INVITATION TO TENDER

FOR

HEATING PLANT MAINTENANCE SERVICE

Date: January 2014

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1 Introduction

Background

This ITT has been issued by the Bracknell Forest Council on behalf of Bracknell Forest Council (BFC) and West Berkshire Council (WBC) and sets out how your organisation can tender for the provision of a Heating Plant Maintenance Service to both.

Outline Requirement

BFC (Lot 1) and WBC (Lot 2) are seeking a contractor for the Inspection, Comprehensive Maintenance and Testing of Heating, Ventilation, Hot Water Systems and Gas Fired Equipment in properties within the Borough of Bracknell Forest and the area of West Berkshire.

This will cover the following:

- Boiler/Burner Units - Oil and Gas
- Natural and Propane (LPG) gas fired direct fired heaters, gas fired and incinerators.
- Air Handling Units
- Heating/Cooling System and Domestic Water Pressurisation Units and Systems
- Fan Assisted Convector Heaters and Fan Assisted Night Storage Heating Units
- Gas Fired and Oil Fired Water Heaters
- Pipe Fan Coil Units
- Gas Testing - Residential Properties
- Gas Fired Catering Equipment, Tumble Dryers and Workshop Equipment

The appointed contractor will also:

- Make any additional visits to carry out repairs or replacement of equipment: either under the terms of the contract or as separately instructed.
- Provide emergency breakdown cover: all equipment between 2 hours and 4 hours (dependent on equipment).
- Prepare appropriate Reports as required.

The visits will ensure that both Councils have an effective maintenance programme in place to cover all sites.

Firms carrying out Mechanical Services work must be Gas Safe or OFTEC registered. Works to ventilation and air-conditioning must be carried out by HVCA registered in house company or sub-contractors. Likewise Electrical Services must be by NICEIC approved (or equivalent) in house or sub-contractor.

Visits will be carried out to the specific requirements of the appropriate manufacturers service detail, complying with the appropriate British or European Standard applicable to the fuel, appliance or service.

The service is essential for meeting the both Councils statutory Health and Safety requirements.

The contract duration will be for a maximum of 5 years, covering an initial period of 3 years plus 2 optional extensions, each of 1 year. (3 + 1 + 1 = 5)

Project Schedule

The following is the proposed timetable for the procurement and implementation of a Heating Plant Maintenance Service.

Issue Invitation to Tender		Friday	
Supplier Visits		TBC	
Last Questions from Tenderers		Wednesday	
Issue Final Question & Answer Summary		Friday	
Receive Response from Tenderers	Mid day	Wednesday	
Clarification Meetings		TBC	
Contract Award		TBC	
Contract Start Date		Tuesday	

Instructions to Tenderers

General Instructions

If you intend to tender for the provision of the Heating Plant Maintenance Service to the BFC and WBC, please read the following instructions carefully and prepare your tender accordingly.

Either Council will not be responsible for any costs or expenses you incur in preparing or delivering or in the evaluation of the tender, nor with any costs or expenses incurred with the formation of a contract should you be successful.

You are deemed to have obtained at your own expense, all information necessary for the preparation of your tender.

Prior to the date for return of tenders, BFC may clarify, amend or add to the documentation. A copy of each such instruction will be issued by BFC to every contractor and shall form part of the tender documentation. No amendment shall be made to the tender documentation unless it is the subject of such an instruction. You should promptly acknowledge receipt of such instructions. If the Tenderer alters or seeks to alter the tender documents, other than as noted before, his tender may be rejected.

Clarifications of the invitation to tender documents must be made by email to the following:

Please note: The above named individual shall be responsible for co-coordinating the transfer of all correspondence to the Mechanical Engineers at each Council, so may not be able to respond to you immediately. However, confirmation of receipt if requested, can be given.

As soon as practical after receipt of any request for clarification, BFC will respond in writing to all tenderers except where the clarification has been identified by the tenderer, and subsequently agreed by both Councils, as being commercially sensitive. BFC will not

be bound to respond to any request for clarification of the Invitation to Tender which is received later than 12 mid day on

Only clarifications made in writing by BFC will form part of the Invitation to Tender documents.

All questions submitted to BFC by email and answers, will be logged, summarised and issued to all tenderers as per the above timetable 1.3.1.

All information contained in the invitation to tender shall be treated as confidential except insofar as is necessary to be disclosed for the purposes of obtaining quotations essential for the preparation of your tender.

Tender Response

Please submit 1 hard copy of your quotation, plus one electronic copy on CD/DVD. Most business file types are acceptable; however any file containing code, password protection or seemingly inappropriate images will be rejected. We are unable to accept quotations on USB stick.

Your tender must be divided into two sections and contain the information called for in each section below:

The **commercial** section should include:-

- Firm prices in sterling for the Goods/Services must be entered on the Pricing Schedule – (Schedule 2).
- The completed Schedule of Reserved Information - see guidance attached at Appendix F (Schedule 3)
- Conditions of Contract Compliance Statement – (Schedule 5).
- The Form of Tender statement (Schedule 6) completed, signed and dated.

The **technical** section should include:

- Method Statement detailing the means of meeting the requirements of the Council and covering in particular (though not exclusively) the following: (Schedule 1)
  - Quality of service to be delivered.
  - Service delivery.
  - Invoicing
  - Transition plan.
- Specification Compliance Statement (Schedule 4)
- Tender Checklist (Schedule 7) should be completed and comments added if required.

No pricing should be included in the technical section.

Respond to all sections in the Schedule of Rates & Specification - Schedule 2. You should complete your responses in blue ink into this document. Alternatively, you may submit a separate document providing the tender cross references the section and paragraph numbers of this invitation to tender.

All sections must be responded to even if simply "Understood" or "Agreed".

BFC and WBC have indicated a maximum number of words against some questions. The number indicated includes words in any charts, appendices and diagrams which are

incorporated into the tenderer's response unless otherwise clearly indicated. In the event that the number of words is exceeded, BFC and WBC will only consider the first part of the tenderer's response up to the maximum allowed.

Where any external reference material, such as brochures, specifications and system descriptions, is used to support your tender, any statements within the reference material which may allow change to obligations or reduce liability, such as "specifications subject to change without notice", or other disclaimers will be regarded as void and shall not form part of the contract in the event that the tender is accepted.

Where a particular section of the tender response relates to information given in another section or in external reference material, then you must ensure that the response is clearly cross-referenced.

All pricing should be stated exclusive of VAT.

Tenders shall remain open for an initial acceptance for a minimum of 90 calendar days, although the Council may ask you to extend of the period of validity.

The Tenderer shall visit the site of the works and is to satisfy himself as to the facilities for access, storage of materials, plant, other site conditions and to ensure the sufficiency of his tender.

