TRADE SPECIFICATION

PLUMBING & HEATING

GENERAL

a) This Trade Specification gives information regarding the procurement of materials, installation of materials and on-site working methods to ensure the correct standards and compliance is achieved on site. This trade specification is to be read alongside working drawings, BDW Standard Details, manufacturer's literature and the Barratt Construction Best Practice Guide. Any statutory requirement relating to the Trade Specification takes precedent. If any doubts remain regarding the information given or further clarity is required, these concerns must be communicated to the Commercial Department BEFORE proceeding.

b) **BDW Trading Limited**
Barratt Homes and David Wilson Homes are trading names of BDW Trading Limited "the Company".

c) **Clearing**
As part of this Trade Specification the Contractor is responsible for clearing up and safe removal of waste materials from in and around the house arising from the execution of their Works, ensuring that all waste materials are segregated and disposed of into the relevant tipper skips..

Failure to comply with this requirement resulting in the Company's labour performing this task will result in contra charges being levied against the Contractor.

The Contractors attention is particularly drawn to the sections below which state where waste materials must be removed as work progresses.

d) **Contract Conditions**
The Contractors attention is drawn to the Company's Conditions of Contract and General Terms.

e) **Defective Workmanship**
All defects, resulting from poor workmanship by the Contractor or, by the Contractor not carrying out the Works in accordance with this Trade Specification and the Governing Documents listed below, are to be remedied by the Contractor at no extra cost to the Company.

Failure by the Contractor to carry out this contractual obligation, resulting in an alternative Contractor being instructed to carry out such remedial work, will incur the Contractor with the cost thereof.

Should any element of work, undertaken by a preceding trade, be considered deficient and inhibiting progression by this trade, all such defects must be brought to the attention of BDW Site Management for remedy prior to the commencement of the works.

f) **Distribution**
Contractors should be aware that the Company operates a national supply chain agreement

with:

For all heating, plumbing and sanitary ware products including; all above ground drainage, plastic plumbing, shower doors, shower trays, shower valves, all brassware, solar hot water (panels and cylinders), radiators and all Kingspan solar products:

City Plumbing Supplies Ltd
Highbourne House
1 Eldon Way
Crick
Northampton
NN6 7SL

Plumb Center (Wolseley UK)
Harrison Way
Leamington SPA
Warwickshire
CV31 3HH

Graham Plumbers Merchants
Bromford Central
Bromford Rd
Birmingham
West Midlands
B8 2SE

It is mandatory that all plumbing and heating materials are only procured through these merchants.

g) **Governing Documents**

The documents below must be used for reference in compliance with the Company's standard working drawings and construction best practice guide. The Contractor is to ensure that all current versions are followed.

All works must conform to NHBC 'Buildmark' and Local Authority requirements and good accepted working practice (BS5449, BS5670 and BS5440) at time of tender.

All works to be carried out in accordance with current building regulations, to the satisfaction of the Local Water Authority, Gas and Electricity Boards.

All gas fired boiler flue installations need to be in accordance with manufacturer's installation instructions, gas safe bulletin 0008 and the Company's method statement BF1000 – installation & guidance relating to extended flue systems.

All pumps, motors, boilers and cylinders installed must be A-rated in accordance with the Energy Using Product (EuP) directive and EU legislation.

All works to be carried out in accordance with water supply (water fittings) regulations 1999 section 73 (1) outlines the requirement of any property to prevent any system which causes or is likely to cause contamination from being connected to a water supply.

h) **Group Suppliers**

The Contractor should be aware that the Company operates National Commodity Agreement with a number of nominated suppliers, as listed below. It is the Contractors responsibility to ensure that these agreements are adhered to. Failure to do so may lead to the Company making a claim from the Contractor for any loss of rebate.

For all above and below ground drainage, all hot and cold-water plumping pipework and all fittings:	**Polypipe Ltd** Broomhouse lane Edlington Doncaster DN12 1ES
For all radiator valves and thermostatic mixing valves distributed through PTS & Plumb Center:	**Pegler Ltd** St. Catherine's Avenue Doncaster, South Yorkshire, DN4 8DF
For all radiators, distributed through PTS & Plumb Center:	**Ideal Stelrad** Stelrad House Marriott Road Mexborough S64 8BN
For all boilers, distributed through PTS, Plumb Center:	**Ideal Heating** PO Box 103 National Avenue Kingston upon Hull East Yorkshire HU5 4JN
For sink tops fitted to Barratt and David Wilson Homes units, distributed through PTS & Plumb Center or direct from the Kitchen unit manufacturer.	**Carron Phoenix (Franke UK Ltd)** West Park MIOC Styal Road Manchester M22 5WB
For standard and smart Cylinders fitted to all Divisions distributed through PTS and Plumb Center:	**Kingspan Range Cylinders & Smart Mixenergy Cylinders** Tadman Street Wakefield West Yorkshire WF1 5QU

For Shower Doors and Trays:	**Merlyn Industries UK Ltd** Ashton House 471 Silbury Boulevard Central Milton Keynes MK9 2AH
For Thermostatic Bar Valves	**Aqualisa Products Ltd** The Flyers Way Westerham Kent TN16 1DE
For Electric Showers – **ONLY** where required by a Registered Social Landlord (RSL)	**Kohler Mira Ltd** Cromwell Road Cheltenham Gloucestershire GL52 5EP
For all Waste Water Heat Recovery devices attached to Thermostatic Showers:	**Recoup Energy Solutions Ltd** Recoup Energy Solutions Ltd Trumpeter House Trumpeter Way Long Stratton Norfolk NR15 2DY
For Bathroom Taps fitted to Barratt Homes units only:	**Bristan Group Limited** Birch Coppice Business Park Dordon Tamworth Staffordshire B78 1SG
For Bathroom Taps fitted to David Wilson units Only:	**Ideal Standard** The Bathroom Works National Avenue Hull NU5 4HS
For Sanitary Ware fitted to Barratt Homes units Only:	**Geberit** Lawton Road Alsager Stoke-on-Trent ST7 2DF

For Sanitary Ware fitted to David Wilson Homes units Only:	**Ideal Standard** The Bathroom Works National Avenue Hull NU5 4HS
For Carbon Monoxide Alarms:	**Green Lighting Ltd** Unit 18, Great Western Business Park McKenzie Way Worcester WR4 9GN
For Cleaning and Commissioning Products:	**Adey Innovation Limited** UK Head Office Gloucester Road Cheltenham GL51 8NR
Air Source Heat Pumps	**Daikin** The Heights Brooklands Weybridge Surrey KT13 0NY Contact : Nick Houghton Best houghton-best.n@daikin.co.uk **Valliant** Nottingham Road, Belper, Derbyshire, DE56 1JT Contact : Chris Goss chris.goss@vaillant-group.com

No other manufacturer's products are to be specified unless otherwise stated in the enquiry letter.

i) **Health & Safety**

The below are specific requirements required for the work activity and reference must also be made to the Company's Safety Health and Environmental Code for Sub-Contractors (SHE Form 09). The contractor must be conversant with this code and fully apply its requirements where practicable.

