SPECIFICATION OF WORKMANSHIP AND MATERIALS

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GENERAL

GENERAL

Applicability

001 This initial general section applies to all subsequent sections of this Specification of Workmanship and Materials **("this Specification")**.

002 This Specification is drafted as a series of instructions that the Service Provider must ensure are complied with in relation to the Works. Each instruction includes all tasks necessary to comply fully with the instruction and the Schedule of Rates item(s) to which it relates.

003 The Schedule of Rates payments, as adjusted by the Service Provider's tendered Rates, include for carrying out all tasks required by this Specification. No further payment is due to the Service Provider in respect of any such tasks beyond the payments provided for in the Schedule of Rates.

004 Specifications across a number of trades may be relevant to each Schedule of Rates item. The Service Provider must comply with all requirements of this Specification applicable to the specific type of Works to be undertaken.

005 References to Paragraphs and Sections in this Specification are to the applicable Paragraph and Section of this Specification. If any contradiction appears within the Specification sections, Schedules of Rates, the Client's Policy documents etc., the most rigorous standard takes precedent.

Standards of workmanship and Materials

006 Carry out and complete all Works:
in accordance with Good Industry Practice;
in accordance with statutory Regulations;
in accordance with the Client's Policies;
in accordance with the Client's Codes of Practice;
in accordance with any specific requirements for those Works in this Specification; and
to the satisfaction of the Client (acting reasonably).

007 To the extent that the standard of any Works has not been specified in this Contract, agree the relevant standard for the Works with the Client before their execution. Where particular Works or working methods are to be "Approved by" "Agreed with" or are indicated to be "subject to the Approval of" the Client, give the Client adequate notice when such Approval or Agreement is needed and retain evidence of all Approvals given, and items that have been Agreed, by the Client.

008 To the extent that it is necessary to design any aspect of the Works, in preparing those Designs use the reasonable skill and care to be expected of an experienced maintenance Service Provider that is skilled in undertaking works similar to the Works.

009 Maintain all existing lines and levels at all times and carry through new work to the same lines and levels unless otherwise instructed by the Client.

European and British Standards & Codes of Practice

010 Ensure all Works undertaken and all Materials used in those Works comply with all applicable International, European and/or British Standards and Codes of Practice and the Client's Codes of Practice that are current at the time of their use.

011 References in this Specification of Workmanship and Materials to any International, European and/or British Standard or Code of Practice are to be construed as references to the version current at the time the Order is undertaken.

012 Where a specific International, European and/or British Standard or a Code of Practice is referred to, this sets out the minimum acceptable standard of Materials or workmanship.

013 Any requirement in this Specification of Workmanship and Materials to use material or an article which is defined by reference to a specified Quality Assurance Scheme, Agreement Certificate, British Standard Specification or other approval, may be met by a material or article which has received equivalent approval in another Member State of the European Union or an equivalent international standard recognised but not yet adopted in the UK.

014 A Service Provider offering a product on the basis of compliance with any such approval shall notify the Client of all such substitutions in advance of placing any order and will be required to provide, in English, technical or other details of the approval and its qualifying tests.

Materials

015 The Client wishes to standardise the use of Materials across its Properties. This is in order to simplify parts requirements and van stock loads, to improve its repairs processes and to reduce maintenance costs. Wherever possible, match all Materials used to materials currently used in the Properties, particularly in terms of their parts requirements and repair procedures. In this Specification the Client has set out details of its current Materials to which the Service Provider is required to standardise.

016 Where this Specification indicates that Materials are to be "Approved by the Client", provide samples of the proposed Materials to the Client for Approval. Any Materials that comply with the functionality and compatibility (including aesthetic compatibility) requirements of this Specification may be proposed. No further Approval is required for any Materials listed in this Specification as being the Client's currently used Materials. The purpose of the Client's decision on the use and Approval of such Materials is to ensure that they meet the Client's requirements for functionality and compatibility. The decision of the Client on this is final. No future precedence will be set by individual Client representatives, with exception to those authorised to do so within the Clients Headquarters. A 'common sense' and 'best practice' approach it is the recommended method of approval.

017 Where this Specification requires Materials to be matched to existing Materials or finishes, this match is subject to the Approval of the Client.

018 Do not use any Prohibited Materials in carrying out the Works. Prohibited Materials are those Materials which are generally accepted or (having regard to Good Industry Practice) are reasonably suspected of:

being harmful in themselves;
being harmful when used in a particular situation or in combination with other Materials;
becoming harmful with the passage of time; or
being damaged by or causing damage to the structure in which they are to be affixed.

019 Materials are to be regarded as harmful if, in the context of their use in the Works (whether alone or in combination with other materials) they:

are prejudicial to health and safety;
may pose a threat to the structural stability or the physical integrity of any Property; or
could materially reduce the normal life expectancy of any part of the Property.

020 Sustainable Timber: In compliance with Public Procurement Policy, all timber and wood derived products referred to throughout this document and which are supplied to the Client, or used by the Service Provider, his agents and Sub-contractorin the performance of any contract to which this document relates, must be procured in accordance with the latest edition of the European Union Timber Regulation (EUTR)

021 CE Marked Products: In compliance with Construction Products Regulation, all products referred to throughout this document and supplied to the Client, or used by the Service Provider, his agents and Sub-contractorin the performance of the works, must be supplied with a Declaration of Performance (DoP) and carry the CE marking (European Conformity marking).

Performance Standards on the CE Mark must comply with relevant Building Regulations as required.

The CE Mark must be fixed visibly, legibly and indelibly either to the product or to a label attached to the product. If this is not possible or not warranted, then it must be fixed to the packaging or within the accompanying documentation.

The DoP must be made available by the manufacture for 10 years after the product was first placed on the EEA market (this may be via a website)

022 Use, fix and apply all Materials strictly in accordance with the manufacturer's recommendations, directions or instructions.

023 Participate in joint initiatives with the Client and other Service Providers to establish supply chain agreements.

024 Where appropriate suggest (economically viable) amendments to this Specification where those amendments may lead to an improvement in environmental performance or sustainability.

025 At the Client's request provide all information the Client reasonably requests regarding the environmental impact of the supply and use of any Materials and goods the Service Provider selects for use in the Works.

026 **[optional clause]** In the event that the Service Provider considers that decanting elderly, vulnerable, people with disabilities and other occupiers and carers from a dwelling whilst intrusive works or disruption to washing and sanitary facilities are required to be undertaken, the Service Provider may be required at his own cost to provide the following facilities:

Decant Mobile - Daytime Decant

Temporary Accommodation shall conform to the requirements of BS EN 1645-1:2012, BS 1646-1:2012 and BS EN 1647:2012

If it is agreed, prior to a scheme start, that daytime facilities are required this may either be a Touring caravan used outside homes between 9am and 5pm and then removed, or a mobile unit located in a fixed position supplied with at least the following.

- External door
- Bedroom
- A toilet compartment with wc suite, wash-handbasin and shower unit
- A flued gas fire/electric heater (note: gas is the preferred option)
- A flued gas fire multi-point water heater or electric water heater.
- Electrical installation to BS 7671:2008+A1:2011
- Mattresses with fireproof removable covers (which shall be thoroughly cleaned and changed after each decant)
- A cooking appliance and fridge
- Warning notice for health and safety advice to users
- Fire blanket (to be located by the cooking appliance)
- 1kg-powder fire extinguisher (to be located by the main door)
- Smoke Detector
- Carbon Monoxide Detector
- User's handbook (to be used by Service Provider when demonstrating the mobile to new occupants).

The Service Provider shall also supply the following:

- A security cabinet for two 13kg bottles of propane gas if gas is to be used (red gas bottle).
- Entrance steps, handrails, level access ramp (maximum 1:12) to be provided for people with disabilities to the satisfaction of the Client.
- Water supply
- Mains sewerage connection

Daytime decanting shall have agreement between the tenant, the Client and the Service Provider on the hours required for the daytime facility, its location and siting. The provision of car parking by Customers of adjoining dwellings must be considered in all circumstances. The form of provision may vary in different situations.

The daytime facility is not required to provide laundry and storage facilities, telephone connections or television aerials or a dedicated car parking facility.

A chemical toilet to BS 2081-1:1998 and BS 2081-2:1998 may be used where no sewer connection is feasible.

All work during the duration of the contract shall conform to the Health and Safety Legislation, which includes installation and checking and is the responsibility of the Service Provider.

Service Providers should be aware of the Code of Practice for the transportation, siting and commissioning of caravans published by the National Caravan Council (www.thecaravan.net).

The location of the day-time mobile decant facility must conform to Health and Safety standards and be agreed with the Client.

Service checks are to be carried out by suitably qualified personnel after each decant, checks should cover:

- Electrical,
- Gas,
- Water,
- Fire prevention equipment,
- Warning Notices
- Steps and Handrails.

The facility is to be cleaned between each change of user.

The following notice must be displayed in the Temporary Mobile Accommodation.

A permanent warning notice not less than 200mm x 130mm with the heading printed in red is to be fixed in a prominent position.

ADVICE TO OCCUPIERS

Ventilation

Do not obstruct the ventilators, which are fitted; your safety depends on them.

In Case of Fire

Get everyone out.
Turn off the outside gas valve
Raise the alarm and call the Fire Brigade
Do not stay behind to put the fire out yourself
Do not put yourself at risk

Fire Precautions

Children - must not be left alone in the caravan.
When cooking never leave a cooker unattended
Do not use multi-adaptors.
If you smoke use metal or glass ashtrays-not plastic.
Make sure cigarettes are put out properly
Do not smoke in bed.

Means of Escape

Make sure you know the location and operation of the emergency windows and doors,
Keep door and window keys handy.
Keep all escape routes clear.
If there is smoke, keep low where the air is clearer
Do not go back into the caravan.

Combustible Materials

Keep them clear of all heating and cooking appliances.

Fire Fighting Equipment

In addition to the 1kg powder fire extinguisher by the main exit door, a fire blanket is provided next to the cooker. Make yourself familiar with the instructions on your fire extinguisher and fire blanket and the fire precautions arrangements on site. Do not stay behind to put the fire out yourself. Do not put yourself at risk.

The use of chip pans in mobiles is strictly prohibited.

EXCAVATION AND EARTHWORK

EXCAVATION AND EARTHWORK

Excavation

001 Leave excavations for the foundations of walls and similar structures exposed until they have been inspected and Approved by the Client. Do not fill in trenches or holds or cover up the concrete until dimensions have been taken by the Client.

002 Refill any excessive depth to the proper level with concrete (7N/20mm) as specified in the "Concrete work" Section. Excavate the formation level to such further depth as the Client Instructs where the bottom of any excavation is found to be soft or otherwise unsound. Fill any extra depth with concrete (for which additional payment is to be made).

003 Any rubble, salvageable building materials and antiquities from the excavations belong to the Client.

004 Check in advance the location of any pipes, cables or any other services when excavations are to be carried out.

Weed killer

005 Use an organic weed killer Approved by the Client.

Disposal of excavated material

006 Remove from site any surplus excavated material from the site to a tip.

Filling

007 Use only clean subsoil free from vegetable soil, roots and rubbish for backfilling around foundations or to make up levels.

Pumping and baling

008 Keep the bottom of excavations free from storm or percolating water by pumping or other means during and throughout the progress of the Works until their completion.

Supporting excavations

009 Support all excavations using earthwork supports to ensure the safety of Staff and the Works to the satisfaction of the Client.

Work in cold weather

010 Protect excavations against freezing. Do not use frozen materials for backfilling.

Hardcore

011 Use for hardcore only hard dry crushed brick or hard broken rubble stone, or limestone quarry waste, free from mud, dirt, clay, ashes, clinker, asbestos, timber or any other deleterious matter, broken to pass a 75mm diameter ring in all directions, well rolled and consolidated in 100mm layers.

Blinding

012 Use for blinding only sand, fine gravel, pulverised fuel ash or other fine materials that are free from dust, well rolled and consolidated.

013 Do not use shale either as hardcore or blinding to hardcore.

014 Use sufficient blinding material to fill the surface to provide a close smooth surface for hardcore.

Generally

015 Remove from the Property any imported filling Materials deemed unsuitable by the Client.

016 Keep excavations and areas to be filled free from soil and rubbish.

Client's current manufacturers/suppliers/products

017 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

DEMOLITION

DEMOLITION

GENERAL

Generally

001 Execute all demolition Works and alterations in the most careful manner to avoid damage to the surrounding structures. Make good any damage caused.

002 Do not allow dangerous portions of any structure to remain standing during idle periods or overnight except where this is unavoidable. Where this is unavoidable, adequately strut and prop such portions to ensure their stability until Works recommence.

003 Load and remove from site all materials (including debris) arising from the demolition or alterations. Do not allow these materials to accumulate. Ensure the care and protection of any Materials to be re-used.

004 Bear the risk of any damage in removing, re-fixing and storing old Materials that are set aside for re-fixing. Replace any damaged or defective Materials or missing parts.

Survey

005 Before starting the Works, examine all available information, survey the structure(s), site and surrounding area. When requested by the Client provide a survey report with a method statement covering all relevant matters listed in the Health and Safety Executive (HSE) guidance in relation to development of safe working practices (www.hse.gov.uk) for further information.

Bench marks

006 Report to the Client any bench marks or other survey information found on the structure(s) to be demolished. Do not remove or destroy unless so Instructed in writing.

Existing features and adjacent works to be retained

007 Keep in place and adequately protect from any damage all features and adjacent work/Properties that are to be retained.

UTILITIES AFFECTED BY DEMOLITION

Regulations affecting utilities

008 Carry out any Works affecting new or existing services in accordance with all applicable Regulatory Requirements.

Location of services

009 Locate and mark the positions of services affected by the Works. Arrange with the appropriate Utility Providers for the location and marking of the positions of mains services.

Disconnection of services

010 Before starting demolition, arrange with the appropriate Utility Provider(s) for the disconnection of services and removal of fittings and equipment unless the drawings provided by the Client state otherwise.

Disconnection of drains

011 Locate and disconnect all disused drains connections. Seal within the site all the connections to existing sewers to the approval of the Utility Provider.

Drains in use

012 Protect drains, manholes, gullies, vent pipes and fittings still in use. Keep them free of debris at all times. Make good any damage arising from demolition. Leave them clean and in working order on completion of the demolition works.

Bypass connections

013 Provide bypass connections as necessary to maintain continuity of services to occupied areas of the Property and adjoining properties. Give a minimum of 72 hours notice to occupiers if shutdown is necessary during changeover.

Services which are to remain

014 Notify the Client, Utility Provider and Customer of any damage. Repair such damage to the satisfaction of the Client and Utility Provider.

WORKMANSHIP

Generally

015 Demolish structure(s) in accordance with the Health and Safety Executive (HSE) guidance notices.

Equipment

016 Use suitable types and standards of cutting and demolition Equipment for the location and type of Works.

Gas or vapour risks

017 Take adequate precautions to prevent fire or explosion caused by gas or vapour.

Flammable liquids & gases

018 When removing tanks and pipes which may have contained flammable liquids or gases:
inform the appropriate officer of the Statutory Authority and follow any advice given;
display danger notices;

- prohibit smoking and the use of naked lights;
- use only non-ferrous tools and equipment, with an ample supply of water, to reduce the risk of sparking;
- empty tanks and dispose of their contents to ensure that none enters any drainage system or watercourse;
- clean tanks and pipes and make them inert as described elsewhere in this Specification or as Instructed by the Client.

Dust

019 Reduce dust by periodically spraying demolition Works with water. Use dust sheets and temporary screens.

Health hazards

020 Take adequate precautions to protect Staff and the public from health hazards associated with any dangerous fumes and dust arising during the Works.

021 Perform all Works in such a manner to ensure the safety of the Works and the public and so as to cause the minimum inconvenience to the public.

Adjoining properties

022 Leave adequate temporary support and protection for adjoining properties at each stage and arrange for inspection by the Client when demolishing structure(s).

023 Maintain and alter temporary supports and protection as necessary as the Works progress.

024 Demolish structure(s) causing a minimum of damage to adjoining properties. Leave no unnecessary or unstable projections.

025 Do not disturb any support to the foundations of any adjoining property unless otherwise Instructed.

026 Report to the Client any defects exposed or becoming apparent in any adjoining property.

027 Promptly repair any damage caused to any adjoining property by demolition work. Make good to ensure safety, stability, weather protection and security.

Structure(s) to be retained

028 Adequately protect all parts of existing structure(s) which are to be kept in place.

029 Cut away and strip out with care the minimum amount necessary so as to keep the amount of making good to a minimum.

030 Prevent debris from overloading any part of the structure which is not to be demolished.

Services which are to remain

031 Notify the Client and Utility Provider of any damage. Make arrangements for repair to the satisfaction of the Client and Utility Provider.

Partly demolished structure(s)

032 Leave partly demolished structure(s) in a stable condition, with adequate temporary support at each stage to prevent the risk of uncontrolled collapse.

033 Prevent debris from overloading scaffolding platforms.

034 Prevent access to partly demolished structure(s) by unauthorised persons.

035 Leave safe whilst not working at the Property.

Dangerous openings

036 Illuminate all openings as necessary.

Asbestos-based materials

037 Where asbestos-based materials are known to be present in the structure(s) to be demolished, ensure they are removed in accordance with the Client's Policy for asbestos removal and the Health and Safety Executive's (HSE) Control of Asbestos Regulations 2012 where possible before any demolition works commence.

Unknown hazards

038 Inform the Client of any unrecorded voids, tanks, chemicals, etc. discovered during demolition works. Agree with the Client the methods for safe removal, filling, etc.

New openings

039 When forming new openings or altering existing openings:
- cut away existing arches, lintels or sills;
- provide temporary strutting and supports and shoring;
- cut away for hoist and insert new lintels, including cutting and pinning ends;
- cut away for, and insert new sills, including cutting and pinning ends;
- make good floors up to levels for new thresholds, sills etc., including latex levelling screed;
- wedge and pin up to existing work and build up jambs as described;
- extend and make good finishings to match existing as necessary;
- remove all debris from the Property and site; and
- retain supports until the new Works have adequate strength to support the existing structure.

Taking down

040 When taking down:
- provide temporary support;
- remove all applied finishes;
- make good finishes and match to existing as necessary;
- make good floors up to levels with latex levelling screed; and
- remove all debris from the Property and site.

Building up existing openings

041 When building up existing openings:
- build up in Materials to match existing or as described for the full thickness of the wall;
- cut out existing thresholds, sills, arches, lintels, etc;
- hack off finishings from jambs or reveals before building up;
- prepare surfaces for raising, including lead core or similar damp proof course;
- cut toothing;
- wedge and pin up to existing work as required; and
- extend and make good finishings to match existing as necessary.

Extending finishings

042 Match all extensions to finishings, plasterwork, ceilings, flooring etc., and any making good exactly to the existing finishings.

MATERIALS

Ownership

043 Components and materials arising from demolition (other than any found during excavations) belong to the Service Provider. Remove them from site as the Works proceed.

Hardcore

044 Reuse brick, stone and concrete rubble or other hard materials arising from demolition as hardcore, subject to compliance with this Specification.

Bricks

045 Use whole, sound bricks arising from the Works for replacing cracked or defective bricks or filling to existing openings.

Infected Timber

046 Inform the Client when infected timber is encountered. Where instructed, remove timber infected by fungal/insect attack from the building in a way which will minimise the risk of infecting other parts of the building. Destroy it as soon as possible.

Commencement condition survey

047 Before starting the Works:
- survey the existing state of the Property to be kept in place;
- record the magnitude and extent of all cracks, spalling, flaking and other irregularities of the fabric of the Property; and
- agree the commencement condition survey record with the Client.

Extent of support work

048 Where necessary, provide support systems to those elements of the Property which are to be retained.

049 Submit detailed proposals including drawings and calculations for all systems to the Client for Approval, and resolve any amendments proposed.

050 Provide adequate and stable support systems and thereby maintain the integrity of supported structure for the period of erection to completion of dismantling support systems.

Workmanship

051 Carry out all work in accordance with the Order or any design brief issued with it.

052 Use site Staff experienced in the methods of erecting and maintaining support systems to supervise and control the Works.

Erecting support systems

053 Locate the positions of existing and new services which may be affected by support systems and provide any necessary temporary diversions.

054 Prevent excessive loadings from foundations of support systems being imposed onto foundations of structure to be kept in place.

055 Erect and connect support systems to structure to be kept in place. Take:
- all necessary precautions to prevent damage; and
- due account of movement of the structure which may occur before, during and after demolition.

056 Promptly repair any damage caused to adjoining properties by the erection or connection of support systems. Make good to ensure safety, stability, weather protection and security.

057 Report to the Client any damage caused to retained features or works by the erection or connection of support systems. Agree the methods of repair with the Client.

058 Check support systems at agreed stages during erection for compliance with design proposals.

Unknown hazards

059 Inform the Client of any unrecorded voids, flues, services, etc., discovered during the erection of support systems. Agree with the Client methods for infill, making good, relocation of support connections, etc.

Loading support systems

060 Complete the erection and connection of the support systems before starting the demolition of any adjoining structures.

061 Inform the Client when support systems are erected and all connections are made to the structure to be kept in place. Obtain any required permissions to load systems.

Maintaining support systems

062 Provide safe access and safe places of work in the support systems for inspection and maintenance.

063 Regularly inspect and maintain support systems, making good ties, wedges, connections, corrosion protection, etc., as necessary.

064 Adequately protect support systems from impact by vehicles, plant and site operations. Prevent access by unauthorised persons. Leave safe when not working at the Properties and outside the Service Provider's Working Hours.

Dismantling support systems

065 Inform the Client when all permanent connections between the supported structure and new construction have been made. Obtain permission before disconnecting and dismantling support systems.

Making good

066 Repair any connection holes made in the structure kept in place, using Materials to match those existing. Repair damage caused to buildings, roads or pavements.

Site clearance

067 Clear away all debris, excess materials and temporary Works and leave the Property and its site in a tidy condition on completion of the Works.

Client's current manufacturers/suppliers/products

068 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

EXTERNAL WORKS

EXTERNAL WORKS

MATERIALS

Hardcore

001 For hardcore in beds and when filling to make up levels under paving, use only good clean hard brick, cement concrete, hard tiles, stone or ballast, broken before placing to pass a 75mm ring and free from all rubbish and deleterious material.

002 Well consolidate hardcore to the required levels and contours with a roller, vibrating roller or mechanical punner. Take care that no damage is done to adjacent work.

003 Blind surfaces of hardcore with sand, ashes or other fine material Approved by the Client.

Sub-bases to Roads.

004 Type 1 Sub-base to be unbound mixture made from crushed rock, crushed slag, crushed concrete, recycled aggregates or well burnt non-plastic shale and may contain up to 10% by mass of natural sand that passes a 4 mm test sieve.

Precast concrete paving flags

005 Use only precast concrete paving flags of a standard and quality to BS 7533-4:2006, Approved by the Client, made from natural and crushed aggregate, hydraulically pressed, of uniform natural colour throughout and with a non-slip surface finish. Tactile paving flags are to be in accordance with BS EN 1339:2003 and lain ain accordance with BS EN 7533-4:2006

006 Lay flags true and square on cement mortar (1:3) dabs with 6mm joints, to BS EN12620 or sand filled joints to BS EN1260 pointed up with cement and sand to BS EN 13139:2002 (1:6) mortar and cleaned off on completion.

Precast concrete edgings and kerbs

007 Lay precast concrete edgings and kerbs on edge with top 6mm below the finished level of the adjacent surface and lain in accordance with BS 7533-6. All precast concrete edgings and kerbs are to to be to BS EN 1340

Macadam topping

008 Use only 19mm hot applied tarmacadam topping for re-topping. Thoroughly clean sub-surfaces by scraping, brushing or washing, and allow them to dry. Just before laying the topping, apply a tack coat of tar bitumen emulsion at the rate of 0.3 to 0.5 litres per m^2.

Macadam surfacing to Footpaths

009 Ensure:

- the preparation and tack coat is in accordance with Paragraph 007;
- the base course is 20 mm dense coated macadam, having 20mm nominal stone aggregate with bitumen or tar binder; and
- the wearing course is 6 mm medium textured macadam having 6 mm nominal crushed stone aggregate with bitumen or tar binder.

Asphalt Concrete to Roads

010 Asphalt concrete is to be in accordance with BS EN 13108-1 and BS 594987.

Hot Rolled Asphalt

011 Hot rolled asphalt is to be in accordance with BS EN 13108-04 and BS 594987.

Interlocking brick/block paving

012 Ensure concrete block paving is of uniform colour throughout and of a size, shape and colour to match existing. Block Paviors to be in accordance with BS EN 1338.

013 Lay block paving on a well graded sand bed vibrated to provide a thoroughly interlocked paving of even overall appearance with regular sand filled joints and accurate to line, level and profile.

Formation

014 Thoroughly compact the bottom of stripped or excavated areas to receive base. Remove any obstructions or soft spots and add and compact suitable additional Material to provide level or graded surfaces of equal bearing capacity.

Bases for paving

015 Immediately after compaction of the earth formation, lay a limestone base in a consolidated layer not exceeding 150mm thick compacted with a vibrating roller or mechanical rammer.

Concrete paving flags

016 Unless specified otherwise elsewhere, lay flags to BS EN 1339:2003 on a prepared stone base to match existing bonding and on a 25mm thick consolidated bed of semi-dry mortar. Use joints 5-10mm wide pointed with cement mortar (1:3) as the Works proceed. Protect completed paving until the pointed joints have set and then brush off and leave clean.

WORKMANSHIP

Macadam paving

017 Lay macadam paving to a standard and quality Approved by the Client.

018 Lay and compact macadam in restricted areas by methods that produce a compacted finish equivalent to the thickness achieved by heavy rollers.

Kerbs and edgings

019 Bed kerbs and edgings on concrete and haunched half way up on the back. Form fine open joints between units. Full height upstand is to be 125mm above road or channel level.

020 Drop kerb upstand shall be 0-6mm for pedestrian crossings, and 25mm for vehicular crossings.

Interlocking brick/block paving

021 Ensure that sub-bases are suitably accurate and to the specified gradients before laying paving.

022 Cut blocks/paviors neatly and accurately without spalling to give neat junctions at edge restraints and changes in bond.

Client's current manufacturers/suppliers/products

023 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

FENCING AND GATES

FENCING AND GATES

MATERIALS

Generally

001 Follow any timber sizes stated in the Schedule of Rates items, in preference to those stated in any European or British Standard.

002 Use only galvanised/sheradised ironmongery and fixings.

003 Where the Schedule of Rates refers to posts "not exceeding" a particular size in Orders and for Valuation use the Schedule of Rates item closest to actual post sizes used in the Works.

004 Use cement, water, aggregates and sand as defined in the "Concrete Work" Section.

005 Note that different fencing types exist amongst the Properties in a variety of heights and with concrete and metal posts set in earth or concrete.

Timber gates

006 Construct frames with ledge and bracing joints.

Metal gates

007 Properly weld together metal gates and grind all welds to a smooth finish.

Pressure impregnating

008 Where Works are described as 'pressure impregnated with preservative' use pressure pretreated timbers for fencing and gates with a copper chrome arsenic preservative treatment Approved by the Client. All timber shall receive a double vacuum treatment in accordance with BS 8417:2011+A1:2014 after machining. This treatment shall be a modern, industrial, organis, solvent based wood preservative containing no "red list" biocides. Application must be by low pressure impregnation, giving highly effective protection against wet rot fungi and having a 30 year warranty

009 Carry out deep cutting, planning and other fabrication before treatment. Where any crosscutting or notching of the pressure impregnated timbers is necessary, liberally treat all new surfaces exposed with a preservative Approved by the Client.

010 Produce a certificate of treatment to cover all timbers processed indicating that the timber has been procured from sources which can independently be verified as being either: from a legal and sustainable source or from a FLEGT licensed or equivalent source.

Wood preservatives

011 Thoroughly clean all woodwork to be treated and ensure it is perfectly dry before application. Apply (by brush, coarse spray, low pressure spray, trowel, injection or gravity irrigation treatment) the preservative in two coats and work it into all joints. Follow with the second coat before the first coat has dried out. Use only products registered by the Health and Safety Executive (HSE) and listed on the HSE website under non-agricultural pesticides.

Concrete mix

012 Ensure all concrete used for bedding in posts is 7N/20mm as defined in the "Concrete Works" Section.

Nails and screws

013 Ensure nails, screws, clips, wire and other ancillaries and fixings are galvanised and as defined in the "Woodwork" Section.

WORKMANSHIP

Fence route

014 Clear vegetation or other obstructions along fence routes. Remove any humps and fill any hollows with compacted soil to provide a clear way, permitting unobstructed passage on both sides of the fence, approximately level or with smooth undulations.

015 Identify any services in the ground before excavations commence and take appropriate precautions to avoid any damage.

Fence erection

016 Erect fences as follows:
- with posts truly vertical and tops to line;
- with struts uniformly angled to give maximum support;
- with straining posts in strained wire fences located at each end, at each change in direction and at each acute change in level;
- with struts to all straining posts in the direction of the line of the fence; and
- with posts fixed, but if the ground is soft or a post or strut cannot be securely fixed in the manner specified, set in concrete (or additional concrete) or otherwise as Approved by the Client, to make the fence secure.

Fixing posts

017 Fix posts as specified in BS 1722 for the type of fencing involved and in accordance with the following:
- in concrete:
- use appropriate size and depth for size of post; and
- use appropriate size and depth for size of struts;
- using holes with vertical sides; and
- where using:
- concrete in holes: half fill the hole with concrete with earth above, both well rammed;
- earth filled holes: keep the hole as small as possible consistent with refilling and compacting with earth; or
- driven posts: drive without damaging the posts.

Post spurs

018 Use metal post spurs, where Instructed by the Client.

Painting

019 Ensure decoration specified in the Schedule of Rates matches the existing unless Instructed otherwise.

Maintaining protective treatments

020 Avoid cutting on site. Make good any damaged protective coatings (e.g. galvanising) to the standard of protection given by the specified coating. Do not cut timber treated with preservative where it will be in the ground. Apply preservative coating to any cuts to treated timber.

Client's current manufacturers/suppliers/products

021 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

DRAINAGE

DRAINAGE

MATERIALS

Vitrified clayware traps and gullies etc

001 Ensure grating, sealing plates and other metal accessories used are cast iron.

Granular beddings

002 Ensure granular bedding for pipes is Type 'A' granular material consisting of broken stone or gravel single size or graded for pipes up to and including 300mm diameter.

Bricks for manholes etc

003 Ensure bricks for manholes are Class B clay Engineering bricks conforming to BS EN 721-1:2011.

Step irons

004 Use general purpose pattern manhole step irons. To Type D Class 1, complying with the requirements of BS 13101:2002

Precast Manhole Rings and Cover Slabs

005 Precast concrete products are to comply with BS591-2, 200 and 230.

Manhole Covers and Frames

006 Manhole covers and frames are to be non-ventilating, and be to the requirements of BS EN 124 and BS 7903, bedded on a gauged Class 1 (3:1) sand/cement mortar.

Road Gully Gratings

007 Road gully gratings and frames are to be "hinged" heavy duty ductile iron minimum grade D400 in accordance with BS EN 124:1994 and be BSI kite marked.

Precast Concrete Gullies

008 Road gullies shall be trapped precast concrete using Sulphate Resistant Cement (SRC) in accordance with BS5911-2:2004

WORKMANSHIP

Setting out

009 Set out all drains as Instructed by the Client and provide all profiles, etc., necessary for the execution of the Works.

Existing drains

010 Check the invert levels of existing drains, sewers and manholes before laying new drains. Notify the Client immediately if the declared invert levels are found to be inaccurate.

011 Before commencing excavation to expose existing drains, determine the exact line and level of the drain by excavating trial holes by hand. In any case carry out the final 300mm of excavation to expose the pipe by hand to ensure that adjacent lengths of pipe are not damaged by Equipment.

Excavation

012 Thin the bottoms of all excavations and consolidate to the correct levels. Fill unauthorised excavations below the required levels with Materials of the same composition as for drain beds. Where the bottom is insufficiently firm, excavate until, in the Client's opinion, a firm bottom is obtained. Make up the level with Materials of the same composition as for drain beds or with a layer of concrete blinding if so Instructed by the Client. Agree the particulars of such additional Works with the Client before covering up the Works, otherwise no payment is to be made for it.

Planking and strutting

013 Take care not to undermine the foundations of buildings. If so Instructed by the Client, plank and strut or adopt other means to protect the foundations.

Backfilling

014 First fill trenches for clay or cast iron rigid joint pipes to a depth of 300mm with selected fine material carefully hand packed around the pipe. Ensure no materials are tipped into the trench until the first 300mm has been completed.

015 Continue filling in layers not exceeding 300mm thick, well rammed and, if necessary, watered. Do not use mechanical rammers until at least 300mm of consolidated filling has been returned over the pipe.

016 Make good any subsidence causing damage in surfaces or to adjoining structures that occurs after backfilling.

017 Rectify all damage caused to pipework during backfilling.

Concrete beds and surrounds to precast concrete manholes and road gullies

018 Concrete bed to precast concrete manhole rings is to be 150mm thick grade C20 concrete, laid on 75mm concrete grade 10 lean mix blinding concrete.

019 Concrete surround to precast concrete manhole rings is to be 150mm thick grade C20 concrete

020 Bed and surrounds to road gullies to be 150mm thick grade C20 concrete.

Concrete beds, haunching and surround to drain pipes with rigid joints

021 Ensure beds are;
- a minimum of 150mm thick below the pipes;
- of the widths described in this Specification or the Schedule of Rates; and
- finished to the correct gradients.

022 After testing, haunch up the drains on both sides in similar concrete to half the diameter of the pipe. Where so Instructed entirely surround vertical clayware drains and other drains with concrete 150mm thick. Set all gullies, shoes, etc., on a base of similar concrete 150mm thick and the sides encased in concrete 150mm thick.

023 Provide flexible cleavage planes at each joint by means of 25mm thick bitumen impregnated fibreboard through the entire concrete surround.

Concrete beds and surrounds to clay and PVCu drain pipes with flexible joints

024 Ensure concrete beds and surround to drain pipes with flexible joints are as described in this Specification.

Granular beds and surrounds to drain pipes with flexible joints

025 Dig out hard obstructions and soft pockets and remove the excavated materials. Fill the resultant void with granular bedding and consolidate it. Lay 75mm concrete blinding where trenches are in made up ground, or wet conditions are encountered.

026 Ensure drains specified to be "bedded and surround in granular material" are laid on a bed of granular material 100mm deep (150mm deep where concrete blinding is required), spread and compacted and finished to the correct gradients and to the correct widths as Instructed by the Client. When compacted, form socket holes in the bedding material sufficient to allow the full length of pipe barrels only to rest on them.

027 After bedding, aligning, levelling and testing the drain pipes, place further granular bedding evenly and consecutively on each side to half way up the pipe. Then protect the pipe by a layer of similar granular bedding carefully consolidated by hand to 100mm above the top of the pipe for the full width of the trench.

028 Ensure backfilling for the first section of the trench is from the top of the granular bedding to 300mm above the top of the pipe with an "earth blanket" of selected fine excavated material, sieved through a fine mesh and free from hard pieces of material, building rubbish, frozen soil, tree roots, vegetable matter and any material liable to decay.

029 Ensure backfilling for the next 300mm is with normal excavated Materials as described under the "Backfilling" Paragraph, and carried out by hand with no mechanical ramming.

030 Ensure backfilling for the next 300mm after that is with normal excavated Materials as described under the "Backfilling" Paragraph, and carried out by hand and/or light mechanical ramming.

Laying drains

031 Lay drains in straight lines to an even gradient from point to point, each pipe being "boned in" and the whole accurately laid and butted closely together at the joints.

032 Set drain pipes passing through foundations so that a flexible drain joint is not more than 150mm from the face of the wall foundations or manholes with a further joint 600mm from the last joint.

033 Commence drains at the lowest point with sockets leading up the gradient.

034 Rest pipes on solid and even foundations for the full length of the barrel with hollows formed in the granular bed or ground for the sockets.

035 Leave trenches open for inspection by the Client until the drains have been tested and Approved.

Gullies etc

036 Set gullies, etc., on concrete seatings, surrounded with concrete and jointed together and to pipes with gaskin and cement and sand mortar or with flexible coupling.

Brickwork in manholes

037 Bed brickwork in manholes in cement mortar (1:3) in an appropriate bond, built fair face with flush joints internally. Where built into manhole walls ensure pipes of 225mm diameter and over have half brick relieving arches over.

PVCu inspection chambers

038 Ensure PVCu inspection chambers including all fittings, covers and frames etc., have polypropylene mustow universal chambers.

Precast Concrete Manhole Rings

039 Manhole rings are to be bedded with mortar, proprietary bitumen or resin mastic sealant

Benching

040 Ensure benching in bottoms of manholes is in fine concrete to falls of at least 45 degrees to channels finished with cement and washed sand mortar (1:2) 25mm thick, trowelled hard and smooth with all angles rounded.

Bedding and sealing covers and frames

041 Bed frames to manhole covers in cement mortar (1:3) and the covers in grease and sand.

CCTV inspection of drains

042 Carry out and record an internal inspection with CCTV equipment when Instructed to do so.

043 Provide all necessary equipment, including suitable covered accommodation for viewing the monitor screen, together with personnel experienced in the operation of the Equipment and interpretation of the results.

044 Maintain adequate intensity of illumination within the pipe(s). Provide continual position recording, still photographs and the ability to stop the movement of the camera at any point requested by the Client.

045 Provide a copy of the recording to the Client.

046 Obtain Instructions from the Client on remedying any blockages or problems which may be revealed.

Testing

047 Test drains and manholes for watertightness and straightness to the satisfaction and in the presence of the Client and the Sewage Utility Provider. Fill drains with water to a head of 1.5 metres and test them in sections agreed with the Client:

- after jointing;
- after haunching or bedding and backfilling; and
- after completion of the Works.

048 Provide all necessary testing apparatus and carry out any other tests required by the Client and the Sewage Utility Provider.

Clean and flush all drains

049 Core, clean and flush drains, gullies, manholes, etc. on completion of the Works.

Client's current manufacturers/suppliers/products

050 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

CONCRETE WORK

CONCRETE WORK

MATERIALS

Cement

001 Use ordinary "Portland" cement in accordance with BS EN 197-1:2000, delivered to the Property or site in sound condition. Store and protect it from deterioration due to moisture or other causes.

002 Use cement fresh in the order of its delivery to site. Remove from site any cement which has become caked or otherwise adversely affected.

003 Keep sufficient cement available in store to ensure that concrete work on any section can proceed without interruption.

Aggregates

004 For fine aggregate use only well graded coarse river sand of Grading Zones 1-3, clean natural sand or crushed stones.

005 For coarse aggregate use only natural gravel, crushed gravel, or crushed stone, well graded and of the nominal sizes as specified below.

006 If so Instructed submit samples of aggregates proposed to be used to the Client for Approval. Ensure all subsequent deliveries conform to the Approved samples. Arrange for ample supplies to be available of both fine and coarse aggregates of the quality and colour selected.

007 Wash fine and coarse aggregates and store them on a hard, clean base where they will not become dirty or otherwise contaminated. Ensure when they are handled that they remain clean and well graded and keep them separate from each other until placed in the mixer.

Water

008 When mixing concrete use only clean and fresh water from the main that is not below 4^0 Centigrade at the time of use.

009 Ensure water does not contain any matter injurious to concrete.

Rejected materials

010 Reject and remove immediately from the Property any Materials which have been damaged, contaminated or have deteriorated or do not comply fully with this Specification.

WORKMANSHIP

Concrete mixes

011 Ensure concrete mixes comply with the following:

Mix reference	Equivalent BS 8500 grade	Total dry aggregate weight for use with 50Kg of cement (Kg)	Maximum size aggregate (mm)	Slump range (mm)
7N/20mm	C7.5P	450	20	25-75
10N/20mm	C10	400	20	25-75
20N/20mm	C20P	300	20	25-75
35N/20mm	C35	200	20	25-75
40N/20mm	C40	190	20	25-75

Concrete mixing

012 Batch and mix all concrete stronger than 15N/mm2 by weight; measure water by volume or weight.

013 Small quantities of concrete 15N/mm2 and under may be batched and mixed by volume. Measure proportions into gauge boxes. Completely fill and empty boxes at each batching.

014 Carry out mixing in an efficient mechanical batch mixer. Mix each batch for a minimum of one and a half minutes after all the Materials are in the mixer and until the mix is an even colour and consistency throughout. Use the minimum quantity of water consistent with workability and vary it as required to suit the moisture content of the aggregate.

015 Ensure concrete is of such consistency as to produce a slump of not more than 50mm for footings, beds and slabs or 75mm for beams and columns by the slump cone test.

016 Discharge the entire contents of the mixer each time direct into the vehicle used for distributing the concrete before any further Materials are placed in the mixer.

017 Thoroughly clean and wash out mixing machines, mixing platforms, wheelbarrows and any other vehicles or implements used in concreting whenever their use is discontinued for longer than thirty minutes.

Transporting concrete

018 Transport concrete from the place of mixing to its place of final deposit as rapidly as practicable and by a means which will prevent segregation, or loss of, or addition to the ingredients. Deposit it as near as practicable to its final position so as to avoid re-handling or discharging through chutes or troughs. Ensure all skips, vehicles or containers used for transporting the concrete are thoroughly clean.

Placing concrete

019 Wherever possible deposit concrete in its final position immediately after mixing. Carefully place it in position and do not tip it from a height exceeding 1.25 metres. Do not re-temper partially set concrete.

020 Deposit concrete in layers not exceeding 230mm thick. Thoroughly tamp it to exclude any voids. In reinforced work carefully pack it around the reinforcement and against the forms to ensure good surfaces that are free from "honeycombing". Take care not to displace the reinforcement from its correct position during concreting.

Ready mixed concrete

021 Use ready mixed concrete only with the written Approval of the Client. Where its use is Approved by the Client, ensure:
- ready mixed concrete is supplied from depots holding a current certificate under the Quality Scheme for Ready Mixed Concrete; and
- the delivered concrete is at a temperature of between 7^0 Centigrade and 30^0 Centigrade.

022 Ensure the actual batched weights of cement and coarse and fine aggregate are declared on each delivery ticket from the supplier.

Construction joints

023 As far as possible complete each section of the Works in one operation. Where necessary to join up with Works which have been stopped, hack and rough the surface and thoroughly clean and coat it with cement slurry (1:1) before concreting is resumed.

Work in cold weather

024 Do not concrete when the air temperature is below 4^0C. Bear the entire risk of concreting done below this temperature.

025 Take adequate precautions to protect concrete from freezing. Bear all risks of damage to concrete from frost action.

026 Keep a reliable maximum and minimum thermometer at the site of any concreting Works.

027 Pretreat water and/or aggregate where necessary to ensure a temperature of 5^0 Centigrade in the concrete at the time of placing. Take all necessary precautions to maintain the concrete at or above this temperature until it is thoroughly hardened.

028 Do not use frozen materials. Ensure all Equipment, formwork, reinforcement and concrete at construction joints is free from frost.

029 Follow the guidance on suitable precautions at "Winter Concreting" (Cement and Concrete Association) and "Winter Building" (HMSO).

Protection and curing

030 Do not deposit concrete when the temperature is at or below 5^0 Centigrade except when precautions have been taken. Properly protect all newly placed concrete during frosty weather.

031 Ensure that concrete is not jarred, walked on or otherwise disturbed during setting.

032 Keep concrete thoroughly damp for at least seven calendar days after concreting and take special precautions to prevent it drying out too quickly.

033 Carry out and replace any concrete damaged whilst setting.

Traffic and loading on concrete

034 Ensure there is no traffic over, or loading on, concrete for at least seven calendar days after placing.

Surface finishes

035 Place concrete so that the face is free from voids and shows a uniform distribution of aggregate and uniform texture.

036 Use wrot formwork where a fair finish is required to the concrete surface. After removing the formwork, remove the feathers caused by the joints in the boards. Fill any holes or honeycombing which may have formed in the surface by first drenching with water and then filling the void with cement mortar composed of cement and washed sand in the same ratio as that in the concrete mix.

037 Use surface lined formwork where a perfect finish is required to the concrete. Immediately after removing the forms bring the concrete to a true, smooth and even surface, free from board marks, honeycombing, etc., by rubbing down with carborundum stone dipped in cement grout.

038 When no specific finish is required, tamp upper surfaces to a plain or evenly ribbed finish with tolerances suitable for subsequent Works. When a floated finish is specified, close the surface to produce an even slightly coarse texture free from ridges and depressions.

039 Trowel concrete to receive a thin floor covering by power float or other suitable method to produce a dense very smooth surface that is visually flat and suited to the direct application of thin floor coverings. Ensure there are no Defects in the finished concrete that show through the floor.

040 The maximum permissible deviation from flat is 3mm from a 3.00m straight edge.

Holes, chases, fixing blocks, etc

041 Incorporate any conduit, pipes, fixing blocks, chases, etc., in concrete members as required. Submit full details of these to the Client for approval before the Works start. Ensure all fixing blocks, bolts, chases, holes, etc., left in the concrete are:
- of the sizes required; and
- accurately set out and cast with the concrete or boxed out as the Works proceed.

042 Do not cut holes or chases in the concrete unless the Client Instructs this to be done.

Reinforcement generally

043 For bar reinforcement use hot rolled high tensile deformed bars or mild steel round bars.

044 For fabric reinforcement use hard-drawn, steelwire fabric.

045 Ensure all reinforcement is free from pitting due to corrosion, loose rust, mill scale, paint, oil, grease, ice or other material which may, in the Client's opinion:
- impair the bond between the concrete and the reinforcement; or
- cause corrosion of the steel or disintegration of the concrete.

Bending reinforcement

046 Bend or straighten bars cold, gradually and evenly and in a manner that will not injure the Material.

047 Bend steel to the shape exactly as shown on the drawings. Ensure all bends have an internal radius of at least twice the diameter of the bar.

Placing reinforcement

048 Place reinforcement exactly as shown on drawings provided by the Client and use the correct concrete cover. Adequately support and bind the reinforcement at intersections with No. 16 BSW gauge soft pliable mild steel wire so that displacement does not occur when the concrete is deposited. Ensure the lap:
- is at least 40 times the diameter of the bar size; and
- to the mesh is at least 450mm.

Formwork

049 Use any suitable Material for formwork. Ensure it is true to line and level, strong and well braced to carry the wet concrete without deformation or deflection, and with closed joints to prevent the loss of concrete. Provide holes for cleaning out rubbish where necessary.

050 Remove all rubbish from the interior of the forms. Clean thoroughly and wet any shuttering in contact with the concrete before that concrete is placed. Thoroughly clean all forms before re-use.

051 Ensure the safe removal of the whole or part of the formwork.

Precast concrete

052 Ensure precast concrete is of the mixes specified.

053 Ensure reinforcement is 25mm clear of the soffit of lintels, steps, etc. Hook the ends of bars for a distance of 38mm and crank to resist shear. Mark the tops of members at the time of casting.

054 Reinforce precast concrete not described as reinforced as necessary to withstand handling and temperature stresses.

055 Adequately cure precast concrete before it is handled and fixed in position.

056 Rub down the surfaces of precast concrete described as "finished fair." Neatly stop any holes, etc. Leave the surfaces perfectly smooth with no sharp arrises. Leave remaining faces rough for plastering or rendering unless stated otherwise in the relevant part of this Specification.

Bituminous damp-proof membrane

057 Thoroughly clean the surfaces to receive the bituminous membrane. Apply this strictly in accordance with the manufacturer's technical data sheet.

Polythene damp-proof membrane

058 Use heavyweight building sheet for any polythene damp-proof membrane. Lap all joints and make them with double welt folds. Tape all in accordance with the manufacturer's technical data sheet.

059 Take special care to prevent joints unsealing and to avoid puncturing the sheeting during placing operations, subsequently during the laying of the brickwork or securing fixing grounds. Remove and replace any damaged sheeting.

060 Seal any holes through the damp-proof membrane for services by wrapping the pipes in small sheets and using sealing tape around the pipes and main film barrier.

Client's current manufacturers/suppliers/products

061 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

BRICKWORK AND BLOCKWORK

BRICKWORK AND BLOCKWORK

MATERIALS

Cement

001 Use either normal setting ordinary Portland cement, or sulphate resisting Portland cement.

Lime

002 Use Class B hydrated lime.

Sand

003 Use only natural sand, crushed stone or crushed gravel for building mortar.

Cement mortar

004 Ensure all cement mortar used is composed of one part cement and three parts sand. Use this in brickwork built below ground level, copings, chimneys, parapet walls and any other brickwork in severely exposed situations.

005 In other situations unless otherwise Instructed, use only gauged cement mortar composed of:
- one part masonry cement;
- one part lime; and
- six parts sand.

006 Ensure all mortar used is fresh and made only in quantities sufficient to meet the immediate demand. Do not revive or re-use any mortar which has been partially set.

Common bricks

007 Use clay common bricks.

Facing and Engineering bricks

008 Ensure facing bricks and engineering bricks are clay and of a size, type and colour to match the existing bricks.

009 Where Approved by the Client, clean and reuse sound facing and engineering bricks taken down as part of repair works.

Air bricks and wall ventilators

010 Use unglazed clay/concrete air bricks of a colour to match the facing bricks.

Cavity wall insulation

011 Use batt type cavity wall insulation Approved by the Client.

Mastic compound

012 Use a one part gun-grade butyl rubber sealant as the mastic compound for pointing.

Wall ties

013 Use butterfly type wall ties of a size to suit the thickness of the wall being constructed.

Chimney pots and cowls

014 Use only specialised pots and cowls as Instructed and Approved by the Client.

Expansion joints

015 Ensure expansion joints in brickwork or blockwork comprise 12mm thick Material, pointed with a mastic compound each as Approved by the Client.

Samples of bricks and blocks

016 Use only common, facing and Clienting bricks and lightweight concrete blocks that conform to samples that have been Approved by the Client.

Precast concrete lintols

017 Unless the Client Instructs otherwise, bed concrete lintols on mortar with a bearing of at least 150mm, packed on slate.

Prefabricated steel lintols

018 Unless the Client Instructs otherwise, bed steel lintols on mortar with a bearing of at least 150mm, packed on slate.

Facing Brick Slips

019 Facing brick slips must be clay of a size, type and colour and to a bond to match existing facework to the property; subject to approval of the Employer.

020 Acrylic brick blips must be of a size, type and colour and to a bond to match existing facework to the property; subject to approval of the Client.

Cavity Wall Insulation - Injected

021 Cavity wall insulation must be injected blown type insulation as directed and must be obtained from an approved manufacturer; subject to approved of the Client.

WORKMANSHIP

Brickwork

022 Except where otherwise Instructed, lay new brickwork:
- to a gauge of 34 courses to 2550mm rise; or
- where existing brickwork is of a different gauge, to match the coursing of that brickwork.

023 Flush up solid horizontal and vertical joints with mortar throughout the thicknesses of the wall. Keep bed joints horizontal and quoins and perpends square and vertical. Lay bricks with single frogs with the frogs upwards.

024 Carry up walls in a uniform manner, with no part being raised more than 1 metre above another at one time. Rack back brickwork for jointing up (do not tooth it). Do not use bats except where required to bond.

025 Where the Schedule of Rates refers to "half brick thick", provide half brick thick walls in either metric or imperial sizes, as required for the Works.

Hollow walls

026 Construct hollow walls:
- with a cavity between the inner and outer casings;
- bonded together with galvanised wire ties:
- spaced at 1.00m apart horizontally and every sixth course vertically (second course vertically for blockwork); and
- staggered with additional ties every sixth course in height at jambs of openings.

027 Fit ties for batt type insulated hollow walls with an adjustable plastic anchor for securing the insulation in position against the inner skin of the wall.

028 Keep cavities clear of mortar dropping by draw boards across the cavity. Leave access holes at the bottom of cavities and over lintels for cleaning out. Fill them in after this has been done.

029 Close cavities of hollow walls at cills and jambs of openings with brickwork, solid for a minimum depth of 100mm, properly bonded to the surrounding work.

030 Take all precautions whilst undertaking the Works not to lose the integrity of the insulation in existing cavity walls that contain loose fill insulation materials.

Weather and protection

031 Adequately protect bricks on site and keep them dry. Where covers are used to protect bricks, ensure that there is sufficient circulation of air to prevent condensation forming. Ensure bricks are laid dry.

032 Do not carry out bricklaying:
- in driving rain; or
- when the temperature in the open is at or below 5^0 Centigrade.

033 Use plasticisers only with the Client's Approval. Do not use antifreeze compounds.

034 Adequately protect new brickwork from damage by frost or excessive wet weather.

Fair face

035 Face surfaces of brickwork or blockwork described as "built fair face" with common bricks or blocks selected from bulk for even and unmarked faces and square undamaged arrises. Finish them with a neat flush joint as the Works proceed to match the existing brickwork. Protect them from mortar droppings and damage and ensure they are left clean on completion of the Works.

Facework

036 Joint facework as the Works proceed. Finish the vertical and horizontal joints with a convex jointer (bucket handle) or to match the existing framework.

037 Keep facings free of all mortar splashes, droppings or other blemishes and leave them perfectly clean on completion of the Works.

Damp-proof courses

038 Lap damp-proof courses 150mm at all joints and full width at angles and intersections.

039 When renewing damp-proof courses, cut out brickwork in short hit and miss lengths not exceeding 1.00m at any one time. Replace brickwork before commencing further lengths.

Bituminous and silcone waterproofing liquid

040 Ensure surfaces to receive the waterproofing liquid are thoroughly dry and clean.

Pointing

041 Match the pointing of new work to that of adjacent work, or to be flush or bucket handle pointing as Instructed by the Client.

042 Match pointing closely to the existing pointing in finish, colour and texture.

Work to chimneys and fires

043 Adequately protect the Customer's finishes, fittings and furnishings from falling debris and soot during Works to chimneys and fires. Take all necessary precautions to protect existing fire appliances from damage. Rectify any damage caused.

044 Ascertain whether any flueways affected by the Works serve a gas appliance. If so, immediately notify the Client of this in writing, so that appropriate safety precautions can be implemented.

045 Remove all debris from flueways and from behind fires and appliances on completion of the Works.

Cavity Wall Insulation (CWI) Inspection

046 Boroscope inspections to be carried out to confirm the quality of insulation in the cavity. Service Providers may, if they wish, use a thermal imaging camera with an appropriate scale to assist them in deciding where exactly to drill for the boroscope inspection but it should comply with the following pattern:

For single storey dwellings this will include 3 boroscope readings per elevation.

- One of these will be at least 300mm above the damp proof course
- One will be within 300mm of the wall plate below the roof (For gable walls this should be along or just above the dividing line between the ground floor accommodation and the loft).
- One will be below a window sill (For gable walls where there are no windows, this can be halfway up the wall between the ground and roof space line)

For two storey dwellings this will include 4 boroscope readings per elevation.

- One of these will be at least 300mm above the damp proof course
- One will be within 300mm of the wall plate below the roof (For gable walls this should be along or just above the dividing line between the first floor accommodation and the loft).
- One will be at first-floor floor joist level (i.e., between ground and first floor)
- One will be below a second storey window cill (For gable walls where there are no windows, this can be halfway up the wall between the first floor and the loft).

Service Providers will produce a report on their findings in relation to the quality of the insulation in each dwelling. This will include confirmation of the following;

.1 Build up and thickness of each element of the wall to determine if it is a brick/block cavity wall construction.
.2 Property construction was suitable for CWI installation
.3 The U-values arising from 2 above.
.4 Type of insulation installed e.g., mineral or glass wool (fibre), bonded bead, loose bead or insulation board.
.5 If the boroscope tests produced any evidence of voids or other problems with insulation failure
.6 Where voids or other problems are evident, what are the reasons eg, insufficient insulation (fibre or bead), settlement of fibre, insufficient glue for bonded beads, boards not properly fitted, etc…. Include photographs from the tests where appropriate.
.7 If there are any signs of internal mould or water penetration evident
.8 Original drill pattern conformed to BBA certification for the type of material used.
.9 Drill holes were properly filled
.10 Any evidence of ingress of CWI materials in roof space/at services
.11 Recommendations for remedial action to improve or replace insulation if considered appropriate..
.12 Any other information considered relevant e.g., if inspection produced evidence of failure of sleeve vents, absence of cavity barriers, etc.

Firestopping Works

047 Firestopping material for use as a gap filling material where cables, non-combustible dusts or pipework services penetrates fire compartment floors and walls shall be a proprietary compound that is to be non-fibrous, non-toxic and to contain no asbestos, phenois or halogens, applied as a mortar to the following thicknesses.

Fire Resistance	Minimum Depth of Filling Material
One Hour	50mm
Four Hour	100mm

50mm Thick non-combustible mineral wool slab is to be used as permanent shuttering to firestopping compound mortars.

For horizontal barriers the mineral wool slabs are to be friction fitted into the opening and around the penetrating services, so that the compound mortar may be poured on top of the slab to the required thickness, temporary support may be needed until the compound mortar has achieved it setting requirements

For vertical or wall barriers the mineral wool slab should be installed at the centre line of the fire compartment wall by friction fitting around the penetrating services, the vertical slab is then to have the compound mortar applied either side of the slab to a maximum thickness of 25mm.

The firestopping mortar is to be applied strictly in accordance with the manufacturer's technical data sheet.

048 Firestopping material for use as a gap filling mortar around cable penetrations through fire compartment and separation walls and floors shall be a proprietary non-combustible material manufactured from lightweight aggregates, inorganic hydraulic binders and other fire protective additives which impart rheological properties. It is to be used in situations where the subsequent installation of additional cables through the wall or floor penetration is likely to take place and a flexible filling material would facilitate this event.

The mortar is to be mixed by hand and applied strictly in accordance with the manufacturer's technical data sheet

049 Firestopping material for use as fire protection to fire compartment floors and walls penetrated by air conditioning ducts or service pipework shall be a proprietary non-combustible non-fibrous and non-toxic material manufactured from lightweight aggregates, inorganic hydraulic binders and other fire protective additives which impart rheological properties, applied in layers as a mortar to the following thicknesses.

Fire Resistance	Minimum Depth of Filling Material
Four Hour	160mm

Temporary shuttering may be required where the mortar is applied to wall penetrations, if there is likely to be movement in the pipes or ducts, the pipe or duct is to be wrapped in a 5 to 10mm thickness of mineral or ceramic wool.

The compound is to be mixed by hand and applied strictly in accordance with the manufacturer's technical data sheet

Client's current manufacturers/suppliers/products

050 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

ROOFING

ROOFING

GENERAL

Generally

001 Stock adequate compatible Materials for the numerous types of tiled roofs that exist throughout the Properties.

002 Ensure tiles, slates and accessories laid or fitted are of a colour to match the existing.

003 Reinstate or replace any missing or defective battens and roofing felt when undertaking repairs.

MATERIALS

Dry and Wet ridge/verge

004 Ensure mechanically fixed dry ridge and dry verge Works are compatible with the existing dry ridge and dry verge installation and existing roof coverings.

005 Ensure wet ridge and wet verge Works are compatible with the existing wet ridge and wet verge installation and existing roof coverings.

Underfelt

006 Lap roof tile underfelt a minimum 150mm or length as stated in the manufacturer's technical data sheet at horizontal and vertical joints over adequately supporting members. Underfelt should be sealed at penetrations through the roof and at the ridge to accommodate high level void ventilation.

BS5534:2014+A1:2015 British Standard Code of Practice for slating and tiling provides additional guidance for the appropriate detailing of roofing components and should be followed when installing underfelt

007 On timber structures use only inodorous sheathing felt or proprietary underlay as specified by the manufacturer as underfelt for copper, lead and zinc roofing in a accordance with BS EN 13707:2013

Battens

008 For the tile battens use good quality deal, reasonably free from knots, clean and with no waney edges and in accordance with BS EN 1313-1:2010 impregnated with an appropriate wood preservative before delivery to the Property, as specified under the "Woodwork" Section. Tile battens and counter battens to comply with BS 5534:20+A1:2015

009 Fix battens with staggered joints and square butt jointing.

Wood rolls

010 For wood rolls for copper, zinc or aluminium roofing use wrot seasoned timber to a tapered profile shown in Code of Practice 143:5/12/15. Use common rolls approximately 45 x 40mm overall unless otherwise Instructed by the Client.

011 For wood rolls for lead roofing, use wrot seasoned timber to the smooth rounded profile shown in BS 6915:2001+A1:2014. Use common rolls approximately 45 x 45mm with a 25mm wide flat base unless otherwise Instructed by the Client.

Mortar

012 Use cement mortar (1:3) for bedding and pointing as described in the "Brickwork and Blockwork" Section, but slightly tinted in colour and specially mixed for the purpose.

Nails

013 Use galvanised steel clout nails for underlay and battens in compliance with BS 1202-1:2002. Use the right size nails for battens to give a secure fixing without splitting the batten. For slates and tiles use aluminium alloy, to BS1202-3, copper to BS1202-2, or silicon bronze nails to BS 5534 or other nails Approved by the Client.

015 Use copper jagged or ring shank nails, at least 20mm long with large flat heads for lead roofing.

Clips

015 Where roofing slates or tiles are described as fixing with clips, use lead or copper clips, approx. 300mm long x 20mm wide. Fix them to the roof batten beneath the slate or tile and bend them up and over the bottom edge of the slate or tile. Use aluminium alloy to BS 5427-1:1996 or stainless steel clips to BS 5534 for slates.

Steel hook bolts and nuts

016 Steel hook bolts for fixing corrugated sheets are to be cadmium or zinc coated steel bolts with plastic sleeves and washers to a standard and quality Approved by the Client 4154. Ensure the bolt profile and size suits the sheets and roof members.

Steel roofing screws

017 For corrugated sheets use galvanised roofing screws complete with plastic sleeves and washers to a standard and quality Approved by the Client 1494. Use an appropriate length of nail to suit the application.

Plywood decking for flat roofs

018 Ensure plywood sheets are exterior quality bonding grade WBP to comply with the to a standard and quality Approved by the Client.

Woodwool slab decking for flat roofs

019 Where appropriate, reinforce woodwool slabs to comply with BS EN 13168:2001 with pressed steel channels. Use galvanised steel large flat headed nails as fixings for the slabs of a length to suit the application of galvanised steel clips to BS EN ISO 3834-1:2005 or such other fixings as the manufacturer of the slabs recommends.

Wood chipboard decking for flat roofs

020 Ensure chipboard conforms to BS 5669 and is of an appropriate moisture resistant grade suitable for the purpose and fix it with galvanised nails to comply to BS 120201:2002 or screws to a standard and quality Approved by the Client 1210 of an appropriate size and gauge.

Lead

021 Use best milled lead for lead roof coverings in accordance with BS EN 12588:2006 , flashings, soakers, rainwater chutes, valley gutter linings, hips, ridges and the like. Provide tacks minimum 40mm wide of the same lead substance at not more than 1 metre centres to flashings.

Self adhesive flashings

022 Use self adhesive flashings in strict accordance with manufacturer's recommendations and only with the Approval of the Client.

023 Fix self adhesive flashings over existing flashing and fillets. Apply an appropriate primer before use to ensure complete adhesion and in strict accordance with manufacturer's recommendations.

Asphalt roofing

024 Use as rubbing sand clean natural coarse sand passing a 600mm micron test sieve.

025 For chippings use hard light coloured non-absorbent natural stone graded 6 to 10mm.

026 Use solar reflective paint.

027 Ensure asphalt roofing subject to traffic is to BS 6925:1998 Type R988 undercoat with finishing coat to to a standard and quality Approved by the Client 1447.

028 Use glass fibre tissue for the isolating membrane for roofing subject to traffic.

High performance felt roofing

029 Apply high performance felt roofing from an approved manufacturer to suit the relevant sub-surface and applied in strict accordance with the manufacturer's technical data sheet.

High performance "torch on" felt roofing

030 Prepare and apply high performance "torch on" felt roofing from an approved manufacturer to suit the relevant sub- surface and applied in strict accordance with the manufacturer's technical data sheet.

Bitumen primer

031 For felt roofing, use cut back bitumen primer with a maximum volatile solvent 60% by weight and Redwood No. 2 viscosity at 21^0 Centigrade 25 sec maximum.

Bitumen compounds

032 For felt roofing, use a bitumen bonding compound having a penetration of 20/30 at 25^0C and a softening point (R & B) of $80/100^0$ Centigrade. For the dressing compound use cut back bitumen to BS EN 12591:2009. Use cold compounds dressing for bonding solar reflective chipping only with the Approval of the Client. Ensure the bitumen coating for lead, copper or zinc roofing is a black coating solution to BS 3416:1991.

WORKMANSHIP

Roof tiling

033 Lay roof tiling in accordance with BS 5534 -1 and BS 8000-6:2013 and in even courses to suit the existing gauging and laps. Secure tiles with the appropriate patent clips and/or nails. Head nail tiles with two nails in every tile.

034 Form eaves with a double course of tiles.

035 Form verges with tile and a half in alternate courses including any undercloak and pointed in cement mortar to match the existing mortar. Ensure there are no exposed cut edges of tiles.

Roof slating

036 Close joint natural slate roofing with horizontal and alternate vertical joints ranging through perfectly straight.

037 Head nail slates with two nails to each slate in every course. Secure slates to eaves, verges, ridges, hips, valleys and abutments with two nails to each slate. Ensure there are no exposed cut edges of slates.