Visits to Bracknell Forest Council to be arranged with Amar Rihal.

Please call 01344 355189 or email Amar.rihal@bracknell-forest.gov.uk

Visits to West Berkshire Council to be arranged with Andy Green.

Please call 01635 519831 or email AGreen@westberks.gov.uk

The tender price shall include for all work that can reasonably be foreseen by study of the Contract documents and from a properly conducted site visit.

The Tenderer is to allow for all expenses and costs incurred with this tender including the compliance with any Police and Traffic Regulations and Restrictions, plus all requirements necessary under the Health and Safety at Works Acts, and relevant Construction Regulations(s).

Submission of Tenders

The original, signed, tender must be returned by no later than

If submitting hard copies, the envelope must not indicate the name of the sender; envelopes that do may be rejected unopened. Similarly, tenders received after the tender submission date/time may be rejected.

Tender Decline

If you decide not to respond to this ITT, please let the contact in Section 2.1.5 know as soon as possible, giving a brief reason(s).

Evaluation of Tenders

BFC may seek confirmation that suppliers meet either Councils minimum levels of economic and financial standing or technical or professional ability, originally stated in the contract notice, at any time.

The contracts will be awarded on the basis of the most economically advantageous offer having regard to:

The **Total Cost** of the service (60% of the total score)

The **Quality** of the solution in terms of functionality and infrastructure (40% of the total score) takes into account issues such as; quality, technical merit, environmental characteristics, cost effectiveness, after sales service, technical assistance.

The **Total Cost** score is out of 100 marks and will be awarded based on a mathematical formula taking into account the overall weighting allocated to this particular section. In this instance, it is calculated by taking the lowest Total Cost divided by the next lowest Total Cost and multiplied by 100. As a result, the lowest Total Cost (subject to the provisions of regulation 30(6) of the Public Contracts Regulations 2006) will be awarded a score of 100 for price alone, with tenderers thereafter being allocated a relative score. This will be combined with quality, to give an overall score for each tenderer.

The evaluation will be carried out using Appendix E 1 and 2.
Following tender evaluation, BFC or WBC will award separate contracts.

The evaluation **may** include clarification meetings, whereby all tenderers can be invited to clarify aspects of their bids and thereby allowing the Councils to re-visit their scoring. Further details will be sent to all tenderers if required.

Additionally the Councils **may** wish to visit tenderers' premises to view the facilities and systems that may be used to deliver the service.

The headline **Quality** evaluation criteria are as follows:-

Criteria	Weighting	Applicable Document(s) & Section(s)
Q.1 Sound Management Structure	16	Schedule 1
Q.2 Key CVs	16	Schedule 1
Q.3 Managing Workload	16	Schedule 1
Q.4 Reporting	16	Schedule 1
Q.5 Mobilisation	10	Schedule 1
Q.6 Auditable Work Progress	6	Schedule 1
Q.7 DBS Checks	5	Schedule 1
Q.8 Health & Safety Risk Assessments	10	Schedule 1
Q.9 Added Value	5	Schedule 1
	100	

The evaluation spreadsheet which details any **sub-criteria** and formulae used is attached as Appendix E of this ITT.

Either Council shall be under no obligation to award a contract for all or any part of the requirement set out in the Invitation to Tender, to any tenderer or at all.

Canvassing

Any contractor who directly or indirectly canvasses any member or official of either Council concerning the award of the contract for the provision of the Goods/Services, or who directly or indirectly obtains or attempts to obtain information from any such member or official concerning any other tender for the Goods/Service will be disqualified. If discovery occurs after the award of the contract, either Council shall then be entitled to summarily terminate the contract.

Whistle blowing policy

Your attention is drawn to BFC whistle blowing policy which can be found on the Procurement website at: www.bracknell-forest.gov.uk/procurement

APPENDIX A - SPECIFICATION

Bracknell Forest Council & West Berkshire Council – Heating Plant Maintenance Service

1.0 The Contractor shall:

1.01 Make routine visits during contract period at intervals as per the Maintenance Sheet Numbers 1 to 10 to carry out a full service as specified in these documents, at the properties listed in Annex 1 and 2 - Property Schedules (See section 3.1.1).

The last known service visit date will be provided at time order is placed.

Subsequent visit - where required and specified in the Maintenance sheet the Contractor must make this visit at specified intervals from the previous visit, with exception to where frequent inspections are specified.

For full details of inspection methods, maintenance procedures, remedial action and recommended lubricants, refer to the manufacturers literature.

1.02 Between routine visits to make further visits on being notified that any plant in the properties is not in proper working order and carry out any repairs necessary to return the plant to full working order. The unsatisfactory operation of any plant is to be reported immediately to the Contract Administrator.

1.03 To provide at all times an emergency call out facility to ensure that all properties receive technical site attendance within 4 hours of notification, whether in writing or verbally, except that this period shall be reduced to 2 hours in the event of total heat loss at one of the sheltered blocks of flats or elderly person homes.

1.04 Replacement Parts

1.04.1 Maintenance Sheet 1 - Boiler/Burner Units, Oil & Gas

Supply and fit all parts including.

a) Drive motors, gas valves, solenoid valves, electrodes, thermocouples, burner bars, gas jets, attomisers, gas tubes, oil connections, swirl plates gaskets and any other parts required for the operation of any burners, for any fuel but excluding its complete replacement in the case of gas or oil pressure jet burner or a complete burner bar/tray assembly for atmospheric boiler.

b) Fans and fan motors associated with forced draught flue systems and contained within boiler assemblies and casings.

c) Electrical control assemblies i.e. control boxes, printed circuited boards, and associated wiring within the boiler/burner assemblies.

d) All boiler/pipe and duct thermostats or sensors directly controlling the operation of the burners (excluding BMS Sensors i.e. Trend, JEL).

e) All electrical wiring and connections within the Boiler/Burner assembly from the last fixed connection external to the boiler including the Multipin Plug and Socket (if fitted).

f) Oil line flexible hose pipe and connections from the last isolating valve.

All the above listed works will be deemed to be included in the servicing rates tendered in the Schedule of Rates with the sole exception of the supply of the items listed below.

The supply of the following items will be paid for in accordance with the provisions for payment for additional materials under the contract:

Gas control valves on pressure type burners.
Time switches.
Optimisers.
Sequences.
Compensators and associated detectors and sensors (BMS Systems).
Boilers/heater mountings (i.e. Safety Valves, Drain Cocks, Remote Altitude/Pressure Gauge and Thermometers)
Drive belts.
Air filters.
Complete oil burners, pressure jet gas burners.
Complete gas burner tray assemblies from manufacturers.