The contractor is to provide suitable competent supervision for their work activities and ensure that monitoring of their work activities is undertaken. A report detailing the monitoring of work activities and action taken must be provided to the company.

All operatives are to be inducted on site prior to carrying out any work. It is the contractors' responsibility to ensure that all persons that are engaged on a site are presented for induction prior to commencing work.

It is the responsibility of the contractor to ensure all persons working for them have been supplied with and wear the appropriate Personal Protective Equipment (PPE) and Respiratory Protective Equipment (RPE) required by statutory requirements, site rules and/or specified controls measures required for the work. It is the contractors' responsibility to provide the PPE/RPE.

The contractor is responsible to ensure all operatives have a valid competency card (i.e. CSCS or equivalent) for the specific work activities to be undertaken.

Prior to work commencing the Contractor must provide an appropriate risk assessment and/or method statement for all the work activities, which also includes an assessment for manually handling material, and COSHH assessments for any materials classified as hazardous. The contractor must ensure that all their workers understand and have been provided with a briefing on the control measures required.

The contractor must ensure prior to commencing works that appropriate fall protection has been provided (external and internal with a plot) and that it is appropriately positioned to enable works to be completed safely. The contractor or any of their workers must not, at any time, alter, modify or amend any scaffolding including handrail systems which has been provided by specialist contractors (i.e. scaffolding contractor).

The contractor must provide suitable access equipment to undertake the works. Any access equipment used by the contractor must be a minimum of BS EN 131

Where any hot works are being undertaken, a hot work permit must be issued by the Company's Site Management team. The contractor must ensure that prior to any hot works commencing that a permit is provided. The contractor must ensure that they have a system in place to ensure that a suitable fire watch is completed at the end of each working day or where hot works are completed in a specific location i.e., plot.

A permit to work must be obtained by the contractor from the Company prior to work being undertaken in any loft space. The permit must be closed and signed off when the work has been completed.

The contractor shall provide suitable task lighting to illuminate any works within a loft space. Head torches can be used for localised lighting, but additional lighting will be required to enable safe movement within the loft space.

The contractor shall provide and ensure that work is undertaken from safe working platforms with the loft space. The platform should be 600mm wide where practicable and be supported by a minimum of 3 truss cords. Sufficient platforms must be provided to enable safe movement of workers within the loft space.

The contactor shall provide a safe means of access into the loft space which will be via an appropriately secured ladder, which extends into the loft space via the access hatch.

All Contractors MUST be registered with 'Gas Safe Register', hold individual 'Gas Safe

Register' ID cards, and hold current ACOPS/ACS Gas Safety training, in the relevant elements. Copies of individuals competency cards will be required and validated at the site induction.

The contractor must be MCS certified or ensure that all Air Source Heat Pump (ASHP) installers have successfully completed the Level 3 award (BPEC or LCL) in the installation and maintenance of ASHP (non-refrigerant circuits), as well as each of the relevant manufacturer's specific installation courses, appropriate to the site specification. The contractor must provide evidence of qualification prior to working on any of our sites that have ASHP specified.

j) **Materials**

It is the Contractors responsibility for checking materials delivered directly to site for any damage, colour variation and correct quantities prior to unloading. Should significant quantities of damaged materials be identified, these must be reported to the supplier before accepting the consignment.

The Contractor is responsible for unloading, protecting and safe storing of all their own materials to avoid damage and surface contamination.

The Contractor must ensure that all materials are satisfactory for use and have not been subject to deterioration and confirm to the relevant BSS, if applicable or Agrément Certificates, NHBC and Local Authority requirements. Failure resulting from the Contractor using unsuitable or damaged materials will result in the Contractor being liable for any costs in rectifying the same.

k) **Manufacturers Products**

The Contractor must make themselves aware of Manufacturer's products and fixing instructions at the tendering stage as no claim for want of knowledge will be entertained. All technical issues must be resolved before work commences on site.

l) **Site Condition**

The Contractor is to examine the drawings, visit the site in order to ascertain position of site office, compound, electricity and water supplies.

Accessibility may vary depending on the location, soil type, weather conditions and such like. These factors must be taken into consideration at tender stage as no claims will be entertained for additional costs due to adverse site conditions.

m) **Sub-Contractor**

The Contractor must not further sub-contract any part of the Works to another Contractor without the prior knowledge and written approval of the Company.

Where fire proofing or fire stopping measures are likely to follow this trade, it is essential the preparation work is sufficiently prepared. Please make reference to the Fire Proofing Trade Specification and associated standard details and drawings to ensure knowledge of requirements. If in doubt, please ask for clarification, prior to signing this document.

Manufacturing engineering judgements should be requested for non - standard applications. Please contact Group Design and Technical for assistance.

It is essential that the Contractor liaises with all other trades associated with the Works to ensure the sub-structure is installed correctly and appropriately prior to work being carried out, including but not limited to:

Carpenter
The Plumbing and Heating Contractor must work in conjunction with the Carpentry Contractor for the Carpentry Contractor to install timber nogging for fixing radiators in Timber Frame house types behind the Vapour Control Layer (VCL).

Roof Tiler
The Plumbing and Heating Contractor is to provide lead or lead replacement soakers and flashing for vent tiles for fixing by the Roof Tile Contractor. The Plumbing and Heating Contractor must liaise with the Roof Tile Contractor to provide the correct fixing kits for installation from soil pipe to vent tile.

Electrician
The Plumbing and Heating Contractor must work in conjunction with the Electrical Contractor to ensure the wiring locations are appropriate and all necessary connections are completed for all items supplied and installed by the Plumbing and Heating Contractor requiring connection to either mains power or to data points; including but not limited to, the heating programmer, heating control units, electric showers, smart hot water cylinders, hot water taps and air source heat pumps.

Where smart cylinders are specified, Electricians must connect a Cat6 Ethernet cable from the cylinder cupboard to the RJ45 socket in the location of the Optical Network Terminator (ONT).

The Plumbing and Heating Contractor must work in conjunction with the Electrical Contractor to connect the condensation trap to the Soil pipe in the roof void at 2nd fix stage.

Kitchen Supplier
The Contractor is to review kitchen layouts prior to installing pipework to avoid clashes with fixings for kitchen units.

1. QUOTATION

1.1 The Contractor is required to submit a fully inclusive lump sum price per House Type, Revision and Specification all in accordance with the House Type working drawings, heating design layouts, kitchen layouts and sanitary ware specification as noted in the specification of finishes enclosed with the tender enquiry.