038 Form eaves with double course of slates.

039 Form verges with slates and slate and a half slates in alternate courses including any undercloak and bedded, jointed and pointed with mortar, tinted to match the colour of the slates. Ensure there are no

exposed cut edges of slates.

040 Ensure ridges and hips are of the type stated in the Schedule of Rates. Bed, joint and point ridge and hip tiles with mortar tinted to match the colour of the tiles or slates.

Fibre cement sheet roofing

041 Where appropriate, incorporate end and side lap sealing strips in fibre cement sheet roofing to BS 8219:2001+A1:2013.

Galvanised steel

042 Lay galvanised corrugated sheeting in accordance with Code of Practice 143 section 4 to allow slight movement between the structural frame and sheeting. Lap all sheets 150mm at the ends and two corrugations at the sides.

Reinforced plastics

043 Where specified use reinforced corrugated plastic sheets in limited areas in association with roof sheeting of another Material. Lap at the ends and sides, as for the main roofing material, and seal with Approved woven fibre sealing strip.

Fixing sheets

044 Secure the sheets to steel with galvanised steel hook bolts and nuts, and to timber with galvanised steel roofing screws. Do not drill steelwork.

Holing sheets

045 Drill sheet fixing holes through the crown of the corrugations 1.5mm larger in diameter than that of the bolt or screw shank.

Safety precautions

046 Prevent unauthorised persons having access to the area below the roof whilst corrugated sheet roofing is under construction. Do not allow any person to go on to roofing without using crawling boards.

Insulation

047 Butt joint insulation quilts and lay them up to wall plates, leaving sufficient space to maintain adequate ventilation of the roof space. Lay the quilt under electrical cables and over horizontal pipes wherever possible. Do not lay quilt under water storage tanks. Bag quilts to hatches in polythene and securely fix them to the hatch. Insulation to be turned over eaves.

General

048 Clear all debris resulting from roof Works from all gutters.

Leadwork

049 Ensure sheet lead Works are undertaken by skilled leadworkers in accordance with Lead Development Association recommendations and in accordance with BS 6915:2001+A1:2014. Do not use solder without the approval of the Client. Undertake close and open nailing with copper nails at 25mm and 75mm centres respectively. Do not use lead pieces larger than 3.00m in length or 2.20m2 in area.

050 Ensure laps to finishings are no less than 100mm.

Lead flashings

051 For flashings use milled sheet lead to comply with BS EN 12588:2006 and shall be in accordance with BS 6915:2001+A1:2014.

052 Dress lead flashings to the appropriate profiles without reducing the thickness of the lead sheet.

053 Turn the top edges of all cover flashings 25mm into grooves chased or cut into brick, blockwork or other cladding material, securely wedged and pointed with low modulus silicone mastic in brick, block, masonry and concrete and in other cladding where appropriate.

Asphalt roofing

054 Lay asphalt roofing generally in accordance with BS 8217:2005 and the recommendations and publications of the Mastic Asphalt Council. Lay underlay loose and with 50mm laps.

055 Lay asphalt roofing in two coats with 150mm laps. Properly bond it to the edges of existing sound sphalt and unless otherwise Instructed by the Client maintain all existing planes. Provide fillets 50mm on the face at all internal angles. Unless otherwise instructed by the Client, ensure that the asphalt surface finish matches the existing surface.

Felt roofing

056 Roofing felt to comply with BS 8217 unless otherwise specified or guided. Immediately seek Instructions from the Client if, when removing any defective felt, the base is found to be defective or unsuitable in any way to receive the new felt and that repair of the base is outside the scope of the Order.

057 Lay felts in the direction of the roof gradient with 75mm side and 100mm end laps, and breaking joints between layers. Apply a well-brushed priming coat to all concrete and screed base surfaces. Other than where the Order is for Emergency Works, allow 24 hours to elapse before laying the felt.

058 Partially or fully bond the first layer of felt to the base, with bonding compound heated in thermostatically controlled kettles, to a temperature not exceeding 215^0 Centigrade, but sufficient to provide a 200^0 Centigrade laying temperature.

059 Effect any partial bonding system by spot, strip or frame bonding the first felt layer with hot bonding compound.

060 Fully bond the perimeter of the roof for a width of 450mm, leaving 150mm wide ventilation channels at appropriate centres.

061 Effect a fully bonded system by applying a continuous even coating of hot bonding compound to the base at the rate of 1.5kg/m2. Apply the first layer of felt to provide a complete bond excluding all trapped air.

062 Bond subsequent felt layers to match the underlayer excluding all trapped air. If any air bubbles become apparent in the Works, cut back and renew the felt.

Torch on felt roofing

063 Ensure the existing roof is clean and dry. Cut out and patch blisters, nicks etc. If necessary, prime the surface and allow it to dry. Lay sheeting with 75mm side and 100mm end laps. Apply flame to the lower surface directed at the junction with the substrate so as to melt the adhesive across the roll width. Unroll felt onto the molten bitumen and press down firmly. Seal laps with wide bladed scraper and seal the plain finish (not mineral surface) by applying heat from above.

Asphalt coverings to balconies and walkways

064 Lay asphalt to balconies and walkways in accordance with BS 8218:1998 and the recommendations and publications of the Mastic Asphalt Council. Lay underlay loose and with 50mm laps.

065 Use a glass fibre tissue isolating membrane Approved by the Client.

066 Use bitumen coated 'plain expanded' steel lathing of a minimum 26 swg and a minimum 10 mm short way of mesh.

067 Use a high bond primer as Approved by the Client.

068 Use oxidised bitumen suitable for applying hot as bitumen based bonding compound for bonding vapour barriers and for general bonding purposes.

069 Use clean natural coarse sand passing a 60 micron test sieve for rubbing sand.

070 For chipping, use hard light coloured non-absorbent natural stone graded 6 to 10 mm/nominal 14 mm single size 6.

071 Use cut back bitumen or a suitable cold applied bitumen based adhesive as a dressing compound for chippings.

072 Use a reputable proprietary brand of solar reflective paint Approved by the Client.

073 For aluminium edging, use a proprietary section profiled to suit asphalt manufactured from aluminium.

074 Asphalt concrete to be laid and compacted in accordance with BS 594987:2015

075 Hot rolled asphalt is to be transported, laid, compacted and tested to BS 594987:2015

Client's current manufacturers/suppliers/products

076 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	**Brand name**	**Manufacturer's details**

[complete table as appropriate]

CARPENTRY AND JOINERY

CARPENTRY AND JOINERY

GENERAL

Generally

001 Where necessary cut out for butts/hinges when replacing door or window frames/linings or piecing in new timber.

002 Note that all sawn timber sizes quoted in the Schedule of Rates are nominal sizes.

003 Stain or prime and undercoat all prepared timber all round before fixing, as described in the "Painting and Decorating" Section.

004 Comply with the "Painting and Decorating" Section where Works include items being painted, decorated, stained, touched up or prepared for decoration. Match the finish and type to the existing or surrounding finish as appropriate.

005 Where painted skirtings and architraves are specified, at the Service Provider's option use an MDF equivalent where this is Approved by the Client.

006 Match any purpose made items (when specified) to the existing items as far as possible.

MATERIALS

Timber

007 Use only suitable, sound, well conditioned, properly seasoned timber that is free from any defects making it unsuitable for its intended purpose.

008 Level and pack all structural timber. Structural timber shall comply with BS 5268: Part 2 and Part 3. The dimensions of a timber floor, ceiling or roof member may be determined by the guidance given in "Eurocode 5 span tables for solid timber members in floors, ceilings and roofs for dwellings" published by TRADA Timber for floors and roofs shall comply with BS 8103-2:2013. Strength classes, species, grades and species combinations referred to be as defined in BS EN 1995-1-1:2004+A2:2014..

009 Cross sectional dimensions are to be either basic sawn or regularised sizes as defined in BS EN 1313 -1. Trussed rafter roofs are to be braced to BS 5628: Part 3. Structural timber shall be C16 or C24 grade timber to comply with loadings and spans as set out in Approved Document A of the Building Regulations, 2010 (amended 2013). The section sizes shall be in accordance with tolerance class 1 of BS EN 336, or are CLS/ALS processed sizes in accordance with tolerance class 2 of BS EN 336.

Graded Softwood for Structural Use:
- Stress graded to BS 4978:2007+A1:2011 or other national equivalent and so marked.
- Strength class to BS EN 1995-1-1:2004+A2:2014.

010 Trussed Rafters generally are to be designed and fabricated to BS EN 1995-1-1:2004+A2:2014, truss members shall be 44mm (minimum) finished thickness, ceiling ties and top chord members shall have 97mm finished depth, all trussed rafters shall be nail plate connected

011 Softwood for use with leadwork shall be planed, free from wanes, pitch pockets, decay and insect attack except pinhole borers, with a moisture content of not more than 22% at time of covering.

012 Cross section dimensions of timber shown on drawings are nominal sizes unless stated otherwise. reduction to finished sizes of planed/regularized timber to be to BS EN 1313-1:201.

013 Moisture content of timber at time of erection to be:
- Structural timber 20% + or - 2%, kiln dried.
- Fascias barge boards and the like 18% + or - 2%.

014 Keep timber dry and do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing. Store timber and components under cover, clear of the ground and with good ventilation. Support on regularly spaced, level bearers on a dry, firm base. Open pile to ensure free movement of air through the stack. Arrange sequence of construction and cover timber as necessary during and after erection to ensure that specified moisture content is not exceeded. Keep trussed rafters vertical during handling and storage

Preservative treatment of timber

015 Treat softwood described as "treated" or "impregnated" before delivery to the Property with either:
- an appropriate preservative under vacuum-pressure with an average net retention of at least 4kg of dry salts per cubic metre; or
- an organic solvent type preservative giving an overall retention of 16Kg of solution per cubic metre of timber.
- Generally - Structural Timber, Fencing and the like:
- Timber shall be treated by water-based CCA process.
- Where subsequent cross-cutting or boring of the treated timber cannot be avoided all exposed surfaces shall be liberally swabbed with a proprietary and grain timber preservative to maintain the integrity of the protective system.
- All treated timber shall show only negligible dimensional change or distortion, otherwise it will be rejected.
- The end use of timber must be quoted by the Service Provider to the treatment company.
- A certificate of treatment to cover all timbers processed shall be supplied by the treatment company to the Service Provider.
- A certificate of treatment shall be supplied by the Service Provider for each batch of timber treated.

Fixings

016 Framing anchors are to be galvanised steel, fixed securely using not less than the number of nails recommended by the anchor manufacturer. Nails to be not less than 30mm x 3.75 mm galvanized or sherardized square twist unless recommended otherwise.

017 Truss clips are to be galvanised steel, fixed securely with 32mm x 3.5mm galvanised square twisted nails in every hole.

018 Anchor straps are to be galvanised steel, fixed securely to timber with three 30mm x 3.75mm galvanized nails and to masonry with four 50 mm x 8 gauge galvanised screws evenly spaced.

019 Lateral restraint straps are to be galvanised steel, ensure that cranked end is in tight contact with cavity face of wall inner leaf and is not pointing upwards. Fix noggings and packs beneath straps which span joists/rafters/ties running parallel to wall, noggins and packs to fit tightly and be not less than three quarters of joist/rafter/tie depth. Notch joists so that straps fit flush with surface. Do not notch rafters/ties. Fix straps to joists/rafters/ties with seven 50 mm x 1½ mm gauge galvanised countersunk screws, evenly spread.

020 Bolts and nuts shall be cup square with large washers and nuts, and comply with BS 4190:2014. - Washers shall comply with BS 4320, 1968.

021 Expanding bolts shall be Grade A4 stainless steel and shall be of a type to suit the purpose for which they are required, Fixed security in position in accordance with manufacturers technical data sheet.

022 Canopy cleats are to be galvanised steel, fixed securely to timber with 50mm x 1½ mm galvanised screws.

023 Retaining strap to be galvanised steel, with site applied bituminous paint coating, and bedded securely in mortar.

024 Expanded metal fixing strip to be galvanised expanded metal lathing to BS EN 13658-1:2005 zinc coated and fixed securely by building into position.

025 Fastenings for materials and components forming part of external construction to be of corrosion resistant material or have a corrosion resistant finish.

026 Fastenings for materials and components, forming part of external construction but not directly exposed to the weather to be of corrosion resistant material or have a corrosion resistant finish, directly exposed to the weather to be of corrosion resistant material.

027 Cartridge operated fixings are not to be used without the permission of the Client. Tools to be manufactured to BS 4078-2:1989 and Kitemark certified. Fasteners, accessories and consumables to be types recommended by the tool manufacturer. Operatives to be trained and certified as competent by tool manufacturer. Ensure that operatives take full precautions against injury to themselves and others. Shot fixing: is to give secure fixing at 750mm centres.

Nails, etc

028 Use sheradised nails for fixing joinery having an external exposed face in accordance with BS 1202-1:2002, punched in below the surface and filled with an approved filler.

Joinery Timber

029 Softwood planed finish joinery timber which will be exposed to view shall be European Redwood, class J10 of BS EN 942:2007.

The following defects shall not be permitted: pith shown on the surfaces; sloping grain exceeding one in eight; checks, splits and shakes in excess of those permitted by class J10 of BS EN 942:2007; knots, excepting isolated sound tight knots of less than 20 mm diameter; any evidence of beetle attack or decay. Softwood not exposed to view will be accepted with minor defects with the exception of active beetle attack or decay.

030 Where hardwood is specified, use the specified hardwood suitable for the purpose, un-replenishable tropical hardwoods are not to be used

031 Tongued and grooved floorboarding is to comply with BS 1297

032 Ensure the moisture content in:
- internal joinery is no more than 12% (8% if the Property is central heated); and
- external joinery is no more than 18%.

Plywood, blockboard, particleboard, hardboard etc.,

033 Plywood panel products for structural use shall conform to BS EN 13986:2004+A1:2015 and BS EN 636:2012+A1:2015. for designs to BS EN 1995 plywood may be selected from those listed in BS EN 1995-1-1:2004+A2:2014 or shall have certification from a suitable body such as the Agrément board.

034 Marine plywood shall comply with BS 1088-1:2003, marine plywood manufactured from selected untreated tropical hardwoods

035 Plywood designed to BS EN 1995-1-1:2004+A2:2014 shall be subject to the quality control procedures of one of the organisations listed in that standard, or to the controls listed by the certification body.

036 The specification for plywood shall state the following information where appropriate:
- type
- Standard
- grade
- Species
- nominal thickness
- number of plies
- finish (sanded/unsanded)

037 Plywood exposed to the weather shall have no open defects (e.g. checks, knots, holes, splits) on the exposed face(s) unless it is used only for a temporary application such as hoarding.

038 Prior to receiving a painted finish, plywood shall be adequately sanded.

039 All cut edges that may be subject to weather exposure shall be sealed with a suitable sealant or applied finish; typically these shall be one of the following:
- Special sealing compounds, such as pitch epoxy
- non-setting mastic, where the plywood is set in frames.
- timber beading bonded with suitable adhesives.

040 In construction the following procedures shall be observed:
- lower edges of boards shall be bevelled to promote shedding of water.
- plywood used as infill panels shall be fully painted before installation and/or assembly.
- cavities behind boards shall be adequately ventilated and drained to allow dispersal of moisture.
- clearance shall be allowed at selected joints to allow free drainage of water.
- plywood junctions with masonry shall provide adequate clearance to allow drainage, prevent capillary absorption of water and provide enough space for maintenance of edge sealing.
- the bottom edges of boards shall stand well clear of flashings, roof coverings, sills, and the ground.
- exposed and/or inadequately protected fixings shall be of non-ferrous metals and have adequate corrosion resistance.

041 WBP sanded and unsanded finished plywood is to be in accordance with BS EN 635-1-1:1995

042 Oriented strand boards shall be in accordance with BS EN 300:2006

043 Particleboards shall be in accordance with BS EN 312:2010, for chipboard flooring, use the appropriate waterproof moisture resistant grade suitable for the purpose.

044 Hardboard shall be to BS EN 622-2:2004. Ensure hardboard used to form bath panels has an enamelled surface.

045 Ensure all blockboard is to be to a standard and quality Approved by the Client, laminboard used is five-ply and veneer is of the specified species of timber (but where none is specified, it is an appropriate species of timber).

Priming

046 Prime timber in accordance with the finish coat specification. Use a primer recommended by the manufacturer of the surface coating.

Preservative treatment of timber

047 Treat softwood described as "treated" or "impregnated" before delivery to the Property with either:
- an appropriate preservative under vacuum-pressure with an average net retention of at least 4kg of dry salts per cubic metre; or
- an organic solvent type preservative giving an overall retention of 16Kg of solution per cubic metre of timber.

048 Generally - Structural Timber, Fencing and the like, shall be treated by water-based CCA process,
- Where subsequent cross-cutting or boring of the treated timber cannot be avoided all exposed surfaces shall be liberally swabbed with a proprietary and grain timber preservative to maintain the integrity of the protective system. All treated timber shall show only negligible dimensional change or distortion, otherwise it will be rejected. The end use of timber must be quoted by the Service Provider to the treatment company.
- A certificate of treatment to cover all timbers processed shall be supplied by the treatment company to the Service Provider. A certificate of treatment shall be supplied by the Service Provider for each batch of timber treated.

Generally - Joinery Components, Fascias and the like, shall be treated by spirit based double vacuum process and shall be machined to it's final dimensions before treatment and then assembled. All treated timber shall show only negligible dimensional change or distortion, otherwise it will be rejected.

049 Treat ground contact timber before delivery to the Property with an appropriate preservative under vacuum pressure with an average net retention of at least 5.4Kg dry salts per cubic metre of timber.

050 Cut timbers to their final dimensions before impregnation. Where this is not possible, liberally swab any sawn or cut faces or borings with an appropriate preservative from the impregnation plants.

051 After treatment, carefully open-stack the timber in a well ventilated covered space to enable surplus solvent in the preservative to dry out by evaporation. Ensure all treated timber is dry before incorporation in the Works.

052 Allow items of carpentry timber treated with an appropriate preservative a minimum of 3 weeks air drying period following treatment and before fixing. Allow joinery timbers similarly treated a minimum of 6 weeks air drying following treatment and before fixing.

053 Provide a copy of the relevant Preservation Treatment Certificate to the Client.

Adhesives

054 Ensure adhesives for:
- exterior use are synthetic resin type WBP; and
- interior use are synthetic resin type of moisture resistant durability ("MR").

Timber fillers for rotted woods

055 Ensure timber fillers for rotted softwoods and hardwoods are a complete system appropriate for the type of wood.

Storage of material

056 Protect joinery from the weather during transit. At all times before fixing, both before and after priming, store it under cover and clear of the ground.

Door frames and linings

057 Ensure external door frames without cills have 12.5mm diameter x 100mm long galvanised steel dowels housed into the bottom of each leg leaving 50mm projecting. Ensure the frames for fire resisting doors are of a type Approved by the Client. Ensure frames for half hour doors have 25mm minimum stops.

Doors generally

058 Note that fire door ratings in the Schedule of Rates are shown in hours. Ensure the integrity of the door achieves this when fitted to a frame with or without intumescent strips.

059 Ensure all external doors (other than flush doors) are from solid timbers. Do not use veneers or laminations.

Ledged and braced doors

060 Ensure ledged and braced doors consist of 3 No. 150mm x 25mm horizontal ledges with bevelled edges, 125 x 25mm, parallel braces and 100 x 25mm tongued and grooved and V-jointed matching with:
- the braces being obliquely jointed to the ledges with their lower ends adjacent to the hanging side of the door;
- each board being nailed to the ledges and braces using at least 2 No. nails 50mm long at each ledge and one at each brace;
- the ends of ledges being screwed back to the match boarding from inside and stopped in;
- all timber being primed before the door is assembled; and
- the end grain being primed with two coats of aluminium primer.

Framed, ledged and braced doors

061 Ensure framed, ledged and braced doors consist of 100 x 50mm stiles and top rail, 175 x 38mm middle and bottom rails, 100 x 38mm braces and 100 x 19mm tongued and grooved V-matching with:

- the top rail being haunched, morticed and tenoned to the stiles;
- the middle and bottom rails being bare faced, morticed and tenoned to the stiles;
- the top rails grooved to receive the tongues of the tongued and grooved V-jointed matching;
- the braces being stub tenoned into the rails and stiles;
- the tongued and grooved V-jointed matching being secured to the rails and braces by lost head nails hammered in from the faces;
- all joints being jointed with WBP glue to standard and quality Approved by the Client;
- all boarding and timber faces covered being primed before assembly including all rails, grooves and matching;
- the end grain being primed with aluminium primer;
- the frame being securely cramped;
- all mortice and tenon joints being secured with hardwood wedges well driven home; and
- the whole being assembled perfectly square and free from winding.

Flush doors

062 Ensure internal flush doors consist of a skeleton or honeycomb core, lipped on two stiles with hardwood strips.

063 Ensure external flush doors are faced on both sides with 6mm external quality resin bonded plywood, for painting or staining to BS EN 927-1 on a solid core. Provide glazing apertures with a rebated, sunk and rounded Utile cover mould and Utile hardwood glazing beads with mitred angles. Ensure the glazing cover piece and beads are no less than that required by the relevant European or British Standard for glazed apertures.

Half-glazed flush doors

064 Ensure the opening for glass in doors described as half-glazed:

- extends the full width between stiles; and
- is at least 680mm high.

065 Ensure:

- glazing apertures are provided with a rebated, sunk and rounded Utile cover mould and Utile hardwood glazing beads with angles mitred; and
- the glazing cover piece and beads are no less than that required by the relevant European or British Standard for glazed apertures.

Panel doors

066 Ensure panel doors:

- are jointed with mortice and tenon joints and WBP glue;
- have ply panels that are a minimum of 6mm thick external quality WBP plywood for painting or staining; and
- have the joint between the ply, stiles and rails sealed at the time of assembly with primer.

Fire check flush doors

067 Ensure fire check flush doors are to the fire rating specified in the Schedule of Rates.

Windows

068 Provide timber windows with a 30 (thirty) year guarantee. Ensure steel windows are galvanised. Provide timber surrounds for steel windows as Approved by the Client.

PVCu doors and windows

069 Ensure all PVCu windows and doors are:
- constructed from high impact modified PVCu; and
- manufactured from base materials guaranteed against decomposition and for colour fastness for a minimum of 10 (ten) years.

070 Guarantee the fabrication of all PVCu frames and sashes against failure of welds, mechanical joints etc., for a minimum of 10 (ten) years.

071 Guarantee double glazed units against failure of the unit for a minimum of 5 (five) years.

072 Guarantee mechanisms against failure of the unit for a minimum of 5 (five) years.

073 Protect PVCu items against damage during the course of fixing.

074 Ensure windows provided can be opened to allow a secure trickle ventilation.

075 Ensure the accurate measurement of the Works and correct any measurement errors.

076 Ensure all window frames show a 65mm face on the outside of the frame.

077 Construct doors from a profile with a minimum of 100mm width showing face.

078 Ensure doors:
- are double panelled type 2XG or 2XGG;
- have the top panel double glazed in toughened glass;
- have a bottom panel similarly double glazed or PVCu skinned/foam sandwich with PVCu frame; and
- have the panels screwed and wedged.

079 Use door and window furniture suitable for the doors and windows, Approved by the Client that meets the following requirements:
- door locks and furniture comprise:
- 1½ pairs of heavy duty hinges;
- cylinder lock;
- letter plate - white plastic gravity type (front doors only);
- 1 No. heavy duty multi-point lift lever espagnolette locking system with return lever handle action to horizontal position when locked;
- lever handles;
- numerals (front doors only);
- stormproof cill/threshold with integral weather seals; and
- rain deflector/weatherboard;
- turn tilt windows have:
- a key operated 'tilt barrier' Approved by the Client;
- child locks, where the windows are fitted on or above the first floor level; and
- a switch barrier; and
- casement windows (outward opening) have:
- friction hinges with espagnolette fittings and locking furniture on all opening windows irrespective of configuration; and
- child locks, where the windows are on or above the first floor level.

080 Ensure door and window furniture is SAA or brass finished as Approved by the Client or as specified on the Order.

081 Use only PVCu windows/doors Approved by the Client unless specified on the Task Order.

Sealant

082 For pointing around window and door frames use sealants:
- to BS EN ISO 11600:2003+A1:2011 Type B with fungicide;
- coloured to match existing; and
- that are suitable for sealing to timber, aluminium and PVCu windows and doors, as applicable.

083 Silicone sealant to BS EN 11600:2003+A1:2011 Type B with fungicide

Combustion air grilles

084 When repairing or renewing items which incorporate combustion air grilles:
- use either the salvaged air grille (if it is in sound condition) or combustion air grilles as Approved by the Client; and
- ensure apertures are maintained in the repair or renewed items.

Fibre cement insulating board

085 Use insulating board that is asbestos free and has a sanded finish.

Boards and panels

086 Do not use cross joints in board coverings.

PVCu fascias/soffits/cladding and components

087 Ensure PVCu fascias, soffits, cladding and components are:
- cellular PVCu with a low density (closed cell) core and homogeneous skin;
- with self coloured, smooth, semi-matt finish;
- of sections and profiles Approved by the Client.

Architraves, reveal linings, window boards and mouldings

088 Ensure replacement items match the existing (which may be of varying profiles and shapes). Where painted softwood skirtings and architraves are specified, at the Service Provider's option use an approved MDF equivalent where Approved by the Client.

089 PVCu cill board is to be bull nosed or square edged, manufactured from low density cellular (closed cell) core and homogeneous impact resistant skin of PVCu in accordance with BS 7619:2010 UV stability and UV aged impact, resistance requirements.

Cill board to be maximum 155mm wide and minimum 9mm thick.
Weight: Average density 500 kg/m3.
Tolerance deviations of: +/-12.5% per m, width +/- 1.5mm, thickness +/- 0.5mm.
Flatness: Must not exceed +/- 0.6mm over 100mm. Linear thermal expansion of less than 7mm x 10.5 dgs. C.
Tested in accordance with BS 4370-3:1988 Method 13. Fire Resistance:
Satisfy the requirements of BS 476-7:1997 Class 1 Surface spread of flame and BS 476-6:1989+A1:2009 Index 1 = 15.4 Fire propagation. Colour Fastness: In accordance with British Standard.
Water Absorption: Less than 1.0% when tested in accordance with BS EN ISO 62:2008.
Appearance: Self-coloured smooth gloss finish. Method of Fixing: As specified by manufacturer. Generally proprietary brand of adhesive or low modulus silicon. Edge Trims: Matching colour. Single part PVCu trims as per manufacturers details and fixed in accordance with manufacturers' instructions.

Polythene vapour barrier

090 For a polythene vapour barrier use a type of sheet Approved by the Client and fixed with all joints lapped and made with double folds and taped.

Ironmongery

091 Carefully wrap and protect ironmongery until completion of the Works. Either replace with new or re-lacquer any defaced or damaged ironmongery as Instructed by the Client.

092 Use screws to BS EN 14566:2008+A1:2009 of a suitable gauge and Material for the purpose and to match the article to be fixed.

093 Lubricate locks, etc., with graphite and leave them in perfect working order on completion of the Works. Properly label and deliver up all keys to or as Instructed by the Client.

094 Use black japanned tee hinges and Suffolk latches.

095 Ensure that letter plates comply with the Royal Mail's minimum size standards in accordance with BS EN 13724:2013. Ensure letter plates provided in fire doors conform to the fire rating of the door.

096 Unless the Task Order states otherwise provide all ironmongery to new, renewed or replacement timber doors in accordance with the following:
for external front doors:
- 1½ pairs 100mm heavy duty steel butt hinges;
- 1 No. cylinder security night latch with latch pull;
- 1 No. 65 or 75mm 5-lever mortice deadlock and keep;
- 1 set escutcheons;
- 1 No. letter plate - gravity type;
- 1 No. security door chain;
- stormproof cill/threshold with integral weather seals;
- rain deflector/weatherboard;
- intumescent seals (fire doors only); and
- door numerals;
- for external rear doors:
- 1½ pairs 100mm heavy duty steel butt hinges;
- 1 No. 100mm 5-lever mortice lock/latch and keep;
- 1 set lever furniture/handles;
- 2 No. mortice security bolts;
- stormproof cill/threshold with integral weather seals;
- rain deflector/weatherboard;
- Intumescent seals (fire doors only); and
- door numerals;

for internal doors:
- 1 pair 75mm medium duty steel butt hinges (1½ pair heavy duty hinges for
- firecheck doors);
- 1 No. 65 or 75mm tubular mortice latch and keep;
- 1 set lever furniture/handles; and
- intumescent seals (fire doors only);
- for bathroom/wc doors:
- 1 pair 75mm medium duty steel butt hinges (1½ pair heavy duty hinges for
- firecheck doors to communal W.C's and bathrooms opening onto a means of escape);
- 1 No. 65 or 75mm mortice bathroom lock/latch and keep;
- 1 set lever bathroom furniture/handles with snib/indicator;
- intumescent seals (fire doors only); and

for external matchboarded doors:
- 1 pair 457mm steel tee hinges;
- 1 No. rim lock and keep; and
- 1 set knob furniture.

097 Ensure all door furniture is SAA or brass finished as Approved by the Client or as specified on the Order.

Kitchen units/worktops

098 Ensure kitchen units are manufactured to meet strength specification level 'H' and have fully repairable carcassing.

099 Ensure worktops are manufactured using laminated moisture resistant chipboard core and are consistent with existing worktops. Ensure all post-formed worktops are constructed using particleboard with minimum 'P5' classification (but if 'P5' is not obtainable construct only square edge and double post-formed worktops using particleboard with minimum 'P3' classification).

100 Ensure metal fittings and screws (to BS EN 14566:2008+A1:2009) used in manufacture are plated against corrosion. Use metal corner gussets as fixing posts.

101 Take all necessary precautions to protect units and worktops from damage. Either make good any damage caused or replace Materials as Instructed by the Client. Ensure that, when fitted, all doors and drawers operate smoothly.

102 Where existing fixing holes cannot be used for hinges, use a steel cabinet strengthening plate, fixed four times to the unit and hinges fixed with self- tapping screws to the plate.

Chrome supporting leg

103 Ensure the worktop supporting leg is 30mm in diameter chrome plated and fixed to the worktop and floor with retaining plates and screws.

104 Aluminium square edge worktop end trim to BS EN 515:1993, fixing with aluminium screws; bedding in silicone sealant.

105 Aluminium insert junctions to BS EN 515:1993, bedding in silicone sealant.

106 Aluminium and rubber clip on cover beads to standard and quality Approved by the Client, fixing with aluminium screws.

107 Chrome cover fillets of an approved type and manufacture, bedding and twice pointing in silicone sealant.

Handrails etc.,

108 Handrail brackets are to be cast aluminium or mild steel and fixed securely to timber with appropriate screws, finish: as specified.

109 Fixing brackets are to be galvanised steel to comply with BS EN 912:2011, fixed securely to timber frame with three 30mm x 1½ mm galvanised screws.

110 Newel brackets are to be galvanised steel, fixed securely with bolts

111 Aluminium angle bearers are to comply with BS EN 515:1993, 6063tf standard, anodised finish to BS 3987, 1991, fixed securely to floor with galvanised steel screws.

WORKMANSHIP

Generally

112 Ensure carpentry work is framed and put together in a substantial and workmanlike manner.

113 Ensure joinery work is accurately set out, framed and executed in accordance with manufacturer's drawings and finished off in a workmanlike manner.

Put together purpose made doors and other framed work immediately upon the general work being commenced, but do not glue and wedge them until the joinery is prepared in readiness for immediate fixing.

114 Finish off machine planning and moulding smooth by hand.

115 Ensure exposed faces of joinery are wrought and all arises slightly rounded.

116 Punch and putty nails and pins in exposed work.

Plugging

117 Note that in this Section 'plug', 'plugged' or 'plugging':
- means fix to concrete, brickwork or blockwork and similar surfaces;
- includes supplying and fixing with proprietary fixings; and
- includes shot fired fixing,.

118 For bolted joints, locate holes accurately and drill to diameters as close as practical to the nominal bolt diameter and not more than 2 mm larger, place washers under all bolt heads and nuts which bear directly on timber, - tighten bolts so that washers just bite the surface of the timber and at least one complete thread protrudes from the nut. Check at agreed regular intervals up to practical completion and tighten as necessary to prevent slackening of joints.

119 Ensure that wall plates are positioned and aligned to give the correct span and level for trusses, joists, etc. Wall plate to be fully bedded in fresh mortar in lengths of not less than 3 m with half lap joints. Wall plates shall be treated with CCA preservative

120 Installing joists generally, position at equal centres not exceeding designed spacing and true to level. Install bowed joists with positive camber. Bed hangers directly on and hard against supporting construction, do not use packs or bed on mortar. Cut joists to leave not more than 6 mm gap between ends of joists and back of hanger, rebate joists to lie flush with underside of hangers, fix joists to galvanised steel hangers with a nail in every hole, hanger size to suit joist, design load and crushing strength of supporting construction.

121 Trimming openings when not specified otherwise, trimmers and trimming joists to be not less than 25 mm wider than general joists.

122 When installing trussed rafters, carefully inspect each truss before erection to ensure compliance with shop drawings and specification, including grades and sizes of members, types, sizes and positions of nail plates, - gaps between ends of members at joints, and full penetration of nails.

Erect trusses plumb, at equal centres not exceeding designed spacing and in accordance with BS EN 1995-1-1:2004+A2:2014. Do not use damaged trusses and do not modify without consent of the Client. Fix securely with truss clips ensuring that rafters do not bear on wall plates. Do not fix ceiling chords to internal walls until roofing is complete and cisterns installed and filled.

123 Permanent bracing of trussed rafters is to be set out as shown on drawings. Fix bracing and binders to every rafter, strut or tie with not less than two 75mm x 3.35 mm galvanized round wire nails. Any lap joints must be side by side extending over and nailed to at least two truss members. Where a binder crosses a brace, interrupt and plate the binder.

Repairs to Redwood Sills of Timber Windows

124 Cut out decayed timber and carry out repair using 'Dry Flex System' or other equal and approved. All in accordance with 'Window Care Systems' recommendations, approved method of working using correct tools.

Repairs to Hardwood Sills of Timber Windows:

125 Cut out decayed timber and carry out repair using 'Dry Flex System' or other equal and approved. All in accordance with 'Window Care Systems' recommendations, approved method of working using correct tools.

Repairs to Timber Internal Door Frames:

126 Cut out decayed timber along the grain for a distance of 300mm (min) beyond the last visible sign of attack. The joint of new and existing timber shall be formed by means of 45° - 60° splice. New timber to be jointed to existing by means of galvanised screws or nails and adhesive and plugged and screwed to wall. New timber members shall match profile of existing. ‘’Dry Flex System” or other equal and approved may be used as a viable alternative to new timber section. Dispose of defective timber immediately.

Repairs to Timber External Door and Window Frames:

127 Cut out decayed timber along the grain for a distance of 300mm (min) beyond the last visible sign of attack.

The joint of new and existing timber shall be formed by means of 45° - 60° splice. The new timber shall be redwood to BS EN 942:2007, Classes 2 and 3 or hardwood to BS EN 942:2007, Class 1 preservative treated in accordance with section Z12.110 and all cut ends shall be dipped in similar preservative fluid before fixing in position. New timber to be jointed to existing by means of galvanised screws or nails and adhesive and plugged and screwed to wall. New timber members shall match profile of existing. ‘’Dry Flex System” or other equal and approved may also be used as a viable alternative to new timber section. Dispose of defective timber immediately.

Repairs to Hardwood Sills of Timber Windows:

128 Cut out decayed timber along the grain for a distance of 300mm (min) beyond the last visible sign of attack.

The joint of new and existing timber shall be formed by means of 45o - 60o splice. The new timber shall be hardwood to BS EN 942:2007, Class 1 and all cut ends shall be dipped in similar preservative fluid before fixing in position. New timber to be jointed to existing by means of galvanised screws or nails and plugged and screwed to wall. New timber members shall match profile of existing. ‘’Dry Flex System” or other equal and approved may be used as a viable alternative to new timber section. Dispose of defective timber immediately.

Replacing Structural Members:

129 Cut out decayed/infested timber along the grain for a distance of one metre beyond the last sign of attack. The joint of new and existing timber shall be formed by means of a lapped joint at least twice the depth of the member in length. New timber shall be jointed to existing by means of bolts. Connection to be affected with at least 4 number 12.5mm diameter mild steel bolts with locking nuts and dog washers. New timber members shall match profile of existing. Dispose of defective timber immediately.

Replacing Preservative Treated Structural Members:

130 Cut out decayed/infested timber along the grain for a distance of one metre beyond the last sign of attack. The joint of new and existing timber shall be formed by means of a lapped joint at least twice the depth of the member in length. New timber shall be jointed to existing by means of galvanised bolts. Connection to be effected with at least 4 number 12.5mm diameter mild steel bolts with locking nuts and dog washers. New timber members shall match profile of existing. Dispose of defective timber immediately.

Replacing Treads and Risers:

131 Remove any plasterboard and trimmings as necessary to underside of staircase. Defective treads and risers to staircase are to be removed. Replacement whitewood treads and plywood risers to profile of previous to be housed into string. Wedges and blocks to be adhesive fixed in position. Internal Grade 1-1 plywood risers to be adhesive fixed and screwed to back of treads. All work to be executed from underside. Dispose of defective timber immediately.

Softwood flooring/board flooring

132 Renew floorboards carefully so as to avoid damaging the ceiling below the floor. Remove tongued and grooved boards by carefully sawing through the tongues and forming a heading joint adjacent to a joist. When replacing the boards, provide additional support at the heading joint using timber 50 x 25mm secured to the joist.

133 Where a number of floorboards require renewal, well cramp up the new boards to form tight joints and nail them up with two lost head nails punched and putted per board, per joint. Fix access traps with screws. Take care when fixing the floorboards not to puncture or damage any existing services.

134 Provide all additional support battens, noggins etc., required to support the boards.

Timber door frames and door linings

135 For new door frames and linings, use a minimum of three sets of fixings to each leg, each set comprising two fixings (either timber plugs and nails or proprietary plastic plugs and screws as appropriate to the quality of the fixing background). Where external door frames do not have timber cills, provide galvanised steel dowels in the legs, grouted into the building structure with cement mortar (1:3).

136 Fix existing door frames or linings which have become loose through the frame using proprietary sleeved screw fixing devices Approved by the Client.

137 Sink the heads of fixings below the surface of the frame and the recess and fill them with an approved filler.

Softwood window frames

138 Fix softwood windows and softwood window surrounds in the same way as for fixing door frames and lining legs.

Metal window frames

139 Bed metal windows in a butyl rubber sealant and fix them to wood window surrounds which have been treated to BS EN 351-1:2007 with galvanised or cadmium plated screws or alternatively by stainless steel fixing clamps or brackets and proprietary plastic plugs and approved rust proof screws.

Window/door replacement

140 All replacement windows and doors in repairs and ad-hoc renewals are to be to BS 6375-2: 2009. Undertake window/door replacements that involve removal of the primary frame from the building and associated glazing in accordance with the current Building Regulations, Approved Document L.

Sealant

141 Before pointing around existing window and door frames, pick out all loose materials and insert a cellular backing appropriate to the type of sealant in the joint between the frame and wall. Use a sealant as specified, inserted by pressure gun to form a neat uniform beaded finish.

Stud partitions

142 For stud partitions use suitably sized softwood head and sole plates with studs at 400mm centres horizontally and noggins at 1200mm centres vertically. Butt joint quilts and fill the entire void.

Kitchen units

143 All kitchen units in repairs and ad-hoc renewals are to BS 6222-2: 2009 and BS EN 1116:2004. Fix base units with proprietary metal or plastic fixing brackets, plastic plugs and screws and the joint between the worktop and wall pointed with a neat bead of anti-mould white silicone sealant.

144 Fix wall units with proprietary metal or plastic fixing brackets, plastic plugs and screws and also support them on full length softwood cleats of not less than 50 x 25mm.

Worktops

145 All worktops in repairs and ad-hoc renewals are to be to BS 6222-2:2009. Fix worktops to base units on metal or plastic brackets with self-tapping screws. Support worktops with a void under by 50 x 25mm softwood cleats securely fixed to any background on at least three sides. If this cannot be achieved, support the sides affected on a flanged tubular steel support fixed to the floor with proprietary plastic plugs and screws and to the worktop with appropriate self-tapping screws. Seal/treat all cut edges to prevent the ingress of moisture, square cut with matching veneer to exposed ends.

Fixing PVCu doors and windows

146 PVCu windows and doors in repairs and ad-hoc renewals are to be to BS 7722:2010 and manufactured to BS 7412:2007 Take out the existing door/window and hack off render/plaster as far as necessary to accommodate the window fixing cramps in window reveals. Supply and install support lintels over the new window/door opening. Where the original brickwork is carried over the window/door i.e. soldier course, make good the brickwork as necessary. Remove all rubbish and leave the window/door opening ready to receive the new window/door. Lintels to be in accordance with Building Regulations 2010 (amended 2013), Approved Document A.

147 Fix the PVCu double glazed window/door with or without a cill directly into the prepared brick reveals using galvanised twist-in-lugs, Approved by the Client, screwed to the reveals using galvanised screws. Seal the windows to the masonry openings with silicone sealant Approved by the Client. Protect the windows during the course of the Works. Fix all windows directly to the inside face of the vertical DPC. Remove all old mastic from the brick face.

148 Where appropriate supply and fix an Approved PVCu cellular core window board, fixed with screw on lugs, fixed to the wall, together with 19mm PVCu quadrant beading, glued to the window boards and window frame using an appropriate adhesive.

149 Make good to all internal window reveals with backing and finished plaster and leave ready for redecoration.

150 Replace the windows/doors that have been removed with new windows/doors and make them weather-tight before the Staff leave the Property at the end of each Working Day.

Fixings/Adhesives

151 Fixing generally: Use fixing and jointing methods and types, sizes, quantities and spacings of fastenings which are suitable having regard to nature of and compatibility with product/material being fixed and fixed to recommendations of manufacturers of fastenings and manufacturers of components, products or materials being fixed and fixed to materials and loads to be supported. Provide additional noggings/grounds/bearers as necessary to provide adequate fixing and support.

152 Adhesive types: As specified in the relevant section. Surfaces to receive adhesive to be sound, unfrozen, free from dust, grease and any other contamination likely to affect bond. Where necessary, clean surfaces using methods and materials recommended by adhesive manufacturer.

Surfaces to be of sufficient smoothness and evenness to suit gap filling and bonding characteristics of adhesive. Adjust as necessary, ensure that operatives observe manufacturer's and statutory requirements for storage and safe usage of adhesives. Do not use adhesives in unsuitable environmental conditions or beyond the manufacturer's recommended time period. Apply adhesives using recommended spreaders/applicators to ensure correct coverage. Bring surfaces together within recommended time period and apply pressure evenly over full area of contact surfaces to ensure full bonding. Remove surplus adhesive using methods and materials recommended by adhesive manufacturer and without damage to affected surfaces.

153 Fixing Through Finishes: ensure that fastenings and plugs (if used) have ample penetration into the backing.

154 Pelleting: Countersink screw heads 6 mm below timber surface and glue in grain-matched pellets not less than 6 mm thick, cut from matching timber. Finish off flush with face.

Sun Pipes

155 Proprietary Rigid Sun Pipe to Pitched Roof

Generally will supplied and installed to the following specification:
- Pipe material: Rigid aluminium.
- Diameter: 240 – 360 mm
- Tunnel length: Up to 6 m maximum.
- Tunnel reflectance: Greater than 97%.
- Roof terminal: Proprietary polycarbonate dome (opal / UV protected) or 4 mm toughened glass in polyurethane frame.
- Ceiling terminal: Double glazed diffuser.
- Accessories: 30° – 45° proprietary bends as required. (Total number of bends to be kept to a minimum).
- Proprietary extension sections as required.
- Flashing: To suit interlocking concrete roof tiling.
- Installation: In accordance with manufacturers' technical data sheet

156 Proprietary Flexible Sun Pipe to Pitched Roof

Generally will supplied and installed to the following specification:
- Pipe material: Flexible metallized polyester.
- Diameter: 350 – 360 mm
- Tunnel length: Up to 1.5 m maximum.
- Roof terminal: Polycarbonate dome (opal / UV protected).
- Ceiling terminal: Double glazed diffuser.
- Flashing: To suit interlocking concrete roof tiling.
- Installation: In accordance with manufacturers' technical data sheet.

157 Proprietary Rigid Sun Pipe to Flat Roof

Generally will supplied and installed to the following specification:
- Pipe material: Rigid aluminium.
- Diameter: 240 – 360 mm
- Tunnel length: Up to 6 m maximum.
- Tunnel reflectance: Greater than 97%.
- Roof terminal: Proprietary polycarbonate dome (opal / UV protected).
- Ceiling terminal: Double glazed diffuser.
- Accessories: 30° – 45° proprietary bends as required. (Total number of bends to be kept to a minimum).
- Proprietary extension sections as required.
- Flashing: To suit flat roof construction.
- Installation: In accordance with manufacturers' technical data sheet.

158 Proprietary Flexible Sun Pipe to Flat Roof

Generally will supplied and installed to the following specification:
- Pipe material: Flexible metallized polyester.
- Diameter: 350 – 360 mm
- Tunnel length: Up to 0.9 m maximum.
- Roof terminal: Proprietary polycarbonate dome (opal / UV protected).
- Ceiling terminal: Double glazed diffuser.
- Flashing: To suit flat roof construction.
- Installation: In accordance with manufacturers' technical data sheet

Servicing of Timber Window Frames (as Client's Code of Practice C51 revised August 2014)

159 **General servicing requirements for timber window frames**

The degree of servicing required to timber window frames will be decided by the Client. The servicing should fall into one or other of the following categories.

160 **Condition of the frame and sash**

- The simplest form of servicing would be to ease and adjust the opening sash.
- Severely damaged opening sashes should be replaced as original.
- The fixed frame presents greater problems to repair but 'Window Care Dry Flex System' should be considered as a viable alternative to replacement.
- On completion the bare timber must be coated as original.

161 **Conditions of surface coating**

- Touching up is generally discouraged as weather conditions have an adverse effect on all surface coatings.
- The preferred option is to re-coat all window surfaces as original with light sanding between each coat.

162 **Condition of ironmongery**

- Damaged ironmongery should be replaced with matching or product similar to existing ironmongery and fitted as per manufactures instructions.
- Back flap or cranked hinges seldom require servicing, however service with light oiling with release oil/lubricant spray
- Friction hinges require light oiling with release oil/lubricant spray during servicing
- Replace all defective hinges as recommended by manufacture.
- Loose casement stays and handles should be re-fixed either by using longer screws or reuse the original screws by plugging the original screw hole.
- Tilt/turn and fully reversible gearing systems should be serviced by a qualified service engineer.
- Trickle vents should be cleaned of all paint, dirt, dust etc. and left in an operational state. Replace parts as necessary.
- Condensation holes/channels were present should be cleaned of all paint, dirt, dust etc. and left in an operational state.
- All existing safety restrictors to be checked for correct operation. Where correct operation is not being achieved, adjustments should be made. If adjustments do not prove adequate replace the restrictor. On finishing the dwelling/property, <u>all</u> opening sashes are to be fitted with a safety restrictor. Each dwelling should be fitted with similar restrictors throughout – thus removing possible confusion in the event of a fire.

163 **Condition of glass and glazing**

- All damaged glass should be carefully removed before the removal of glazing slips or facing putty.
- Cracked glass should be taped to prevent accidents.
- When all glass is removed the rebates should be cleaned and primed with the appropriate primer before re-glazing.
- When slip glazing is used the bottom slip must be bedded in 'Dry Seal Elastic
- Glazing Sealant' to prevent ingress of water.
- <u>Linseed oil putty must NOT</u> be used.

164 **Glazing medium**

'Elastic Glazing Sealant' is the only option for face pointing. Linseed oil putty must NOT be used.

165 **Draught Proofing**

Draught proofing to existing window frames can usually be effected by using one of five different methods:

- Appropriately sized extruded foam with one side self adhesive; this if fitted to the frame rebate/inside face of sash.
- A co-extruded flexible seal with the rigid section nailed to the sash and the flap touching the sash. This component may have a metal rigid section.
- A bulbous extruded seal, again with the flat section nailed to the inside rebate of the frame and the bulbous section touching the sash.
- Replacement nerprim seals (if fitted) to match existing profile and colour.
- Silicon sealing. This method of draught proofing should be avoided and only undertaken after written advice and clarification is received from Policy and Standards.

In all cases some slight difficulty may be experienced when closing the sash and generally adjustment of ironmongery may be necessary.

Servicing of PVC-u Window Frames (as Client's Code of Practice C55 revised August 2015)

General servicing requirements for PVC-U window frames

166 Ventilation and drainage:

All:
- Trickle vents (either in-frame, in-glazing or other)
- Condensation holes/channels (were present)

should be cleaned of all paint, dirt, dust etc. and left in an operational state. Replace parts as necessary.

167 Seals and gaskets:

Check neoprene seals and gaskets for wear/failure and replace seals/gaskets as necessary. Replacement seals to match existing profile and colour.
Clean of all paint, dirt, dust etc. from seals/gaskets and apply a spray coat of silicate lubricant (remove access lubricant).

168 Ironmongery:

Damaged ironmongery should be replaced with matching or product similar to existing ironmongery and fitted as per manufactures instructions.

169 Hinges:

Hinges should be cleaned of all paint, dirt, dust etc. and left in an operational state. Hinge oil/lubricant is to be applied and hinge restraint screws adjusted accordingly. Replace parts as necessary.

170 Safety restrictors:

All existing safety restrictors to be checked for correct operation. Where correct operation is not being achieved, adjustments should be made. If adjustments do not prove adequate replace the restrictor.

On finishing the dwelling/property, <u>all</u> opening sashes are to be fitted with a safety restrictor. Each dwelling should be fitted with similar restrictors throughout – thus removing possible confusion in the event of a fire.

Cleaning PVC-U window frames

171 Sash frames and window frames are to be fully cleaned of all paint, dirt, dust etc. and left in an operational state.

172 Dirty marks on frames can be easily removed by using cleaning materials as indicated on the following table.

Cleaning cloths should be unbleached cotton. Do not use cloths containing synthetic fibres.

Heavy stains and deep scratching can be removed from white profiles only by sanding with a 320/400 grit sanding disc and by polishing using a sisal rotary brush to restore surface finish.

On wood grain surfaces care must be taken when cleaning. Seek manufacturer's advice on damaged wood grain surfaces.

Condition of glass and glazing

173 Check condition of glass;

- All damaged glass should be carefully removed before the removal of glazing slips.
- Cracked glass should be taped to prevent accidents.
- When all glass is removed the rebates should be cleaned

Typical problems and remedial action

174 Incorrect glazing and fixing of frames to masonry are the cause of most maintenance problems.

The following is an indication of typical problems and remedial action.

175 Opening sashes that have dropped during use:

Check hinges for wear/adjustment remove wedge gaskets.
Remove glazing beads internal or external.
Repack glass to manufacturers recommendations.
Refit glazing slips and gaskets.

176 Bowed cills/stiles:

Incorrect packing generally the case. Re-glaze as 163 and secure packers to prevent further movement. Taking care not to block drainage/air circulation channels and/or slots.

177 Sashes not sealing properly or engaging keepers:

Check adjustment hinges and keepers.
Check that the glass is packed at locking points, if not packed carry out work as manufacturer's technical data sheet.
Check also that the glass is packed at the position of frame fixings.
Check gaskets for wear/failure.

178 Broken/cracked glass.

Remove if possible pieces of broken glass before removing glazing beads.
Cracked glass should be taped to avoid accidents, before removing gaskets or glazing beads. Remove gaskets, remove glazing beads.
Carefully remove damaged unit or sheet glass.
Replace and re-glaze as per manufacturer's instruction, taking care to fit packers as recommended.

179 Opening sash adjustment.

All necessary adjustment should be completed after glazing. All hinges should be lightly oiled at periodic intervals. If glazing is completed as per manufacturer's instruction, little or no adjustment will be necessary. However, should adjustment be necessary the following steps should be taken:-

- Check margin of sash to frame.
- Remove centre screw on friction arm.
- Release two outer screws and then reposition the sash.
- Check that the overlap sash to frame is sufficient (5 mm min).
- Retighten the outer screws; replace the centre screw to ensure no further movement of the sash. The friction on the friction stay can be adjusted using the screw on the friction stay fixed member.
- Where adjustable espagnolettes have been fitted the rollers can be adjusted to gain compression of the weather gasket with the use of an Allen key by turning the rollers about their eccentric cams.

Should problems still exist when the sash is closed and the overlap to frame is equal refer to the below table for possible cause.

Upgrading

180 When upgrading from single to double glazing units, consider the strength of the existing hinges with regard to the additional weight of the double glazed unit and replace if required.

NOTE: It is recommended that all servicing work is carried out by a specialist service engineer

CHECK LIST A

PROBLEM	CAUSE	ACTION
Sash hits keeper	- Frame bowed opening to rear	Re-glaze Reposition hinge
Cam hits striker	- Striker in wrong place	Reposition
Handle operation stiff	- Cams not adjusted - Keepers out of line	- Adjust cam - Realign and oil
Draughts	- Bowing members	- Re-glaze - Fit cavity block
	- Overlap incorrect - Both overlaps incorrect	- Reposition - Remake sash
	- Gasket problem	- Repair or replace
Sash moves too easily	Friction screw set incorrectly	Tighten Friction screw
Sash binding	Friction screw set incorrectly Outer frame bowed	Loosen friction screw Repack outer frame

CHECK LIST B

COMTAMINATION	CLEANING METHOD			
	Scrape off and Polish with Dry Cloth	Clean with water and mild detergent	Clean Off with non-abrasive detergent and water	Manufacturers specified cleaning agent[1]
Bitumen			✓	
Pencil		✓		
Emulsion Paint	✓			
Felt Pen		✓		
Inorganic Grease			✓	
Plaster	✓			
Wood stain		✓		
Ball Pen		✓		
Cellulose Paint				✓
Rust				✓
Soot			✓	
Cement Mortar	✓			
Wax Pen			✓	

181 Manufacturers specified cleaning agents should only be used by authorised Service Providers and with extreme care.

Client's current manufacturers/suppliers/products

182 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

REPLACEMENT WINDOWS AND EXTERNAL DOORS

GENERAL SPECIFICATION FOR REPLACEMENT WINDOWS AND EXTERNAL DOORS

Initial Survey & Measurements

001 A list of properties will be given to the Service Provider with access details and the Service Provider is then responsible for arranging access, visiting the properties, taking measurements and forwarding existing window dimensions and the Service Provider's proposed style of replacement windows to the Client for approval.

Whether the new windows are to be PVCu or timber replacements is dependent on condition of existing double glazed window (if present) and therefore matching new proposals with the existing property and surrounding Client owned properties.

002 The drawings are to include 'sketch elevations' of each window and door showing the position of each proposed window and door type and to include details of glass type for each window and door.

003 The proposals are to be approved by the Client before the Service Provider commences manufacture.

Generally

Existing Fixtures etc

004 The Service Provider is responsible for moving any furniture, fixtures and fittings that may be damaged during the installation of the windows, prior to commencement of the replacement of any window and repositioning such items upon completion of the installation to each property.

005 The Service Provider will be responsible for both internal and external protection.

006 The Service Provider must ensure that clean and sufficient dust sheets or protective coverings are used, when carrying out any works. The Service Provider must ensure he has taken all adequate provisions to ensure that the soiling or damage to floor coverings and needless damage to decorations are avoided. The Service Provider must allow for any cleaning of floor coverings required as a consequence of the works and this should be reflected in the tender Rates submitted.

Remove and Install on same Day

007 Replacement windows and external doors and frames must be installed on the same day that the original windows and external doors and frames are removed in order to maintain security and weather tightness of the structure. The existing windows and door frames should be removed with care in order to avoid damage to the building structure and its finishes and without permitting any subsidence of the structure during or after the operation.

008 Any defects that become apparent in the integrity of the structure upon removal of any window and or door frame should be reported to the Client immediately.

009 If there is a sub-cill or threshold, eg. Concrete, slate, brick or tile, below the existing window frame or window frame it must be left in position unless otherwise specified.

Making Good

010 Internal and external making good, may take place on subsequent days, but the whole operation from start to finish of each window must not exceed 3 No. consecutive working days.

General Design of Windows

Windows - Street Properties

011 Generally the design of windows to be replaced with storm-proof casements projecting top & side swing hinge. (See Appendix A)

012 However, each property case may be different and hence each property approval will be required in all cases, the proposed new style of windows will need to comply with Building Regulations and in particular fire egress in terms of all habitable rooms.

Timber Windows

013 The Service Provider is responsible for ascertaining the correct dimensions and sizes of every existing window and door in each property.

Emergency Egress Windows

014 Every habitable room shall have at least one opening which shall comply with the Building Regulations. Emergency Egress Windows, having an unobstructed openable area that is at least 0.33m2 and at least 900mm high x 450mm wide with the bottom of the openable area not more than 1100mm above the floor. Egress hinges should be included, where necessary.

Guarantees

015 The Service Provider is to provide the minimum guarantee tabled below against manufacturing defects etc., on all new PVCu and timber windows and external doors upon completion of the works. The guarantee is to include for all profiles, joinery, and for the double glazed units.

PVC-U profiles	25 Years
Timber frames	30 Years guarantee against fungal attack
Timber Window Manufacturing Defects	10 year guarantee
Timber Window (Factory Painted External Joinery)	10 Year guarantee (as minimum)
Timber Window (Factory Stained External Joinery)	6 Year guarantee (as minimum)
Hardware Components	10 Years (minimum)
Double Glazed Units	15Years (minimum)

General Window Installation

016 All new windows and external doors and door frames are to match existing size openings in existing positions (i.e. brick reveals to be maintained externally where necessary on all occasions).

017 Before installing the new window or door frame, the existing structural opening should be checked to ensure its stability and existing lintels checked to ensure their condition soundness. Any large repairs should be reported to the Client.

018 It is permissible to "chip back" a small area of plaster (typically 25mm) extending full height up the existing reveals and immediately adjacent to the windows; this will both facilitate removal of existing window and installation of replacement window.

019 All openings should be cleaned of debris etc, and any minor making good is expected to be carried out as part of the window replacement works.

020 All metal fixings should be at least as corrosion-resistant as BS EN 1670 Grade 3. 13.5.

Windows shall be secured in accordance with the recognised "fixing distances" for strap / lug fixings and through-frame fixings as recommended in BS 8213-4. 030.

021 Cills must be properly supported and fixed to ensure there is no likelihood of water penetration.

022 All internal reveals should be made good and plaster or decorations made good to match existing.

023 External sealing should be by means of a cement/sand pointing around the new window frame to conceal larger gaps and then a low modulus white silicone sealant to BS EN 11600. Only silicone sealants recommended by the manufacturer supplier should be used and not general purpose mastics. All abutments of the windows should have silicone sealant applied.

024 Prior to installation the windows and doors are to be supplied with adequate protection against damage caused by slippage, distortion etc. They must be stored under cover in a dry and secure position, stacked vertically, not horizontally.

025 The window dimensions must be checked with those of the opening before removal of the existing window.

026 A craft knife should be used to score around the perimeter of the existing frame in order to minimise damage to plaster / decoration.

027 Windows to be removed and all existing mastic and debris cleaned away. The Service Provider is to ensure that the work is carried out in a neat and tidy manner, with all rubbish removed to a lockable skip at the end of each working day.

028 The damp proof course is to be checked by the Service Provider to ensure one is present and in good condition. Any defects present are to be brought to the attention of the Client immediately.

029 The new windows must be installed in accordance with the manufacturer's requirements, taking into account the construction of the building. Fixing methods should take into account thermal movement. The method of fixing will generally be either through frame fixing or lug fixing.

030 Windows must be installed plumb and square without twisting, racking or distortion of any member in accordance with the manufacturer's installation tolerances.

031 The outer frame of the window must be centred in the aperture and be positioned so that it does not bridge the damp proof course. The amount by which the new window is set back from the outer face of the wall is determined by the requirement to set the internal face as close to the existing internal finishes as possible and by the bridging of the damp proof course.

032 The frames must be secured so that the corner fixings are a minimum of 150mm and a maximum of 250mm from the corner of the frame and the intermediate fixings at centres no greater than 600mm.

033 No fixing must be closer than 150mm to a transom or mullion centre line. Should the manufacturer require more onerous fixing requirements then these must be adhered to. Care should be taken not to overtighten bolts and that packers/shims are not allowed to fall away. Care should also be taken to ensure that watertightness is maintained where lintels have to be drilled for fixing.

034 All screw fixing heads which pass through the profile are to be spot sealed with white silicone sealer or a PVCU cap.

035 Where electrical, television, telephone wires etc., enter a property either through a hole in the existing window, or adjacent to it, then such services must be routed around the PVCU window frame. A split plastic tube of suitable diameter and length for entry into the property should be slipped over the cable so that connections do not have to be disturbed on the appliances, with the ends of the tube sealed with white silicone sealant on completion of the window installation.

036 Where any internal plaster work is disturbed when the existing windows are removed, the Service Provider must make good the plasterwork. PVCu cover mouldings may be used to a maximum width of 30mm.

037 Bathrooms/WC windows must have obscured glazed window panes internally and one clear pane externally forming the double glazed units.

038 The Service Provider is to include for removing existing internal window cills and renewing with suitably sized PVCu window cills and any extensions to window frames required to raise height of window openings to 800mm from finished floor level internally if required.

039 Internally the PVCu frame must be well caulked and the gap between the reveal finish and the frame flush pointed with a one part white emulsion acrylic painters caulk.

040 The Service Provider must provide a matching cover bead at the junction of the internal window board or tile cill and the PVCu window frame to all windows.

General Items

041 Each window must be permanently marked or labelled in an unobtrusive position (not visible when the opening light is closed) with the name of trademark of the fabricator.

042 The latest standard for glass units is BS EN 1279 –2 (also part 3 for gas filled types)

043 Special care and attention must be taken to protect and avoid any damage to windows. Any damaged window must be replaced with a new window, and it must be at the Clients sole discretion as to whether a repair to a window is acceptable.

Site Measurements

044 The dimensions noted on any schedule issued by the Client are for guidance only and are approximate measurements. The Service Provider is responsible for taking all site sizes and measurements for each and every window opening, and for manufacturing windows accordingly and to BS 8213-4.

045 The Service Providers attention is drawn to the fact that similar windows in similar dwelling types do vary in size.

046 The use of make up pieces (clip-on's) will not normally be permitted except with the express written authority of the Client.

047 Any existing window opening which will present the Service Provider with a problem in compliance with the specification, or in manufacture of a window to suit, must be brought to the attention of the Client before the window is fabricated. The Client will issue a written instruction informing the Service Provider of what action is to be taken.

Glazing

048 All windows to be **INTERNALLY GLAZED** in argon filled sealed units in low Emissivity glass, using pre-formed gaskets inserted during the profile extrusion and secured by knock-in PVCU glazing beads with mitred corners

049 U-values of windows glass and frames must meet the Building Regulations and must be BFRC Certified and have an "A" Rated Energy Index. Centre Pane "U Value" of 1.2W/m²K (or better). Thermal Transmittance Whole Window "U Value" of 1.4 W/m²K (or better)

050 All glazing to be clear glass except bathrooms and WC's which are to be obscure Cotswold style glass or pattern group 5.

051 Glass shall be at least the minimum thickness to meet wind load requirements of BS 6262 and BS 6375.

052 Glazing beads are to be able to withstand the design wind loading in accordance with BS 6375: Part 1 and the tests specified in BS EN 12211.

053 Note: All timber sliding sash windows to have sash cords and "lead weights to box frames to counteract the glazing weights

054 Fans are not permitted in sealed units.

055 Details of all glass types are to be stated in the Service Provider's proposals for each new window when proposed drawings are forwarded.

Laminated Glass

056 All glazing in windows/doors in critical locations as defined by the Building Regulations (i.e. glazing below 800mm internal cill heights in windows and below 1500mm height in doors with a zone of 300mm either side of the door) is to be have both skins of glass units glazed with laminated low E glass – assumed to be 2 No. skins of 6.8mm laminated safety glass.

057 All safety glass is to be permanently marked on both panes with British Standard kite marks, which are to be visible after installation.

058 Both sheets of glass making up the sealed double glazed unit must be safety glass where required by the above descriptions.

059 Details of windows/doors in critical locations are to be stated in the Service Provider's proposals for each new window and external door when proposed drawings are forwarded to the Client for approval.

General

060 Windows must be manufactured so that glazing or re-glazing on site is possible without the need to remove the outer frame from the structure of the building.

061 All glass and insulated glazed units should be carefully examined for damage, especially at the edges, prior to installation. Defective items must not be used.

062 The two panes of glass in the double glazed unit are to be held apart with warm edge technology, spacer bars to improve thermal efficiency and reduce the possibility of condensation forming around the perimeter of the sealed double glazed unit.

063 The glazing of the windows must be carried out immediately after the installation of the frames and casements

064 On completion of window installations, all glass to be cleaned internally and externally and left clean and free from blemishes.

065 Any glass with scratches cracks or defects to be replaced by the Service Provider at no charge.

Weather Performance and Seals

066 All new windows must be approved to BS 6375 Part 1 to the following levels:-

(a) Air permeability – 300 Pascals minimum
(b) Water tightness – 300 Pascals minimum
(c) Wind resistance according to the design wind loading but not less than 1500 pascals.

067 Weather stripping and glazing gasket material must not have a detrimental effect on the plastic profile.

068 Weather strips for PVCu windows to be co-extruded weldable seals and white gaskets approved to BS 7412 and BS 4255 to increase the weather tightness of the windows.

069 The weather-stripping must be capable of being renewed without disturbing the glazing system and without removing the outer frame from the structure.

070 The weather-stripping must be continuous around the frame.

071 Weather strip seals and draught excluders between all timber sashes to be included for all windows.

072 Glazing gaskets must be thermoplastic elastomer (TPE) and must be pre- inserted into the profiles.

Ventilation

073 All window units are to be provided with trickle ventilators to provide 8000mm2 areas to each habitable room and 4000mm2 areas to kitchen, bathroom, WC and utility rooms.

074 The ventilator is to be fitted with an insect mesh in accordance with the requirements of BS 5440-2: 2009. Trickle ventilators must be manufactured from either aluminium section with powder coated finish to match window colour, or high impact modified PVCu.

All ventilators are required to have their 'equivalent areas' from testing clearly marked on the device. The fitting of cording or rod devices to ventilators, ensuring ease of use by the occupant, to be in accordance with the latest guidance in the Approved Document. For new build applications ventilation requirements must be calculated from the tables in the Approved Document.

075 The Service Provider is to ensure that all window designs to habitable rooms have a window opening area of no less than 5% of the floor area. The Service Provider must bring to the attention of the Client any window designs included in this specification that he believes does not meet this criterion, before the manufacture of any windows.

076 The type of trickle ventilator to be fitted is to be "glazed in" or through frame" design.

077 Front timber windows in Conservation Areas will "NOT" require trickle ventilators to be installed as this would be against planning policies.

Child Restrictors

078 Child restrictors are to be fitted to all windows with openings on all floors. The restrictors are to not allow opening the window more than 100mm without using the restrictor switch.

079 Type of restrictors to the PVCu windows are to be the push type fitted within frames on all casements outward openings, and the PVCu switch built into the top sashes on PVCu sliding sash windows.

080 Types of restrictors for timber windows are to be agreed between Service Provider and Client prior to installation of windows – examples of types required would be Sash Stop and Limiter to sliding sash windows, and button restrictor within the window frame to outward opening casements.

Window Furniture

081 Window furniture to openable sashes to be positioned in the centre line of the frame unless indicated otherwise.

082 Push button handles to be fitted to all window openings.

083 Full details of replacement keys and where they can be obtained is to be provided by the Service Provider.

084 Key operated locks to be fitted to all PVCu and timber doors and minimum 2 No. keys for each door provided.

085 Details of window furniture are to be provided by Service Provider and approved by Client.

086 Once all the above items are completed, the Service Provider is to demonstrate the operation of the window or door to the Customer and provide the Customer with their own operating instructions for the windows. In addition, the Service Provider is to provide a Customer Satisfaction Card (to be supplied by the Client) which the Customer is requested to complete and return by free postage to the Client.

Client's current manufacturers/suppliers/products

087 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

Appendix A

Choosing window type to applicable Stock

Table 1 Choosing window type to applicable Stock

STOCK APPLICABLE TO:			**STORM-PROOF CASEMENTS** Projecting Top & Side Swing Hinge	**FLUSH CASEMENTS** Projecting Top & Side Swing Hinge	**FULLY REVERSIBLE WINDOWS*** Hotel Hinge – Top Swing	**FULLY REVERSIBLE WINDOWS** Fully Reversible Hinge
	No of storeys	**Property Type**				
LOW RISE STOCK (1 – 3 Storey)	**1**	Bungalows	▪	▪		
	2	Houses	▪	▪		
	2	Flats	▪	▪		
	3	Houses	▪	▪		
MEDIUM RISE STOCK (3 – 5 Storeys)	**3**	Flat Blocks		▪	▪*	
	3	Flat over Maisonette		▪	▪*	
	3	Maisonette over Flat		▪	▪*	
	4	Flat Blocks			▪*	
	4	Flat over Maisonette Blocks			▪*	
	4	Maisonette over Maisonette			▪*	
	5	Flat Blocks			▪*	
HIGH RISE STOCK (6 – 20 Storeys)	**6-20**	Multi-Storey Flat Blocks				▪
* Floors 1 & 2 will be FLUSH CASEMENTS to reflect the same "fenestration" as the Fully Reversible Window - Floors 3 - 5 will be FULLY REVERSIBLE (Hotel Hinge)						

PERFORMANCE SPECIFICATION FOR EXTERNAL DOORS AND FRAMES

PERFORMANCE SPECIFICATION FOR REPLACEMENT EXTERNAL DOORS AND FRAMES

Secured by Design:

001 All external doors must meet the requirements of "Secured by Design" certification. External Doors; PAS 24:2008+A2:2011 Doors of Enhanced Security

002 All new external doors complete with frames and factory installed double glazing must be high performance proprietary door sets as tested to PAS 24 and supplied by a certified SBD manufacture. Fire doors must have additional testing certification in accordance with BS 476-22:1987 or BS EN 1634 and BS 8214:2008

003 These may be PVCu, timber or timber / steel faced, composite door sets complete with a Secured by Design approved locking mechanism.

004 PVCu external doors, timber composite or steel faced composite doors are suitable for areas where high security or severe exposure rating requires greater durability and a multi point locking mechanism.

005 Sample doors complete with proposed locking mechanisms are to be supplied for the approval of the Client.

Door Sets

006 The Door sets must meet the performance standards set out in this Specification. The Service Provider must provide a copy of the test certificate and list of door components/ironmongery as supplied by a UKAS test house prior to commencement of the Contract. The doorsets supplied must be to exactly the same specification as those tested.

007 The fitting tolerance must be plus or minus 5mm, it is the Service Provider's responsibility to take all site dimensions for pricing purposes and for fitting purposes.

008 Door Sets which are deemed to be outside the fitting tolerances must be remade at no further expenses to the Client.

009 Where existing Door Sets are removed, the new assembly must be installed and left in full working order before the end of the same day.

010 The manufacturer of the Door Sets must be stated on the Form of Tender and a guarantee should be supplied indicating the life of the components.

011 Door Frames to be white reinforced PVCu to BS 7412 and BS EN 12608.

Level Access Thresholds

012 All external door sets (Main and Secondary Entrances including Doors leading onto a patio) must have level access thresholds (max 15mm high threshold) and a minimum clear opening width of 800mm between the blade and the stop, irrespective of the type of accommodation in order to meet the requirements of Lifetime Homes.

Weather bar should be capable of renewal in-situ i.e. without the need to remove the door frame. The weather bar unit shall have a performance rating to comply with BS 6375

Ironmongery:

013 Ironmongery must be provided in full compliance with "Secured by Design", Handles and locks must be easy grip type suitable for use by disabled persons.

014 Two door viewers must be provided to all front doors at heights of 1500 and 1050 mm from finished floor level.

015 All external doors must be hung on 1½ pairs of 100 mm heavy duty butt hinges. Fire door hinges must be CE Marked and tested to BS 476:22 or BS 1634. Hinges shall have high corrosion resistance, greater than BS EN 1670 grade 4.

016 Multi-point locks tested to PAS24 and to comply with (and stamped) Secured by Design. Front doors to be provided with a security chain. .

Door Performance Requirements

017 All the external doors must meet the following minimum performance criteria for weather resistance as defined in BS 6375-1:2015 -Classification for Weather tightness.

Air Permeability	Test Pressure Class 300 Pa Test Method BS EN 1026
Water Tightness	Test Pressure Class 200 Pa Test Method BS EN 1027
Wind Resistance Test Pressure	2000 Pa Test Method BS EN 1028

018 All doors must be completely draught free when closed. The doors are to meet the **Severe Exposure Rating** category

Side Lights to Living Room External Doors

019 If the glazed opening door is in a living room, the sole means of natural daylight and ventilation must not be from that door.

020 Additional opening side light windows with trickle ventilators and security restriction, must be provided in order to allow ventilation to the room without opening the door all year round.

Double Glazing

021 All double glazing to any external doors and their associated side lights (or, within 400mm of the door lock) must be 6.4mm laminated to comply with Secured by Design.

022 Door and side light glazing must be 24 mm hermetically sealed double glazing units manufactured with laminated glass.

- Front door to be in small panels and be obscured.
- Front door must incorporate facilities to view callers
- Glazing to rear doors to be clear

Door Frames

023 Door Frames to door handle relationship to allow for a min of 50mm from the frame edge to the lever handle. Lock Backset to accommodate this dimension

024 All frames must have a factory fitted removable weatherstrip to frames and weatherstrip to the bottom edge of doors.

025 Door Frame set back must be 65 mm minimum reveal to external face of wall.

026 New lintels to windows and external doors must be insulated galvanised steel manufactured by an approved manufacturer and have an Agreement Certificate. End bearings must be a minimum of 150 mm.

027 All external door frames are to have mastic pointing provided all around. Such mastic pointing must be specified to be applied strictly in accordance with the manufacturer's technical data sheet and good practice. The Client has a preference for two part polysulphide mastics in areas that are vulnerable to vandalism.

Door Ironmongery

028 Multi-point locking espagnolette system to be provided

029 **The requirements of Secured by Design (SBD) and the approved and tested locking mechanism of the selected SBD Door Licence Holder may override this section**

030 Cylinder and Keys: All cylinders to be nickel plated on brass finish. Cylinders should have a large thumb turn to suit the elderly. All cylinders to be double profile and a minimum five pin tumblers, 1000 differs, anti-bump flush. Minimum of 3 keys supplied with each cylinder.

031 **The requirements of Secured by Design (SBD) and the approved and tested locking mechanism of the selected SBD Door Licence Holder may override this section**

032 Doors generally fitted with level handles operational both sides of door.

033 Pull Handles and Push Plates: To be provided only where elements of communal accommodation occur.

034 Pull handles must be 230mm x 19mm dia. bolt through fixed and Nylon or Plastic coated finish. Push plates to be 300 x75 x 1.5mm drilled and countersunk fixed, finishes to match the Pull Handles.

035 Letter Plates: Front doors to dwellings are to have a telescopic letter plate with external flap (finish to match door ironmongery) and an inward sprung flap, on the inside of the door.

036 Letter Plates must be draught and fire proofed internally and have a finger hood to prevent access to door locks (minimum distance from door locks 400 mm).

037 Intumescent Liners and Smoke Stopping must be provided to fire doors.

038 Internal flat entrance door off communal corridors must have a fire and acoustic rated letter plate with integral intumescent liners and a smoke stopped internal letter flap. Fire tested to satisfy the requirements of BS 476:22. Acoustic tested to satisfy the requirements of BS EN ISO 10140:1 to 5 to 29db/Rw.

039 Door numerals must be provided to the front entrance door of each dwelling.

040 Door Stops: All doors are to be provided with floor, wall or skirting mounted rubber stops on a nylon or plastic coated shoe where appropriate to prevent damage to walls or plaster.

041 Door Closers**:** Where required, all self-closing fire doors should have size 2 - 6 adjustable strength and back check function overhead closers.

042 Concealed door closers and hush latches may be used in individual dwellings and flats if approved by Building Control.

043 Closers to Frail Elderly flats must be the 'swing-free' type operated by the activation of the fire alarm.

044 Cabling and transformers must be provided to all wheelchair dwelling external entrance doors for the future installation of 'power operated' door closers

045 All overhead closers must carry a 10 year guarantee to BS EN 1154:1997

046 Hinges: Hinge bolts must be fitted to all external access doors for Secured by Design.

047 Doors to have 1 ½ pairs of 102x35x3 mm BZP fixed pin steel butts fitted to carry 37kg max weight.

048 Door Viewer: Front doors to Flats should have a 180 degree chrome plated door viewer fitted at.

- 1500mm above finished floor level for accessible dwellings
- 1050mm above finished floor level for Wheelchair Units

049 Door Bolts: Bolts to double doors, french windows and the like, should be of brass material satin chrome or satin nickel plated. Flush blots should be fixed in the leading edge of the second opening leaf of a pair of doors with a flat plate at the head and an easy clean socket in the floor.

050 Kick Plates: To be provided only where elements of communal accommodation occur.

051 Provide 450mm high coloured plastic kick plates to match the ironmongery on the push side of internal doors in communal and circulation areas and to all flat entrance doors on the corridor side. Flat entrance door kick plate to achieve fire resistance of door set.

052 Wall Protection: For internal communal areas only

053 Provide flame retardant corner protection to all external wall angles to a height of 1000mm using proprietary PVCu corner protectors

REPLACEMENT EXTERNAL DOORS AND DOORSETS

Timber Doors

054 All new pre-finished timber doors shall be purpose made pre-treated timber double glazed doors manufactured to BS 644:2012. All timber doors to be to Client's schedule of standard external doors.

REF	DOOR TYPE
2P.2SG	Two panel door, both panels double glazed with safety glass
3P.1SG/2SP	Three panel door, top panel double glazed with safety glass, two bottom panels with solid hardwood panels
4P.2SG/2SP	Four panel door, top two panels double glazed with safety glass, two bottom panels with solid hardwood panels
5P.2SG/3SP	Five panel door, top two panels double glazed with safety glass, three bottom panels with solid hardwood panels
6P.2SG/4SP	Six panel door, top two panels double glazed with safety glass, two middle and two bottom panels with solid hardwood panels
6P.6SP	Six panel door, top two panels, two middle and two bottom panels all with solid hardwood panels
FL.1SG	Flush door with 1 single panel of double glazed safety glass
LBS	Ledged, braced and sheeted door
FLBS	Framed, ledged, braced and sheeted door

055 All workmanship to be to BS.1186-2:1988.

056 All frames, mullions, transoms etc., to be to quality standard of BS 1186-2:1988.

057 All softwood joinery to be subject to preservation treatment by double vacuum pressure impregnation in compliance with NHBC requirements, and the preservation is to comply with BS 8417:2011+A1:2014.

058 Timber doors to be set in rebated hardwood frames, and 2XG style pre-primed timber doors with upper panel double glazed with laminated safety glass sealed units.

059 Weatherboards to doors are to be included.

060 All doors to be hung on minimum 3 No. steel hinges.

PVCU Doors

061 All new PVCu doors to be rebated white reinforced PVCu frames with drip mould and weathered cill and double glazed with laminated safety glass sealed units.

062 All doors to be hung on minimum 3 No. hinges with zinc die cast bodies of white polyester powder coating, nylon brushes and stainless steel security pin.

063 Doors to have 7 point lever handle security locking mechanism.

Composite Doors -Generally

064 It is intended to renew main front doors and frames on all single family dwelling houses with composite doors installed by the PVCu manufacturer/Service Provider with the exception of conservation areas – see below).

Doors -Generally

065 All front doors to be styled with upper panels double glazed with laminated safety glass sealed units

All rear doors to be 2XG style with upper panel double glazed with laminated safety glass sealed units.

066 Doors to have multi-point lever handle security locking mechanism meeting BS 3621 and stamped with SBD Logo.

067 Customers to be given the option of cat flaps to be installed to lower panels of rear door.

068 Doors within Conservation Areas will be renewed with a pre-finished timber door

Composite Front Doors to Houses not within Conservation Areas

069 Style and choice of front doors is to be agreed with the Customer and Client on each individual project. The Service Provider is to provide each Customer with a sheet listing and showing the style of doors available and five colours available, and the Customer is to choose and sign the list as to which door they wish, and copy of the signed sheets to be forward to Client.

070 Where composite doors are to be provided, the door shall have 70mm white fully reinforced with aluminium section door frames. Doors to be high quality laminated hardwood sub frame with added powder coated aluminium edge guard protection, and high density EPS moulded core filling all internal cavities and faced with high impact thermosetting skins to be through coloured multi-directional woodgrain finish to give the appearance of a timber door.

071 Where fanlights are above the doors, the fanlights and frames are to be included as part of the renewal.

072 All glazing doors to be double glazed laminated safety glass sealed obscure units.

073 All doors to have brass numbers on the outside and brass draught-proof letter boxes.

074 All doors to have brass multipoint lever handles.

075 All doors and locks to meet Secure by Design British Standard and tested to PAS 24 Standard. All existing door bells to be re-fixed.

076 The Service Provider is responsible for surveys and installation of the doors at the same time as the windows installations.

Timber Front Doors to Conservation Areas

077 All new timber front doors where requested are to be purpose made pre-primed minimum 44mm thick softwood doors, with hardwood painted frame.

078 It is anticipated that most doors will be 4 panel with 2 No. upper panels to be double glazed laminated safety glass sealed obscure units, and 2 No. lower panels to be mouldings to match existing.

079 All doors to have brass numbers on the outside and brass draught-proof letter boxes.

080 All doors to have brass mortice night latch and separate 5 lever deadlocks with finger turn snib internally.

081 Where fanlights are above the doors, the fanlights and frames are to be included as part of the renewal. All existing door bells to be re-fixed.

Timber Architraves and Cills

082 To every new timber door and door frame, carefully remove all existing internal architraves and replace to match existing in pre-primed ogee or similar timber, with mitred joints to architraves. All timbers to be finished in gloss paint.

083 All gaps to walls or gaps to joints are to be sealed prior to decorations.

Painting of Timber Windows and Doors

084 To all new timber cill boards, pre-prime, architraves and cill boards before fixing, and then once installed, rub down, fill as necessary and paint 2 No. coats white undercoat and 1 No. gloss white paint, rubbing down between all coats.

085 Include to repaint existing external concrete cills and thresholds externally to the doors and touch up any painted stonework or render around the door frame to match existing, as disturbed during the renewal works.

Client's current manufacturers/suppliers/products

086 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

PERFORMANCE SPECIFICATION FOR REPLACEMENT GRP ENTRANCE DOORS & FRAMES AND ASSOCIATED FANLIGHTS AND SIDELIGHTS

SPECIFICATION FOR GRP ENTRANCE DOORS & FRAMES AND ASSOCIATED FANLIGHTS AND SIDELIGHTS

General

001 This specification is intended to describe the performance criteria to be obtained for the manufacture, supply and installation of inward opening GRP doors and frames and associated PVC-U windows. Service Providers must ensure that their proposed system completely satisfies all the relevant standards detailed.

002 This specification is applicable to ALL properties and the Service Provider's price must cover the location of all properties and doors being renewed. Generally properties will be occupied during the course of the works.

003 This specification describes works in detail however not all items of work will be applicable to each property, nor is work referred to exhaustive. All doors, frames, fanlights and sidelights must meet the requirement of the "Secured By Design" certification.

004 Only products defined herein shall be used; alternative products will not be acceptable unless agreed with Client.

005 The Service Provider is to arrange access with the Customer to carry out a pre-manufacture site survey as recommended by the British Plastics Federation Code of Practice for the Survey of PVC u Window sets, current edition. This survey will include the provision of a proforma questionnaire offering the available options from which the Customers can choose.

The visit will include:

- consulting with the Customer about choices,
- taking measurements sufficient to prepare scale drawings
- scheduling Customer fittings and their condition
- any other site condition that may affect installation

006 Customers are to be given a choice of 5 front door types as table below.

REF	DOOR TYPE
3P.1SG/2SP	Three panel door, top panel double glazed with safety glass, two bottom panels with solid hardwood panels
4P.2SG/2SP	Four panel door, top two panels double glazed with safety glass, two bottom panels with solid hardwood panels
5P.2SG/3SP	Five panel door, top two panels double glazed with safety glass, three bottom panels with solid hardwood panels
6P.2SG/4SP	Six panel door, top two panels double glazed with safety glass, two middle and two bottom panels with solid hardwood panels
6P.6SP	Six panel door, top two panels, two middle and two bottom panels all with solid hardwood panels

Other choice options are to be:

Element	**Location**	**Options**
Colour	Front/Rear Door	White
		Blue (RAL 5004)
		Red (RAL 3002)
		Green (RAL 6009)
		Black (RAL 9005)
Glazing	Front	Obscure - Cotswold
	Rear	Clear only
Ironmongery	Front/Rear	Gold/brass
Surface Finish	Front/Rear	Wood grain effect

007 All window styles must be in accordance with modern casement design where possible, allowing for exceptions where fire egress casements are necessary. Unusual aesthetic arrangements are to be referred to the Client for decision.

008 All component parts are to be British Standard "Kite marked", or BBA approved, verification of which to be supplied on request by the Client.

009 PAS 24 certification of the manufacturer and Service Provider must be provided to the Client before manufacture.

010 The window types are to be as existing in respect of configuration and opening lights. However, windows in conservation areas, areas of outstanding natural beauty or historic buildings must be discussed with the Client for likely planning approval issues.

011 Design drawings are to be prepared by the Service Provider prior to manufacture. A copy is to be supplied to the Client before manufacture commences.

012 The Service Provider will be required to carry out a pilot installation prior to full commencement of the work, to ascertain the correct provision and detailing of the installation.

Programme and Security

013 In the case of numerous installations a programme for the works is to be prepared by the Service Provider and agreed by the Client, before work commences.

014 Provide 14 days notice, and agree the timing of the works with each Customer. When undertaking works they need to be carried out as quickly as possible, in order to reinstate all facilities as soon as is possible. Full security, wind and weathertightness must be provided at the end of each working day in each occupied property to suit the Customer's/Client's needs.

015 The installation of a door and frame, fanlights and sidelights must be carried out in one continuous operation within the working day. The security, wind and weathertightness of the dwelling must not be compromised at any time.

016 All making good of the structure and fabric must be carried out within one working day following the installation of the door etc., Any making good will not be left outstanding over weekends without the permission of the Customer and the Client.

017 The Client is also to be notified of the proposed commencement and completion dates, and proposed date for completion inspection once all the works are completely finished including any snagging by the Service Provider.

018 The Service Provider is to agree a maximum number of dwellings to be worked on at any one time before the works programme begins (to suit number of properties/contract period available).

019 A dwelling must be 100% complete prior to commencing on further dwellings above the agreed maximum and each completed dwelling must be signed off by the Customer and the Client.

Protection

020 Allow for protection of floor coverings, furniture and Customer's belongings throughout the duration of the works. Include for moving furniture, Customer's belongings and everything necessary in order to carry out the works and minimise disturbance to the Customer as far as possible. On completion of the works place all previously moved furniture and belongings in locations agreed with the Customer. Dust sheets must be used at all times during the works to prevent any damage.

021 The Service Provider will be responsible to any damage to carpets or Customer's belongings therefore it is recommended the Service Provider undertakes a schedule of condition and agree this with the Customer prior to undertaking any works. It is therefore considered prudent, to take photographs of any damaged Customer's belongings within the vicinity of the work prior to commencement, and where appropriate to obtain a signed disclaimer.

Stripping Out

022 Carefully remove existing doors, frames, cills, fanlights, sidelights and all associated fixings and prepare existing openings to receive the new installation. Dispose of all unwanted material and recycle were possible.

023 Take care to carefully remove remaining Customer's fixtures and store to one side for reinstalling and refix on completion.

024 Carefully remove coatings, panelling, tiles or sheeting of any kind from adjacent walls and ceilings generally back to the plastered surfaces. Make good, repair or replaster to receive new fittings, tiles and decoration.

025 After the removal of the existing door, frame, cill, fanlight and sidelight the Service Provider is to carefully cut back any internal or external flooring, finishings, cladding, wallpaper and decoratings to allow for the installation of the new frames etc. The Service Provider is responsible for making good all structures, finishings and decorations up to 100mm from the face of the frame or cill.

Replacement Doors - General

026 Service Providers must ensure that all doorsets and their installation fully satisfy the relevant standards detailed.

027 Manufacture, fabrication and installation should be suitable in all respects for the following type of building:

Low Rise Domestic Structures

028 All door styles must correspond to Drawing S(05.11)01A.

029 Important Note: Dimensions, if shown, are for guidance only and the Service Provider is responsible for taking all necessary site dimensions to ensure that doorsets are manufactured to fit accurately and properly.

030 No frame extensions or make up pieces are to be used to compensate for incorrectly measured openings.

031 All doorsets are to have been tested to BS 6375-1:2015 in accordance with the following methods:

Air Permeability	Test Pressure Class 300 Pa Test Method BS EN 1026
Water Tightness	Test Pressure Class 200 Pa Test Method BS EN 1027
Wind Resistance Test Pressure	2000 Pa Test Method BS EN 1028

032 Fire doors are to have been tested (at a UKAS accredited test facility) to BS 476-22 or BS EN 1634 and BS 8214. Fire doors are to have achieved fire resistance integrity in excess of 30 minutes and a doorset classification of FD30S.

Construction of Door and Frame

033 Door leafs shall be constructed with minimum 4mm high gloss through coloured external Skins, manufactured from gel coat to BS 3532, coloured to BS 5252, and one layer of 300gm chopped strand matt and 2 layers of 450gm chopped strand matt to BS EN 14118, fully saturated with high heat distortion isophthalic / DCPD polyester resin conforming to BS 3532 type C. Skins shall fully encapsulate a jointed timber frame manufactured from prepared material kiln dried to BS 4978, and resin laminated CFC free polyurethane foam core. The above may be over ruled/enhanced by testing to PAS24 (and fire testing. as above. in the case of fire doors).

034 Door frames shall be of moulded GRP manufacture generally to the same specification as the door leaf and have a non staining EPDM compression seal gasket and secondary angled blade neoprene stop seal;

035 Door cills, where required for non wheelchair required access, shall be of moulded GRP manufacture generally to the same specification as the door leaf. They shall be 50mm in height, 150mm in width and designed to accept an approved threshold.

Threshold to Front Doors

036 All external door sets (Main and Secondary Entrances including Doors leading onto a patio) must have level access thresholds (max 15mm high threshold) and a minimum clear opening width of 800mm between the blade and the stop, irrespective of the type of accommodation in order to meet the requirements of Lifetime Homes.

Weatherbar should be capable of renewal in-situ – i.e. without the need to remove the door frame. The weatherbar unit shall have a performance rating to comply with BS 6375

Glazing

037 All glazing apertures are to be internally beaded with the double glazed units securely fixed using mechanical means.

038 All doors, fan lights and/or side lights shall be glazed with dual sealed double glazing units having a 12mm air space as standard. Glass shall be 6.8mm laminated safety glass to both faces. Safety glass shall comply with BS EN 12600 and BS 6262

Ironmongery

039 Ironmongery must be provided in full compliance with "Secured by Design", Handles and locks must be easy grip type suitable for use by disabled persons.

040 Two door viewers must be provided to all front doors at heights of 1500 and 1050 mm from finished floor level.

041 All external doors must be hung on 1½ pairs of heavy duty butt hinges. Fire door hinges must be CE Marked and tested to BS 476:22 or BS 1634. Hinges shall have high corrosion resistance, greater than BS EN 1670 grade 4.

042 Multi-point locks tested to PAS 24 and to comply with (and stamped) Secured by Design. Front doors to be provided with a security chain.

043 All hardware, where attached to the doorset, shall be fixed with stainless steel screws fully penetrating the timber sub frame. For all installations use screws not rivets and employ maximum retention. Do not over tighten fixings.

044 Allow for fitting of D type handle to internal face of door where identified. Position to be agreed with manufacturer.

Installation of Doorsets

045 The doorsets are to be fixed strictly in accordance with the manufacturer's technical data sheet. Care shall be taken to ensure the doors are handled and stored correctly. Frames are to be packed and wedged into the correct position to ensure a square and flat fit before fixing to the reveals.

046 The doorset is to be fixed with a minimum of eight M10 x 140mm Hilti HPF/2 frame fixings, direct through frame and finished with white cover caps.

047 Door frame should be sealed to reveal with low modulus silicone sealant, colour matched to the door frame and neatly executed. A suitable bull nosed cover trim should be used to improve the aesthetic appearance of the joint.

048 All protective coverings on doorsets shall be removed on installation. Removal and cleaning of the frames and doors is the responsibility of the Service Provider.

Sidelights and Fanlights

Profile Manufacture

049 All sidelights, fanlights, door frames etc., profiles are to be obtained from the same approved system manufacturer.

050 All manufacturers must confirm as being registered as either having BS 7412 or BBA independently. Evidence to be supplied. All manufacturers will be required to have membership of either, the GGF or BPF, evidence to be supplied.

051 The sidelights, fanlights, door frames etc., will be manufactured in accordance with current manuals for GRP sidelights and door frames. The profile will be manufactured to BS EN 12608. Cadmium based stabilisers, and re -work material used in manufacture will not be accepted. The profile will be vent profile manufactured with a euro- groove. All profiles are to be chamfered.

Construction

052 All sidelights, fanlights, door frames etc., shall be of all welded construction. All corner joints, transoms and mullions are to be mitred, and fusion welded. All excess materials are to be neatly trimmed and feature grooved. Mechanically jointed transoms may be considered where there are specific design constraints, but only after approval from the Client. All feature grooves should be straight and of consistent depth throughout their length.

053 Each sidelights, fanlight, door frames etc., shall be permanently marked in an unobtrusive position (not visible when the opening light is closed) with BS 7412, the weather tightness exposure category and the name or trade mark of the manufacturer.

054 Reinforcement is to be continuous to a minimum of 85% of the length of the frame, and within 5mm of the weld. Screw fixed to the profile at 250 mm max c/c, with a minimum of three fixings. All reinforcement to be to the profile manufacturers current recommended parameters in either aluminium or galvanised steel.

055 All sidelights, fanlights, door frames etc., will be constructed with the profile manufacturers current guide lines for pressure equalisation. Face drainage is to be provided, however drainage slots should be a minimum 30mm long and 5mm wide. Internal drainage slots should be offset by a minimum of 50mm from external slots.

056 The sidelights, fanlights, door frames etc., are to be internally beaded as recommended in the current profile manufacturer's manual, and be capable of accepting 24mm hermetically sealed "low emmissity" glass units.

Installation

057 The correct installation of GRP sidelights and door frames is critical to achieve maximum performance. Installation shall at all times meet the requirements of BPF/ GGF code of practice for the survey and installation of white high impact modified windows (Ref: COP3, parts A&B). The requirement for through frame fixing, cleat fixing and the need for frame extensions will be discussed at appropriate times. The Service Provider should draw these details to the Client's attention.

058 All sidelights etc., are to be glazed from the inside of the building. Glazing systems shall be designed so that the glass cannot be removed from the outside by the use of a thin blade or other simple tool or tools.

059 All fasteners used for the installation of GRP door frames, sidelights etc and doors, must meet the following specification:-

- Fastener is to be a nylon through frame type with twist proof vanes to ensure mechanical stability and prevent anchor rotation;
- To ensure stress free attachment to the masonry structure and to prevent twisting, racking or distortion of the frame, the anchor body will expand radially along its full length during installation. Fasteners relying on a cone and expanding sleeve are not acceptable due to the increased risk of frame distortion;
- The fastener when installed will be fully concealed within the frame to ensure that the fastener remains tamper proof and secure;
- Maximum distances between fasteners will not be more than 600mm and the minimum distance of fasteners from frame corners, transom or mullion joints will be 150mm; and

The Service Provider is to ensure the final securing of fixings are screw tightened (not hammered) to avoid possible splitting of the frame. Any splitting of frames will result in the entire door set having to be removed, re-framed and replaced at the no extra expense to the Client

Glazing

060 Glazing should be to Approved Document K of the current Building Regulations and to BS 6262, and BS 8000-7. In addition manufacturer's recommendations for positioning of glazing blocks and packers must be adhered to.

061 Glass to all screens and windows will be hermetically sealed double glazed units to a standard and quality Approved by the Client. The glazed units will incorporate low emissivity to BS 952-1 and BS952-2, units to be fitted in accordance with manufacturer's specification. Glass to be marked with appropriate labelling which will only be removed after handover is completed.

062 Double glazed units are to be manufactured to the following specification 4mm Float Glass - 20mm Argon Gas fill - 4mm low emmissity Glass overall thickness 28mm. Glass thickness and type shall be selected using the recommendations given in BS 6262 to withstand the calculated design wind pressure relative to the size of pane.

063 All glazing to screens and adjacent windows to be laminated safety glass (both panes) to BS EN 12600 and marked accordingly. Safety glass shall be fitted where required in accordance with the Building Regulations.

064 If any panels have any fixtures/fitting etc., attached they are to contain a ply reinforcement.

065 Obscure glass to be Cotswold pattern or an obscure pattern of level 5 as a minimum.

Hardware Specification for Fanlights and Sidelights

066 Openings in the fanlights/sidelights should in the first instance be avoided, as it presents a higher risk of unauthorised door entry. However it may be deemed necessary to provide the room/inner space with an adequate amount of ventilation (see Building Regulations). In these instances all ironmongery must be as window specification detailed elsewhere. In addition restrictors must be concealed and tamper-proof from outside the property.

067 The fanlight/sidelight hardware package must meet the requirements of PAS 24 "Enhanced security performance requirements for doorsets and windows in the UK. External doorsets and windows intended to offer a level of security suitable for dwellings and other buildings exposed to comparable risk"

Insulated Panels

068 On full floor to head height frames lower panels will be coloured insulated panels to match door panelling. Therefore the panels overall thickness and materials to be used will be determined by the doors PAS24 certification. All panels will achieve a min thermal resistance equal to or better than the glazed area above.

069 All panels to be manufactured to meet all relevant Building Regulations and safety standards with regard to thermal performance, acoustic transmission, and fire protection.

Covers, Trims and Mouldings

070 Unless otherwise instructed all internal heads, jambs, and cills will be finished with a (colour as windows) Single bull-nosed PVCu trim typically 5–7mm maximum thickness of not greater width than 100mm. Scribed, mitred, securely screwed and capped and the edge glued to the frame with a PVCu cyanoacrylate adhesive to give a neat finish and sealed on all edges using an emulsion acrylic sealant.

071 All PVCU extrusions, mouldings, trims and profiles to windows will be manufactured and installed so that no colour variation exists to the detriment of the aesthetic value of the windows, doors etc. In accordance with colour fastness test methods included in BS EN 12608.

072 Trims are not to be used to simply provide or enhance the weather tightness of the window or any perimeter joints. Finishing trims shall be used to neaten the interface between frames and opening, they are only to be used in conjunction with the "plaster-patching" / making good situations. As it is likely that cold bridging may occur filling at reveals, heads and cills must be plastered prior to fitting of all trims.

073 The inclusion of a finishing trim to existing reveals and sill may in certain circumstances create an issue around the re-fitting of Tenant's blinds etc. The window installer shall pay due regard to the existing window dressing(s) and where finishing trims are required that a "slim-line" version (5mm or less) is used.

Sealants and Perimeter Pointing

074 All external sealants are to be of low modulus silicone and conform to BS 11600 and used to seal gaps between window/door assembly and brickwork/plasterwork. Colour matched to windows and neatly executed.

075 Internal sealant to be a one part flexible emulsion acrylic sealant. This sealant may be used to fill cracks or gaps around walls and ceilings, and around all finished PVCu architraves and trims.

Ventilation

076 All openings to be fitted with room ventilation as per window specification detailed elsewhere.

077 If required the Service Provider is to supply and fit a ventilator, which will conform to Gas regulations BS 5440-2, for air supply to gas appliances. This applies to any room containing, or used to vent these types of appliances. Type position and quantity of ventilators to be agreed and verified with the Client prior to work commencing.

078 An appropriate "**DO NOT OBSTRUCT"** label approved by the Client indicating boiler rating, must be fitted to all gas ventilators by the manufacturer.

Completion

079 On completion of all works thoroughly clean all adjacent surfaces affected by the works.

080 All builders rubbish both internally and externally must be removed during and on completion of the

works.

Client's current manufacturers/suppliers/products

081 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

PERFORMANCE SPECIFICATION FOR REPLACEMENT PLASTIC COATED ALUMINIUM EXTERNAL DOORS AND SCREENS

PERFORMANCE SPECIFICATION FOR REPLACEMENT PLASTIC COATED ALUMINIUM EXTERNAL DOORS AND SCREENS

Generally

001 The works comprise all the necessary design work for and the supply and installation of aluminium external doors, with double glazed units to communal staircases and landings.

Design Standards

002 The door system is to comply with the following British Standards:

BS 952-1:1995	Glass for glazing – Classification
BS EN 755	Aluminium and aluminium alloys. Extruded rod/bar, tube and profiles. Mechanical properties
BS 4873:2004	Aluminium alloy windows
BS 5516-1 and 2:2004	Patent glazing and sloping glazing for buildings. Code of practice for design and installation of sloping and vertical patent glazing
BS 9991:2011	Fire safety in the design, management and use of residential buildings. Code of practice
BS 6206:1981	Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings
BS 6262-5:2005	Glazing for buildings. Code of practice for safety related to human impact
BS 6375-1:2015	Performance of windows and doors. Classification for weathertightness and guidance on selection and specification
BS 6375-2:2009	Performance of windows and doors. Classification for operation and strength characteristics and guidance on selection and specification
BS 6496: 1984	Specification for powder organic coatings for application and stoving to aluminium alloy extrusions, sheet and preformed sections for external architectural purposes, and for the finish on aluminium alloy extrusions, sheet and preformed sections coated with powder organic coatings
BS EN ISO 9227:2012	Corrosion tests in artificial atmospheres. Salt spray tests
BS 8213-1:2004	Windows doors and rooflights. Design for safety in use and during cleaning of windows, including door-height windows and roof windows. Code of practice
BS 8213-4:2007	Windows, doors and rooflights. Code of practice for the survey and installation of windows and external doorsets
GGF 6.6.2	Specification for improved security single hinged residential doorsets

003 The installation is to comply with all the requirements of Building Regulations Approved Documents

004 All door openings are to be suitable for wheelchair access in accordance with the Building Regulations (Access to and use of buildings). This means that, with the door open, the clear opening width between the jamb of the frame and the hanging style of the door is to be not less than 800mm.

Materials

005 All framing and swing doors system must be constructed from aluminium 100% recycled and suitable for fire route exits.

006 Screws and internal components must be either stainless steel, A2 cadmium plated steel or other corrosion resistant material.

007 Glazing beads must be aluminium "snap on" type requiring no screws. Dry glazing must be with self locking plasticised PVC gaskets.

Construction

008 Framing assembled from pre-finished lengths of aluminium profile, which are square cut. All horizontal members are secured to verticals by screwing into four integral screw splines. All joints to be sealed against the entry of water. Mid rails into framing are to be secured with frame to rail cleats.

009 Door leaf assembled from finished lengths of aluminium profile, which is square cut. Door rails secured to stiles with pre-machined cleats. All joints to be sealed against entry of water. All external-glazing beads must be secured by mechanical means and tamper proof. Stiles to have double weather-stripping as standard.

Ironmongery

010 Fire exit doors (opening out) (to comply with BS EN 1125):

1 No. Flush Fitting Panic Latch.

1 No. Pull handle in matching polyester RAL coating to outside.

1 No. Door closer.

1 No Modular escape nightlatch with 70mm backset with suited lock.

1no. High Security Electric Strike faceplate

Minimum 3 No. finger guard silver anodised butt hinges.

011 Main entrance door:

1 No Pull handles in matching polyester RAL coating.

Minimum 3 no. finger guard silver anodised butt hinges.

1 No. Flush Fitting Panic Latch.

1 No. Low energy swing door operator.

1 No Modular escape nightlatch with 70mm backset with suited lock.

1 No. High Security Electric Strike faceplate

Window Inserts

012 System windows must consist of an outer frame and ventilator frame mitred and mechanically jointed using prepared extruded aluminium corner cleats and stainless steel corner chevrons. All joints must be sealed against the entry of water. Infills are secured by snap in beads internally or externally. Integral mullions/transoms are secured by driving screws into extruded screw ports. Structural coupling mullions and transoms are available to construct larger composite window units. Always refer to the System manufacturer's technical data sheets for limitations on frame and vent size.

Colour Finish

013 All exposed sections of aluminium extrusion are to be powder coated. Unless otherwise specified all powders must comply with the requirements of BS 6496:1984 and conducted under BS EN ISO 9002:2000 control conditions. Powder coating application and stoving on aluminium must be carried out in accordance with BS 6496.

014 The powder coating must have a Class 1 surface spread of flame rating to BS 476-7.

015 The selected coating must comply with the British Board of Agrement Certificate. Colour to be high gloss white.

016 All doors are to be permanently marked in an unobtrusive position (not viable when the opening door is closed) with the name and trademark of the system supplier and fabricator.

017 Units are to be installed by an authorised Alcoa installation agent. After installation and glazing units are to be checked and adjusted as required.

Glass

018 Hermetically sealed 24mm double glazed units with clear glass.

Main entrance door to scheme

019 Electric swing opener to be installed by a specialist Sub-contractor Approved by the Client under the terms of the Contract.

020 The Service Provider is to liaise with his Sub-contractor for the door entry / warden call system to work on door entry system with regard to the following operations:

021 Disconnection system before existing door is removed.

022 Connection system after installation of new door is installed to allow Customers and central control to open the door remotely.

Proximity Swipe

023 External doors to be fitted with a proximity swipe system with capability of reading up to 70 key fobs also to be supplied.

Master Keying

024 All new locks are to pass the same key suited to the schemes master suite.

025 Copies of keys are to be issued in the first instance to the Client.

Installation

Aluminium

026 Installation of fenestration systems must be performed by a Sub-contractor Approved by the Client in accordance with shop drawings and pointed with a fire grade silicone/mastic sealant, all as approved by the specifying architect. After installation and glazing the Service Provider must check and adjust, if required, all items furnished under this section.

Glass

027 All glazing to be carried out in accordance with the requirements of the Building Regulations. Glass to comply with BS 952-1:1995

028 Safety glass to comply with BS EN 12600 with regard to impact performance and the marking of glass to indicate type and classification, and with BS 6262 and subsequent amendments with regard to minimum thickness' for certain pane sizes.

Protection & Cleaning

029 The Service Provider must be responsible for any damage to the materials under this section of the specification incurred by him during installation and must leave the work in a clean condition. The Service Provider must be responsible for the protection of these materials from damage by other trades and must be responsible for the final cleaning of the work.

Fasteners and Fixings

030 All aluminium units are to be installed in accordance with the manufacturer's installation technical data sheets.

031 Openings should be checked against available drawings or a site survey for correctness and openings should be square and plumb.

032 Fixings grounds at head, cill and jamb must be capable of carrying all imposed and dead loads in a stable condition, ie: there should be no spalling, fissures or general debris.

033 Foamed polyurethane must not be used as a means of fixing.

Approved Fabricators

034 If the Service Provider is not an Approved by the Client window manufacturer/Service Provider, he must sub-contract the work to a fabricator who be capable of being Approved by the Client.

035 When submitting his tender, the Service Provider must give full details of the proposed system, ironmongery, glazing method etc.

Client's current manufacturers/suppliers/products

036 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

PERFORMANCE SPECIFICATION FOR REPLACEMENT PVCu WINDOWS

PERFORMANCE SPECIFICATION FOR REPLACEMENT PVCU WINDOWS

MATERIALS AND MANUFACTURE

PVCu Windows and Doors

001 All new PVCu windows and external doors shall be purpose made BBA approved fully welded and fully reinforced PVCu to BS 7412, BS EN 12608 and PAS24.

002 The windows fabricator/Service Provider is to be a licensed kite marked manufacturer to BS 7412, and all products to be covered by BS EN ISO 9001 and an 'A' energy rating certificated by the British Fenestration Rating Council (BFRC).

003 Casement windows are to be kite marked to PAS24, and doors kite marked to PAS24 enhanced security. Windows to comply with secure by Design PAS24 Building Regulations Approved Documents.

•

PVCu Window Installations Specific

004 To all windows where timber sliding sash windows are to be removed and replaced with PVCu windows, the Service Provider is to include for new windows to have pressure treated timbers around the windows wrapped in damp proof course to infill the old window sash boxes. The timber packers to then be covered with PVCu clip on liners, and small gaps filled with polyurethane insitu foam with closed cell structure between 65% and 75%.

005 Under no circumstances are the old box frame cavities to be filled with foam only. Plaster is then to be made good and new plaster covered with wider PVCu architraves to reduce damage to wall decorations.

006 The use of 'make-up' pieces (clip on's) as means of standardising manufacturing sizes should not be used under any circumstances without prior approval. In only special circumstances will approval be given, and then the make-up size should not exceed 15mm either side or head.

PVCU Windows Section Profiles and Reinforcement

007 Extruded window profiles shall only be those itemised on the window manufacturer/Service Provider's kite marked licence and the type testing carried out by a third party testing house to BS 7412.

008 The material from which the extruded four chambers profile sections are made shall consist of white high impact modified unplasticised poly vinyl chloride with a class 1 surface spread of flame resistance to the requirement of BS 476.

Manufactured and extruded hollow PVC-U profiles to BS EN 12608. PVC-U material shall have a multi-chambered design (5 chambers minimum) for enhanced thermal efficiency

All PVC-U profile must be in white to 40% Gloss (RAL 9003 equivalent)

009 All joints to be welded joints with a grooved finish.

010 Reinforcement to be installed to all casement and frame members.

011 Reinforcement is to be fixed with self-tapping stainless steel screws to BS EN ISO 3506-1 and 2:2009 or, sheradised coated steel screws to BS 4921 (Class 1), at 300mm centres so that the reinforcement does not move or rattle when the window is in use.

012 Reinforcement must be made of hot dipped coated steel reinforcement to comply with BS EN 10346 or Aluminium reinforcement to comply with BS EN 485-2:2013; BS EN 515:1993 or BS EN 755-9:2008 (as laid down in BS 7412:2007) or hot dipped prime galvanised steel complying with BS EN ISO 1461:2009, BS EN 10132 and BS EN ISO 9015.

013 The profile must be extruded from un-plasticised polyvinyl chloride (PVC-u) therefore recyclable at the end of its life. Only those additives and pigments may be used that are needed for the manufacture of the compound and its subsequent conversion into sound, durable extrusions of good surface finish and mechanical strength, as assessed by the requirements of this specification.

014 The PVCu material frame, that the profiles are to be made from, must conform to the specification given in Table 1. The tests must be carried out on pressed plaques prepared from milled sheet*, under standard conditions as specified in BS EN ISO 1163-2. (* with the exception of the impact tests which are carried out on samples cut from the face sides of extruded profile.)

015 Profile wall thickness to be classified in accordance with the requirements of BS EN 12608 – Unplasticised polyvinylchloride (PVCu) profiles for the fabrication of windows and doors – Classification, requirements and test methods.

016 The colour of the profile must be uniform and the colour of the profiles in a system must be uniform. The finish of the windows is to be white to 40% Gloss (RAL 9003 equivalent). The profile must be free from foreign bodies, cracks or sink marks when viewed by normal corrected vision at 90 degrees to the surface and at a distance of 1 metre in normal diffused north light.

017 The profiles must be straight such that the longitudinal axis of the profile as measured on the face surfaces may deviate from the straight line by no more than 1mm/metre.

018 Tolerances on external dimensions (from BS EN 12608)

External dimension	Tolerance
Depth (D) ≤ 80 > 80	+/- 0.3 +/- 0.5
Overall width (W)	+/- 0.5

019 No rework/regrind material is to be used in any section, which will be subjected to any weathering. Rework/regrind material will only be allowed in internal glazing bead extrusions.

Construction

020 All corners and intersection joints between frames, mullions and transoms must be welded.

021 The excess material created by the welding process must be removed by a grooving or flush surface method. In either case, the method used must not weaken the profile or the joint, and must retain sufficient wall thickness.

022 Only where Instructed by the Client must windows be provided with external projecting PVCu cills. The cill must be from the same manufacturer as the PVCu windows.

023 These cills must be properly supported, and hollow sill sections must have end caps to ensure that no water penetration occurs at the end of the sills. The sill and window frame must be jointed in accordance with the manufacturer's technical data sheet to ensure a water and weather tight joint.

024 Insulated infill panels to window frames must be provided where Instructed by the Client and fixed with internal glazing beads.

025 The panels must consist of an inner core of high density thermal insulation (min 0.033W/m2K) and outer layers of coloured plastic coated steel skins (skins to be a min of 0.5mm think). The colour of the panels, must be approved by the Client, prior to the Service Provider ordering the panels..

026 The finished window must be free from all sharp edges, burrs and the like that might be a hazard to the user.

Performance Requirements

027 All windows are to comply with BS 7412 and BS EN 12608.

028 The Service Provider must be able to provide test reports prepared by a UKAS accredited testing house to confirm that the windows meet the criteria. The Client reserves the right to have any window provided for the contract tested to check its compliance with these performance requirements.

029 Windows are required to meet the following minimum performance levels as defined in BS 6375-1:2009 "Classification for weathertightness and guidance on selection and specification"

- Air Permeability - Class 2 = 300 Pa Test method BS EN 1026
- Water tightness - Class 5A = 200 Pa Test method BS EN 1027
- Wind resistance - Class 5 = 2000 Pa Test Method BS EN 12211

030 The new BS EN test methods are more demanding than the old. One major factor is the introduction of a final 'safety test' on windows. A 2000 Pa exposure rated window would have to withstand a 'safety' test where gusts of 3000 Pa are applied (both positive and negative pressure)

Architraves and Cills

031 To every new PVCu window and door, carefully remove all existing internal architraves and cill boards and replace to match existing in white PVCu **with mitred joints** to architraves.

032 All trims are to be sealed with white silicon to the window frame and sealed to decorations.

033 Cill boards to have rounded nosing finish and sealed to undersides with white silicon and provided with end caps.

034 Include for PVCu quadrant piece around casement windows to internal recesses.

035 To all windows where timber sliding sash windows are to be removed and replaced with PVCu windows, the Service Provider is to include for pvc liners to inner reveals to form square reveals for new PVCu windows and cover with wider 150mm PVCu architraves to minimise disturbance.

Ironmongery, Fixtures and Fixings

036 Hardware with provision for adjustment must be accessible for adjustment after the window has been installed. Hardware used to open/close the window must be replaceable without removing the outer frame from the structure.

037 All components should be supplied by a manufacturer complying with BS EN ISO 9001 accredited quality system

038 Ironmongery product manufactures limitations must be strictly observed within the terms of their conditions of supply. It is the responsibility of the fabricator/purchaser to ensure that the performance of the window complies with the relevant standards and specification requirements for the particular window and that the correct product is chosen for the weight and design of each window system.

039 Evidence of compliance with PAS24 - Enhanced security performance requirements for doorsets and windows in the UK. External doorsets and windows intended to offer a level of security suitable for dwellings and other buildings exposed to comparable risk.

040 Window hardware wherever applicable must be supplied from a manufacturer holding a product licence under the auspices of the Home Office "Secured By Design" initiative with the aim of fulfilling the obligations placed on the housing provider to ensure a reasonable level of security to the occupants as outlined in Section 17 of the Crime and Disorder Act 1998.

041 Written confirmation of compliance with all of the above should be given to the contract management team in advance of commencement on site.

General Windows Openings

042 All windows to be fitted with Egress Easy Clean Hinges.

043 All hinge components such as bottom track, link bars and rivets to be manufactured from Austenitic stainless steel to BS EN ISO 10088/2 Grade 1.4301 and fitted in accordance with manufactures instructions limitations and recommendations. All associated hardware should be approved to PAS24 and meet BS EN 1670 Class 4 corrosion resistance.

044 The protective tapes shall be removed from the windows immediately or as soon as practicable after installation and the window cleaned with a suitable cleaning agent.

045 Easy clean facility to allow the window to slide along the hinge track so as to be cleaned from inside the building to BS 8213-1. After cleaning, the hinge should allow the window to self relocate and return to its original position and mode of operation simply by closing the casement.

046 All hinges should be BBA Approved and to include a thermoplastic end point and die cast end cap with self lubricating surface finish featuring a roof to minimise the build up of debris.

047 Windows, after a considered and noted risk assessment, can be fitted with a clearly visible and intuitive to release restrictor.

048 The release mechanism must self relocate in one action on closure of the vent. All components, rivets and pins should withstand a force of 600N to comply with BS 6375 Part 2, Performance of windows and doors. Classification for operation and strength characteristics and guidance on selection and specification and BS 8213 Part 1: 2004 - Design for Safety in Use and During Cleaning of Windows.

049 Restrictor to be tested to comply with BS 6375 Part 2 to withstand a force of 600N when opened at the restricted position and fitted to provide a maximum opening of 100mm in the restricted position. Restrictor to be manufactured from stainless steel to BS EN ISO 10088/2 Grade 1.4301 tested to meet the requirements of BS 7412:2007 and to meet BS EN 1670:2007 Class 4 corrosion resistance.

050 Written confirmation of compliance with all of the above should be given to the Client in advance of commencement on site.

Operating Handles

051 Windows to be fitted with cranked espagnolette operating handles coloured white unless otherwise requested. Refer for advice from the Client if internal face other than white. Handles to incorporate a push to release mechanism only; non-locking egress option (in every case) - key operated lock not permitted. Mechanical Guarantee / Warranty required (as a minimum) - 10 years. Product must be BBA accredited or a Secured by Design Licensed Product and UKAS laboratory tested to BS EN 1670. All to Abusive load testing to BS 6462-1985 strength Test C3.

052 Handle manufacture to hold a BS EN ISO 9001 certified quality system and manufacture the handle from die cast zinc alloy (to BS EN 1774) with a polyester powder coating finish incorporating thermoplastic push fit covers.

Emergency Egress Window Handles

053 Nominated Emergency Egress windows to be fitted with green buttoned, push to release, non-deadlocking handle. Written confirmation of compliance with all of the above should be given to the contract management team in advance of commencement on site and will be a condition of the tender.

Locking Mechanism

054 All windows to be fitted with a Locking Mechanism that must be BBA accredited and have been tested to the equivalent of PAS 24 security test or a Secured by Design Licensed Product

055 Locking mechanism to have an enhanced grade zinc alloy gearbox and mushroom-headed cams and shoot bolts. Where twin cam type is used, shoot bolts are not required. Minimum corrosion resistance: BS EN 1670 Class 3. Fully adjustable "Twin Cam" high performance "no crop" security locking system. Operate with up to four pairs of mushroom cams travelling towards each other locking into a double-sided security keep. Fully adjustable cams ± 1mm. Keeps with a night latch locking facility.

056 All windows should be approved to BS 7412: 2002 and meet BS EN 1670 Class 4 corrosion resistance

057 Evidence of compliance with PAS24 (Specification for Enhanced security performance requirements for doorsets and windows in the UK) will be a condition of tender.

058 All components should be capable of sustaining a minimum of 25,000 opening cycles and 1,000 full reversables under 50kg operational load without demonstrating any significant deterioration or deformation that would inhibit its function and have a Mechanical Guarantee / Warranty required (as a minimum) - 10 years.

Fixings

059 Screws used for fixing non-reinforced PVC-u sections will be of carbon steel with a suitable corrosion protective coating and feature a double helical thread, spoon point with a countersunk head.

060 Fixings must incorporate a combination square / cross recess drive to provide a non-magnetic stick fit.

061 Fixings for friction stay applications will be supplied with a special low profile pan head to prevent fastener head interfering with the friction stay.

062 All screws, nuts, bolts and other fastenings must be of corrosion resistant material, or be treated to give corrosion resistant properties. When subject to the acetic acid salt spray test specified in BS EN ISO 9227 for a period of 144 hours, the corrosion resistance of treated mild steel must be equal to or better than that of stainless steel samples subjected to the same test conditions.

063 All ironmongery, fixtures and fittings must be of materials resistant to, or protected against atmospheric corrosion. Metals in contact with each other must be compatible so as to prevent galvanic corrosion of dissimilar metals by electrolytic action.

064 Foamed polyurethane must not be used as the sole means of fixing, and is only to be used with express consent of the Client. Fixing to be as recommended by in BS 8213-4. below is a brief summary –

Secured on all sides (where practicable);
Corner fixings – 150 – 250mm from external corner;
No fixings less than 150mm from centre line of a mullion or transom;
Minimum of 2 fixings per reveal;
If head is fixed with polyurethane foam, then head fixings can be – • Frame width up to 1200mm – no fixings • >1200mm to <2400mm – one central fixing • >2400mm to 3600mm – two equally spaced fixings

065 All components should be supplied by a manufacturer complying with BS EN ISO 9001: 2000 accredited quality system. A warranty certificate to be issued by the hardware manufacturer on completion of the project.

066 Written confirmation of compliance with all of the above should be given to the Client in advance of commencement on site and will be a condition of the tender.

067 Installation "packers" should be used to set the window frame onto to allow sealant/mastic to be used as a full fill bedding material. The colour should match the window finish.

Drainage

068 The windows must include a self-drainage system by means of slots/ holes which must under no circumstances drain through chambers incorporating reinforcement. All drainage slots/ holes must be neatly cut out with no lips to allow free drainage of water from the frames to the outside of the building.

069 Matching PVCu caps must be provided to cover all visible external drainage slots. Care must be taken to ensure that glazing blocks or spacers do not obstruct drainage from the glazing rebate.

Client's current manufacturers/suppliers/products

070 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

TABLE 1
MINIMUM PROPERTIES OF PVCu MATERIAL TO BE USED FOR FABRICATION OF WINDOW

MATERIAL PROPERTY	TEST METHOD	REQUIREMENT
Vicat Softening Point	BS 2782-1: Part 1: Method 120B: 1990	$78^0C \pm 2^0C$
Apparent modulus of Elasticity (flexural)	BS ISO 6721-10:2015 Method 335A. Rate 5mm/min	2500 MPa
Impact Strength	BS ISO 6721-10: Method 359	$20KJ/m^2$ minimum
% change impact strength after accelerated ageing		70% minimum
Notch impact strength	BS ISO 6721-10: Method 359A	$12KJ/m^2$ minimum
Low temperature impact	A 300mm profile sample supported at 200mm centres. Condition at one hour – 10^0C. Strike flat surface with rounded 1kg weight from 1 metre.	
Colour retention after artificial accelerated weathering	BS2782: Part 5: Method 540D and Method 540G. Sample to be exposed to total irradiation of $8GJ/m^2$ in wet/dry cycle.	
Colour retention after natural weathering for a period of 60 months	DIN 3386	Maximum colour change allowed is that rated 3, using BS 1006: Part A03:1978
Heat reversion	200mm of profile tested. Mark profile 1cm from each end and age at 100^0C for one hour. Cool and re-measure distance between marks. Compare before and after ageing and express as % change.	No visible signs of deterioration Maximum reversion allowed – 2%
Profile delamination post heat ageing	200mm of profile tested. Subject sample to 30 minutes at 150^0C. Visually inspect	No bubbles, cracks or delamination should be found
Heat Stability	BS2782: Part 1: Method 130A: 1991	Not less than 85 minutes

TABLE 1 MINIMUM PROPERTIES OF PVCu MATERIAL TO BE USED FOR FABRICATION OF WINDOW		
MATERIAL PROPERTY	**TEST METHOD**	**REQUIREMENT**
Flame Resistance Weld factor	BS 476 Part 7 Samples of profile are butt welded together at 180 degrees. Cut sample from joined faces according to requirements of the now withdrawn BS 2782-Part 3: Method 320C so that weld line is in centre. Five samples are tensile tested to the requirements of the now withdrawn BS2782-3: Method 320 at a rate of 5mm/min. Five samples of un-welded section are tested in comparison. Sample condition at 20^0C for 1 hour Weld factor – Maximum stress valve welded. Maximum stress control sample. Profile cut at 45 degrees and welded to give 90 degree corner. Condition at 20^0C for 1 hour. Load applied to deform on leg of corner piece.	Class 1
Corner Weld Strength	BS EN ISO 868 or DIN53505 – Shore hardness Table D	Deformation of horizontal member should be minimum 5mm with no breakage of the corner weld line.
Hardness		77-79

Notes on tables above

Please refer to BS EN 12608: 2003 for details of test methods and standards currently adopted.

PERFORMANCE SPECIFICATION FOR REPLACEMENT TIMBER WINDOWS

PERFORMANCE SPECIFICATION FOR REPLACEMENT TIMBER WINDOWS

Timber Windows

001 All new pre-finished timber windows shall be purpose made pre-treated timber double glazed windows and doors manufactured to BS 644 and PAS24

All Timber Window manufacturers shall produce timber windows and the ranges required to the highest standards, all of which have been approved by the British Woodworking Federation's (BWF) Timber Window Accreditation Scheme (TWAS) and hold a "third party" registration by BBA.

All windows are generally measured in accordance with BS 8213-4: 2007 and as recommended on the GGF (Glass & Glazing Federation) "Good Practice Guide for the Installation of Replacement Windows and Doors".

All windows are to have "child restriction" to limit the uncontrolled opening of the window.

Opening Vents in every case must provide for Child Restriction, Egress, and Easy Clean

002 All timber for constructing windows should be in accordance with BS EN 942:2007 Timber in Joinery and sustainably obtained as per European Union Timber Regulation (EUTR).

003 Window to achieve an '**A'** energy rating certificated by the British Fenestration Rating Council (BFRC).

004 All windows must carry a permanent mark or stamp showing details of the manufacturer, the job number of the window and the date of manufacture. The mark should also indicate compliance with BS 1279-5: 2005+A2:2010 and a BSI Kite-mark. This mark should be placed on at least one section of the spacer bar between the glazed panes glass and be visible.

005 All softwood joinery to be subject to preservation treatment by spirit based double vacuum pressure impregnation in compliance with BS 8417.

006 All new windows to be in compliance with Building Regulations.

Timber Window Installations Specific

007 Where no 'check' reveal is present install the new window frame wrapped in an Approved damp proof course. Where 'checked' reveal is present the window is to be placed directly behind the DPC located behind the external skin.

The "as installed" windows shall in every case operate correctly.

Avoid (as far as reasonably practicable) unnecessary damage to the internal plastered reveals irrespective of how they may be finished (i.e. paint/wallpaper/ tiling etc.,); fixing methods will be directly affected by the condition of the any cavity closer.

The new frame shall maintain the recommended movement gap (typically 5mm) each side; once the frame is fixed, this gap can be "foam filled". Fixings should be at least as corrosion-resistant as BS EN 1670: 2007, Grade 3 Windows shall be secured in accordance with the recognised "fixing distances" for strap / lug fixings and through-frame fixings as recommended in BS 8213-4:2007;

Dwelling Type	Window Type
Low rise stock (1-3) storeys- Bungalows, houses, flats	Storm proof casement (projecting top and side hung hinge) Flush casement. (projecting top and side swing hinge)
Medium rise stock (3-5) storeys- Flats block, flats over maisonettes (opposite), maisonettes. Over maisonettes	Flush casement. (Projecting top & side swing hinge) Fully reversible windows- (hotel hinge top swing) Floors 1 & 2 will be FLUSH CASEMENTS to reflect the same "fenestration" as the fully reversible window Floors 3-5 will be FULLY REVERSABLE (Hotel Hinge)
High rise stock (6-20) storeys- Multi storey flats	Fully reversible hinge.

Timber Window Styles

008 All new timber windows are to be purpose made pre-treated.

009 All new windows to be double-glazed and must have features to match existing, e.g. vertical beadings, curved sashes, cover mouldings and horn details etc.

010 All new windows to be pre-primed prior to delivery and installation on site.

011 All external cills to new windows to match existing cills

Timber Windows Architraves and Cills

012 To every new timber window, carefully remove all existing internal architraves and cill boards and replace to match existing isurrounds, with mitred joints to architraves.

013 All gaps to walls or gaps to joints are to be sealed prior to decorations.

014 Cill boards to have rounded bull nose timber finish.

Painting of Timber Windows

015 All new timber windows/sidelights etc shall be delivered to site with the full coating system. All external edges of timber windows shall have a radius of not less than 1.5mm and not greater than 3.0mm in accordance with any Paint Manufacturer's Instructions. This detail is acceptable through all joint lines.

016 Where required, pre-prime and paint all new architraves before fixing, and then once installed, rub down, fill as necessary and paint 2 No. coats white undercoat and 1 No. gloss white paint, rubbing down between all coats.

017 The Tendered rates include to repaint existing external concrete cills externally to the windows and touch up any painted stonework or render around the windows to match existing, as disturbed during the window renewal works.

Ironmongery, Fixtures and Fixings

018 Hardware with provision for adjustment must be accessible for adjustment after the window has been installed. Hardware used to open/close the window must be replaceable without removing the outer frame from the structure.

019 All components should be supplied by a manufacturer complying with BS EN ISO 9001 accredited quality system

020 Ironmongery product manufactures limitations must be strictly observed within the terms of their conditions of supply. It is the responsibility of the fabricator/purchaser to ensure that the performance of the window complies with the relevant standards and specification requirements for the particular window and that the correct product is chosen for the weight and design of each window system.

021 Evidence of compliance with PAS24 - Enhanced security performance requirements for doorsets and windows in the UK. External doorsets and windows intended to offer a level of security suitable for dwellings and other buildings exposed to comparable risk.

022 Window hardware wherever applicable must be supplied from a manufacturer holding a product licence under the auspices of the Home Office "Secured By Design" initiative with the aim of fulfilling the obligations placed on the housing provider to ensure a reasonable level of security to the occupants as outlined in Section 17 of the Crime and Disorder Act 1998.

023 Written confirmation of compliance with all of the above should be given to the contract management team in advance of commencement on site.

General Windows Openings

024 All windows to be fitted with Egress Easy Clean Hinges.

025 All hinge components such as bottom track, link bars and rivets to be manufactured from Austenitic stainless steel to BS EN ISO 10088/2 Grade 1.4301 and fitted in accordance with manufactures instructions limitations and recommendations. All associated hardware should be approved to PAS24 and meet BS EN 1670 Class 4 corrosion resistance.

026 The protective tapes shall be removed from the windows immediately or as soon as practicable after installation and the window cleaned with a suitable cleaning agent.

027 Easy clean facility to allow the window to slide along the hinge track so as to be cleaned from inside the building to BS 8213-1. After cleaning, the hinge should allow the window to self relocate and return to its original position and mode of operation simply by closing the casement.

028 All hinges should be BBA Approved and to include a thermoplastic end point and die cast end cap with self lubricating surface finish featuring a roof to minimise the build up of debris.

029 Windows, after a considered and noted risk assessment, can be fitted with a clearly visible and intuitive to release restrictor.

030 The release mechanism must self relocate in one action on closure of the vent. All components, rivets and pins should withstand a force of 600N to comply with BS 6375 Part 2, Performance of windows and doors. Classification for operation and strength characteristics and guidance on selection and specification and BS 8213 Part 1: 2004 - Design for Safety in Use and During Cleaning of Windows.

031 Restrictor to be tested to comply with BS 6375 Part 2 to withstand a force of 600N when opened at the restricted position and fitted to provide a maximum opening of 100mm in the restricted position. Restrictor to be manufactured from stainless steel to BS EN ISO 10088/2 Grade 1.4301 tested to meet the requirements of BS 7412:2007 and to meet BS EN 1670:2007 Class 4 corrosion resistance.

032 Written confirmation of compliance with all of the above should be given to the Client in advance of commencement on site.

Operating Handles

032 Windows to be fitted with cranked espagnolette operating handles coloured white unless otherwise requested. Refer for advice from the Client if internal face other than white. Handles to incorporate a push to release mechanism only; non-locking egress option (in every case) - key operated lock not permitted. Mechanical Guarantee / Warranty required (as a minimum) - 10 years. Product must be BBA accredited or a Secured by Design Licensed Product and UKAS laboratory tested to BS EN 1670. All to Abusive load testing to BS 6462-1985 strength Test C3.

033 Handle manufacture to hold a BS EN ISO 9001 certified quality system and manufacture the handle from die cast zinc alloy (to BS EN 1774) with a polyester powder coating finish incorporating thermoplastic push fit covers.

Emergency Egress Window Handles

034 Nominated Emergency Egress windows to be fitted with green buttoned, push to release, non-deadlocking handle. Written confirmation of compliance with all of the above should be given to the contract management team in advance of commencement on site and will be a condition of the tender

Locking Mechanism

035 All windows to be fitted with a Locking Mechanism that must be BBA accredited and have been tested to the equivalent of PAS 24 security test or a Secured by Design Licensed Product

036 Locking mechanism to have an enhanced grade zinc alloy gearbox and mushroom-headed cams and shoot bolts. Where twin cam type is used, shoot bolts are not required. Minimum corrosion resistance: BS EN 1670 Class 3. Fully adjustable "Twin Cam" high performance "no crop" security locking system. Operate with up to four pairs of mushroom cams travelling towards each other locking into a double-sided security keep. Fully adjustable cams ± 1mm. Keeps with a night latch locking facility.

037 All windows should be approved to BS 7412: 2002 and meet BS EN 1670 Class 4 corrosion resistance

038 Evidence of compliance with PAS24 (Specification for Enhanced security performance requirements for doorsets and windows in the UK) will be a condition of tender.

039 All components should be capable of sustaining a minimum of 25,000 opening cycles and 1,000 full reversables under 50kg operational load without demonstrating any significant deterioration or deformation that would inhibit its function and have a Mechanical Guarantee / Warranty required (as a minimum) - 10 years..

Fixings

040 Screws used for fixing timber sections will be of carbon steel with a suitable corrosion protective coating and feature a double helical thread, spoon point with a countersunk head.

041 Fixings must incorporate a combination square / cross recess drive to provide a non-magnetic stick fit.

042 Fixings for friction stay applications will be supplied with a special low profile pan head to prevent fastener head interfering with the friction stay.

043 All screws, nuts, bolts and other fastenings must be of corrosion resistant material, or be treated to give corrosion resistant properties. When subject to the acetic acid salt spray test specified in BS EN ISO 9227 for a period of 144 hours, the corrosion resistance of treated mild steel must be equal to or better than that of stainless steel samples subjected to the same test conditions.

044 All ironmongery, fixtures and fittings must be of materials resistant to, or protected against atmospheric corrosion. Metals in contact with each other must be compatible so as to prevent galvanic corrosion of dissimilar metals by electrolytic action.

045 Foamed polyurethane must not be used as the sole means of fixing, and is only to be used with express consent of the Client. Fixing to be as recommended by in BS 8213-4. below is a brief summary –

Secured on all sides (where practicable);
Corner fixings – 150 – 250mm from external corner;
No fixings less than 150mm from centre line of a mullion or transom;
Minimum of 2 fixings per reveal;
If head is fixed with polyurethane foam, then head fixings can be – • Frame width up to 1200mm – no fixings • >1200mm to <2400mm – one central fixing • >2400mm to 3600mm – two equally spaced fixings

046 All components should be supplied by a manufacturer complying with BS EN ISO 9001: 2000 accredited quality system. A warranty certificate to be issued by the hardware manufacturer on completion of the project.

047 Written confirmation of compliance with all of the above should be given to the Client in advance of commencement on site and will be a condition of the tender.

048 Installation "packers" should be used to set the window frame onto to allow sealant/mastic to be used as a full fill bedding material. The colour should match the window finish.

Drainage

049 The windows must include a self-drainage system by means of slots/ holes which must under no circumstances drain through chambers incorporating reinforcement. All drainage slots/ holes must be neatly cut out with no lips to allow free drainage of water from the frames to the outside of the building.

050 Matching PVCu caps must be provided to cover all visible external drainage slots. Care must be taken to ensure that glazing blocks or spacers do not obstruct drainage from the glazing rebate.

Client's current manufacturers/suppliers/products

051 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

METALWORK

METALWORK

MATERIALS

Mild Steel

001 Ensure steel used is free from imperfections. Before fixing, remove all rust, mill scale, welding slag and flux residue from iron and steel surfaces by wire brushing, scraping, hammering and/or flame cleaning.

Galvanised coatings

002 Apply galvanised coatings to BS EN ISO 1461:2009.

Garage door repairs

003 Ensure fittings and furniture for metal 'up and over' garage doors generally match the existing fittings.

WORKMANSHIP

General repairs

004 Cut out defective metal balusters and replace with new, including all welded joints. Prime where damaged and leave ready to receive decorative finish.

005 Cut out defective ironmongery and replace with new, including any welding that may be necessary. Prime where damaged and leave them ready to receive the finish.

006 Make good damaged welds including removing the remains of the weld, wire brushing, hacking the surface and re-welding. Prime where damaged and leave it ready to receive the finish, in accordance with the details in the "Painting and Decorating" section.

007 Remove a defective arch bar by:
- cutting it out from brickwork;
- providing temporary supports;
- replacing with a new primed mild steel bar; and
- making good the brickwork with a finish to match the existing finish.

Fabrication

008 Ensure compliance with any stated design and performance requirements. Ensure sections and dimensions are in accordance with relevant British Standards. Do not permit contact between dissimilar metals. Mitre corner junctions of identical sections. Use tack welds only for temporary attachment. Make joints with parent material fully bonded throughout with no inclusions, holes, porosity or cracks. Prevent weld splatter falling on surfaces that will be self-finished and visible in completed work. Remove traces of flux residue, slag and weld splatter.

009 Steel is to be welded to BS EN 1011-1:2000.

010 Stainless steel is to be welded to BS EN 1011-1:2009 using double butt welds, backing bars, jigging and other methods to remove distortion.

011 Aluminium alloys are to be welded to BS EN 1011-4:2000.

012 Brazing is to be to BS EN 14324:2004 with butt joints finished smooth and level with adjacent surfaces.

013 All sharp arrises are to be removed from any welding or brazing to prevent hazards.

Client's current manufacturers/suppliers/products

014 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

PLASTERWORK AND OTHER FLOOR, WALL AND CEILING FINISHES

PLASTERWORK AND OTHER FLOOR, WALL AND CEILING FINISHES

MATERIALS

Cement and water

001 Cement is to be to BS EN197-1:2011

002 Use water as described in the "Concrete Work" Section.

Sand

003 Sand is to be to BS EN13139:2002 (BS1199 Table 1)

Building paper

004 Building paper is to be water resistant breather type to standard and quality Approved by the Client.

Membranes

005 For polythene membranes, use no thinner than 1000 gauge.

Slip Resistance

006 The Pendulum Test Value (PTV) should be not less than 40 when tested, wet or dry as appropriate for the anticipated service conditions including any likely surface contamination by the method described in BS 7976-2:2002+A1:2013 as required by BS 8204-6:2008+A1:2010

Plaster

007 For plaster, use Gypsum building plasters or 'Pre-mixed Lightweight Plaster', Bonding plaster to BS EN 13279-1:2008 to a minimum thickness of 8mm, Finish Plaster to BS EN13279:2008; minimum thickness of 2mm to bonding plaster, minimum thickness of 3mm to plasterboard.

Bonding agent

008 Where bonding agents are permitted, use an EVA/PVA of 1:10 solution to sound surfaces, with a 1:3 solution to be applied to soffits.

Metal lathing, beads and stops

009 Ensure steel lathing is of the plain expanded type having a minimum weight of 1.6Kg/m2.

010 Ensure beads and stops are of an appropriate profile and:
- for internal use are galvanised; and
- for external use are manufactured from stainless steel.

Plasterboard

011 Plasterboard is to be to BS EN 520:2004+A1:2009; core density of 6kg/m2 for 12.5mm board. Product selection to be restricted to materials with a minimum 75% recycled content.

012 Dry lining is to be to BS EN 520:2004+A1:2009, core density of 10kg/m2 for a 12.5mm board; taper edged.

Thermal board

013 Thermal board is either 12.5mm taper edged plasterboard bonded to a rigid polyisocyanurate (PIR) insulation packing to either an overall thickness of 42.5mm or 82.5mm, or 12.5mm plasterboard bonded to a high performance rigid phenolic insulation core to an overall thickness of 25.2mm, 31.5mm or 37.5mm.

Wall tiling

014 Plain cushion edge white or coloured glazed ceramic tiles to BS EN 14411:2012 and BS 5385-1:2009 size 152 x 152 x 6mm. Waterproof adhesives for ceramic tiles is to be to BS ISO 13007-1:2010. Waterproof grout to BS ISO 13007-3:2010. Wall tiling for repairs is to match existing for repairs to existing tiled surfaces.

Sealant

015 Use gun grade white silicone anti-mould sealant.

Textured decorative finish

016 Use a plastic compound textured decorative finish. Apply it to provide a finish to match the existing finish. Apply to no less than the minimum thickness stated in the manufacturer's technical data sheet.

WORKMANSHIP

Steel lathing beads and stops

017 Securely fix lathing to:
- timber backgrounds with galvanised staples; or
- steelwork with 1.2mm galvanised tie wire.

018 Ensure all joints have a 75mm lap and are wired at centres not exceeding 75mm.

019 Fix beads and stops with rustproof hardened steel pins or mortar dabs.

Plasterboard, Dry Lining and Thermal Boards

020 Fix plasterboard to soffits or studding with 32mm x 12 swg galvanised clout headed nails for 10mm boards and 38mm x 12 swg galvanised clout headed nails for 12.5mm boards at intervals suitable for the particular application. Provide all supporting members as necessary for fixing the plasterboard. Do not use cross joints in boards. Seal all exposed and cut edges with PVAC sealer.

021 Horizontal joints will not be permitted on dry lining unless the wall height exceeds the maximum manufactured board dimension. All joints are to be taped and finished to a flush seamless finish. Jointing material is to be to BS EN 13963:2014. Seal all exposed and cut edges with PVAC sealer.

022 Ensure flush joints between plasterboards and at the junction between walls and soffits with staright edged and level finish plaster. Cover them with 90mm wide jute scrim cloth bedded in neat board finish. Apply a coat of neat d finish plaster at least 5mm thick immediately after the joint application has set but before it dries out.

023 Fix thermal board in dry lining to walls using the plaster pad and dab process with:
- an appropriate multi-purpose adhesive used as the bonding medium to the solid background;
- align with plasterboard packers to the inside face of the vapour barrier; and
- back with 1000 gauge polythene vapour barrier.

024 Fix dry lining to metal framing with drill point ("jack point") drywall screws at 300mm centres to vertical studs, around openings and at board edges.

025 Ensure that backing walls are dry and direct bond dry lining with a gypsum based adhesive , seal perimeter and around openings with gypsum sdhesive

026 Ensure the plaster finish to thermal board consists of two coats of premixed lightweight plaster total thickness of plaster system of at least 13mm as follows:
- the first coat being scratch coat of bonding plaster; followed by
- a coat of appropriate finish plaster trowelled to a smooth finish.

Plaster on concrete soffits

027 Ensure the plaster finish to concrete soffits consists of two coats of premixed lightweight plaster, to a total thickness of plaster system of at least 10mm as follows:
- the first coat being a bonding scratch coat; followed by
- a finishing coat trowelled to a smooth finish.

Plaster on solid vertical backgrounds

028 Ensure the plaster finish to solid vertical backgrounds consists of two coats of lightweight premixed plaster to a total thickness of plaster system of at least 13mm as follows:
- the first coat being:
  - on low suction backgrounds, a bonding plaster scratch coat containing exfoliated vermiculite; or
  - on normal suction backgrounds, a scratch coat of HB browning plaster containing expanded perlite aggregate; and
- the second coat being finish plaster containing exfoliated vermiculite aggregate trowelled to a smooth finish.

029 **Dissimilar Solid Backgrounds for Plaster:**

Where plaster is to be continued without break across joints between dissimilar solid backgrounds which are rigidly bonded or tied together, cover the joints with a 200 mm wide galvanized mesh strip (backgrounds in the same plane) or with galvanized corner mesh (internal angles) fixed at not more than 600 mm centres along both edges, unless specified otherwise.

030 **Dissimilar Solid Backgrounds for Plaster (Lintels):**

Where plaster is to be continued without break and without change of plane across the face of a lintel which is not wider than 300 mm and is rigidly bonded or tied to the plaster background:
- Cover the face of the lintel with building paper to BS 1521:1972 extending 25 mm on to the adjacent background.
- Overlay with expanded galvanized steel lathing extending 50 mm beyond the edges of the paper and securely fix with masonry nails at not less than 100 mm centres along both edges.

Alternatively, a suitable paper and mesh lathing may be used.

031 **Dissimilar Solid Backgrounds For Rendering:**

Where rendering is to be continued without break across joints between dissimilar solid backgrounds which are in the same plane and rigidly bonded or tied together, cover joints with a 150 mm wide strip of building paper to BS 1521:1972 overlaid with 300 mm wide stainless steel lathing fixed at not more than 600 mm centres along both edges, unless specified otherwise.

032 **Conduits:**

Conduits bedded in undercoat to be covered with 90 mm wide jute scrim bedded in finishing coat mix, pressed flat and trowelled in. Do not lap ends of scrim.

Cement beds, backings and renderings generally

033 Unless the Client Instructs otherwise, ensure all beds, backings and renderings are composed of one part Portland Cement to three parts sand, by volume. Keep the water content as low as possible and ensure it does not exceed 18 litres per 50 Kg of cement (including the moisture content in the sand).

034 Brush sub-bases and backgrounds free of all dust. Well wet them and coat them with cement slurry before applying the screeds. Alternatively, use 1:10 EVA bonding adhesive instead of cement slurry.

035 Where the beds, backings or renderings are specified as waterproof, incorporate waterproofer to BS EN1199:2005 in the mix.

036 Expansion joints should be placed to form bays not exceeding 3.50m x 3.50m. Finish off the surfaces of beds and backings to receive the appropriate tiling, paving or other finishing.

037 External rendering is to be to BS EN 13914-1:2005. Ensure external renderings have a surface finish to match the existing renderings.

Granolithic finish

038 Ensure granolithic finish is composed of 1 part cement to 1 part fine aggregate to 2 parts coarse aggregate 10mm maximum size, all measured by weight. Add the minimum amount of water necessary to give sufficient workability for laying and compacting. All granolithic repairs are to match existing.

039 Thoroughly scabble, clean, wet and treat the base for granolithic application either by brushing on a neat cement grout or an EVA emulsion bonding agent. Lay the granolithic finishing in bays not exceeding 15m2 with the bay proportions being such that the ratio of sides will not exceed 1:1 1/2.

040 Ensure the minimum thickness is 19mm to a sound loadbearing concrete base. To prevent dusting, avoid excessive trowelling. Carry out curing for at least 4 days or, if the Client so Instructs, for longer.

041 Ensure the deviation from the level is no more than +/- 3mm in 3m.

042 Steel trowel the granolithic to produce a close knit surface and either tool it by stud rolling or sprinkle it with non slip grains to produce an anti-slip finish as Instructed by the Client.

Wall tiling

043 Fix tiles to the backing with straight joints on a combed bed of waterproof adhesive. Ensure all exposed edges of tiles are round edged. Either round edge or mitre the external angles, at the Service Provider's discretion. Form exposed stop end corners using double bullnose tiles.

044 Fill the joints between tiles solid with waterproof grout. Tool off the joints and clear off all residual adhesive and grout from the tiles and surrounding surfaces on completion of the Works.

Quarry and Ceramic floor tiling

045 Lay tiles either on a bed of cement and sand (1:3) or on a cementitious adhesive bed to BS ISO 13007 3-6mm thick, which makes full contact with the tile and background.

046 **Suitability of Backgrounds/Bases**:

Before starting work ensure that backgrounds/bases:

- Are sufficiently flat to permit specified flatness of finished surfaces, bearing in
- mind the permissible minimum and maximum thicknesses of the bedding material.
- Have been allowed to dry out by exposure to the air for not less than the following:
  - Concrete slabs: 6 weeks.
  - Cement:sand screeds: 4 weeks.
  - Rendering: 2 weeks.
  - Gypsum plaster: 4 weeks.

047 **Plain Coloured Skirting To Existing Painted Plaster:**

Tiles: Plain coloured unglazed ceramic skirting tiles, rounded top edge, coved bottom to BS EN 14411:2006 and BS 5385-3:2007, Size: 152mm x 152mm x 8mm. Joint width: 3mm.

- Background/Base: Existing painted plaster.
- Grouting material: Waterproof grout.

048 **Setting Out:**

Ensure that:
- Joints to be true to line, continuous and without steps.
- Joints on walls to be truly horizontal, vertical and in alignment round corners.
- Joints in floors to be parallel to the main axis of the space or specified features.
- Cut tiles/slabs to be kept to the minimum, as large as possible and in unobtrusive locations.
- Before laying tiles obtain confirmation of setting out to satisfaction of the Client.

049 **Flatness of Wall Tiling:**

Sudden irregularities not permitted. When measured with a slip gauge to BS EN 14411:2012 and BS 5385-1:2009, the variation in gap under a 2 m straight edge placed anywhere on the surface to be not more than 3 mm.

050 **Flatness of Floor Tiling:**

Sudden irregularities not permitted. When measured with a slip gauge to BS EN 14411:2012 and BS 5385-3:2014, the variation in gap under a straight edge (with feet) placed anywhere on the surface to be not more than 3mm over a 2m straight edge.

Vinyl and thermoplastic tiles

051 Unless the Client Instructs otherwise, lay tiles in accordance with BS 8203:2001+A1:2009 with straight joints on a combed bed of adhesive to a standard and quality Approved by the Client. Match the size, colour and pattern of the tiles as nearly as possible to any existing surrounding tiles.

Vinyl and other Resilient Sheet Floor Coverings

052 Unless the Client instructs otherwise, vinyl and other resilient sheet floorings are to be of a standard and quality in accordance with BS EN 10582:2013, and laid in accordance with BS 8203:2001:A1:2009.

All non slip floor coverings to be 2mm thick anti slip vinyl sheet floor coverings to BS EN 13845 and BS EN 13553 and to have a Pendulum test value (PTV or slip resistance value) (36+ (CoF) or above) as tested to BS 7976-1,-2 and -3 and a Surface roughness (Rz) (20+µm (microns) or above) to BS 1134:2010. Floor covering to be complete with aluminium threshold strips at doors

Textured decorative finish (artex)

053 Fill joints in plasterboard to receive decorative textured finish with plastic filler. Cover them, while wet, with wet strength paper scrim or while wet or dry, with glass fibre membrane scrim tape. Allow this dry before applying the finishing coat. Apply the finishing coat evenly. Tool or brush this to match the existing surrounding finishes or as the Client Instructs otherwise.

Labour and sundry items

054 Cut and fit and/or make good all wall and floor finishings around any kind of obstruction or projection of a permanent nature from the wall background or floor base including any:
- structural elements;
- pipework, ducting and their brackets and supports;
- fittings and appliances in connection with the electrical, water, gas heating, air conditioning, communication and waste disposal systems; and/or
- fittings and any permanent object in connection with any permanent parts of the Property.

055 Unless the Client Instructs otherwise, maintain plasterwork, renderings, backings, asphalt and any applied finishes in the same plane as any existing surrounding similar applications. Make a fair joint between the new application and any existing surrounding application.

Client's current manufacturers/suppliers/products

056 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

PAINTING AND DECORATING

PAINTING AND DECORATING

GENERAL

Redecorate/touch up/make good

001 Note that "redecorate/touch up" or "make good decoration" includes preparation, priming, one undercoat and either one gloss coat to previously painted surfaces or reinstating any stain or clear finish for previously stained or clear finish surfaces.

MATERIALS

Generally

002 Obtain undercoats and finishing coats for an individual surface from the same manufacturer.

003 Ensure paints are delivered to the Property in sealed containers as received from the manufacturer and no labels are removed or painted out. Use the paint without adulteration.

004 Under no circumstances thin paint supplied by the manufacturer unless Approved by the Client. When such Approval has been granted, carry out thinning with thinners of the type stated in the manufacturer's technical data sheet.

005 Execute painting in shades Approved by the Client. Submit samples of tints before ordering Materials. Ensure each coat of paint matches the finished shade, and where tint types are required by the manufacturer's technical data sheet, they are used.

006 Provide samples of Materials to the Client for Approval in sample tins filled 7/8 full after the contents of the container or kettle have been thoroughly stirred and mixed. Record all relevant details of the Materials sampled.

007 Immediately remove any unsatisfactory Materials from the Property and make good any Works executed with such defective Materials.

008 Note that the Rates include for the use of varied colours in the Works and for the execution of sample patches, as required by the Client.

009 Use water based paints where appropriate.

Knotting

010 Use a best quality shellac knotting compound, dissolved in methylated spirits. Cover all knots and resinous parts.

Stopping

011 Ensure stopping/filler for:
- plasterwork - is a plaster based filler applied to a PVA solution primed surface, or a proprietary filler suitable for plaster repairs;
- internal woodwork, hardboard, fireboard and plywood - is a proprietary wood filler either suitably pre-coloured to match the base material or of a neutral colour and capable of being stained to match the required colour when stain is applied;
- external woodwork – is a proprietary filler recommended for external use Approved by the Client, (and tinted to match the colour of the stained/varnished finish where appropriate); and
- clear finished woodwork - is tinted to match the surrounding woodwork.

Primer for alkaline surfaces

012 For alkaline surfaces use an alkali resistant sealer/primer and finish with a top coat of the type stated in the manufacturer's technical data sheet.

Primer for iron and steelwork

013 Prime iron and steelwork with a primer of the type stated in the manufacturer's technical data sheet for the subsequent finish coats.

Primer for galvanised iron and steelwork

014 Prime galvanised iron and steelwork with a primer that is compatible with the subsequent finish coats. Pretreat new galvanised surfaces with a mordant solution before priming.

Primer for hardboard

015 Where hardboard is not factory primed or sealed, use a suitable primer of the type stated in the manufacturer's technical data sheet for the subsequent finish coats.

Primer for woodwork

016 For woodwork, use a finishing ready-mix primer obtained from the maker of the undercoat and finishing coats.

Primer for oily or resinous timbers

017 For British Columbia pine (Douglas fir) or other oily or resinous timber, use an aluminium based priming paint not darker than BS 4800:2011 Colour 00A01 Approved by the Client which is compatible with the subsequent coats of the type stated in the manufacturer's technical data sheet.

Primer for stains

018 For stain finishes, ensure surfaces are clean, rubbed down to an even finish and lightly keyed to every coat except the top coat.

Stabilising sealer

019 Use a type and make of stabilising sealer recommended by the manufacturer of the undercoat and finishing coat.

Chemical stripper

020 Ensure chemical paint stripper is water soluble.

Anti fungal solution

021 Ensure an anti-fungal solution is appropriate to the surface being treated and is used in accordance with The Control of Pesticides Regulations 1986 (amended 1997) and The Pesticides Act 1998.

PREPARATION OF SURFACES

Preparations

022 Thoroughly prepare all surfaces to a high standard of preparatory work. Note that "prepare" used in the Schedule of Rates includes all Works described below including washing down, priming and painting extra coats but excluding paint removal.

023 Report any necessary paint removal to the Client and agree the extent of this with the Client before starting this Work. Note that no payment will be made for paint removal unless this is done.

024 Apply a liberal brush coat of timber preservative conforming to Building Establishment Technical Note No. 24 (or European equivalent) to existing bare non-durable timber surfaces. Allow adequate time for this to dry before overcoating.

025 Rub down previously painted surfaces in good condition with abrasive paper. Fill cracks as described in Paragraph 011. Subject to Paragraph 023, remove existing paint in poor condition completely using a non-caustic paint remover.

026 Treat stains on the ceiling before decoration to prevent them bleeding through subsequent decorative coatings with a proprietary stain stop or blocker appropriate to the substrate and in keeping with the requirements of the finish to be applied.

027 Use tinted undercoats if the Client so Instructs.

Approval

028 Where specified, obtain the Approval of the Client to the preparation of surfaces before applying any coating.

Stopping

029 Where stopping/filling is referred to in this Section, use the appropriate stopping as described in the Materials Section.

Burning off

030 Burn off and rub down to remove paint from wooden surfaces. Fill in cracks, knot, prime and stop woodwork so exposed all as described for new work, rub down with fine abrasive paper and apply one additional undercoat before painting as specified. Burning off is not permitted indoors without the express written permission of the Client.

Plaster, render, concrete and brickwork

031 Remove plaster or mortar splashes from the decorated surfaces by scraping. Stop all holes, cracks, etc. Brush down the whole surface to remove dust and loose material. Remove all traces of mould oil by scrubbing with water and detergent and rinsing with clean water to remove all detergent.

032 Allow plaster surfaces to dry out completely before decorating, (i.e.< 10% moisture content).

033 Remove efflorescence first by wiping dry with a dry course cloth and then with a damp cloth. Leave the surfaces for 48 hours to see if efflorescence has ceased and clean the surfaces to remove dirt, dust, etc. Allow the surfaces to dry out thoroughly before painting is commenced. When efflorescence has occurred or is suspected, defer painting as Instructed by the Client. New plaster/render should be allowed to dry for a minimum of 28 calendar days before decorating.

034 Cut out loose and defective rendering and make good before redecoration. Stabilise existing surfaces to be redecorated with an stabilising agent of 1:10 PVA solution or 1:3PVA solution to soffits.

Plasterboard to receive direct redecoration

035 Finish the joints in plasterboard ceilings to receive textured decorative finishings as described in the 'Plasterwork and other floor, wall and ceiling finishes' section.

Iron and steel

036 Remove rust, mill scale, welding slag and flux residue from iron and steel surfaces by wire brushing, scraping, hammering, flame cleaning, etc.

Previously painted metalwork

037 Thoroughly clean down all paintwork which is in sound condition and rub down with abrasive paper. Remove small areas of defective paint and all rust and loose scale by chipping, scraping and wire brushing back to clean metal. Prime the metal so exposed immediately after preparation with one coat of primer and apply one additional undercoat before painting.

038 Remove large areas of defective paint by using a non-caustic stripper appropriate to the substrate and in accordance with the technical data sheet for the subsequent coats or by chipping, scraping and wire brushing back to clean metal. In all cases where rust is apparent, scrape the rusting section and a sufficient area around it clean of all paint and rust and coat it with a rust inhibiting primer Approved by the Client in addition to the priming coat described.

Defective putties

039 Hack out defective, cracked or uneven putties to glazing, prepare and prime the rebates as required and make good the putties before any painting is carried out. Allow putties to form a hard skin before painting with an oil based paint or allow for no less than 14 calendar days drying time where water based paint/stain is to be applied.

Hardboard

040 Remove dirt and grease from hardboard surfaces. Before priming ensure all nail holes and other imperfections are stopped/filled in.

Plywood

041 Fill as required with a plastic based filler before priming/staining. Prime surfaces of internal plywood before painting with one coat of primer, filled as required with a plastic based filler. Rub and dust down and apply a second coat of primer/stain.

042 Before final priming/staining ensure that all imperfections are stopped, rubbed down and brushed off. Prime/stain surfaces of external plywood before painting with one coat of primer/stain. Where stain is to be applied use a stainable filler, or a filler pre-coloured to match the stain finish. Rub and dust down and apply a second coat of primer/stain.

Woodwork to be painted

043 Before fixing woodwork, rub down surfaces that will be visible after fixing. Scorch back excess resin from live knots and resin pockets. Coat all knots and resinous areas with fresh knotting. Prime all surfaces, ensure all nail holes and other imperfections are stopped/filled. Rub down the whole surface and brush off all dust before the undercoat is applied.

Previously painted woodwork

044 Wash down thoroughly with sugar soap or white spirit solution all paintwork which is in sound condition and allow to dry. Rub down to a smooth surface with an abrasive paper, achieving the final pre-paint finish with a fine grain abrasive paper to achieve a finish free from abrasive marks. Rinse well with clean water and allow to dry. Fill in cracks, etc., as described for new woodwork.

045 Remove small areas of cracked or defective paint by carefully scraping back to a firm edge. Knot, prime and stop woodwork so exposed as described for new work. Sand with fine abrasive paper and apply one additional undercoat before painting if required.

046 Apply a liberal coat of brush applied water repellent timber preservative conforming to the recommendations of BS 8417:2011+A1:2014 to bare existing non-durable timber surfaces or surfaces with defective areas of paint film. Allow adequate time to dry before overcoating.

047 On existing coated timber, remove any degraded surface timber by sanding down to clean sound timber. Remove resinous exudations by heat using hot air gun. Apply 2 coats of knotting to affected areas and any exposed knots and allow to dry.

048 On existing coated timber, remove dirt, algae and dead fibre by means of high pressure power hosing, apply one coat fungicide and leave for 72 hours.

Woodwork to receive a clear finish

049 Stop/fill holes and other imperfections in surfaces that are to receive a clear finish. Rub down the whole surface and brush off all dust.

050 Prepare existing varnished surfaces in sound condition by cleaning down with a suitable detergent and thoroughly rinsing them. Lightly key sound existing finishes to an even finish over the entire surface ensuring that all existing finish sheen is removed.

051 Strip and revarnish existing varnished surfaces in unsound condition.

Woodwork to receive stain finish

052 Prepare previously treated and untreated surfaces that are to receive a proprietary stain finish in accordance with the manufacturer's technical data sheet.

WORKMANSHIP

Paint

053 In order to eradicate any unauthorised addition of thinners or driers, or other adulteration of paint:
- give adequate supervision during the painting work to ensure that paint is not adulterated;
- note that if cases of unauthorised or excessive thinning or other adulterations are discovered, the Client will usually exercise the power contained in this Contract to require the removal of the Staff members concerned;
- ensure a notice is exhibited drawing the attention of Staff to the Client's requirement to use paint as supplied by the manufacturer and the consequences of a breach of this requirement; and
- note that similar requirements will apply to SubService Providers.

Stirring of Materials

054 Thoroughly stir the contents of all cans and containers of Materials before and during use. Suitably strain them as and when necessary.

Application

055 Apply coatings by brush or roller. Use sprays only with the prior Approval of the Client. Where spray application is Approved it shall be applied as directed by the manufacturer, including thinning with thinners of a type and to a ratio that complies with the manufacturer's technical data sheet.

Priming of glazing beads

056 Prime/stain glazing beads, rebates and the backs of beads at the same time as priming/staining the window frames.

Condition of priming

057 If the priming/staining has in any way deteriorated or has been damaged by the time of the first coat, rub down and reprime/restain the affected portions, or the whole if necessary. Where required, touch up with the same primer/stain or equivalent all articles, such as the windows, that were primed by their manufacturers.

Coatings to be dry

058 Allow coatings to dry thoroughly for the time specified by the manufacturer before applying succeeding coats.

Painting windows/doors

059 Do not paint windows or doors in the closed position.

Rubbing down

060 Rub down and de-nib undercoats for paints and clear finishes to a smooth surface with abrasive paper. Remove all dust before the succeeding coat is applied.

Differing colours of undercoats

061 Ensure each succeeding coat of priming and undercoating paint is sufficiently different in colour to be readily distinguishable.

Unsuitable conditions

062 Do not apply coating:
- to surfaces affected by wet, damp, foggy or frosty weather or other unsuitable conditions;
- to any damp surface; or
- in temperatures below 5^0 Centigrade.
- when heat is likely to cause blistering or wrinkling.

Take all necessary precautions including restrictions on working hours, providing temporary protection and allowing extra drying time, to ensure that coatings are not adversely affected by climatic conditions before, during and after application.

Protection of wet surfaces

063 Take adequate care to protect surfaces whilst still wet, by the use of screens and 'wet paint' signs where necessary. Take responsibility for any damage which may be caused by or through wet paint.

Damage to adjoining surfaces

064 Take care not to damage or stain other Works when storing Materials, preparing surfaces, or applying paint or stains. Remove all such stains, making good the stained surface and touching up any paintwork disturbed.

Cleanliness

065 Keep surfaces clean and free from dust during the painting processes. Do not carry out painting in the vicinity of other operations which might cause dust. Provide a suitable movable receptacle into which all liquids (including slop washings) are placed. Ensure this is not tipped down any of the gullies, manholes, sinks, basins, water closets or any other sanitary fittings. Remove all solid refuse or inflammable residues from the Property.

Removal of ironmongery

066 Remove surface fixed ironmongery, fittings and door/window furniture (except hinges) before painting and refix them on completion.

Radiators

067 Take down radiators to allow the proper decoration of the surfaces behind. Refit the radiators and refill the systems including inhibitor and balance if required.

Protection of furniture

068 Protect all furniture and fittings, use dust sheets and remove items such as curtains before commencing the Works. Rehang or reinstate on completion of the Works.

Protection:

069 Adequately protect both internal and external surfaces which are not to be coated, by covering with dust sheets or other suitable materials. Exhibit 'Wet paint' signs and provide barriers where necessary to prevent damage to freshly applied coatings.

Concealed Joinery Surfaces:

070 Where one or more additional coats are specified to be applied in the factory, they must be applied to all surfaces, including those which will be concealed when incorporated into the building.

Painting Existing Concrete:

071 Preparation: - Remove surface salts and other loose material with stiff brush. Leave for 48 hours and repeat process if necessary. Apply one coat of fungicide solution and leave for 72 hours, apply one coat proprietary sealer/primer, carefully remove all loose or defective areas of coating to a firm edge. Thoroughly clean by wiping down with white spirit or washing with water containing detergent. Remove heavy deposits of oil, grease, etc. with a suitable proprietary cleaning solution, sand down surfaces while still wet to provide a key, rinse off and allow to dry, patch prime as specified. fill joints, cracks, holes and other depressions with filler worked well in and finished off flush with surface. Sand smooth and remove dust, apply additional coats to areas where paint has been removed to restore the original coating thickness (Bring forward). Sand down junctions to give a flush surface.

Apply initial coat of exterior quality water based masonry paint and one finishing coat of exterior quality water based masonry paint.

Painting New Concrete:

072 Preparation: - Remove surface salts and other loose material with stiff brush. Leave for 48 hours and repeat process if necessary. Apply one coat of fungicide solution and leave for 72 hours, apply one coat proprietary sealer/primer, apply one coat of exterior quality water based masonry paint thinned as necessary in accordance with the manufacturer's technical data sheet. Sand down junctions to give a flush surface.

Apply initial coat of exterior quality water based masonry paint and one finishing coat of exterior quality water based masonry paint.

Painting Existing Render:

073 Preparation: Take back to a firm edge all areas of poorly adhering or defective coatings. Remove all loose or powdery material by vigorously brushing down with suitable stiff brushes and dust off. Where appropriate on smooth surfaces, rub down sound areas to produce the necessary key for good adhesion and dust off. Cut out and make good all cracks, holes, open joints and other imperfections etc., with an approved proprietary filler, rub down smooth and dust off. Prime all sound bare areas exposed by the removal of coatings with one coat of exterior quality water based masonry paint, thinned as necessary in accordance with the manufacturer's technical data sheet. Apply stabilising primer to all areas. Bring forward all areas which during preparation were taken back to bare substrate or disfigured/exposed by the removal of the previous coating with one coat of exterior quality water based masonry paint of the selected shade.

Apply initial coat of exterior quality water based masonry paint and one finishing coat of exterior quality water based masonry paint.

Painting New Render:

074 Preparation: Thoroughly clean down to remove all surface contamination, mortar splashes, nibs etc. Allow to fully dry. Cut out and make good all cracks, holes, open joints and other imperfections etc., with an approved proprietary filler, rub down smooth and dust off. Apply one coat of exterior quality water based masonry paint, thinned as necessary in accordance with the manufacturer's technical data sheet. .

Apply initial coat of exterior quality water based masonry paint and one finishing coat of exterior quality water based masonry paint.

Painting Existing Concrete / Render with Anti-Graffiti Paint:

075 Preparation: Carefully remove all loose or defective areas of coating to a firm edge. Thoroughly clean by wiping down with white spirit or washing with water containing detergent. Remove heavy deposits of oil, grease, etc. with a suitable proprietary cleaning solution. - Sand down surfaces while still wet to provide a key. Rinse off and allow to dry, patch prime as specified, fill joints, cracks, holes and other depressions with filler worked well in and finished off flush with surface. Sand smooth and remove dust. Apply additional coats to areas where paint has been removed to restore the original coating thickness (Bring forward). Sand down junctions to give a flush surface.

Apply initial coat of two pack water based epoxy anti-graffiti paint and one finishing coat of two pack water based epoxy anti-graffiti paint.

Painting New Concrete / Render with Anti-Graffiti Paint:

076 Preparation: Remove surface salts and other loose material with stiff brush. Leave for 48 hours and repeat process if necessary. Apply one coat of fungicide solution and leave for 72 hours, fill joints, cracks, holes and other depressions with filler worked well in and finished off flush with surface. Sand smooth and remove dust. Apply one coat proprietary sealer/primer. Sand down junctions to give a flush surface.

Apply initial coat of two pack water based epoxy anti-graffiti paint and one finishing coat of two pack water based epoxy anti-graffiti paint.

Painting Existing Coated Brickwork/Blockwork:

077 Preparation: Carefully remove all loose or defective areas of coating to a firm edge. Thoroughly clean by wiping down with white spirit or washing with water containing detergent. Remove heavy deposits of oil, grease, etc. with a suitable proprietary cleaning solution. Sand down surfaces while still wet to provide a key. Rinse off and allow to dry, patch prime as specified. Fill joints, cracks, holes and other depressions with filler worked well in and finished off flush with surface. Sand smooth and remove dust. Apply additional coats to areas where paint has been removed to restore the original coating thickness (Bring forward). Sand down junctions to give a flush surface.

Apply one initial coat of exterior quality Pliolite based masonry paint, and one finishing coat of exterior quality Pliolite based masonry paint.

Painting New Brickwork/Blockwork:

078 Preparation: Carefully remove all loose mortar etc. Thoroughly clean by wiping down with white spirit or washing with water containing detergent. New brickwork/blockwork: Remove surface salts and other loose material with stiff brush. Leave for 48 hours and repeat process if necessary. Apply one coat of exterior quality Pliolite based masonry paint thinned as necessary in accordance with the manufacturer's technical data sheet. Sand down junctions to give a flush surface.

Apply one initial coat of exterior quality Pliolite based masonry paint, and one finishing coat of exterior quality Pliolite based masonry paint.

Painting Existing Plaster – Oil based Paint:

079 Preparation: Remove dirt and surface deposit with a stiff brush and rub down to remove nibs, trowel marks, plaster and paint splashes. Widen cracks sufficiently to receive proprietary filler. Brush cracks to remove any loose plaster and fill with proprietary filler and rub flush with surface. Apply one coat proprietary primer/sealer.

Apply one initial coat of oil based vapour barrier paint and one finishing coat of oil based vapour barrier paint.

Painting New Plaster – Oil based Paint:

080 Preparation: Lightly rub over-trowelled glossy plaster with worn abrasive paper. Fill all depressions, holes and cracks and lightly rub down flush with surface, apply one coat proprietary sealer/primer.

Apply one initial coat of oil based vapour barrier paint and one finishing coat of oil based vapour barrier paint.

Painting Existing Plaster – Emulsion Paint:

081 Preparation: - Remove dirt and surface deposits with a stiff brush. Widen cracks sufficiently to receive proprietary filler. Brush cracks to remove any loose plaster and fill with proprietary filler and rub flush with surface. Rub down to remove nibs, trowel marks and plaster and paint splashes, lightly rub over-trowelled glossy plaster with worn abrasive paper, fill all depressions, holes and cracks and lightly rub down flush with surface, apply one coat proprietary sealer/primer.

Apply two finishing coats of emulsion paint.

Painting New Plaster – Emulsion Paint:

082 Preparation: - Remove dirt and surface deposits with a stiff brush. Rub down to remove nibs, trowel marks and plaster splashes, lightly rub over-trowelled glossy plaster with worn abrasive paper, fill all depressions, holes and cracks and lightly rub down flush with surface, apply one coat proprietary sealer/primer, apply one coat of emulsion paint thinned as necessary in accordance with the manufacturer's technical data sheet.

Apply two finishing coats of emulsion paint.

Painting Existing Plaster – Eggshell Paint

083 Preparation: Thoroughly clean down the surfaces to remove all dirt, grease and surface contaminants. Carefully scrape back to a firm edge all areas of poorly adhering or defective coatings. Powdery and friable surface coatings are to be completely removed by scraping, brushing and washing. Allow the surface to fully dry before proceeding. Where appropriate rub down sound areas to produce the necessary key for good adhesion and feather broken edges of existing coating. Dust off. Make good holes, cracks and other imperfections with an approved proprietary filler, rub down and dust off.

Initial coats: Prime all sound bare areas with one coat of eggshell paint thinned in accordance with the manufacturer's technical data sheet.

Apply two finishing coats of eggshell paint.

Painting New Plaster – Eggshell Paint

084 Preparation: Remove dirt and surface deposits with a stiff brush. Rub down to remove nibs, trowel marks and plaster splashes, lightly rub over-trowelled glossy plaster with worn abrasive paper, fill all depressions, holes and cracks and lightly rub down flush with surface, apply one coat proprietary sealer/primer, apply one coat of eggshell paint thinned in accordance with the manufacturer's technical data sheet.

Apply two finishing coats of eggshell paint.

Painting Existing Plaster – Vinyl Matt Paint

085 Preparation: Thoroughly clean down the surfaces to remove all dirt, grease and surface contaminants. Carefully scrape back to a firm edge all areas of poorly adhering or defective coatings. Powdery and friable surface coatings are to be completely removed by scraping, brushing and washing. Allow the surface to fully dry before proceeding. Where appropriate rub down sound areas to produce the necessary key for good adhesion and feather broken edges of existing coating. Dust off. Make good holes, cracks and other imperfections with an approved proprietary filler, rub down and dust off.

Initial coats: Prime all sound bare areas with one coat of vinyl matt paint thinned in accordance with the manufacturer's technical data sheet.

Apply two finishing coats of vinyl matt paint.

Painting New Plaster – Vinyl Matt Paint

086 Preparation: Remove dirt and surface deposits with a stiff brush. Rub down to remove nibs, trowel marks and plaster splashes, lightly rub over-trowelled glossy plaster with worn abrasive paper, fill all depressions, holes and cracks and lightly rub down flush with surface, apply one coat proprietary sealer/primer, apply one coat of vinyl matt paint thinned in accordance with the manufacturer's technical data sheet.

Apply two finishing coats of vinyl matt paint.

Painting Existing Painted Internal Surfaces – Anti Graffiti Paint

Preparation: Remove existing graffiti with an approved appropriate graffiti removal system, thoroughly clean down the surfaces to remove all dirt, grease and surface contaminants. Carefully scrape back to a firm edge all areas of poorly adhering or defective coatings. Powdery and friable surface coatings are to be completely removed by scraping, brushing and washing. Allow the surface to fully dry before proceeding. Where appropriate rub down sound areas to produce the necessary key for good adhesion and feather broken edges of existing coating. Dust off. Make good holes, cracks and other imperfections with an approved proprietary filler, rub down and dust off.

Prime all sound bare areas with one coat of anti graffiti paint sealer, bring forward sealed areas with anti graffiti paint primer, apply two finishing coats of anti-graffiti paint.

Painting Internal Surfaces – Anti Graffiti Paint

Preparation: Thoroughly clean down the surfaces to remove all dirt, grease and surface contaminants. Powdery and friable surface coatings are to be completely removed by scraping, brushing and washing. Allow the surface to fully dry before proceeding. Where appropriate rub down sound areas to produce the necessary key for good adhesion and feather broken edges of existing coating. Dust off. Make good holes, cracks and other imperfections with an approved proprietary filler, rub down and dust off.

Prime all sound bare areas with one coat of anti graffiti paint sealer, bring forward sealed areas with anti graffiti paint primer, apply two finishing coats of anti-graffiti paint.

Painting Existing Painted Internal Surfaces – Class "O" or "1" Fire Retardant Finish

089 Preparation: Remove existing graffiti with an approved appropriate graffiti removal system, thoroughly clean down the surfaces to remove all dirt, grease and surface contaminants. Carefully scrape back to a firm edge all areas of poorly adhering or defective coatings. Powdery and friable surface coatings are to be completely removed by scraping, brushing and washing. Allow the surface to fully dry before proceeding. Where appropriate rub down sound areas to produce the necessary key for good adhesion and feather broken edges of existing coating. Dust off. Make good holes, cracks and other imperfections with an approved proprietary filler, rub down and dust off. Seal marks or suspect areas and surfaces that remain powdery and friable after thorough preparation with one coat of stain blocker

Finishing system: Apply three coats of Class "O" or Class "1"as instructed by the Client fire retardant basecoat applied strictly in accordance with the manufacturer's technical data sheet. Apply two finishing coats of eggshell paint

Painting New Internal Surfaces – Class "O" or "1"Fire Retardant Finish

090 Preparation: Thoroughly clean down the surfaces to remove all dirt, grease and surface contaminants. Allow the surface to fully dry before proceeding. Where appropriate rub down sound areas to produce the necessary key for good adhesion. Dust off. Make good holes, cracks and other imperfections with an approved proprietary filler, rub down and dust off.

Finishing system: Apply three coats of Class "O" or Class "1" as instructed by the Client fire retardant basecoat applied strictly in accordance with the manufacturer's technical data sheet. Apply two finishing coats of eggshell paint.

Painting Previously Painted Internal Metal– Gloss Paint

091 Preparation: Thoroughly clean down to remove all surface contamination. Carefully scrape back to a firm edge all areas of damaged paint coatings. Scrape and wire brush corroded steel to produce a clean metal surface. Rub down with a suitable abrasive and dust off. All surfaces should be prepared to the minimum standard recommended in BS 7079:2009 at the time of coating. Prime all bare metal with two coats of zinc phosphate primer, applied in accordance with the manufacturer's technical data sheet. Bring forward primed areas with one coat of undercoat.

Apply two finishing coats of 8 years all weather protection metal gloss finish paint, applied in accordance with the manufacturer's technical data sheet.

Painting New Internal Metal– Gloss Paint

092 Preparation: Thoroughly clean down to remove all surface contamination. Rub down with a suitable abrasive and dust off. All surfaces should be prepared to the minimum standard recommended in BS 7079:2009 at the time of coating at the time of coating. Prime all metal with two coats of zinc phosphate primer, applied in accordance with the manufacturer's technical data sheet. Apply one coat of undercoat.

Apply two finishing coats of 8 years all weather protection metal gloss finish paint, applied in accordance with the manufacturer's technical data sheet.

Painting Previously Painted External Metal– Gloss Paint

093 Preparation: Thoroughly clean down to remove all surface contamination. Carefully scrape back to a firm edge all areas of damaged paint coatings. Scrape and wire brush corroded steel to produce a clean metal surface. Rub down with a suitable abrasive and dust off. All surfaces should be prepared to a minimum standard recommended in BS 7079:2009 at the time of coating. Prime all bare metal with two coats of zinc phosphate primer or other equal approved, applied in accordance with the manufacturer's technical data sheet. Bring forward primed areas with one coat of undercoat.

Apply two finishing coats of 8 years all weather protection metal gloss finish paint, applied in accordance with the manufacturer's technical data sheet

Painting New External Metal– Gloss Paint

094 Preparation: Thoroughly clean down to remove all surface contamination. Rub down with a suitable abrasive and dust off. All surfaces should be prepared to the minimum standard recommended in BS 7079:2009 at the time of coating at the time of coating. Prime all metal with two coats of zinc phosphate primer, applied in accordance with the manufacturer's technical data sheet. Apply one coat of undercoat.

Apply two finishing coats of 8 years all weather protection metal gloss finish paint, applied in accordance with the manufacturer's technical data sheet.

Painting Galvanised Steel – Gloss Paint

095 Preparation: Wash with white spirit to remove dirt and grease then wash with mild detergent solution and rinse off with clean water. Pretreat with mordant solution. Retreat non-blackened areas to achieve blackening of whole of surface. If galvanizing is defective obtain instructions before proceeding.

Apply one coat zinc phosphate primer, apply one coat of undercoat.

Apply two finishing coats of 8 years all weather protection metal gloss finish paint, applied in accordance with the manufacturer's technical data sheet.

Painting Previously Painted Internal Timber – Gloss Oil Paint

096 Preparation: Carefully scrape back to a firm edge all areas of poorly adhering or defective coatings. Rub down to feather broken edges of existing coating and dust off. Wash down the surfaces with soap and water, detergent solution or suitable solvent to remove all dirt, grease and surface contaminants. Whilst wet, rub down the surfaces with a suitable abrasive, taking care to avoid exposing timber on sharp edges. Finally rinse down and allow to dry. Make good all nail holes, open joints and open grain etc with an approved proprietary filler, rub down smooth and dust off. Apply two thin coats of knotting solution to all knots and resinous areas and allow to harden. Spot prime any bare metal, metal fixings, nail heads etc., with one coat of metal primer; prime all bare areas and areas exposed by the removal of coatings with one coat of wood primer, thinned as manufacturer's technical data sheet.

Apply one coat of oil based undercoat and one finishing coat of gloss oil based paint.

Painting Previously Painted Internal Timber – Gloss Water Based Paint

097 Preparation: Carefully scrape back to a firm edge all areas of poorly adhering or defective coatings. Rub down to feather broken edges of existing coating and dust off. Wash down the surfaces with soap and water, detergent solution or suitable solvent to remove all dirt, grease and surface contaminants. Whilst wet, rub down the surfaces with a suitable abrasive, taking care to avoid exposing timber on sharp edges. Finally rinse down and allow to dry. Make good all nail holes, open joints and open grain etc., with an approved proprietary filler, rub down smooth and dust off. Apply two thin coats of knotting solution to all knots and resinous areas and allow to harden. Spot prime any bare metal, metal fixings, nail heads etc., with one coat of metal primer; prime all bare areas and areas exposed by the removal of coatings with one coat of wood primer, thinned as manufacturer's technical data sheet.

Apply one coat of water based undercoat and one finishing coat of gloss water based paint.

Painting New Internal Timber – Gloss Oil Paint

098 Preparation: Wash down the surfaces with soap and water, detergent solution or suitable solvent to remove all dirt, grease and surface contaminants. Whilst wet, rub down the surfaces with a suitable abrasive. Finally rinse down and allow to dry. Make good all nail holes, open joints and open grain etc with an approved proprietary filler, rub down smooth and dust off. Apply two thin coats of knotting solution to all knots and resinous areas and allow to harden. Spot prime any bare metal, metal fixings, nail heads etc., with one coat of metal primer; apply one coat of wood primer.

Apply one coat of oil based undercoat and one finishing coat of gloss oil based paint.

Painting New Internal Timber – Gloss Water Based Paint

099 Preparation: Wash down the surfaces with soap and water, detergent solution or suitable solvent to remove all dirt, grease and surface contaminants. Whilst wet, rub down the surfaces with a suitable abrasive. Finally rinse down and allow to dry. Make good all nail holes, open joints and open grain etc with an approved proprietary filler, rub down smooth and dust off. Apply two thin coats of knotting solution to all knots and resinous areas and allow to harden. Spot prime any bare metal, metal fixings, nail heads etc., with one coat of metal primer; apply one coat of wood primer.

Apply one coat of water based undercoat and one finishing coat of gloss water based paint.

Painting Previously Painted External Timber – Exterior Quality Gloss Paint

100 Preparation: Thoroughly clean down surfaces to remove all dirt, grease and surface contaminants. Remove all areas of blistered, poorly adhering or defective coatings. Where flaking has occurred or coatings are defective, the entire member or section must be stripped back to the nearest joint. Open up all joints which are not tight fitting and rake out thoroughly. Rub down to feather broken edges of existing coating and dust off. Abrade the surfaces in the direction of the grain to remove any grey denatured timber and raised grain, round all sharp edges. Make good all cracks, nail holes, open joints and open grain etc., with an approved proprietary filler, rub down smooth and dust off. Apply two thin coats of knotting to all knots and resinous areas and allow to harden. Spot prime any bare metal, metal fixings, nail heads etc., with one coat of metal primer. Prime all bare areas and areas exposed by the removal of coatings with one coat of exterior preservative primer. Bring forward all primed and/or filled areas to match existing with one coat of 8 years all weather protection exterior flexible undercoat of appropriate shade.

Apply one coat of 8 year all weather protection water based undercoats of appropriate shade, and one finishing coat of 8 year all weather protection exterior high gloss paint.

Painting New External Timber – Exterior Quality Gloss Paint

101 Preparation: Thoroughly clean down surfaces to remove all dirt, grease and surface contaminants. Abrade the surfaces in the direction of the grain to remove any grey denatured timber and raised grain, round all sharp edges. Make good all cracks, nail holes, open joints and open grain etc., with an approved proprietary filler, rub down smooth and dust off. Apply two thin coats of knotting to all knots and resinous areas and allow to harden. Spot prime any bare metal, metal fixings, nail heads etc., with one coat of metal primer. Apply one coat of exterior preservative primer.

Apply one coat of 8 year all weather protection water based undercoats of appropriate shade, and two finishing coats of 8 year all weather protection exterior high gloss paint.

Preparation: Carefully scrape back to a firm edge all areas of poorly adhering or defective coatings. Rub down to feather broken edges of existing coating and dust off. Wash down the surfaces with soap and water, detergent solution or suitable solvent to remove all dirt, grease and surface contaminants. Whilst wet, rub down the surfaces with a suitable abrasive. Finally rinse down and allow to dry. Prime all bare areas with two coats of gloss paint, thinned as manufacturer's technical data sheet. Bring forward all primed areas with one coat of gloss paint.

Apply one finishing coat of gloss paint.

103 Preparation and making good: Carefully scrape back to a firm edge all areas of poorly adhering or defective coatings. Rub down to feather broken edges of existing coating and dust off. Wash down the surfaces with soap and water, detergent solution or suitable solvent to remove all dirt, grease and surface contaminants. Whilst wet, rub down the surfaces with a suitable abrasive. Finally rinse down and allow to dry. Prime all bare areas with two coats of 8 year all weather protection exterior gloss, thinned as manufacturer's Technical data sheet. Bring forward all primed areas with one coat of 8 year all weather protection exterior gloss.

Apply one finishing coat of 8 year all weather protection exterior gloss paint.

Previously Woodstained Internal Timber – Decorative Protection

Preparation: Carefully scrape back to a firm edge all areas of poorly adhering or defective coatings. Rub down to feather broken edges of existing coating and dust off. Wash down the surfaces with soap and water, detergent solution or suitable solvent to remove all dirt, grease and surface contaminants. Whilst wet, rub down the surfaces with a suitable abrasive, taking care to avoid exposing timber on sharp edges. Finally rinse down and allow to dry. Make good all nail holes, open joints and open grain etc., with an approved proprietary filler, rub down smooth and dust off. Touch in any bare areas with one coat of decorative wood stain of appropriate shade, thinned as manufacturer's technical data sheet.

Apply two finishing coats of decorative wood stain of selected shade, apply stain in flowing coats, redistribute excess material by brushing before stain has set, allow not less than 24 hours between coats.

New Internal Timber – Decorative Protection

Preparation: Wash down the surfaces with soap and water, detergent solution or suitable solvent to remove all dirt, grease and surface contaminants. Rinse down and allow to dry. Make good all nail holes, open joints and open grain etc., with an approved proprietary filler, rub down smooth and dust off. Apply one coat of decorative wood stain of appropriate shade, thinned as manufacturer's technical data sheet.

Apply two finishing coats of decorative wood stain of selected shade, apply stain in flowing coats, redistribute excess material by brushing before stain has set, allow not less than 24 hours between coats.

Previously Opaque Woodstained External Timber – Decorative Protection

106 Preparation: Thoroughly clean down surfaces to remove all dirt, grease and surface contaminants. Remove all areas of blistered, poorly adhering or defective coatings. Where flaking has occurred or coatings are defective, the entire member or section must be stripped back to the nearest joint. Open up all joints which are not tight fitting and rake out thoroughly. Rub down to feather broken edges of existing coating and dust off. Abrade the surfaces in the direction of the grain to remove any grey denatured timber and raised grain, round all sharp edges. Make good all cracks, nail holes, open joints and open grain etc., with an approved proprietary stopper/filler designed for use with a woodstain system, rub down smooth and dust off. Apply two thin coats of knotting solution to all knots and resinous areas and allow to harden. Prime all sound bare areas and areas exposed by the removal of coatings with one coat of 8year all weather preservative basecoat. If required, touch in any primed areas with 8 year all weather protection stain to match the surrounding timber for colour and build. Allow to dry.

Apply two finishing coats of opaque 8 year all weather protection wood stain of selected shade, apply stain in flowing coats, redistribute excess material by brushing before stain has set, allow not less than 24 hours between coats.

Opaque Woodstained New External Timber – Decorative Protection

107 Preparation: Thoroughly clean down surfaces to remove all dirt, grease and surface contaminants. Abrade the surfaces in the direction of the grain to remove any grey denatured timber and raised grain, round all sharp edges. Make good all cracks, nail holes, open joints and open grain etc., with an approved proprietary stopper/filler designed for use with a woodstain system, rub down smooth and dust off. Apply two thin coats of knotting solution to all knots and resinous areas and allow to harden. Apply one coat of 8 year all weather preservative basecoat.

Apply three finishing coats of opaque 8 year all weather protection wood stain of selected shade, apply stain in flowing coats, redistribute excess material by brushing before stain has set, allow not less than 24 hours between coats.

Previously Transparent Woodstained External Timber – Decorative Protection

108 Preparation: Thoroughly clean down surfaces to remove all dirt, grease and surface contaminants. Remove all areas of blistered, poorly adhering or defective coatings. Where flaking has occurred or coatings are defective, the entire member or section must be stripped back to the nearest joint. Open up all joints which are not tight fitting and rake out thoroughly. Rub down to feather broken edges of existing coating and dust off. Abrade the surfaces in the direction of the grain to remove any grey denatured timber and raised grain, round all sharp edges. Make good all cracks, nail holes, open joints and open grain etc., with an approved proprietary stopper/filler designed for use with a woodstain system, rub down smooth and dust off. Apply two thin coats of knotting solution to all knots and resinous areas and allow to harden. Prime all sound bare areas and areas exposed by the removal of coatings with one coat of 8 year all weather preservative basecoat. If required, touch in any primed areas with 8 year all weather protection stain to match the surrounding timber for colour and build. Allow to dry.

Apply two finishing coats of transparent 8 year all weather protection wood stain of selected shade, apply stain in flowing coats, redistribute excess material by brushing before stain has set, allow not less than 24 hours between coats.

Transparent Woodstained New External Timber – Decorative Protection

109 Preparation: Thoroughly clean down surfaces to remove all dirt, grease and surface contaminants. Abrade the surfaces in the direction of the grain to remove any grey denatured timber and raised grain, round all sharp edges. Make good all cracks, nail holes, open joints and open grain etc., with an approved proprietary stopper/filler designed for use with a woodstain system, rub down smooth and dust off. Apply two thin coats of knotting solution to all knots and resinous areas and allow to harden. Apply one coat of 8 year all weather preservative basecoat.

Apply three finishing coats of transparent 8 year all weather protection wood stain of selected shade, apply stain in flowing coats, redistribute excess material by brushing before stain has set, allow not less than 24 hours between coats.

Previously Varnished Internal Timber – **Polyurethane Varnish**

110 Preparation: and making good: Carefully scrape back to a firm edge all areas of poorly adhering or defective coatings. Rub down to feather broken edges of existing coating and dust off. Wash down the surfaces with soap and water, detergent solution or suitable solvent to remove all dirt, grease and surface contaminants. Whilst wet, rub down the surfaces with a suitable abrasive, taking care to avoid exposing timber on sharp edges. Finally rinse down and allow to dry. Make good all nail holes, open joints and open grain etc with an approved proprietary filler, rub down smooth and dust off. Touch in any bare areas with one coat of interior polyurethane varnish or other equal approved, thinned as manufacturer's technical data sheet.

Apply two finishing coats of gloss, satin or matt interior polyurethane varnish as specified, brush well in avoiding aeration and layoff, rub down lightly between coats along the grain.

Previously Preservative Treated Sawn Timber; External

111 Preparation: Brush down to remove loose fibres, grey denatured timber and poorly adhering or defective coatings. Thoroughly clean down the surfaces with soap and water, detergent solution or suitable solvent to remove all dirt, grease and surface contaminants. Rinse with clean water and allow to dry. Surfaces which are contaminated with mould and/or vegetable growths should be scraped and treated with an appropriate fungicidal wash applied strictly in accordance with the manufacturer's technical data sheet. Ensure all surfaces are completely dry. Apply two thin coats of knotting solution to all knots and resinous areas and allow to dry. Spot prime all knots and bare areas with two coats of coloured timber preservative primer.

Apply one or two (as specified by Client) finishing coats of opaque fencing timber preservative of selected shade.

Preservative Treated New Sawn Timber; External

112 Preparation: Brush down to remove loose fibres and grey denatured timber Thoroughly clean down the surfaces with soap and water, detergent solution or suitable solvent to remove all dirt, grease and surface contaminants. Rinse with clean water and allow to dry. Apply two thin coats of knotting solution to all knots and resinous areas and allow to dry. Spot prime all knots and bare areas with two coats of coloured timber preservative primer.

Apply two finishing coats of opaque fencing timber preservative of selected shade.

Stripping Wallpaper:

113 Strip wall paper, lining paper, etc., clear away debris, remove dirt and surface deposits with a stiff brush, rub down to remove trowel marks, plaster and paint splashes. Lightly rub glossy plaster with worn abrasive paper. - Fill all depressions, holes and cracks with suitable filler and lightly rub down flush with surface.

Vinyl Covered Backgrounds:

114 Where these are to be stripped, the paper backing may be retained as a lining if in good condition and firmly adhering. Stick down any lifting edges and corners.

Treatment of Organic Growths:

115 Remove all loose growths and infected coatings/ decorations. Apply appropriate biocidal solution to growth areas and surrounding surfaces. Scrape or brush off all dead growth. Remove infected materials immediately to ensure that no other areas become infected. Apply appropriate residual effect biocidal solution to inhibit re-establishment of growths. Biocides must be approved and registered by the Health and Safety Executive (HSE) and listed as surface biocides.

Hanging Wallpaper, Lining Paper etc., Generally:

116 All joints must be truly vertical and/or horizontal, straight and fully adhered with edges neatly cut to ceilings and skirtings. Finished coverings must be securely adhered, smooth and free of air bubbles, wrinkles, gaps, tears, adhesive marks and stains.

Sizing:

117 Where specified size surfaces with a solution of wallpaper paste diluted in accordance with the manufacturers technical data sheet.

Lining Paper:

118 Apply size to BS 3357 to walls and hang lining paper with adhesive to BS 3046 with butt joints and turn all edges. When not specified otherwise, select type and weight to suit covering and background. Hang lengths with butt joints; do not overlap. Hang lengths transversely to direction of covering. Leave to dry for 24 hours before hanging covering.

Adhesive:

119 When not specified otherwise, type to be as recommended by the covering manufacturer or, in the absence of such recommendation, type to be approved. Adhesives to contain a fungicide and be made up in accordance with the manufacturer's technical data sheet.

Coverings:

120 Self edged coverings to be trimmed to a true straight edge before hanging, unless manufacturer recommends overlap joints. Hang wall coverings vertically unless specified otherwise. Hang ceiling coverings parallel to the main window wall unless specified otherwise. Isolate any metallic foil/fabric coverings from electrical contact.

Joints in Coverings:

121 Hang lengths with neat butt joints generally with the patterns matching where applicable. Hang lengths with neat overlapped joints only when permitted by the covering manufacturer where butt joints are impractical.

Hang lengths in one piece generally. Cross joints are only permitted where single lengths are impractical.

Joints in Coverings - Overlapped and Cut:

122 Hang lengths with neat overlapped joints. Cut through when stable to a true straight edge, without damaging the background, and bond joints. Hang lengths in one piece generally. Cross joints are only permitted where single lengths are impractical.

Shading:

123 Use lengths in the sequence they are cut from the roll. Check each length for colour and pattern match before hanging.

Do not reverse alternate lengths unless recommended by the covering manufacturer.

Check for shade variation after hanging the first three lengths. Inform the Client Representative of any variation before proceeding.

Client's current manufacturers/suppliers/products

124 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

GLAZING

GLAZING

MATERIALS

Glass

001 Clear float, obscured pattern and Georgian wired glass shall comply with BS 952-1:1995

002 Laminated safety, toughened glass and polycarbonate sheet shall comply with the requirements of BS EN 12600

003 Laminated safety glass shall comply with and meet the requirements of BS 6206:1981

004 Laminated safety glass shall comply with and meet the requirements of BS EN ISO 12543:2011

005 Panes to be accurately and squarely cut, with clean, undisfigured, free from all specks, bubbles, bladders and all other defects, and having undamaged edges and surfaces, to suit the sizes of the openings. Dimensions of edge cover and clearance, positions and materials of distance pieces, setting and location blocks to be to BS 6262:2005 and glass and sealant manufacturer's recommendations.

006 For clear float glass, use 'ordinary glazing quality'.

007 For obscure/patterned glass, use clear cast glass either to match the existing glass or of a pattern Approved by the Client.

008 For polished plate glass, use 'glass for glazing quality'.

009 For wired glass, use Georgian wired cast or Georgian wired polished plate glass, as specified. Ensure the wire extends to the edges of the glass and is free from rust. Cut Georgian wired glass to ensure that any edge is parallel to the alignment of the wires. Care to be taken to ensure that the wires in adjacent panes line up either horizontally or vertically.

Double and triple glazed units

010 Ensure flat dual/hermetically sealed double glazing units are manufactured using low-E coating on inner face s and have a minimum 5 (five) year guarantee. Provide details of the guarantee to the Client. Units to comply with BS EN 1279-1:2004, with units to be clearly marked on at least one section, the spacer bar with the BS kitemark or equivalent European standard or compliance with BS EN 1279-5:2005+A2:2010, the manufacturer's name and number and the date of manufacture, to the month. All units to have argon gas filling.

Secure double glazed units into rebates with double-sided PVC foam closed cell high density security glazing to PAS 24:2012.

Install units in accordance with BS EN 572-2:2012, BS 6262:2005, BS 8000-0:2014, the glass and Glazing Federation Glazing Manual or European equivalents.

Putty

011 For glazing to wood use timber slips and sealants.

012 On timber windows the bottom slip shall be a proprietary drained aluminium bead complete with end caps and spacers.use linseed oil putty or equivalent.

Intumescent mastic

013 Ensure mastic to fire doors/windows is of a type of fire protection sealant Approved by the Client.

Plastic Protection Channels:

014 Preformed proprietary protection channel are to suit particular glass thickness, and fitted securely to bottom edge of glass.

Condensation Channels:

015 Proprietary pre-formed PVC/metal condensation channel are to be complete with stop ends, glazing gaskets and proprietary fixings. Channel to be bedded in recommended sealant to bottom member of window.

Ventilated Glazing Beads:

016 Proprietary pre-formed PVC or aluminium ventilated glazing bead are to be complete with stop ends, glazing gaskets and proprietary fixings and fixed in accordance with manufacturer's technical data sheet.

Glass Locking System:

017 Proprietary plastic/metal body and clip and fixed in accordance with manufacturer's technical data sheet.

WORKMANSHIP

Glazing generally

018 Undertake all glazing in accordance with the Glass and Glazing Federation Code of Practice and the current Building Regulations.

019 Accurately cut glass to size with a small clearance. Provide a clearance of 3mm on timber, 5mm on PVC-U windows all round between the edge of the double glazed unit and the frame to permit drainage and ventilation.

020 Ensure glass, except that bedded in patent glazing strip, is bedded back and front and around the perimeter with mastic neatly trimmed and cleaned off.

021 Ensure glazing is sprigged to wood, or fixed with aluminium, timber beads or PVCu beads and security clips or double edged security tape.

022 If gasket glazing is required, ensure the glazing gaskets and weather seals are extruded from EPDM (Ethylene Propylene Diene Monomer).

023 Install obscured glass in single glazing with the "rough" side to the inside of the Property. Install obscure glass to sealed double glazed units with the "rough" side to the inside of the unit and the obscure glass to the inside of the Property.

024 Seal and prime rebates and beads before glass is inserted.

Double glazing units

025 Glazing packers are to in accordance with BPF COP 362 and should not obstruct the drainage with profile specific bridging packers used. Use setting blocks and distance pieces so as to centralise the glass, unit or infill within the opening and ensure that it cannot move in the wind. Use setting blocks at the bottom edge of the frame. For fixed windows, position them as near the quarter points as possible. Where it is necessary to avoid undue deflection of the frame, place them nearer the sides, but never less than 85mm from the corner. Use setting blocks that are 3mm wider than the glass unit or infill and as thick as the designed edge clearance. Allow for toeing and healing.

026 Use setting blocks that are at least 25mm in length and approximately 25mm in length for each metre of major glass dimension. For vertically pivoted windows, use setting chocks that are at least 75mm in length.

027 Use location blocks between the edges of the glass unit or infill and at the top and sides of the frame in an opening light.

028 Use distance pieces 25mm long and 3mm less in height than the rebate depth. Ensure the thickness is at least 3mm and such as to ensure that the glass is held firmly in the glazing rebate. Insert rigid PVC shims if necessary, to ensure that the distance pieces are a tight fit between the face of the glass and rebate. For beads which fit into continuous grooves, insert the first distance pieces 75mm from each corner, and the remainder at approximately 30mm centres. For beads fixed by screws or other studs, insert the distance pieces at the fixing points provided.

Neoprene glazing gaskets

029 Fit glass to PVCu windows using glazing gaskets appropriate to the window. Angle all glazing gaskets if possible, but in any event mitre all corners.

Cleaning:

030 Remove cement and plaster based spillage whilst wet. Remove all smears and excess glazing materials. Leave glazing clean and free from scratches inside and out.

Damage:

031 Replace all glass and fixing materials broken or damaged before Completion, and redecorate.

Client's current manufacturers/suppliers/products

032 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

PLUMBING

PLUMBING

GENERAL

Generally

001 Ensure all Materials comply with the requirements of the applicable water Utility Provider.

002 Use rust proofed ancillary and fixing Materials. Ensure all Materials in direct or indirect contact are compatible so as to prevent electrolytic or chemical corrosion.

003 Note that the Client's Properties may contain a variety of disposal systems manufactured from conventional materials and also a wide range of manufacturer's proprietary systems.

004 Seal any pipework entering a vertical service duct all round with intumescent sealant to prevent the passage of fire or smoke.

MATERIALS

Plastic rainwater gutters and pipes

005 Match the colour of the systems, the profile of gutters and the rainwater pipe jointing and fixing to the existing systems unless the Client Instructs otherwise.

Cast iron rainwater gutters and pipes

006 For gutters use half round or ogee. Match all new gutters and pipes to the existing system unless the Client Instructs otherwise.

Aluminium rainwater gutters and pipes

007 Ensure aluminium rainwater disposal systems match the existing system.

Plastic soil and vent pipes

008 Ensure the colour and jointing and fixing match the existing pipework unless the Client Instructs otherwise.

Cast iron soil and vent pipes

009 Ensure the jointing and fixing methods match the existing pipework unless the Client Instructs otherwise.

Plastic waste pipes, fittings and traps

010 Use PVC-u plastic to BS EN 1328-1:2014 for soil/ventilating pipework and fittings. Use polypropylene plastic to BS EN 1565-1:2000 and BS EN 1451-1:2000 for waste and warning pipework, fittings and traps. Fully protect any external polypropylene and ABS pipes and fittings from sunlight. Ensure waste pipes, fittings and traps match the existing waste systems unless the Client Instructs otherwise.

Copper waste pipes and fittings

011 Ensure the gauges of pipework and types of fittings match those of the relevant existing pipework.

Plastic water supply pipes and fittings

012 Use blue polyethylene pipes with copper fittings for pipework laid underground for potable water supplies.

Copper water supply pipes and fittings

013 Use lead free capillary fittings for potable water supplies.

Fittings for lead supply pipes

014 Use lead to copper mechanical joint fittings for connecting dissimilar pipes to existing lead water services.

Overflow pipes and fittings

015 Ensure the pipework for overflows complies with the same requirements as for water supply pipework.

Solder

016 Do not use lead based solders or solders containing lead in Works associated with potable water supplies. Use tin/copper or tin/silver compositions instead.

Float valves

017 Use float operated valves unless the Client Approves the use of piston valves. Where Approval is given, use piston valves of at least 22mm that comply with the requirements of the Utility Provider.

Taps

018 Use chromium plated metal taps. For lavatory basins and sinks, use 1/2 inch taps; for baths, use 3/4 inch, unless the Client Instructs otherwise.

019 Replacement of taps to kitchen sinks for Responsive Maintenance and Void Property Works use:
- deck pattern chromium plated kitchen sink mixer with metal handle control with colour discs, left hand red for hot and right hand blue for cold;

020 Taps to kitchen sinks for Persons with Disabilities use:
- deck pattern chromium plated kitchen sink mixer with metal handle lever action operation control with colour discs, left hand red for hot and right hand blue for cold;

021 Replacement of taps to baths for Responsive Maintenance and Void Property Works use:
- deck pattern chromium plated bath pillar taps suitable for both high and low pressure with metal handle control with colour discs, left hand red for hot and right hand blue for cold;

022 Taps to baths for Persons with Disabilities use:
- deck pattern chromium plated bath pillar taps suitable for both high and low pressure with metal handle lever action operation control with colour discs, left hand red for hot and right hand blue for cold;

023 Replacement of taps to wash hand basins for Responsive Maintenance and Void Property Works use:
- vertical pattern chromium plated basin taps with metal handle control with colour discs, left hand red for hot and right hand blue for cold;

024 Taps to wash hand basins for Persons with Disabilities use:
- vertical pattern chromium plated basin taps with metal handle lever action operation control with colour discs, left hand red for hot and right hand blue for cold;

Sanitary fittings

025 Ensure all sanitary fittings are Approved by the Client.

026 For lavatory basins and pedestals, to BS 1188 and BS 3402 use white vitreous china with:
- size 560mm x 440mm, one tap hole with pedestal;
- wall brackets secured in accordance with the manufacturer's technical data sheet;
- chromium plated to BS EN 248 deck mounted mono mixer, quarter turn lever action;
- chromium plated rotative clicker waste stopper;
- polypropylene trap, 50mm seal, with combined overflow; and
- all fittings necessary to connect to services and disposal systems.

027 For hand rinse wash basins, to BS 1188 and BS 3402 use white vitreous china with:
- size 360mm x 265mm, one tap hole without pedestal;
- wall brackets secured in accordance with the manufacturer's technical data sheet;
- chromium plated deck mounted mono mixer, quarter turn lever action;
- chromium plated rotative clicker waste stopper;
- polypropylene trap, 50mm seal, with combined overflow; and
- all fittings necessary to connect to services and disposal systems.

028 For corner rinse wash basins, to BS 1188 and BS 3402 use white vitreous china with:
- size 500mm x 400mm, one tap hole without pedestal;
- wall brackets secured in accordance with the manufacturer's technical data sheet;
- chromium plated deck mounted mono mixer, quarter turn lever action;
- chromium plated rotative clicker waste stopper;
- polypropylene trap, 50mm seal, with combined overflow; and
- all fittings necessary to connect to services and disposal systems.

029 For baths, use heavy duty pressed steel to BS 1390, with bolt on adjustable legs.

030 Supply baths with:
- 1700 mm rectangular pattern, 2 centre tap holes, twin handle grips and slip resistant base;
- chromium plated deck pattern over bath/shower fitting comprising height adjustable lockable slide rail, shower bracket, fastening set, shower hose (minimum 1500mm) soap dish and adjustable head outlet
- chromium plated deck mounted mono mixer to match mono basin mixer, quarter turn lever action;
- chromium plated rotative clicker waste stopper;
- DN 40 polypropylene deep seal trap with combined overflow;
- bolt on adjustable feet
- galvanised mild steel floor plates to be provided under bath feet; and
- all fittings necessary to connect to services and disposal systems.

031 Supply baths with:
- 1500 mm rectangular pattern, 2 centre tap holes, twin handle grips and slip resistant base;
- chromium plated deck pattern over bath/shower fitting comprising height adjustable lockable slide rail, shower bracket, fastening set, shower hose (minimum 1500mm) soap dish and adjustable head outlet
- chromium plated deck mounted mono mixer to match mono basin mixer, quarter turn lever action;
- chromium plated rotative clicker waste stopper;
- DN 40 polypropylene deep seal trap with combined overflow;
- bolt on adjustable feet
- galvanised mild steel floor plates to be provided under bath feet; and
- all fittings necessary to connect to services and disposal systems.

032 Where it not feasible to install a gravity over bath/shower mixer assembly, a deck mounted quarter turn lever action chromium plated bath filler mixer taps with maximum mixed water outlet temperature for bath fill of 48 degree C, an electric shower is also to be provided over the bayth.

033 For WC pans to BS EN 997 and BS 3402, use white vitreous china close coupled toilet pan, horizontal outlet, standard

034 For dual flush WC cisterns to BS 1125 and BS 3402, use white vitreous china type for use with close coupled suites. Ensure the cisterns are complete with:

- lid;
- ball valve low pressure type;
- siphon;
- cistern to be dual flush 6 litres/4.5 litres capacity with dual flush button;
- wall brackets;
- cistern inlet connector to wc pan; and
- all fittings necessary to connect to services, disposal systems and overflow.

035 For Close Coupled WC Pan and Cistern to BS EN 22:2011 and BS EN 997:2012+A1:2015 use:

- White vitreous china pan to BS EN 997:2012 and BS 3402:1969;
- Thermoplastic Type 2 seat and cover to BS 1254:1981, with thermoplastic colour matched plastic hinges, buffers to be either synthetic or natural rubber or thermoplastic with a minimum of two integral distance pieces or a maximum of four buffers attached to underside of seat, seat colour black or white;
- Standard pan connector to BS 5627:1984 to 'P', 'S' or turned 'P' coloured to match pan;
- White vitreous china cistern to BS 1125:1987 and BS 3402:1969 with lid;
- Dual flush 6 litres/4.5 litre capacity to BS 1125:1967;
- Operating control, ball valve low pressure type to BS 1212-1:1990, BS 1212-2:1990 or BS1212-3:1990, diaphragm pattern of copper alloy/plastic construction with plastic float to BS 2456:1990
- Dual flush button operating mechanism, with cistern inlet connector to WC Pan;
- Internal overflow into WC pan through the flush valve supplied by the manufacturer.

036 For replacement of WC Pan for Responsive Maintenance and Void Property Works use:

- White vitreous china low level wash down with horizontal outlet pan to BS EN 997:2012 and BS 3402:1969;
- Standard pan connector to BS 5627:1984 to 'P', 'S' or turned 'P' coloured to match pan;

037 For replacement of WC Cistern for Responsive Maintenance and Void Property Works use:

- White plastic cistern to BS 1125:1987 with lid;
- Dual flush 6 litres/4.5 litre capacity to BS 1125:1967;
- Operating control, ball valve low pressure type to BS 1212-1:1990, BS 1212-2:1990 or BS1212-3:1990, diaphragm pattern of copper alloy/plastic construction with plastic float to BS 2456:1990
- Dual flush button operating mechanism, with cistern inlet connector to WC Pan;
- Internal overflow into WC pan through the flush valve supplied by the manufacturer.

038 For replacement of WC Seat for Responsive Maintenance and Void Property Works use:

- Thermoplastic Type 2 seat and cover to BS 1254:1981, with thermoplastic colour matched plastic hinges, buffers to be either synthetic or natural rubber or thermoplastic with a minimum of two integral distance pieces or a maximum of four buffers attached to underside of seat, seat colour black or white;

039 Provide Automatic WC Pan and Cistern use:

- Automatic WC shower toilet providing flushing, washing and warm air drying WRAS approved;
- Combined WC/Bidet with addition of drying air to BS 3402:1969
- White vitreous china arrangement with low level wash down and horizontal outlet;
- Seat and cover as supplied by manufacturer;
- Pan connector, standard to BS 5627:1984 'S' trap (vertical fall) or 'P' trap (horizontal) white to match pan;
- Cistern, as supplied by the manufacturer;
- Flushing operation, as supplied by the manufacturer;
- Operating control, as supplied by the manufacturer;
- Water service, 15mm cold water service only with isolation valve, from storage or mains water supply;
- Boiler capacity, as supplied by the manufacturer;
- Cistern capacity, as supplied by the manufacturer;
- Internal overflow into WC pan through the flush valve supplied by the manufacturer.;
- Electrical services, 230/240V 1 Phase 50Hz AC earthed supply, Maximum Power 1300 watts, Load 10A, Rating IPX4
- Installation, a fused spur is required for isolation, located in accordance with the current IET Wiring Regulations;

- Height, to be raised above floor level to enable easy transfer from wheelchair to WC pan.

040 Provide Bidet to BS use;
- Standard to BS 35:2014, BS EN 14528:2015 and BS 3402:1969;
- Pedestal type in white vitreous chine with over-rim supply;
- Water supply fittings, pillar taps or centre set taps with pop up waste, chromium plated finish;
- Standard waste, DN30 flush grated waste fitting, standard to BS EN 274-1:20012, BS EN 274-2:2002 and BS EN 274-3:2002, un-slotted tail, brass, with external parts chromium plated with solid brass back nut;
- Standard 50mm (minimum) seal polypropylene trap DN30 kite marked to BS 274-1:20012,

Stainless steel sinks

041 Provide stainless steel inset sinks to BS EN 13310 and BS EN 10088 with single bowl, single drainer, 2 tap holes. Supply 0.9mm satin polish finish sinks with:
- deck pattern chromium plated sink mixer with metal handle control with colour discs, red for hot and blue for cold to ;
- DN 40 chromium plated combined plug type waste and overflow unit with unslotted or slotted tail (for use with an appliance with overflow);
- DN 40 polypropylene 50mm (minimum) seal trap to BS EN 274chrome plated sink waste chain and stay with black rubber or plastic plug; and
- all fittings necessary to connect to services and disposal systems.

042 Provide sit on type stainless steel sink to BS EN 13310 and BS EN 10088 for Responsive Maintenance and Void Property Works with single bowl, single drainer, 1000 x 500mm for 2 tap holes. Supply 0.9 mm thick satin polish finish sinks with:
- deck pattern chromium plated sink mixer with metal handle control with colour discs, red for hot and blue for cold;
- DN 40 chromium plated combined plug type waste and overflow unit with unslotted or slotted tail (for use with an appliance with overflow);
- DN 40 polypropylene 50mm (minimum) seal trap to BS EN 274;
- Chrome plated sink waste chain and stay with black rubber or plastic plug; and
- all fittings necessary to connect to services and disposal systems.

043 Provide sit on type stainless steel sink to BS EN 13310 and BS EN 10088 for Responsive Maintenance and Void Property Works with single bowl, single drainer, 1000 x 600mm for 2 tap holes. Supply 6mm thick satin polish finish sinks with:
- deck pattern chromium plated sink mixer with metal handle control with colour discs, red for hot and blue for cold;
- DN 40 chromium plated combined plug type waste and overflow unit with unslotted or slotted tail (for use with an appliance with overflow);
- DN 40 polypropylene 50mm (minimum) seal trap to BS EN 274;
- Chrome plated sink waste chain and stay with black rubber or plastic plug; and
- all fittings necessary to connect to services and disposal systems.

044 Provide sit on type stainless steel sink to BS EN 13310 and BS EN 10088 for Responsive Maintenance and Void Property Works with single bowl, single drainer, 1200 x 600mm for 2 tap holes. Supply 6mm thicj satin polish finish sinks with:
- deck pattern chromium plated sink mixer with metal handle control with colour discs, red for hot and blue for cold;
- DN 40 chromium plated combined plug type waste and overflow unit with unslotted or slotted tail (for use with an appliance with overflow);
- DN 40 polypropylene 50mm (minimum) seal trap to BS EN 274;
- Chrome plated sink waste chain and stay with black rubber or plastic plug; and
- all fittings necessary to connect to services and disposal systems.

045 Provide sit on type stainless steel sink to BS EN 13310 and BS EN 10088 for Responsive Maintenance and Void Property Works with single bowl, double drainer, 1500 x 500mm for 2 tap holes. Supply sinks with:
- deck pattern chromium plated sink mixer with metal handle control with colour discs, red for hot and blue for cold;
- DN 40 chromium plated combined plug type waste and overflow unit with unslotted or slotted tail (for use with an appliance with overflow);
- DN 40 polypropylene 50mm (minimum) seal trap to BS EN 274;
- Chrome plated sink waste chain and stay with black rubber or plastic plug; and
- all fittings necessary to connect to services and disposal systems.

046 Provide sit on type stainless steel sink to BS EN 13310 and BS EN 10088 for Responsive Maintenance and Void Property Works with single bowl, double drainer, 1500 x 600mm for 2 tap holes. Supply sinks with:
- deck pattern chromium plated sink mixer with metal handle control with colour discs, red for hot and blue for cold;
- DN 40 chromium plated combined plug type waste and overflow unit with unslotted or slotted tail (for use with an appliance with overflow);
- DN 40 polypropylene 50mm (minimum) seal trap to BS EN 274;
- Chrome plated sink waste chain and stay with black rubber or plastic plug; and
- all fittings necessary to connect to services and disposal systems.

047 Provide fibreglass level access shower trays to BS EN 14527:2006+A1:2010, preferred optimum size 850mm x 1200mm (on site variations to be considered):
- Weight – loading of 380 kilos/60 stone;
- Level access (no greater than 5mm above finished floor level at point of entry with rounded/bevelled lip);
- Waste – shower trap with removable waste fitting (supplied as standard with shower tray) and installed in accordance with the manufacturer's technical data sheet;

048 Provide fibreglass or stone resin step in shower trays to BS EN 14527:2006+A1:2010, preferred optimum size 850mm x 1200mm (on site variations to be considered):
- Weight – loading of 380 kilos/60 stone;
- Step in tray (a maximum step of 85mm is recommended);
- Waste – shower trap with removable waste fitting (supplied as standard with shower tray) and installed in accordance with the manufacturer's technical data sheet;

049 Provide fibreglass wet room former to BS EN 14527:2006+A1:2010, preferred optimum size 850mm x 1200mm (on site variations to be considered):
- Weight – loading of 380 kilos/60 stone;
- Fibreglass floor former with integral floor covering;
- Waste – shower trap with removable waste fitting (supplied as standard with shower tray) and installed in accordance with the manufacturer's technical data sheet;

050 Provide shower enclosure manufactured to BS EN 14428:2015:
- Half height bi-fold/tri-fold toughened glass/plastic enclosures which shall not break or shall break safely;
- All seals to be watertight with 180 degree rise and fall hinges;
- Magnetic closing doors with locking handle;
- Optional full height shower curtain and curtain rail;
- Curtains to be durable polyester weighted by 50 grams to prevent swing;
- Powder coated aluminium frame and plastic parts with an anti-bacterial coating;

051 Provide shower enclosure manufactured to BS EN 14428:2015:
- Half height bi-fold/tri-fold toughened glass/plastic enclosures which shall not break or shall break safely;
- All seals to be watertight with 180 degree rise and fall hinges;
- Magnetic closing doors with locking handle;
- Optional full height shower curtain and curtain rail;
- Curtains to be durable polyester weighted by 50 grams to prevent swing;
- Polished chrome frame with an anti-bacterial coating on plastic parts;

052 Provide shower enclosure manufactured to BS EN 14428:2015:
- Full height toughened glass/plastic enclosures with watertight door seals and magnetic closing doors ;
- Powder coated aluminium frame and plastic parts with an anti-bacterial coating;

053 Provide ABS Plastic grab rails:
- All rails shall be manufactured from ABS plastic (virtually indestructible plastic) and shall have a a slip resistant grip with broad flanged fittings to be plastic welded to rail for fixing with non-corrosive screws to wall or floor;
- All rails to have easy bends and no sharp corners;
- Rails should contract in colour and luminance with the background against which they are seen;
- It is of the utmost importance that the wall construction should allow a sec ure fixing of grab rail to suit changing needs or specific needs of an individual;
- The rail should not deteriorate when exposed to extremes of heat and cold;
- Sizes to suit site conditions and left or right handing;

054 Provide single or double folding rails:
- Manufactured from 32mm to 35mm diameter mild steel and coated with a white epoxide/polyester finish and fitted with a strongly constructed locking device to enable the rail to be locked in the vertical position;
- Double folding rails shall be fitted with a toilet roll fitment;
- Drop down rails should be of a type that can be pulled down by a person when seated on the WC;
- They shall incorporate vertical support struts, set back from the front edge of the rail by at least half its projection from the wall so as not to impede wheelchair access;
- Projection of rails shall vary according to need.

055 Provide double folding rails with foot support:
- Manufactured from 32mm to 35mm diameter mild steel and coated with a white epoxide/polyester finish and and to be used where the mechanical strength of the wall is doubtful;
- In the down ward position the supporting leg shall take most of the applied load;
- In the upright (Vertical) position the locking device shall enable the rail to be used as a HAND HOLD and shall not be considered as suitable as a GRAB RAIL when in the vertical position;
- Projection of rails shall vary according to need.

056 Provide shower curtain tracks:
- Track may be straight, 'L' shaped or 'U' shaped;
- Rail shall be manufactured from anodised aluminium;
- Rail is to be easy to bend and supplied with all necessary fixing brackets and hooks;

057 Provide shower curtain:
- Curtain to be shower proof plastic with hem weighted by 50 grams to ensure correct hanging and supplied with all necessary clips and fixings

058 Provide shower seat:
- Seat to be manufactured to BS EN 12182:2012 and BS EN 12727:2000
- Wall mounted seat with height adjustable support legs and be able to fold upwards when not in use;
- Complete with fixed or detachable padded seat, back and arms for extra comfort;
- Powder coated frame;
- Stainless steel rawlbolt fixings to suit wall construction in accordance with the fixing manufcaturer's technical data sheet;
- Weight – not to exceed a loading of 254 kilos/40 stone;

059 Provide thermostatic shower mixing valve to BS EN 111:1999, BS EN 1287:1999 BEAB Care, TMV2, YMV3 and WRAS approved:

- Thermostatic shower control to mix hot and cold water to the desired water temperature;
- Surface mounted shower control, with extended lever control to distinguish between flow and temperature for disabled use;
- Chrome plated finish;
- Temperature range, Thermostatic control range 35 to 45 degrees C;
- Inlet water supply temperatures, 15 degrees C Cold and 65 degrees C Hot;
- Maximum hot water system temperature: 60 degrees C;
- Automatic shut down within 3 seconds in the event of failure in the cold water supply;
- Multi-mode showerhead with a 1m (minimum) length slide bar and soap dish, 1.5m (minimum) lenth flexible hose with retaining ring and all necessary fittings for surface fixing;
- Minimum maintained pressure: 0.1bar;
- Maximum maintained pressure: 5.0 bar;
- Maximum static pressure: 10.0 bar;

Tanks

060 Ensure tanks are complete with tightly fitting removable lids. Use moulded plastic tanks to BS 4213 and BS 7181. Ensure the tank is complete with a float valve and all fittings necessary to connect the services and overflow.

Copper cylinders

061 Ensure hot water storage copper cylinders are to BS 1566-1 Grade 3 factory insulated, fitted with sacrificial anodes and complete with:

- immersion heater boss, cap and washer screwed boxes; and
- all fittings necessary to connect to the primary pipework supply and draw off pipework.

Combination hot water storage units

062 Provide indirect or direct combination tanks to BS 3198 as appropriate. Ensure the proprietary units are complete with:

- sacrificial anodes;
- insulation;
- float valve;
- immersion heater boss, cap and washer, screwed boxes; and
- all fittings necessary to connect to the primary supply, draw off and overflow pipework.

Insulation

063 Use preformed, fully flexible, closed cell elastomeric insulation fire rated as insulation for hot and cold pipework that meets the requirements of the Utility Provider.

Paint

064 Ensure paint used in repairs complies with the "Painting" Section.

WORKMANSHIP

Water supply

065 Support pipework at centres recommended by the manufacturer with approved clips or brackets of a type to suit the background to which it is required to be fixed.

066 Ensure that pipes used in repairs are similar to the existing pipework, but repair lead pipework using appropriate plastic pipe and approved compression fittings. Do not use copper pipework for repairs to lead pipework. Use either compression or lead free solder capillary ring fittings.

Sanitary appliances

067 Properly install sanitary fittings. Take care to ensure that integral overflows are not obstructed with jointing compounds. Fix sanitary fittings securely to structure without taking support from pipe lines, level and plumb and fall to drain as intended, use jointing and bedding compounds as recommended by the manufacturer's of appliances, accessories and pipes technical data sheets to form watertight joints between appliances and backgrounds (except cisterns) , and between appliances and discharge pipes, Ensure that noiiggins, bearers etc., necessary to support sanitary appliances and fittings are accuratekly postioned and securely fixed.

068 Isolate waste, taps and other fittings from the sanitary fittings with the appropriate flexible washers making an effective seal.

069 On cisterns, obtain from manufacturer, float operated valve matched to pressure of water supply, fix overflow pipe to falls and located to give visible warning of discharge.

070 Assemble taps, fix securely, making a watertight seal with the appliance, a suitable set of flanged insert plug/sleeve and washers shall be fitted to each and evert tap for securing tap in position and for anti-rotation purpose.

071 Assemble wastes and overflows to appliances, bed in waterproof joint compound and fix with a resilient washer between appliance and backnut.

Rainwater Harvesting- Design Criteria

072 The collection tank is to be buried. Rainwater is to enter the drainage system through sealed gullies and pass through a pre-filter to remove leaves and other debris prior to entering the collection tank. A submersible pump controlled by the monitoring and sensing panel is to deliver recycled rainwater on demand. The non-potable distribution pipework to the washing machine, cleaner's tap, outside tap and toilets etc., must either be a boosted system or configured for a header tank in the loft, with mains supply back-up with monitors and sensors located located in or adjacent to the header tank.

073 Rainwater harvesting systems must include an automatic switchover to the mains water back-up supply, upon depletion of the stored rain water.

Grey Water Recycling – Design Criteria

074 Waste water from baths, showers and washbasins collected by conventional pipework, is to collected in a pre-treatment sedimentation tank to remove larger dirt particles. Water then is to pass to the aerobic treatment tank in which cleaning bacteria ensure that all bio-degradable substances are broken down. The water then passes onto a third tank, where an ultra-filtration membrane is to remove all particles larger than 0.00005 mm, (this includes viruses and bacteria) to disinfecting the recycled grey water. A fourth tank is to store the clean water from where it is pumped on demand under the control of monitors and sensors in the control panel. Recycled grey water may be used for toilet and urinal flushing, for laundry and general cleaning, and for outdoor use such as vehicle washing and garden irrigation. If there is insufficient space, then the tanks may be buried but with adequate arrangements for maintenance access.

075 Grey water harvesting systems must include an automatic switchover to the mains water back up supply, upon depletion of the stored grey water.

Client's current manufacturers/suppliers/products

076 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

MAINTENANCE OF THERMOSTATIC MIXING VALVES

MAINTENANCE OF THERMOSTATIC MIXING VALVES

General Requirements

001 The Service Provider shall be deemed to have read the whole of this specification together with the Client's requirements' and will be deemed to have included in his Tendered Rates for full compliance.

The Service Provider shall provide a 24-hour, 365 days per year (366 for a leap year) responsive maintenance service for the period of the Service to allow for breakdown or malfunction of any appliance, or installation and the replacement of any defective or missing components or installation parts previously specified. This service is to ensure that the appliances and installations are left in a safe and fully operational condition. The details of any repair are to be noted by the engineer for registering on the Service Provider's database (as provided by the Client).

Asset Register

002 The Service Provider must ensure that all the asset registers are supplied to the Client during the first 12 months of the contract period.

Maintenance Reports

003 The Service Provider shall ensure that, following all inspection visits, conditional reports shall be in electronic format, including all specialist reports and test equipment printouts, and uploaded onto the Clients IT system.

Manufacturer's Requirements

004 Where manufacturer's instructions exceed the requirements of this document they shall be adhered to in their entirety.

Access

005 The Service Provider shall ensure that he undertakes a risk assessment and provides a method statement for his means of access to allow for inspection and testing.

006 All works shall be carried out in strict accordance with the requirements of "The Work at Height Regulations 2005".

007 The Service Provider shall ensure that all personnel employed upon this contract are suitable trained and experienced and competent to work at height.

Guidance

008 The Service Provider shall refer to the specification and to the British Standards Institution publications for detailed guidance. Other guidance is available from the HSE, NHS Estates, the Water Regulations Advisory Scheme and the Thermostatic Mixing Valve Manufacturer's Association.

The Service Provider shall pay particular attention to:

- NHS Estates Health Guidance Note – 'SAFE' hot water and surface temperatures.
- Building Regulation Approved Documents
- Thermostatic Mixing Valve Manufacturer's Association Recommended Code of Practice for Safe Water Temperatures.
- HSE document L8: The prevention and control of legionellosis (including Legionnaires' disease).
- The Water Supply (Water Fittings) regulations.
- WRAS Water Regulations Guide.
- BS EN 1287 'Sanitary tap ware – low pressure thermostatic mixing valves'
- BS 7942 Thermostatic Valves for use in care establishments.
- BS 8558 Specification for design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.

Minor Repairs

009 The Service Provider shall, during testing, carry out minor repairs such as tightening joints, replacement of clips, etc., to achieve a pass status and make appliances safe to ensure compliance with BS EN 1111.

Periodic Inspections and Testing

010 Inspection and testing of thermostatic mixing valves must unless otherwise instructed by the Client be carried out in accordance with the requirements tabled below;

Item No.	Item	Frequency	Action	Notes
Installation Information				
1.	The Service Provider shall examine records pertaining to each TMV. All TMVs should be identified by a unique asset number. In particular the Service Provider shall ensure the presence of the following information: 'As-fitted' drawings Manufacturer's installation and maintenance manual Commissioning and testing records. Maintenance records			
Testing				
2.	Water Treatment	6 Monthly	Measure temperature of water flow at normal flow rate and after allowing stabilisation. Repeat temperature test at approximately ¼ normal flow rate. Temperature range should be as required in Health Guidance Note 'Safe' hot water and surface temperatures (Section 3 Table 1).	Use a digital thermometer of known accuracy, with a minimum refresh rate of 4 times per second.
3.	Fail Safe Action	6 Monthly	Isolate cold water supply. Ensure all hot water ceases to flow in time specified by manufacturer for valve type.	
4.	Flow Rate	6 Monthly	Measure flow rate. Compare flow to commissioning data and previous maintenance records.	Undertake maintenance as appropriate

Item No.	Item	Frequency	Action	Notes
Routine & Responsive Maintenance				
5.	TMV – General	Annually	Examine for leaks. Examine for corrosion. Examine connections, hoses and outlets. Examine fixings. Descale in accordance with manufacturer's instructions. Sterilise shower heads as required by legionella risk management plan.	
6.	Pipework	Annually	Examine for leaks. Examine hangers and supports, adjust as necessary. Examine for corrosion. Examine thermal insulation. Record hot and cold water temperatures.	
7.	Isolation Valves	6 Monthly	Examine for leaks. Test valves for free travel. Repack if necessary. Examine for corrosion.	
8.	Strainers	6 Monthly	Examine general medical condition. Clean strainers and filters.	
9.	Repairs		If repairs are necessary, all works shall be carried out in strict compliance with manufacturer's recommendations and requirements. Upon completion of works the TMV shall be recommissioned in accordance with the manufacturer's instructions. Record commissioning data.	

Client's current manufacturers/suppliers/products

011 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

HEATING

General Requirements

General Requirements

Service Provider's Conduct

001 The Client is intent on providing an expeditious, safe and efficient maintenance service to the occupants of its premises and consequently the Service Provider shall do his utmost to promote and enhance the image and reputation of The Client in this respect.

002 The Service Provider shall require his employees and employees of any Sub-contractor engaged upon the Works to be properly and presentably dressed in appropriate uniforms or workwear.

003 The Service Provider shall ensure that his employees and employees of any Sub-contractor shall perform their duties in an orderly and quiet manner as may be reasonable and practicable having regard to the nature of the duties being performed by them.

004 The need to maintain the highest standards of hygiene and courtesy whilst the Service Provider's employees and any Sub-contractor's employees are engaged upon the Works is paramount and in particular consideration must be given to users and occupiers when working in or near occupied premises, the Service Provider shall observe all of these provisions and also ensure that the said employees do not cause a nuisance and or disturbance to users and occupiers when they are working in or near occupied premises.

005 The Client is empowered by this provision to give written notice to the Service Provider requiring him to remove from the Works forthwith any employee of the Service Provider or employee of any Sub-contractor engaged upon the Works, if he is not satisfied in any way with the respective employee's apparel, conduct, manner, or ability. The Service Provider shall on receipt of such notice comply forthwith and remove the employee from the Client's premises and the employee shall not be employed or engaged upon or in connection with the Works whilst the Contract remains in force.

006 The Client will from time to time poll the occupiers of its premises to obtain their views on the effectiveness of the service provided by the Service Provider and the manner adopted by his employees when discharging their duties. The results of the poll will be taken into account when considering the needs for resourcing future repair and maintenance programmes.

Registered Service Provider

007 The Service Provider shall have and maintain throughout the Contract Period registration with the:-

(a) GAS SAFE Register or such other body as may from time to time be approved by the Health and Safety Executive and

(b) OFTEC or such other body as may from time to time be approved by the Health and Safety Executive and

(c) HETAS or other such body as may from time to time be approved by the Health and Safety Executive and

(d) National Inspection Council for Electrical Installation Contracting (NICEIC) and/or Electrical Service Providers Association (ECA) or alternatively, the Service Provider may employ a sub-Service Provider, to be approved by the Client under the Contract, who is registered with the National Inspection Council for Electrical Installation Contracting and/or Electrical Service Providers Association in order to undertake electrical work in connection with the Works. Be registered with an approved electrical licence to practice system. An example of a licence to practice system is SparkSafe.

008 In the event that the Service Provider's GAS SAFE or OFTEC or HETAS OR NICEIC or ECA registration becomes suspended or withdrawn or has any conditions attached for whatever reason, the Service Provider shall immediately notify the Client in writing giving full details of the reasons for such and the proposed or intended action and time-scale for gaining reinstatement of its registration(s). With immediate effect from the date of suspension or withdrawal of its registration(s) and until reinstatement The Service Provider shall, subject to approval of the Client, be required to employ on a domestic sub-contract basis a suitable registered Sub-contractor to undertake Works under the Contract.

009 Should the Service Provider be unable within a period of two weeks to engage a suitably registered Sub-contractor which meets the Client's approval and or the period of suspended or withdrawn registration(s) exceeds or is likely to exceed four weeks then, the Client may at its sole discretion terminate the Service Provider's employment under the Contract in writing with immediate effect. Such action on the part of the Client shall constitute a valid termination in accordance with the Contract Conditions.

Electrical Installations

010 The Service Provider shall as part of the installation of a new/replacement gas or oil fired or biomass central heating installation, check and test all electrical installations and fittings associated with the Heating Installations and Heating Appliances covered by this Contract, so as to ensure their safe operation.
All remedial work will comply fully with the IET Regulations.

PERFORMANCE SPECIFICATION FOR HEATING INSTALLATIONS

PERFORMANCE SPECIFICATION FOR HEATING INSTALLATIONS

SPECIAL CONDITIONS

Special Conditions

001 The following special conditions apply to all new boiler central heating and hot water services installations and boiler replacement and boiler renewal installations.

002 The Service Provider shall be GAS SAFE, OFTEC or HETAS registered. All operatives, engineers and technicians shall be suitability qualified.

003 The Service Provider shall provide a full list of the operatives who will be involved in the contract prior to the commencement date. This list shall include the operatives' names, career history, qualifications, etc.

004 This information shall be updated as and when required throughout the duration of the contract.

005 **The Service Provider should note that following completion of the works, a 24 hour, 7 days/week, including Public Holidays, emergency call-out service shall be provided for the duration of the 12 months Defects Liability Period.** The emergency call-out number shall be provided on a sticker placed on the boiler enclosure.

006 The Service Provider is to provide written notification of all emergency call-outs giving details of faults/defects and response times which should be countersigned by the Customer.

Service Provider Design

007 The Service Provider carries the design responsibilities for the new domestic central heating and hot water services installations, or for the boiler replacement/renewal installations.

008 The Service Provider will be required to provide a statement of skills, knowledge and experience which will cover:

- Membership of a relevant professional body.
- Familiarity with the construction processes in the circumstances of the project and the impact of design on Health and Safety.
- Awareness of relevant Health and Safety and fire safety legislation and appropriate risk assessment methods.
- The Health and Safety practices of the designer for design work carried out.
- The people to be employed to carry out the work, their skills and training, this is likely to include external resources where necessary and is to be reviewed in association with the design requirements.
- Technical facilities to support the design, particularly in the circumstances of the project.
- The method of communicating design decisions.
- How information and instructions will be communicated to the Customers. Ideally this should be provided by a person with specific training, e.g. City and Guilds in Energy Advice.
- This information shall be forwarded to the Client.

009 INSTALL AND MAINTAIN REPLACEMENT GAS (WALL MOUNTED CONDENSING BOILER) CENTRAL HEATING SYSTEM

Replacement operations will be as follows and to include all labour and materials necessary for the completion of the installation

Design

The Service Provider shall carry out an initial survey of each dwelling and prepare and submit the design information for the replacement of the heating system in compliance with the Clients Specification.

The Service Provider shall submit a completed "Survey Schedule and Cost Estimate" to the Client for clearance and approval.

The Service Provider shall carry out all necessary Tenant consultation

The Service Provider shall obtain all necessary statutory approvals; for the works (including the payment all necessary fees and administration charges in connection therewith).

Removal of Existing System

The Service Provider shall include for carefully draining down, disconnection and removal of the complete existing Clients and or Tenant installed heating system; remove/seal off as necessary all pipe work thereto, remove fireplace hearth and surround, build up chamber opening, core ball and sweep flue; supply and insert permanent ventilator and extend and make good plaster, skirting to match existing.

The Service Provider shall remove all redundant radiators and exposed pipe work as necessary and remove the feed and expansion cistern, all pipe work, and insulation and any support platforms. The hot water cylinder, pipe work, immersion heaters, insulation and support stool are also to be removed. All existing electric cable, conduit and accessories shall be removed and all surfaces made good.

Replacement installation

The Service Provider shall supply temporary heat (two 2 Kilowatt electric panel type heaters having time and temperature control; for the complete duration of the works and maintain tenant's mains electricity supply, mains water supply and bathroom facilities at end of each working day.

The Service Provider will also ensure that tenant's property and possessions are protected with the dwelling cleaned at the end of each working day and on completion of all of the works.

The Service Provider shall supply and install a gas wall mounted condensing boiler complete with fixing gig and all gas pipe work connections thereto, including any alterations to existing and all new heating pipe work, domestic hot and cold water pipe work as applicable; all pipe work insulation, all condensate pipe work to waste or gully or to and including construction, if necessary, of a soak-a-way.

Supply and install a complete boiler flue to comply with BS 5440 Part 1, all in accordance with the boiler manufacturer's flue options where necessary, with a flue terminal wire guard if required, including forming all structural openings and all necessary builders work and making good.

The Service Provider shall supply and install a fireproof ceiling above a boiler if located in a store or below stairs as required.

Provide eaves/guttering protection heat shields above flue terminal. Provide and install a plume kit.

The Service Provider shall supply and install in all habitable rooms a radiator to provide the calculated heat output required in each dwelling type, including grounds to stud walls where required. Rear halls and porches are not deemed to be a habitable room.

Supply and install new heating circulator complete with valves, including dedicated electrical circuit and flexible cable connection to the pump.

Thermostatic radiator valves to be fitted to all rooms fitted with a radiator except in rooms where a controlling room thermostat (standard or programmable is fitted).

Supply and install a lock shield radiator valve to all rooms fitted with a radiator, including an additional lock shield valve in lieu of a thermostatic valve where the room thermostat is fitted.

The control of space heating and hot water systems shall be provided with time and temperature control in accordance with the Clients specification including electrical circuit and all connections to each item of control equipment.

Supply and install new feed and expansion cistern, complete with insulation jacket, support platform, lid, float valve, overflow and warning pipework.

Supply and install new hot water cylinder, complete with factory fitted foam insulation, 3kW immersion heater, cylinder stool including new dedicated electrical circuit having a heating boost switch and new flexible cable connection to the immersion heater.

The Service Provider shall provide a tiled fire surround and hearth in accordance with F30 (3) Code of Practice for Electric Fires, with an electric inset focal point fire provided, including dedicated electrical circuit and flexible cable connection to the fire from DP switch concealed within the fabric of the building.

The Service Provider shall design, install and test all new dedicated electrical circuits in accordance with the current Edition of the IET Wiring Regulations for:

Gas boiler installation including heating/hot water system control and all accessories
Boiler house/compartment light circuit including bulkhead fitting and lamp where required
Electric inset electric focal point fire circuit including flexible cable
Electric immersion heater circuit including heating boost switch circuit and flexible cable

The Service Provider shall also provide all labels where necessary, test and provide to the Client an EIC (Electrical Installation Certificate) for all works completed.

Where necessary provide ventilated pipe casings to all gas pipe work in accordance with GSUIR.

The Service Provider shall make good/replace as necessary insulation to all exposed
pipe work in roof space and all necessary new insulation to pipelines in accordance with the Clients specification.

The Service Provider shall provide all necessary pipe casings to pipe work where exposed. All pipe casings to be painted with 2 No. coats of undercoat and finished with one coat of white gloss paint.

Completion

On completion of the replacement installation of a boiler and hot water system, together with associated equipment such as pipe work, circulating pump, radiators and system controls, the Service Provider shall check the system for air locks and vent as necessary and the system and all equipment should be tested and commissioned in accordance with the manufacturer's instructions.

The Service Provider shall provide the fuel for testing.

The heating system is to be thoroughly cleaned and flushed out before the installation of a new boiler.

During the final filling of the system, a chemical water treatment inhibitor meeting the boiler manufacturer's specification or other appropriate standard should be added to the primary circuit to control corrosion and the formation of scale and sludge.

The Service Provider shall upload unto the Clients IT system, all test certificates and records as requested in the Clients specification.

The Service Provider shall give the Tenant sufficient information about the dwelling, including operational and maintenance instructions of the installed building services and controls and other details so that each dwelling can be operated and maintained in an energy efficient manner to use no more fuel than is reasonable in the circumstances.

Without comprising health and safety requirements, the instructions should explain to the Tenant how to operate the system efficiently to include:

How to make adjustments to the timing, temperature and flow control settings; and
What routine maintenance is necessary to enable each system to be maintained at reasonable efficiency throughout their service life

The Service Provider shall provide an information pack supplied in an A4 clear plastic envelope and containing a copy of the central heating system's manufacturers operational instructions/ booklets for each major component.

The Service Provider shall notify in writing to the local Building Authority and the Client confirming that all fixed building services have been properly commissioned not more than five days after completion of the commissioning works.

A Health & Safety File shall be uploaded unto the Clients IT system in accordance with the current CDM (Construction Design Management) Regulations, on completion of the works.

Boiler Manufacturer's Warranty

The work will also include the provision of a manufacturer providing evidence of a warranty for each boiler installed by the Service Provider.

The warranty guarantees the repair of all defects to the boiler at no cost to the Client (including the cost for all parts, labour and any other charges) for a period of 10 years from the date of installation of the boiler.

The warranty shall be given by the manufacturer directly to the Client and the manufacturer agrees that from the commencement date to the end of the warranty period of the agreement, labour to carry out any repairs is provided by the Service Provider but is transferable to the Clients new Service Provider either after the end date of this contract or upon termination of the contract.

The Client will undertake to have the warranted boiler installed under this contract

The Client will undertake to have the warranted boiler serviced annually either under this contract or a subsequent contract.

Service Providers Central Heating Warranty

The work will also include the provision of a Service Providers warranty for each replacement central heating system installed by the Service Provider and this warranty must provide for the following features

The warranty guarantees the repair of all defects and any Tenants misunderstanding or abuse to the replacement central heating system at no cost to the Client (including the cost of all parts, labour and any other charges) **for a period of 12 months from the date of installation of the replacement heating system.**

Routine and Responsive Maintenance Service

For the avoidance of doubt, the replacement central heating system installed under this part of the service, with immediate effect, is repaired by the Service Provider under the routine and response Maintenance Service of this contract, however while the replacement central heating system is under the Service Providers 12 month warranty, no payment will be made for the installation under the routine and responsive maintenance service during this time.

As part of the Service Providers routine and responsive maintenance service of this contract the Service Provider is responsible for obtaining all parts and recovering all associated labour costs or any other

expenses, directly from the boiler manufacturer under the boiler manufacturer's warranty.

010 INSTALL AND MAINTAIN REPLACEMENT GAS (COMBINATION CONDENSING BOILER) CENTRAL HEATING SYSTEM

Replacement operations will be as follows and include all labour and materials necessary for the completion of the installation

Design

The Service Provider shall carry out an initial survey of each dwelling and prepare and submit the design information for the replacement of the heating system in compliance with the Clients Specification.

The Service Provider shall submit a completed "Survey Schedule and Cost Estimate" to the Client for clearance and approval.

The Service Provider shall carry out all necessary Tenant consultation.

The Service Provider shall obtain all necessary statutory approvals for the works; (including the payment of all necessary fees and administration charges in connection therewith).

Removal of Existing System

The Service Provider shall include for carefully draining down, disconnection and removal of the existing Clients and or Tenant installed heating system; remove/seal off as necessary all pipe work thereto, remove fireplace hearth and surround, build up chamber opening, core ball and sweep flue; supply and install a permanent ventilator and extend and make good plaster, skirting to match existing.

The Service Provider shall remove all redundant radiators and exposed pipe work as necessary, remove the feed and expansion cistern, the cold water storage tank, all pipe work, and insulation and any support platforms. The hot water cylinder, pipe work, immersion heaters, insulation and support stool are also to be removed. All existing electric cable, conduit and accessories shall be removed and all surfaces made good.

Replacement installation

The Service Provider shall supply temporary heat (two 2 Kilowatt electric panel type heaters; having time and temperature controls); for the complete duration of works and maintain tenant's mains electricity supply, mains water supply and bathroom facilities at end of each working day.

The Service Provider will also ensure that tenant's property is protected and the dwelling cleaned at the end of each working day and on completion of all of the works.

The Service Provider shall supply and install a Gas wall mounted combination boiler complete with fixing gig; all gas pipe work connections thereto, including any alterations to existing and all new heating pipe work and domestic hot and cold water pipe work as applicable; pipe work insulation; all condensate pipe work to waste or gully or to and including construction, if necessary, of a soak-a-way.

Supply and install complete boiler flue to comply with BS 5440 Part 1, all in accordance with the boiler manufacturer's flue options; with a flue terminal wire guard if required, including forming all structural openings; all builders work and making good.

The Service Provider shall supply and install a fireproof ceiling above a boiler if located in a store or below stairs as required.

Provide eaves/guttering protection heat shields above flue terminal. Provide and install a plume kit.

The Service Provider shall supply and install in all habitable rooms a radiator to provide the calculated output required in each dwelling type; including grounds to stud walls where required.

Supply and install new heating circulator complete with valves, including dedicated electrical circuit and flexible cable connection to the pump.

Thermostatic radiator valves to be fitted to all rooms with a radiator except in rooms where a controlling room thermostat (standard or programmable is fitted).

Supply and install a lock shield radiator valve to all rooms fitted with a radiator, including an additional lock shield in lieu of a thermostatic valve where the room thermostat is fitted.

The control of space heating system shall be provided with time and temperature control in accordance with the Clients specification including electrical circuit and all connections to each item of control equipment.

The Service Provider shall replace the existing WC cistern valve with new high-pressure valve where required and include for installing a pressure reduction valve and pressure vessel where necessary.

The Service Provider shall make good/replace as necessary insulation to all exposed pipe work in roof space and all necessary new insulation to pipelines, where applicable.

The Service Provider shall provide a tiled surround and hearth in accordance with F30 (3) Code of Practice for Electric Fires, together with an electric inset focal point fire provided, including dedicated electrical circuit and flexible cable connection to the fire from DP switch concealed within the fabric of the building.

The Service Provider shall design, install and test all new dedicated electrical circuits in accordance with the current Edition of the IET Wiring Regulations for:

- Gas boiler installation including heating system control and all accessories
- Electric Boiler house/compartment light circuit including bulkhead fitting and lamp where required
- Electric inset electric focal point fire circuit including flexible cable

The Service Provider shall also provide all labels where necessary, test and provide to the Client an EIC (Electrical Installation Certificate) for all works completed.

The Service Provider shall supply and install fireproof ceilings above boiler if located in a store or under stairs as required.

The Service Provider shall also provide labels where necessary, test and upload unto the Clients IT system a EIC (Electrical Installation Certificate) for all works completed.

Where necessary provide ventilated pipe casings to all gas pipe work in accordance with GSUIR.

The Service Provider shall make good/replace as necessary insulation to all exposed pipework and all necessary new insulation to pipelines, in accordance with the Clients specification.

The Service Provider shall provide all necessary pipe casings to pipework where exposed. All pipe casings to be painted 2 No. coats of undercoat and 1 No. coat of white gloss paint.

Completion

On completion of the replacement installation of a boiler and hot water system, together with associated equipment such as pipe work, circulating pump, radiators and system controls, the Service Provider shall check the system for air locks and vent as necessary and the systems and all equipment shall be tested and commissioned in accordance with the manufacturer's instructions.

The Service Provider shall provide the fuel for testing

The heating system to be thoroughly cleaned and flushed out before installing a new boiler
During the final filling of the system, a chemical water treatment inhibitor meeting the boiler manufacturer's specification or other appropriate standard should be added to the primary circuit to control corrosion and the formation of scale and sludge.

The Service Provider shall upload unto the Clients IT system, all test certificates and records as requested in the Clients specification.

The Service Provider shall give the Tenant sufficient information about the dwelling, including operational and maintenance instructions of the installed building services and controls and other details so that each dwelling can be operated and maintained in an energy efficient manner to use no more fuel than is reasonable in the circumstances.

Without comprising health and safety requirements, the instructions should explain to the Tenant how to operate the system efficiently to include:

How to make adjustments to the timing, temperature and flow control settings; and

What routine maintenance is necessary to enable each system to be maintained at reasonable efficiency throughout their service life.

The Service Provider shall provide an information pack supplied in an A4 clear plastic envelope and containing a copy of the central heating system's manufacturers operational instructions/ booklets for each major component.

The Service Provider shall notify in writing to the local Building Authority and the Client confirming that all fixed building services have been properly commissioned not more than five days after completion of the commissioning works.

A Health & Safety File shall be uploaded unto the Clients IT system in accordance with the current CDM (Construction Design Management) Regulations, on the completion of the works.

Manufacturers Boiler Warranty

The work will also include the provision of a manufacturer providing evidence of a warranty for each boiler installed by the Service Provider.

The warranty guarantees the repair of all defects to the boiler at no cost to the Client (including the cost for all parts, labour and any other charges) for a period of 10 years from the date of installation of the boiler.

The warranty shall be given by the manufacturer directly to the Client and the manufacturer agrees that from the commencement date to the end of the warranty period of the agreement, labour to carry out any repairs is provided by the Service Provider but is transferable to the Clients new Service Provider either after the end date of this contract or upon termination of the contract.

The Client will undertake to have the warranted boiler installed under this contract

The Client will undertake to have the warranted boiler serviced annually either under this contract or a subsequent contract.

Service Providers Central Heating Warranty

The work will also include the provision of a Service Providers warranty for each replacement central heating system installed by the Service Provider and this warranty must provide for the following features.
The warranty guarantees the repair of all defects and any Tenants misunderstanding or abuse to the replacement central heating system at no cost to the Client (including the cost of all parts, labour and any other charges) **for a period of 12 months from the date of installation of the replacement heating system.**

Routine and Responsive Maintenance Service

For the avoidance of doubt, the replacement central heating system installed under this part of the service, with immediate effect, is repaired by the Service Provider under the routine and responsive maintenance service of this contract, however while the replacement central heating system is under the Service Providers 12 month warranty, no payment will be made for the installation under the routine and responsive maintenance service during this time.

As part of the Service Providers routine and responsive maintenance service of this contract the Service Provider is responsible for obtaining all parts and recovering all associated labour costs or any other expenses, directly from the boiler manufacturer under the boiler manufacturer's warranty.

011 INSTALL AND MAINTAIN REPLACEMENT GAS (CONDENSING SYSTEM BOILER) CENTRAL HEATING SYSTEM

Replacement operations will be as follows and include all labour and materials necessary for the completion of the installation

Design

The Service Provider shall carry out an initial survey of each dwelling and prepare and submit the design information for the replacement of the heating system in compliance with the Clients Specification.

The Service Provider shall submit a completed "Survey Schedule and Cost Estimate" to the Client for clearance and approval.

The Service Provider shall carry out all necessary Tenant consultation.

The Service Provider shall obtain all necessary statutory approvals for the works (including the payment of all necessary fees and administration charges in connection therewith).

Removal of Existing System

The Service Provider shall include for carefully draining down, disconnection and removal of the complete existing Clients and or Tenant installed heating system; remove/seal off as necessary all pipe work thereto, remove fireplace hearth and surround, build up chamber opening, core ball and sweep flue; supply and install a permanent ventilator and extend and make good plaster, skirting to match existing. The Service Provider shall remove all redundant radiators and exposed pipe work as necessary , remove the feed and expansion cistern, the cold water storage tank, all pipe work, and insulation and any support platforms. The hot water cylinder, pipe work, immersion heaters, insulation and support stool are also to be removed. All existing electrical cable, conduits and accessories shall be removed and all surfaces made good.

Replacement Installation

The Service Provider shall supply temporary heat (two 2 Kilowatt electric panel type heaters; having time and temperature controls: for the complete duration of works and maintain tenant's mains electricity supply, mains water supply and bathroom facilities at end of each working day.

The Service Provider will also ensure that tenant's property is protected and the dwelling cleaned at the end of each working day and on completion of all of the works.

The Service Provider shall supply and install a Gas wall mounted system boiler complete with fixing gig; all gas pipe work connections thereto, including any alterations to existing and all new heating pipe work and domestic hot and cold water pipe work as applicable; pipe work insulation; all condensate pipe work to waste or gully or to and including construction, if necessary, of a soak-a-way.

Supply and install complete boiler flue to comply with BS 5440 Part 1, all in accordance with the boiler manufacturer's flue options; with a flue terminal wire guard if required; including forming all structural openings; all builders work and making good. Provide and install a plume kit.

Provide eaves/guttering protection heat shields above flue terminal.

The Service Provider shall supply and install a fireproof ceiling above a boiler if located in a store or below stairs as required.

The Service Provider shall supply and install in all habitable rooms a radiator to provide the calculated output required in each dwelling type; including grounds to stud walls where required.

Supply and install new heating circulator complete with valves, including dedicated electrical circuit and flexible cable connection to the pump.

Thermostatic radiator valves to be fitted to all rooms with a radiator except in rooms where a controlling room thermostat (standard or programmable is fitted).

Supply and install a lock shield radiator valve to all rooms fitted with a radiator, including an additional lock shield in lieu of a thermostatic valve where the room thermostat is fitted.

The control of space heating system shall be provided with time and temperature control in accordance with the Clients specification including electrical circuit and all connections to each item of control equipment.

The Service Provider shall make good/replace as necessary insulation to all exposed pipe work in roof space and all necessary new insulation to pipelines, where applicable.

The Service Provider shall provide a tiled surround and hearth in accordance with F30 (3) Code of Practice for Electric Fires, together with an electric inset focal point fire provided, including dedicated electrical circuit and flexible cable connection to the fire from DP switch concealed wihin the fabric of the building.

The Service Provider shall design, install and test all new dedicated electrical circuits in accordance with the current Edition of the IET Wiring Regulations for:

Gas boiler installation including space heating and system control and all accessories
Electric Boiler house/compartment light circuit including bulkhead fitting and lamp where required
Electric inset electric focal point fire circuit including flexible cable to fire

The Service Provider shall also provide all labels where necessary, test and provide to the Client an EIC (Electrical Installation Certificate) for all works completed.

The Service Provider shall also provide labels where necessary, test and upload unto the Clients IT system an EIC (Electrical Installation Certificate) for all works completed.

Where necessary provide ventilated pipe casings to all gas pipe work in accordance with GSUIR.

The Service Provider shall make good/replace as necessary insulation to all exposed pipework and all necessary new insulation to pipelines, in accordance with the Clients specification.

The Service Provider shall provide all necessary pipe casings to pipework where exposed. All pipe casings to be painted 2 No. coats of undercoat and 1 No. coat of white gloss paint.

Completion

On completion of the replacement installation of a boiler and hot water system, together with associated equipment such as pipe work, circulating pump, radiators and system controls, the Service Provider shall check the system for air locks and vent as necessary and the system and all equipment should be tested and commissioned in accordance with the manufacturer's instructions.

The Service Provider shall provide the fuel for testing.

The heating system to be thoroughly cleaned and flushed out before installing a new boiler

During the final filling of the system, a chemical water treatment inhibitor meeting the boiler manufacturer's specification or other appropriate standard should be added to the primary circuit to control corrosion and the formation of scale and sludge.

The Service Provider shall provide and upload unto the Clients IT system, all test certificates and records as requested in the Clients specification.

The Service Provider shall give the Tenant sufficient information about the dwelling, including operational and maintenance instructions of the installed building services and controls and other details so that each dwelling can be operated and maintained in an energy efficient manner to use no more fuel than is reasonable in the circumstances.

Without comprising health and safety requirements, the instructions should explain to the Tenant how to operate the system efficiently to include:

How to make adjustments to the timing, temperature and flow control settings; and what routine maintenance is necessary to enable each system to be maintained at reasonable efficiency throughout their service life

The Service Provider shall provide an information pack supplied in an A4 clear plastic envelope and containing a copy of the central heating system's manufacturers operational instructions/ booklets for each major component.

The Service Provider shall notify in writing to the local Building Authority and the Client confirming that all fixed building services have been properly commissioned not more than five days after completion of the commissioning works.

A Health & Safety File shall be uploaded unto Clients IT system in accordance with the current CDM (Construction Design Management) Regulations, on the completion of the works.

Manufacturers Boiler Warranty

The work will also include the provision of a manufacturer providing evidence of a warranty for each boiler installed by the Service Provider.

The warranty guarantees the repair of all defects to the boiler at no cost to the Client (including the cost for all parts, labour and any other charges) for a period of 10 years from the date of installation of the boiler.

The warranty shall be given by the manufacturer directly to the Client and the manufacturer agrees that from the commencement date to the end of the warranty period of the agreement, labour to carry out any repairs is provided by the Service Provider but is transferable to the Clients new Service Provider either after the end date of this contract or upon termination of the contract.

The Client will undertake to have the warranted boiler installed under this contract The Client will undertake to have the warranted boiler serviced annually either under this contract or a subsequent contract.

Service Providers Central Heating Warranty

The work will also include the provision of a Service Providers warranty for each replacement central heating system installed by the Service Provider and this warranty must provide for the following features. The warranty guarantees the repair of all defects and any Tenants misunderstanding or abuse to the replacement central heating system at no cost to the Client (including the cost of all parts, labour and any other charges) **for a period of 12 months from the date of installation of the replacement heating system.**

Routine and Responsive Maintenance Service

For the avoidance of doubt, the replacement central heating system installed under this part of the service, with immediate effect, is repaired by the Service Provider under the routine and responsive maintenance service of this contract, however while the replacement central heating system is under the Service Providers 12 month warranty, no payment will be made for the installation under the routine and response maintenance service during this time.

As part of the Service Providers routine and responsive maintenance service of this contract the Service Provider is responsible for obtaining all parts and recovering all associated labour costs or any other expenses, directly from the boiler manufacturer under the boiler manufacturer's warranty.

012 INSTALL AND MAINTAIN REPLACEMENT OIL (CONDENSING BOILER) CENTRAL HEATING SYSTEM

Replacement operations will be as follows and to include all labour and materials necessary for the completion of the installation

Design

The Service Provider shall carry out an initial survey of each dwelling and prepare and submit the design information for the replacement of the heating system in compliance with the Clients Specification.

The Service Provider shall submit a completed "Survey Schedule and Cost Estimate" to the Client for clearance and approval.

The Service Provider shall carry out all necessary Tenant consultation.

The Service Provider shall obtain all necessary statutory approvals; for the works (including the payment all necessary fees and administration charges in connection therewith).

Removal of Existing System

The Service Provider shall include for carefully draining down, disconnection and removal of the complete existing Clients and or Tenant installed heating system; remove/seal off as necessary all pipe work thereto, remove fireplace hearth and surround, build up chamber opening, core ball and sweep flue; supply and insert permanent ventilator and extend and make good plaster, skirting to match existing where required.

The Service Provider shall remove all redundant radiators and existing pipe work as necessary and remove the feed and expansion cistern, all pipe work, and insulation and any support platforms. The hot water cylinder, pipework, immersion heater, insulation and support stool are also to be disconnected and removed. All electric cable, conduits and accessories shall be removed and all surfaces made good.

The Service Provider shall allow for the braking up and removal of existing concrete/paving slabs boiler house/cabinet bases and existing installed concrete/paving slabs oil storage tank bases either installed by the Client and or a Tenant.

Replacement installation

The Service Provider shall supply temporary heat (two 2 Kilowatt electric panel type heaters having time and temperature control) for the complete duration of the works and maintain tenant's mains electricity supply, mains water supply and bathroom facilities at end of each working day.

The Service Provider will also ensure that tenant's property and possessions are protected and the dwelling cleaned at the end of each working day and on completion of all of the works.

The Service Provider shall supply and install an oil fired condensing boiler (outdoor type) complete with concrete base; oil pipe work connections thereto; including any alterations to existing and all new heating pipe work, domestic hot and cold water pipe work as applicable; all pipe work insulation, all condensate pipe work to waste or gully or to and including construction, if necessary, of a soak-a-way.

Supply and install a complete low level boiler flue assembly to comply with BS 5440 Part 1, all in accordance with the boiler manufacturer's installation instructions, with all flue extensions; bends; supports and a flue terminal wire guard if required. Supply and install a plume kit.

The Service Provider shall supply and install in all habitable rooms a radiator to provide the calculated heat output required in each dwelling type, including grounds to stud walls if required. Rear halls and porches are not deemed to be a habitable room.

Supply and install new heating circulator complete with valves, including dedicated electrical circuit and flexible cable connection to the pump.

Thermostatic radiator valves to be fitted to all rooms fitted with a radiator except in rooms where a controlling room thermostat (standard or programmable is fitted).

Supply and install a lock shield radiator valve to all rooms fitted with a radiator, including an additional lock shield valve in lieu of a thermostatic valve where the room thermostat is fitted.

The control of space heating and hot water systems shall be provided with time and temperature control in accordance with the Clients specification including electrical circuit and all connections to each item of control equipment.

Supply and install new feed and expansion cistern, complete with insulation jacket, support platform, lid, float valve, overflow and warning pipework.

Supply and install new hot water cylinder, complete with factory fitted foam insulation, 3kW immersion heater, cylinder stool including new dedicated electrical circuit having a heating boost switch and new flexible cable connection to the immersion heater.

The Service Provider shall supply and install a new bunded oil storage tank in accordance with the Clients specification; and form base.

Supply and install oil supply pipe laid in 450 deep trench including breaking/taking up and reinstating paving or concrete of any type and/or grassed topsoil; backfill and disposal of surplus spoil, granular bed/haunching/surround; galvanised or 150 diameter PVC ducting including all necessary fittings, filter shut off valve, de- aeration device, and fire valve Provide an external plastic coated galvanised steel casing to fire valve and/or de- aeration device.

The Service Provider shall provide a tiled fire surround and hearth in accordance with F30 (3) Code of Practice for Electric Fires, with an electric inset focal point fire provided, including dedicated electrical circuit and flexible cable connection to the fire; from DP switch concealed within the fabric of the building.

The Service Provider shall design, install and test all new dedicated electrical circuits in accordance with the current Edition of the IET Wiring Regulations for:

Oil boiler installation including heating/hot water system control and all accessories
Boiler house/compartment light circuit including bulkhead fitting and lamp where required
Electric inset electric focal point fire circuit including flexible cable to fire
Electric immersion heater circuit including heating boost switch circuit and flexible cable

The Service Provider shall also provide all labels where necessary, test and upload unto the Clients IT system an EIC (Electrical Installation Certificate) for all works completed.

The Service Provider shall make good/replace as necessary insulation to all exposed
pipe work in roof space and all necessary new insulation to pipelines in accordance with the Clients specification.

The Service Provider shall provide all necessary pipe casings to pipe work where exposed. All pipe casings to be painted with 2 No. coats of under coat and finished with one coat of white gloss paint.

Completion

On completion of the replacement installation of a boiler and hot water system, together with associated equipment such as pipe work, circulating pump, radiators and system controls, the Service Provider shall check the system for air locks and vent as necessary and the system and all equipment should be tested and commissioned in accordance with the manufacturer's instructions.

The Service Provider shall provide the fuel for testing.

The heating system to be thoroughly cleaned and flushed out before installing a new boiler

During the final filling of the system, a chemical water treatment inhibitor meeting the boiler manufacturer's specification or other appropriate standard should be added to the primary circuit to control corrosion and the formation of scale and sludge.

The Service Provider shall upload unto the Clients IT system, all test certificates and records as requested in the Clients specification.

The Service Provider shall give the Tenant sufficient information about the dwelling, including operational and maintenance instructions of the installed building services and controls and other details so that each dwelling can be operated and maintained in an energy efficient manner to use no more fuel than is reasonable in the circumstances.

Without comprising health and safety requirements, the instructions should explain to the Tenant how to operate the system efficiently to include:

How to make adjustments to the timing, temperature and flow control settings; and

What routine maintenance is necessary to enable each system to be maintained at reasonable efficiency throughout their service life.

The Service Provider shall provide an information pack supplied in an A4 clear plastic envelope and containing a copy of the central heating system's manufacturers operational instructions/ booklets for each major component.

The Service Provider shall notify in writing to the local Building Authority and the Client confirming that all fixed building services have been properly commissioned not more than five days after completion of the commissioning works.

A Health & Safety File shall be uploaded unto the Clients IT system, in accordance with the current CDM (Construction Design Management) Regulations, and issued to the Client on the completion of the works.

Boiler Manufacturer's Warranty

The work will also include the provision of a manufacturer providing evidence of a warranty for each boiler installed by the Service Provider.

The warranty guarantees the repair of all defects to the boiler at no cost to the Client (including the cost for all parts, labour and any other charges) for a period of 10 years from the date of installation of the boiler.

The warranty shall be given by the manufacturer directly to the Client and the manufacturer agrees that from the commencement date to the end of the warranty period of the agreement, labour to carry out any repairs is provided by the Service Provider but is transferable to the Clients new Service Provider either after the end date of this contract or upon termination of the contract.

The Client will undertake to have the warranted boiler installed under this contract

The Client will undertake to have the warranted boiler serviced annually either under this contract or a subsequent contract.

Service Providers Central Heating Warranty

The work will also include the provision of a Service Providers warranty for each replacement central heating system installed by the Service Provider and this warranty must provide for the following features
The warranty guarantees the repair of all defects and any Tenants misunderstand or abuse to the replacement central heating system at no cost to the Client (including the cost of all parts, labour and any other charges) **for a period of 12 months from the date of installation of the replacement heating system.**

Routine and Responsive Maintenance Service

For the avoidance of doubt, the replacement central heating system installed under this part of the service, with immediate effect, is repaired by the Service Provider under the routine and responsive maintenance service of this contract, however while the replacement central heating system is under the Service Providers 12 month warranty, no payment will be made for the installation under the routine and responsive maintenance service during this time.

As part of the Service Providers routine and responsive maintenance service of this contract the Service Provider is responsible for obtaining all parts and recovering all associated labour costs or any other expenses, directly from the boiler manufacturer under the boiler manufacturer's warranty.

013 INSTALL AND MAINTAIN REPLACEMENT WOOD PELLET BOILER CENTRAL HEATING SYSTEM

Replacement operations will be as follows and to include all labour and materials necessary for the completion of the installation

Design

The Service Provider shall carry out an initial survey of each dwelling and prepare and submit the design information for the replacement of the heating system in compliance with the Clients Specification.

The Service Provider shall submit a completed "Survey Schedule and Cost Estimate" to the Client for clearance and approval.

The Service Provider shall carry out all necessary Tenant consultation.

The Service Provider shall obtain all necessary statutory approvals; for the works (including the payment all necessary fees and administration charges in connection therewith).

Removal of Existing System

The Service Provider shall include for carefully draining down, disconnection and removal of the complete existing heating system; remove/seal off as necessary all pipe work thereto, remove fireplace hearth and surround, build up chamber opening, core ball and sweep flue; supply and insert permanent ventilator and extend and make good plaster, skirting to match existing.

The Service Provider shall remove all redundant radiators and existing pipe work as necessary and remove the feed and expansion cistern, all pipe work, and insulation and any support platforms. The hot water cylinder, pipe work, immersion heaters, insulation and support stool are also to be removed. All existing electric cable, conduits and accessories shall be removed and all surfaces made good.

Replacement installation

The Service Provider shall supply temporary heat (two 2 Kilowatt electric panel type heaters having time and temperature control); for the complete duration of the works and maintain tenant's mains electricity supply, mains water supply and bathroom facilities at end of each working day.

The Service Providers will also ensure that tenant's property and possessions are protected and the dwelling cleaned at the end of each working day and on completion of all of the works.

The Service Provider shall supply and install an Outdoor Wood Pellet boiler in accordance with the Clients specification; including all alterations to existing and all new heating pipework; and domestic hot and cold water pipework as applicable; pipework insulation; all condensate pipework to waste or gulley or to and including construction if necessary of a soak-away.

The Service Provider shall form a base for the boiler with either a concrete or pre-cast concrete flags.

Where a remote boiler is proposed include for the following; 450 deep trench excavation including breaking/taking up and reinstating paving or concrete of any type and/or grassed topsoil; backfill and disposal of surplus spoil, granular bed/haunching/surround; 150 diameter PVC ducting; pipe work; pipe work insulation and electrical cable; automatic air separator complete with A.A.V. and vertical flue support bracket.

Supply and install manufacturer's recommended vertical flue complete with anti-downdraft cowl. Vertical flues shall be complete with all bends and fittings as necessary as specified and approved by the boiler manufacturers and installed in strict accordance with their instructions.

The Service Provider shall supply and install in all habitable rooms a radiator to provide the calculated heat output required in each dwelling type, including grounds to stud walls if required. Rear halls and porches are not deemed to be a habitable room.

Supply and install new circulator complete with valves, including a dedicated electrical circuit and flexible cable connection to the pump.

Thermostatic radiator valves to be fitted to all rooms fitted with a radiator except in rooms where a controlling room thermostat (standard or programmable is fitted).

Supply and install a lock shield radiator valve to all rooms fitted with a radiator, including an additional lock shield valve in lieu of a thermostatic valve where the room thermostat is fitted.

The control of space heating and hot water systems shall be provided with time and temperature control in accordance with the Clients specification including electrical circuit and all connections to each item of control equipment.

Supply and install new feed and expansion cistern, complete with insulation jacket, support platform, lid, float valve, overflow and warning pipework.
Supply and install new hot water cylinder, complete with factory fitted foam insulation, 3kW immersion heater, cylinder stool including new dedicated electrical circuit having a heating boost switch and new flexible cable connection to the immersion heater.

The Service Provider shall provide a tiled fire surround and hearth in accordance with F30 (3) Code of Practice for Electric Fires, with an electric inset focal point fire provided, including dedicated electrical circuit and flexible cable connection to the fire from DP switch concealed within the fabric of the building.

The Service Provider shall design, install and test all new dedicated electrical circuits in accordance with the current Edition of the IET Wiring Regulations for:

Wood Pellet boiler installation including heating/hot water system control and all accessories
Boiler house/compartment light circuit including bulkhead fitting and lamp where required
Electric inset focal point fire circuit including flexible cable to fire
Electric immersion heater circuit including heating boost switch circuit and flexible cable

The Service Provider shall also provide all labels where necessary, test and upload unto the Clients IT system an EIC (Electrical Installation Certificate) for all works completed.

The Service Provider shall make good/replace as necessary insulation to all exposed pipe work in roof space and all necessary new insulation to pipelines in accordance with the Clients specification.

The Service Provider shall provide all necessary pipe casings to pipe work where exposed in accordance with the Client's standard detail drawings. All pipe casings to be painted with 2 No. coats of under coat and finished with one coat of white gloss paint.

Completion

On completion of the replacement installation of a boiler and hot water system, together with associated equipment such as pipe work, circulating pump, radiators and system controls, the Service Provider shall check the system for air locks and vent as necessary and the system and all equipment should be commissioned in accordance with the manufacturer's instructions.

The Service Provider shall provide the fuel for testing

The heating system to be thoroughly cleaned and flushed out before installing a new boiler

During the final filling of the system, a chemical water treatment inhibitor meeting the boiler manufacturer's specification or other appropriate standard should be added to the primary circuit to control corrosion and the formation of scale and sludge.
The Service Provider shall upload unto the Clients IT system, all test certificates and records as requested in the Clients specification.

The Service Provider shall give the Tenant sufficient information about the dwelling, including operational and maintenance instructions of the installed building services and controls and other details so that each dwelling can be operated and maintained in an energy efficient manner to use no more fuel than is reasonable in the circumstances.

Without comprising health and safety requirements, the instructions should explain to the Tenant how to operate the system efficiently to include:

How to make adjustments to the timing, temperature and flow control settings; and
What routine maintenance is necessary to enable each system to be maintained at reasonable efficiency throughout their service life

The Service Provider shall provide an information pack supplied in an A4 clear plastic envelope and containing a copy of the central heating system's manufacturers operational instructions/ booklets for each major component.

The Service Provider shall notify in writing to the local Building Authority and the Client confirming that all fixed building services have been properly commissioned not more than five days after completion of the commissioning works.

A Health & Safety File shall be uploaded unto the Clients IT system, in accordance with the current CDM (Construction Design Management) Regulations, on the completion of the works.

Boiler Manufacturer's Warranty

The work will also include the provision of a manufacturer providing evidence of a warranty for each boiler installed by the Service Provider.

The warranty guarantees the repair of all defects to the boiler at no cost to the Client (including the cost for all parts, labour and any other charges) for a period of 10 years from the date of installation of the boiler.

The warranty shall be given by the manufacturer directly to the Client and the manufacturer agrees that from the commencement date to the end of the warranty period of the agreement, labour to carry out any repairs is provided by the Service Provider but is transferable to the Clients new Service Provider either after the end date of this contract or upon termination of the contract.

The Client will undertake to have the warranted boiler installed under this contract

The Client will undertake to have the warranted boiler serviced annually either under this contract or a subsequent contract.

Service Providers Central Heating Warranty

The work will also include the provision of a Service Providers warranty for each replacement central heating system installed by the Service Provider and this warranty must provide for the following features.
The warranty guarantees the repair of all defects and any Tenants misunderstanding or abuse to the replacement central heating system at no cost to the Client (including the cost of all parts, labour and any other charges) **for a period of 12 months from the date of installation of the replacement heating system.**

Routine and Responsive Maintenance Service

For the avoidance of doubt, the replacement central heating system installed under this part of the service, with immediate effect, is repaired by the Service Provider under the routine and responsive maintenance service of this contract, however while the replacement central heating system is under the Service Providers 12 month warranty, no payment will be made for the installation under the routine and responsive maintenance service during this time.

As part of the Service Providers routine and responsive maintenance service of this contract the Service Provider is responsible for obtaining all parts and recovering all associated labour costs or any other expenses, directly from the boiler manufacturer under the boiler manufacturer's warranty.

014 REPLACEMENT OF EXISTING BOILER (ANY TYPE) WITH OR WITHOUT CONTROLS

Replacement operations will be as follows and to include all labour and materials necessary for the completion of the installation

Design

The Service Provider shall carry out an initial survey of each dwelling and prepare and submit the design information for the replacement of the heating boiler in compliance with the Clients Specification. The Service Provider shall submit a completed "Survey Schedule and Cost Estimate" to the Client for clearance and approval by the Client.

The Service Provider shall carry out all necessary Customer consultation.

The Service Provider shall obtain all necessary statutory approvals; for the works (including the payment of all necessary fees and administration charges in connection therewith).

Removal of Existing Boiler

The Service Provider shall include for carefully draining down, disconnection and removal of the existing Clients and/or Tenant installed heating boiler (any type); boiler pipework connections, boiler electrical connections remove/seal off as necessary all pipe work thereto, and make good all works.

The Service Provider shall allow for the braking up and removal of existing concrete/paving slabs boiler house/cabinet bases and existing concrete or paving slabs oil storage tank bases either installed by the Client and/or Tenant.

New Boiler Installation (any type) with no controls

The Service Provider shall supply temporary heat (two 2 Kilowatt electric panel type heaters having time and temperature control; for the complete duration of the works and maintain tenant's mains electricity supply, mains water supply and bathroom facilities at end of each working day.

The Service Provider will also ensure that tenant's property and possessions are protected and the dwelling cleaned at the end of each working day and on completion of all of the works.

The Service Provider shall supply and install a gas condensing boiler any type, oil fired condensing boiler any type or biomass boiler (outdoor type) complete with boiler fixing gig where applicable, concrete base for outdoor type boiler; oil pipe work connections thereto; including any alterations to existing and all new heating pipe work, domestic hot and cold water pipe work as applicable; all pipe work insulation, all condensate pipe work to waste or gully or to and including construction, if necessary, of a soak-a-way.

Supply and install a complete low level boiler flue assembly to comply with BS 5440 Part 1, all in accordance with the boiler manufacturer's installation instructions, with all flue extensions; bends; supports and a flue terminal wire guard if required. Supply and install a plume kit.

The Service Provider shall supply and install if required a new replacement bunded oil storage tank in accordance with the Clients specification; and form base.

The Service Provider shall include for the gas carcass to be replaced if required from the existing meter cupboard to the gas boiler in all cases, and shall extend the carcass to the cooker position in the Kitchen and re-connect the Tenant's natural gas cooker appliance including stability chain if not already fitted. If the Tenant has an electric cooker then the gas supply is to be capped off at this point.

Supply and install if required oil supply pipe laid in 450 deep trench including breaking/taking up and reinstating paving or concrete of any type and/or grassed topsoil; backfill and disposal of surplus spoil, granular bed/haunching/surround; galvanised or 150 diameter PVC ducting including all necessary fittings, system filters, shut off valve, de- aeration device, and fire valve provide an external plastic coated galvanised steel casing to fire valve and/or de- aeration device where required.

New Boiler Installation with controls

Notwithstanding the above identified works for boiler replacement systems with no controls; the following additional works are to be included in the all in rate for boiler replacement (any type) with controls;

a) Disconnect and remove existing heating control system equipment and components excluding electrical wiring, and provide and install new replacement programmer, motorised valves, room thermostat, hot water control thermostat; providing new final connections to all control system equipment in accordance with Clients specification.
b) Disconnect existing heating circulator pump excluding electrical wiring and replace with new circulator including valves; providing new final connection to circulator in accordance with Clients specification.
c) Disconnect and remove all existing thermostatic radiator valves to all radiators and replace with new valves in accordance with the Clients specification.

All works are to be in accordance with the Clients specification

Completion

On completion of the replacement of a boiler (any Type) (with or with no controls); the Service Provider shall check the system for air locks and vent as necessary and the system and all equipment should be tested and commissioned in accordance with the manufacturer's instructions.

The Service Provider shall provide the fuel for testing.

The existing heating system is to be thoroughly cleaned and flushed out before installing a new boiler.

During the final filling of the system, a chemical water treatment inhibitor meeting the boiler manufacturer's specification or other appropriate standard should be added to the primary circuit to control corrosion and the formation of scale and sludge.

The Service Provider shall provide and upload to the Clients IT system, all test records and certificates in the Clients specification.

The Service Provider shall give the Tenant sufficient information about the boiler, including operational and maintenance instructions of the installed building services and controls and other details so that each boiler can be operated and maintained in an energy efficient manner to use no more fuel than is reasonable in the circumstances. Without comprising health and safety requirements, the instructions should explain to the Tenant how to operate the system efficiently to include:

How to make adjustments to the timing, temperature and flow control settings; and
What routine maintenance is necessary to enable each system to be maintained at reasonable efficiency throughout their service life.

The Service Provider shall provide an information pack supplied in an A4 clear plastic envelope and containing a copy of the central heating system's manufacturers operational instructions/ booklets for each major component. The Service Provider shall perform all duties and carry out all requirements described in Clients Service Information.

The Service Provider shall notify in writing to the local Building Authority and the Client confirming that all fixed building services have been properly commissioned not more than five days after completion of the commissioning works.

A Health & Safety File shall be uploaded unto the Clients IT system in accordance with the current CDM (Construction Design Management) Regulations, on the completion of the works.

Boiler Manufacturer's Warranty

The work will also include the provision of a manufacturer's warranty for each boiler installed by the Service Provider. The warranty guarantees the repair of all defects to the boiler at no cost to the Client (including the cost for all parts, labour and any other charges) for a period of 10 years from the date of installation of the boiler.

The warranty shall be given by the manufacturer directly to the Client and the manufacturer agrees that from the commencement date to the end of the warranty period of the agreement, labour to carry out any repairs is provided by the service but is transferable to the Clients new Service Provider either after the end date of this contract or upon termination of the contract.

The Client will undertake to have the warranted boiler installed under this contract.

The Client will undertake to have the warranted boiler serviced annually either under this contract or a subsequent contract.

Service Providers Defects Liability Period

The work will also include the provision of a Service Providers defects liability period for each boiler replaced by the Service Provider during which time the Service Provider will repair all breakdowns and rectify all faults caused by Tenants misunderstanding and/or abuse to the boiler and system at no cost to the Client (including the cost of all parts, labour and any other charges) **for a period of 12 months from the date of installation of the replacement heating system.**

Routine and Responsive Maintenance Service

For the avoidance of doubt, the replacement boiler installed under this part of the service and the central heating system, with immediate effect, is repaired by the Service Provider under the routine and responsive maintenance service of this contract, however while the boiler renewal system is under the **Service Providers 12 month defects liability period**, no payment will be made for the installation under the routine and responsive maintenance service during this time.

As part of the Service Providers routine and responsive maintenance service of this contract the Service Provider is responsible for obtaining all parts and recovering all associated labour costs or any other expenses, directly from the boiler manufacturer under the boiler manufacturer's warranty.

Initial Survey

015 Following instruction, the Service Provider shall include for an initial survey of the property. Access arrangements shall be made direct with the Tenant.

016 The initial survey for replacement installations will be for the purposes of determining the:

- Information for heat loss calculations, i.e. room/window dimensions, wall construction, number of external walls, cavity wall insulation etc.
- Layout for radiators, pipework routes, etc.
- Location of boiler (and cylinder if appropriate).
- Size and adequacy of pressure of incoming water main.
- Location of cold water main stopcock.
- Location for cable routes and adequacy of equipotential bonding.
- Number and location of extract fans, flues and chimneys.

- Thickness of existing roof space insulation.
- Condition of CWS cistern and Bye Law 30 compliance.
- Condition of insulation to domestic pipe work in roof space.
- Any dwelling condensation problems.
- Window frame type: material, glazing type, and condition and if draught proofed.
- Solid wall, if any.
- Any other roof insulation and its thickness, e.g. flat roofs.
- Tenant installed appliances
- LPG or natural gas cooker installation

Continuity of Services

017 The Service Provider will leave the properties with all services in proper working order at the end of each working day. Under no circumstances shall residents be without the use of these services and facilities overnight.

018 Ensure that an alternative form of heating is available for the Customer during the period of works. The alternative form of heating will be a minimum of **Two 3kw electric floor standing panel heaters max** (in line with requirements on Gas Breakdowns), with time and temperature controls.

Elderly and Vulnerable Customers

019 Special care and consideration must be given when planning and executing Work in premises occupied by elderly or vulnerable Customers. This may include, but is not limited to: temporary decant or respite arrangements, enhanced or reduced working hours, additional temporary heating etc.

Gas and Electrical Supplies

020 Under **no circumstances** must work be started in any dwelling that is not fitted with all services and meters etc. Arranging for the gas supply and where an electrical supply and meters may be required is the Service Provider's responsibility and the Utility Provider's should be notified of this before the dwellings are programmed.

021 However, the Service Provider after seeking the Clients approval will make his own arrangements to have the supply of gas put on to a property. This will be paid for as an extra to the contract on an individual basis providing supporting documentation is submitted with the valuation.

Electrical Work

022 All electrical work must be carried out by an NICEIC, ECA Service Provider, or be registered with an approved licence to practice system, an example of which is SPARKSAFE, and who must issue a current approved IET Electrical Installation Completion (EIC) certificate for each individual installation.

023 Where all the electrical requirements in the dwelling to BS 7671; Regulation 701.411.3.3 are met, supplementary equipotential bonding may be omitted. Therefore, before work of any nature proceeds in the property the electrical installation must be tested.

024 No installation will be accepted for payment unless such certificate is provided. Equally a note must be made on the certificate that all bonding has been completed in accordance with the 17th edition of the IET Regulations, or any subsequent amendments.

025 The Service Provider is to inspect the loft space of the dwelling and establish the depth of insulation existing, if below the minimum requirements of 270mm, the Service Provider is to report the actual depth to the Client who will determine what further action is required. The cost of upgrading any insulation, loft hatch insulation and insulated catwalks will be reimbursed at the rates in the Schedule of Rates, these rates are deemed to include the cost of moving and reinstating any Customer content stored in the loft.

DESIGN PROCESS

Design Criteria

026 The design criteria for the replacement of the central heating installation, boiler replacement or boiler renewal is as follows.

027 The replacement heating system shall be designed with due consideration to the installation, commissioning, operation, maintenance and repair of components, appliances and the system. Heating systems shall be designed to achieve and maintain the following minimum room temperatures when the ambient external temperature is -4°C, the heating flow being 82° (max) and temperature difference across the pumped system 11° (max), with the circulating pump running and the air change rate is as detailed below.

Habitable Room	Room Temperature	Air
Living Room	21°c	1.5
Dining Room	21°c	1.5
Kitchen/Dining Room	21°c	2
Bed Sitting Room	21°c	1.5
Circulating spaces	18°c	1.5
Bathrooms	23°c	3
WC's	23°c	2
Kitchens	18°c	2
Bedrooms	18°c	N/A
Mobility (Standard)	21°c throughout	As rooms above

Where extract fans are fitted the Service Provider shall allow for 60 l/s for Kitchens with an extract fan or 30//s with a cooker hood and 15 l/s for Bathrooms

A rear hall or a porch are not deemed to be habitable rooms.

028 With regard to heat loss calculations, these shall be calculated in accordance with Chartered Institute of Building Services Engineers Environmental Guide A, and BS EN 12831 with the following factors shall be allowed.

1. The Service Provider is to inspect the loft space of the dwelling and establish the depth of insulation existing, if below the minimum requirements of 270mm, the Service Provider is to report the actual depth to the Client who will determine what further action is required. The cost of upgrading any insulation, loft hatch insulation and insulated catwalks will be reimbursed at the rates in the Schedule of Rates, these rates are deemed to include the cost of moving and reinstating any Customer content stored in the loft.

2. Radiators shall be fitted under windows where possible and in all cases on exterior walls.

3. A 10% contingency shall be allowed on the total system design to allow for general heating and pipe losses.

4. It shall be assumed that adjacent properties are heated to 10°c for heat loss calculation purposes.

5. A 3kW hot water load shall be allowed for when sizing the boiler.

6. Calculations for the heating pipe sizes should not exceed 1.5 m/s to ensure quiet operation.

All heat loss calculations shall be forwarded as part of the Design Information to the Client.

Conditions of Temperature Guarantee – For information only as existing systems

029 The temperature in any room or other area will be ascertained by a mercury in glass thermometer suspended at a point 1.5m from the flow in the centre of the room or other area.

030 When the outside temperature is not less than -4°C the system is to be guaranteed to achieve the heating standards described above, provided the following conditions are satisfied:

1. The internal volume of any room or other area served by one radiator must not exceed 1450 cubic feet (42 cubic metres). In a room which exceeds 1450 cubic feet (42 cubic metres) in volume, more than one radiator will be required in order to obtain the heating standards referred to.

2. 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 180°F (82°C).

3. There must not be more than the specified air change per hour in any room or other area.

Design Information

031 The Service Provider shall submit details of the initial survey.

1. An electronic scaled working drawing layout of each property type, identifying each floor space, showing radiator positions and sizes together with proposed, valves, pipe sizes, pipework routes, cold water and domestic hot water services, control system and electrical cable routes. The location of the boiler and cylinder (if applicable) shall also be included on the drawing.

2. Heat loss calculations.

032 The Service Provider will require written agreement to the design proposals from the Client before site works can start.

033 Failure of the Service Provider to provide working drawings, schedules and calculations may lead to additional time and costs being incurred by the Client which shall be passed on to the Service Provider to bear.

034 The approval by the Client of such drawings, schedules and calculations covers only the general principles of the work concerned and does not absolve the Service Provider from carrying out the Works in accordance with the Specification and good engineering practice.

035 The Client shall have the right to change the Service Provider's design with no financial implications to the Client. The Service Provider is to comply with all Customer requirements with regard to radiator location in each room at no financial implication to the Client. The Service Provider is to explain the full extent of the works i.e. radiator positions, pipework routes, boiler position, controls, and all other mechanical services contained within the contract to the tenant and then request the tenant to sign the tenant agreement form. The Tenant Agreement Form shall be produced by the Service Provider and submitted to the Client for approval at the pre-contract meeting.

036 In void properties the Service Provider is to allow for further attendance. This is to include, contacting new Customers and making arrangements for testing and commissioning.

037 When these documents have been forwarded through to the Client, a completion certificate for the Works will be issued. The defects liability period will run from the date of the Client's certificate.

Regulations and Standards

038 The design and installation of new heating and hot water systems shall comply with all appropriate Regulations, British Standards and Codes of Practice.

039 In particular, the design of the system shall be in accordance with BS EN 12828: Specification for forced circulation hot water central heating systems for domestic premises:

040 The works shall comply with the Gas Safety (Installation and Use) Regulations including latest amendments and shall also be in accordance with the manufacturer's technical data sheet and Building Regulations and amendments and Technical Booklet F1.

041 With regard to implementation of the works, the Service Provider shall also take into account the following Health and Safety Regulations.

- Management of Health and Safety at Work Regulations 1999
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013
- Manual Handling Operations Regulations 1992 as amended 2002.
- The Control of Substances Harmful to Health Regulations 2002 (COSHH)
-
- The Provision and Use of Work Equipment Regulations 1998 (PUWER).
- Electricity at Work Regulations 1989.
- Construction (Health, Safety and Welfare) Regulations 1998.

042 Electrical works shall be in accordance with BS 7671, The Requirements for Electrical Installations (17th Edition) 3rd amendment and The Electricity Safety, Quality and Continuity Regulations (Amendment) 2009

STANDARD SPECIFICATION

General Preamble

043 Where properties are occupied during the works the Service Provider shall take all reasonable steps to ensure that inconvenience and disturbance to the occupiers is minimised.

044 Once work commences in a dwelling it must be continuous without interruption until completion.

045 The Service Provider is to allow for protection of all fixtures and fittings including carpets. Move, take up, refit and replace all furniture, fittings and fixtures as may be necessary to execute the works. Re-position items of furniture and appliances at the end of each working day whether work is completed or not.

046 The Service Provider must protect and maintain existing services at all times, inform the Customers prior to disconnection and adaptation works, which are to be for the minimum period possible. No services are to be left disconnected overnight.

047 The Service Provider is to make good to all adjacent structures and surfaces disturbed during the works, whether specifically mentioned or not. Any damage caused by carelessness or want of skill on **the part of the Service Provider shall be immediately made good at the Service Provider's expense**.

048 All carpets, floor coverings, underlay, hardboard, floorboards, etc (excluding laminated wood flooring) to be properly and professionally re-fitted on completion of the installation.

049 Materials or tools must not be stored within the dwelling, communal areas or gardens.

PERFORMANCE SPECIFICATION

BOILERS

050 The Service Provider shall design for and install boilers which are SEDBUK Band A rated high efficiency with evidence of a Low No-x rating condensing boiler as manufactured by a manufacturer to be approved by the Client.

051 Boilers shall be sized by the Service Providers to suit. All boilers are to be fitted according to manufacturer's technical data sheet and compression type fittings shall be used to facilitate easy removal for repair. The Service Provider shall include for filling loop and the optional pipe cover accessory as supplied by the boiler manufacturer.

052 All boilers shall carry a minimum ten year's manufacturer's guarantee with a minimum ten year parts and labour warranty and this shall be arranged to run from the date of the completion certificate. The Service Provider is to provide a boiler installation record secured to the inside of the lower casing giving the Service Provider's name and address and the date of installation.

053 The heating installation shall be cleansed through the use of a permanent in-line magnetic filter to ensure effective magnetic filtration.

054 Servicing: The filter shall be accessible to carry out a visual inspection of the canister chamber to ensure all system debris has been successfully removed during boiler servicing.

055 The Client's preferred option is for an open vented system to be designed and installed where appropriate. The Service Provider shall obtain the Client's approval for a sealed system design and installation.

056 The Service Provider shall supply and install the boiler in an agreed position with the Client, on an external wall to the outside and in accordance with the manufacturer's technical data sheet.

057 The Service Provider shall size the boiler in accordance with the following:
- Total of all radiator outputs
- Total of all pipework losses
- Hot water load (minimum 3kW to be allowed)

058 The Service Provider shall total the above and add 20% to the load for intermittent heating before selecting the appropriate size boiler.

059 The Service Provider shall supply and install an additional expansion vessel of appropriate size if the system volume is beyond that which can be accommodated by the built in expansion vessel.

060 The Service Provider shall supply and install a complete boiler flue system in accordance with the manufacturer's technical data sheet and BS 5440-1. The Service Provider shall terminate the flue a suitable location and supply and install a flue terminal guard as necessary.

061 BOILER, GAS FIRED CONDENSING CONVENTIONAL TYPE
Standard: To BS EN 677, High Efficient **SEDBUK** Band A rated
Low NOX classification
Type: Wall Mounted
Casing Finish: Vitreous Enamel
Controls/Accessories: All as per boiler manufacturer
Heat Exchanger: Stainless Steel
Boiler Flue: To BS 5410 and in accordance with manufacturer's flue options
Commissioning of gas fired boiler to be carried out by boiler manufacturer's representative
Boiler manufacturer to provide a 10 year parts and warranty to the Client

062 BOILER, GAS FIRED CONDENSING COMBINATION TYPE
Standard: To BS 5258, High Efficient **SEDBUK** Band A rated
Low NOX classification
Type: Wall Mounted
Casing Finish: Vitreous Enamel
Controls/Accessories: All as per boiler manufacturer
Heat Exchanger: Stainless Steel
Boiler Flue: To BS 5410 and in accordance with manufacturer's flue options
Commissioning of gas fired boiler to be carried out by boiler manufacturer's representative
Boiler manufacturer to provide a 10 year parts and warranty to the Client

063 BOILER, GAS FIRED CONDENSING SYSTEM TYPE

Standard: To BS 6798 and BS 7074 Low NOX classification
Type: Wall Mounted
Casing Finish: Vitreous Enamel
Controls/Accessories: All as per boiler manufacturer
Heat Exchanger: Stainless Steel
Boiler Flue: To BS 5410 and in accordance with manufacturer's flue options
Commissioning of gas boiler to be carried out by boiler manufacturer's representative
Boiler manufacturer to provide a 10 year parts and warranty to the Client

064 BOILER, OIL FIRED CONDENSING CONVENTIONAL TYPE

Standard: TO BS799 and OFS A100, High Efficient **SEDBUK** Band A rated
Type: Floor Mounted
Casing finish: Mild steel
Controls/Accessories: All as per boiler manufacturer
Boiler Flue: To BS 5410 and in accordance with manufacturer's flue options
Commissioning of oil fired boiler to be carried out by boiler manufacturer's representative
Boiler manufacturer to provide a 10 year parts and warranty to the Client

065 BOILER, OILL FIRED CONDENSING OUTDOOR TYPE

Standard: To BS 799 and OFS A100, High Efficient **SEDBUK** Band A rated
Type: Floor mounted, outdoor with patented weather proof casing
IP Rating: IPX4
Controls/Accessories: All as per boiler manufacturer
Boiler Flue: To BS 5410 and in accordance with manufacturer's flue options
Commissioning of oil fired boiler to be carried out by boiler manufacturer's representative
Boiler manufacturer to provide a 10 year parts and warranty to the Client.

066 BOILER, WOOD PELLET

Standard: To BS EN 303
Type: Floor mounted, outdoor with patented weatherproof case, enclosing the boiler and 100kg hopper
IP Rating: IPX4
Controls: Low pellet level sensor with warning beacon, high limit thermostat, back burning protection, fuel overload, combustion control, modulation control, frost protection and safety valve
Boiler Flue: To 5410 and in accordance with manufacturer's flue options
Commissioning of wood pellet boiler to be carried out by the boiler manufacturer's representative
Boiler manufacturer to provide a 10 year parts and warranty to the Client.

067 OIL STORAGE TANKS, PLASTIC

Standard: To BS 5410, and constructed and certified to OFTEC standard OFS T100
Type: Horizontal bunded oil fuel storage tank
Capacity: The capacity of the oil tank shall be in accordance with BS 5410 Clause 6.2.1: Table 2
Accessories: All as per tank manufacturer
Oil Supply: Top outlet option
Location: To BS 5410, and current Building Regulations on a suitable concrete base
Domestic Oil Tank Bases Construction and Design: To Client's standard details
Where a tank of a lesser capacity is required due to limited space, **any cost adjustment is deemed to be included.**

068 FIRE WALLS FOR OIL STORAGE TANKS

Standard: To BS 5410
Method: The tank should be protected in one of the following ways:

a) Isolating the tank, including any integral bund, by placing it at a distance from any building or other potential source of fire or;
b) Protecting the tank, including any integral bund, by a physical barrier.

Where the above criteria for distance cannot be met, and where steel stand physical barrier screens are required, certification will be required that the screen panels satisfies the performance requirements specified in BS 476-22 Clause 5, for a non-loading beating fire wall with a fire resistance of 30 minutes and shall be installed in accordance with the manufacturer's instructions.
Where it is necessary to provide panel type fire walls, any cost adjustment is deemed to be included.

069 OIL SUPPLY (TIGER OIL DE-AERATOR)

Standard: To BS EN 12514-2
System Type: Single pipe system, with de-aerator device, bottom of oil storage tank below or level with burner
Location: To be fitted to be fitted externally to the boiler in accordance with BS 5410 and the manufacturer's installation instructions.
Installation: The assembly to be fully concealed in a manufactured enclosure of suitable size constructed from powder coated mild sheet steel, plugged and securely fixed to a wall.

070 OIL FILTER

Standard: To BS EN 12514-2
Location: To BS 5410, and as specified by the appliance manufacturer
Installation: To be fitted on the oil supply pipe between the isolating valve and the appliance.

071 FIRE VALVE

Standard: To BS 5410
Compliance: Fire valves shall comply with OFTEC Standard OFS E101
Installation: Where the boiler is positioned externally outside the building, the valve body shall be fitted at least 1m away from the appliance with its sensor over the burner. The fire valve assembly to be fully concealed in a manufactured enclosure of suitable size constructed from powder coated mild sheet steel, plugged and securely fixed to a wall.

072 OIL MONITORING SYSTEM

Standard: To BS EN 60335
Type: Two parts, comprising a tank mounted transmitter ans a plug in receiver with integral antenna located in the dwelling
Power Supply: Receiver 230 – 240V/ 1/50Hz
Transmitter: 3V Lithium cell
Battery Life: 10 years (estimated life)
Communication: Wireless to BS EN 300 -220
Transmitter: To monitor the level of fuel inside the tank and relay the data via a secure wireless connection to the receiver unit
Receiver Unit: The receiver unit shall be securely fixed to an electrical socket outlet plate and connected a galvanised wall mounted fixing box, spurred off the Kitchen ring main circuit.

073 GUARD FOR PIPELINES

Pipelines: Exposed on external walls to be fully concealed by covering with a powder coated mild sheet steel box section profile of suitable size, flanged, plugged and securely fixed to the wall.

074 GUARD FOR EXTERNALLY LOCATED FIRE VAVE ASSEMBY

Installation: For externally located heating appliances, the oil supply should be cut off at least ONE m away from the appliance. The fire valve assembly to be fully concealed in a manufactured enclosure of suitable size constructed from powder coated mild steel sheet, plugged and securely fixed to the wall.

075 GUARD FOR EXTERNALLY LOCATED TIGER OIL DE-AERATOR

Installation: The tiger oil de-aerator is to be installed externally to the boiler cabinet all in accordance with BS 5410 and to the Manufacturer's instructions. The assembly to be fully concealed in a manufactured enclosure of suitable size constructed from powder coated mild sheet steel, plugged and securely fixed to the boiler cabinet.

076 SYSTEM CIRCULATION
Space heating systems and domestic hot water primary circuits should have fully pumped circulation.
If the boiler manufacturer's instructions advise installation of a bypass, an automatic bypass valve should be provided and the manufacturer's instructions on minimum pipe length followed.

CIRCULATING PUMP
Standard: To BS EN 1151, BS EN 60335, EUP Directive 2005/32/EC and EC 640/2009
System: For Low temperature hot water heating system
EEI Rating: = 0.23
System Resistance: The flow rate shall be sufficient to circulate the maximum boiler output against the system resistance
Installation: To be installed in a readily accessible position in accordance the manufacturer's installation instructions
Maintenance: Provide 2No. pump valves to enable removal/replacement without need to drain down
Electrical Supply: 230 – 240V 1/50Hz

077 The Service Provider shall supply and install adequate ventilation in accordance with the manufacturer's technical data sheet and BS 5440-2:2009.

078 The Service Provider shall supply and install high and low level ventilation grilles when the boiler is installed within a cupboard. Such grilles shall be suitably sized in accordance with manufacturer's requirements.

079 The Service Provider shall show the position of the boiler on the working drawings.

080 The Service Provider shall supply and install a 15 mm galvanized steel pipe from the pressure relief valve on the boiler and run it to outside to discharge in a safe location. The Service Provider shall show the position of the boiler on the working drawings.

081 The Service Provider shall supply, install and deliver a pipe cover accessory.

082 The Service Provider shall supply and install in the cold water mains supply prior to entering the boiler, a branch connecting with a filling loop which connects between the cold mains and the heating flow. The filling loop shall complete with all valves in accordance with Water Regulations and manufacturer's recommendations. The filing loop is to be located in an accessible place.Type equation here.

Radiators

083 All radiators are to be the steel panel convector type to the latest edition of BS EN 442-1 and BS EN 442-2 to achieve the required design temperatures listed in 010 and shall be installed by way of brackets. Radiators shall be round top, with four BSP connections.

084 Radiators shall, be fitted below windows to give a clearance of not less than 25mm from the underside of the sill to the top of the radiator, with a minimum clearance from the underside of the radiator to the finished floor level not be more than 150mm, or less than 100mm.

085 The length of the radiator must be such that it is not greater than the width of the window opening and not less than 100mm within the width of the of the window opening.

086 Radiators shall not be positioned back to back on internal walls.

087 Radiator fixings shall be arranged to suit the wall construction.

088 All valves will be watertight and connected to radiators with PTFE tape unless manufacturer's technical data sheet state otherwise.

089 Each radiator shall be fitted with a chrome plated thermostatic radiator valve (except in room where room stat fitted) and 15mm back seating type lock shield valve. The lock shield radiator valve cover shall be screwed down. Radiator connections shall be at the bottom and opposite ends. A brass air release valve is to be fitted on the flow side top connection.

090 A drain off tapping shall be fitted at every lowest point in the system.

091 All radiators installed in any specific project shall be selected from the same radiator manufacturer's approved list.

092 Reflective foil shall be fitted behind all radiators on external walls. The foil shall be cut neatly, 25mm smaller than radiator dimensions and fixed in accordance with manufacturer's recommendations behind the radiator-fixing bracket.

093 In dwellings which previously had radiators installed the new radiators are to be the same size to match existing.

094 If no cylinder is to be installed, a suitably sized radiator is to be installed in the airing cupboard as required.

095 Two no air vent keys are to be left with each installation with the exception of sealed system installations where no keys are to be left.

096 The radiators shall be supplied with a good priming coat and left for the Tenants to decorate. Where radiators are found to be scratched or damaged, the Service Provider shall replace the same at no extra cost to the contract.

097 The Service Provider shall show all radiator positions, numbered with a radiator schedule showing the individual radiator number, radiator height, radiator length, radiator type, radiator output and type of connection on the Service Providers working drawing.

Pipes and Fittings

098 All heating, primary, cold, hot, mains water pipework and gas pipework shall be installed in EN 1057 R250 Table X light gauge copper with fitted brass or copper integral solder ring capillary type joints and general pipework fittings to BS EN 1254-3:1998, all Kite mark certified.

099 All fittings and solder used shall be lead-free and carry the UP or SS lead-free mark. Do not use formed bends on exposed pipework, except for small offsets. Form changes of direction with radius fittings.

100 All pipes to be of even bore, clean and smooth throughout, commercially straight and free from grooving, blistering or other surface marks and free from any corrosive oxide etc. All ends shall be cut square and all burrs removed with a reamer to restore the bore.

101 Easy sweep fittings are to be used. Square tees and elbows shall not be accepted. Union joints shall be provided as necessary to permit easy removal of all apparatus.

102 All pipework shall be supported at a minimum of 900 mm centres, at high or low level, with either screw on brackets or white plastic clips with one screw per clip.

103 Spacing for copper pipelines to be fixed securely and true to line at the following maximum centres:

15mm and 22mm pipe OD:	1200mm horizontal and 1800mm vertical
28mm and 28mm pipe OD:	1800mm horizontal and 2400mm vertical
35mm and 42mm pipe OD:	2400mm horizontal and 3000mm vertical

104 Heating pipework routes shall, where possible be at skirting level and shall be arranged in a neat and orderly manner and concealed where possible. Pipework through walls shall be sleeved. Additional supports to be located within 150mm of connections, junctions and changes of direction.

105 In houses with solid floors, heating pipework shall be run in the upper floor voids with pipe drops to lower floor radiators. Pipes drops to be fully encased in plywood pipe casing from ceiling to skirting level, painted two coats of undercoat and finished with on coat white gloss paint. The Service Provider shall include for carefully lifting and replacing floorboards. Any flooring damaged is deemed to be replaced at the Service Provider's expense. All pipes to be sleeved where they pass through masonry or concrete. The maximum notch depth shall be 25mm and located between 0.07 and 0.25 of span from support. Notches within the central 2 quarters of span are not allowed.

106 Sleeves are to be of suitable size to allow free expansion of the pipework. Sleeves shall be cut square at each end and shall be of sufficient length to finish flush with the finished face of wall or ceiling, and 6mm proud of the finished surface of floors. All excessive gaps between the inside surface of the sleeves, and pipes passing through boiler house walls shall be filled with fire resistant materials. The weight of pipework shall not be borne by the sleeves. It is the Service Provider's responsibility to ensure that pipes are not bedded in by making good.

107 No pipes shall be run in concrete screeds or in floors overlaid with sound insulation materials, ie insulated floating floors.

108 The run of pipework shall be in accordance with the layout indicated on the drawings supplied by the Service Provider for approval.

109 The actual run of pipework shall be approved by the Client before such work is put in hand, and all pipes shall be installed in a neat and workman-like manner. Pipes shall be laid to graded falls as necessary to facilitate draining and venting, adequately supported with provision for expansion and brackets suitably placed. Vertical pipes shall be dropped plumb and all lines shall be parallel to each other. Pipework shall be installed without springing or forcing.

110 All pipes shall follow the contour of the building. Where pipes enter floors or ceilings, they shall be taken in square. All pipes and fittings shall be kept at least 150 mm away from the lighting or power cables, conduits etc.

111 The Service Provider shall be held liable and entirely responsible for making all provision necessary to allow full expansion and contraction of all pipework and apparatus. Failure to make such provision, which results in damage to the installation or to the building and its contents, shall be held to be the responsibility of the Service Provider, who must make good all damage free of cost to the Client.

112 The Service Provider shall supply and install the heating flow and return pipework from the boiler to the pump and motorised valve complete with all isolating valves. From the motorised valves the heating shall split to feed the hot water cylinder and radiators within each room, as shown on the Service Provider's working drawings.

113 The Service Provider is to flush out the heating services at least twice prior to filling and adding inhibitor to the system.

114 The Service Provider shall connect to the existing hot water service, cold feed and open vent serving the dwelling. All the above pipework will be shown on the Service Provider's working drawings.

115 The Service Provider shall supply and install a cold water main from the nearest existing point to feed the boiler in 15 mm pipe as shown on the Service Provider's working drawing if a system boiler is installed. All the above pipework shall be shown on the Service Provider's working drawings.

116 The Service Provider shall supply and install at low points of the heating system, a lock shield type drain cock to BS 2879, to enabling each Heating and HWS system to be drained down when required.

Natural Gas Supplies

117 The natural gas supply to all appliances will conform strictly to BS 6891:2005+A2:2008

118 The Service Provider shall include for the gas carcass to be replaced from the meter position to the gas boiler in all cases. In addition, they shall extend the carcass to the cooker position in the Kitchen and re-connect the Tenants gas cooker appliance including stability device if not already fitted. If the Customer has an electric cooker then the gas supply is to be capped off at this point.

119 The Service Provider is to ensure that the supplies are of sufficient size (minimum 22mm to boiler, 22mm to the cooker position, to supply the volume of gas required to allow the appliances to function effectively and in accordance with the manufacturer’s technical data sheet. The new gas carcass is to be run from the existing gas meter position.

120 The Service Provider shall supply and install a bayonet fitting 600 mm from finished floor level on the gas supply to the cooker. The Service Provider is to connect the cooker to the new gas supply with approved new flexible connector.

121 The Service Provider is to include soundness checks, smoke and spillage tests. The Client may provide a representative on occasions to be present at tests.

122 The Service Provider is to provide the Client with a signed certificate of the gas safety checks and gas pressure test within the operation and maintenance manuals.

123 All the above shall be shown on the Service Provider's working drawings.

124 Test for soundness and purge in accordance with BS 6891.

125 Upon completion the gas pipework is to be pressure tested (may be witnessed on occasions by the Client) for 15 minutes at a pressure of 20mbar.

Hot Water Storage Requirements

126 Standard: To BS 1566

1. Vented copper hot water storage cylinders should comply with the heat loss and heat exchanger requirements.
2. Hot water storage combination units should comply with BS 3198
3. Primary storage systems should meet the insulation requirements of the Hot Water Association Performance specification for thermal stores
4. Unvented hot water storage system products should comply with BS EN 1287 or an equivalent standard as set out by an accredited test body such as the British Board of Agreement, the Water Research Council, or KIWA.

Heat Loss: The standing loss for all hot water storage vessels an a), b), c) and d) should not exceed where: V= 1.15 x (0.2+0.051V2/3) kWh/day where V is the volume of the cylinder

Labelling: All hot water vessels should carry a label with the following information

1. type of vessel (vented, combination unit types or thermal store);
2. nominal capacity in litres;
3. standing heat loss in kWh/day
4. heat exchanger performance in kW
5. reference to product compliance with relevant standard 9e.g. BS 1566, BS EN 12897) and logos of accreditation bodies as required.
6. Storage capacity: To C.I.B.S.E. Guide G. For domestic installations a cylinder of approximately 120 litres (min) is usually adequate.

127 The new units will be complete with sacrificial anodes and adequate thermal insulation of the CFC reduced type and comply with the Water By-Laws.

128 The cylinders to be fitted on a new stool.

129 The Service Provider shall include for a 750mm long immersion heater facility rated at 3kW and thermostat to BS EN 60335 -2-73.

130 The Service Provider shall supply and install a new 22mm gate valve on the cold feed, heating flow and return pipework to the cylinder.

131 The Service Provider shall show the position of the cylinder on the working drawings.

SYSTEM CONTROLS

132 TIME CONTROL OF SPACE AND WATER HEATING

The control of space heating and hot water systems shall be provided with time and temperature controls as follows:

1. 2 channel programmer with separate timing to each circuit

2. for dwellings with a total usable floor area greater than 150 m², timing of the separate space heating zones can be achieved with separate timing to each circuit

3. where the hot water is produced instantaneously, such as with a combination boiler, time control is only required for space heating zones

133 TEMPERATURE CONTROL OF SPACE HEATING

Separate temperature control of zones within the dwelling should be provided by:

1. room thermostats
2. individual radiator controls such as thermostatic radiator valves (TRVs) on all radiators other than in the reference room (with thermostat)

134 TEMPERATURE CONTROL OF DOMESTIC HOT WATER

Domestic hot water systems should be provided with a cylinder thermostat, immersed type in BSP outlet on storage vessel, to control the zone valve

135 Room thermostats shall be positioned as follows:
- In a hallway.
- 1800mm above floor level.
- Away from radiators or direct heat source, direct sunlight, external doors or draughts.

136 A wiring centre shall be provided and be located as shown on the Service Providers drawings.

137 Where fitted, the HWS cylinder shall incorporate a immersed type cylinder thermostat inserted in a pocket on the cylinder and set at 60°c.

138 The automatic pump overrun period should be set to 20 seconds.

139 An automatic bypass will be fitted to all systems including combination boilers should the boiler manufacturer's technical data sheet advise that this is a requirement of the installation.

140 A frost thermostat is to be provided if the boiler is located in a position where frost damage may occur.

141 Final connection to the boiler shall be carried out by the Service Provider.

142 The above controls shall be shown on the Service Provider's working drawings.

ELECTRICAL INSTALLATION

143 The Service Provider shall be responsible for the electrical installation associated with the replacement heating installations. This shall include the following electrical circuits from a new metallic consumer to be located in the existing meter cupboard. Where due to space restrictions the new consumer unit cannot be fitted in the existing cupboard; the Service Provider shall install the consumer unit in a separate wooden meter enclosure. **The cost of the enclosure will be deemed to be included in the costs**:

144 Provision of new dedicated electrical circuit fitted to the new hot water storage cylinder immersion heater, including new flexible cable connection. The Contactor shall allow for replacing the existing heater face plate switch in the dwelling where necessary with a heating boost switch with timed settings.

145 Provision of dedicated electrical circuit for the heating boiler including system control wiring and all necessary accessories. The Contactor shall provide and install where required a bulkhead light fitting to assist with all necessary maintenance or breakdown call outs.

146 Provision of dedicated electrical circuit for the electric focal point inset fire, including a 20A DP switch fitted adjacent fire on chimney breast, with flexible connection concealed within the fabric of the building to connect to inset fire.

Electric Direct Acting Day Rate Focal Inset Fire
Standard: To BS EN 60335 -1
Approval : BEAB/CE MARK
Type: Direct Acting Electric Inset Fire, to fit chimney opening
Heater Type: Fan Convention
Max Heat Output: 2kW
Coal Bed: One piece with switchable choice for flame effect independent of heat source
Noise: Fan noise suppressed to 50dB max, when in operation
Lights: LED bulbs for long life and low energy consumption
Controls: ON/OFF switch with multiple heat settings and thermostat control
Fixing: To be securely fixed to hearth or surround

147 Cables shall be installed above ceilings, below floors and should be concealed in walls.

Cables concealed in masonry walls should be enclosed in conduit.

Cables should be withdrawable through either continuous conduit, or where it not feasible to conceal the cable system, through the provision of a continuous trunking system.

Cables should be installed without joints other than at equipment and terminal fittings. **JUNCTION BOXES ARE NOT PERMITTED.**

Cables should be supported and fixed to the requirements of BS 7671.

Cables should be sleeved passing through masonry walls with conduit bushed at both ends.

Cables installed across floor joists should be threaded through holes neatly bored in joists at least 50mm from floor or ceiling.

PVC insulated cables must not come into contact with polystyrene insulation or organic timber preservative.

Cables concealed within a wall or partition should comply with BS 7671.

148 All routing of trunking shall be done in a workmanlike manner and shall be arranged to be unobtrusive in terms of its layout.

149 All cabling used for final connections to boilers or hot water service cylinders shall be multi core heat resistant EP rubber insulated or HOFR sheathed flexible cable or heat resistant PVC flexible cable.

150 The Service Provider shall include for upgrading earth and supplementary equipotential bonding to the new system in accordance with the IET Regulations current at the date of installation of the new boiler.

151 Equipotential earthing shall be completed where necessary back to the main consumer unit and the Utility Provider's incoming cut out.

152 All control wiring associated with the installation shall be supplied and installed by the Service Provider.

153 **Recommended Minimum Standards for Insulation of Pipework in Wet Central Heating Systems**

Standard: To BS 5422

Pipes should be insulated to comply with the maximum permissible heat loss, and labelled accordingly, as follows:

1. Primary circulation pipes for heating an hot water circuits wherever they pass outside the heated living space or through voids which communicate with and are ventilated from unheated spaces
2. Primary circulation pipes for domestic hot water circuits should be insulated throughout their length, subject only to practical constraints imposed by the need to penetrate joists and other structural elements
3. All pipes connected to hot water storage vessels, including the vent pipe, should be insulated for at least 1 m from their points of connection to the cylinder (or they should be insulated up to the point where they become concealed)
4. If secondary circulation is used, all pipes kept hot by that circulation should be insulated.
5. Extra provision may need to be made to protect heating and hot water pipe work in unheated areas against freezing

Where insulation is labelled as complying, it must not exceed the following heat loss levels:

Pipe Outside Diameter	Maximum Heat Loss*
8mm	7.06W/m
10mm	7.23W/m
12mm	7.35W/m
15mm	7.89W/m
22mm	9.12W/m
28mm	10.07W/m
35mm	11.08W/m
42mm	12.19W/m
54mm	14.12W/m

* In accessing the thickness of insulation required, standardised conditions shoul be assumed in all compliance calculations, based on a horizontal pipe at 60°C in still air at 15°C.

154 All pipework running under ground floor suspended floors, through unheated areas (ducts, cupboards, or in loft spaces shall be provided with rigid pipe insulation and where necessary frost protection. All primary flow and return pipework and all pipework within airing cupboards shall also be insulated.

155 All insulation shall be Class 1, minimum 25mm thick nitrile rubber (CFC and HCFC free), all suitable for Class A1, and shall be fitted after testing. Mineral fibre insulation shall not be acceptable.

156 All slit lengths and butt joints shall be glued together using the adhesive recommended by the manufacturer, so that no pipe fitting or valve/cock is kept uninsulated.

Feed and Expansion Cistern

157 The Service Provider shall supply and install a plastic 18 litre feed and expansion cistern in accordance with the current Water Regulations if an open vented system is to be used. The Service Provider shall supply and install purpose made lids and insulation jacket for the feed and expansion cistern. The Service Provider shall supply and install overflows of suitable size to the feed and expansion cistern and discharge it in an appropriate location.

158 The Service Provider shall supply and install an open vent and cold feed to the heating system in accordance with the boiler manufacturer's technical data sheet.

159 Connect boiler to cold main supply via a combined filling/double check valve kit. Ensure that the flexible link is not left in position and to comply with the current Water By-laws.

160 Service Provider is to supply and install a suitable wooden frame and support the feed and expansion cistern. The frame shall transfer all the live load to the roof trusses or surrounding walls. The framework shall be made from 50mm x 25mm wood battens with a minimum of four cross supports. The feed and expansion cistern shall be sited on 25mm marine plywood

Safety Discharge

161 Where a safety discharge pipe is fitted, this shall be fitted to the manufacturer's technical data sheet and shall be arranged to discharge externally in a safe location and timed back to the wall.

Condensate Discharge

162 Wherever possible, the condensate pipe shall be routed and terminated so the condensate drains away from the boiler under gravity to a suitable internal water discharge point such as an internal soil and vent stack, internal kitchen, bathroom or washing machine waste water pipe of similar.

163 Where it is not possible, so that the condensate drains away from the boiler under gravity, the Service Provider shall provide for the installation of a condensate pump to drain the condensate away to a suitable water discharge point in accordance with the boiler manufacturer's instructions. **Where a condensate pump is required by design it shall be deemed to be included in the costs**

164 Where no other discharge method is possible, the use of an externally-run condensate discharge drainage pipe terminating at a suitable water discharge point or purpose-designed soak away may be considered. The pipe shall be run internally as far as possible before going externally, and the pipe diameter shall be increased to 32mm before it passes through the wall to the exterior. The pipe should take the shortest and least exposed route to the discharge point, and shall fall as steeply as possible away from the boiler with no horizontal runs in which condensate might stand. The use of fittings and shall be kept to a minimum and any internal burrs on cut pipe work should be removed so that the internal pipe section is as smooth as possible. Where the pipe terminates over an open drain or gulley, the pipe should terminate below the grating level, in order to minimise the wind chill at the open end.

165 The external condensate discharge pipe shall be insulated using suitable waterproof and weather resistant pipe insulation.

Flues and Guards

166 The Service Provider shall include for flues and guards associated with the required appliances and these shall be fitted in accordance with manufacturer's technical data sheet. This shall include all associated builders work and making good.

167 The Service Provider shall also include for the provision of all access equipment on properties of two storeys or below.

168 The room sealed combination boiler flues shall be sited 200 mm down from the soffit outside.

169 A suitable terminal guard shall be fitted where flue terminals are less than 2m above ground level.

170 Weathering slates where required shall be manufactured from milled lead to BS EN 12588 lead.

171 These requirements must be applied for any boiler manufacturer's flue option.

Ventilation

172 The Service Provider shall include for the provision of necessary ventilation to comply with the Regulations and Standards. Ventilation provision shall be identified as necessary on the design drawings.

Combustion and Ventilation Requirements

173 The provision of combustion and ventilation requirements for the central heating boilers must comply completely with BS 5540-2 whichever of the following is required.

Compartments for Boilers

174 Where the design requires a boiler to be located in a Bedroom, the Service Provider shall provide and fit a suitable compartment to enclose the boiler installation and all pipe work etc; and provide the necessary boiler compartment ventilation in accordance with the current BS 5440-2
The cost of the compartment for the boiler is deemed to be included in the unit rate for that type of house type.

Existing Heating Appliances and Installations

175 The Service Provider shall include for carefully draining down, disconnection and removal of all existing Client and or Tenant installed heating and hot water appliances and associated appliances and making good. This shall include properties with partial heating systems, combined hot water/cold water storage and expansion tank packs, etc., and include removal of:

- All redundant pipework and electrical cables and making good to all disturbed surfaces.
- All oil tanks, any physical barriers, concrete bases, support walls, boiler cabinets and external oil fuel pipework
- Removal of the existing hot water storage tank or cylinder and associated redundant pipework.
- Removal of the gas carcass within the dwelling.
- Removal of the existing heating system in its entirety.
- Removal of existing controls and wiring.

176 In all cases the Service Provider should allow for removal of solid fuel open fires and room heaters, bricking up flue apertures, render and set, fixing plaster vent with a permanent ventilator, renewing skirting, making good to all disturbed surfaces clearing away, and leave ready for redecoration.

Existing Equipment Removal Prior to Boiler Upgrade

177 The items detailed herein apply in general terms and are intended to be indicative of works that may be required dependent upon the extent of the boiler replacement and any system upgrade. They are not intended to be carried out regardless of the works required.

178 Remove and make good:

1. All types of solid fuel appliances

2. All types of electric heating and hot water appliances

3. All types of old gas heating & hot water appliances

4. All types of fireplace surround and hearths.

5. Fix terracotta vent cap and louvre air brick to any redundant solid fuel chimney

6. Carefully remove any tenants own appliances including fires, wall heaters, circulators and multipoint water heaters and return them to the tenant

7. Any pipework, flues, fitments, ducting etc, associated with the above

Existing Chimneys

179 The Service Provider is to be responsible for arranging and including within his tendered rates for the thorough sweeping of all existing chimneys and providing a certificate to that effect.

Tiled Surrounds

180 The existing tiled hearth and surround is to be removed. The opening is to be bricked up and plastered to feather in with existing plasterwork on the chimney breast. A permanent ventilator is to be fitted in this new brickwork. The chimney is to be capped and the hearth made good.

Builder's Work

181 The Service Provider shall be responsible for undertaking all builders work in connection with the installation, including holes, making good decorations to match existing following the removal of redundant equipment and after the installation of new equipment.

182 **Detailed Requirements on Builders Work**

1. Make good to all ceilings and walls to plaster finish and to match existing decorations as closely as possible

2. Remove all redundant tank supports from cupboards and make good.

3. Remove any coal bunkers made redundant by the heating installation, bag any coal up and return to the tenant.

4. Any disturbed areas around chases cut for ducts across solid floors for pipework are to be tiled together with the duct covers to match existing floor tiles as near as practical.

5. Any areas, where boilers, tiled hearths and warm air units and circulators have been removed, will be made good to the following standard:

   - Straighten and level floor and provide and install floor tiling to match existing everywhere the floor finish has been disturbed;
   - Make good all holes and cracks and opening left in walls and ceilings and around fireplaces to plaster finish and to match existing decorations as closely as possible; and
   - Should a warm air unit be removed from a compartment and the compartment is such that the door does not go to floor level, then a false floor consisting of batten and 22 mm plywood will be built in that compartment at the lower level of the door.

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

   - Thoroughly swept;
   - Have a terracotta vent terminal supplied and fitted on top of the chimney;
   - The base of the chimney is to be permanently sealed and a suitable air vent is to be fitted above the base to ensure the chimney is vented at all times; and
   - Any flue that is not part of the structure of the property and had the sole purposes of providing flue arrangements for a removed gas appliance is to be removed in its entirety. Weathered where necessary and all holes left as a result of this removal are to be made good to math existing.

7. Wherever floor boards are lifted, they are to be replaced if damaged and all boards are to be screwed and countersunk into position. Should a laminate or other similar floor construction be encountered then the customer must be advised that they should make their own arrangements to have such floor lifted prior to works commencing. Alternatively the Service Provider may lift the flooring upon the occupant signing a disclaimer to the effect that neither the Client nor the Service Provider is responsible for any damage that may arise or for the floor's reinstatement.

8. Any plaster damaged or holes left in ceilings as a result of removing any cylinders or associated pipework are to be made good to plaster finish.

9. All ducting, grilles, register and vents that can be removed practically whenever a warm air unit is replaced shall be removed and made good to the required standards.

10. Alterations to compartments that are to be utilised for boilers are to be allowed for, this is also to include removal of architrave, door handles or any shelves or shelving of any construction.

Hot press/Airing/Cylinder Cupboards

183 Adapt existing cupboard to accommodate new cylinder, pipe work and any necessary ancillary heating equipment where necessary, this is to include removal of the architrave and door, and re-fixing and any alterations or re-fixing of existing shelving as necessary.

Health and Safety File

184 During the pre-construction phase, the principal designer shall prepare a health and safety file appropriate to the characteristics of the project.

185 The file must contain information about the current project likely to be needed to ensure health and safety during any subsequent work, such as maintenance, cleaning, refurbishment or demolition.

186 When preparing the health and safety file, information on the following should be considered for inclusion:

- A brief description of the work carried out;
- Any hazards that have not been eliminated through the design and construction processes, and how they have been addresses (e.g. surveys or other information concerning asbestos or contaminated land);
- Key structural principles (e.g. bracing, sources of substantial stored energy – including pre or post tensioned members) and safe working loads for floors and roofs;
- Hazardous materials used (e.g. lead paints and special coatings);
- Information regarding the removal or dismantling of installed plant and equipment (e.g any special arrangements for lifting such equipment);
- Health and safety information about equipment provided for cleaning or maintaining the structure;
- The nature, location and markings of significant services, including underground cables, gas/oil supply equipment; fire-fighting equipment etc.,; and
- Information and as built drawings of the building, its plant and equipment (e.g. the means of safe access to and from service voids and fire doors).

187 There should be enough detail to allow the likely risks to be identified and addressed by those carrying out the work.

188 However, the level of detail should be proportionate to the risks.

189 The file should **not** include things that will be of no help when planning future construction work such as pre-construction information, the construction phase plan, contractual documents, safety method statements etc.

190 Information must be in a convenient form, clear, concise and easily understandable.

191 The Service Provider shall upload unto the Clients IT system the Health and Safety File on completion of the works.

Scaffolding

192 The Service Provider is to provide, erect, maintain and dismantle on completion tower scaffolding. Include for gaining access, ladders, boards and physical ties where necessary. The cost of scaffolding is only reimbursed when provided on properties above two storeys.

193 All scaffolding works are to be agreed by the Client prior to erection. In multi occupancy properties, the Customer Liaison Officer is to notify all Customers 48 hours prior to erection of scaffolding.

Cold Water Storage Tank

194 Where the existing tank is defective; the Client may provide a task order to renew the cold water storage tank with a new, 227 litres capacity actual to be constructed of plastic material; to include new ball valve and float, lid, Byelaw 30 kit and insulation jacket; allow for draining down/chlorination and refilling system; alterations and re-connecting pipe work and overflow, remove old tank and test on completion.

SAP Ratings and Energy Performance Certificate

195 Upon completion of the installation the Service Provider is to provide an Energy Performance Certificate for the dwelling.

MAINTENANCE OF SYSTEMS

Boiler Label

196 The Service Provider is to supply a self-adhesive label and fit the label to each boiler on completion. The label shall contain the following information:

1. Service Provider's name.
2. Service Provider's phone number.
3. Service Provider's emergency call out number.
4. Date of installation of system.
5. Gas safe registration number.
6. Signature of commissioning engineer.

197 A sample of the label shall be submitted for approval at the pre-contract meeting.

Defects Liability Period

198 The Service Provider shall be responsible for both the new boiler and the heating system within each dwelling with the exception of any previously installed gas fires and gas cooker from the date of completion of each section of works.

199 The Service Provider shall be liable for all defects until the end of the 12 months defects liability period and all defects are corrected. Any faults that occur during the defects period on the new and existing mechanical plant and equipment shall be repaired at the Service Provider's own expense.

200 Any nuisance calls made by Customers for not operating the system correctly shall be at the Service Provider's own expense for attendance to such calls.

201 The Service Provider is to provide a repair service line that is open 24 hours. The Service Provider must respond within 2 hours to all breakdown calls 24 hours a day. Calls can come from any of the following sources (Call Centre, On-Call Officer or Client. The number of the service line is to be given to Client at the pre-contract meeting.)

202 The Service Provider is to provide and forward a report to the Client's IT system within one day of any fault being reported to the Service Provider with the following information.

1. Date and time of which the fault is reported to Service Provider.
2. Date and time the Service Provider arrived to rectify fault.
3. Date and time the fault was rectified
4. Description of fault.
5. Materials used in rectifying the fault.
6. Name of tenant.
7. Address of the tenant.
8. Signature of the tenant and printed name.
9. Signature of the fitter and printed name.

203 The Client shall not accept a delay of more than 12 hours to repair any part of the heating or hot water system.

204 If the Service Provider fails to meet the 12 hour repair time the Client reserves the right to have the repair effected by another Service Provider and a counter charge shall be levied against the main Service Provider.

Annual Service

205 Appliances installed by the Service Provider are to be inspected, tested, serviced and Landlord Safety certified during the defects liability period at no additional cost to the Client.

System Preparation and Water Treatment

206 Standard: To 7953

a) Central heating systems should be thoroughly cleaned and flushed out before installing a new boiler
b) During final filling of the system, a chemical water treatment inhibitor meeting boiler manufacturer's specification or other appropriate standard should be added to the primary circuit to control corrosion and the formation of scale and sludge
c) The Service Provider should also refer to the boiler manufacturer's installation instructions for appropriate treatment products and special requirements for individual boiler models
d) Where the mains total water hardness exceeds 200 parts per million, provision should be made to treat the feed water to water heaters and the hot water circuit of combination boilers to reduce the rate of accumulation of lime scale.

Commissioning

207 On completion of the installation of a boiler and hot water storage system, together with associated equipment such as pipe work, pumps and controls, the equipment shall be commissioned in accordance with the manufacturer's instructions. These instructions will be specific to the particular boiler or hot water storage system. The Service Provider should give a full explanation of the system and its operation to the user, including the manufacturer's User Manuals where provided.

208 If the Service Provider carries out any works on the hot and cold water services within each dwelling then the Service Provider shall chlorinate all hot and cold water services in accordance with BS EN 806 -5, HSG 70 and the current edition of the Water Regulations. Prior to chlorination the Service Provider shall flush out all hot and cold water services.

209 The Service Provider shall record the services chlorinated during the works on the Client's Chlorination Certificate.

210 To ensure adequate cleaning of replacement systems the Service Provider will flush out the heating flow and return pipework and radiators prior to connection to the boiler at least twice, and power flush with a recommended descaling/flushing agent.

211 The replacement boiler is to be isolated from the system until the system water is clean, in accordance with the manufacturer's technical data sheet.

212 An analysis/purity test of the heating circuit water will form part of the post inspection quality checks and the Clients representative will select samples to be taken throughout the duration of the works and sent to the water treatment provider for independent testing and reports forwarded to the Client.

213 The filling loop is to be removed and capped and secured with a spring clip or pipe clip adjacent to mains feed and heating circuit connections.

214 It is the Service Provider's responsibility to give one week's prior notice to the Client of when the flushing of the new system will take place in each dwelling. The Service Provider will also provide a certificate stating that the flushing was undertaken in accordance with both the boiler manufacturer's and the flushing agent manufacturer's technical data sheet.

215 Upon completion of the pipework installations, the installations shall be filled with clean water and then subjected to a hydraulic pressure test and the Service Provider shall upload unto the Clients IT system the Hydraulic Test Certificate.

216 Heating and HWS primary systems shall be subjected to a test pressure of 6.0 bar or twice the working head. HWS and cold water service pipework shall be subjected to a test pressure of one and a half times the working head. The test periods shall not be less than 30 minutes. All the above pressure tests shall be recorded on the Client's Hydraulic Test Certificate.

217 After the hydraulic tests have been carried out to the satisfaction of the Client, each system is to be heat tested in accordance with the Clients specification.

218 Boiler burner pressure, functional checks and all flame supervision devices should be checked as recommended in the manufacturer's installation instructions. The whole system should be balanced to provide an even temperature distribution.

219 The Service Provider shall test and regulate the systems to the satisfaction of the Client with the Heat Test uploaded unto the Client's IT system.

220 The Service Provider shall upload unto the Clients IT system an EIC (Electrical Installation Certificate) for the electrical installation within each dwelling.

221 Gas installations shall be tested.

222 Any defects of workmanship, materials, performance or other irregularities which become apparent during the tests shall be rectified at the Service Provider's expense.

223 All tests may be carried out to the satisfaction of the Client.

224 Unless otherwise indicated, the Service Provider is to give a minimum notice of one week prior to site tests in order that the Client at their discretion, may be present at such tests.

225 On completing the testing of the system within each dwelling the Service Provider shall upload unto the Clients IT system a Landlords Safety Record and a Service/Maintenance Check List to be passed to the Client within 24 hours of the tests being completed within each dwelling.

226 The Service Provider is to notify immediately the Client of any Tenant installed appliance.

227 The Service Provider shall be responsible for providing the whole of the testing equipment required.

228 The Service Provider shall upload unto the Clients IT system the following test certificates and records for each dwelling completed.

- Gas Landlords Gas Safety Record (CP12)
- Oil Landlord Safety Record (CD12)
- Electrical Installation Certificate (EIC)
- Boiler Commissioning Certificate
- Benchmark Booklet (copy of)
- Hydraulic Test Certificate
- Heat Test Certificate
- Chlorination Certificate where works have been carried out to hot and cold water services
- Record of Analysis/Purity test record from water treatment provider
- ErP Package Label
- Notice of application to Building Control Authority for all necessary approvals
- Notice from Service Provider to Building Control Authority confirming fixed building services have been properly commissioned
- Manufacturer's Warranty Form
- Tenant Agreement Form for the works to be undertaken (To be provided by the Service Provider)
- Tenant Satisfaction Sheet (To be provided by the Service Provider)

229 The Client will carry out post inspection quality check on all systems installed. The Client and the boiler manufacturer will be present during the commissioning of a number of the initial systems and will be making random inspection to monitor commissioning procedures.

Customers Instructions

230 The Service Provider shall ensure the manufacturer's installation and servicing instructions and user instructions are left with the Tenant following completion of the work.

231 In addition to the manufacturer's technical data sheet, an A4 size laminated sheet giving simple clear basic instructions and guidance should be included.

232 The Service Provider shall thoroughly explain and demonstrate to the Customer the operation of the system and check their understanding.

233 The Service Provider should ensure that the system is set up ready for the Customer's own requirements. The Customer should be asked about their lifestyle and heating requirements, rather than the "standard" heating pattern being imposed.

234 In instances where the Customer's first language is not English or alternatively where there are communications difficulties, the Client shall be advised.

Client's current manufacturers/suppliers/products

235 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

REPLACEMENT HEATING INSTALLATION: Check List

Item	Work Description	Deemed included within All-in Central Heating Renewal Rates	Reimbursed through Schedule of Rates
	General		
1.0	Removal of all Clients and or Tenant installed existing appliances (gas, oil, LPG, warm air, solid fuel, electrical) and making good. This shall include properties with partial heating systems, complete heating systems, combined hot/cold water storage and expansion vessel packs , etc., Removal of gas and or oil fuel pipelines, oil tanks, concrete/paving slabs boiler house bases and oil tank bases etc.,	✓	
1.1	Patch plaster walls for decorations following strip out, total area not exceeding 2m2	✓	
1.2	Removal of all redundant pipework and cables and make good to all disturbed surfaces.	✓	
1.3	Removal of the existing hot water storage tank or cylinder and associated redundant pipework where required.	✓	
1.4	Removal of the gas carcass within the dwelling.	✓	
1.5	Removal of the cold water supply pipework serving the sink, bath and basin and any hot water pipework servicing washing machines and dishwashers.	✓	
1.6	Removal of the existing heating and hot water system in its entirety.	✓	
1.7	Removal of all existing control equipment and associated wiring and accessories.	✓	
1.8	Removal of gas fires which are to be isolated and the gas supply capped, bricking up flue apertures, render and set, fixing plaster vent with permanent ventilator, renewing skirting, making good to all disturbed surfaces clearing away, and leave ready for redecoration.	✓	
1.9	Fitting of restraint chains to gas cookers		✓
1.10	All builders work in connection with the installation, including holes, making good decorations to match existing following the removal of redundant equipment and after the installation of new equipment.	✓	
1.11	Undertake all surveys, prepare working drawings, prepare all calculations, prepare radiator schedules, obtain Customer's approval, obtain Client's approval. The Service Provider shall carry out all necessary Tenant consultation.	✓	
	Hot and Cold Water Plumbing		
2.1	Connect to the existing hot water service, cold feed and open vent serving the dwelling. All the above pipework will be shown on the Service Provider's working drawings	✓	
2.2	Supply and install a cold water main from the nearest existing point to feed the boiler in 15 mm pipe as shown on the Service Provider's working drawing if a system boiler is installed	✓	

Item	Work Description	Deemed included within All-in Central Heating Renewal Rates	Reimbursed through Schedule of Rates
	Heating Plumbing		
3.1	Supply and install the heating flow and return pipework from the boiler to the pump, motorised valves and magnetic filter as shown on the Service Providers drawings. From the motorised valve the heating shall split to feed the hot water cylinder and radiators within each room, as shown on the Service Provider's working drawings.	✓	
3.2	Supply and install at low points of the heating system, a lock shield drain cock to BS 2879, complete with loose keys,	✓	
	Gas Plumbing		
4.1	The gas carcassing to be replaced to the new appliance from the meter position in all cases. In addition, they shall extend the carcass to the cooker position and re-connect the Tenants own appliance including stability device if not already fitted. If the Customer has an electric cooker then the gas supply is to be capped off at this point. The Service Provider is to ensure that the supplies are of sufficient size, to supply the volume of gas required to allow the appliances to function effectively and in accordance with the manufacturer's instructions.	✓	
4.2	Supply and install a bayonet fitting 600 mm from finished floor level on the gas supply to the cooker.	✓	
4.3	Install a gas cock prior to the cooker for isolation purposes.	✓	
	Boilers		
5.1	Install any type of boiler which are to be SEDBUK A rated high efficiency with evidence of a Low No-x rating condensing boiler as manufactured by a manufacturer approved by the Client	✓	
5.2	Supply and install in the cold water mains supply prior to entering the boiler, a branch connecting with a filling loop which connects between the cold mains and the heating flow. The filling loop shall be complete with all valves in accordance with Water Regulations and manufacturer's recommendations.	✓	
5.3	Provide a minimum ten year's manufacturer's guarantee with a minimum ten year parts and labour warranty and this shall be arranged to run from the date of the completion certificate	✓	
5.4	Provide a boiler installation record secured to the inside of the lower casing giving the Service Provider's name and address and the date of installation	✓	
5.5	All new boilers are to be fitted with a "magnetic filter" on the return pipe to the boiler in accordance with manufacturer's instructions	✓	
5.6	Supply and install a complete boiler flue system in accordance with the manufacturer's technical data sheet and BS 5440 Part 1. The Service Provider shall terminate the flue at a suitable location and supply and install a flue terminal guard as necessary. Supply and install plume kit	✓	
5.7	Supply and install adequate ventilation in accordance with the manufacturer's technical data sheet and BS 5440-2	✓	
5.8	Supply and install high and low level ventilation grilles when the boiler is installed within a cupboard. Such grilles shall be suitably sized in accordance with manufacturer's requirements.	✓	
5.9	Supply and install an additional expansion vessel of appropriate size if the system volume is beyond that which can be accommodated by the built in expansion vessel.	✓	

Item	Work Description	Deemed included within All-in Central Heating Renewal Rates	Reimbursed through Schedule of Rates
5.10	Supply and install a 15 mm galvanized steel pipe from the pressure relief valve on the boiler and run it to outside to discharge in a safe location.	✓	
5.11	Supply, install and deliver a pipe cover accessory	✓	
5.12	Where necessary supply and install a safety discharge pipe, this shall be fitted in accordance with the manufacturer's technical data sheet and shall be arranged to discharge externally in a safe location and tied back to the wall.	✓	
5.13	Supply and install all condense pipes which shall be preferably run internally and terminated in accordance with the manufacturer's technical data sheet and recommendations. If run externally they must be secure and lagged with external waterproof lagging of 19mm thick to BS standard.	✓	
5.14	Supply and install all flues and condensation drain pipes associated with the required appliances and which shall be fitted in accordance with manufacturer's technical data sheet. This shall include all associated builders work and making good.	✓	
5.15	Service Provider shall also include for the provision of all access equipment on properties of two storeys or below.	✓	
5.16	The Service Provider shall include for a suitable terminal guard to be fitted where flue terminals are less than 2m above ground level.	✓	
	Radiators		
6.1	Supply and install radiators complete with brackets and be fitted with a chrome plated thermostatic radiator valve (except in room where room stat fitted) and 15mm type chrome lock shield isolating valve. Radiator connections shall be at the bottom and opposite ends. Air release valve are to be fitted on the flow side top connections	✓	
6.2	Supply and install reflective foil to be fitted behind all radiators on external walls. The foil shall be cut neatly, 25mm smaller than radiator dimensions and fixed in accordance with manufacturer's recommendations behind the radiator-fixing bracket	✓	
6.3	Supply and install a drain off tapping fitted at lowest point in the system.	✓	
6.4	The radiators shall be supplied with a good priming coat	✓	
	Cylinders		
7.1	Where a system boiler is provided, the Service Provider shall include a new high recovery foam insulated indirect cylinder of appropriate size for dwelling (minimum storage capacity 120 litres). The cylinder shall be pre insulated of an appropriate grade for the installation The cylinder shall be located in the existing hot press. The Service Provider shall include for a 22mm cold feed to this cylinder from the main storage tank and also for a 22mm vent pipe.	✓	
7.2	Supply and install a 750mm long immersion heater facility rated at 3kW and thermostat to BS EN 60335 -2-73 and heater booster switch.	✓	
7.3	Supply and install a new 22mm gate valve on the cold feed, heating flow and return pipework to the cylinder.	✓	

Item	Work Description	Deemed included within All-in Central Heating Renewal Rates	Reimbursed through Schedule of Rates
	Controls		
8.1	Supply and install programmer to incorporate a manual override facility and to be an electro-mechanical programmer and be located in the kitchen, wireless programmers may also be installed if approved by the Client.	✓	
8.2	Supply and install 22mm motorised valves complete with actuator motor to be located as shown on the Service Providers drawings complete with isolating valves.	✓	
8.3	Supply and install room thermostat. A wireless room thermostat may also be installed if approved by the Client.	✓	
8.4	Supply and install wiring centre in accordance with the manufacturer's installation instructions to be located as shown on the Service Providers drawings.	✓	
8.5	Supply and install an immersed cylinder thermostat set at 60°c in a cylinder provided pocket.	✓	
8.6	Supply and install an automatic bypass to be fitted to all systems including combination boilers should the boiler manufacturer's technical data sheet advise that this is a requirement of the installation.	✓	
8.7	Supply and install a frost thermostat to be provided if the boiler is located in a position where frost damage may occur	✓	
8.8	Supply and install a heating pump in an accessible location. The pump shall be sized to provide the correct flow rate against the system resistance	✓	
	Insulation		
9.1	Supply and install insulation to all pipework running under ground floor suspended floors, through unheated areas (ducts, cupboards, or in loft spaces in accordance with the Clients specification. All primary pipework and pipework within hot presses shall also be insulated.	✓	
	Water storage Tanks		
10.1	Supply and install a plastic 18 litre feed and expansion cistern in accordance with the current Water Regulations if an open vented system is to be used.	✓	
10.2	Supply and install purpose made lids and insulation jacket for the feed and expansion cistern.	✓	
10.3	Supply and install overflows of suitable size to the feed and expansion cistern and discharge it in an appropriate location	✓	
10.4	Supply and install an open vent and cold feed to the heating system in accordance with the boiler manufacturer's technical data sheet	✓	
10.5	Supply and install a framework to support the feed and expansion cistern. The framework shall transfer all the live load to the floor or surrounding walls. The framework shall be made from timber with a minimum of four cross supports. The feed and expansion cistern shall be sited on 25mm marine plywood.	✓	

Item	Work Description	Deemed included within All-in Central Heating Renewal Rates	Reimbursed through Schedule of Rates
	Electrical Installation		
11.1	Supply and install if required a new electrical circuit from consumer unit and connect to the new immersion heater via a heater booster switch.	✓	
11.2	If a new consumer unit is required this will be a surface non-combustible unit with lid, and complete with: main control switch to BS EN 60439-3; sufficient RCBO's to accommodate all the sub-circuits scheduled for the Property; a minimum of 20% spare ways for future capacity; and each protective device to be permanently labelled to identify each circuit and rating.		✓
11.3	Provision of new electrical circuit and connect to Boiler any type and system control equipment and accessories.	✓	
11.4	Circuit wiring shall be carried out using 2.5mm2 PVC/PVC insulated cables. All routing of trunking shall be done in a workmanlike manner and shall be arranged to be unobtrusive in terms of its layout.	✓	
11.5	Supply and install final connections for boilers, heating circulators, electric inset fire and immersion heater which shall be heat resisting 3 core 2.5mm2 butyl. Include for the upgrading of supplementary earth bonding to a new system in accordance with the IET Regulations current at the date of installation of the new boiler.	✓	
11.6	Earth bonding shall be completed where necessary back to the main consumer unit or meter.	✓	
11.7	All control wiring associated with the installation shall be supplied and installed by the Service Provider.	✓	
	Commissioning and Testing		
12.1	If any works are undertaken on the hot and cold water Services within each dwelling then the Service Provider shall chlorinate all hot and cold water services in accordance with BS 6700, HSG 70 and to the current edition of the Water Regulations. Prior to chlorination the Service Provider shall flush out all hot and cold water services. The services chlorinated during the works are to be recorded on the Client's Chlorination Certificate.	✓	
12.2	Flush out the heating flow and return pipework and radiators prior to connection to the boiler at least twice, with the boiler manufacturer's recommended descaling/flushing agent and power flushing machine. The Service Provider will also provide a certificate stating that the flushing was undertaken in accordance with both the boiler manufacturer's and the flushing agent manufacturer's technical data sheet	✓	
12.3	The filling loop is to be removed and capped and secured with a spring clip or pipe clip adjacent to mains feed and heating circuit connections.	✓	
12.4	Upon completion of the pipework installations, water pipework shall be filled with clean water and then subjected to a hydraulic pressure test and the Service Provider shall complete the Client's Hydraulic Test Certificate.	✓	

Item	Work Description	Deemed included within All-in Central Heating Renewal Rates	Reimbursed through Schedule of Rates
12.5	Heating and HWS primary systems shall be subjected to a test pressure of 6.0 bar or twice the working head. HWS and cold water service pipework shall be subjected to a test pressure of one and a half times the working head. The test periods shall not be less than 30 minutes. All the above pressure tests shall be recorded on the Client's Hydraulic Test Certificate.	✓	
12.6	After the hydraulic tests have been carried out to the satisfaction of the Client, each system is to be cleaned and dosed and a heat test shall be carried out	✓	
12.7	Main burner pressure, gas rate, functional checks and flame supervision device should be checked as recommended in the manufacturer's installation instructions. The whole system should be balanced to provide an even temperature distribution.	✓	
12.8	The Service Provider shall regulate the systems to the satisfaction of the Client and the results shall be recorded on the Client's Commissioning Certificate and Heat Test Certificate	✓	
12.9	The Service Provider shall upload unto the Clients IT system an Electrical Installation Certificate for the electrical installation within each dwelling.	✓	
12.10	Upload unto the Clients IT system a signed certificate of the gas safety checks and gas pressure test within the operation and maintenance manuals.	✓	
12.11	Test for soundness and purge in accordance with BS 6891: 2005 and certify.	✓	
12.12	Upon completion the gas pipework is to be pressure tested (may be witnessed by the Client) for 15 minutes at a pressure of 20mbar.	✓	
12.13	Flush out the heating services at least twice prior to filling and adding inhibitor to the system.	✓	
12.14	At the time of commissioning following the successful cleaning of the system the Service Provider will add the boiler manufacturer's recommended corrosion inhibitor approved by the Client, dosed in accordance with the manufacturer's technical data sheet, into the heating system after the system has been tested.	✓	
	Customer's Instructions		
13.1	Ensure the manufacturer's installation and servicing instructions and user instructions are left with a responsible person on site together with an A4 size laminated sheet giving simple clear basic instructions and guidance.	✓	
13.2	Supply a radiator vent key and for thoroughly explaining to the Customer, demonstrating the operation of the system and checking their understanding.	✓	
13.3	Ensure that the system is set up ready for the Customer's own requirements. The Customer should be asked about their lifestyle and heating requirements, rather than the "standard" heating pattern being imposed.	✓	
13.4	In instances where the Customer's first language is not English or alternatively where there are communications difficulties, the Client shall be advised.	✓	

Item	**Work Description**	Deemed included within All-in Central Heating Renewal Rates	Reimbursed through Schedule of Rates
	Health & Safety File		
14.1	During the pre-construction phase, the principal designer shall prepare a health and safety file appropriate to the characteristics of the project which shall contain information relating to the project which is likely to be needed during any subsequent project to ensure the health and safety of any person. The information required per Scheme shall be agreed with the Client prior to commence to the works:	✓	
	Scaffolding		
15.1	Provide, erect, maintain and dismantle on completion tower scaffolding. Include for gaining access, ladders, boards and physical ties where necessary.	✓	
15.2	The cost of scaffolding is only reimbursed when provided on properties above two storeys.		✓
	SAP Ratings and Energy Performance Certificate		
16.1	Upon completion of the heating installation the Service Provider is to provide an Energy Performance Certificate for the dwelling.	✓	
	Maintenance of System		
17.1	Supply a self-adhesive label and fit the label to each boiler on completion. The label shall contain the information listed in clause 186:	✓	
17.2	Accept responsibility for both the new boiler and the heating system within each dwelling with the exception of any previously installed gas fires and gas cooker from the date of completion of each section of works.	✓	
17.3	Accept liability for all defects until the end of the 12 months defects liability period and all defects are corrected. Any faults that occur during the defects period on the new and existing mechanical plant and equipment shall be repaired at the Service Provider's own expense.	✓	
17.4	Provide a repair service line that is open 24 hours. The Service Provider must respond within 2 hours to all breakdown calls 24 hours a day. Calls can come from any of the following sources (Call Centre, On-Call Officer or Client. The number of the service line is to be given to Client at the pre-contract meeting.)	✓	
17.5	Provide a report sheet to the Client within one day of a fault being reported to the Service Provider with the information listed in clause 186.	✓	

REPLACEMENT BOILER (WITHOUT AND WITH CONTROLS): Check List

Item	Work Description	Deemed included within All-in Central Heating Renewal Rates	Reimbursed through Schedule of Rates
	General		
1.0	Removal of Clients and or Tenant installed existing boiler of any type and boiler flue and making good.	✓	
1.1	Patch plaster walls for decorations following strip out, total area not exceeding 2m2	✓	
1.2	Removal of all redundant pipework and cables where required and make good to all disturbed surfaces.	✓	
1.3	Removal of existing control equipment, wiring and accessories.	✓	
1.4	All builders work in connection with the installation, including holes, making good decorations to match existing following the removal of redundant equipment and after the installation of new equipment.	✓	
1.5	Undertake all surveys, prepare working drawings, prepare all calculations, obtain Customer's approval, obtain Client's approval. The Service Provider shall carry out all necessary Tenant consultation	✓	
	Hot and Cold Water Plumbing		
2.1	Connect to the existing hot water service, cold feed and open vent serving the dwelling. All the above pipework will be shown on the Service Provider's working drawings	✓	
2.2	Supply and install if necessary a cold water main from the nearest existing point to feed the boiler in 15 mm pipe as shown on the Service Provider's working drawing if a system boiler is installed	✓	
	Heating Plumbing		
3.1	Supply and install or modify the heating flow and return pipework from the boiler to the pump and motorised valves and magnetic filter, as shown on the Service Providers drawings. From the motorised valves the heating shall split to feed the hot water cylinder and radiators within each room, as shown on the Service Provider's working drawings.	✓	
3.2	Supply and install at low points of the heating system, a Lock shield drain cock to BS 2879, complete with loose keys,	✓	
	Gas Plumbing		
4.1	The gas carcassing to be replaced to the new appliance from the meter position in all cases. In addition, the Service Provider shall extend the carcass to the cooker position and reconnect the Tenants cooker including stability device if not already fitted. If the customer has an electric cooker then the gas supply is to capped off at this point. The Service Provider is to ensure that the supplies are of sufficient size, to supply the volume of gas required to allow the appliances to function effectively and in accordance with the manufacturer's instructions.	✓	
4.2	Supply and install a bayonet fitting 600 mm from finished floor level on the gas supply to the cooker.	✓	

Item	Work Description	Deemed included within All-in Central Heating Renewal Rates	Reimbursed through Schedule of Rates
	Boilers etc		
5.1	Install boilers which are SEDBUK A rated high efficiency with evidence of a Low No-x rating condensing boiler as manufactured by a manufacturer approved by the Client	✓	
5.2	Supply and install in the cold water mains supply prior to entering the boiler, a branch connecting with a filling loop which connects between the cold mains and the heating flow. The filling loop shall complete with all valves in accordance with Water Regulations and manufacturer's recommendations.	✓	
5.3	Provide a minimum ten year's manufacturer's guarantee with a minimum ten year parts and labour warranty and this shall be arranged to run from the date of the completion certificate	✓	
5.4	Provide a boiler installation record secured to the inside of the lower casing giving the Service Provider's name and address and the date of installation	✓	
5.5	All new boilers are to be fitted with a magnafilter on return pipe	✓	
5.6	Supply and install a complete boiler flue system in accordance with the manufacturer's technical data sheet and BS 5440-1. The Service Provider shall terminate the flue a suitable location and supply and install a flue terminal guard as necessary.	✓	
5.7	Supply and install adequate ventilation in accordance with the manufacturer's technical data sheet and BS 5440-2	✓	
5.8	Supply and install high and low level ventilation grilles when the boiler is installed within a cupboard. Such grilles shall be suitably sized in accordance with manufacturer's requirements.	✓	
5.9	Supply and install an additional expansion vessel of appropriate size if the system volume is beyond that which can be accommodated by the built in expansion vessel.	✓	
5.10	Supply and install a 15 mm galvanized steel pipe from the pressure relief valve on the boiler and run it to outside to discharge in a safe location.	✓	
5.11	Supply, install and deliver a pipe cover accessory	✓	
5.12	Where necessary supply and install a safety discharge pipe, this shall be fitted to the manufacturer's technical data sheet and shall be arranged to discharge externally in a safe location and tied back to the wall.	✓	
5.13	Supply and install all condense pipes which shall be preferably run internally and terminated in accordance with the manufacturer's technical data sheet and recommendations. If run externally they must be secure and lagged with external waterproof lagging of 19mm thick to BS standard.	✓	
5.14	Supply and install all flues and condensation drain pipes associated with the required appliances and which shall be fitted in accordance with manufacturer's technical data sheet. This shall include all associated builders work and making good.	✓	

Item	Work Description	Deemed included within All-in Central Heating Renewal Rates	Reimbursed through Schedule of Rates
5.15	**Service Provider shall also include for the provision of all access equipment on properties of two storeys or below.**	✓	
5.16	The Service Provider shall include for a suitable terminal guard to be fitted where flue terminals are less than 2m above ground floor level.	✓	
	Controls		
6.1	Supply and install programmer to incorporate a manual override facility and to be an electro-mechanical programmer and be located in the kitchen, wireless programmers may also be installed if approved by the Client.	✓	
6.2	Supply and install 22mm motorised valves with isolating valves complete with actuator motor to be located as shown on the Service Providers drawings.	✓	
6.3	Supply and install room thermostat A wireless room thermostat may also be installed if approved by the Client.	✓	
6.4	Supply and install wiring centre in accordance with the manufacturer's to be located as shown on the Service Providers drawings.	✓	
6.5	Supply and install an immersed cylinder thermostat set at 60°c in a hot water cylinder provided pocket.	✓	
6.6	Supply and install an automatic bypass to be fitted to all systems including combination boilers should the boiler manufacturer's technical data sheet advise that this is a requirement of the installation.	✓	
6.7	Supply and install a frost thermostat to be provided if the boiler is located in a position where frost damage may occur	✓	
6.8	Supply and install a heating pump in an accessible location. The pump shall be sized to provide the correct flow rate against the system resistance.	✓	
	Insulation		
7.1	Supply and install insulation to all pipework running under ground floor suspended floors, through unheated areas (ducts, cupboards, or in loft spaces shall be provided with rigid pipe insulation. All primary pipework and pipework within airing cupboards shall also be insulated.		✓
	Water storage Tanks		
8.1	If the existing cold water storage tank is defective, renew tank with new 227 litres actual and constructed of a plastic material acceptable to the Client, include for new ball valve and float, lid, Byelaw 30 kit and rigid insulation, allow for turning water on/off, draining/refilling system, adjusting and connecting pipework and overflow, remove old tank and test on completion.		✓

Item	**Work Description**	Deemed included within All-in Central Heating Renewal Rates	Reimbursed through Schedule of Rates
	Electrical Installation		
9.1	Re-connect existing switched connection fused connection to new boiler of any type.	✓	
9.2	Circuit wiring shall be carried out using 2.5mm2 PVC/PVC insulated cables All routing of trunking shall be done in a workmanlike manner and shall be arranged to be unobtrusive in terms of its layout.	✓	
9.3	Supply and install final connections to boiler and system control equipment which shall be heat resisting 3 core 2.5mm2 butyl Include for upgrading where necessary the supplementary earth bonding in accordance with the IET Regulations current at the date of installation of the new boiler.	✓	
9.4	Earth bonding shall be completed where necessary back to the main consumer unit or meter.	✓	
9.5	All existing control wiring associated with the installation shall be retained and final connections to equipment shall be provided by the Service Provider.	✓	
	Commissioning and Testing		
10.1	If any works are undertaken on the hot and cold water services within each dwelling then the Service Provider shall chlorinate all hot and cold water services in accordance with BS 6700, HSG 70 and the current edition of the Water Regulations. Prior to chlorination the Service Provider shall flush out all hot and cold water services. The services chlorinated during the works are to be recorded on the Client's Chlorination Certificate.		✓
10.2	Flush out the heating flow and return pipework and radiators prior to connection to the boiler at least twice, with the boiler manufacturer's recommended descaling/ flushing agent and power flushing machine. The Service Provider will also provide a certificate stating that the flushing was undertaken in accordance with both the boiler manufacturer's and the flushing agent manufacturer's technical data sheet	✓	
10.3	The filling loop is to be removed and capped and secured with a spring clip or pipe clip adjacent to mains feed and heating circuit connections.	✓	
10.4	Upon completion of the pipework installations, water pipework shall be filled with clean water and then subjected to a hydraulic pressure test and the Service Provider shall complete the Client's Hydraulic Test Certificate.	✓	
10.5	Heating and HWS primary systems shall be subjected to a test pressure of 6.0 bar or twice the working head. HWS and cold water service pipework shall be subjected to a test pressure of one and a half times the working head. The test periods shall not be less than 30 minutes. All the above pressure tests on the Client's Hydraulic Test Certificate shall be uploaded unto the Clients IT system.	✓	
10.6	After the hydraulic tests have been carried out to the satisfaction of the Client, each system is to be cleaned and dosed and a heat test shall be carried out	✓	

Item	Work Description	Deemed included within All-in Central Heating Renewal Rates	Reimbursed through Schedule of Rates
10.7	Main burner pressure, gas rate, functional checks and flame supervision device should be checked as recommended in the Manufacturer's installation instructions. The whole system should be balanced to provide an even temperature distribution.	✓	
10.8	The Service Provider shall regulate the systems to the satisfaction of the Client and the results shall be recorded on the Client's Commissioning Certificate and Heat Test Certificate	✓	
10.9	The Service Provider shall upload unto the Clients IT system an Electric Test Certificate for the electrical installation within each dwelling.	✓	
10.10	Upload unto the Clients IT system with a signed certificate of the gas safety checks and gas pressure test within the operation and maintenance manuals	✓	
10.11	Test for soundness and purge in accordance with BS 6891 and certify.	✓	
10.12	Upon completion the gas pipework is to be pressure tested (may be witnessed by the Client) for 15 minutes at a pressure of 20mbar.	✓	
10.13	Flush out the heating services at least twice prior to filling and adding inhibitor to the system.	✓	
10.14	At the time of commissioning following the successful cleaning of the system the Service Provider will add the boiler manufacturer's recommended corrosion inhibitor approved by the Client, dosed in accordance with the manufacturer's technical data sheet, into the heating system after the system has been tested.	✓	
	Customer's Instructions		
11.1	Ensure the manufacturer's installation and servicing instructions and user instructions are left with a responsible person on site together with an A4 size laminated sheet giving simple clear basic instructions and guidance.	✓	
11.2	Ensure that the system is set up ready for the Customer's own requirements. The Customer should be asked about their lifestyle and heating requirements, rather than the "standard" heating pattern being imposed.	✓	
11.3	In instances where the Customer's first language is not English or alternatively where there are communications difficulties, the Client shall be advised.	✓	
	Health & Safety File		
12.1	During the pre-construction phase, the principal designer shall prepare a health and safety file appropriate to the characteristics of the project which shall contain information relating to the project to ensure the health and safety of any person. The information required per Scheme shall be agreed with the Client prior to commence to commence the works.	✓	

Item	Work Description	Deemed included within All-in Central Heating Renewal Rates	Reimbursed through Schedule of Rates
	Scaffolding		
13.1	Provide, erect, maintain and dismantle on completion tower scaffolding. Include for gaining access, ladders, boards and physical ties where necessary.	✓	
13.2	The cost of scaffolding is only reimbursed when provided on properties above two storeys.		✓
	SAP Ratings and Energy Performance Certificate		
14.1	Upon completion of the installation the Service Provider is to provide an Energy Performance Certificate for the dwelling.	✓	
	Maintenance of System		
15.1	Supply a self-adhesive label and fit the label to each boiler on completion. The label shall contain the information listed in clause 186.	✓	
15.2	Accept responsibility for the new boiler from the date of completion of each section of works.	✓	
15.3	Accept liability for all defects until the end of the 12 months defects liability period and all defects are corrected. Any faults that occur during the defects period on the new and existing mechanical plant and equipment shall be repaired at the Service Provider's own expense.	✓	
15.4	Provide a repair service line that is open 24 hours. The Service Provider must respond within 2 hours to all breakdown calls 24 hours a day. Calls can come from any of the following sources (Call Centre, On-Call Officer or Client. The number of the service line is to be given to Client at the pre-contract meeting.)	✓	
15.5	Provide a report sheet to the Client within one day of a fault being reported to the Service Provider with the information listed in clause 186.	✓	

ENERGY PERFORMANCE CERTIFICATES

SPECIFICATION FOR ENERGY PERFORMANCE CERTIFICATES

001 The Service Provider is provide an Energy Performance Certificate ("EPC") in respect of:

1 On the completion of void property works;
2 Prior to the installation or upgrading of a central heating boiler;
3 Prior to installing or renewing the central heating installation to a property;
4 Prior to undertaking the installation or renewal of micro-generation components;
5 Prior to undertaking any kitchen or bathroom renewals;
6 Prior to undertaking any external insulation;
7 Following the completion of the installation or upgrading of a central heating boiler;
8. Following the completion of installing or renewing the central heating installation to a property;
9. Following the completion of the installation or renewal of micro-generation components;
10. Following the completion of any kitchen or bathroom renewals;
11. Following the completion of any external insulation;

002 EPCs are to be produced by suitably qualified Domestic Energy Assessors ("DEA's") accredited with National Energy Services (NES) Ltd.

003 The DEA shall therefore observe the terms and conditions of this accreditation, and it is the responsibility of the DEA/successful Service Provider to ensure all necessary evidence etc is retained for the purposes of audit as per the terms and conditions set out by NES.

004 Should any audit failures be recorded by the DEA/contracting organisation as part of this process, the Service Provider is to bring this to the attention of the Client, and ensure that any necessary remedial action is taken such that the data that underpins any EPC, and the EPC itself, is a true reflection of the property being assessed.

005 The actual data collected as part of this process will be appropriate for that required to produce EPCs at the time, and as per any guidelines produced by NES. The data collected is to be input into the NES online portal, such that an EPC can be produced.

006 The Service Provider is to retain a copy of all EPCs produced.

007 The Service Provider is to provide the Client with the RRN, PRRN, and address of every property for which an EPC has been produced. This information is to be provided by email on the same day as production of the EPC.

008 EPC's for void properties are to be produced within 5 working days of a property becoming void.

009 EPC's in respect of kitchen and bathroom renewals are to be produced within 1 working day of the Service Provider's pre-commencement survey, and an updated EPC within 5 working days of the completion of the kitchen and bathroom renewal works if any upgrading of loft insulation or installation of solid wall insulation has been undertaken

010 EPC's in respect of boiler renewals, central heating installations, micro-generation component installation or external solid wall insulation are to be produced within 1 working day of the Service Provider's pre-commencement survey, and an updated EPC within 5 working days of the completion of the Works.

011 The cost of providing Energy Performance Certificates is deemed to be included in the Service Provider's Tendered Rates.

ELECTRICAL WORKS

ELECTRICAL WORKS

GENERAL

Regulations

001 Ensure all electrical Works are carried out in accordance with the current edition (complete with amendments) of the Requirements for Electrical Installations published by the Institution of Engineering and Technology ("the IET Regulations") applicable at the time the Works are carried out.

Equipotential bonding

002 Connect the following to the main earthing terminal using earthing clamps to BS 951 or European equivalent or other means where appropriate:
- main cold water pipe adjacent to stop valve;
- main gas pipe adjacent to and on the consumer side of the gas meter;
- central heating system pipework;
- other service pipes and ducting;
- exposed metallic parts of the building structure; and
- lightning conductor.

Supplementary bonding

003 Within the zone formed by the main equipotential bonding, provide connections to:
- baths;
- sinks;
- exposed pipes;
- metal water storage tanks; and
- heating and ventilation systems.

PME Installations

004 In PME installations the power circuit must be protected by a RCBO (Residual Current Breaker with Overcurrent) as an integral part of the consumer unit.

Earth Rods and Inspection Pits

005 Earth rods must be protected by purpose made inspection pits set neatly and firmly in the ground.

006 The earth wire must be enclosed in HGS galvanised conduit taken directly into the inspection pit.

007 The conduit must be secured to the external wall of the building with galvanised heavy duty 2-hole saddles up to a maximum height of 1800mm above ground level.

008 The saddles must be fixed with zinc plated round head screws.

MATERIALS

Earth Electrode

009 Ensure any earth electrodes used are manufactured from copper with hardened steel driving cap, hardened steel tip and phosphor bronze coupling screws. Use sufficient electrodes (in length and number) to give the required earth loop impedance.

010 Protect each earth electrode from mechanical damage by enclosing the earth lead in a heavy duty cast-iron or concrete box with lid. Enclose the entire lengths in heavy gauge, galvanised steel conduit. Attach permanent labels indelibly marked "Safety Electrical Earth Do Not Remove" to the earth lead at both the meter cupboard and at the earth electrode.

Conduit/trunking/ducting

011 Do not use surface conduit or trunking without an Instruction to do so from the Client.

PVC conduits and fittings

012 Ensure PVC conduits and fittings comply with the following:
- strength: heavy gauge super high impact;
- shape/colour: round, white or black;
- jointing: push fit and solvent welded;
- fittings: standard;
- mounting/support: screw the conduit to surfaces using the conduit manufacturer's clips/saddles;
- use maximum practical straight lengths to minimise number of joints;
- use proprietary bends and/or junction boxes at changes of direction;
- do not use elbows, tees or site formed bends without the Approval of the Client;
- secure the conduit system using boxes, plated screws and fibre/plastic plugs;
- fix boxes independently of the conduit; and
- form secure joints, using expansion couplings where recommended by the manufacturer and connectors at equipment and terminal fittings.

PVC surface cornice trunking system

013 Use PVC surface cornice trunking in conjunction with mini trunking for the mechanical protection of sub-mains cables and final circuit cables in accessible locations at ceiling level, where Approved by the Client. Ensure the trunking complies with the following:
- fittings: use the manufacturer's standard fittings;
- colour: white;
- mounting/support: secure to surfaces using plated screws and fibre/plastic plugs; and
- use proprietary units to form junctions and changes of direction wherever possible.

PVC surface mini-trunking system

014 Use PVC surface mini-trunking for the mechanical protection of final circuit cables in accessible locations. Ensure the trunking complies with the following:
- fittings: use the manufacturer's standard fittings;
- colour: white;
- mounting/support: secure to surfaces using plated screws and fibre/plastic plugs; and
- use proprietary units to form junctions and changes of direction wherever possible.

Fire stopping of trunking/ducting

015 Seal trunking/ducting internally with firmly packed rock fibre or intumescent type material supplied by the trunking/duct manufacturer.

Cables generally

016 Ensure cables are BASEC certified. Use cables in the locations and for the uses specified in the table below:

Location/Use:	Cable Type:
General (includes central heating, ventilation and smoke detector systems)	PVC insulated and sheathed
Conduit system (complete)	PVC insulated and sheathed or PVC insulated only
Sub-mains distribution	PVC split concentric
Sub-mains distribution armoured and PVC sheathed	PVC insulated, PVC sheathed, steel wire armour and PVC sheathed
Fire alarm system	PVC insulated and sheathed
Immersion heater (final connection)	EP rubber/HOFR sheath, Heat resistant PVC flexible cable

PVC insulated and sheathed cables and PVC insulated split concentric cables

017 Colour code cables for identification.

Electrical accessories generally (wall mounted)

018 Ensure wall mounted accessories for the connection and control of power, lighting and low voltage equipment are:
- manufactured using white moulded plastic;
- complete with surface or flush type mounting box except where specified otherwise;
- from the same manufacturer in a single installation; and
- marked to show their function where they are a control switch for e.g. an immersion heater, a cooker, a refrigerator, a washing machine or a circulating pump etc.,.

019 Ensure metal boxes for flush mounting switches and sockets are manufactured from galvanised steel complete with an earth terminal.

020 Fix all boxes using brass screws, fibre or plastic plugs.

Electrical accessories generally (ceiling mounted)

021 Ensure ceiling mounted accessories for the connection and control of power, lighting and low voltage equipment:
- are manufactured using white moulded plastic;
- are complete with mounting box where required;
- are from the same manufacturer where used in a single installation;
- are fixed with brass or sheradised screws, with fibre or plastic plugs as required; and
- in conduit systems have a white insulated break-ring between the ceiling roses and cord switches and the respective terminal boxes.

Consumer unit

022 Ensure consumer units:
- have a surface non-combustible pattern unit complete with lid;
- have a main switch of 80/100 amp DP rating;
- are fitted with RCBO's to BS EN 61009-1;
- located adjacent to the meter at the incoming supply position; and
- have each way permanently labelled to identify the circuit and rating.

023 In installations without Protective Multiple Earthing it must be the a surface non-combustible unit complete with lid, fitted with RCBO's to BS EN61009-1 and must be labelled to correspond to the following circuit allocations:

Circuit No Allocations	**RCBO Rating**
Lighting Downstairs	6
Lighting Upstairs	6
Boiler	6
Immersion Heater	16
Kitchen Ring Main Circuit	32
Shower	40
Cooker	32
Power Ring Main Circuit – RCD/RCBO protected	32
Mains Powered Smoke Alarms	6

Residual current device/residual current circuit device (RCD/RCCD)

024 Ensure RCDs and RCCDs:
- function as both isolators and switches;
- have a current rating of 80 amp DP;
- have a sensitivity of 30m amp; and
- are complete with an insulated cover or terminal shrouds.

Residual current circuit breaker (RCCB)

025 Ensure RCCBs:
- function as both isolators and switches;
- have a current rating of 63 amp DP;
- have a sensitivity of 30mA; and
- have a white PVC enclosure.

Residual current circuit breaker with override protection (RCBO)

026 Ensure RCBOs:
- function as both isolators and switches;
- have a current rating of 80A DP;
- have a sensitivity of 30mA; and
- are complete with an insulated cover or terminal shrouds.

ISCO connectors

027 For ISCO connectors ensure:
- the covers and bases are manufactured from black phenolic resin material; and
- the connector blocks are manufactured from brass with electro-tin finish.

Door bells

028 Ensure door bells:
- are primary mains supply, transformer , 6v secondary outlet;
- have a white bell push PVC cover; and
- are screw fixed.

Bulkhead light fitting (tungsten) (metal base)

029 Ensure metal base bulkhead light fittings:
- have a corrosion resistant die-cast or pressed metal base complete with a vandal resistant diffuser;
- have the wiring within the fitting protected by heat resistant sleeving;
- are installed complete with a 16W 2D or 28W 2D lamp; and
- are screw fixed.

Bulkhead light fittings (tungsten) (polycarbonate base)

030 Ensure polycarbonate base bulkhead light fittings:
- have a heavy duty polycarbonate base with a vandal resistant diffuser;
- have the wiring within the fitting protected by heat resistant sleeving;
- are installed complete with a 16W 2D or 28W 2D lamp; and
- are screw fixed.

Photocell sensor

031 Ensure sensors to control the landlord's lighting installation are:
- complete with a baseholder and wall mounting bracket;
- screw fixed to masonry or concrete; and
- fixed in a position Approved by the Client.

TV aerial installation

032 Ensure TV aerial installations:
- consist of 20mm diameter conduit complete with co-axial cabling run from roof level; and
- terminate at a white plastic surface mounted outlet box complete with a white plastic cover plate with single co-axial TV outlet.

Time switch (24 hour)

033 Ensure time switches:
- have a 24 hour and quartz control mechanism;
- are a 20 amp single pole, single throw time switch; and
- have 2 'on' and 2 'off' programmes with a day omitting device and independent motor connections.

Smoke detectors

034 Ensure smoke detectors:
- have white PVC for the housing;
- include a photoelectronic sensor to BS EN 14604;
- are 240 V mains operated with a sealed-in rechargeable Lithium cell back up supply; and
- include a full function test switch, automatic reset and low battery warning signal.

Heat detectors

035 Ensure heat detectors:
- have white PVC housing;
- comprise a fixed temperature fast response thermistor sensor with a range of 54° – 62° centigrade to BS 5446-2;
- are 240V mains operated with a sealed-in rechargeable Lithium cell back up supply; and
- include or have a test button and low power cell warning signal with both separate mains and battery warning LEDS.

Carbon monoxide detectors

036 Ensure carbon monoxide detectors:
- have white PVC housing;
- incorporate an electrochemical cell sensor module;
- are battery operated to BS EN 50291 fixed with security screws to ceiling;
- sensor power pack life 10 years;
- include a continuous self check function monitor with test/hush facility;
- have a pre-alarm warning LED;
- include LEDS for battery power pack life, CO2 level and fault status; and
- have a CO2 gas test feature.

Fixing electrical accessories/equipment

037 Position accessories accurately and squarely to the vertical and horizontal axes. Where not shown otherwise, align adjacent accessories on the same vertical or horizontal axis (as appropriate). Agree the mounting heights with the Client.

Multi-gang switches

038 Connect switches so that there is a logical relationship with the lights.

WORKMANSHIP

Installation generally

039 Install, test and commission the electrical work in accordance with the IET Regulations and the design and performance requirements set out in this Section so as to provide a safe, well insulated, earth protected system capable of supplying the anticipated maximum demand.

040 Ensure all installation Works are carried out by qualified electricians fully conversant with the IET Regulations to good workmanship by skilled (electrical) or instructed (electrical) persons and proper materials shall be used in the electrical installation. .

041 Do not allow the number of Apprentices and Trainees at a Property to exceed the number of qualified electricians.

042 Ensure all installation Works are carried out under the direct supervision of a "Qualifying Manager" named in the List of Approved Service Providers issued by the National Inspection Council for Electrical Installation Contracting (or European equivalent)

043 Use only the types of fastenings, bushes, glands, terminals, connectors, clips, clamps and all other minor accessories necessary to complete the installation that are recommended by the manufacturer of the electrical equipment being installed.

044 Avoid contact between dissimilar metals. Use corrosion resistant fastenings in locations where moisture is present or may occur.

045 The Service Provider must rectify, free of charge to the contract, any work which in the opinion of the Client has not been properly executed and must replace free of charge to the contract any materials or goods which do not comply with this Specification.

046 The Service Provider must confirm the voltage and frequency of the supply before ordering any equipment. This will normally be 240v a.c. 50 Hz single phase.

047 The Service Provider must include in his tender for the provision of all fixings and the making good by qualified tradesmen to the satisfaction of the Client all damage to walls, ceilings, decorations and fitments.

048 Dust sheets are to be used and every consideration given to Customer's property.

049 After work is completed each day all systems will be left in a safe usable condition and all dust and mess cleared up.

Distribution charts - labelling of equipment

050 Fix circuit charts securely to the inside of each item of distribution equipment, clearly indicating the circuits protected, fuse and RCBO ratings and the size and type required.

Electricity supply

051 Note that the electricity supply is nominally 240 volt, single phase, 50 hertz, 2 wire.

System of wiring

052 For concealed wiring, use PVC sheathed 600/1000 volt grade cable of the size and type specified. Wherever possible, run it in within floor, roof and ceiling voids.

053 Run cables along the sides of joists at the mid point. Clip them at 450mm centres using cable clips of tinned brass secured by nonferrous fixing pins, screws, clips or a similar fixing. Support the wire and equipment located between the joists by a wood bearer of a size of at least 100x25mm.

054 Install the cable:
- with a minimum clearance of 150mm to all heating, gas and waste pipes or ducts; and
- physically separated from other wiring not associated with lighting and power supplies.

055 Where cables cross flooring joists they must be passed through small holes drilled through the centre of the joists. These holes must not exceed 25mm diameter.

056 Ensure cables leaving or crossing joists do so at right angles to the longitudinal side of the joist, on trusses or binders. Do not notch or saw joints. Ensure that cables do not run in positions where they are susceptible to damage by floor nails.

057 Do not run cables in roof spaces on the top of joists or near water tanks, etc., since in this position they are susceptible to damage.

058 Install cables leaving roof voids and within floor spaces or passing through any part of the structure in conduit or trunking as specified.

059 Ensure cables in solid floor that are either laid in screed or in a ceiling void are drawn in through rigid PVC conduit as specified and run continuously from the consumer unit to the outlet served.

060 Do not install cables within wall cavities.

061 Contain all wiring to each flat within that flat.

062 Fit conduits complete and then draw the cable through.

Cables installed in plastered walls

063 Protect cables by rigid PVC metric super high impact heavy gauge conduit where no conduit exists at present. Reuse existing conduit where Approved by the Client.

064 Ensure new conduits are in continuous lengths, smooth in bore, true in size, and terminating in roof spaces and within floor spaces with a minimum projection of 50mm. Provide inside outlet boxes with a universal cleat.

065 Ensure new conduits are vertical and chased into the wall, such that the finished wall will provide a minimum of 10mm plaster cover. Adequately fix the conduit with sheradised nails and saddle clips, such that during the plastering processes, there is no tendency for plaster to push the conduit forward and reduce the cover.

066 Where Approved by the Client, embed cables in plastered surfaces and cover them with 'top hat' trunking secured at a depth to allow the plastered surface to be made good.

Cables installed in proprietary de-mountable or plasterboard partitions

067 Install cables in proprietary or de-mountable similar type partitions. Draw them through holes formed by forcing a suitable rod through the honeycomb core of the partition from above.

068 Take due account of any insulation within the partition when sizing the cables so as to prevent overheating.

069 In plasterboard partitions with a timber core, draw cables through the partition between the timber studding and noggins. Where timber work occurs, take the cable over the face of the timber by a small chase through the plasterboard and into the timber. Make good the chase with a suitable plaster material finished smooth and flush. Ensure cables installed in partitions are vertical.

Conduit installed on the surface

070 Use super high impact light gauge PVC metric rigid conduit and accessories on fairfaced brickwork or unplastered surfaces in heating cupboards, stores, garages, plant rooms, meter compartments and similar areas.

071 Support the conduit by PVC spacer bar saddles and wood screws and rawlplugs at intervals not exceeding 400mm.

072 Allow for the expansion of PVC conduit.

073 Install the conduit only vertically or horizontally.

Where new cables are to be installed in or under solid floors

074 Protect cables by rigid PVC round super high impact heavy gauge conduit laid in continuous lengths from the consumer unit to the outlet served, run in a diagonal line. Use the proper outlet and inspection bends and tees. Adequately fix the whole system to avoid any displacement by subsequent building trades.

Requirements for PVC conduit systems

075 Install no more cables in each circular conduit than necessary to permit easy insertion and withdrawal. Do not install more than the maximum recommended in the IET Regulations. Demonstrate to the Client that cables can be easily withdrawn and inserted in any section of the installation. If this cannot be done using the existing conduit, then provide new conduit.

076 Use conduits, boxes, fittings and accessories from the same manufacturer and with suitable fixings for the application. Ensure circular conduit is at least 20mm in diameter.

077 Ensure PVC outlet boxes and equipment do not become distorted during plastering. Install boxes flush with the finished plaster and the sides vertical, using 1.25" No.8 woodscrews and rawlplugs or equivalent fixing.

Use of cable trunking

078 Use cable trunking to improve the appearance at points in the installation where a number of conduits terminate or share a common route, and/or at the meter intake positions for the formation of distribution board/local isolator assemblies. Use compact miniature trunking of the appropriate size.

079 Use PVC trunking with fitted end covers. Provide a separate earth continuity conductor.

080 Connect trunking to equipment by appropriate screwed couplers, bushes and shakeproof washers, or flanged couplings.

081 Connect trunking to PVC conduit by "threaded to plain" adaptors with lock nuts, or clip in adaptors.

082 Clean out trunking before cable is drawn in.

083 Ensure the number of cables installed in trunking does not exceed the space factor specified in the IET Regulations.

Conductors

084 Ensure all cables comply with British Cable Association recommendations (or European equivalent).

085 Carefully remove any insulation in making terminations without causing damage to the conductor. Double the wiring to fill the terminations.

086 Take the sheath of PVC sheathed cable inside the outlet boxes or the pattress of ceiling fittings and similar equipment.

087 Securely clamp flexible cords and fit suitable grommets to all terminal boxes.

088 Use cables of the following types and sizes complete with integral earth continuity:

Concealed wiring - copper 2 core and earth PVC 600/1000 volt grade	
Lighting sub-circuits - 1.5mm sq	Dependent upon length of circuit and to comply with the IET Regulations
Boiler circuits - 1.5mm sq	
Ring circuits - 2.5mm sq	
Radial circuits - 2.5mm sq	
Cooker circuit - 10.0mm sq	
Shower circuit - 10.0mm sq	
2/3 Kw Immersion Heater - 2.5mm sq	
3 Kw Water Heater - 2.5mm sq	
Flexible cords and cables - heat resistant insulation 300/500 volt grade	
Lighting - pendant lamp holder	0.75mm sq 2 core heat resistant silicone rubber insulated white circular
Lighting - final internal connection for enclosed tungsten fittings in bathrooms, garages, and for exterior light fittings	0.75mm sq 3 core heat resistant butyl rubber
2/3 Kw Immersion heater	2.5mm sq EP rubber/HOFR sheath or heat resistant PVC flexible cable
3 kw Water heater	2.5mm sq EP rubber/HOFR sheath or heat resistant PVC flexible cable

Lighting Circuits

089 Install wiring by the loop-in system. Ensure there are no joints or connectors in the final-circuit from the consumer distribution unit.

090 Install a maximum of two live pairs and one switch pair at each point. Install the wiring for 2-way switching between switch points. Terminate the earth conductor in each lighting and switch point.

091 Install lighting points and arrange the system such that:
- 2/3 bedroom Properties are provided with two 6 amp circuits; and
- small 1 bedroom Properties are provided with one 6 amp circuit in the consumer distribution unit.

092 Limit the number of points controlled by one 6 amp RCBO way to 10. If an installation has an excess of 20 lighting points then provide three 6 amp RCBO circuit ways.

093 Ensure pendant type cord grip, all insulated lampholders and ceiling roses are white plastic and are complete with 225mm of flexible cable as specified for a standard height ceiling. For non-standard Properties, adjust the length of the flexible cable to give a 2.1 metre (7ft) clearance from the lampholder to the floor. Ensure lampholders are all of the insulated heat resisting pattern fitted with a skirt.

094 Ensure batten type lampholders are insulated white plastic. Fit them where Instructed by the Client. In bathrooms, kitchens, toilets, garages and all damp situations, ensure lampholders are complete with a protective shield.

095 Ensure interior light switches (except in bathrooms) are white plastic, flush fitting, single pole, rocker operated 5 amp AC units, mounted in boxes with adjustable fixing lugs. Gang the switches as required, using a multiple plate cover.

096 Where flush fittings and switches cannot be used, mount single pole rocker operated 5 amp AC surface type switches on matching moulded white plastic boxes.

097 Install light switches at a distance of between 900 and 1100mm above the floor level to the centre of the switch, and at least 150mm from the nearest door frame, unless the Client Instructs otherwise.

098 Ensure light switches in bathrooms are white plastic 5 amp AC surface pattern operated by a non-conductive pull cord and knob and hang between 900 and 1100mm above floor level. Fit them close to the wall and well clear of the door to the room.

099 Support ceiling fittings that are wired and located between joists by wooden bearers of a minimum size of 100x25mm fixed to the joists at both ends of the bearer.

100 Do not provide lamps except where specifically required by the Schedule of Rates.

13 amp ring circuit installation

101 Connect sockets in ring circuits without spurs using cable as specified, with both ends of each circuit terminated in one 32 amp RCBO at the consumer distribution unit.

102 If desired, use spurs from ring circuits to the maximum as specified in the current IET Regulations with due regard to the load or the circuit. Use fused connection units for static items of equipment, provided that not more than one appliance is connected to each ring circuit.

103 Prevent overloading of circuits by providing specified appliances with separate final-circuits.

104 Use junction boxes only with the Approval of the Client.

105 For Properties with a total internal floor area exceeding 100 square metres, provide two ring circuits with appropriately equal numbers of sockets or fused connection units connected to each ring. Ensure each one ring circuit serves only one storey.

106 Locate sockets and fused connector boxes in the same positions as those existing. Ensure they are 13 amp 3 pin white flush pattern. Gang sockets as required, with a multiple plate cover.

107 Use surface pattern sockets protected with a RCBO device in garages, and elsewhere on fair face brickwork.

108 Ensure sockets have switches unless otherwise specified.

109 Ensure the positions of sockets relative to the floor level are as follows:

Location	Dimensions for socket outlets to floor level
Garages, laundry areas	400mm - 1000mm
General living areas, hall, landings, etc.	400mm - 1000mm
Elderly persons' Properties	400mm - 1000mm
Bedrooms (except elderly persons' Properties)	400mm - 1000mm
Kitchens (preferred dimension from bottom of outlet to worktop)	150mm

110 In kitchens, where necessary, increase the above dimensions to ensure a satisfactory match with the layout of the wall tiles. Agree the exact position of sockets with the Client before installation to ensure a satisfactory position in relation to storage cupboards and shelves, etc.

111 Recess socket boxes into the walls to just below plaster level and provide them with adjustable fixing lugs.

Cooker circuit

112 For cooker circuits, provide one final-circuit connected to one 40 amp RCBO at the consumer distribution unit using cable as specified.

113 Locate a flush fitting, white plastic cooker control unit with a 45 amp DP main cooker control switch, 13 amp switch socket outlet and the cooker control switch complete with neon indicator, horizontally within 150-1200mm maximum from the edge of the cooker spaces Instructed by the Client. Ensure the dimension from the top of the unit to the floor is 1400mm and from the side of the cooker to the centre line of the unit is 150mm.

114 Ensure a cooker control unit that is located between storage cupboards or shelves and working top surfaces exactly matches the layout of the wall tiles and the centre line of the unit lines up exactly with the centre line of any local sockets.

115 Connect the cooker circuit in the cooker control unit. Extend it to terminate in a cooker cable connector outlet mounted 450mm above the finished floor level and immediately adjacent to the cooker. Terminate the cooker wiring at the cooker connector outlet box where no electric cooker is provided. Connect the cooker if the Customer has one.

Immersion heaters

116 For heater circuits, provide one final sub-circuit connected to one 16 amp RCBO at the consumer distribution unit using cable as specified.