NOTE: The cost of fitting or installation is to be deemed included in the contract price.

1.04.2 Maintenance Sheet 2 - Natural & Propane (LPG) Gas Direct Fired Heaters

a) Supply and fit all parts (including Internal Heater Thermostats, Fan Impellers and Mounting, Fan Motors, Gas Valves, Burner Bars/Elements, Igniters, Thermocouples, Electrical Wiring, Fuses, Filters etc., free of charge, with the sole exception of the supply of the items listed in b) below.

All the above listed works will be deemed to be included in the servicing rates tendered in the Schedule of Rates with the sole exception of the supply of the items listed below.

b) The supply of the following items will be paid for in accordance with the provisions for payment for additional materials in the General Conditions

Time Switches.
Room and Frost Thermostats.
Internal and External Guards.
Flue Pipes on conventional flued appliances.
Heater Casings.
Heat Exchangers.

NOTE: The cost of fitting or installation is to be deemed included in the contract price.

c) Make such visits as may be necessary to do work and/or replace parts.

1.04.3 Maintenance Sheet 3 - Air Handling Units

a) All replacement parts are chargeable in accordance with the provision for payments for additional materials under the contract.

b) The cost of fitting will be deemed to be included within the servicing rates tendered in the Schedule of Rates.

c) Make such visits as may be necessary to do work and/or replace parts.

1.04.4 Maintenance Sheet 4 - Heating/Cooling System & Domestic Water Pressurisation Units & Systems

a) All replacement parts are chargeable in accordance with the provision for payments for additional materials under the contract.

b) The cost of fitting will be deemed to be included within the servicing rates tendered in the Schedule of Rates.

c) Make such visits as may be necessary to do work and/or replace parts.

1.04.5 Maintenance Sheet 5 - Fan Assisted Convector Heaters, Fan Assisted Night Storage Heating Units together with the associated equipment

a) All replacement parts are chargeable in accordance with the provision for payments for additional materials under the contract.

b) The cost of fitting will be deemed to be included within the servicing rates tendered in the Schedule of Rates.

c) Make such visits as may be necessary to do work and/or replace parts.

1.04.6 Maintenance Sheet 6 - Gas Fired and Oil Fired Water Heaters

Supply and fit all parts including:

a) Drive motors, gas valves, solenoid valves, electrodes, thermocouples, burner bars, gas jets, attomisers, gas tubes, oil connections, swirl plates gaskets and any other parts required for the operation of any burners, for any fuel but excluding its complete replacement in the case of gas or oil pressure jet burner or a complete burner bar/tray assembly for atmospheric boiler.

b) Fans and fan motors associated with forced draught flue systems and contained within water heater assemblies and casings.

c) Electrical control assemblies i.e. control boxes, printed circuited boards, and associated wiring within the boiler/burner assemblies within water heater assemblies or attached to casings.

d) All boiler/pipe and duct thermostats or sensors directly controlling the operation of the burners.

e) All electrical wiring and connections within the Boiler/Burner assembly and water heater from the last fixed connection external to the unit including the Multipin Plug and Socket (if fitted).

f) Oil line flexible hose pipe and connections from the last isolating valve.

All the above listed works will be deemed to be included in the servicing rates tendered in the Schedule of Rates with the sole exception of the supply of the items listed below.

The supply of the following items will be paid for in accordance with the provisions for payment for additional materials under the contract:

Gas control valves on pressure type burners.
Time switches.
Optimisers.
Sequences.
Compensators and associated detectors and sensors.
Boilers/heater mountings (i.e. Safety Valves, Drain Cocks, Remote Altitude/Pressure Gauge and Thermometers)
Drive belts.
Air filters.
Complete oil burners, pressure jet gas burners.
Complete gas burner tray assemblies from manufacturers.

NOTE: The cost of fitting is to be deemed included in the contract price.

1.04.7 Maintenance Sheet 7 - 4 Pipe Fan Coil Units

a) All replacement parts are chargeable in accordance with the provision for payments for additional materials under the contract.

b) The cost of fitting will be deemed to be included within the rates tendered in the Schedule of Rates.

c) Make such visits as may be necessary to do work and/or replace parts.

1.04.8 Maintenance Sheet 8 - Gas Testing Residential Properties

All repairs identified to gas pipework are chargeable at the rates for payment of material and labour under the contract.

1.04.9 Maintenance Sheet 9 - Gas Fired Catering Equipment, Tumble Dryers and Workshop Equipment

All repairs identified to gas pipework are chargeable at the rates for payment of material and labour under the contract.

1.04.10 Maintenance Sheet 10 - Air Conditioning Service Schedule

All repairs identified to refrigerant pipework and insulation are chargeable at the rates for payment of material & labour under the contract.

NOTE: The quantities of equipment indicated in the Property Schedules is that known at the time of preparation. The Engineer must check that all equipment is serviced and any adjustment to the quantity is indicated on the Service Report Sheet, and will be paid for or deducted at the scheduled rate

1.05 Where parts are obsolete and no direct replacement is available, inform the Contract Administrator and carry out any necessary modifications to the plant to allow the fitting of currently available parts. This work will be paid for in accordance with the daywork rates included in the documents, unless an inclusive price is agreed before the work starts.

1.06 Reset mechanical and electrical timeclocks on all plant to GMT for sites not connected to the network control centre at The Commercial Centre.

1.07 Provide all necessary 'Safe Means of Access' to all equipment to be serviced to comply to all Health and Safety Legislation.

1.08 Submission of Service Sheets

The Contractor shall submit completed service sheets, as detailed in Appendix B, within 7 days of routine service.

Service sheets must record the type of unit serviced and exact location of the unit within the Establishment.

1.09 Where an item of Plant/Equipment is serviced the Contractor shall cause a label to be firmly adhered to the outside of the unit (except for heaters in rooms where it will be on the inside) giving the following information:-

Contractors Name, Contact Telephone Numbers, Date of Service, Name of Engineer.