1.2 The Contractor is to specifically advise the Company of his inclusions and exclusions. Failure to do so will result in non-payment of associated works / variations. Assume full compliance with specification contained herein.

1.3 The Contractor is to review all drawings thoroughly as part of the tender pack to ensure they fully understand the requirements therein and ensure compliance with this Trade Specification. Any queries should be taken up with the Surveying department prior to submitting the quotation for completing the Works.

1.4 In all flat/apartment projects, suitable fire sleeves between floors must be provided to soil and vent pipes.

1.5 Where an 'unvented' Hot Water system is required in accordance with the heating consultants design, all operatives MUST receive the relevant assessment in 'Unvented HW Storage Systems'. A copy of their Certificate of Achievement MUST be supplied with the quotation and prior to any order/contract being placed.

1.6 The Contractor is to ensure that suitable fire protection is provided by the site manager when hot work is to take place. Always ensure when the hot work has been undertaken that the area is inspected one hour after. The Contractor must obtain a "Hot Works" permit from the site agent prior to commencement.

1.7 The Company will provide free of charge the following: -

- Shared welfare facilities
- Water for the works
- Use of scaffolding whilst erected
- **110V** power, where available, within the compound (No **240V** power tools to be used)

1.8 The Contractor is responsible for the safe storage of all goods supplied by them. Title (and Insurance liability) will not be transferred until goods are fixed.

1.9 The Contractor is responsible for all builders work required such as the forming of holes etc. This work must be carried out using a core drill back drilled to avoid damage to face brickwork, decking drilled from both sides to avoid end-grain tear-out.

1.10 All Timber / Engineered Joists must be notched in accordance with NHBC requirements or, manufacturer's instructions.

1.11 All sanitary ware to be installed to manufactures specification and compliant with Part M.

1.12 Housing specification levels are listed as follows:

(i) Barratt Homes:
President
Embassy
Ambassador

(ii) David Wilson Homes:
A1
A2
A3

(iii) Apartment specification levels are:
F1

1.13 The Contractor is to allow for refixing sanitary ware, after fixing of tiling. The sanitary ware must be fixed level.

1.14 All outside taps are to be fitted with a stop tap and a double check valve located inside the building as per specification.

1.15 The Contractor is to allow for the supplying, fitting and sealing sink tops as per specification and nominated supplier noted above.

1.16 The Contractor is to allow for the supply and installation of Electric showers in accordance with the housing specification and nominated supplier noted above.

1.17 All services are to be tested and certificates issued in accordance with the requirements of current Building Regulations and NHBC.

1.18 **All works must be completed by a Gas Safe Register registered person and must comply with the Company's Gas Policy and procedures manual.**

2. BOILER AND FLUE

2.1 Design of the house or apartment's boiler installation and the flue installation with gas meter location and gas pipework sizing MUST be undertaken by a qualified consultant or by the boiler manufacturer, carried out to reflect the appliance proposed. Note: a combination boiler requires more gas than a system boiler with a hot water cylinder; therefore the gas pipework size is to be increased accordingly. Ventilation of the appliance and gas installation will be incorporated in the design, preventing remedial action after installation has been completed and adequate ventilation has not been provided.

2.2 Any changes to the design must be proposed back to the designer for checking and confirmation that the changes proposed do not affect the safe working of the appliance and its flue, prior to any installation taking place.

2.3 Supply and fix boiler in accordance with BS5440, part 1 2008, BS5440 part 2 2004 and the Company's preferred supplier(s), listed in the enquiry letter, complete with fanned or balanced flue as required in accordance with the current building regulations and as detailed on the heating consultant design drawings.

2.4 Boiler location to be positioned as close to the external wall as possible to reduce flue run and risk of flue failure. Additionally, where the boiler is located in the kitchen or utility room the contractor must review the kitchen and utility room layout drawings prior to first fixing to ensure the boiler is positioned suitably within the boiler housing (where specified) to provide adequate access/clearance for future boiler maintenance and servicing.

2.5 If boiler is positioned within the garage, a pipe and frost stat must be installed.

2.6 Position of balanced flue to be not less than 300mm from any opening and in accordance with Approved Document J1 and British Gas guidelines and in accordance with manufacturer's instructions.

2.7 Where flue terminal is within 850mm of a gutter or 450mm of a painted eaves a 750mm long aluminium shield must be fitted to the gutter/eaves underside.

2.8 Holes for boiler flue in masonry constructed walls must be core drilled, Cavity wall insulation material to be neatly cut back to clear boiler flue by min. 25mm. Opening cut in timber frame for a flue must be min 75mm bigger than balanced flue size.

2.9 When installing a gas flue in a timber framed plot, the boiler flue must pass through a 150mm dia. galvanised or stainless steel tube (min. 0.5mm thick steel), spanning the width of the cavity wall construction from back side of plasterboard to approximately 17mm back from the external face of the outer masonry leaf. The space between boiler flue and steel tube must be packed with mineral wool as shown on Group Standard Details. The void around the steel tube as it passes through the timber frame panel must be packed with mineral wool to the timber frame that is present to compartmentalise the steel tube, as shown on Group Standard Details. Once the outer masonry leaf has been constructed, the void around the boiler flue to the outer masonry leaf must be sealed with Nulifire FS703 high temperature fire resistant sealant before the boiler flue surround is fitted back to the outer masonry leaf, as shown on Group Standard Details.

2.10 Boiler flue chimneys must be sealed into walls using the manufacturers internal seal provided. A weather collar must be installed externally sealed to the wall with sand and cement to seal the chimney to the fabric of the building and prevent ingress of weather and combustion products.

2.11 Air for combustion should always be taken from the external of the building envelope, in the same way the flue terminal exhausts products of combustion.

3. AIR SOURCE HEAT PUMP

3.1 Supply and fit an Air Source Heat Pump (ASHP) as detailed on the heating & plumbing consultant design drawing, all in accordance with the Company's preferred supplier(s), listed under **Group Suppliers** above and in accordance with the manufacturer's instructions. ASHP, cylinder and controls must be purchased as a complete kit from the same manufacturer. Third party cylinders and controls must not be used.

3.2 The ASHP is to be located externally to the house as much as practically possible from any openable window in order to minimise the noise from the unit being transmitted to the house.

3.3 The ASHP must be securely installed on a suitable footing that can sustain its weight, fixed using anti-tamper fixings.

3.4 ASHPs must be positioned centrally on anti-vibration feet, with required clearances in accordance with manufacturer's details

3.5 ASHPs must be fixed down to their concrete foundations with anti-tamper permanent fixings the same day as delivery. Immediately after fixing down, the canvas cover (and/or security cage) must be fitted and if the ASHP is going to be used the ventilation flaps must be fixed in their open position. Canvas cover and/or security cage supplied by the Company.

3.6 All ASHPs must be ordered for Just in Time (JIT) delivery. ASHPs must not be stored on site due to increased risk of theft due to high value. Delivery should be rescheduled if there is insufficient time to securely fix down ASHP to suitable footing. Plumbing Contractors to ensure appropriate personnel are on site to take delivery with necessary equipment.

https://www.heatpumpmover.co.uk are specifically designed for the safe movement of ASHP's and must be used to transport and fix ASHP into position. Use of HeatPumpMovers, all as per the manufacturers recommendations, must be incorporated into your company RAMS to ensure compliance when manual handling ASHPs.

3.7 ASHP – anti-freeze valves to be supplied and installed by the Contractor.

3.8 ASHP - All external pipework, including anti-freeze valves, must be fully insulated with DiversiTech External Grade Insulation, PVC Coated.

3.9 ASHP - All primary and secondary pipework must be insulated within the cylinder cupboard, routed neatly and efficiently. Controls should be positioned in an accessible location for future maintenance.=

3.10 ASHP - All radiator flow and return pipework must be 15mm.

3.11 ASHP - All internal primary pipework from the ASHP to the Hot Water Cylinder must be insulated with 25mm Climaflex, including pipe clips. Elbows must be insulated with reflective foil pipe wrap.

4. CARBON MONOXIDE ALARMS

4.1 A Carbon Monoxide Alarms must be installed in all properties where a gas appliance is installed.

4.2 Refer to Section 23 – Schedule of Materials. No other product or supplier is to be used unless expressly instructed to do so by the Group Procurement department.

4.3 Alarms must not be located:

- In an enclosed space, i.e. cupboard
- Directly above a sink
- Next to a door or window
- Next to an extract fan or vent
- In a damp or humid location
- In the immediate vicinity of a cooking appliance.

4.4 Alarms must be fixed:

- 1 - 3m horizontally from the appliance
- 150mm vertically down from the ceiling
- Above the height of any doors.
- Within any room where a concealed flue in a void travels to an outside wall.

5. CENTRAL HEATING SYSTEM PIPEWORK

5.1 Supply and fix full gas fired central heating in accordance with the heating consultant design drawings, current building regulations, NHBC, BS 5449*:* PART 1 and appropriate Manufacturers instruction. All systems to be as specified on relevant heating design drawings.

5.2 Supply and fix hot and cold water system in compliance with the Water Byelaws, Local Water Authority, BS 6700 and NHBC requirements.

5.3 The Company's specified heating pipe work system can be either **Polyfit or Polyplumb by Polypipe** push-fit plumbing and heating system. No variation from this is permitted without written consent from the Company.

5.4 For this type of installation the manufacturer's recommendations / instructions are to be strictly adhered to. The Contractor is deemed to fully acquaint all employees and operatives with working practices and procedures necessary to supply and fix plastic plumbing and provide whatever training is necessary. Care should be taken with regard to post installation system testing. Each installation is to be pressure tested to the manufacturer's installation instructions, and must be witnessed by the Site Manager. Copies of all Certificates must be provided to the Site Manager for inspection and recording on the Company's portal.

5.5 It is important that the Contractor ensures that all pipe-work runs can be detected at a later date via metal detector and should install some form of metallic sheathing to aid detection.

5.6 Where pipe work runs are located within timber stud partitions and / or bulkheads, the pipe work is to be protected within the wall construction with a metal plate to prevent plasterboard fixing screws penetrating the pipe work.

5.7 Flux utilised in copper pipe installations must not come into contact with plastic pipe work or fittings due to the corrosive effect. Adequate protection must be used when using flux in the vicinity of plastic pipe work.

5.8 Pipe work must be adequately supported in accordance with manufacturers installation instructions installed to BS5955-8 (plastic Pipework standards for installation).

5.9 Plastic pipe work must be sleeved through all joist voids metal partitions and block work holes to prevent damage and/or pipe noise in accordance with Construction Best Practice Guide.

5.10 Manifolds must be located as per the design drawing.

5.11 Pipe must not be taped or fixed to Soil and vent pipe but must be have separate clips to the wall or boxing frame.

5.12 Where lubricant is required only the manufacturer's (**Polypipe**) spray lubricant is to be used.

5.13 All pipes are to be run neatly and as unobtrusively as possible, utilising service ducts where provided.

5.14 All exposed pipe work shall be run in approved positions; every precaution is to be taken to reduce the incidence of freezing. All pipe work in cold areas to be insulated to current building regulations.

5.15 All pipe ends are to be covered at all times during installation to avoid ingress of deleterious material and safety.

5.16 Flow and return pipes to radiators can be installed in copper if so desired. These must exit the wall at the center of the radiator and must be fitted with a Manthorpe radiator pipe guide and seal GRS – DUO.

6. CHASED PIPEWORK

6.1 The Contractor is to allow within the quotation for chasing all gas pipes and all other pipes greater than 15mm into blockwork walls. In addition, all 15mm pipes on blockwork walls must be chased in where a door frame is present along that wall

6.2 Chasing must be vertical (not horizontal or diagonal) to all gas appliances from the ceiling to exit point of the wall in one continuous line.

6.3 Chasing depth is to be no greater than 25mm.

6.4 All gas pipes must be manufactured yellow/orange plastic coated copper pipe. All other copper pipes are to be wrapped in PVC tape to prevent deterioration of the pipe from the covering sand/cement mix.

6.5 The Contractor must then cover the wrapped pipe with a strong sand/cement mix (3:1:1 soft sand: sharp sand: cement) ensuring that the mix does not come into contact with the pipe or fitting.

6.6 Chasing on either side of the wall must be avoided and should not be within 500mm of the chased pipe on the opposing wall.

6.7 The Contractor must limit the operative's exposure to silica dust during the chasing process by;

(i) The use of a specially adapted grinder or chaser with on-tool extraction. The extraction unit must be a minimum of M class extraction including all filters and collection bags.

(ii) All operatives must wear a FFP3 disposable mask or half face respirator with a P3 filter. All operatives involved in the work must be face fit tested and records made available to site management.

7. FIRE PROOFING

7.1 For the purposes of this Trades Specification, the plumbing element below is relevant. Please note the associated fire sealing element, if in apartments (apartments, for this purpose being over two storey *and* more than four flats) will be undertaken by a Certified Fire Proofing Trade.

7.2 Where plastic pipes penetrate fire rated walls, these must be installed into the wall with an Intumescent Pipe Wrap CE, cut to the appropriate size of pipe, ensuring that the entire pipe is covered. Pipe seals are to be positioned centrally within the wall, horizontally. Plastic pipes of less than or equal to 115mm diameter are to be lapped (wrapped) singularly, pipes of between 115mm and 170mm are to be double lapped.

7.3 Where the use of a Rockwool Insulated Fire Sleeves is to be installed on plastic pipes

penetrating walls, or coated batts, the split joint on the insulated pipe is to be overlaid with foil tape, self-adhesive Class 0 foil tape along the length of the joint prior to being positioned into the wall or floor.

7.4 Where a Rockwool Insulated Fire Sleeves is used on plastic pipes, the pipe sleeve must extend beyond the face of the wall or the floor extend at least 25 mm from each face of the supporting wall to allow for effective sealing against any thermal insulation, except when used with Rockwool Ablative Batt where a minimum of 50 mm protrusion is required from both faces.

7.5 Where Rockwool Insulated Fire Sleeves is being used to replace combustible lagging on metal pipes where they penetrate the wall or floor, to offer fire resistance and maintain vapour layers, Rockwool Insulated Fire Sleeves must be foil taped either side to the existing lagging. The gap between the supporting construction and the Insulated Pipe Seal is to be kept to a minimum as practical. If gaps exceed 15mm around the sleeve or 8mm between the service pipe and the sleeve, these voids must be filled with Rockwool Acoustic Intumescent Sealant or Rockwool Firestop Compound.

7.6 Where pipes have already been installed in to the wall, ensure that the wall around the opening has been made good using Rockwool Acoustic Intumescent Sealant or Rockwool Firestop Compound, a Rockwool Pipe Collar CE should then be fitted around the plastic pipe and fixed to the wall in accordance with the manufacturers fitting instructions.

7.7 Rockwool Pipe Collar CE are required to be fitted to both sides of the wall.

8. CONTROLS

8.1 The Contractor is to provide all heating controls, cylinder thermostats and motorised valves, to the heating system, in accordance with EuP/ErP legislation and the Company's preferred manufacturers listed in the section below headed Schedule of Materials.

8.2 The Contractor is to supply only, zone thermostats, to two heating zones as specified on the heating consultant design drawings, in readiness to be fitted by the Electrician as a part of the Contractors tender package.

8.3 The heating controls must provide independent control of central heating and hot water. The programmer must have 2 on and 2 off functions for a 24-hour period as well as an independent manual control (zones are indicated on all the Company's working drawings).

9. FLEXIBLE FILLING LOOPS

9.1 Flexible filling loops that feed the expansion vessel, as detailed on the heating consultant design drawings, must be installed to the current Water Regulations requirement.

9.2 The short length of flexible pipe must be disconnected from both ends and handed over to the client with heating instructions.

9.3 To avoid accidental spillage in the cupboard, the stop valve should have a cap fitted over the open end.

10. GAS PIPEWORK

10.1 All work on gas fittings including the installation of any pipework must be undertaken by a person who is a Gas Safe Registered Engineer and is deemed competent for the type of installation being undertaken.

10.2 Supply and fix copper gas service points for gas hobs, gas cookers (if applicable), gas fires/open fireplaces (if applicable) and boiler positions. Only copper tube to EN 1057 is permitted for use with gas installations jointed using capillary or compression fittings to EN 1254. Compression fittings must only be used where they are readily accessible for tightening and inspection. All joints must be kept to a minimum.

10.3 Gas pipes in England and Wales in traditional masonry housing must be installed in intermediate timber house floors (not compartment floors) providing that the following precautions are taken:-

(i) I-beam timber joists must be either cleanly drilled or knock-out panels within the center of the joist used to accommodate the gas pipes. The Contractor is to provide hair-felt, wrapped around the pipe, through the joist void to prevent pipe noise.

(ii) Gas pipes installed parallel to joists must be supported adequately.

(iii) Pipes running parallel to I-beams should be clipped utilising the side of the I-beam.

10.4 Gas pipes in blockwork walls must be chased vertically (not horizontally or diagonally), from the ceiling to exit point of the wall in accordance with the requirements noted in the **CHASED PIPEWORK** section above.

10.5 A gap of 25mm must be maintained between the gas pipe and other services and a minimum distance of 150mm from electricity meter boxes and fuse boxes.

10.6 All gas pipes must be sleeved where it passes through solid walls. The gap between the gas pipe and sleeve should be left open on the external end to allow gas to escape to atmosphere in the event of a leak within the sleeve. It is not permitted for gas pipes to be laid in ground floor screed or a concrete floor slab in traditional masonry housing. Where gas pipes are specified to be installed in concrete plank flooring to apartment structures, these must be specified and approved by the structural engineer.

10.7 Pipework in 3 storey houses is to be routed through garage (ventilated) where provided and up into living room / kitchen if possible.

10.8 All gas points are to be protected against dust or debris entering them, prior to full connection, by the fitting of compression blanking caps. All gas service installations are to be tested for gas tightness before the meter is connected in accordance with the latest Gas Safety (Installation and Use) Regulations. Further tests must be undertaken once the meter is connected and the installation purged into the ground. 1st fix Gas test certificates are to be handed to the Site Manager for inspection and recording on the Company's portal.

10.9 The gas carcass should be sized in accordance with the latest Gas Safety (Installation and Use) Regulations and manufacturer's installation instructions.

10.10 Gas isolating valves are to be accessible and suitably labelled at all times in accordance with the latest Gas Safety (Installation and Use) Regulations, for kitchen appliances (hobs and ovens) they should be positioned in a suitable, adjacent, cupboard unit and not directly behind the appliance.

10.11 All gas pipework in common areas within flats / apartments shall be in medium black steel screwed pipework and ventilated in accordance with the latest Gas Safety (Installation and Use) Regulations and IGE/G/5 requirements. Where flats / apartments are constructed in timber framed structures, all gas pipework in common areas shall be installed in accordance with IGE/UP/7.

11. GUTTERS AND RAINWATER PIPES

11.1 Supply and fix guttering, to fascia board (or if no fascia, to the eaves using proprietary "rise and fall" brackets) together with rainwater pipes to the positions shown on the construction drawings, colour as specified.

11.2 Guttering at high level to be fixed prior to the scaffolding being dropped. If necessary temporary rainwater pipes must be fixed to prevent saturation of the external walls.

11.3 The Contractor is to assess the location of plots in close proximity of each other for access to install rainwater guttering at high level. The Contractor is to install gutters at the most effective point in the build, this being immediately after the fascia and soffit is fitted and before roof covering work commences. The Contractor is to liaise with the Carpenter and Roof Tiling trades to ensure access to install gutter is completed without hindrance.

11.4 Ensure adequate numbers of brackets are used to fix downpipes to walls to ensure they are fitted vertically against the wall, the only exception to this being the first 0.5m, which may be angled from the gutter connection.

11.5 All rainwater downpipes are to terminate into the relevant drain connections, refer to site drainage layout for exact positions. Care must also be taken to ensure downpipes are installed vertically above the relevant drain connection with no exception.

