

Shepway District Council

JCT Minor Works with Council Amendments

for

Commercial Boiler Renewal Mittell Court

**Technical Specification**

**Version 1 – April 2017**

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# TECHNICAL REQUIREMENTS FOR COMMERCIAL BOILER UPGRADE – MITTELL COURT

* 1. **General**
	2. **Requirements**
		1. This specification covers the works required to renew the commercial boilers associated plants at Mittell Court.
		2. Parts the three existing boilers are no longer available and one of the three boiler has failed beyond repair.
	3. **Codes and Standards**

1.2.1The following codes and standards shall apply to this work:

British Standard 5449 for Gas

 CIBSE How to Design Heating Systems

 CIBSE Energy Efficiency in Heating

 HVAC Domestic Central Heating Specification

 OFTEC Guide on appliances and pipework

 Part L of the Building Regulations

1.2.2 The heating system is to be checked to ensure that it complies with British Standard 5449. All copper pipework shall comply with BSEN 1057 and Electrical works are to be in accordance with BS7671.

* 1. **Regulations**

1.3.1 The Contractor will take all steps and include for all consequential costs within the contract necessary to comply with current stator legislation and requirements contained within, but not limited to;

 The Gas Safety (Installation and Use) Regulations 1998

 Gas Safe Register Essential Gas Safety and Gas Installer Manuals

 Management of Health and Safety at Work Regulation

 Electricity at Work Regulations 1989

 Asbestos Regulations 2016

 IEE Regulations BS7671

**1.4** **Commissioning of system**

1.4.1 The appliances are to be commissioned in accordance with Manufactures instructions and guidelines. Log book are to be completed and a landlord safety record completed.

1.4.2 All controls are to be checked to ensure they are operational and have been installed in accordance with the manufactures recommendations.

1.4.3 Pipework and fittings are to be tested for soundness ensuring the system design meets the requirements and are safe for use.

* 1. **Qualifications of Contractors**

1.5.1 The Contractor is to demonstrate that all engineering operatives are fully qualified to carry out gas works and are fully aware of all the safety features of the system they intend to install.

1.5.2 Works will be carried out by an engineer suitably qualified and holding appropriate competent qualification and registered by Gas Safe.

**1.6 Approved Products**

1.6.1 All rates are to reflect the usage of the products that provide the requirements.

 Boiler – will require a minimum warranty of 24 months

 Pumps – will require a minimum warranty of 5 years

 Controls - will require a minimum warranty of 2 years

 Motorised valves – will require a minimum warranty of 2 years

**1.7 Warranty and Defects Period**

1.7.1 The warranty period for the boiler will be a minimum of 2 years

1.7.2 The Contractor will agree to provide a 12 month defects period from the date of installation, covering all materials and workmanship.

**1.8 Existing System**

1.8.1 All existing appliances, fixtures and pipework being removed by the contractor must be carried out in a safe method that will ensure it does not cause damage to the property or is a risk to the residents or to the contractor.

1.8.2 Where existing installations are made redundant by the new installations the contractor will be expected, where practicable to dismantle and remove from the site.

1.8.3 Where existing installations need to be modified, diverted or otherwise affected by the new installation, approval needs to be obtained from the Contract Administrator.

**1.9 Controls**

1.9.1 Every heating installation is to comply with the manufacturer’s instructions.

1.9.2 The building regulations approval certificate is to be provided and issued to the Client. The ErP (EnergyProducts) label to be attached to the boiler in a non-conspicuous position, NOT on the front outer case of the boiler.

1.9.3 The Contractor must advise what manufacturer controls they propose at the time of submitting their price. All controls proposed must be efficient and easy for customers of all abilities to use.

**1.10 Type of system controls**

1.10.1The type of controls will depend upon which system will be installed but in all cases it must meet Part L of the Building Regulations and cover the following type of control suitable for the system being installed.