1.10 The Contractor will not alter or adjust Control Settings to Units linked to the Network Systems.

1.11 Full service to plant and equipment to be as specified on the Maintenance sheets hereafter.

1.12	**MAINTENANCE SHEET 1** **Boiler/Burner Units, Oil and Gas**	
1.12.1	Make two routine service visits to each oil burning boiler plant or warm air unit installed in the Council properties as summarised in the attached Schedule of Properties. (Sections A, B, D, E, F, G & H Applicable).	
1.12.2	Make one routine service visit to each gas burning boiler plant, warm air unit, high level radiant heater or direct fired air heater in the Council properties as summarised in the attached Schedule of Properties. (Sections C, D, F, G & H Applicable).	
1.12.3	<u>Oil Burners</u> i) Clean and service fuel pump units, including filter, check drive shaft, and flexible couplings. ii) Inspect motor and drive shaft for wear, remove any deposits of dust, dirt and surplus lubricant, lubricate motor as necessary (ensure that over lubrication is not carried out). iii) Remove nozzle, inner core, and inner filter, clean and ensure that swirler grooves and parts are carefully cleaned and reassembled. iv) Clean electrodes, insulators and HT cables, check spark gap setting and adjust or replace if necessary, check for tracking. v) Ensure fan runners are clean, balanced, free from oil and free running. vi) Remove oil filters, clean if permanent element or replace if disposable. vii) Test the operation of control and safety equipment fusible links, flame failure devices, oil control, fire valves, boiler thermostats, adjust, repair or replace as necessary. viii) Test the operation of control equipment, electrical contactors, frost stats, time switches, adjust and carry out such replacements or repairs if authorised. ix) Carry out all other duties listed on Service Sheet. x) On completion of service clean and degrease complete burner unit. (For the purpose of controlling fuel consumption, settings are to be recorded on the Service Sheet with any alternative from original settings indicated).	
1.12.4	<u>Oil Fired Boilers</u> The following work to oil fired boilers is to be carried out in addition to the previously defined work to the burner:	

i) Thoroughly clean and inspect all boiler heating surfaces including flue ways, smoke boxes, flue connections to chimney and combustion chambers.

ii) On the occasion of the first maintenance visit in each contract year the Contractor is to dismantle the front plate and refractory and to inspect and carry out all necessary repairs and replacement to the refractory. On subsequent visits the Contractor is to examine the condition of all combustion chamber refractory brickwork and concrete, make good any minor defects in accessible areas and report if complete replacement is required. Check for any unusual firing conditions, i.e., flame impingement, deposits, oil leaking, etc.

iii) Boiler flue cleaning shall be carried out with the approved cleaning tools and where necessary with rotary power cleaning equipment and/or approved chemicals. All soot and combustion products are to be removed with industrial vacuum cleaning equipment and remove from site.

iv) Remove all flue retarders where fitted, clean and inspect for damage and replace.

v) Check for air fume leakage between sections, bases, flue doors, smoke box, flue joints and front plates, etc. Seal as required.

vi) Examine all flue doors, sealing plates, access covers, front plates insulation etc., reseat if badly fitting and if necessary renew sealing gaskets.

vii) Inspect all fixing studs and replace any missing nuts and bolts.

viii) Overhaul and clean any mechanical forced or induced draught plant where installed and check the controls and operation. Check the adequacy of the boiler room ventilation whether natural or mechanical and report.

ix) Check satisfactory operation of draught stabiliser where provided and adjust if necessary.

x) Inspect boiler insulation and casings and report any defects.

xi) Ensure that all necessary section baffles are in position and replace any damaged or missing baffles.

xii) Ensure boiler sight glass is clear and replace if badly stained or pitted. Ensure any flame inspection aperture covers drop shut.

xiii) Report where main chimney stack requires cleaning.

1.12.5 <u>Gas Fired Plant</u>

i) Inspect and carefully clean burner jets, manifold injectors, gas train assemblies and control including the following items where applicable:

	Master gas control pressure governors, cut off valves, relay valves, flame failure devices, thermocouples, test cocks, weep pipes, magnetic valves, boiler circuit and control thermostats, high and low burner flame controls, forced draught fans, dampers, motors, pressure switches, electrodes.
	ii) Inspect flame and make adjustments as necessary. iii) Check setting of spark gaps on electrodes. iv) Examine high tension cables and insulators for cracks or signs of tracking. Renew if necessary. v) Check photo cell viewing head and ensure correctly positioned. vi) Ensure fan runners are clean, balanced, free from oil and free running. Ensure fresh air inlet to boiler area is adequate. If not report on worksheet. vii) Inspect motor for wear, remove any deposits of dust or dirt, and surplus lubricant, lubricate motor as necessary. viii) Check operations of all controls as previously specified or oil burners. ix) Carry out boiler cleaning etc., as previously specified for oil burners/boilers where applicable. (Section B above).
1.12.6	<u>Warm Air Heaters (Oil/Gas) Including Direct Fired Units</u> i) Carry out service and checks to oil/gas burners as previously specified. (Sections A, B, C & H). ii) Clean internal flueways of heat exchanger. iii) Check heat exchanger for defects and report any found for further action. iv) Check all electrical connections and controls. v) Check any remote and overheating thermostats for correct settings and operation. vi) Check that fan belts are correctly tensioned and aligned; replace as necessary.
1.12.7	<u>Oil Fuel Storage</u> i) Check oil storage tank to ensure that all fittings and valves are in good order and that the tank is free from corrosion. ii) Check operation of contents gauge.

iii) Open sludge valve on oil tank(s) and remove any water sludge deposits. Report condition of oil storage facilities on Service Sheet. (Contaminated fuels to be removed from site and disposed of correctly).

iv) Report unacceptable amounts of water or debris contained in the bund to the Building Manager.

1.12.8 Associated Heating Equipment

i) Carry out visual inspection of hot water service storage cylinders, calorifiers, cold water feed tanks and repair any leaks in connection, inspection covers, gaskets, bolted heads, valves etc., and service as required.

ii) Clean and adjust any local control as necessary. Vent if necessary.

iii) Inspect all circulating pumps, check pump pressures, and running currents, service, adjust or repair as necessary including checking and lubricating bearings, repacking glands, checking starter contacts, pump operation etc. Ensure pumps are properly fixed as appropriate and correctly aligned to avoid vibration.

iv) Replace any lubrication systems requiring total changes at intervals and generally grease and oil all motor parts as appropriate.

v) Check drain cocks are operational and drainage points are clean and functioning.

vi) Ensure that any guards and shields are properly located and fixed.

vii) Check all motor contracts, brushes, etc., and the operation of all mechanical parts.

ix) Check all cut-off switches and electrodes.

x) Check any immersion heaters, including supply leads and controls. Clean and repair as necessary. Check for signs of over-heating, malfunctions.

1.12.9 Water Treatment

Check correct properties of inhibitor within the heating system.

One property only - South Hill Park.

1.12.10 Testing on completion

Applicable to all types of equipment.