117 Provide for the heater to be controlled by a heating boost switch to BS EN 60669-1 or BS EN 60730-1 located above the worktop in the kitchen with a flex outlet plate located adjacent to the hot water cylinder in the hot press.

118 Use flush fitting units where switches are located outside the hot press. Where flex outlets are located inside the hot press, use either surface or flush fitted units.

119 Terminate the circuit adjacent to the heater using suitable cable and a flex outlet plate. Make the final connection with heat resistant flexible cable as specified and run so as to prevent the hanging of clothes, etc., on the cable. When control switches are remote from the heaters, provide an appropriate means of isolation.

120 When the supply cable is exposed within a hot press, protect cables with mini-trunking as specified.

Showers

121 For shower circuit, provide one final sub-circuit connected to one 40amp RCBO at the consumer distribution unit using cable as specified. Provide for the shower to be controlled as near as practicable to the shower unit, by either a white 20amp AC, DP neon indicating pull switch with pull card if located in bathroom, and by a white 20amp AC DP neon indicating switch labelled "shower".

122 New showers are to ne 8.7KW electric shower unit to BS EN 60335-2, BEAB, BEAB CARE, RNIB, CE marked and WRAS approved complete with installation set maximum temperature control, phased shut down, low pressure indicator, installation set timer setting, including plugging walls as necessary, connect to water and electrical supplies including provision of shower circuit including mini-trunking or rigid PVC conduit chased to walls etc., incorporating RCBO protection, controlled with 20A DP switch with neon light or indicator flag, all adjustments to pipework, adjust electrical supply as necessary, fill, test, and undertake tests, provide certificate, and remove all waste.

Showers are to be supplied with fixed sliding rail, twist and lock shower head mechanism, shower hose with adjustable shower head outlet and soap dish

Smoke Detectors

123 Smoke alarms must be approved by the Client and must be installed to BS 5839: -6 and must be of the mains powered type. The mains power must be supplied from an independent circuit of the distribution board and protected by a suitably rated RBCO breaker. The Service Provider must provide the necessary wiring for interconnection of the units. Installation must be strictly as specified by the manufacturer. One set of instructions must be left on site for Customer's use.

124 Additionally, the installation must comply with the following regulations: BS 5839-6:2013

125 Detectors must be mains operated with either battery or capacitor back up.

126 In premises of two levels, an optical detectior is required in each of the circulation spaces and the main habitable room. Manufacturer's technical data sheet requirements must be strictly adhered to.

127 Wiring must be in PVC twin and earth cable looped from an independent circuit at the distribution board.

128 Interconnection must be made using PVC triple and earth cable between the two detectors, using the third core for interconnection, such that in the event of either surrounding the other must also sound.

Installation control and distribution

129 Install, test and commission the electrical work in accordance with the IET Requirements for Electrical Installation ensuring compliance with design and performance, to provide a safe, well insulated, earth protected system capable of supplying the anticipared maximum demand.

130 Ensure the consumer equipment consists of a non-combustible consumer unit with lid complying with the IET Regulations complete with:
- main control switch to BS EN 61439-3:2012;
- sufficient RCBO's to accommodate all the sub-circuits scheduled for the Property;
- a minimum of one spare way; and
- a RCCD to the power, cooker, immersion and shower circuits.

131 Ensure sufficient space is available for the Utility Provider's metering and service cutouts. If required, provide a panel which satisfies the requirements of the Utility Provider for mounting meters, cutout and other equipment.

132 Supply and install PVC connection tails to the Utility Provider's point of supply, using correct coding and matching the cross sectional area to the main isolating switch rating.

133 Upgrade all earthing and bonding to conform to the IET Regulations. Do not use metal trunking as an earthing conductor.

134 Meter tails are to be neatly fixed and clipped as specified.

135 Provide all equipment white in colour.

136 Clearly identify each way on distribution equipment.

137 Ensure the mounting height of equipment is such that persons of average height can reach all fuses, switchgear, etc., from floor level without assistance.

138 Conceal cables above the ceilings and maintain access to the cable runs.

139 Enclose cables run in cupboards in mini-trunking.

140 Before and on starting the Works, obtain Approval from the Client to the proposed routes of cable runs and wiring circuits.

141 Agree any alterations to the agreed routes of wiring circuits with the Client before starting the Works on them.

142 If Works are carried out before having agreed the routes with the Client, return and reroute and rewire cable runs and circuits where Instructed by the Client.

Standardisation of components

143 Use matching components with all lighting switches, sockets, fused spurs and similar equipment used in the Works, being from the same manufacturer.

Customer's fittings

144 Refix any existing fittings installed by the Customer, provided the fitting conforms to the IET Regulations.

145 Notify the Client of any Customer's fitting which does not meet the IET Regulations and which will therefore not be rewired or reconnected.

Removal of floor boarding, etc

146 Carefully remove any floor boarding necessary for the installation of cables. Saw through the tongues only and replace the boards in a workmanlike manner. Joists to be drilled only for the installation of cables. Ensure any new floor boarding is identical in width and thickness. Remove all debris from the joist and roof spaces.

147 Make good all plaster disturbed by the removal of fittings to a true and level surface.

148 Do not disfigure timber frames and mouldings by sawing or chiselling out for the insertion of cables.

149 Where the removal of mouldings, etc. is necessary, ensure the replacement is carried out by a qualified tradesman and that the replacement surface matches the existing surface.

Existing roof insulation

150 Where the roof insulation must be moved for the electrical installation, carefully move it to one side. On completion of the electrical Works carefully replace it to its original position. Take care to cover lengths of cable with insulating material to ensure the current rating of the cable(s) is not unduly altered.

Removal of old cables and fittings

151 Remove old cables and redundant switches, sockets, clips, boxes, etc. from roof spaces, exposed walls and other noticeable places and make good any disturbed surfaces.

COMPLETION

Inspection and testing

152 Ensure that on completion and before being energised, any installation is tested in accordance with the IET Regulations current at the time the Works are undertaken.

153 Give not less than 24 hours notice to the Client before commencing the testing.

154 After satisfactory completion of tests, submit copies of all inspection and completion certificates, with all associated schedules and test results if applicable, to the Client.

155 Note the testing instrument serial numbers on the test certificates.

156 All charges for testing or re-testing must be borne by the Service Provider.

157 The Service Provider must provide all the test instruments and test equipment required, make all arrangements for connections of the mains supply and issue to local authority supply company all appropriate test notices.

158 The Service Provider must affix to the distribution board a notice in accordance with the IET Regulations.

Report and certificates

159 Ensure all inspections, reports and test certificates and forms are the current version at the time of the test and are in the standard format published by IET, the National Inspection Council for Electrical Installation Contracting (NICEIC), the Electrical Contractors' Association (ECA) or other certifying and testing body Approved by the Client.

160 For minor Works or alterations to an electrical installation which involve a change or modification to an existing single circuit, provide a certificate for Minor Electrical Installation Works.

161 Issue an Electrical Installation Completion Certificate for Major Works or alterations to electrical installations which involve:
- a change or modification to two or more existing circuits;
- the addition of one or more new circuits to an existing installation; or
- a new installation.

162 Provide an electrical installations condition report when specifically Instructed by the Client.

Operating Instructions

163 Each consumer unit must be supplied with an operating instruction card which must be mounted adjacent to the unit.

164 The Service Provider must leave with the Customer printed instructions regarding operation of the consumer unit trip switch.

165 The instruction leaflet for the smoke detectors must be left in a safe place either by the electricity meter or consumer unit.

Client's current manufacturers/suppliers/products

166 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

MAINTENANCE OF ELECTRIC HEATING INSTALLATIONS

MAINTENANCE OF ELECTRIC HEATING INSTALLATIONS

General Requirements

001 The Service Provider shall be deemed to have read the whole of this specification together with the Client's requirements' and will be deemed to have included in his Tendered Rates for full compliance.

The Service Provider is required to provide a 24 hour breakdown service 365 days per annum.

Asset Register

002 The Service Provider must ensure that all the asset registers supplied by the Client prior to the commencement of the Contract are verified during the first 12 months of the contract period and any discrepancies made known, in writing, to the Client.

003 At the commencement of the Contract, a set of services drawings may be issued to the Service Provider who shall ensure that, during each maintenance service element, the respective drawing shall be marked up by him to indicate the actual installed services. At the completion of each element the marked-up drawings shall be returned to the Client.

Maintenance Reports

004 The Service Provider shall ensure that, following all inspection visits, conditional reports shall be submitted to the Client in electronic format, including all specialist reports and test equipment printouts.

005 The Service Provider shall provide to the Client copies of the site risk assessment, method statement and COSHH assessments issued to the Service Provider's Staff and to his specialist sub-Service Providers.

Manufacturer's Requirements

006 Where manufacturer's instructions exceed the requirements of this document they shall be adhered to in their entirety.

Permit to Work Certification

007 If it is deemed necessary by the Client for the need for a permit to be issued before any work is undertaken on the installation, the Service Provider shall ensure his compliance with the permit to work system as employed by the Client.

Access

008 The Service Provider shall ensure that he undertakes a risk assessment and provides a method statement for his means of access to allow for inspection and testing.

009 All works shall be carried out in strict accordance with the requirements of "The Work at Height Regulations 2005".

010 The Service Provider shall ensure that all personnel employed upon this contract are suitable trained and experienced and competent to work at height.

Minor Repairs

011 The Service Provider shall, during testing, carry out minor repairs such as tightening joints, replacement of clips, etc to achieve a pass status and make appliances safe to ensure compliance with the Client's requirements.

Periodic Inspections and Testing

012 Inspection and testing of storage and convector heater installations must unless otherwise instructed by the Client be carried out in accordance with the requirements tabled below;

Routine and Responsive Maintenance

013 The Service Provider shall provide a 24-hour, 365 days per year (366 for a leap year) responsive maintenance service for the period of the Service to allow for breakdown or malfunction of any appliance, or installation and the replacement of any defective or missing components or installation parts previously specified. This service is to ensure that the appliances and installations are left in a safe and fully operational condition. The details of any repair are to be noted by the engineer for registering on the Service Provider's database (as provided by the Client).

014 All works in connection with the installations to be arranged by the Service Provider.

015 For breakdowns the Service Provider is expected to complete 80% of such repairs at first fix or as a minimum within one day and 100% within two days. The aim of this requirement is to minimise any disruption to the customer relating to use of water/space heating facilities.

016 Where the above is not achievable with parts being unavailable from impressed or local stockist the Service Provider is to immediately notify the Customer / Client and provide time scales for completion of the works where replacement parts are required.

017 On receipt of a request being made by the Client/ Customer the Service Provider shall comply with the following:-

a) EMERGENCY CALLOUT ATTENDANCE WILL MEAN THE FOLLOWING:

Emergency call out to be responded to immediately and no later than 2 hours and completed or made safe within 4 hours.

Breakdown repairs are to be completed within the stipulated attendance timescales, with every effort being made to complete on a first call, first fix basis, where this cannot be achieved the timescales as mentioned above will apply.

b) URGENT CALLOUT ATTENDANCE WILL MEAN THE FOLLOWING:

Urgent Call Out To be responded to immediately and no later than 24 hours and completed within 48 hours.

c) Ensure that each engineer is equipped with an adequate impressed van stock of parts to deal with most eventualities. A comprehensive stock of impressed spare parts, shall also be kept at the Service Provider's control point and store to enable items such as cylinders and where applicable immersion heaters to be replaced immediately.

d) If rectification of the fault is not possible at the time of attendance the fault must be rectified within the previously stated time scales.

In the event of rectification not being considered possible as aforesaid, the Service Provider shall immediately notify the Client and the property occupier giving the reasons as to why, and inform the Client and the property occupier when the repair will be completed. The Client must satisfy himself that suitable alternative temporary arrangement for hot water and heating are in place.

Notwithstanding the generality of the Service Provider's obligations hereunder, the expression "component part" shall include the parts listed elsewhere hereof and any other specialist controls associated with a particular installation.

e) Ensure that the Customer is kept informed of the situation at all times.

f) Upon completion of a breakdown, the satisfaction card is to be left with each Customer, the approved work document is to be duly completed and a copy of such is to be sent to the Client.

g) In addition to the requirements detailed previously the Service Provider shall also allow to provide the following Services, which shall be included for within the rate per appliance:

1. Advise on efficient and correct use of appliance and installations.
2. Instruct new and existing Customers on the operation of appliances and installations.
3. Resetting of controls for any reason.
4. All calls where a Customer maintains an appliance or installation is faulty, even if no such fault is found to exist.
5. All calls where the fault reported is due to controls being incorrectly set.
6. Repairs due to customer damage

h) The breakdown element of the works shall be priced in accordance with the schedules shown elsewhere in this document and shall be inserted in The Price Framework.

i) The Service Provider is to provide on a daily basis a breakdown status report on each site visited.

018 Before attending a breakdown the Service Provider should contact the Customer/occupier to ascertain where reasonably possible as to the authenticity of the call to establish if the malfunction is due to Customer/occupier error such as installation/control adjustments or electricity failure.

Client's current manufacturers/suppliers/products

019 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	**Brand name**	**Manufacturer's details**

[complete table as appropriate]

Storage Heaters

Item No.	Item	Frequency	Action	Notes
1.	**General**	5 Yearly	All storage heaters shall be inspected, tested and maintained in strict accordance with the manufacturer's recommendations and requirements	On older models be vigilant for the presence of asbestos. Report suspect appliances.
2.	**Cases**	5 Yearly	Examine fixings. Examine general mechanical condition of cases and cabinets. Tighten screws and fixings as necessary. Clean cases and cabinets. Remove all fluff, dust and dirt from interior and exterior, including fans, grilles and ducts. Examine the location of the storage heater to ensure that it does not present a fire risk.	
3.	**Fans**	5 Yearly	Clean and examine fans, motors and bearings. Examine filters, clean or renew as necessary. Examine fan housings and ductwork. Test performance.	
4.	**Elements**	5 Yearly	Examine connections. Examine terminals for oxidisation, corrosion and tightness. Clean and tighten as necessary. Test insulation resistance. Test element resistance.	Note the condition of the thermal blocks, report to the Client any signs of deterioration.
5.	**Controls**	5 Yearly	Clean and examine controls, control switches and pilot lights. Examine time switches. Examine over-ride controls. Examine thermostats, test calibration. Examine terminal connections. Examine condition of wiring.	Discuss operational effectiveness with user to determine control settings. Comment upon location of external thermostats.
6.	**Meters & Electricity Supply**	5 Yearly	Examine meters at supply position. Ensure time clocks are correct and supply charge to storage heaters during 'off peack' periods.	
7.	**Electrical Installation**	5 Yearly	Examine flexible cables for wear, fraying braid and brittle insulation. Examine connections. Examine fused connection unit to electrical installation. Check fuse rating. Test insulation resistance. Examine earthing arrangements and test continuity.	

Fan Convectors

Item No.	Item	Frequency	Action	Notes
1.	**Visual Inspection**	**5 Yearly**	Visually examine each heater, replace missing fixings, if cabinet damaged report condition. Check operation of local isolation switch and indicator lights – switch off.	Report defects to Client. Report any findings of Asbestos Cement type boarding within heater cabinets or forming ducts through walls to Client.
2.	**Cleaning**	5 Yearly	Remove access panels, expose Heater Battery and Fan Assembly. Vacuum clean heater interior. Remove filter (if fitted) and clean thoroughly. Clean out heater battery and fan assembly using high pressure airline and vacuum collection. Ensure fins are correctly aligned.	Report defects to Client. Report if not fitted or faulty to Client.
3.	**Electrical Inspection and Testing, General**	**5 Yearly**	Examine all internal wiring and test insulation. Check and test earth connections. Ensure all fuses are correctly rated. Check operation of in-built room thermostat/change speed thermostat. Check operation of low temperature cut out thermostat.	Record readings and report defects to Client.
4.	**Electrical Inspection and Testing, Motors**	**5 Yearly**	Lubricate fan bearings to manufacturer's recommendations. Examine and test insulation to all motors and test earth continuity to the motor casings.	Report defects to Client. Record readings
5.	**Mechanical Inspection**	5 Yearly	Check operation of isolating lockshield valves on heater battery.	

SPECIFICATION FOR SMOKE, HEAT AND CARBON MONOXIDE DETECTORS

SPECIFICATION FOR OPTICAL SMOKE ALARM TECHNICAL SPECIFICATION

The Optical Smoke Alarm shall have the following features:

- The Smoke Alarm shall carry the BSI Kitemark to indicate type testing to BS EN14604: 2005. It will meet the requirements of Grade D (and exceed the requirements of Grades E and F) as defined in BS 5839: Pt.6: 2004. It carries the CE mark to indicate conformance to Low Voltage and Electromagnetic Compatibility Directives.
- The alarm shall have an optical (photoelectric) sensor with large volume chamber and large high sensitivity photodiode. The sensor chamber shall have an insect resistant fine mesh screen with holes less than 0.030 inches.
- The alarm shall operate on a 230V AC Mains Power Supply with built-in tamper proof Rechargeable Vanadium Pentoxide Lithium standby cells, capable of lasting at least 10 years and powering the alarm initially for at least 6 months in the event of mains power failure.
- The Lithium cell manufacturer shall endorse a minimum 10 year life expectation for the rechargeable cells.
- The alarm shall be supplied with a built-in surface mounting plate, with integral terminal block and cable cover and incorporate a foam gasket fitted to the mounting plate to prevent dust ingress into the unit. The alarm shall connect to the mains and interconnect/control connections automatically as it slides on to the mounting plate. The alarm shall disconnect from the mains and interconnect/control connections as it slides off the mounting plate, without the need for a lead and connector.
- All mains wiring shall be covered by a cable cover so that the mains cable is not visible when the Smoke Alarm is removed from the ceiling, obviating the need for a ceiling pattress or dry lining box.
- The alarm shall have a built-in sounder giving a minimum sound output of 85dB(A) at 3 metres. The diameter of the piezo disc in the sounder shall measure 35mm and have wire contacts soldered directly on to the piezo disc.
- There shall be an interconnection capability so that if one alarm sounds all interconnected alarms sound.
- A remote test facility via a separate Remote Control Switch shall be available to test circuitry, sensor and horn (red LED shall flash rapidly) and to activate all interconnected alarms in the system. The Remote Control Switch shall also have a remote 'Locate' facility (to audibly identify the source of an alarm signal when the system is sounding). All units except the alarm that has triggered and sent out the interconnect signal shall be silenced when this switch is activated. The Remote Control Switch shall also have a 'Silence' facility for false alarm control. Pressing and resetting the 'Silence' switch shall silence nuisance alarms. A red LED on the alarm cover shall flash every 10 seconds to indicate that alarm is in 'Hush' mode and automatically reset in approximately 10 minutes.
- The alarm shall have an automatic self-test feature which tests the chamber every 40 seconds and the unit bleeps (without red LED flash) if it is degraded.
- The alarm shall be provided with a manual integral test/hush button to test circuitry, sensor and horn and activate all interconnected alarms in the system. This button shall also operate a 'Hush' feature to silence nuisance alarms. A red LED shall flash every 10 seconds to indicate that alarm is in 'hush' mode and shall automatically reset after approximately 10 minutes.
- The alarm shall have a separate green LED mains indicator light to confirm integrity of mains power supply.
- The alarm shall have a separate red LED which will flash every 40 seconds to indicate full auto test of circuitry and the rechargeable cells. The red LED shall flash rapidly in alarm condition and flash once every ten seconds whilst the unit is in a de-sensitive (hush) condition.
- The alarm shall have an RF (Radio Frequency) wireless interconnect capability when used with an RF base. In this case other RF products can be connected.
- Control via an optional wall-mounted Hardwired or RF Remote Control Switch shall also be available.
- The alarm shall have a low power cell-warning signal, which must operate with or without mains power present.
- The alarm shall be provided with an anti-tamper locking device to prevent unauthorised removal of the alarm without the use of a tool.
- The alarm shall be supplied with a dust cover fitted to protect it from contamination during installation.
- The alarm shall be supplied with two separate sets of instructions - one for the installer and one for the user.
- The alarm shall have a 5 Year guarantee.

HEAT ALARM TECHNICAL SPECIFICATION

The Heat Alarm shall have the following features:

- The Heat Alarm shall carry the BSI Kitemark to indicate type testing to BS 5446: Pt.2:2003 for a Class A1 device. It shall be CE marked to indicate conformance to BS EN 60065:1994 Low Voltage, and BS EN 50081-1:1992 and BS EN 50082-1:1992 Electromagnetic Compatibility Directives.
- The alarm shall be of the fixed temperature thermistor type, temperature range 54^0C to 62^0C (129^0F - 144^0F).
- The alarm shall operate on a 230V AC Mains Power Supply and have built-in tamper proof Rechargeable standby cells, capable of lasting at least 10 years and powering the alarm initially for at least 6 months in the event of mains power failure.
- The rechargeable cell manufacturer shall endorse a minimum 10 year life expectation for the rechargeable cells.
- The alarm shall be supplied with a built-in surface mounting plate, with integral terminal block and cable cover and incorporate a foam gasket fitted to the mounting plate to prevent dust ingress into the unit. The alarm shall connect to the mains and interconnect/control connections automatically as it slides on to the mounting plate. The alarm shall disconnect from the mains and interconnect/control connections as it slides off the mounting plate, without the need for a lead and connector.
- All mains wiring shall be covered by a cable cover so that the mains cable is not visible when the alarm is removed from the ceiling, obviating the need for a ceiling pattress or dry lining box.
- The alarm shall have a built-in sounder giving a minimum sound output of 85dB(A) at 3 metres. The diameter of the piezo disc in the sounder shall measure 35mm and have wire contacts soldered directly on to the piezo disc.
- There shall be an interconnection capability so that if one alarm sounds all interconnected alarms sound.
- A remote test facility via a separate Remote Control Switch shall be available to test circuitry, sensor and horn (red LED shall flash rapidly) and to activate all interconnected alarms in the system. The Remote Control Switch shall also have a remote 'Locate' facility (to audibly identify the source of an alarm signal when the system is sounding). All units except the alarm that has triggered and sent out the interconnect signal shall be silenced when this switch is activated. The Remote Control Switch shall also have a 'Silence' facility for false alarm control. Pressing and resetting the 'Silence' switch shall silence nuisance alarms. A red LED on the alarm cover shall flash every 10 seconds to indicate that alarm is in 'Hush' mode and automatically reset in approximately 10 minutes.
- The alarm shall be provided with a manual integral test/hush button to test circuitry, sensor and horn and activate all interconnected alarms in the system. This button shall also operate a 'Hush' feature to silence nuisance alarms. A red LED shall flash every 10 seconds to indicate that alarm is in 'hush' mode and shall automatically reset after approximately 10 minutes.
- The alarm shall have a separate green LED mains indicator light to confirm integrity of mains power supply.
- The alarm shall have a separate red LED which shall flash every 40 seconds to indicate full auto test of circuitry and the rechargeable cells. The red LED shall flash rapidly in alarm condition and flash once every ten seconds whilst the unit is in a de-sensitive (hush) condition.
- The alarm shall have an RF (Radio Frequency) wireless interconnect capability when used with an RF base. In this case other RF products can be connected.
- Control via an optional wall-mounted Hardwired or RF Remote Control Switch shall also be available.
- The alarm shall have a low power cell-warning signal, which must operate with or without mains power present.
- The alarm shall be provided with an anti-tamper locking device to prevent unauthorised removal of the alarm without the use of a tool.
- The alarm shall be supplied with a dust cover fitted to protect it from contamination during installation.
- The alarm shall be supplied with two separate sets of instructions - one for the installer and one for the user.
- The alarm shall have a 5 year guarantee.

MAINS POWERED CARBON MONOXIDE (CO) ALARM

The Mains Powered Carbon Monoxide Alarm shall have the following features:

- The CO Alarm shall carry the BSI Kitemark to indicate type testing to BS EN 50291:2001. It shall be CE marked to indicate conformance to Low Voltage and Electromagnetic Compatibility Directives.
- The alarm shall have a new generation electrochemical cell type carbon monoxide sensor which checks CO level every 70 seconds. Each unit shall be calibrated and tested in CO gas to ensure accuracy. The sensor module should plug into base of unit and should be replaced after 5 years. The amber 'Fault' light should flash once every 40 seconds (without a beep) to indicate the sensor should be replaced. Replacement sensor modules shall be readily available at modest cost. It shall not require an electrician to change the sensor.
- The alarm shall have a high level of selectivity - no false alarms when exposed to the following interference gases for 2 hours: (as per UL2034sec.38) Methane 500ppm, Butane 300ppm, Heptane 500ppm, Ethyl Acetate 200ppm, Isopropyl Alcohol 200ppm and Carbon Dioxide 1000ppm.
- The alarm shall be 220 – 240V AC, 50 Hz mains powered. Power consumption shall be: 1 Watt, 60mA. The alarm shall be supplied complete with sealed-in tamper proof Panasonic Rechargeable Vanadium Pentoxide Lithium standby cells, designed to last at least 10 years without the need for replacement and can power the unit for a minimum 30 days in the event of mains failure. The rechargeable cells shall be monitored and if they start to be depleted (i.e. with mains off) or if they become defective the unit should beep every 40 seconds. The cell manufacturer shall endorse a minimum 10 yr life expectation for the rechargeable cells.
- The alarm shall be supplied with a surface mounting plate, with integral terminal block, cable cover and incorporate a foam gasket fitted to the mounting plate to prevent dust ingress into the unit. The terminal block shall be permanently fitted to the mounting plate. The built-in rechargeable cells shall connect as the alarm is slid on to the mounting plate. There shall be an option for conduit (up to 25 x 16mm) to be attached to the top or bottom of the unit for surface wiring. The unit shall be able to be ceiling or wall mounted.
- The alarm shall have a hard-wire interconnect capability such that if one alarm sounds all interconnected alarms sound. Additionally, an RF interconnect option shall be available when used with an Interface Module.
- A remote test facility via a separate Remote Control Switch shall be available to test circuitry, sensor and horn (red LED shall flash rapidly) and to activate all interconnected alarms in the system. The Remote Control Switch shall also have a remote 'Locate' facility (to audibly identify the source of an alarm signal when the system is sounding. All units except the alarm that has triggered and sent out the interconnect signal shall be silenced when this switch is activated. The Remote Control Switch shall also have a 'Silence' facility for false alarm control. Pressing and resetting the 'Silence' switch shall silence nuisance alarms. A red LED on the alarm cover shall flash every 10 seconds to indicate that alarm is in 'Hush' mode and automatically reset in approximately 10 minutes.
- On first power up the Red and Amber LED's shall flash once; after 2 minutes settling, the unit shall operate normally.
- The alarm shall have a green LED indicator light that confirms integrity of mains power supply.
- The alarm shall have low and high level indicators - red LED indicator light shall flash every 2 seconds at 50ppm CO (sounder operate within 60-90 mins); flash twice every second at 100ppm CO (sounder operate within 10-40 mins); flash 4 times per second at 350ppm CO (sounder operate within 3 minutes)
- The alarm shall have a fault indicator - amber LED flash and horn beep every 40 seconds if a fault is detected.
- The alarm shall have a manual test/hush button - test button to test circuitry and horn. Pressing and releasing the test button when the unit is sensing CO shall silence the alarm for 4 minutes. It must only silence once until the gas clears. At 300ppm CO the unit shall not silence due to the increased danger.
- The alarm shall have a quick CO Gas Test to reduce the time for testing with CO from at least 4 - 5 minutes to less than 10 seconds.
- The alarm shall have a memory feature - pressing test button must record if CO has been detected during a period of absence: red LED off – no CO recorded; red LED flashes twice (every 40 seconds) – 50ppm CO recorded; red LED flashes 4 times (every 40 seconds) –100ppm; red LED flashes 8 times (every 40 seconds) - 300ppm CO recorded. Pressing the test button for 20 seconds must reset the memory.

- The alarm shall have a built in sounder to give a minimum output of 85dB(A) at 3 metres. The sound output shall be modulated - 3 rapid pulses followed by a 1½ second pause, repeated until reset. This easily differentiates it from a typical smoke alarm.
- The alarm shall have an automatic reset facility of alarm test when button is released and after an alarm state when CO gas clears.
- The alarm shall have a tamper resistant cover, which cannot be removed from mounting plate without releasing catch with a small screwdriver. There shall be an optional locking screw that can be screwed into the side to prevent removal. The rechargeable cells must not be suitable for use with other products and must be soldered on to the circuit board.
- The alarm shall have an operating temperature range: -10°C to +40°C (14°F - 104°F). 15% to 95% relative humidity (non-condensing).
- The alarm shall have a 5 Year Guarantee.

Client's current manufacturers/suppliers/products

Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

MAINTENANCE TO MICRO-GENERATION APPLIANCES

GENERAL

GENERAL

Applicability

001 This initial general section applies to all subsequent sections of this Specification of Workmanship and Materials **("this Specification")**.

002 This Specification is drafted as a series of instructions that the Service Provider must ensure are complied with in relation to the Works. Each instruction includes all tasks necessary to comply fully with the instruction and the Schedule of Rates item(s) to which it relates.

003 The Schedule of Rates payments, as adjusted by the Service Provider's tendered Rates, include for carrying out all tasks required by this Specification. No further payment is due to the Service Provider in respect of any such tasks beyond the payments provided for in the Schedule of Rates.

004 Specifications across a number of trades may be relevant to each Schedule of Rates item. The Service Provider must comply with all requirements of this Specification applicable to the specific type of Works to be undertaken.

005 References to Paragraphs and Sections in this Specification are to the applicable Paragraph and Section of this Specification.

Standards of workmanship and Materials

006 Carry out and complete all Works:
- in accordance with Good Industry Practice;
- in accordance with the Client's Policies;
- in accordance with any specific requirements for those Works in this Specification; and
- to the satisfaction of the Client's Representative (acting reasonably).

007 To the extent that the standard of any Works has not been specified in this Contract, agree the relevant standard for the Works with the Client's Representative before their execution. Where particular Works or working methods are to be "Approved by" "Agreed with" or are indicated to be "subject to the Approval of" the Client's Representative, give the Client's Representative adequate notice when such Approval or Agreement is needed and retain evidence of all Approvals given, and items that have been Agreed, by the Client's Representative.

008 To the extent that it is necessary to design any aspect of the Works, in preparing those Designs use the reasonable skill and care to be expected of an experienced maintenance Service Provider that is skilled in undertaking works similar to the Works.

009 Maintain all existing lines and levels at all times and carry through new work to the same lines and levels unless otherwise instructed by the Client's Representative.

European and British Standards & Codes of Practice

010 Ensure all Works undertaken and all Materials used in those Works comply with all applicable European and British Standards and Codes of Practice that are current at the time of their use.

011 References in this Specification of Workmanship and Materials to any European and British Standard or Code of Practice are to be construed as references to the version current at the time the Order is undertaken.

012 Where a specific European and British Standard or a Code of Practice is referred to, this sets out the minimum acceptable standard of Materials or workmanship.

Materials

013 The Client wishes to standardise the use of Materials across its Properties. This is in order to simplify parts requirements and van stock loads, to improve its repairs processes and to reduce maintenance costs. Wherever possible, match all Materials used to materials currently used in the Properties, particularly in terms of their parts requirements and repair procedures. In this Specification the Client has set out details of its current Materials to which the Service Provider is required to standardise.

014 Where this Specification indicates that Materials are to be "Approved by the Client's Representative", provide samples of the proposed Materials to the Client's Representative for Approval. Any Materials that comply with the functionality and compatibility (including aesthetic compatibility) requirements of this Specification may be proposed. No further Approval is required for any Materials listed in this Specification as being the Client's currently used Materials. The purpose of the Client's Representative's decision on the use and Approval of such Materials is to ensure that they meet the Client's requirements for functionality and compatibility. The decision of the Client's Representative on this is final.

015 Where this Specification requires Materials to be matched to existing Materials or finishes, this match is subject to the Approval of the Client's Representative.

016 Do not use any Prohibited Materials in carrying out the Works. Prohibited Materials are those Materials which are generally accepted or (having regard to Good Industry Practice) are reasonably suspected of:
- being harmful in themselves;
- being harmful when used in a particular situation or in combination with other Materials;
- becoming harmful with the passage of time; or
- being damaged by or causing damage to the structure in which they are to be affixed.

017 Materials are to be regarded as harmful if, in the context of their use in the Works (whether alone or in combination with other materials) they:
- are prejudicial to health and safety;
- may pose a threat to the structural stability or the physical integrity of any Property; or
- could materially reduce the normal life expectancy of any part of the Property.

018 Use, fix and apply all Materials strictly in accordance with the manufacturer's recommendations, directions or instructions.

019 Participate in joint initiatives with the Client and other Service Providers to establish supply chain agreements.

020 Where appropriate suggest (economically viable) amendments to this Specification where those amendments may lead to an improvement in environmental performance or sustainability.

021 Provide all information the Client's Representative reasonably requests regarding the environmental impact of the supply and use of any Materials and goods the Service Provider selects for use in the Works.

MICRO-GENERATION HEATING

GENERAL REQUIREMENTS

Immediate Response Service

001 The Service Provider shall maintain an office at a location from which the Works may reasonably be undertaken within the response times required, during normal working hours and out of hours. The Service Provider shall be equipped to receive calls and orders however transmitted (telephone, radio, fax, email) and provide the Client's Representative with a single telephone number that can be published.

Service Provider's Conduct

002 The Client is intent on providing an expeditious, safe and efficient Maintenance and Repair Service to the occupants of its premises and consequently the Service Provider shall do his utmost to promote and enhance the image and reputation of the Client in this respect.

003 The Service Provider shall require his employees and employees of any Sub-contractor engaged upon the Works to be properly and presentably dressed in appropriate uniforms or workwear.

004 The Service Provider shall ensure that his employees and employees of any Sub-contractor shall perform their duties in an orderly and quiet manner as may be reasonable and practicable having regard to the nature of the duties being performed by them.

005 The need to maintain the highest standards of hygiene and courtesy whilst the Service Provider's employees and any Sub-contractor's employees are engaged upon the Works is paramount and in particular consideration must be given to users and occupiers when working in or near occupied premises, the Service Provider shall observe all of these provisions and also ensure that the said employees do not cause a nuisance and or disturbance to users and occupiers when they are working in or near occupied premises.

006 The Client's Representative is empowered by this provision to give written notice to the Service Provider requiring him to remove from the Works forthwith any employee of the Service Provider or employee of any Sub-contractor engaged upon the Works, if he is not satisfied in any way with the respective employee's apparel, conduct, manner, or ability. The Service Provider shall on receipt of such notice comply forthwith and remove the employee from the Client's premises and the employee shall not be employed or engaged upon or in connection with the Works whilst the Contract remains in force.

007 The Client will from time to time poll the occupiers of its premises to obtain their views on the effectiveness of the service provided by the Service Provider and the manner adopted by his employees when discharging their duties. The results of the poll will be taken into account when considering the needs for resourcing future repair and maintenance programmes.

Registered Service Provider

008 The Service Provider shall have and maintain throughout the Contract Period registration with the:-

(a) Microgeneration Certification Scheme (MCS) or such other body as may from time to time be approved by regulation and

(b) National Inspection Council for Electrical Installation Contracting (NICEIC) and/or Electrical Service Providers Association (ECA) or alternatively, the Service Provider may employ a sub-Service Provider, to be approved by the Client's Representative under the Contract, who is registered with the National Inspection Council for Electrical Installation Contracting and/or Electrical Service Providers Association in order to undertake electrical work in connection with the Works.

009 All works shall comply with Part 'J' and 'P' Building Regulations by either obtaining Building Regulation approval or self certification by registered company.

010 In the event that the Service Provider's MCS or NICEIC or ECA registration becomes suspended or withdrawn for whatever reason, the Service Provider shall immediately notify the Client's Representative in writing giving full details of the reasons for such and the proposed or intended action and time-scale for gaining reinstatement of its registration(s). With immediate effect from the date of suspension or withdrawal of its registration(s) and until reinstatement the Service Provider shall, subject to approval of the Client Representative be required to employ on a domestic sub-contract basis a suitable registered Sub-contractor to undertake Works under the Contract.

011 Should the Service Provider be unable within a period of two weeks to engage a suitably registered Sub-contractor which meets the Client Representative's approval and or the period of suspended or withdrawn registration(s) exceeds or is likely to exceed four weeks then, the Client may at its sole discretion terminate the Service Provider's employment under the Contract in writing with immediate effect. Such action on the part of the Client shall constitute a valid termination in accordance with the Contract Conditions.

Existing Systems

012 The Client does not guarantee the condition or composition of fluid within wet systems. The cost of the removal of sediment and/or the re-establishment of the correct water/anti-corrosion fluid (or any other chemical) mix shall be deemed to be included in the **Schedule of Rates**, and/or the Service Provider's tendered **Percentage Adjustment.**

Existing Micro-Generation Installations and Appliances

013 As far as the Client is aware, its existing Micro-Generation Installations and Appliances have been installed and maintained with due regard to both the British Standards and the Regulations:-

Types of micro-generation installed can include;

- Electricity generation technologies;
  - Solar powered or pholvolataic (PV) systems
  - Micro turbines either wind or hydro
- Heat generation technologies
  - Solar thermal hot water
  - Ground source heat pumps
  - Air source heat pumps
  - Bioenergy
- Co-generation technologies
  - Hydrogen energy and fuel cells
  - Combined Heat and Power (CHP)

and the maintenance of which is to be undertaken by Microgeneration Certification Scheme (MCS) accredited engineers in strict accordance with the relevant manufacturer's instructions

014 The Service Provider in carrying out the Works shall have due regard to all the above and shall not do anything which will compromise or degrade the integrity of the Micro-generation Installations and or Appliances.

Reinstatement to be Provided by the Service Provider

015 The Service Provider will be required to cut out any chases in floors, ceilings or walls, remove and refix insulation, floorboards, panels and the like to expose pipework for maintenance, repair, exploratory or investigation purposes and on completion to reinstate affected areas, insulation and surfaces to their original condition.

016 Any exposed work left unattended shall be protected and temporarily covered by the Service Provider at his own cost.

Leaks to Pipes Laid in Floors

017 The Service Provider shall be required to open up the floor of any Property to trace and identify the source of the leak. The Service Provider will drain down the system, remove the defective pipe and/or fittings and carry out the repair using capillary fittings. The system is to be recharged and left standing for 2 hours to test the repair. The Service Provider will make good the floor, in the case of screeded floors these shall be made good with asphalt or cement and grano compacted to completely encase the pipework subsequent to covering the pipework with an approved sleeve or wrapping tape. The floor will be allowed to dry out and the Service Provider will then recommission and put into use the heating system.

018 Alternatively the Service Provider may wish to seek dispensation from the Client's Representative to bypass the defective pipe in the floor or wall with an exposed run of pipe connected into the circuit at expedient points. The Service Provider should not on any account undertake this alternative without first obtaining the CA's approval.

Maintenance and Repair Records

019 On each occasion the Service Provider gains access to a premises for the purpose of carrying out the Works, he shall before leaving the premises, forthwith complete forms appropriate to the type of work undertaken in the form and manner prescribed hereafter.

020 The Service Provider shall at his own cost, provide for each premises a sufficient quantity of forms and notices, for the purposes of recording in ink from time to time, information in respect of the Heating Installations and Heating Appliances. The format and content of the said forms and notices, shall be based upon the models in Appendix to this Specification but in any case, shall be subject to the overriding approval of the Client's Representative and where required by statute, the Health & Safety Executive.

021 The Service Provider shall record upon the forms and notices, general information as follows:-

(1) The address of the premises to which the form applies.
(2) Details of the respective Micro-generation Installations and or Appliances and their location in the premises, clearly indicate any Micro-generation Installations or Appliances which have not previously been contained in the Service Provider's and or Client's records.
(3) Any changes to previously recorded details of Micro-generation Installations and or Appliances.
(4) The name of the firm and the name and signature of the firm's employee who undertook any work, inspection or check and the date and time of the undertaking.

022 In addition, the Service Provider shall record specific information upon the forms and notices as follows:-

Annual Service Log;

023 Details of all work undertaken during the annual inspection and service.

Repairs Log;

024 Details of all work undertaken in response to a request for day to day repairs.

Landlord's Micro-generation Safety Record;

025 Details of the routine annual inspection and service as follows:-

(i) the date on which the appliance was checked;
(ii) the address of the Property at which the appliance is installed;
(iii) the name and address of the Client responsible for the Property (or their agent) at which the appliance is installed;
(iv) a description of and the location of each appliance checked;
(v) any defect identified;
(vi) any remedial action taken;

(vii) confirmation that the routine annual service has included an examination of:-
(a) the effectiveness of any appliance,
(b) the appliances operation pressure and heat input,
(c) the appliances operation so as to ensure its safe functioning and,
(viii) the name and signature of the individual carrying out the annual service and inspection; and
(ix) the registration number with which that individual or his Client is registered, with MCS.

Actions arising from Forms and Notices

026 The forms and notices completed by the Service Provider shall be dealt with and the information thereon, delivered to persons in the form and manner prescribed hereafter:-

The Service Provider shall get the tenant or occupier of the respective premises to endorse their signature upon the forms, to provide evidence that the Service Provider has undertaken an examination of the Client's Micro-generation Installations or Appliances.

The original documents should be delivered to the Client's Representative within **two** working days of the visit;

The Service Provider should retain a copy of the documents for his own records.

A copy only of the Landlord's Micro-generation Safety Record also signed by the individual who undertook the routine annual inspection and service, should be handed to the tenant or occupier.

However, if the tenant or occupier refuses to sign the Landlord's Micro-generation Safety Record or the occupier at the time is a minor, the Service Provider should in each case, deliver the unsigned copy of the said Safety Record signed by the individual who undertook the routine annual inspection and service to the Client's Representative, together with a list of the unsigned documents in the batch of documents.

In the case of the tenant's advice notice issued to the tenant in respect of a Micro-generation Installation or Appliance owned by them or for which they are entirely responsible, copies of the said notices should be delivered to the Client's Representative with the contemporaneous batch of forms.

Service Label

027 The Service Provider shall at his own cost provide a durable heat resisting self-adhesive label of a type to be approved by the Client's Representative. Immediately upon completion of a routine annual inspection and service and or repair to any Micro-generation appliance and or heating system the Service Provider shall enter in ink upon the label information as follows:-

Name of the firm,
Date of the routine annual inspection and service and or repair together with details of work undertaken
The signature of the engineer who undertook the routine annual inspection and service and other works.

028 Upon completion of the entries on the label the Service Provider shall affix the label in a prominent place on or near the appliance subject of the routine inspection and service and or repair.

Repairs Works Order

029 The Service Provider immediately after responding to a repair Works Order issued by the Client's Representative, shall provide electronically the nature of the repair undertaken, the date and time when the repair was executed or provide this data electronically

030 In addition, the Service Provider shall obtain the tenant's signature on the rear of the Works Order to indicate that the heating system and or appliance has been left in working order. The Works Order shall be attached to the respective account submitted by the Service Provider in accordance with the Conditions.

Materials and Components

031 All materials used shall comply with British Standards, current at the time and only approved replacement parts or components shall be fitted when servicing, maintaining or repairing any Micro-generation Installation or Appliance. Wherever possible materials, replacement parts and or components fitted by the Service Provider shall be on a like for like basis but in any case, shall be of comparable quality and finish and be consistent with the performance requirements of the respective systems unless the defective material, part and or component was of an inferior quality to the relative British Standard in which case the material, replacement part and or component provided by the Service Provider will be at least to current British Standards and be consistent with the performance requirements of the respective installation system and be subject to the Client's Representative 's approval. Workmanship shall comply with the current British Standard Codes of Practice.

Annual Servicing

032 The annual inspection and servicing specifications specified hereafter are model requirements only and the Service Provider shall at his own cost and as part of his undertaking in respect of the **Works**, obtain the manufacturer's service and maintenance requirements for the respective **Micro-generation Installations** and **Appliances** and any other information which will enable the Service Provider to identify the full service, maintenance and repair requirements necessary to meet his obligations under the Contract and consequently enable the Client to fulfil its obligations to its tenants and the occupiers of its Property.

Response Maintenance

033 Wherever the Service Provider undertakes any response maintenance on a Micro-generation appliance, he shall immediately thereafter examine:-

(a) the effectiveness of the appliance,

(b) its operating pressure and heat input,

(c) its operation so as to ensure its safe functioning.

Any defects disclosed by the examination should be immediately dealt with by the Service Provider, in accordance with the provisions of this Contract.

Electrical Installations

034 The Service Provider shall as part of the routine annual service and inspection, check and test all electrical installations and fittings associated with the Micro-generation Installations and Appliances covered by this Contract, so as to ensure their safe operation. All remedial work will comply fully with the current edition of the IET Regulations.

All works shall comply with Part 'P' Building Regulations by either obtaining Building Regulation approval or self certification by registered company.

Decorative Casings

035 The Service Provider shall at his own cost carry out repairs to appliances, decorative casings and finishes.

Service/Test Certificate

036 The Service Provider following the successful completion of the routine annual inspection and service shall provide to the Client no later than 7 days after completion of the service a certificate in a form to be agreed with the Client's Representative which must be signed by the Service Providers Agent as defined by Condition 9.1.

037 In respect of Sheltered Accommodation, Hostels, Residential Care Accommodation, Dwellings in Multiple Occupation or similar schemes with Independent Boilers a copy of the Certificate is to be provided for display prominently within the scheme and the Service Provider is to allow within his tendered rates for the provision of a copy of the relevant certificate to each tenancy served by the independent Micro-generation appliance.

038 In respect of Sheltered Accommodation, Hostels, Residential Care Accommodation, Dwellings in Multiple Occupation or similar schemes with Communal Boilers a copy of the certificate is to be provided for display within the communal areas of the scheme and the Service Provider is to allow within his tendered rates for the provision of a copy of the relevant certificate to each tenancy served by the Communal Micro-generation Appliance or Installation.

MATERIALS

Air Source Heat Pump

039 The Client's preference is for an externally mounted air-to-water air source heat pump (ASHP) with an internal heat store. The ASHP should be located near the home, with good air circulation and on a solid concrete base. The system should be MCS and REA approved. Ideally, it should have an inverter-driven heat pump compressor.

040 All ASHP systems should be installed with underfloor heating or suitable oversized radiators to maximise system efficiency.

041 Heating zones should be independently programmable with a central controller to set the heat demands on the system.

042 All systems should have the ability to connect with solar thermal panels to create a full renewable system. External fan units must be designed to protect people from danger and prevent the ability for injury or damage. Protection measures must be agreed with the Client.

043 Heating controls must be simple to understand and use. The system should come with at least a 3 year product and installation warranty.

044 All heating systems require an electronic time programmer with separate control for heating and hot water.

045 The programmer must be capable of running hot water and heating either separately or together, with at least two on/off periods per day.

046 Heating controls must be approved by the Client prior to finalising the heating design.

047 The Service Provider is required to provide a demonstration to the Client's Representative at handover on how to use the heating system.

048 If the heating and hot water system combines a number of LZCTs together or LZCT with gas central heating, for example, solar thermal panels with a gas boiler system, the Client will require the systems to be operated from a single electronic programmer.

049 The entire heating installation must be checked for leaks after the system has been flushed and be pressure tested in accordance with manufacturer's requirements.

050 The system must be filled with water and any trapped air removed. A Gas Safe commissioning certificate must be available at handover. Particular attention is to be paid to commissioning the heating system to ensure that it is installed and set up to perform in accordance with the design.

Solar Photovoltaic Panels

051 The Client's preference is for monocrystalline PV panels with self cleaning glass. The panel, frame and fixings must have MCS and BBA approval.

052 Installations to individual dwellings should be connected to the household electrical system and communal systems should be connected to the communal landlord electrical system.

053 Single phase or three phase GSM enabled Passiv Systems Compatible Elster generation meters should be installed, as appropriate.

054 The panel should have a 25 year manufacturing warranty cover. The frame, fixtures and fittings should have a 5 year product and workmanship warranty. The inverter should have a 5 year warranty cover.

055 The system should meet either G59 or G83 grid compliance criteria. All proposals must be agreed by the Client's Sustainable Development Team.

Solar Thermal Panels

056 The Client's preference is for MCS and Solar Keymark approved evacuated tube ST systems. The system should be a pressurised closed loop system with an appropriate expansion vessel.

057 The hot water cylinder must be a twin coil system with the bottom coil used for ST and the upper coil for the primary hot water circuit. A 3kW electric immersion must be installed.

058 A temperature controller should be installed with sensors in the collector and cylinder to automate the pump.

059 The solar panels must have a 5 year product and installation warranty cover.

Combined Heat and Power Generating Boilers

060 Combined heat and power generating boilers (CHP) must convert over 90% of their fuel into electricity and useful heat.

061 CHP boilers must generate a minimum of 1kw of electricity per hour and a maximum of 24kw of thermal output.

Solid Fuel Biomass and Wood Burning Boilers

062 Solid fuel biomass boilers must use wood pellet fuel from an approved renewable or recycled source.

063 All solid fuel boilers must convert over 90% of their fuel into useful heat.

Client's current manufacturers/suppliers/products

064 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]

MODEL ANNUAL SERVICE REPAIRS AND MAINTENANCE SPECIFICATIONS

SOLAR THERMAL INSTALLATIONS

MODEL ANNUAL SERVICE SPECIFICATION, REPAIRS AND MAINTENANCE PARTICULAR TO ANY SOLAR THERMAL INSTALLATION,

001 The Service Provider shall have and maintain throughout the Contract Period registration with MCS or be a member of a class of persons approved for the time being by regulation.

002 The Service Provider shall undertake routine servicing, maintenance and repairs to solar thermal installations under this specification as follows:-

1) The solar thermal panel or tubes installed on or in roofs
2) The solar hydraulic pump and solar controller
3) Installation pipework
4) Solar hot water cylinders.

003 The Contract will include for the annual inspection and service as described and in accordance with the manufacturer's recommendations, replacement of all defective materials, parts and components and any additional visits, during or outside normal working hours, to maintain the whole installation in good and safe working order.

004 The Service Provider shall be responsible for defining the full nature of the annual inspection and service which together with the day to day response service, repairs and maintenance ordered from time to time by the Client's Representative and defined and undertaken by the Service Provider will ensure the safe operation at all times throughout the currency of the Contract, the Client's solar thermal panels or tubes installation and systems. The routine annual inspection and service shall be carried out in accordance with but not limited to, the recommendations of the manufacturer of the solar thermal panels or tubes installation and systems outlined hereafter.

	Solar Thermal Panels and Tubes General Requirements
1	Check general, condition of solar thermal panels or tubes installed on roof before commencing service.
2	Remove any debris, blown leaves etc that may hinder servicing and operation of solar thermal panel or tubes.
3	Cut off overhanging branches for non Tree preservation Order Trees limiting operation of solar thermal panel or tubes.
4	Clean panels or tubes with iodised water
5	Check operation of solar hydraulic pump, overhaul pump if necessary, clean filters, change hydraulic fluids, adjust
6	Check operation of solar controller, adjust as necessary
7	Check installation pipework and cylinder/storage tank for any leaks
8	Check operation of solar thermal installation and adjust settings on controls, cylinder thermostat etc
9	Affix completed service label adjacent to cylinder.
10	Make good and clear away all debris to approved tip

AIR SOURCE HEAT PUMPS

MODEL ANNUAL SERVICE SPECIFICATION, REPAIRS AND MAINTENANCE PARTICULAR TO ANY AIR SOURCE HEAT PUMPS

001 The Service Provider shall have and maintain throughout the Contract Period registration with MCS or be a member of a class of persons approved for the time being by regulation.

002 The Service Provider shall undertake routine servicing, maintenance and repairs to air source heat pumps under this specification as follows:-

1) The air source heat pump
2) The inverter
3) Installation pipework and radiators
4) Cylinders.

003 The Contract will include for the annual inspection and service as described and in accordance with the manufacturer's recommendations, replacement of all defective materials, parts and components and any additional visits, during or outside normal working hours, to maintain the whole installation in good and safe working order.

004 The Service Provider shall be responsible for defining the full nature of the annual inspection and service which together with the day to day response service, repairs and maintenance ordered from time to time by the Client's Representative and defined and undertaken by the Service Provider will ensure the safe operation at all times throughout the currency of the Contract, the Client's solar thermal panels or tubes installation and systems. The routine annual inspection and service shall be carried out in accordance with but not limited to, the recommendations of the manufacturer of the air source heat pump installation and systems outlined hereafter.

	Air Source Heat Pump General Requirements
1	Check general, condition of air source heat pump before commencing service.
2	Remove any debris, blown leaves etc that may hinder servicing and operation of air source heat pump.
3	Clean external surfaces of air source heat pump unit with iodised water.
4	Check operation of air source pump, overhaul pump if necessary, clean filters, change e filters, adjust
5	Check operation of inverter, adjust as necessary
6	Check installation pipework, radiators and cylinder/storage tank for any leaks
7	Check operation of installation and adjust settings on controls, cylinder thermostat etc
8	Affix completed service label adjacent to cylinder.
9	Make good and clear away all debris to approved tip

GROUND SOURCE HEAT PUMPS

MODEL ANNUAL SERVICE SPECIFICATION, REPAIRS AND MAINTENANCE PARTICULAR TO ANY GROUND SOURCE HEAT PUMPS

001 The Service Provider shall have and maintain throughout the Contract Period registration with MCS or be a member of a class of persons approved for the time being by regulation.

002 The Service Provider shall undertake routine servicing, maintenance and repairs to ground source heat pumps under this specification as follows:-

1) The ground source heat pump
2) The inverter
3) Installation pipework and radiators
4) Cylinders.

003 The Contract will include for the annual inspection and service as described and in accordance with the manufacturer's recommendations, replacement of all defective materials, parts and components and any additional visits, during or outside normal working hours, to maintain the whole installation in good and safe working order.

004 The Service Provider shall be responsible for defining the full nature of the annual inspection and service which together with the day to day response service, repairs and maintenance ordered from time to time by the Client's Representative and defined and undertaken by the Service Provider will ensure the safe operation at all times throughout the currency of the Contract, the Client's solar thermal panels or tubes installation and systems. The routine annual inspection and service shall be carried out in accordance with but not limited to, the recommendations of the manufacturer of the ground source heat pump installation and systems outlined hereafter.

	Ground Source Heat Pump General Requirements
1	Check general, condition of ground source heat pump before commencing service.
2	Remove any debris, blown leaves etc that may hinder servicing and operation of ground source heat pump.
3	Clean external surfaces of ground source heat pump unit with iodised water.
4	Check operation of ground source pump, overhaul pump if necessary, clean filters, change e filters, adjust
5	Check operation of inverter, adjust as necessary
6	Check installation pipework, radiators and cylinder/storage tank for any leaks
7	Check operation of installation and adjust settings on controls, cylinder thermostat etc
8	Affix completed service label adjacent to cylinder.
9	Make good and clear away all debris to approved tip

INJECTED DAMP PROOF COURSES AND FUNGUS/BEETLE ERADICATION

INJECTED DAMP PROOF COURSES AND FUNGUS/BEETLE ERADICATION

GENERAL REQUIREMENTS

Generally

001 Ensure chemical injection damp proof course Works are undertaken by a specialist installer/Sub-contractor Approved by the Client.

002 Ensure fungus/beetle eradication Works are undertaken by specialist installer/Sub-contractor Approved by the Client.

003 Provide a warranty supported by an insurance policy in terms Approved by the Client for chemical injection damp proof course system or fungus/beetle eradication. Hand the policy for each Property to the Client, on completion of the Works to that Property.

004 **Protection of Property**: It is the responsibility of the Service Provider and his specialist installers/SubService Providers to avoid all un-necessary damage to the property and its contents. Particular care should be taken if the house has bitumen or pitch floors and/or damp proof courses, since bitumen could be leached by the solvents present in some damp-proofing fluids.

005 Carpets, vinyl floors, furniture and decorations should be adequately protected from contact with the chemicals. Most of the fluids used can damage plant life and adequate precautions should be taken to prevent spillages in gardens.

006 Before any work is commenced by the damp proof course specialist installer/Sub-contractorit is important that the occupier/owner of the adjoining property should be advised of the proposed work and if possible carry out inspection and record condition of the relevant walls in their dwelling.

WORKMANSHIP

Chemical injection damp proof course

007 BS 6576:2005+A1:2012 deals with the methods of installing chemical damp proof courses.

008 Neatly and fully fill holes which are exposed to view with 1:1:6 cement:lime:sand mortar. Match the mortar to the existing masonry in colour and texture. Inform the Client before starting the Works and obtain Approval of the appearance of the first few holes before completing the remainder.

009 Take effective measures to ventilate and dry out damp building fabric as soon as possible. Allow a minimum of 48 hours to ventilate spirit based formulations and as long as practicable for drying out the fabric. Obtain the Approval of the Client to the methods to be used.

Cutting out Decayed or Infested Timber

010 Cut out the decayed or infested timber along the grain for one metre beyond the last visible sign of attack. Minimise any damage to sound building fabric and ensure adequate propping and shoring.

Repairs to timber internal door frames

011 Form the joint of the new and existing timber by a 45° - 60° splice. For the new timber, use redwood from a source Approved by the Client. Joint the new timber to the existing with galvanised screws or nails or plug and screw it to the wall. Ensure the new timber matches the profile of the existing timber.

Repairs to timber external door and window frames and the cills of timber window frames

012 Form the joint of the new and existing timber by a 45° - 60° splice. For the new timber use a preservative treated redwood from a source Approved by the Client. Dip all cut ends in similar preservative fluid before fixing them in position. Joint the new timber to the existing timber with galvanised screws or nails or plug and screw it to the wall. Ensure the new timber matches the profile of the existing timber.

Replacing structural members

013 From the joint of the new and existing timber by a lapped joint at least twice the depth of the member in length. For the new timber, use a preservative treated whitewood from a source Approved by the Client. Joint the new timber to the existing bolts. Ensure the new timber matches the profile of the existing timber.

Chemicals for treatment

014 Use only chemical formulations Approved under the Health and Safety Executive (HSE) and listed on the HSE website under non-agricultural pesticides.

Dry rot, wet rot and insect infestation

015 Treat dry rot, wet rot and insect infestation in accordance with the relevant British/European Standards.

Disposal of defective timber

016 Dispose of defective timber immediately and safely to a tip approved by a waste regulation authority. Prevent contamination of other parts of the property..

Sterilisation for Fungus Eradication

017 Completely sterilise the surface with approved fungicide by coarse spraying of fluid preparation or direct application by brush with heavy bodied preservative paste. Timber preservatives and biocides must be approved under the Control of Pesticides Regulations (COPR). The approvals procedure is operated by the Health and Safety Executive (HSE) which deals with non-agricultural products. A list of approved products is published and kept up do date on the HSE's website.

Sterilisation for beetle eradication

018 Completely sterilise the surface with approved fungicide/insecticide by coarse spraying/brush application of fluid preparation.

Sterilisation for woodworm

019 Inject an insecticide Approved by the Client into existing woodworm holes.

Irrigation

020 Irrigate walls with a fungicide Approved by the Client. Bore holes in the wall as necessary for the introduction of the liquid.

Plaster to control dampness or after insertion of a new damp proof course or system

021 Arrange for the Client to inspect and Approve the brickwork background before starting any replastering.

022 Apply a plaster after the insertion of a new damp proof course or system consisting of three coats of cement sand backing and gypsum hemihydrate formulated finish with a total plaster thickness in accordance with Good Industry Practice as follows:

- the first coat comprising a cement sand (1:3) scratch coat with an additive Approved by the Client;
- the second coat comprising cement sand (1:3) with no additive mixture, applied whilst the first coat is still green and then ruled to alignment and scratched to form a key; and
- the finishing coat comprising gypsum hemihydrate formulated finish.

023 Alternatively, if the Client so Approves, use a two coat lightweight aggregate plaster with a total plaster thickness of at least 13mm as follows:
- on normal backgrounds:
  - for the first coat: use a renovating plaster scratch coat containing a perlite lightweight aggregate and a waterproofing/salts inhibiting additive; and
  - for the second coat: use a finishing plaster coat containing fine lightweight aggregate; or
- on low suction backgrounds:
  - for the first coat: use a slurry keying aid as recommended by the plaster manufacturer; and
  - immediately follow it by a tight coat of renovating plaster and leave it for a minimum of 36 hours before applying the finishing plaster.

024 For normal two coat systems of a total of 13mm thickness, apply the floating coat in a single application, ruled to alignment and scratched to form a key. If the maximum thickness of the backing coat required exceeds 12mm use a scratch or dubbing out coat to bring out to a level surface. Ensure the coat does not exceed 11mm, is well scratched, and is allowed to dry before the application of the subsequent coat.

Physically Inserted Damp Proof Courses to Existing Walls

025 Carefully cut joint of brickwork, blockwork or masonry to prevent structural damage, install a continuous dalp proof course barrier to rising damp with polyethylene to BS 6515:1984 weighting not less than 1.55kg per m2 to full width of wall and finish, externally to finish flush with face of wall, internally to form a minimum 150mm lap with damp proof membrane.

026 Carefully cut joint of brickwork, blockwork or masonry to prevent structural damage, install a continuous dalp proof course barrier to rising damp with bituminous felt to BS 6398:1983 weighting not less than 0.48kg per m2 to full width of wall and finish, externally to finish flush with face of wall, internally to form a minimum 150mm lap with damp proof membrane.

Mastic asphalt tanking/damp proof membranes

027 Where these are horizontal, apply them as follows:
- base: existing concrete;
- preparation: laid to falls;
- separating layer: none;
- certification: asphalt kitemark certified;
- thickness: at least 20mm; and
- finish: smooth floated.

028 Where these are vertical, apply them as follows:
- base: existing concrete or brickwork;
- preparation: key a vertical surface;
- certification: asphalt kitemark certified;
- thickness: at least 20mm; and
- finish: smooth floated.

General technical requirements

029 Lay each horizontal coat in a single operation to provide a secure, free draining and completely watertight floor.

030 Unless otherwise specified, use ancillary products and accessories recommended by the asphalt manufacturer.

Primer

031 Use a primer recommended by the manufacturer of the material to be bonded. Apply by mopping, brushing or spraying to achieve an even and full cover of the surface. Allow to dry thoroughly before covering.

Bonding compound(s)

032 Unless specified otherwise, use oxidised bitumen of a grade recommended by the manufacturer of the material for the conditions and type of surface. Heat it and lay it at a temperature sufficient to ensure bonding over the whole surface. Do not overheat it.

Preparation of bases - renewing existing asphalt

033 Agree with the Client the extent of the area(s) to be renewed.

034 Remove, renew and waterproof each area on the same day, unless the Client Instructs otherwise.

035 Adequately protect existing and new area(s) of floors against damage during the execution of the Works. Where removal results in accidental damage to existing elements which are to remain, Agree the proposed repair or replacement with the Client.

Keying to concrete

036 Clean off mould oil with detergent. Use Materials recommended for the purpose by the asphalt manufacturer. Either prime the surface with a proprietary bituminous emulsion or apply a proprietary keying mix of cement and slurry incorporating a bonding agent.

Keying to brickwork/blockwork

037 Ensure that all joints are lightly recessed by brushing or other means. Prime the wall surface with a proprietary bitumen and rubber emulsion recommended by the mastic asphalt manufacturer.

Keying to metal

038 Apply a keying primer to all metal pipes, metal lathing, etc.

Asphalt/accessories - suitability of base

039 Before laying asphalt ensure that:

- the horizontal base is to even falls with no areas which will pond;
- the surfaces to be covered are firmly fixed, clean, dry, smooth, free from frost, contaminants, voids and protrusions; and
- all preliminary work including formation of upstands, kerbs, sumps, grooves, chases, expansion joints, etc., and fixing of battens, fillets, anchoring plugs/strips, flashings, outlets, pipesleeves, ventilators, etc., is complete and satisfactory.

Application of asphalt

040 Ensure thorough mixing when remelting and do not heat to more than 230 deg.C.

041 Do not use reheated asphalt.

042 Apply each coat to an even thickness using suitable gauges. Float to a smooth surface free from imperfections and crazing. Apply successive coats without delay and within the same working period.

043 Ensure there is complete fusion of the asphalt at all joints so as to give a continuous watertight membrane. Clean and heat the edges of previously laid coats by poulticing with hot asphalt. Remove and discard the poultice and cut away the edge to remove sand rubbed material before jointing. Lay new asphalt whilst the poulticed surface is still hot. Do not torch.

044 Stagger junctions of bays in successive coats by at least 150mm.

045 Pierce any blows and make good affected areas while the asphalt is still at a working temperature.

046 Form solid fillets in all internal angles, fully fused to the asphalt coating and at least 40mm wide on face and at an angle of approximately 45 degrees to the horizontal.

047 Maintain the full thickness of the asphalt around all external angles.

048 Turn the asphalt into splayed chase at the top edge of skirtings and vertical work. Finish the top surface with a splay to shed water away from the wall, maintaining full thickness.

049 Form watertight joints around all pipes, gullies and other penetrations.

050 Finish asphalt to a smooth flat surface, free from lipping, pitting, scars and other imperfections. Sand rub all horizontal surfaces while the asphalt is still warm, using clean, coarse sand from natural deposits, passing a 600 micron sieve and retained on a 210 micron sieve.

Client's current manufacturers/suppliers/products

051 Ensure all Materials are compatible with and standardised to the Client's current products specified in the table below (listed by manufacturers, suppliers and/or brand names).

Product	Brand name	Manufacturer's details

[complete table as appropriate]