11.6 All installations to be in accordance with manufacturer's instructions.

11.7 All Gutter brackets to be installed at 600mm centres maximum with a minimum of two screws per bracket.

11.8 Expansion gaps must be provided for gutters in all fittings and fixtures as shown on manufacturers fitting instructions.

11.9 All Barratt Homes and David Wilson Homes are to be fitted with 115mm approved section or 'Deepflow' or equivalent capacity UPVc rainwater gutters to discharge into 63mm dia. downpipes (maximum roof area 53m² per outlet). Detached garages to be fitted with Polypipe 112mm half round gutters.

11.10 The Contractor is to position the manufacturers' name printed on the downpipe facing the house wall. Swan neck down pipes must be returned at right angles to the face brickwork, the gutter outlet must be positioned directly above the storm water drain.

12. HEATING EXPANSION VESSELS

12.1 A pressure relief & discharge valve/pipe must be installed in accordance with current building regulations and manufacturers installations instructions to ensure that the stored hot water does not exceed 100^{o} C all in accordance with G3 building regulations.

13. HOT AND COLD PIPEWORK

13.1 Pipework within the floor void is to be either **Polyfit or Polyplumb by Polypipe** push-fit plumbing and heating system. All push-fit pipework is to be completed as part of the first fix installation and must be tested as described in **TESTING & COMMISSIONING** section of this specification.

13.2 The Contractor is to chase, vertically (not diagonally), 18mm pipes into blockwork walls, from the ceiling to exit point of the wall.

13.3 All hot and cold water pipework drops to kitchen, utility rooms, cloakrooms and ground floor shower rooms must be in copper pipe-work. Additionally, feeds to bathrooms, shower-rooms, all pipe-work within airing cupboards and roof spaces, must also be in Copper pipe-work connected within the ceiling void at first fix stage. All connections at second fix stage must also to be in copper to prevent joint failure.

13.4 Pipe drops must be a minimum 300mm away from window/door reveals.

13.5 All copper pipework in roof voids/ room-in-roof bathrooms must be jointed using compression fittings, no soldering must be completed in these areas due to the risk of fire.

13.6 Copper Pipe used must be to BS EN1057R250. All compression fittings (where used) are to be DZR or Gunmetal. All capillary fittings to be soldered using lead free solder and Non-Acid fluxes. All float-operated valves are to be connected using service valves. Where any copper pipe work penetrates the walls or ceiling they should be covered using white plastic circular Flamco cover plates. All pipe work in notched joists must be laid in hair-felt insulation.

13.7 The first 1.0m primary flow and return from the boiler **MUST** be in copper. At the boiler position the gas and condense pipes are to be placed behind the Drylining. No pipe work is to be visible around the finished boiler except the primary flow and return at the top, which must be neat and tidy without excessive visible pipe work.

13.8 All pipe work within the airing cupboard and roof voids must be insulated in accordance with current building regulations.

13.9 Copper pipe work must be sleeved through metal partitions and block work holes.

13.10 Pipes must not be taped or fixed to Soil and vent pipe but must be have separate clips to the wall or boxing frame. Fixing of pipe work runs must be with suitable clips in accordance with manufacturer's guidelines.

13.11 Hot and cold pipes for wash hand basins and cold pipe to WC cisterns, should be hidden in the wall and then exit the wall as high as possible and finished with a cover plate to minimize exposed pipework.

13.12 All service pipes to appliances must be fitted with a 1581ZA Pegler Ballofix isolation valve; reference code 13111 with Pegler flow restrictor; reference code 13779 – 13782 depending on the flow rate required for the appliance.

13.13 1581ZA Pegler Ballofix isolation valves, reference code 13111, are to be installed to hot and cold pipework leading to wash hand basins, WC cisterns, kitchen and utility sinks.

13.14 Isolation valves must be installed in an easily accessible location to allow the maintenance of the appliance, WC or tap.

13.15 All pipe ends are to be covered at all times during installation to avoid ingress of deleterious material and safety.

14. INSULATION

14.1 All pipe-work in unheated areas, such as roof spaces, external walls, garages, floor voids and airing cupboards, is to be fully insulated to current building regulations.

14.2 Fire-stops to be provided where fire resisting walls and floors are perforated by holes for pipes, ducting and flues.

15. RADIATORS

15.1 Supply and fix radiators in accordance with the Company's preferred supplier(s), listed above unless otherwise noted in the enquiry letter, to the sizes shown on the heating consultant design drawings. All radiators must be fixed in accordance with Manufacturers installation instructions in positions shown.

15.2 All ground floor radiators are to be fitted with a lock shield drain off radiator valve and/or Thermostatic/Wheel head valve as shown on the heating consultant design drawings. TRV's can be fitted vertically or horizontally depending on space issues encountered. All other radiators are to be fitted with a lock shield valve and/or Thermostatic/Wheel head valve, again as shown on the heating consultant design drawings.

15.3 Allow for touching up of all scratches and damage. Where any copper or plastic pipe-work penetrates the walls they should be covered using white plastic circular Flamco cover plates.

15.4 Where elbows are used they must be recessed into the wall as necessary to allow flush fitting of the cover plate.

15.5 Where radiator brackets have been fitted prior to tiling, these must be removed (by the Plumber) before tiling commences and refitted (by the Plumber) following completion.

15.6 The Contractor must work in conjunction with the site policy for the management of radiator tails, preventing them becoming a trip hazard.

16. RETURNS PROCEDURE

16.1 The Contractor must notify the supplying branch of any item the needs to be returned due to damage or manufacturing fault to raise a collection note for the faulty items using the original delivery address, plot no. and contractor order ref (for reconciliation purposes both businesses).

16.2 Once the faulty items is received back at the supplying branch, the collection note creates a credit for the contractor and a supplier returns note.

16.3 The supplier returns note will capture the history of the product; i.e. Contractor, date supplied, address, and the Company's contract number, this will then be collected by the manufacturer for inspection and credit to the merchant.

16.4 Where a minor fault occurs within an occupied dwelling, faulty items are to be reviewed for immediate replacement if possible as noted above. Where a fault occurs with a serviceable item, such as a hot water cylinder or boiler, the Contractor should request that the manufacturer attends the plot to repair or provide a replacement part, to be sent directly to the contractor.

16.5 For installed items that have failed and that have caused damage or require additional work with an associated cost to replace; the manufacturer would be expected to visit, as compensation may be applicable. In this instance the manufacturer should be invited to inspect the installation, damage caused and additional associated cost for replacement works by all trades, i.e. replacing a faulty shower tray could impact on tiling, new door or water damage to the ceiling/room below.

16.6 The information that the returns note captures, will enable reports to be generated on specific manufacturer/products, Contractors or sites and feedback to be assessed by the Company.

17. SHOWER TRAYS, VALVES AND SCREENS

17.1 Shower trays are to be installed directly onto the chipboard floor. Alternatively, where the shower tray is being installed onto a concrete floor, the installer must ensure that the area where the shower tray is being installed is of good firm construction and free from debris. The shower tray is to be laid on lines of silicone polymer mastic, crossing the floor area – under the location of the tray, to a depth of approximately 20mm, ensuring that the tray is securely fixed in place once the mastic has set. There is no requirement to install a horizontal marine plywood base between the shower tray and the chipboard floor.

17.2 All shower valves are to be installed on the sidewalls of cubicles with a fixing bracket, this must be used without exception.

17.3 All shower screens (even where these are supplied by the Company) are to be fixed so that the shower valve can be accessed easily at the end where the door opens.

18. SOIL AND VENITLATION PIPES

18.1 Supply and fix 110mm diameter Solvent Weld soil pipe, internally or externally – where indicated on the working drawings, and fittings to all bathrooms and En-Suite shower rooms as required. Ventilation pipes to terminate at vented tile above roof level - colour as specified, alternatively they can be terminated with AAV, however these must be set above roof insulation or provided with ventilation if in a boxing.

18.2 All pipe connectors to tile / vent terminals are to be supplied by the roofing Contractor.

18.3 All soil pipe to be installed in accordance with NHBC and manufacturers installation instructions.

18.4 Felt isolating packs must be used where soil and vent pipes touch any timber.

18.5 The locations of rodding access points are to be provided at 3 storey intervals or less and above the spillover levels of appliances as per approved document H.

19. TEMPERATURE REQUIREMENTS

19.1 All details as specified on the heating consultant design drawings.

20. TESTING & COMMISSIONING

20.1 The completed installation is to be fully tested and left in working order after commissioning in accordance with the heating consultant design drawings, manufacturer's instructions all in accordance with G3 building regulations. Proportional balancing is required to all radiators and towel rails to give simultaneous heating throughout.

All systems to be flushed using approved cleaner and refilled with approved inhibitor added upon completion in accordance with the products noted in the **SCHEDULE OF MATERIALS** section.

20.2 Allow for one cold flush and one hot flush.

20.3 After testing an allowance should be made for draining down and refilling to site requirements, to prevent the incidence of freezing.

20.4 After commissioning a Barratt / DWH plot central heating system, an ADEY ProCheck® (ADEY CODE CP1-03-05132) test should be used to test and record the concentration of inhibitor and cleanliness of system water. The test should deliver a pass result for turbidity, inhibitor, corrosion and ph levels (in accordance with BENCHMARK and BS7593:2019) and a certificate should be made available documenting the result. Where a result presents a recommendation on some/all of the test parameters in the above, corrective action should be taken and an additional test conducted showing that a pass result has been achieved. A system of recording the cleanliness of system water should be in place for evidence of annual inspection and inhibitor top-up over time. A positive passed certificate then needs to be submitted to the Site Manager for inspection and recording on the Company's portal.

20.5 All work to be carried out in line with the 'Benchmark' code of practice. Log books are to be completed and signed by the Contractor and left with the site manager upon completion of the testing phase, or supplied to the Regional office to the Commercial Director/Manager. Individual operatives license numbers as well as the company's registration numbers must be included in the benchmark.

20.6 Ensure that safety testing and examination of gas appliances meet the requirements of the Gas Safety (Installation and Use) Regulations. In particular so far as reasonably practicable, to ensure that all appliances operate safely and the following minimum checks are undertaken.

(i) The effectiveness of the flue – including a full visual examination of fixings, joints and installation in accordance with the manufacturer's installation requirements.

(ii) The supply of combustion air.

(iii) The appliance operating pressure or heat input or wherever possible both.

(iv) The appliance operation so as to ensure its safe functioning.

20.7 Gas Boilers must be tested for the level of CO in the chimney/flue gases and the combustion ratio using electronic combustion gas analyser (often known as a flue gas analyser). The measured CO level and combustion ratio must then be recorded on the appropriate commissioning documentation i.e. Benchmark Commissioning Checklist supplied with every boiler sold in the UK.

20.8 The Contractor must liaise with ASHP supplier to agree assisted commissioning for first 3 units installed on site and then assisted commissioning for 1 in 10 for the rest of site.

20.9 The following testing documentation must be provided to the Site Manager and be uploaded to the Company's portal for handover to the customer.

(i) First-fix Gas Carcass tightness test certificate,

(ii) First-fix Hot, Cold & Heating pressure test certificates (witnessed by the site manager),

(iii) First fix soil stack test certificate,

(iv) Boiler commissioning certificate,

(v) Second-fix Gas tightness test certificate,

(vi) Final inspection commissioning form,

(vii) Gas hob commissioning form,

(viii) Gas fire commissioning form,

(ix) Benchmark booklet,

(x) Unvented cylinder benchmark.

20.10 In accordance with regulation 20 of the Building Regulations 2010, it is the Contractor's responsibility to notify the Local Authority of the installation of a notifiable gas appliance and unvented cylinder or system.

21. UNVENTED HOT WATER CYLINDER / SMART CYLINDERS

21.1 Supply and fit unvented indirect/direct hot water cylinder or smart cylinder as detailed on the heating consultant design drawing all in accordance with the Company's preferred supplier(s), listed above.

21.2 A pressure relief & discharge valve/pipe must be installed in accordance with current building regulations and manufacturers installations instructions to ensure that the stored hot water does not exceed 100° C.

21.3 Where non-thermostatic bath shower mixers are installed; a Peglar 402 TMV3/2 thermostatic mixing valve must be fitted to provide hot water within a temperature range of between 43° and a maximum of 48° C to prevent scalding. In line with part G of the building regulations 2009 the TMV should be fitted at the front of the bath inside the bath panel for access for maintenance and temperature adjustment.

21.4 All Contractors/operatives should hold relevant assessment in the fitting of unvented cylinders (see 1.6.1) care should be taken with regard to post installation system testing.

21.5 The Contractor, prior to installation, must check water pressures, to ensure the unit will operate to its design criteria. Should the cold water mains kinetic or static pressure exceed 3.0bar, then a non-dynamic (static) pressure reducing valve must be installed. The non-dynamic (static) PRV should be located; on the cold main as it enters the property, immediately after the isolating valve and before any connections for water outlets.

21.6 The installer must be competent in installing mains pressure hot water cylinders (see 1.15).

21.7 All flexible hoses, from either a shower or bath/shower mixer tap, shall be retained by a plastic clip to ensure that the handset cannot be immersed into the bath or the adjacent toilet pan, this is a requirement of the water by-laws to prevent contamination / back syphonage in to the supply pipes.

21.8 Zone valves supplied with the unvented hot water cylinder should be labelled to indicate which valve controls which zone.

21.9 Installer must connect smart hot water cylinders to the data point within the storage cupboard with a Cat6 Ethernet cable.