1.12.11 Oil Fired Plant

On completion of the specified boiler/maintenance works, the Contractor shall carry out the following tests:

i) Test all electrical control circuits. Check oil pump pressure and ensure oil atomising pressure is correct. Carry out safety check on pump and controls and fire boiler(s) at manufacturers rating.

ii) Check and record on Service Sheet flue gas temperature, combustion efficiency, Nitrous Oxide, and Oxygen reading and if necessary carry out adjustments to air shutter to obtain reading of between 3 and 6 percent, O_2.

iii) Check and record on Service Sheet boiler draught readings.

iv) Check and record on Service Sheet smoke readings.

v) Inspect burner flame for any variation from Normal shape and appearance, pulsation or fluctuation. Adjust as necessary.

vi) Ensure burner is securely mounted on boiler front plate/floor supports/base plate.

vii) Boiler combustion tests are to be carried out and recorded on work sheets following service or burner breakdown visits in order that optimum efficiency may be obtained and thereby reduce fuel consumption. Test results shall be given for "High" and "Low" settings where applicable.

viii) Test Equipment. All efficiency tests must be carried out using a Combustion Analyser giving 0_2, CO, NOx, SO_2 and temperature measurements, complete with calculation and display of CO_2, efficiency, stack loss and excess air.

The Printer is to have preset date/time option incorporated.

A copy of the print out must be attached to the service sheet as well as the figures written on to the service sheet.

1.12.12 Gas Fired Plant

On completion of the specified boiler/burner maintenance works, the contractor shall carry out tests where applicable as specified for oil fired plant and including the following:

i) Check gas flow rate and pressures and adjust as necessary.

ii) Check for irregular burning jets and any excessive or unusual condensation.

iii) Check satisfactory operation of gas detection devices and gas shut off valve where provided.

iv) Boiler combustion tests are to be carried out and recorded on work sheets following service or burner breakdown visits in order that optimum efficiency may be obtained and thereby reduce fuel consumption. Test results shall be given for "High" and "Low" settings where applicable.

v) Test Equipment. All efficiency tests must be carried out using a Combustion Analyser giving 0_2, CO, NOx, SO_2 and temperature measurements, complete with calculation and display of CO_2, efficiency, stack loss and excess air.

The Printer is to have preset date/time option incorporated.

A copy of the print out must be attached to the service sheet as well as the figures written on to the service sheet.

1.13	**MAINTENANCE SHEET 2** **Natural Gas and LPG Direct fired Gas Heaters, (Warm Air and Radiant) together with associated ancillaries** **(Calor Gas Heater/Gas Fires)**	
1.13.1	Make one routine service visit to each heater unit in the Council properties as summaries on the attached Schedule of Properties. i) Service Gas Heater, strictly in accordance with manufacturers servicing instructions. ii) Check operation of all associated Electrical Control Systems, i.e. (Time Clock, Room and Frost Thermostats (if fitted). iii) Check condition and report if necessary on all internal and external guards. iv) Check for free air ventilation to rooms where natural draught flued appliances fitted. v) Check operation of all local gas cocks and lubricate if required. Report if handles/levers are missing. vi) Check operation of propane change over valve and condition of "Pig Tail" connections. (If applicable) vii) Check condition of propane cylinder storage cabinet. Clean and touch up small rusty areas with approved lead free paint. Report if cabinet requires complete painting. (If applicable) viii) Check operation of cabinet lock and lubricate lock. (If applicable)	

ix) Check all pipework associated with gas installation and report on condition.

x) Carry out carbon monoxide emission tests adjacent to the appliance with a dedicated carbon monoxide detector.

xi) On completion of all work ensure that the Contract Administrator is conversant with the operation of the heaters.

	MAINTENANCE SHEET 3
1.14	**Air Handling Units**
1.14.1	Make one service visit (hereinafter referred to as the "Main Visit") to inspect, clean, service, maintain and report on all Air Handling Units. As detailed on the attached schedule of properties.
1.14.2	Make 3No. quarterly visits to check services as detailed in the Service Schedule Section. The visit to be not more than 14 weeks and not less than 10 weeks from the previous visit.
1.14.3	**WORKS TO BE UNDERTAKEN AT EACH MAIN VISIT**

i) Examine each unit for its correct and efficient operation and on completion a signed and dated label shall be affixed to each heater cabinet externally (Tie on labels will not be acceptable - See clause XIV).

ii) Each unit shall be vacuumed and blown clean including the heater battery and all components shall be left thoroughly clean on completion. Industrial vacuum cleaners and blowers shall be used for cleaning purposes (dust sheets shall be used to prevent spread of dust particles). Where a heater unit panel is inaccessible the Contract Administrator must be notified by telephone.

iii) Filters

a) Washable filters where fitted are to be washed, dried and fitted or replaced if damaged.

b) Replaceable filters are to be replaced with new at each first visit and a spare set left on site adjacent equipment in safe area.

c) Roll type filters. Check operation (manual and automatic) and replace as necessary.

iv) Replace all drive belts and adjust for correct tension. Ensure drive pulleys are in correct alignment. Ensure belt guards are correctly fitted.

v) All bearings and working parts including anti-vibrational measures shall be checked, examined for wear and necessary adjustments carried out. All other items shall be checked for secure fixings including rubber mounting brackets etc.

vi) Where grease or oil points are provided the Contractor shall allow to apply the correct lubrication to all bearings or motors or moving parts.

vii) Carry out earth loop, insulation's, load tests and record any deviation where the result cannot be considered as satisfactory. Inspect cables, all terminations, bonding and controls including the satisfactory siting of control equipment. Readings are to be recorded on the report form.

viii) Check all room frost, high and low limit thermostats and controls for satisfactory operation including any associated motorised valves. Temperature settings are to be marked on the report form as shown on the specimen copy included with this specification.

ix) Clean and vacuum plant room/plenum chamber check all air intake grilles and remove any obstructions.

x) Inspect lighting in plant room and report any defects on services sheets.

xi) Report any deviance from the Health and Safety at Work Act 1974, or other appropriate regulations.

xii) On completion the Contractor shall if necessary advise and instruct staff at the premises on the operation, maintenance and interim cleaning of the equipment.

xiii) Make such visits as necessary to do all work and fit replacements.

xiv) All replacement parts shall be recorded on a label fixed to the heater cabinet showing the date of replacement and the name of the operative who dealt with the repair. The latter should be printed. This is to provide a log of individual equipment faults. The label should be of sufficient size to allow additions should parts be required at a later date.

xv) Carry out an inspection of the heater case externally and internally to ensure all parts are adequately sealed to prevent air by-pass of the heater battery or excessive escape of air from the cabinet structure other than inlet and outlet registers.

1.14.4	**WORKS TO BE UNDERTAKEN AT EACH CHECK SERVICE** i) Clean all filters. ii) Check and adjust vee belt tensions. iii) Visually inspect and report any defects. iv) Check level of all Manometer fluids, top up if necessary and record the reading of the differential.		