**1.11 Design Temperature**

1.11.1 All systems are to be designed to be capable of providing the mean internal air temperature in the spaces described when the outside temperature is –3oC. The design must allow for the specified air change rate in each space with continuous heating, the boiler flow temperature being set at 82oC and the circulating pump running.

 **Space** **Air Change Rate** **Temperature Requirements all Dwellings**

 Living Room 1.5 21

 Kitchen 2 21

Dining Room 1.5 21

Hallway 2 21

Landing 2 21

WC 3 21

Bathroom 3 22

Bedrooms 1 21

1.11.2 The temperature in any room or space will ordinarily be ascertained by a mercury

 glass thermometer suspended at a point 1.5m from the floor in the centre of the

 room or other area.

1.11.3 When the outside temperature is not less that -3oC the system is to be guaranteed to

 achieve the heating standards described in 1.08 previous, provided the following

 conditions are satisfied:-

a) The internal volume of any space or other area served by one radiator must not exceed 42 cubic meters. In a space which exceeds 42 cubic meters in volume, more than one radiator will be required in order to obtain the heating standards referred to.

b) The system must have been operated continuously for not less than 24 hours and must continue to operate fully with clock controller overridden and air temperature and hot water thermostatic controls correctly set and the boiler flow temperatures set at 82oC.

**1.12 Boilers**

1.12.1 Ideal Evomax Boilers x 3 (or equivalent)

1.12.2 Heat Output of 100KW each

1.12.2 Robust cast aluminum silicon alloy heat exchange

1.12.3 In-built commissioning and fault diagnostics

1.12.4 Meets Building regulations (Part L)

1.12.5 Compact size – small footprint

1.12.6 High 5:1 turndown

1.12.7 Up to 107.5%nett efficiency (fully condensing)

1.12.8 Conventional or room sealed flue options

**1.13 System Pipework**

1.13.1 The system pipework will be provided so that it is installed to connect the new boiler with all controls and component parts in accord with their respective installation instructions.

1.13.2 All exposed pipework shall in the first instance be in copper tubing.

1.13.3 Adequate drain-off facilities are to be provided and fitted to all boilers and in

 Accessible positions on all low points of drops to radiators.

**1.14 Condense Pipe**

1.14.1 The condense pipe from the new appliance should be fitted in accordance with the

 Manufacturer’s instructions.

**1.15 System Inhibitor**

1.15.1 The system once all commissioning has been completed shall be dosed with a water

 treatment recommended by the boiler manufacturers for that particular system as

manufactured by Sentinal, Fernox or Adey. A label shall be attached to the sealed system kit stating that a dosage has been applied to the system and full history given of the dosage applied. All installations will require a water sample to be taken and the test data certificate issued with the installation pack.

**1.16** **Filter**

1.16.1 Fit a suitable manufacturer approved Magnetic Central Heating Filter

**1.17 Flues**

1.17.1 The condense pipe from the new appliance should be fitted in accordance with the

 Manufacturer’s instructions

**1.18** **Electrical Work**

1.18.1 All electrical work must be carried out by an NICEIC /ECA registered electrician, who

 must issue current approved NICEIC / ECA test and completion certificates for each

 individual installation.

1.18.2 No installation will be accepted for payment unless such certificate is provided. 1.18.3 Equally a note must be made on the certificate that all bonding has been completed

 in accordance with the current edition of the I E E wiring regulations BS7671.

**1.19 Flushing and Cleaning of New and Existing Systems**

1.19.1 All systems shall be thoroughly cleaned and flushed prior to commissioning. This shall as a minimum be carried out in accord with the requirements of BS7593:2006 – “Code of Treatment of water in domestic hot water heating systems”. Further guidance in this respect may be sought from manufacturers such as Sentinal or Fernox. Should this treatment not adequately clean an existing system then the Contractor shall carry out descaling and desludging processes by use of power flushing the system. Upon completion of cleaning, descaling and desludging a system inhibitor of an approved type shall be added and a water sample taken and sent for analysis, the results of the sample to be provided as part of this process.

