12:03 Reports and Forms

If any part of an installation is out of order the Contractor's operative must inform his Supervisor and the Contract Administrator.

The reports concerning breakdowns should be sent with the relevant invoice.

Special Note

Payment will normally be made only where report sheets are signed by the Service Operative and an appropriate representative at the property.

Enter on the report the date and time of completion and "No Representative Available" when there is no site manager or site representative available on site.

No payments will be made if the Contractor has to return to site to carry out repairs which in the opinion of the Contract Administrator have occurred due to poor workmanship or lack of maintenance.

2:12:04 Work Required

The work required under this contract has, for convenience only been divided into categories. In preparing the tender figure the Contractor must allow for all the work involved at each property to be included irrespective of whether all of each category of work is applicable. The tender figure must allow for the entire system associated with each fan convector heater to be cleaned and serviced.

'System' shall include the intake grille(s), register, casings, fan motors, heat exchanger fan and shall include external covers, protective mesh and fixings; the electrical equipment deemed part of the 'system' shall be the fan heater electrical supply, time clock and room stats.

2:12:05 Annual Cleaning & Testing of Fan Convector Heaters

The following operations shall be carried out on all the fan convectors.

1. Remove and clean all air filters within the unit (replace if damaged). The filter shall be cleaned by using a suitable vacuum cleaner.

2. Clean out heat exchanger radiator fins, straighten out damaged fins. The heat exchanger fins shall be cleaned by using compressed air (bottles) blown in the reverse direction of the normal air flow, a suitable dust extractor shall be used to minimise the amount of airborne dust created. This can be in the form of a vacuum cleaner fitted with a large pickup head. If necessary disconnect and remove heat exchanger from unit and remove to outside. Using low pressure water jet, wash out all foreign matter, dry out exchanger and refit to unit.

3. Clean off all foreign matter from fan blades and fan motors. Fan blades are to be cleaned by using a small wire brush. Lubricate fan motor, and bearings (**DO NOT OVER LUBRICATE)**.

4. Operate heating hand valves through one complete stroke ensuring they are returned to their original settings. Lubricate valve spindle using high temperature spindle oil. Ensure valve glands are watertight. Tighten if necessary. Inspect all pipework is sound and watertight within unit.

5. Test insulation resistance, polarity and effectiveness of earthing cables and apparatus.

6. Test connections to apparatus, ensuring they are sound. Check operation of convector isolator D/P Switch, replace if faulty. Check for correct fuse size, replace if required.

7. Prove that fan control stat operators correctly (e.g. internally controlled 2-step stat) at 19°C fan stops, 18-19°C low running speed below 18°C normal running speed. Test all room stats controlling fan convector for correct operation, set at 18°C and lock off.

   These are to be tested at room temperature by comparing stat operation with the temperature reading of an Electronic Digital thermometer.

8. Check operation of all time clocks controlling fan circuit and set as instructed by the Site Administrator.

   The Maintenance Contract will commence in April when all items listed on the Schedule shall be serviced and be complete by the end of October in each year.

   The Contractor must allow in his tender figure for the work to be carried out only by skilled operatives, each of whom must be equipped with all the necessary test equipment and material. The equipment must include step ladders, ladders and Portable scaffolding.

   The Contractor must leave the property in a clean and tidy condition to at least the standard existing before any work commenced.

   The cleaning, servicing and any additional work must be carried out to the entire satisfaction of the Contractor Administrator.

2:12:06 Annual servicing of L.P.H.W. Fan Convector Heaters

MODEL SERVICE REPORT (Please note that this is included within this Appendix A – Particular Specification for information purposes only. This is not for Pricing purposes. Please refer to Volume Four (4) – Pricing Schedule, for all required pricing):

Room No.	Heating Type	Heater Ref No.	Service Date	Remark/Report	Estimated cost of repair

OFFICER IN CHARGE (TORBAY COUNCIL REPRESENTATIVE)

SIGNED……. DATE…….

CONTRACTOR SIGNED……..

SECTION 2:13

DUCTWORK CLEANLINESS

SECTION 2:13

2:13:0 Ductwork Cleanliness

2:13:1 Scope of the Work

In order to comply with the mandatory requirements of the Workplace (Health, Safety and Welfare) Regulations 1992. The contractor will regularly inspect and record all mechanical ventilation ductwork cleanliness. Strictly in accordance with the Approved Code of Practice and Guidance Sections associated with the Workplace (Health, Safety and Welfare) Regulations 1992.

In order to determine the frequency of inspection and maintenance of suitable records reference should be made to the HVCA Guide to Good Practice – Cleanliness of Ventilation Systems TR17.

2:13:02 Testing

In order to set up the regular monitoring (dependent upon risk level i.e. HIGH – 3 monthly; MEDIUM – 6 monthly; LOW 12 monthly), it will be necessary to designate test points with unique identity numbers (Clearly labelled) or access panels for deposit thickness test results to be recorded.

The test results must include a summary of any recommendations of action required and identify the cleaning frequency.

SECTION 3

PLANT DETAIL SCHEDULES

Please refer to Part 5 Pricing Schedules including Torbay Council Asset Database - Mechanical Services Schedule spreadsheets, for all properties and equipment details and required pricing: