Odiham Parish Council
The Bury,
The Bridewell,
Odiham,
Hampshire
RG29 1NB

SPECIFICATION
MATERIALS
WORKMANSHIP

Standard Specification
for
Workmanship
and
Materials

Item	Description

Table of Contents

Item	Description
A	**General Items**
A01	**General**
	All specifications notes shall be read in conjunction with the Contract Documentation. If information in the drawings, preambles, specification or schedule of works or any other contract documentation is not clear, incomplete or contradictory then the attention of the Contract Administrator is to be drawn to such points in writing immediately. The accuracy of dimensions scaled from drawings and sketches cannot be guaranteed. The Contractor shall be responsible for checking all existing dimensions and levels to be matched by the new works. Any deviation from the existing dimensions or levels are to be corrected at the Contractors expense. The Contractor shall carefully control and monitor all materials and processes concerned whilst undertaking the entire works so that the strength, quality and appearance are consistent throughout and nowhere below the standards called for by the contract or good building practice. Any operation, material or workmanship issue not specifically mentioned within this document shall be carried out in a good workmanlike manner, with suitable good quality materials, in accordance with good practice and conform to appropriate British Standards and Codes of Practice and to the satisfaction of the Contract Administrator. The Contractor shall remove or make good at his own cost any portion of the work which in the opinion of the Contract Administrator is not of good enough strength, workmanship or finish or which may prejudicially affect the durability of the construction.
A02	**The Works**
	All materials, products and methods must, where possible, provide for close matching of all visual characteristics and features of the original building fabric so that jointing between existing and new work is as inconspicuous as practicably possible and to the satisfaction of the Contract Administrator. The Contractor shall be responsible for checking all existing dimensions and levels to be matched by the new works. Any deviation from existing dimensions or levels are to be corrected at the Contractors expense. The Contractor must accept responsibility for the constructional stability and structural integrity of the building during the contract period and introduce and maintain all necessary temporary supports deemed appropriate. The Contractor must not overload any parts of the building and if any doubt exists the matter should be referred back to the Contract Administrator. No cutting through floors or walls or under foundations will be allowed, other than that required by the drawings, this specification or particularly described in the schedule of works, without the authority of the Contract Administrator. The Contractor must take all reasonable precautions to prevent pollution of the site, the works and the general environment and to prevent nuisance from dust, rubbish and other causes. The burning of materials is on site is strictly forbidden.
A03	**Preparation and Protection**
	*A*dequate protection is to be provided during the contract period to all areas either forming or not forming parts of the works, including works carried out by others. If works are of an especially vulnerable nature or exposed to abnormal risks, special protection shall be provided to ensure damage does not occur. Contractor to prevent damage to the existing buildings, fences, gates, walls, road, paved areas and other site features which are to remain in position during the execution of the works. Any concrete or plaster, which is mixed on site, must be mixed on plywood underlain by plastic sheeting to protect the drives, etc. Contractor to take all reasonable precautions to prevent damage to any adjoining property. The Contractor will be held responsible for any such damage. The Contractor will have to replace, rebuild or adequately repair to match existing any areas which are damaged due to inadequate protection. The Contract Administrators decision on an adequate match shall be final and binding on both parties. The Contractor must accept responsibility for the constructional stability and structural integrity of the building during the contract period and introduce and maintain all necessary temporary supports deemed appropriate. The Contractor must not overload any parts of the building

Item	Description
A04	**Working at Height** Definition of 'Height' : A place where a person could be injured falling from it, even if it is at or below ground level. The following specifications must be read in conjunction with: 'The Work at Height Regulations 2005' Statutory Instrument 2005 No. 735. that came into force through parliament 6th April 2005. Copies and further information can be found online at: www.hmso.gov.uk/si/si20050735.htm. Further reading can also be found through the HSE available at: www.hse.gov.uk/falls. Free singular copies of the HSE leaflet 'The Work at Height Regulations 2005' can be obtained from HSE Books. Contractor Duties The Contractor must do all that is reasonable practicable to prevent anyone falling and avoid work at height where they can. Use work equipment or other measures to prevent falls where they cannot avoid working from height. Where they cannot eliminate the risk of a fall, use work equipment or other measures to minimize the distance and consequences of a fall should one occur. All work at height is properly planned and organized and takes account of the weather conditions that could endanger health and safety. Those involved in work at height are trained and competent and the place where work at height is done is safe. Equipment for work at height is appropriately inspected and the risks from fragile surfaces or falling objects are properly controlled. The contractor must ensure that no work is done at height if it is safe and reasonably practicable to do it other than at height. Ensure that the work is properly planned, appropriately supervised, and carried out in as safe a way as is reasonably practicable. Plan for emergencies and rescue. Take account of the risk assessment carried out under regulation 3 of the Management of Health and Safety of Work Regulations. The contractor must ensure that the work is postponed while weather conditions endanger health or safety. The contractor must ensure that everyone involved in the work is competent (or, if being trained, is supervised by a competent person). This includes involvement in organization, planning, supervision, and the supply and maintenance of equipment. Where other precautions do not entirely eliminate the risk of a fall occurring, the contractor must (as far as it is reasonably practicable to do so) train those who will be working at height how to avoid falling, and how to avoid or minimize injury to themselves should they fall. The contractor must ensure that the place where work is done at height (including the means of access) is safe and has features to prevent a fall, unless this would mean that it is not reasonably practicable for the worker to carry out the work safely (taking into account the demands of the task, equipment and working environment). Detailed safety requirements about where the work is done at height are set out in schedule 1 (Of the main document; The Work at Height Regulations 2005). The contractor must provide equipment for preventing (as far as is reasonably practicable) a fall occurring. If the precautions do not entirely eliminate the risk of a fall occurring, the contractor must do all that is reasonably practicable to minimize the distance and effect of a fall. When selecting equipment for work at height the contractor must use the most suitable equipment and give collective protection measures (eg guard rails) priority over personal protection measures (eg safety harness). The Contractor must take account of the working conditions and the risks to the safety of all those at the place where the work equipment is to be used. The contractor must ensure that all equipment, temporary structures (eg scaffolding), and safety features comply with the detailed requirements of Schedules 2 to 6 of the main document; The Work at Height Regulations 2005. 'Inspection' is defined as 'such visual or more rigorous inspection by a competent person as is appropriate for safety purposes…(including) any testing appropriate for those purposes'. The contractor must ensure (as far as it is reasonably practicable to do so) that each individual place at which work is to be done at height is checked on every occasion before that place is used. The contractor must ensure that before they use any equipment from another business, and before any equipment leaves the business, it is accompanied by an indication (clear to everyone involved) that the last inspection required by this regulation be carried out.

Item	Description
	The contractor must make sure that any platform used for (or for access to) construction work and from which a person could fall more than 2 m is inspected in place before use (and not more than seven days before use). Where it is a mobile platform, inspection at the site is sufficient without re-inspection every time it is moved. Note: 'Construction work' is defined in detail in regulation 2(1) of the Construction (Health, Safety and Welfare) Regulations 1996 but broadly means 'the carrying out of any building, civil engineering or engineering construction work'. 'Platform' is widely defined by regulation 2 to include areas like gangways and stairways. The contractor must ensure that the person inspecting a platform (as required above) prepares a report before going off duty, giving the details listed in Schedule 7. The report (or a copy) must be provided within 24 hours of completing the inspection to the person for whom the inspection was done (e.g. the contractor or your site manager). The contractor must keep the report of a platform inspection made under the instructions given in the paragraphs above at the construction site until the work is completed and then at the office of the contractor for three months. The contractor must ensure that no one working under their control goes onto or near a fragile surface unless that is the only reasonably practicable way for the worker to carry out the work safely, having regard to the demands of the task, equipment, or working environment. If anyone does work on or near to a fragile surface the contractor must ensure (as far as it is reasonably practicable to do so) that suitable platforms, coverings, guard rails, and the like are provided (and used) to minimize the risk and do all that is reasonably practicable, if any risk of a fall remains, to minimize the distance and effect of a fall. If anyone working under your control may go onto or near a fragile surface, the contractor must do all that is reasonably practicable to make them aware of the danger, preferably by prominent warning notices fixed at the approaches to the danger zone. Where it is necessary to prevent injury, the contractor must do all that is reasonably practicable to prevent anything falling. If it is not reasonably practicable, the contractor must ensure that no one is injured by anything falling. The contractor must ensure that nothing is thrown or tipped from height if it is likely to injure anyone and stored in such a way that its movement is likely to injure anyone. If the workplace contains an area in which there is a risk of someone being struck by a falling object or person, the contractor must ensure that the area is clearly indicated and that (as far as reasonably practicable) unauthorized people are unable to reach it.
A05	**Materials - General** All materials, products and methods must, where possible, provide for close matching of all visual characteristics and features of the original building fabric so that jointing between existing and new work is as inconspicuous as possible and to the satisfaction of the Contract Administrator.

Item	Description
B	**Foundation Works**
B01	**Groundworks**
B01-01	General All excavations shall be opened specified by the Contract Administrator and the Local Authority Building Control Officer, if applicable, and to the required levels and depths. No excavation formation shall be built on until approved by the Contract Administrator and the Building Control Officer. No excavation shall be kept open longer than absolutely necessary, unless ordered. Should the Contractor allow the bottom of excavations to deteriorate, he shall rectify the situation at his own expense and in accordance with the Contract Administrator instructions. The Contractor is to satisfy himself as to the nature of the ground to be excavated, as no claim on the grounds of want of knowledge will be recognized. The price of excavation shall include all normal materials expected to be encountered, cutting off and grubbing up roots, breaking out disused drains or other obstructions and for effectively supporting by timber or other means, all pipes, ducts, cables, mains and other services exposed, excluding only old brickwork, concrete or rock. Where an excavation encroaches below a line drawn at an angle of 45º for stable soils or 30º for wet clays from the horizontal from the nearest formation level of another higher excavation, the lower excavation including all work within it and backfilling thereto must be completed before the higher excavation is made. The Contractor shall keep excavations free from water at all times. Water from excavations shall not enter any other constructional work. Where pumping is necessary, the material in and around the excavations shall not be disturbed by the pumping and all pumps shall be formed clear of the excavations and permanent works. Notwithstanding any direction or approval, the Contractor shall be responsible for designing & taking all necessary safety precautions and for any damage and injury arising from his operations. The Contractor shall be responsible for all shoring and timbering, etc., necessary to ensure the safety of his workmen and prevent settlement or damage to existing structures, including buildings, roads, footpaths, etc., and for its maintenance during the course of the works. Remedial works necessitated by the absence or failure of shoring & timbering shall be carried out at the Contractors expense. All backfilling material shall be approved by the Contract Administrator and, unless otherwise stated, shall consist of well graded granular material (DOT Granular Sub-base Material Type 2). Backfill material shall be laid and compacted in layers not exceeding 150mm thick, using suitable vibrating roller, or plate compactor. Where hardcore is specified, it shall be approved by the Contract Administrator and shall consist of hard dry brick, stone, concrete or other similar incompressible material, free from dust and broken to pass through a 75mm ring gauge, always with the addition of sufficient small material to fill in all voids. It shall not include any deleterious or degradable material. If the material has dimensions equal to or approaching the required thickness, it shall be hand pitched. Otherwise hardcore shall be laid and compacted in layers not exceeding 150mm thick by means of a vibrating roller or plate compactor and the final surface blinded with approved fine material, soft sand or similar. Blinding where described to be 25mm thickness building sand, the upper intersections of the filling to be filled and the surfaces to be left smooth and compact The Contractor is to notify the Contract Administrator when excavations are ready to receive concrete filling, and obtain his approval before any concrete is laid. Any extra excavation as may be required and ordered in writing will be measured and agreed. Any concrete or other work put in before approval has been obtained shall be removed and replaced at the Contractor's expense. Compacting the base of excavations and hardcore is to be by approved mechanical means. Should excavations be made below the level required to obtain an agreed solid base, the Contractor must fill up such excavations to the proper level with concrete (1:2:4) as specified at his own expense.

Item	Description
B02	**Concrete Foundations**
B02-1	Mass Concrete Foundations Mass concrete shall be minimum C20 prescribed mix in accordance with BS5328. Cement is to be ordinary Portland to BS 12:1978 unless specified otherwise and be obtained from an approved manufacturer in ordinary sealed bags and stored in a ventilated dry place to avoid deterioration. Consignments of cement shall be used in the order in which they were delivered. Sand is to be clean sharp natural pit or river, free from loam, vegetable matter or any other organic impurities and not more than 10% to pass a 0.5mm screen mesh. Aggregate to be clean gravel or broken stone carefully graded down to 4mm leaving a minimum of interstices to be filled with sand. All sand and aggregate to be to BS 822:1983. Water shall be clean and free from oil, acid, alkali, earthy vegetable or organic matter, or other deleterious substance in suspension or in solution. Admixtures shall not be used in concrete without the prior approval of the Contract Administrator. Reinforcement is to be round mild steel bars free from mill scale or rust and comply with BS 4449 and BS7336 to achieve rigid frame and consistent cover. Mesh reinforcement to comply with BS 4483. Reinforcement is to be tied with 16 gauge annealed soft iron tying wire. Suitable spaces and chairs are to be provided and to be approved by the Contract Administrator. The use of concrete spacer blocks cast on site brick pieces or other foreign matter is not permitted. Formwork shall be in accordance with item 6.9 of BS 8110: Part 1 Polythene damp-proof membrane where specified shall be 1000 gauge polythene sheeting of an approved brand used strictly in accordance with manufacturer's instructions and lapped minimum 150mm at joints and carried minimum 150mm up walls and partitions, linked to existing damp proof courses. Workmanship Ready mixed concrete shall be used wherever possible and shall comply with the requirements of the specification and BS 5328. Copies of all delivery tickets relating to the ready mixed concrete used on the contract shall be kept for inspection by the Contract Administrator and shall include the following information. Where mixing is to occur on site, the mixing is to be carried out on a clean platform or batch mixer which is to be hosed clean after each mix. Accurately dimensioned gauge boxes are to be used throughout. Dry ingredients are to be mixed to an even colour before water is added through a rose, and only in sufficient quantities to make a workable mix with firm ramming. Immediately after mixing, concrete shall be run to the work and carefully placed round any reinforcement bars and thoroughly compacted to exclude any voids. It is not to be tipped from any height greater than 1000mm. The concrete shall be of such consistence that it can be worked into the corners and angles of the formwork and around reinforcement without segregation of the materials or bleeding of free water at the surface. The workability shall be controlled by direct measurement of the water content, allowance being made for any water in the fine and coarse aggregates and within the limits set out in BS 5328. On striking the form work it shall present a face which is free from honeycombing, pitting, surface crazing or excessive dusting. The Contractor shall carry out workability tests of the concrete in accordance with BS 1881:1962, whenever required. 150mm cubes shall be made from the concrete as placed in the work whenever required by the Contract Administrator. The concrete for the cubes shall be taken after it has been deposited in the work and the position from which the sample was taken is to be recorded for future reference. A slump test shall be carried out with the sample from which the cubes are to be made. Test cubes shall be made, cured and stored strictly in accordance with the procedure set out in BS 1881. All concrete work is to be in strict accordance to BS 8110. Reinforcement shall be cut and bent in accordance with BS 4466. Care should be taken to ensure reinforcement is not displaced while the concrete is being placed. No concrete is to be placed in position or re-mixed after setting has commenced. No concrete is to be deposited where the temperature is below 2°C on a falling thermometer or below 1°C on a rising thermometer except where specifically approved precautions have been taken to ensure protection of the concrete through setting to the satisfaction of the Contract Administrator.

Item	Description
	Formwork must be sufficiently strong to resist all applied loads without bulging or undue deflection. No formwork shall be struck until the concrete can safely carry its own weight and that of any load coming onto it. In warm or dry weather, concrete must be protected from the sun and kept wet with clean fresh water for at least 48 hours after placing by the use polythene sheeting, wet sacking or hosing down. No traffic or work allowed thereon during this period. Where construction joints or stops are necessary during concreting, the face of the placed concrete is to be left rough and vertical, well wetted, scrubbed with clean water and brushed with neat cement grout over the whole face immediately before placing of new concrete. Beds for screeds are to be provided with an efficient key and well swept, cleaned and drenched before screeding is commenced.
B03	**Underpinning and Piling Works**
B03-1	Materials Structural Concrete to be C35, 20mm max aggregate with a minimum concrete content of 300kg/m^2 and a maximum w.c. ratio of 0.6 all in accordance with BS 5328. If the concrete is to be mixed on site then the cement content must be increased by 10% and the mix proportion should be 1:2:4 with maximum w.c. ratio of 0.6. Mixing on site only with approval from the Contract Administrator. All concrete below ground level to be Class 2 sulphate conditions in accordance with BS5328: Part 1:1997 and BRE Digest 363. Minimum cement content to be 330kg/m3 OPC with w/c ratio of 0.5 or 280kg/m3 SRPC with w/c ratio of 0.55.
B03-2	Anti-heave measures Where specified compressible materials should be installed to the sides of the underpinning to provide heave protection such as Claymaster or other similar approved. If not specified the minimum thickness shall be 100mm, taken full depth of the underpinning save the bottom 500mm. Polythene sheet slip membrane shall be placed against the outside face of the concrete full depth where in clay soils. Under new suspended concrete floor slabs, provide collapsible void former as specified.
B03-3	Dry packing Dry packing is to be carried out between the well prepared and cleaned soffit of the underpinned structural foundation/wall and the top of the underpinning. Material to be cement / sharp sand mortar mix (1:3) using a grit mix with an approved expanding agent. Sufficient water should only be added to allow the mix to hold together when squeezed by hand. The contractor is responsible for ensuring an adequate connection is made and that the support is not adversely affected by shrinkage of the dry pack material.
B03-4	Piling works All piling work to comply with BS 5228 part 4 1992 unless agreed otherwise with the Contract Administrator. All piling work to comply with BS 8004: 1986 Code of Practice for Foundations. If a piling layout is provided on the project drawing this is only a guide for tender purposes and revised piling layouts must be submitted for approval by the Contractor to the Contract Administrator at least seven days prior to starting on site. Traditional underpinning is not permitted to a greater depth than 2.5m. If ground investigation details are unavailable or inconclusive then the Contractors price should be based on 6m pile lengths with 1m adjustments specified for each metre over and under 6m. The piles shall be installed within at least 75mm of their intended position at pile cap level. A brief piling specification must be provided by the Contractor, including method statement and estimated duration of the works with his tender, together with appropriate guarantees for successful performance of the piles.

Item	Description
	The Contractor will be responsible for designing the pile system which must provide support to the underpinned sections of the building without causing future damage to the non-underpinned sections. A minimum factor of safety of 2.5 is to be built into the design. Calculations must be provided in suitable format and submitted to Building Control for approval. Rates are to be included for as additional items for integrity testing and load testing per pile. Concrete is not to be placed until pile depths have been measured and recorded and a daily pile record shall be submitted to the Contract Administrator within five days of completion of the work.
B03-5	<u>Mass concrete underpinning</u> The contractor is entirely responsible for all works being carried out in a safe manner on site. Support to excavated sides must be in place at all times together with any requisite support for the undermined structure. The base of the excavation shall be level and well rammed if necessary. Concreting shall be carried out immediately after exposure to prevent deterioration The underside of the existing footing shall be trimmed and made level to provide a good bearing surface. Poor quality or loose footings may need to be removed or re-shaped to achieve a good surface. Voids within the footing will need to be filled, removed or otherwise made up. Dry packing to be a 1:3 cement:sharp sand mix well rammed into position and carried out not less than 24 hours after casting underpinning section. Allow 24 hours before adjacent bay is excavated. Allow maximum depth of 75mm for dry packing The underpinning sequence must be notified to the Contract Administrator before proceeding along with any special arrangements. No underpinning section shall exceed 1.2m and no two adjacent bays shall be excavated at any one time. The sequence must be designed to provide full support to the building at all times and any damage caused to the building as a result of the Contractor's chosen method of working shall be rectified at his own expense. The backfilling of excavations following concreting should be undertaken to prevent any subsequent settlement of the ground in that area. Layers should not exceed 150mm. Each layer to be well rammed to exclude air pockets. Any settlement which occurs as a result of inadequate workmanship, materials or compaction will be rectified by the Contractor at his own expense.