* 1. **Scaffolding**
		1. The design and build of the scaffolding to comply with TG20:13

1.20.2 Scaffolding shall comply with all relevant requirements and Codes of Practice under the Health and Safety at Works Act (current edition) and shall provide all the necessary protection for his workmen, tenants and public.

* + 1. The Contractor shall allow to supply, erect, maintain and dismantle on completion of works, independent tied scaffolding to allow all works to be carried out (this must include for chimney scaffolds to allow for all works to chimney). Provide toe boards, barriers and protection over all entrances, and pathways to protect the public and occupiers at all times.
		2. The Contractor shall allow to supply, erect, maintain and dismantle on completion of works, independent tied scaffolding to allow all works to be carried out
		3. The scaffold decking is to consist of 225mm boards minimum of 4 boards wide. The scaffolding is to be fully boarded at all times.
		4. Regular safety checks are to be carried out by competent persons and recorded using Scaftags as a minimum.
		5. No element of the scaffolding is to be placed on, or have contact with property that is privately owned without the occupier’s permission and written confirmation of the Contract Administrator.
		6. The Contractor is to fix distinctive foam padding, to base of standard, 2m high, on any standard near the front entrance walkways, paths and entrance doors.
		7. Overhead protection over all doorways will be required, adequate perimeter protection of the scaffolding will be required to prevent un-authorised persons entering the areas.

1.20.10The scaffolding will be erected without the requirement of a working security alarm.

 However, the Contractor will be expected to erect dummy alarm boxes and CCTV

 cameras in suitably prominent positions to deter intruders from attempting to gain

 access to the scaffolding. In addition, appropriate signboards should be erected to

 act as a further deterrent to intruders and give the impression that the scaffold is

 fitted with an alarm linked to a manned telephone system with 24 hours a day

coverage.

**2.0 Scope of Works**

**2.1 Works**

2.1.1 To renew the commercial boilers associated plants at Mittell Court, including scaffolding.

## Specification of Works/Installation

* + 1. Temp Boiler for duration of works
		2. Remove 3 x Ideal Concord c300

2.2.3 Install 3 new boilers (including all associated pipework) to match current output of approx. 300kw – Ideal Evomax 100kw

* + 1. Install plate heat exchanger, expansion vessel, condense and relief pipework
		2. Replace existing pumps and motorised valves with honeywell
		3. Install new solenoid valve to incoming gas supply in conjunction with a gas sensor
		4. Lag pipework

2.2.8 Replace existing controls for timed heating and hot water controls with new thermistor controls within property

* + 1. Produce new operating manual, line diagram and provide 24month warranty.

**2.3** **Make good**

2.3.1All builders work such as cutting away, forming holes, making good, built-in

 brackets or any other function associated with the fabric of the building and its

 alteration as necessary to suit the heating system, is within the scope of this

 specification and must be included within the price for each work element specified.

 Any chimneys and flues made redundant as a result of removing appliances are to be removed.

**2.4 Equipment Removal**

2.4.1 Once the new system has been fitted and handed over to the Contract Administrator, the equipment removed is to be disposed of properly off-site by the Contractor.

**2.5 Handover**

2.5.1A person authorised by the Contractor shall visit each dwelling on the day of completion and issue a Completion Certificate confirming that the system has been fully installed, tested, commissioned and is working as specified and that all parts of the specification have been complied with. The certificates will be provided to the Client’s Representative.

2.5.2 Any apparent defects or items of remedial works reported back to the Contractor. These are to be addressed and rectified within 10 days of notification.

2.5.3 The Contractor will provide with a heating handover pack that will allow the

understanding of how the system works. The pack will also include the LSR Certificate.

2.5.4 The Contractor is to ensure that the Contract Administrator and residents understands the operation of the system before they leave the property.

**2.6 Pricing Element**

2.6.1 The Contractor is to submit a fully priced and correct copy of the Schedule of Works (Appendix B) upon which his tender is based with the Contract Administrator. All variations shall be measured and priced at the same rates as contained in the Schedule or where the rates do not apply as rates proportionate to the rates therein contained.