22. WASTE PIPES

22.1 Supply and fix 32mm, 40mm and 50mm (as necessary) solvent weld waste pipe system in direct compliance with the current building regulations, NHBC and manufacturers installation instructions where waste pipes are used for discharge of boiling water, a high pressure polyethylene pipe must be used.

22.2 Where waste pipes discharge to the soil stack, 76mm seal traps MUST be used.

22.3 Where possible (subject to adequate soffit depth), external soil stack pipes should be directed through the soffit in preference to formation of swan-neck around eaves.

22.4 Where wastewater plumbing connections are required for washing machines and dishwashers these are to be provided using appliance trap connectors fitted with a jubilee clip at sink waste connection.

22.5 All 2½ and 3 storey plots to have anti syphon valves fitted to traps on showers & basins.

22.6 All Builders work for waste pipes should be formed using a core drill back drilled to avoid damage to face brickwork.

22.7 WC waste pipes should be within floor structure wherever possible. Washbasin waste pipes should be run within the pedestal if fitted. Felt isolating packs must be used where waste pipes touch any timber.

22.8 Where possible (subject to the dimensions of the bath) bath waste pipes should be accessible by the removal of the bath panel.

23. BATH AND SHOWER WASTEWATER HEAT RECOVERY SYSTEM (WWHR)

23.1 Supply and fit a WWHR device as detailed on the heating & plumbing consultant design drawing, all in accordance with the Company's preferred supplier(s), listed under **Group Suppliers** above and in accordance with the manufacturer's instructions.

23.2 Return SAP documentation to the required parties (as described in the supplied SAP documentation from the supplier).

23.3 Install the WWHR device in the correct 'System' configuration, as per heating consultants design.

23.4 WWHR instructions and Legionella guidance must be left in the plot to be included within the homeowner pack.

23.5 Complete and fix the SAP identifier label provided with the system to the boiler or service cupboard.

23.6 When installing the WWHR device (Recoup Pipe+ HEX), ensure that the pipe is perfectly vertical and fixed correctly as detailed in the construction drawings. See house type specific drawings and WWHR Standard Detail for further information.

23.7 Insulation wrapped or inserted into the SVP boxing **MUST NOT** insulate the WWHR device. Please refer to the WWHR Standard Detail for further information.

23.8 A non-return valve, with full flow shut-off, should be installed on the mains water supply prior to the WWHR unit. A further double check valve must be installed close to the connection for the pre-heated water leaving the WWHR device, to facilitate in any replacement of parts.

23.9 System Configurations & Install methods

(i) System A Configuration Install - Ensure the preheated water supply is feeding both the DHW water heater (Combi or Hot water cylinder) AND the cold-water inlet of the shower's thermostatic mixing valve.

(ii) System B Configuration Install – Preheated water supply feeding the cold inlet of the shower's thermostatic mixing valve ONLY (System B installation)

23.10 The preheated water supply from the WWHR device must be clearly labelled to avoid future connections of other services.

23.11 Pipework between the WWHR device and the water heater (combi or cylinder) and/or cold-water inlet of the thermostatic mixing valve, is to be insulated in accordance with the Building Regulations.

24. WASTE REMOVAL AND CLEANING OUT

24.1 The contractor must ensure that waste from their work activities is minimised and materials are reused where practicable.

24.2 All plots, garages and scaffolds must be cleaned by the contractor upon completion of the works and left free of materials or debris created by the works. Failure to do so will result in contra charges being applied.

24.3 Upon completion of the contract (or defined sections thereof), the Contractor will clear from site all stored materials, equipment, site accommodation, etc., no longer required, without delay.

24.4 Waste removal and disposal must be in accordance with all current UK legislation.

24.5 Waste generated should be segregated and disposed of into the relevant tipper skips, it is the responsibility of the contractor to request appropriate and sufficient tipper skips to be sited in close proximity to their working area. If cross contamination of skips is observed and is as a result of the contractor's inappropriate management of waste, a contra-charge will be applied.

24.6 We reserve the right to contra-charge the Contractor for the cost of excessive removal of the Contractors' waste, including waste resulting from damage to materials in their care, plus an administration fee of 20%.

25. SCHEDULE OF MATERIALS

Thermostatic and lockshield Radiator Valves – Pegler Limited

Part Number	Description
42295	15mm TRV with 15x10mm Elbow
663001	15mm WH MRV with 15x10mm Elbow
663005	15mm DLS MRV with 15x10mm Elbow
647080	15mm LS MRV with 15x10mm Elbow
42297	Mistral TRV 15mm CP cw 15x15 Elb
42298	Mistral TRV strt 15 CP 15x15 Elb
647082	Mercia LS 15mm with 15x15mm Elbow
663010	15MM WH MERCIA RAD VLV-15X15 PF E
663011	15MM LS MERCIA RAD VLV-15X15 PF E
663015	15X15MM PF ELB MERCIA DO RAD VLV

Thermostatic Mixing Valves – Peglar Limited

Part Number	Description
PEG 402	15mm TMV3/2 with a pre-set temperature of 43°
PEG 402 STC	22mm TMV3/2 with a pre-set temperature of 43°

Heating Controls – As Noted

Part Number	Description
V4043H1056	Honeywell 2-port 22mm valve

026645	Programmer TPOne – B DANFOSS 087N785100
026646	Programmer TPOne – M DANFOSS 087N785200

Part Number	Description
tbc	Google Nest Learning Thermostat
tbc	Google Nest Heatlink

Note: The above specified products will be supplied as part of the pre-plumb cylinder kits from both Kingspan and Megaflow distributed via PTS or Plumb Centre.

Carbon Monoxide Alarms – Honeywell Analytics & Green Lighting

Part Number	Description
GL-P103	Green Lighting - Carbon Monoxide Alarm
XC100-EN-C	Honeywell - Carbon Monoxide Alarm (for use in Housing Association units – where specified)

Cleaning and Commissioning Products – Adey Innovation Limited

Part Number	Description
CH1-03-01669	ADEY MC1 + Inhibitor 500ml
CH1-03-01670	ADEY MC3 + Cleaner 500ml
SR1-03-01978	ADEY MagnaScale 15mm
SR1-03-02794	ADEY ElectroScale 22mm

TRADE SPECIFICATION

PLUMBING & HEATING

This Specification Agreement relates specifically to the Company's development at

……..…….

I confirm that I have read and understood the foregoing Specification and any necessary associated documentation referenced, such as standard specifications, drawings or quoted details and that my prices include for all items contained therein and will "Remain Fixed" for a period of: ..... as outlined in the Enquiry letter.

SIGNED: ……

FOR AND ON BEHALF OF:

……..

DATE: …….

N.B. The Contractor is to sign this Agreement and return it with their Quotation. Any prices received without this Agreement will be excluded from consideration.

Revised: Rev AW – 1 January 2025