Item	Description
C	**Building Elements**
C01	**Cavity Wall Construction**
C01-1	General Note: Clay bricks throughout to be manufactured in accordance with BS EN 771-1 with minimum water absorption of 7-12%. All masonry Construction to be built in accordance with BS5628: Part 3.
C01-2	Wall Construction: New external walls to be of cavity construction with 100mm facing brickwork outer leaf, 100mm cavity and 100mm 7kn dense blockwork to inner skin. Finish to inner skin to be 13mm lightweight plaster. 'U' value of wall construction to be 0.28 W/m²k or less.
C01-3	Pointing: Pointing to be 10mm joints in 1:3 masonry cement / sand mix or 1:4 OP cement / sand with plasticiser or alternatively a suitable mortar mix designation selected from BS5628 Part 1 1978. Pointing to be bucket handle joint to perp ends and bed.
C01-4	Construction below DPC: Cavity walls to be filled with fine concrete up to a level 150mm below adjacent ground level. Top of fill to be sloped towards the external leaf of the wall at an angle of 45 º. Walls below ground to be Class B engineering brickwork or dense concrete blockwork.
C01-5	Cavity Insulation: 100mm full fill celotex GA 3000 cavity wall insulation board, fitted in accordance with manufacturers instruction and relevant BBA Certificate. Ensure total continuity of insulation within wall. Protect walls with waterproof sheet during wet weather. Ensure that mortar is removed from boards and wall ties as work progresses by using cavity battens raised with each course. Cavity battens to be employed throughout construction in order to maintain clean ties.
C01-6	Cavity Wall ties: All cavity walls to be tied together with stainless steel wall ties to BS1243: 1978. Spacing of wall ties to be minimum 900mm horizontally and 450mm vertically, staggered. At window and door jambs provide ties at 225mm centres vertically. Ties to be suitable for use with the insulation retaining clips and to achieve minimum 50mm embedment into each leaf of wall. Any mortar droppings on ties or cavity trays to be removed as work progresses.
C01-7	Pipework: All pipework (drains) that pass through walls below DPC to be protected with PCC lintels of same width as brick / block work and sleeved to ensure a minimum clearance of 50mm all around the pipe. Fit with rigid board each side of the opening shaped around the pipe to prevent ingress of granular fill into the cavity created.
C01-8	Air Bricks (where required): Include for the provision of 225 x 75mm louvered air vents with fly screen built in as work progresses and where required. All air bricks and vents to be sleeved through cavity wall using purpose made sleeve units. Provide a cavity tray over the sleeve, extending a minimum of 150mm each side of the sleeve. Sleeves to slope down outwards.
C01-9	Weep hole Ducts: Provide weep holes in brick course above cavity tray lintels to non-archform openings at maximum 450mm spacing, with minimum 2 weep holes per lintel. Weep holes to be 75mm high in accordance with BS5628, using standard slimvent weep hole ducts. Allow thermal performance of isolated areas of external walls where indicated and in accordance with good building practice and statutory regulations.

Item	Description
C02	**Masonry Party Walls**
C02-1	Construction Party walls to be constructed of 2 skins of plastered 100mm dense concrete block with a clear 50mm cavity and BBA approved wall ties spaced as external walls up to the underside of the roof and fire stopped with mineral wool or an approved proprietary intumescent product to achieve a minimum 45dB value for airborne sound insulation. The Party Wall is to be bonded/tied to the inner leaf and the junction of cavities are to be fire stopped throughout its length with a proprietary acoustic/ insulated fire stop cavity closer and all other vertical and horizontal cavities are to be closed in a similar manner to provide effective edge sealing and a U-value of 0.2 W/m2.K. 22. Walls to be constructed up to underside of roof covering and fire stopped with mineral wool. External cavity at junction with Party Wall to be fully filled with acoustic Rockwool or similar sandwiched between the insulation sheet and inside face of the outer wall.
C03	**Wall Ancillary Details**
C03-1	Cavity Trays All cavity trays to be standard pre-formed trays suitable for individual situations or trays formed on site with suitable hyload or similar DPC materials. Cavity trays to extend 150mm either side of the protected area and / or rise minimum 150mm / maximum 225mm within the cavity. Stepped trays are to be provided between roof and wall abutments, 150mm above roof surface (minimum 85mm from top of roof tile / slate to bottom of lowest point of tray fitted with 2 stop ends and a weep hole to allow discharge.
C03-2	Lintels: Include for the supply and installation of new lintel supports where required or where shown on the construction drawings. Lintels to openings in cavity walls to be IG steel lintel or similar proprietary. Insulated cavity closer fitted in accordance with manufacturers instructions to all jambs and sills, with jambs proud of bottom of sill section which is to be cut to the length of the frame sill. Installation to be to Local Authority approval. All lintels to have minimum 150mm end bearing and be firmly bedded in mortar and on full (not cut) blocks. End bearings to be minimum 150mm and padstones to be provided in accordance with the structural engineers drawings. Provide DPC cavity trays over in external cavity walls to lap with vertical DPC at window and door jambs. Trays to extend to a minimum 150mm beyond the end of the lintel. Cavity trays must rise 140mm across cavity. Cavity trays to be linked to flashings in all cases and stepped in the case of a stepped flashing. Manufacturers recommendations for providing adequate fire resistance should be followed. Cold bridge paths should be avoided and adequate insulation measures incorporated, depending upon lintel profile and in accordance with manufacturers specification and NHBC requirements.
C03-3	Damp Proof course: Damp proof course to be high quality 2000 gauge polythene DPC to BS6515 or bitumen type DPC to BS6398. Where pre-cast floor beams bear onto the inner leaf DPC the material is to be suitable for the situation and be covered by appropriate certification. DPC to be laid on mortar bed with further mortar joint laid over and under the first course of brick or block to achieve sandwich. ~DPC to be stepped where required to maintain 150mm clearance above the finished external levels.
C03-4	Movement Joints: Provide movement joint (16mm width) in masonry wall sections at maximum 6m centres (blockwork) and 12m spacing (brickwork) and all in accordance with manufacturers written instructions. New walls to be tied to existing with Ancon 'Staifix' or similar approved wall starter system. Include for 15 x 15 Polysulphide sealant on aerofil backing strip with colour to match mortar. Provide wall ties each side of the movement joint at maximum 225mm vertical spacing and within 150mm of joint.

Item	Description
C03-5	Relevant British Standards for Cement and Mortar**:** Ordinary Portland Cement BS12 1978 Sulphate Resisting Cement BS4027 1980 Aggregates BS882 1983 Limes BS890 1972 Sand BS1200 Plasticisers for Mortars BS4887 1973 Pigment for coloured mortars BS1014 1975 Coloured mortar: pigment to be to BS1014:1975 mixed strictly in accordance with manufacturer's instructions. Ready mixed mortars to comply with BS4721:1981. Pre-packaged dry mortar mix to comply with BS5838:1980 Frost inhibitors based on calcium chloride will not be used.
C04	**Internal Walls**
	Internal Load Bearing Walls:
C04-1	Internal load bearing walls to be minimum100mm thick 7N/mm2 dense concrete blocks to BS EN 771-3 / 771-4 (actual wall thickness must not be less than the wall it supports above), built off suitable foundations (as detailed above), with pre-cast concrete/proprietary steel lintels over openings (in compliance with lintel manufacturers span tables) and walls bonded/tied to external or party walls with proprietary ties each course and restrained by floor or ceiling joists/trusses. Constructed blockwork must achieve a minimum mass of 120kg/m2 excluding wall finish.
	Internal Non-Load bearing Walls
C04-2	Internal load bearing timber stud partitions Load bearing timber stud partitions and non-proprietary lintels to be in compliance with details and calculations by a suitably qualified and experienced person, which must be approved by building control before works commence on site.
C04-3	Internal masonry non-load bearing partitions: Internal non-load bearing partitions to be constructed of 100mm 2.8/mm² dense concrete blocks built off a thickened floor slab and tied/block bonded to all internal and external walls at maximum 225mm centres with either a plaster or dry lined finish as the external walls.
C04-4	Internal timber studwork non-load bearing partitions: Allow for the reconstruction of timber stud partition walls to similar location. Include for the following specification; Non-load bearing stud partitions are to be constructed of 100mm x 50mm (C16) softwood studs, head and sole plates and intermediate noggins fixed at 400mm centres with minimum of 25mm of 10Kg/m3 proprietary sound insulation quilt or 100mm thick mineral fibreboard suspended in the stud. Finish with 9mm thick WBP plywood and 15 mm foil backed plasterboard and skim both sides. Where partition walls abut bathrooms or shower enclosures, plasterboard to be moisture resistant (10kg/m2)
C04-5	Internal non-load bearing block wall: Contractor to re-build the central spine and wall through the chimney in blockwork as per the existing specification. Include for re-building in Celcon standard 7N/mm2 blockwork bedded in gauged mortar. Tie into existing walls using stainless steel firfix profiles and fixings and forming openings with lintel over where existing. Service chases into the wall to be no deeper than 1/3 thickness of the leaf of wall (vertically) or no deeper than 1/6 thickness of the leaf of the wall horizontally. Dot and Dab wall: 12.5mm gypsum plasterboard on 10mm plaster dabs

Item	Description
	Metal lining system Use Gypliner metal wall lining system comprising 12.5mm Wallboard fixed to metal wall brackets forming a cavity partially filled with 75mm thick Isowool High-Therm insulation. Ensure that the plasterboard and plaster extends beyond the floor levels to ensure containment. Where required, infill around window openings with solid masonry, brickwork bonding and pointing all to match existing. Key any new brickwork in with existing masonry to form good connection. Allow for Gyproc 48I55 Studs at 6000mm centres between 50C50 head and base channel fixed at 600mm centres. Between the flanges of the studs, incorporate 50mm Gypglass 2405 mineral wool within the framework clad with a double layer of 12.5mm Gyproc wallboard. The installation should maintain a clear distance from the supporting masonry wall as advised by the system installer. Where required, infill around window openings with solid masonry, brickwork bonding and pointing all to match existing. Key any new brickwork in with existing masonry to form good connection. **Apartment / Flats** <u>Party Walls – Studwork and metal frame</u> New internal party walls between apartments to be Gypwall 'Quiet IWL System', comprising twin minimum 60mm metal 'I' studs at 600mm centres, forming a minimum 190mm cavity with 100mm thick mineral wool (Isowool 1200) placed between the twin studs. Finish with two layers of minimum 15mm Soundbloc board, staggered tape & jointed. Within the bathroom, the second layer should be moisture resistant plasterboard. System to be installed in complete accordance with the manufacturers standard recommendations to maintain acoustic performance. All party walls are to be built directly off the structural concrete slab / structural timber floor deck and not off the insulation & screed / floating floor systems. Provide continuous timber blocking within floor joist void under each skin of every party wall, in the form of either noggins where the joists run perpendicular to the party walls or double timber joists bolted together where the existing floor joists run parallel. Ensure all voids between the underside of the party walls and compartment ceilings are fully sealed to maintain fire compartmentation. Where masonry walls exist, use 'Gypliner Universal' metal wall lining system comprising 12.5mm thick Wallboard fixed to metal wall brackets forming a 35mm cavity, partially filled with 25mm thick Isowool 1200 insulation. Seal around all perimeters, junctions, penetrations etc of party walls and wall linings and ceilings with sealant to close any potential air paths. All party walls to be continued up to underside of floor soffits / roof and fire stopped. Party walls to be taken past the wall lining through to the original brickwork and fully sealed around the perimeter. Where socket outlets etc are to be positioned on party walls, ensure sockets are staggered either side of the wall. <u>Internal Partitions</u> Non load bearing partitions to be light weight steel comprising of 75mm metal stud work with 25mm Isowool 1200 mineral wool insulation or equal (min density 10kg/m^3) between studs. Provide additional timber noggins within the floor void under all new partition walls. Line stud work with No. 1 layer of plasterboard Gyproc Duplex wallboard 12.5mm or similar (min mass per unit area 10kg/m^2) with taped and staggered joints and skim plaster finish to both sides. Linings to be minimum 45mm apart between the internal faces of plasterboard. Provide additional noggins or ply sheathing for fixings in bathrooms and kitchens where required. Line walls within bathrooms, kitchens and utility rooms with moisture resistant plasterboard. Fix WPB plywood behind showers and basins for fixing. All ceiling joints and perimeter junctions with walls must be taped or caulked with sealant.

Item	Description
	Finish to all blockwork will be 12.5mm plasterboard dry lining in accordance with British Gypsum White book details and recommendations. All work to be in accordance with BS8212 and BS6214. All plasterboard used to be in accordance with BS1230. All joints to be taped and skimmed. Finish to all plasterboard wall surfaces to be Gyproc. Top coat taped over and filled joints to tapered edge plasterboard.
C05	**Wall Finishes**
C05-1	Plasterboard: Plasterboard to solid party walls must be 12.5mm soundboard or moisture board (12kg/m2 board weight) if adjacent to shower enclosures or bathrooms.
C05-2	Re-plastering: To all new brick / block walls, base plaster to be 10mm 1:3 cement/sand render incorporating RA30 additive or equal approved. Include for final plaster coat of 5mm gyproc thistle finishing plaster trowelled smooth and leave ready for redecoration. Include for all galvanised angle and stop beads and stainless steel metal lathing over any retained timbers, repaired cracking or removed loose plaster. To all newly provided dry lining, supply and apply 3mm skim multi-finish coat of finishing plaster, trowelled smooth and ready for redecoration.
C06	**Floors**
C06-1	**Suspended Beam and Block Floor:** Preparation: Allow for taking up and discarding to tip existing floor slab and screed within the areas as indicated Include for reduction and levelling of the ground below the suspended floor (removing topsoil and apply total weed killer) and 75mm blinding concrete to ground. Minimum space between below underside of floor to be 150mm. Prepare dwarf walls to the level of the underside of new beams. Construction: Proprietary pre-cast concrete beams 155mm deep x 125mm wide fixed at approximately 520mm centres. Minimum bearing 100mm onto DPC course on load bearing walls. Double beams to be provided below non-load bearing parallel partitions. Infill blocks to be standard 225mm wide x 100mm thick x 440mm long 3.5kn concrete blocks of minimum compressive strength of 7N/mm2. Beams and blocks to be to manufacturers design and specific detail and specification and to BS6073 Part 1. Min. overall U-value of construction to be 0.20W/m2K. Membrane: Lay 1200 gauge (300 um) visqueen damp proof membrane / radon barrier with 300mm laps double welted and taped at joints and service entry points using Radon gas proof tape, over beam and block floor all in accordance with manufacturers instructions. Edges of the membrane to be folded double thickness and taken around the edge of the slab and fully lapped with horizontal DPC in walls to the full width of the inner leaf. Proprietary service ducting to be provided as necessary within the screed to allow access to all services. Screed and Insulation: Beam and block floor surface to be wetted and grouted with sand and cement to provide a smooth level surface with nominal maximum thickness of grout to be 5mm. Install a 75mm thick sand / cement screed incorporating galvanized light anti-crack mesh reinforcement laid on separating membrane on 100mmCelotex Tuff R zero GA3000 system or similar flooring grade insulation. Include for 25mm wide perimeter insulation between screed and wall. Ventilation: Provide telescopic ‘z’ vents (fitted with flyscreen) underfloor vents. Sub-structure void to be vented on opposing sides to provide cross ventilation using 225m x 150mm proprietary ventilators at 2000mm centres, inner ground level to be above external ground levels. Finish: Ensure that the finished floor level is of a steel float finish and of true level. Datum of finished floor level shall be the underside of existing skirting. Incorporate the supply and installation of all incoming surfaces.

Item	Description
C06-2	**Suspended Timber Floor: Replacement** Preparation: Allow for taking up and discarding to tip existing floor slab and screed within the areas as indicated Include for reduction and levelling of the ground below the suspended floor (removing topsoil and apply total weed killer) and 75mm blinding concrete to ground. Minimum ventilated space between top of oversite concrete and underside of any wall plates to be at least 75mm and at least 150mm to the underside of the suspended timber floor or insulation. Construction: Joists to be supported off proprietary heavy duty galvanized joist hangers. Hangers to be built into new masonry walls or fixed to treated timber wall plate (same size as joists), resin bolted to existing walls at 600mm ctrs using 16mm diameter high tensile bolts. Where necessary, floor joists can be supported on treated wall plates & dpc onto masonry honeycombed sleeper walls onto oversite concrete. Floor joists sizes as stated on plans, or table below. Joists to be grade C24 kiln dried floor joists fixed at 400mm ctrs (depth to be increased where necessary to match floor levels). Proprietary galvanized steel strutting to be fixed at mid span for 2.5 - 4.5m span and 2 rows at 1/3rd points for spans over 4.5m. Insulation: Floor to be insulated with floor grade insulation thickness and type in table below, friction fixed between joists. Fix 22mm moisture resistant t & g flooring sheets to BS 5669 type II or II/III laid with long edge across the joists. All joints to positioned over joists, glued & nailed using 55mm X 10g annular ring shank nails. Ventilation: Provide telescopic 'z' vents (fitted with fly screen) underfloor vents. Sub-structure void to be vented on opposing sides to provide cross ventilation using 225m x 150mm proprietary ventilators at 2000mm centres, inner ground level to be above external ground levels. Finish: Ensure that the finished floor level is of true level. Datum of finished floor level shall be the underside of existing skirting.
C06-3	**Ground Bearing Solid Concrete Floor:** Construction: All topsoil and vegetation matter to be cleared from site and treated with weed killer. Construct new slab to; Sand blinded compacted hardcore mechanically compacted in 150mm layers (not exceeding 600mm) 1200G (300um) continuous polythene sheeting DPM lapped and sealed over joints and lapped to the DPC in the walls. Floor and external perimeter edges to be insulated with floor grade insulation 150mm concrete, reinforced with one layer of A193 mesh, top and bottom with suitable movement / expansion Flexcell joints at edges. Trowel finish 65mm sand / cement screed with steel float finished slab level to match existing. Screed Works: Allow for carefully removing existing screed to floor areas. Provide and lay minimum 50mm thick sand/cement screed incorporating A90 type mesh reinforcement (over 25mm insulation). Incorporate three coats of Synthaprufe (or similar), top coat sanded between slab and screed and ensure that the finished floor level is of a steel float finish and of true level. Datum of finished floor level shall be the underside of skirting. Include for the supply and installation of all incoming surfaces.
C06-4	**Intermediate upper timber floor:** General Note: Trimming of beams to be as shown on the architectural drawings. Trimming to be provided where necessary to staircase openings, horizontal waste and soil pipes and soil vent pipes. Minimum 35mm by 72mm noggins at maximum 600mm centres between joists. Noggins to be fixed with proprietary 'z-clips' to top flanges of beams around all perimeters for fixing edges of floor decking.

Item	Description
	Construction: Floor to be constructed of kiln dried structural grade timber joists with sizes and spacing suitable for the proposed clear span as annotated on the drawing. Joists to be supported by heavy-duty proprietary galvanized metal restraint joist hangers built into walls or fixed to treated timber wall plates (same sizes as joists) resin bolted to walls at 600mm centres using approved 16mm diameter stainless steel fixings. Alternatively, joists can be built into walls using approved proprietary sealed joist caps. Joists are to be doubled up and bolted together for trimmers, under partitions and baths. Ensure all gaps & all voids are sealed to prevent any air leakage. Insulation: Floor void between joists to be insulated with a minimum thickness of 100 mm of 10Kg/m³ proprietary sound insulation quilt, ceiling to be a minimum 15mm plasterboard and skim and floor joist covering to be a minimum of 20mm softwood tongue and groove softwood boards or moisture resistant particle/chipboard to give overall 30 minutes fire resistance. Floor joists to be provided with 1 row of 38 x ¾ depth solid strutting at ends between joist hangers or proprietary galvanized struts to BS EN 10327 fixed as manufacturers details, at mid span for 2.5 – 4.5m spans and 2 rows at ¹/3 points for spans over 4.5m. Exposed intermediate upper floors Semi exposed intermediate timber floors over unheated areas such as garages, porches, walkways, and canopy's to be insulated with the following minimum thickness and types of insulations to achieve a U-value0.22w/m².k as in Table 6 below. Where the construction is open to the environment a vapour barrier and proprietary external mineral fibre or similar 30 minute fire and moisture resistant boarding is to be applied to the underside of the floor. Stud partitions Parallel to Floor Span: Stud Partitions parallel to the floor span but not located immediately over beams to be supported on minimum 35mm x 72mm noggins at maximum 60mm centres.
C06-5	**Timber Floor – Repair:** Construction: Allow for the removal of the timber first floor boards where required. Health and safety to be paramount when removing the floorboards and Contractor to confirm at Tender stage the proposed method of safe working practice. 200 x 50mm softwood C16 joists at 400mm centres. Include for all temporary scaffold access, materials, insulation and floor boarding. Chipboard floor to be screwed to joists. Include for double and treble joists where indicated. Insulation – 125mm thick 'kingspan kooltherm K3' or similar between the joists. Interlocking moisture resistant boards. Acoustic materials / layer to building regulation requirements.
C06-6	**Straps to Floors:** Walls to be restrained at intermediate floor, ceiling and gable walls by the provision of 30 x 5 x 1000mm lateral restraint straps or other approved in compliance with BS EN 845-1, at maximum 2m centres carried across at least 3 joists or rafters, etc, with a minimum of 38mm wide x ¾ depth noggins.
C06-7	**Floorboards – Repair:** Allow a sum for the replacement of the floorboards within the all ground floor rooms where timber floor exists and where contaminated / damaged by water. Insulation requirements and specification for replacement to be as per item 7.2. Allow for 50m sq. replacement. Where boarding requires to be replaced above timber floor construction, include for 4mm thick hard board sheet to all rooms except WC , bathroom, kitchen or shower rooms which will have 6mm thick WBP plywood sheet .
C06-8	**Gas Control Measures** Where Radon and Methane Gas Control Measures are necessary, details to be in accordance with BRE Guidelines and NHBC Recommendations.

Item	Description
C06-9	**Floors / Ceilings** Upper floors / ceilings to comprise of 18mm thick chipboard on 19mm plank on 25mm mineral wool of density 60 to 100 kgm3 on 18mm plywood on existing joists19mm plank on 12.5mm fireline board taped and jointed. New ceilings to provide a minimum void of 125mm lined with two sheets of 12.5mm plasterboard with 100mm mineral wool (Iso wool 1200) laid over the ceiling board within the cavity. 5mm skim coat of finishing plaster to the underside of all ceilings. Use galvanised plasterboard nails for affixing. Where repair to the floors are being undertaken, the acoustic performance of the upper floors to be achieved with laying an acoustic floating floor system laid in strict accordance with manufacturers standard requirements. The separating floor shall be continuous through to the external walls and shall pass through independent wall lining treatment. Seal around all perimeters, junctions, penetrations etc of party walls and wall linings and ceilings with sealant to close any potential air paths. Where WC's are located over habitable rooms, they are to be mounted on an absorbent material in accordance with NHBC requirements.
C07	**Pitched Roof Construction**
C07-1	General Notes Contractor to ensure that all health and safety measures are observed when working on the roof. General guidance when working on flat roofs is provided by the HSE and in particular their Guidance note 'working on roofs'. Contractor to allow for the design and replacement of the existing roof as per the Specification shown within the Architects specification appended to this report. Where appropriate, roof specification to be built in accordance with Part L of the current Building Regulations. The Contractor is to allow for the design and replacement of the existing roof structure in accordance with the Engineers drawings. Contractor to include for all joists, rafters, wall plates, decking, flashing, strapping, ridge boards, purlins etc. Roof construction to be to the sizes and centres as indicated on the structural engineer's drawings. Rafters, ceiling joists, purlins, hangers and binders to be sized as per the engineering drawings. The roof is to be replaced on a like-for-like basis in so far as possible. Roof to be formed from kiln-dried stress graded timbers sized, spacing, spans, bracing and fixings as detailed. Allow for all necessary alteration/modification of any existing adjoining roof as required to enable the proper completion of the works and in agreement with building control.
C07-2	Construction: Roof to be constructed using kiln dried –stress graded timber. Rafters, ceiling joists, purlin, hanger and binder sizes as stated on drawings or see TRADA Span Tables. All timbers should be suitable for the proposed clear spans and all properly fixed together using approved fixings. Where the ceiling joists are raised above wall plate level they must be fixed within the bottom third of the rafter using 12mm diameter high tensile bolts and steel toothed connectors to connect each rafter and ceiling joist to prevent possible roof spread. Joists raised above this level are to be designed by a suitably qualified person and approved by building control before works commence. Struts & braces to be 100 X 50mm, hips to be splayed rafter depth + 25mm (under 30 degree pitch the hips are to be designed by a suitably qualified person), lay-boards to be the splayed rafter depth + 25mm X 32mm thick, ridges to be splayed rafter depth + 25mm, all valleys beams are to be designed by a suitably qualified person, wall plates to be 100 x 50 fixed to inner skin of cavity wall using galvanized strapping as detailed below. Hip rafters to have 100 X 75mm angle ties connected across wall plates in housed joints at corners of roof & hip irons screwed to hip rafters. Roof pitch to (single storey) single skin buildings with walls 100mm thick should not exceed 40 degrees without structural engineers details & calculations to confirm stability of the structure. Cut roofs over 40° are to be braced to BS 5268.

Item	Description
C07-3	Cavity Tray and Flashings: Allow for building in as work proceeds or insertion of proprietary stepped/cavity tray dpc to follow line of new roof 150mm above all roof/wall abutments as necessary using code 5 lead flashings. Tie new roof into the existing, alter/modify/renew existing roof coverings and form a weather tight structure.
C07-4	Strapping: Gable restraint straps to be mild steel straps at maximum 1250mm centres along upper (rafter) chords of trusses and maximum 2m centres along lower ceiling joist. Straps to be 150mm x 1450mm length, 30mm x 5mm section, multi-holed galvanized mild steel to BS2989. Straps to be built into cavity wall with 150mm down leg secured tight against the inner leaf within the cavity. Straps to span minimum 3 trusses with softwood noggins of same section as truss chord under strap. Minimum 5 nails 0.8 softwood galvanized x 75mm fixings to each strap with minimum 1 into each truss spanned and minimum one into each length of noggin. Galvanised Straps to be to BS EN845 and to be carried across at least 3 joists or rafters with a minimum 38mm wide ¾ depth noggin. Rafters to be securely fixed to new plate strapped to wall with 30x5mm galvanised mild steel straps at 2m centres maximum securely fixed to 2no.block courses.
C07-5	Valley Gutter: Include for the provision or replacement of the existing valley boards with 18mm WPB plywood twice spiked to each rafter. Leave ready to receive new roof covering.
C07-6	Wall Plate: To be 75mm x 100mm softwood with lap joints as necessary strapped down with galvanized mild steel straps at 2m centres and not more than 400mm from external corners. Straps to be 100 x 900mm length 30 x 2.5mm section galvanized mild steel to BS2989. Fixings to be 4 no. into masonry (plugs and No.12 x 50mm screws or hardened 8 softwood galvanized x 75mm nails) and 1 into wall plate.
C07-7	Roof covering: Allow for the removal of all of the existing tiles, battens and felt to the entire roof section. Upon completion of the roof structure repair works, include for; - All new treated softwood timber battens (minimum 25mm x 50mm) with minimum 65mm long aluminium alloy clout smooth round nails - Breathable roof felt underlay to BS 747 or relevant BBA Certificate. Include for Spiratech 250 vapour permeable underlay or similar. Fully lapped and dressed into gutters at eaves positions. ('Tyvek or similar approved) - All new roof tiles, to match existing in profile and colour. Include for forming two courses at eaves level and all necessary cuttings to valleys and abutments. Top and bottom course are to be mechanically fixed. - Lead flashing detail (Code 5 lead flashing dressed up for 150mm height above roof line relevant junctures where appropriate - Include for ridge and hip tiles with hip irons bedded and pointed in cement mortar 1:6.
C07-8	Fascia and Soffit: Allow for replacement fascia and soffit boards as per existing specification or in uPVC to BS 4576 fixed in compliance with manufacturers details. Include for appropriate vents to be installed at eaves level. Facia vent to be situated 45mm above the top of the rafters (to be confirmed).
C07-9	Roof insulation: Crown Loft Roll (K=0.044) to be laid above ceiling in two layers. First layer to be between ceiling joists (thickness to suit depth of joists) with second layer laid in opposite direction. Total thickness of insulation to be 300mm to provide U-value of min 0.16W/m²k. Pitched roof insulation to be Celotex; 100mm fixed between rafters and 50mm below to achieve U-value of 0.18 W/m²k. Insulation to be continuous and contractor to ensure there is no 'cold bridging'.

Item	Description
C07-10	Ventilation: Roof insulation to be continuous with the wall insulation but stopped back at eaves or at junctions with rafters to allow a 50mm air gap. Cross ventilation to be provided by a proprietary eaves ventilation fly screened vent equivalent to a 25mm continuous gap at eaves level. Ventilation to achieve minimum 25,000mm2 per metre run of eaves i.e. glidevale. Supply and fit roof slope ventilators to allow eaves ventilation where insulation is dressed into eaves or at pitch change. To be fixed in accordance with manufacturers requirements i.e. Catnic or Glidevale roof ventilators. Alternatively, where cross ventilation is not possible such as mono pitch, coved ceiling or room in the roof provide additional ridge/high level ventilation equivalent to a 5mm gap in the form of proprietary vent tiles spaced in accordance with manufacturer's details. Ventilation to the roof space may be omitted, only if a proprietary BBA or similar approved breathable roof membrane, with minimum 25mm thick treated vertical counter battens and proprietary eaves carrier system is used. Breathable roof membranes & proprietary roof vents must always be installed as manufacturers details (note: some breathable membranes may also require additional roof ventilation)
C07.10	Flashing: Allow for Code 5 Lead Flashing dressed up for 150mm height above roof line. Include Code 5 lead to cheeks of dormers and stepped lead flashing to chimney stacks and other abutments. Abutment flashings to be set 25mm into wall and to be wedged at each lap and at 450mm centres with lead wedges pointed in. Minimum upstand of soaker under flashing to be 75mm. All soakers to be Code 4 lead.
C08	**Truss Rafter Roof**
C08-1	Construction: Contractor to be fully responsible for the measurement, specification, purchase, delivery and installation of any trussed roof installation (whether part or in full). Contractor to complete all installation strictly in accordance with the suppliers requirements and any requirements or recommendations made from the Trussed Rafter Association. Particular attention is drawn to bracing, affixation and the limits of cutting, notching and drilling of trussed rafters as provided on the Information Sheet No. 2003-1 Revision A. For installation, reference is made to the Trussed Rafter Manual provided by the same association. The following clauses are for guidance only and actual work to be undertaken to the design and specification provided by the truss supplier /designer. Trusses to be at maximum 600mm centres. Trusses to be stored and handled in accordance with ITPA Technical Bulletin No. 3. Trusses to be erected in accordance with ITPA Technical Bulletin No.2 BS5268 Part 3 and any specific requirements of the manufacturers. All trusses to be fixed to wall plates with proprietary clips and framing anchors. Longitudinal binders to be installed all in accordance with BS5268 Part 3
C08-2	Restraint and Strapping: Contractor is to allow for providing all bracing and strapping necessary to meet requirements of BS5268 Part 3. Diagonal bracing to be 100mm x 25mm and provided to trusses on ceiling chords between 1/3 points and wall plates at no more than 30degrees to wall plate, also under rafter chords each with laps covering two trusses as required. Roof and walls to be provided with lateral restraint straps across at least 3 timbers as noted in wall section at ceiling, wall plate and verge levels with 30 x 5mm x 1m galvanized metal straps or other approved to BSEN 845-1 at maximum 2m centres
C08-2	Roof Covering: Allow for the provision and construction of roof covering. Include for all battens, three layers of felt, tiles, to match existing and new lead flashing detail at the main house juncture. Allow for the provision of all guttering and rainwater pipes including connection to buried services.