1.15	**MAINTENANCE SHEET 4** **Heating/Cooling System and Domestic Water Pressurisation Units and Systems**		
1.15.1	Make two routine service visits to inspect, clean, service maintain and report on all systems as summarised in the attached schedule of properties. a) Examine each system for its correct and efficient operation and on completion a signed and dated label shall be affixed to each unit. Tie-on labels will not be accepted (Previous labels to be removed). b) Service each system as detailed as following:		
1.15.1.1	i) DIAPHRAGM EXPANSION TANK Inspect tank external services Check diaphragm cushion pressure Check tank diaphragm for soundness If necessary remove diaphragm to inspect Clean/de-scale tank internal surfaces Repair or replace diaphragm if necessary Re-assemble tank and fittings Re-set diaphragm cushion pressure Check tank charging valve for tightness.		

1.15.1.2	ii)	PRESSURISATION UNIT Check closed valve pressure and pump capacity, mechanical seal, and renew any parts necessary. Remove and clean pressure reducing valve filter Check/adjust pressure setting reducing valve Check accumulator charging valve for tightness Dismantle and clean suction non-return valve/filter Clean any debris from mains break tank Clean and lubricate break tank ball valve Inspect set for rusting, damage or other defects Report on general condition of unit.			
1.15.1.3	iii)	ELECTRICAL CONTROLS Check setting of high and low pressure switches Ensure they interrupt the control circuit Ensure pressurisation unit contactor in control panel is operational (where applicable). Clean, lubricate and adjust as necessary.			
1.15.1.4	iv)	RE-COMMISSIONING Adjust all cushion pressure, pressure switch and pressure reducing valve settings to conform with above design information.			
1.15.1.5	v)	LEAVE UNIT FULLY OPERATIONAL. Report any deviations from the: i) Health and Safety at Work Acts ii) Asbestos Code of Practices and Regulations iii) IEE Rules and Regulations, 17th Edition On completion the Contractor shall if necessary advise and instruct staff at the premises on the operation of the equipment.			
1.16		**MAINTENANCE SHEET 5** **Fan assisted convector heaters,** **fan assisted night storage heating units** **together with the associated equipment**			
1.16.1		Make one routine service visit to inspect, clean, service, maintain and report on all heating units as detailed on the attached schedule of properties. a) Examine each heater for its correct and efficient operation and on completion signed and dated label shall be affixed inside each heater cabinet. Tie on labels will not be acceptable.			

b) Each fan convector shall, be vacuumed and blow cleaned including the heater battery and all components shall be left thoroughly clean on completion. Industrial vacuum cleaners and blowers shall be used for cleaning purposes (dust sheets shall be used to prevent spread of dust particles). Where a heater units panel is inaccessible the Contract Administrator must be notified by telephone.

c) Where air filters are fitted they shall be removed completely, washed and replaced.

d) All bearings and working parts shall be checked, examined for wear and necessary adjustments carried out. All other items shall be checked for secure fixings including rubber brackets, etc.

e) Where grease or oil points are provided the Contractor shall allow to apply the current lubrication to all bearings or motors or moving parts.

f) Carry out earth loop, insulations, load tests and record any deviation where the result cannot be considered as satisfactory. Inspect cables, all terminations and controls including the satisfactory siting of resistors.

g) Check all room and frost thermostats and controls for satisfactory operation and leave set at 65℉ or 18℃. Return ai r stats where set below 65℉ or 18℃ shall remain unaltered, where ab ove 65℉ or 18℃ shall be reset at 65℉ or 18℃. Temperature settin gs are to be marked on the report form as shown on the specimen copy included with this specification.

h) Report any deviances from the Health & Safety at Work Act 1974.

j) On completion the contractor shall if necessary advise and instruct staff at the premises on the operation, maintenance and interim cleaning of the equipment.

k) All unit cases shall be repaired where necessary.

l) Make such visits as necessary to do all work and fit replacements.

m) All replacement parts shall be recorded on a label fixed within the heater cabinet showing the date of replacement and the name of the operative who dealt with the repair. The latter should be printed. This is to provide a log of individual equipment faults. The label should be of sufficient size to allow additions should parts be required at a later date.

n) Carry out an inspection of the heater case externally and internally to ensure all parts are adequately sealed to prevent air by-pass of the heater battery of excessive escape of air from the cabinet structure other than inlet and outlet registers.

1.17	**MAINTENANCE SHEET 6** **Gas Fired and Oil Fired Water Heaters**		
1.17.1	(i) Make one routine service visit to each direct gas-fired water heater on the Council properties as summarised on the attached Maintenance Schedule.		
1.17.2	(ii) Make two routine service visits to each oil burning direct fired water heater installed in Council properties as summarised on the attached schedule of properties.		
1.17.3	<u>Gas Fired Water Heaters - General</u> i) Inspect and carefully clean burner jets, manifold injectors, gas train assemblies, control and including the following items where applicable:- Master gas control pressure governors, cut off valves relay valves, flame failure devices, thermocouples, test cocks, weep pipes, magnetic valves, boiler circuit and control thermostats, pressure switches electrodes. ii) Inspect flame and make adjustments as necessary. iii) Check setting of spark gaps on electrodes. iv) Examine high tension cables and insulators for cracks or signs of tracking. Renew if necessary. v) Check photocell viewing head and ensure correctly positioned. vi) Thoroughly clean and inspect all heating surfaces including flue ways, smoke boxes, flue connections to chimney and combustion chambers. vii) Cleaning shall be carried out with the approved heating tools and where necessary with rotary power cleaning equipment. All soot and combustion products are to be removed with industrial vacuum cleaning equipment and removed from site. viii) Remove all flue retarders where fitted, clean, inspect for damage and replace. ix) Check for air fume leakage between sections, bases, flue doors, smoke box, flue joints and front plates, etc. Seal as required. x) Examine all flue doors, sealing plates, access covers, front plates insulation etc., reseat if badly fitting and if necessary renew sealing gasket. xi) Inspect all fixing studs and replace any missing nuts and bolts. xii) Inspect heater insulation sand casings and report any defects.		

xiii) Check satisfactory operation of gas detection devices and gas shut off valve where provided.

xiv) Check for irregular burning jets and any excessive or unusual condensation.

1.17.4 Quality Assurance Label

When a boiler is serviced the Contractor shall cause a label to be firmly adhered to the outside of the boiler or burner and where possible a duplicate label inside the boiler casing giving the following information:-

Name of Contractor:

Telephone Number:

Date of Service:

Name of Fitter:

1.17.5 Typical Servicing Procedure for Lochinvar "Green Knight" Gas Water Heaters

a) Shut off gas service and remove inner and outer burner inspection covers.
Disconnect burner and pilot gas supply and thermocouple room control valve.
Remove burner assembly complete with pilot supply gas tube and thermocouple lead.

b) Remove split flue clip above down draught diverter and remove the diverter.

c) Lift out baffle from centre of flue way.

d) Clean flue way with brush and remove any deposits in the burner tray.

e) Clean pilot and main burner.

f) Shut off cold water supply to heater and drain.

g) Remove screws from edge of top of casing cover. Check sacrificial anode and if under 3/8" dia. replace with new.

h) Reassemble and test.

1.17.6 Typical Servicing Procedure for Lochinvar "Charger" Gas Water Heaters

a) Shut off gas service and remove thermocouple E.C.O. lead and thermostat connections on control valve.

b) Release locating and securing screws of the burner. Disconnect union adjacent to gas cock and remove burner and clean.

c) Remove split flue pipe clip above the draught diverter. Remove screws from top edge of casing, lift off outer and inner covers.

d) Lift out baffles from flue ways. Clean flue ways and remove deposits from burner tray.

e) Shut off cold water supply and drain heater. Remove nut and loosen hand hold plate and remove from heater.

f) Remove sediment or scale built up.

g) Check sacrificial anode in top of heat exchange and replace is under 3/8" diameter.

h) Reassemble and test.

1.17.7 <u>Typical Servicing Procedure for Andrews Water Storage Heaters</u>

a) Isolate from gas supply (and electricity supply if applicable).

b) Close c.w input valve and rain heater.

c) Detach pipework from c.w. feed and h.w.service (also secondary return if fitted).

d) Remove split flue clip and draught diverter.

e) Remove drain cock and fittings - inspect for lime formation (on Hi-Flo units remove clean-out). Remove loose scale and report if descale is required.

f) Remove sacrificial anode(s) and replace is mean diameter is less is less than 7/16" dia.

g) Remove c/w dip tube and inspect for soundness (not applicable on Hi-Flo).

h) Remove flue baffle(s) and examine.

j) Clean flue way(s).

k) Examine bottom of water tank for corrosion and combustion chamber.

l) Check that open vent is free of obstruction.

m) Re-assemble heater, reconnect all pipework and refill.

n) Check for water leaks.

	o) Re-light burner. p) Check pilot burner impingement on thermocouple. q) Check for gas leaks (main burner "on"). r) Check burner pressure.		
	s) Check gas rate. t) Check flue draught. u) Checkwater temperature at various thermostat settings. v) Carry out visual inspection of complete installation.		
1.17.8	<u>Oil Fired Water Heaters - General</u> Carry out all servicing to each heater in accordance with the principles detailed and applicable as for oil fired boilers (Maintenance Sheet No 1) and the manufacturers detailed instructions.		
1.18	**MAINTENANCE SHEET 7** **4 Pipe Fan Coil Units**		
1.18.1	Make one routine service visit to inspect, clean, service, maintain and report on all fan coil units as detailed on the attached schedule of properties. (To be carried out at agreed weekends only). a) Examine each fan coil for its correct and efficient operation and on completion a signed and dated label shall be affixed inside each fan coil case. Tie on labels will not be acceptable. b) Each fan coil unit shall, be vacuumed and blow cleaned including the heater battery and chilled water battery and all components shall be left thoroughly clean on completion. Industrial vacuum cleaners and blowers shall be used for cleaning purposes (dust sheets shall be used to prevent spread of dust particles). Where a fan coil unit is inaccessible the Contract Administrator must be notified by telephone. c) Filters shall be removed completely, washed in a solution of lukewarm water and household detergent, and then replaced. Damaged filters shall be replaced with new. Filters shall only be replaced when dry and no fan unit will be left running without a filter installed. d) Where grease or oil points are provided the Contractor shall allow to apply the current lubrication to all bearings or motors or moving parts.		

e) Carry out earth loop, insulations, load tests and motor speed record any deviation where the result cannot be considered as satisfactory. Inspect cables, all terminations and controls including the satisfactory siting of resistors.

f) Report any deviances from the Health & Safety at Work Act 1974.

g) All unit cases shall be repaired where necessary. Carry out an inspection of the heater case externally and internally to ensure all parts are adequately sealed to prevent air by-pass of the heater battery of excessive escape of air from the cabinet structure other than inlet and outlet registers.

h) Inspect the 4 way valve/actuator for gland leakage, and adjacent isolation valves, sight glasses etc.

j) Make such visits as necessary to do all work and fit replacements.

k) All replacement parts shall be recorded on a label fixed onto the heater cabinet showing the date of replacement and the name of the operative who dealt with the repair. The latter should be printed. This is to provide a log of individual equipment faults. The label should be of sufficient size to allow additions should parts be required at a later date.

NOTE: a) These units are located in ceiling voids within office spaces, which entails the removal of ceiling panels over desks and equipment.

b) The Contractor must provide suitable approved access equipment and protection.

	MAINTENANCE SHEET 8
1.19	**Gas Testing - Residential Properties**
1.19.1	Make one visit at the same time as the carrying out of the Gas Boiler/Heater service to the residential type property on the attached Maintenance Schedule (including domestic houses, Conference Centres and residential care homes or hostels).

i) Carry out tests and inspections of all gas services and equipment to satisfy the requirements of Regulation 36:

- Duties of Landlords of the Gas Safety (Installation and Use) Regulations 1998 (and amendments) including a gas soundness test of the whole system and a visual inspection of accessible gas pipework.

ii) Issue Certificate in compliance with these regulations with copy left on site and copy to the Contract Administrator.

1.20	**MAINTENANCE SHEET 9** **Gas Fired Catering Equipment, Tumble Dryers and Workshop Equipment**		
1.20.1	Make one service visit per annum to inspect, clean, service, maintain and report on the gas equipment, as detailed on the attached schedule of properties.		
1.20.2	Inspection, Servicing and Testing of Appliances All equipment is to be inspected, serviced and tested in accordance with the relevant equipment manufacturers specific instructions if available and the detailed schedules 2.2, 2.3 and 2.4. On completion the relevant service checklist is to be completed (Appendix B).		
1.20.3	General Any person working on a gas appliance must ensure the following checks are carried out: • The effectiveness of any flue. • The supply of combustion air. • The heat input and operating pressure are correct. • Its safe functioning. These requirements are the statutory elements laid down in the Gas Safety (Installation & Use) Regulations 1998. (Amendments and updates applicable) If any defects are found and cannot be rectified the customer must be informed and the procedure for hazardous installations implemented. Where ventilation is considered by the Fitter to be inadequate he shall report the existing problem and supply technical details such as room size in order that calculations can be conducted for subsequent remedial action to be implemented as appropriate. The equipment will be located in Kitchens, Home Economics areas and Workshop areas. It is necessary to confirm exact dates prior to attending sites.		
1.20.4	Quality Assurance Label When an appliance is serviced the Contractor shall cause a label to be firmly adhered to the outside of the appliance and where possible a duplicate label inside the appliance casing giving the following information:-		

Name of Contractor:

Telephone Number of Contractor:

Date of Service:

Name of Fitter:

1.20.5 Inspection, Testing, Maintenance and Servicing of Gas Fired Catering Equipment

1.20.5.1 Preliminary Examination

a) Check that the room ventilation is adequate for the appliance.
b) Check the operation of all the control taps and ignition devices.
c) Check oven burner flame stability on its lowest thermostat setting.
d) Check the flame picture of all burners.
e) Check the stability of the appliance including provision of bracket or hook and chain.

1.20.5.2 Appliance Checks

f) Isolate the gas and electrical supplies to the appliance.
g) Check any electrical connection for tightness, including the correct fuse rating for the appliance.
h) Renew any dry cells as necessary.
i) Check the condition and effectiveness of the oven door seals (and report).
j) Ease and grease any taps which were noted as stiff.
k) Check the operation of any flame failure devices.
l) Remove and clean burners and injectors as necessary.
m) Before restoring electrical supply carry out preliminary electrical checks i.e. earth continuity, insulation resistance and polarity.
n) Restore the gas and electrical supplies.
o) Check all previously disconnected joints for soundness using 'U' gauge wherever possible. Use leak detection fluid if it is not possible to use a 'U' gauge.
p) Check the working pressure and heat input are correct as per the manufacturers instructions.
q) Check condition of cable for soundness, suitability and size. Check all electrical connections for tightness. Check for correct fuse rating. Change if necessary.

1.20.6 Inspection, Testing, Maintenance and Servicing of Gas Fired Tumble Dryers

1.20.6.1 Preliminary Examination

a) Check the location of the appliance is suitable, paying particular attention to ensure there is an adequate supply of air to the appliance.
b) Check the electrical installation fully complies with the IEE Regulations.
c) Check the operation of all the appliance controls and ignition systems.

d) Check the location of the flue termination and the route of any flue to ensure it complies with the relevant requirements.
e) Visually check there are no signs of spillage.
f) Check the flame picture of the burners.
g) Check for any limit accumulation from the lint chamber, thermostat and microprocessor temperature sensor (if fitted).
h) Check the stability of the appliance including provision of bracket or hook and chain.

1.20.6.2 Appliance Checks

i) Isolate gas and electricity supplies.

j) Clean any dust, lint and deposits within the appliance casing, grilles and flue ways as necessary.
k) Check condition of cable for soundness, suitability and size. Check all electrical connections for tightness. Check for correct fuse rating. Change if necessary.
l) Remove and clean burners and injectors as necessary.
m) Examine the condition of the combustion chamber and flue ways, clean/repair as necessary.
n) Check the operation of any flame failure devices.
o) Before restoring electrical supply carry out preliminary electrical checks, i.e. earth continuity, insulation resistance and polarity.
p) After satisfactory flue tests as applicable to the appliance reconnect to the gas and electrical supplies.
q) Check all previously disconnected joints for soundness using 'U' gauge wherever possible. Use detection fluid if it is not possible to use a 'U' gauge.
r) Ensure the working pressure and heat input rate are correct and that all controls are working correctly.

1.20.7 Inspection, Testing, Maintenance and Servicing of Gas Fired Workshop Equipment

1.20.7.1 Preliminary Examination

a) Check the location of appliance is suitable, paying particular attention to ensure there is an adequate supply of air to the appliance.
b) Check any associated electrical installations fully comply with the IEE Regulations.
c) Check the operation of all the appliance controls and ignition systems.
d) Check the location of the flue termination and the route of any flue to ensure it complies with the relevant requirements.
e) Visually check there are no signs of spillage.
f) Check the flame picture of the burners.
g) Check the stability of the appliance including provision of any bracket or hook and chain.

1.20.7.2 Full Service

h) Isolate gas and electricity supplies.

i) Clean any dust and deposits within the appliance casing, grilles and associated flueways as necessary.
j) Check condition of cable for soundness, suitability and size. Check all electrical connections for tightness. Check for correct fuse rating. Change if necessary.
k) Remove and clean burners and injectors as necessary.
l) Examine the condition of the combustion chamber and associated flueways, clean/repair as necessary.
m) Check the operation of any flame failure devices.
n) After satisfactory flue tests as applicable to the appliance reconnect to the gas and electrical supplies.
o) Before restoring electrical supply carry out preliminary electrical checks, i.e. earth continuity, insulation resistance and polarity.
p) Ensure the working pressure and heat input rate are correct and that all controls are working correctly.
q) Check all previously disconnected joints for soundness using 'U' gauge wherever possible. Use leak detection fluid if it is not possible to use a 'U' gauge.

MAINTENANCE SHEET 10
General Air Conditioning Servicing for split air conditioning units & 4No. CIAT roof top and cooled chillers

2.1.1 Make one annual service visit (hereinafter referred to as the "Main Visit") to inspect, clean, service, maintain and report on all Air Conditioning Units. As detailed on the attached schedule of properties.

2.1.2 Make 1No. six monthly visit (hereinafter referred to as the “Minor Visit”) to check services as detailed in the Service Schedule Section.

2.1.3 <u>Inspection, servicing and testing of appliances</u>

All equipment is to be inspected, serviced and tested in accordance with the relevant equipment manufacturer’s specific instructions. On completion the relevant checklist to be completed (Appendix B).

2.1.4 <u>General split air conditioning unit</u>

For split air conditioning service schedule scope of works as below:

a) Clean or replace filters as required.
b) Inspect and clean condenser coils.
c) Inspect evaporator coils and treat with anti-bacterial agent.
d) Check operation and setting of HP switches.
e) Check operation and setting of LP switches.
f) Inspect condenser fan motors.
g) Inspect evaporator fan motors.
h) Inspect Vee belts, replace if necessary.
i) Run and test humidifiers, manually drain, change bottle if required.
j) Inspect incoming electrical connections at the unit.
k) Check all electrical connections are tight.
l) Check operation of expansion valves.

m) Check operation and setting of head pressure controls.
n) Check refrigerant change.
o) Check sight glasses for moisture.
p) Check operation and calibration of thermostats.
q) Run system and check air-on and air-off coil temperature.
r) Check for oil and gas leaks.
s) Inspect cooling towers (if applicable).
t) Check overall condition of the equipment.

2.1.5 Roof top mounted air cooled chiller units

Time Square, Market Street, Bracknell, RG12 1JD has 4No. air cooled chillers, make CIAT, model AQUACIAT2LDV 702V refrigerant R410A. Units to be serviced to CIAT UK requirements.