Item	Description
	New slates are to conform to BS 680: 1944 best quality to the sizes of existing slates. Clay tiles to comply with BS 402: 1979, and to match existing in all respects. Concrete tiles shall comply with BS 473: 550:1971 (1980) of type, size, colour, finish either to match existing or as specified manufacturer. Nails and clips to be as recommended by the tile/slate manufacturers and all coverings to be fixed in accordance with manufacturer's instructions. Fix using nails sized in accordance with BS 5534: Part 1 and not less than a length of 40mm greater than the thickness of the batten on length. Battens to be sawn softwood species to BS 5534, clause 11.3. Grading to BS 4978, clauses 5 or 9 and to be softwood pressure impregnated with timber preservative. Minimum size - *32.25 mm* Underlay to be reinforced sarking felt weighing minimum 2.3kg/m^2 and laid with minimum 100mm laps vertically and 300mm laps horizontally. Underlay *to BS1521 Class A* Lead is to comply with BS1178. See also 'Lead sheet in building: A guide to good practice'. Lead development association. Standard details for lead work contained in this publication are to be regarded as part of this specification. <u>Workmanship</u> Defective slates or tiles are to be replaced as necessary to match existing colour and size. Ridges, verges and flashings are to be pointed in cement mortar (1:3). New slates and tiles shall be handled with care and stored in the dry clear of the ground and well protected from other trades and the weather. Battening shall be of preservative treated softwood of a size recommended by the tile or slate manufacturer and for the condition served with joints meeting halfway across the top faces of a rafter fixed with galvanized wire nails and having sawn ends. Battens required in matching and repairs to existing roofs may require thickness less than those recommended above. In such cases the width of battens are to be twice the recommended sizes. Under cloak Supalux board at verges to be laid butt jointed and bedded on brickwork which is to be first damped to ensure good adhesion. Ridge tiles, hip tiles, bonnet tiles and valley tiles to b same manufacturer, colour and texture as the rest of the roof or as closely matched as to colour and texture to existing materials as possible. The Contractor must supply a sample to the Contract Administrator & the Local Authority where necessary for approval prior to fixing. Ridges, hips, bonnets to be butt jointed and bedded in cement mortar (1:3) squeezed down and struck off and laid otherwise to manufacturers instructions. Ends of ridges to be tied to rafters with wire ties. Hips to be fitted at ends with new hip irons securely fixed to timber. Eaves, verges and cutting to abutments are to be constructed in accordance with good practice and to be clipped using stainless steel clips in exposed situations. <u>Bitumen Felt roofing</u> Bitumen felt roofing shall comply with BS 747 Type 2B (weighing not less than 13.61kg/9.29m^2 unless otherwise specified) and in accordance with the British Standard Code of Practice CP144: Part3 (1970). The Surface under is to be primed and the bottom layer is to be continuously hot bonded to it and the upper layers to their respective under layers with hot bitumen, with 50mm minimum side laps and 75mm minimum end laps, covering with 9x16 mm limestone chippings spread evenly shoulder to shoulder bedded in hot bitumen 17-20kg per square metre. Bitumen felt roofing is to be carried out by an approved firm in a first class manner by skilled craftsman, and the whole roof left in a perfectly sound state. A guarantee will be required for the whole of the work, in accordance with that recommended by the Felt Roofing Contractors Advisory Board indemnifying the Employers against all costs in repairing or relaying any part or parts of the work which shall have proved unsatisfactory in the opinion of the Contract Administrator <u>Roof insulation</u> Insulation to be fixed to manufactures details and must be continuous with the wall insulation but stopped back at eaves or at junctions with rafters to allow a 50mm air gap in ventilated cold roofs.

Item	Description
C09	**Chimney Construction**
C09-1	Construction: Chimney to be constructed in external quality frost resistant materials 100mm minimum thickness (increased to 200mm where separates another fire compartment or another dwelling), using brick, dense blocks or reconstituted/natural stone to match the existing, with suitable mortar joints for the masonry as the masonry manufacturers details with any combustible material kept at least 50mm away from the walls containing flues.
C09-2	Flue: Line chimney with manufactured flue liners installed in compliance with manufacturers details. Clay flue liners to BS EN 1457:2009: Class A1 N1 or Class A1 N2, to be laid vertically and continuously socket up (jointed with fire proof mortar) from appliance with a minimum diameter in compliance with table 22. Backfill gaps between masonry and flue liners with a weak mix concrete using 1:6 ordinary Portland cement and vermiculite. Build in code 5 lead flashings (including apron & lay board flashings) & dpc tray into chimney as work proceeds, 150mm above all roof/wall abutments as necessary & terminate chimney with a proprietary chimney pot to match the internal flue sizes.
C10	**Flat Roof**
C10-1	Timber notes: All Timbers to be designed in accordance with BS5268 Part 2 and to be Grade C16. All joist hangers, straps and fixings are to be galvanized. Flat Roof must have a "U" value of 0.16W/m² ºC or better. A minimum fall of 1:40 to be achieved. Roof level to be true with no sag. Moisture content of timber should not exceed 20% and to be kiln dried & grade C24. Workmanship to comply to BS 8000:4. All fixings to be proprietary stainless steel or galvanized steel. The design, workmanship & selection of materials should comply with Model Specification Sheet P.L.1 Built-Up Roofing: Plywood Deck, published by The British Flat Roofing Council. Metallic roof trims to be of non-corrodible material & resistant to sunlight & not fixed through the water proof covering. All timber to be treated using CCA vacuum/pressure or O/S double vacuum to BS 5268:5, including all cut ends of timber etc 300mm of any joint. All flat roofing works to be carried out by a specialist flat roofing contractor and all materials etc to be fitted in compliance with manufacturer's details. Work should not be carried out during wet weather or when the deck has not fully dried out. Contractor to ensure that all health and safety measures are observed when working on the roof. General guidance when working on flat roofs is provided by the HSE and in particular their Guidance note '*working on roofs'*
C10-2	Structural Timbers: 200mm x 50mm timber joists at 300mm c/c. Affixed using proprietary joist hangers fixed to masonry wall using 6 No. bolts. Remove timber plates and brick infill and repair where necessary. 200mm x 50mm timber noggins between joists and between ends. Provide solid staggered strutting at third points if joist length is over 4.5m. Provide central strutting if joist length exceeds 2.5m.All roof timbers, joists, wall plates, blocking, strutting, battens etc to be preservative treated.
C10-3	Insulation: 175mm thick Kingspan insulation over 18mm WBP plywood decking fixed securely 59mm treated soft wood timber firings to achieve a minimum fall of 1:40. Contractor to ensure that suitable and adequate fixings or primary fasteners are used to affix the insulation to the building frame. Their strength, weatherproofing and durability must be considered during construction. Contractor to seek input from the Designer to ensure that the spacing and strength of fixings are adequate. Flat roof insulation is to be continuous with the wall insulation but stopped back to allow a continuous 50mm air gap above the insulation in ventilated cold decks. Cross ventilation to be provided on opposing sides by a proprietary eaves ventilation strip equivalent to a 25mm continuous gap at eaves level with insect grill.

Item	Description
	Note: Warm roof applications i.e. insulation above the structural deck do not require ventilation. Between joists lay 120mm Celotex insulation with minimum 50mm air gap above and 45mm Celotex below joists, finished with 12.5mm plasterboard and skim finish to provide "U" value of 0.16W/m² ºC or better. At fascia positions provide equivalent 25mm continuous ventilation with Glidevale system or similar. At abutments with existing walling, provide 25mm vent upstand system to ensure adequate crossflow A 500g vapour control barrier is required on the underside of the roof below the insulation level. Fix 12.5mm foil backed plasterboard (joints staggered) and 5mm skim coat of finishing plaster to the underside of all ceilings using galvanized plasterboard nails.
C10-4	<u>Strapping:</u> 30mm x 5mm x 1000mm galvanized mild steel straps at 800mm centres Fixed using 3 no. 10g nails to joists and screwed to wall and 100mm x 50mm wall plates and internal wall faces 30mm x 5mm galvanized mild steel straps (perpendicular to joists) 1050mm long at 1200mm centres plugged and screwed to existing masonry wall. Provide timber noggins between joists at strap locations. All strapping to conform to Building Regulation requirements
C10-5	<u>Decking:</u> 3 layers of high performance felt (hot bonded together with bitumen) to a current BBA Certificate in compliance with BS8217 Single layer system with a current BBA or WIMLAS Certificate Glass reinforced plastic (GRP) system with a current BBA or other approved accreditation Lead sheet fixed in compliance with the Lead Development Associations guide to good practice Mastic asphalt fixed in compliance with the Mastic Asphalt Councils technical guides & specifications Waterproof covering to be laid in compliance with manufacturers details by flat roofing specialist onto separating layer over roof insulation layer to form a 'warm roof' (or alternatively insulation fixed between/under joists forming a 'cold roof') fixed to, 22mm external quality plywood decking or similar approved laid to 1:60/80 minimum gradient using firing strips at spacing to match joists, fixed onto timber flat roof joists constructed of kiln dried structural grade timber with sizes and spacing suitable for the proposed clear span as annotated on the drawing or in compliance with Table below or see TRADA Span Tables. Flat roof to have a surface finish of bitumen bedded stone chippings covering the whole surface to a depth of 13mm to achieve a class AA (or B (t4) European class) fire rated designation for surface spread of flame.
C10-6	<u>Pipes passing through roof:</u> Where pipes / flues pass through the roof, to be fitted with metal sleeve extending 150mm above finished roof surface and wire flange at base screwed to plywood decking. Expanded metal lath to be tack welded to metal sleeve to receive asphalt skirting, neatly dressed and protected by weathered skirt fitted to pipe or flue. Ensure minimum 50mm clearance between boiler flues and roof timbers, soil vent pipes and waste vent pipes to terminate minimum 900mm above adjacent ventilated roof lights, if within 3000mm of roof light.
C10-7	<u>GRP Roof covering</u> Specialist roofing company to be appointed to undertake this specialist work. Reference is made to Appendix E which contains a guide for installing a GRP roof for information purposes. Contractor to seek specialist advice for pricing purposes. Minimum specification as follows Specification: Polyester resin applied to specially treated 18mm exterior plywood or a conditioned sterling board topped with fiberglass matting which is resin coated (top layer) to provide fully watertight system. Non-slip aggregate coating applied. Colour to be agreed with Client Matting to be minimum 450g/m2 weight

Item	Description
	Kerb and edge trims: Examples of kerb details are provided in DRG-SK11. All kerb details required to be included in this contract. Ensure kerb details properly constructed ensuring insulation is packed along the upstand to prevent a cold bridge (causing condensation). Joints between decking, gutters, GRP trims and protrusions to be sealed prior to resin Standards: Roof specification to be built in accordance with Part L of the current Building Regulations. Minimum u-value of 0.2W/m2k. A 20 year guarantee is to be obtained for the installed roof on completion.
C10-8	<u>New Flat roof</u> Contractor to allow for the design and replacement of the existing roof as follows; 18mm thick deck Vapour barrier (felt with boded bitumen layer) 125mm thick Celotex TD3000 insulation board (or similar) 5.5mm plywood bonded to top 1st layer - 2mm glass fibre based felt nailed to decking. 2nd layer – 2mm glass fibre based felt fully bonded to first in hot bitumen. 3rd layer - 4mm polyester based mineral finished felt fully bonded to hot bitumen. Ensure kerb details properly constructed ensuring insulation is packed along the upstand to prevent a cold bridge (causing condensation). Holding down and lateral strapping to be incorporated to meet current Building Regulation requirements. All roof timbers, joists, wall plates, blocking, strutting, battens etc. to be preservative treated. A minimum fall of 1:40 to be achieved sloping from front to rear. Roof level to be true with no sag. Ensure that minimum 150mm laps are included in any overlap and that the edges are suitably dressed down. Roof specification to be built in accordance with Part L of the current Building Regulations
C11	**Windows, Doors and Glazing**
C11-1	<u>General:</u> Door sets to include frames, architraves, ironmongery, glazing etc. All windows and doors to have the following guarantees; 10 years – manufacturing defects of double glazed units 5 years – all ironmongery and associated fittings 30 years – against rot and fungal attack.
C11.2	<u>Specification:</u> All new windows and doors to be replaced with new double glazed stained / powder coated units by specialist supplier. All external doors to be double glazed units to achieve average 'U' value of 1.8W/m² ºC or better. All external windows to be double glazed units to achieve average 'U' value of 1.6W/m² ºC or better. Outer glazing 6.4mm stadip silence plus glass Inner glazing 4mm planitherm total toughened glass Cavity 18mm thermal spacer filled with Argon gas between each pane. External finish Rosewood with chrome external and white internal handles Internal finish White with white furniture Where required include for Proprietary acoustic/insulated fire stop cavity closers, or similar are to be provided to all cavity openings/closings, tops of walls and junctions with other properties. All windows and doors to be set on 100mm outer leaf DPC to be laid under proprietary closer.

Item	Description
	Trickle ventilation to be provided in frames as required by current building Regulations to achieve the following background ventilation; Habitable Room 8000mm2 Kitchen 4000mm2 Utility Room 4000mm2 Bathroom 4000mm2 All glass to have low E coating. Provide sealant to frame both internally and externally. All glazing described below is to be safety glass to BS 6206 and BS5713 All glass below 800mm in height , and all glass in doors below 1500mm
C11.3	<u>Glazing:</u> Obscure glazing to be installed to front door (where applicable), bathroom, en-suite and landing window (if directly overlooking an adjacent window within 13m. Provide 6mm laminated safety glass to inner skin of all glazing below 1500mm above finished floor level to doors, and to windows within 300mm to either side of doors. Provide 6mm laminated safety glass to windows within 800 mm of finished floor level and stairs. All laminated safety glass to comply with relevant British Standard.
C11.4	<u>Openings:</u> Habitable rooms at ground and first floor levels to have a window to provide means of escape. Casement window to provide a clear opening of min. 750x450mm, with bottom of opening min. 800 and max. 1100mm from FFL. Means of escape windows to be fitted with proprietary hinges to open to the minimum required clear width of 450mm. Windows to have a minimum clear opening of 450x450mm, and a clear area of 0.33m^2. Windows are to have restrictors fitted limiting the clear opening to a maximum of 100mm to prevent falls.
C11.3	<u>Certification:</u> Contractor to ensure that a FENSA certificate is made available on completion. Allow for warranty with insurance backed guarantee for 10 years. Sheet glass is to be of good quality, free from all defects and must be cut so as to properly fit the rebate it has to fill. It shall comply with BS 952, and be of sufficient thickness or laminated to prevent the risk of injury in low-level exposed locations. Linseed oil putty is to comply with BS 544. Mastic for glazing to wood with beads to be approved colour to suit. All glass where fixed with putty is to be sprigged in where necessary and well back puttied. Glazing to wood with beads and mastic to include for the application of an approved sealer before glazing. All cracked and broken glass to be replaced upon completion.
C11.4	<u>Powder-coated Door and Window Units:</u> Where powder coated aluminium framed windows are required, incorporate 24mm sealed, double glazed units. Windows to BS 5713 and CP 152. Windows to provide a maximum U-value of 2.0 W/m^2K. Trickle vents to be provided in the windows where required (refer to mechanical ventilation requirements for background ventilation details where necessary). Proprietary acoustic/insulated fire stop cavity closers, or similar are to be provided to all cavity openings/closings, tops of walls and junctions with other properties. Means of escape windows to be fitted with proprietary hinges to open to the minimum required clear width of 450mm. Contractor to ensure that a FENSA certificate is made available on completion. Allow for warranty with insurance backed guarantee for 5 years.

Item	Description
C11-5	Internal Doors, Frames and architraves Door linings to be 32mm with planted 13mm stop and separate architrave. Wherever necessary, provide timber stud against wall where required to allow full architrave to be fitted. Leave in full working order including the locking mechanism. Include for the re-use of all ironmongery where in a suitable condition. All glazed doors are to be glazed with safety glass.
C12	**Timber Work**
C12-1	General New timber shall be good quality, softwood free of warps, excessive knots, & splits with a moisture content not exceeding 20%. External and carcassing timbers shall be treated with a suitable preservative. The terms 'Hardwood' used without qualification as to species is to be suitable for its use in the works as defined by BS1186. Timber shall comply with the following British Standards: B4978:1973 'Timber graded for Structural Use' BS1186: 'Quality of Timber and Workmanship in Joinery' for quality and species Part 1 Quality of Timber Part 2 Quality of Workmanship BS5268 Part 2: Latest Edition Moisture content at time of fixing will not exceed 19% for external use and 17% for internal use. All timber incorporated within the works shall be adequately protected to ensure that the required moisture content is maintained until practical completion occurs.
C12-2	Materials Structural timber is to be graded "General Structural" and is to be Scandinavian or Russian Redwood or Whitewood. Structural timbers are to be vacuum /pressure impregnated with approved preservative to a nett dry salt retention of 4kg/m^3 of timber. A preservation certificate must be attached to each delivery note and be open for inspection by the Contract Administrator Joinery timber is to be in accordance with BS 1186 Part 1 1971. Joinery timber to be Scandinavian or Russian Redwood or Whitewood. Joinery timbers are to be rot-proofed by impregnation by a 3 minute immersion in 'Cuprinol' or 'Rentokil' joinery preservative or other similar approved. The timber to be treated must be machined to the finished sections and cut to component lengths before impregnation. Any cross cuttings, boring, notching, etc., after impregnation shall be treated with a brush-applied concentration of similar composition. Plywood to be BS 6566, bonding M.R. for interior quality and W.B.P. for exterior quality and with grade 1 finish on exposed faces. Blockboard and laminate board shall comply with BS 3444 MR bonding internally and W.B.P. bonding externally. Chipboard shall comply with BS 5669:1989 Type C4, and be of flooring grade quality (treated) for all flooring locations. Fibre building board shall comply with BS1142. Nails screws bolts and the like are to be best quality mild steel. Nails to be BS1202, sheradized screws to be BS 1210 and bolts to be BS 916. Glue for joinery to be synthetic resin adhesive as BS 1204 Part 1 or 2 as appropriate, type W.B.P. for external joinery and type I.N.T for internal joinery. Facia and Soffit: Allow for the replacement fascia and soffit boards where required and as per existing specification or in uPVC to BS 4576 fixed in compliance with manufacturers details.

Item	Description
C12-3	Workmanship Softwood for painting shall be thoroughly sanded down and left free from imperfections of machine marks, raised grain, etc. and the surfaces shall be such that when properly finished with a gloss paint no imperfections of manufacture are apparent. All Ironmongery shall be carefully wrapped and protected until completion of the works and any which may be defaced or otherwise damaged shall be replaced with new or replaced at the Contractors expense as directed by the Contract Administrator. Structural timbers are to extend in one piece between their supports or fixings and to be jointed in an approved manner. Where structural timbers are to be notched over supports the depth of the notch is not to be more than two-fifths the depth of the timber. Where structural timbers are to be cut for the passage of pipes, cables and the like, cuts are to be made as near to the centre neutral axis as possible and are not to exceed one third the depth of the timber. Alternatively they are to be made in the top of the timber as far from the centre of the span as possible. All stored joinery to be stacked in accordance with good practice and protected from the weather. Seal exposed end grain with clear and grain sealer. Any timber that shrinks, splits or warps shall be rectified by the Contractor at his own expense.
C12-4	Staircase Construct in accordance with the Architects Specification. New timber staircase to replace existing: Total Rise 2590mm approx. = 14 No. equal risers of 185mm. Treads to be 225mm. Pitch to be less than 42 degrees. Provide handrail 900mm above line of nosings (measured vertically) with vertical rails at maximum 100mm. Handrails to be terminated by newel posts. Minimum headroom to stair to be 2000mm measured from line of nosings.
C12-5	Loft Hatch Loft hatch to be insulated to the same standard as the roof, draft stripped and fixed. Include for 8mm moisture resistant MDF boarding with 70mm insulation backing. Trim ceiling board to suit and locate hatch in new 38mm softwood opening. Frame to be properly screwed to structure at minimum 225mm centres. New 32mm x 20mm softwood architrave to be glued and screwed to the frame. Prepare ready for redecoration.

Item	Description
D	**Masonry and Masonry Repairs**
D01	**Masonry Repairs**
D01-1	Materials Cement / Mortar: Selection of suitable mix shall be in accordance with BS 5628: Part 3 table 13. Cement is to be in accordance with BS 12. Cement mortar is to be composed of one part cement to three parts of sand by volume unless otherwise scheduled. Gauged mortar is to be composed of one-part cement to one-part lime to six parts sand by volume. Limes shall be hydrated lime in accordance with BS 890. Sand is to be clean, sharp river or pit sand, course grained to comply with BS 1199 and 1200 and must be well screened and well washed before use. All mortar is to be freshly mixed and no mortar is to be re-mixed and used after commencing to set. The use of plasticisers will not be permitted unless approval has been obtained from the Engineer. All water used in mixes shall be clean and free from any impurities. Trial mixes should be undertaken to ensure a good match and shall be to the satisfaction of the Contract Administrator. General guide for mix as follows for Mortar for re-pointing (Cement: Lime: Sand) Strong 1:1:6 Normal 1:2:9 Weak 1:3:12
D01-2	Bricks / blocks Bricks and blocks shall be suitable for location, loading & exposure/frost rating and comply with the latest edition of the appropriate British Standards as follows: - Semi-engineering bricks are to be 65mm and comply with BS 3921 Class B. - Facing bricks shall be 65mm or 73mm and selected to match existing and to the satisfaction of the Contract Administrator and comply with BS 3921. Facing bricks shall not be used below DPC, for parapet walls or garden walls unless manufacturers certify suitable. - Common bricks to be 65mm or 73mm thick from an approved supply. Common flettons are not suitable for masonry painting. - Lightweight and pre-cast concrete blocks shall comply with BS 6073, and shall not be used below DPC or in exposed locations unless manufacturers certify suitable. - Where concrete blocks are laid below damp proof course level they shall have a density greater then 1500kg/m^3. Brickwork minimum strengths as follows; Common Brickwork 34.5N/mm2 (minimum strength 20n/mm2) Common blockwork 3.5N/mm2 Engineering brick Class A 70N/mm2 Wall ties for hollow walls shall be stainless steel double-triangle and comply with BS 1243: as amended 1981 and be set at 900mm horizontal and 450mm vertical intervals (staggered) except at openings where they will be inserted at 300mm intervals vertically, such as jambs and expansion joints. Damp proof course to new brickwork to be Hessian based bitumen or other similar approved by the Contract Administrator, lapped at joints and intersections. Vertical D.P.C 150 mm wide to be provided at all jambs and sills of openings. In all instances, the damp proof course shall be placed at a minimum of 150mm above ground level. Where a lap of damp proof course is unavoidable a minimum of 150mm lap shall be incorporated. Suitable cavity trays shall be installed over openings in cavity walls with weep vents. Insulation in cavity walls shall be sufficient thickness to comply with current Building Regulations.

Item	Description
D01-3	Removal / Replacement of Bricks Cut out and replace broken bricks with new to match existing. Cut out to a depth of 75mm all cracked joints and cut along bed joint either side of the crack to a depth of 75mm for a length of 75mm. Ensure that joints are thoroughly cleaned by vacuum, removing all dust. Repack all joints so formed with mortar no stronger than 1:1:6 or the existing mortar, whichever is the weaker, and repoint to match existing. Particular care is required in the area of the D.P.C.s and any damage made good as the works proceeds. Carefully rout out mortar joints in damaged area and remove cracked or loose bricks. The edges of the demolished area shall be toothed out to allow the new brickwork to be fully bonded to existing. Rout out adjacent bed joints either side of damaged area to a depth of 75mm. Re-build affected area using bricks of similar match (submitted for approval prior to installation). Insert 1 no. 6mm dia. Stainless steel rod embedded 50mm into every forth joint to span required area and extend a minimum 400mm either side of repaired area. Ensure that new brick fits flush with existing external face. Insert Plusbond 25 resin grout and bed brick back in position. Allow curing. Sound and intact headers are to be left in place to facilitate bonding in the new brickwork. Where insufficient headers protrude, stainless steel frame anchors shall be incorporated at 450mm horizontally and 450mm vertically plugged and screwed into the existing brickwork. Alternatively stainless steel brick ties may be embedded in the remaining blockwork with Epoxy mortar to facilitate bonding of the repaired areas.
D01-4	Brickwork repairs behind existing Render Cut the render back 150mm either side of the crack in the underlying wall. Cut out and replace with new all cracked bricks or blocks. Cut out to a depth of 75mm all cracked joints and cut along bed joints either side of the crack to a depth of 75mm for a length of 75mm. Repack all joints so formed with mortar no stronger than 1:1:6 or the existing mortar strength, whichever the weaker. Undercut all edges; fit stainless steel expanded metal lathing across cracks in masonry. Brush down to remove dust and apply proprietary bonding agent, to edges of background. Where any timber is exposed, securely fix eml plugged and screwed to brickwork. Apply render coat not exceeding 50mm in 1:1:6 cement:lime:sand render left keyed for finishing coat. Apply render finishing coat not exceeding 5mm finish to match surrounding render. All work in accordance with BS 5262: 1976. Applied render should be protected from freezing and from rapid drying.
D01-5	Workmanship All facing brickwork to match existing and to be approved by the Client and Engineer prior to construction. Brickwork is to rise at the rate of 4 courses per 300mm or to match the existing and shall follow the recommendations set out in BS 5628: Part 3. Brickwork is to be executed in stretcher or English bond as appropriate. The perpends are to be accurately kept, angles plumb, all joints flushed up as the work proceeds and cross joints filled solidly. Cuttings to be accurately executed. Pointing to be neat joints to match existing No broken or defective bricks are to be used and no snapped headers are to be used where required for bond. All bricks are to be well wetted before laying and tops of walls which are left off are to be wetted directly before recommencing. No wall is to rise more than 1000mm in any one part above any other and the maximum height of masonry to be built in one day shall not exceed 1500mm. Strict care shall be taken to ensure the cavity is kept clean of mortar droppings and other debris as the work proceeds. Insulation to cavities shall be kept clean, dry & free from mortar as the work proceeds. No brickwork is to be laid in frosty weather and any damage caused by frost is to be made good at the Contractor's expense. All brickwork and blockwork shall be adequately covered and protected during inclement weather. Bricks and blocks shall not be laid in frosty weather.

Item	Description
	All timber frames to be bedded in cement mortar (1:3) and pointed externally with an approved mastic compound applied with a pressure gun in accordance with manufacturer's instructions. Where windows and doors are PVCu then open openings shall be formed using accurate profiles which allow for required tolerances. The Contractor shall remove or make good at his own cost any portion of brickwork which in the opinion of the Engineer is not of sufficient strength or of satisfactory finish or which may prejudicially affect the durability of the construction. Proprietary pre-cast concrete lintels to BS5977: Part 2: Bed on mortar used for adjacent work with bearing of not less than 150mm unless specified otherwise. Pre-fabricated steel lintels: For internal walls constructed with facing bricks, the lintel should be formed using a 6 x 65mm galvanised mild steel plate with a minimum of 150mm bearing the first bed course above the lintel should be reinforced using BK60 reinforcement supplied by British Reinforcement Concrete Engineering Co Ltd, London office, Station Approach, Hayes, Middlesex.
D02	**Crack Repairs**
D02-1	General Generally, all damage to cracked walls, plaster, render and tile finishes to be made good. All crack repairs including workmanship to be carried out generally in accordance with the recommendations of BRE Digest 359 and BS 6270 Part 1. If an area is found to be damp during the stripping of decorations the Contract Administrator should be informed immediately and his further instructions sought before continuing the works. If the existing plaster has lost its key with the brickwork/blockwork, then the plaster should be stripped back to firm secure plaster. Clean the exposed brickwork/blockwork of loose plaster and wash the wall with a solution of water and bleach. Allow the area of brickwork/blockwork to dry as long as practically possible. Paint the wall with a stabilizing solution and rake out the mortar joints to a depth of 10mm to allow a good key. Re-plaster with a 1:3 cement:sand undercoat with class B gypsum plaster finish in accordance with good building practice. Prepare the newly plastered area to a suitable finish ready for final decoration in accordance with the Scope of the Works. This preparation should include for a coat of emulsion primer if required to tone in the new area of adjacent colours. If, upon removal of existing decorations the plaster is sound then the walls should be washed with a solution of bleach and water and the wall allowed to dry as long as practically possible. Paint the wall with an anti-fungal primer paint followed by a coat of proprietary sealer paint. Allow primer to dry and then apply final decorated finish in accordance with the Scope of the Works.
D02-2	Plaster cracks Cut out the plaster back from crack to a brick length either side of the crack in the underlying wall. Cut out and replace broken bricks with new to match existing. Cut back to a depth of 75mm all cracked joints and cut back along bed joint either side of the crack to a depth of 75mm for a length of 75mm. Repack all joints so formed with mortar no stronger than 1:1:6 or the existing mortar, whichever is the weaker and repoint to match existing. Undercut all edges, fit expanded metal lathing across repaired cracks in masonry. Brush down to remove dust and apply a proprietary bonding agent. Re-plaster in type, strength and thickness as existing, flush and true to the surrounding area. Allow to dry out completely before applying decorations. NB. Type of existing plaster to be determined to establish compatibility with remedial specification.

Item	Description
D02-3	Mild Steel Straps: Hack of plaster locally to where straps are to be inserted. Affix 30mm x 3mm galvanised mild steel straps secured to wall using 50mm long zinc plated screws at 100mm centres in locations shown on the attached sketch. Affix EML around straps and re-plaster to existing specification.
D02-4	Brickwork / Blockwork Cracked Bricks / Blocks — Replace with new bricks / blocks to existing match Joints from hairline to 0.5mm — Rake out fractured mortar bed joint and re-point Joints 0.5mm to 5mm — Resin inject cracks, re-stitch and re-point Joints with cracks > 5mm — Reinforce bed joint using Helibar repair system Consideration to be given to repair with the use of helibar reinforcement where specified in the scope of works.
D02-5	External Render / Internal plaster finish Hairline — Cut out and make good plaster cracks Cracks hairline to 0.5mm — Rake out and fine fill Lath and plaster — Rake out and fine fill Cracks > 0.5mm — Resin inject masonry, affix stainless steel EML (150mm min width) and re-render / re-plaster Loose or blown plaster — Hack off loose plaster , EML as above and re-plaster Brush down to remove dust and apply a proprietary bonding agent. Re-plaster in type, strength and thickness as existing, flush and true to the surrounding area. Allow to dry out completely before applying decorations.
D02-6	Plasterboard Ceiling Cracks hairline to 0.5mm — Fine fill with flexible filler Cracks 0.5mm to 2mm — Chase out crack and fill with flexible filler Cracks > 2mm — Cut back 150mm of existing ceiling or to nearest joist and replace with new section of plasterboard, tape joints and skim. Apply Unibond solution to the entire board and fill and scrim the joint with 2 layers of nylon scrim and re-skim with plaster over a minimum 600mm wide to even out any undulation. If, upon removal of existing decorations the plaster is sound then the walls should be washed with a stabilizing solution and the wall allowed to dry as long as practically possible. Paint the wall with an anti-fungal primer paint followed by a coat of proprietary sealer paint. Allow primer to dry and then apply final decorated finish in accordance with the Scope of the Works.
D02-7	Lath and plaster Other than hairline cracks, cut back and repair crack. Once repaired cut back setting coat of plaster to accommodate two layers of 75mm wide nylon scrim fixed with Unibond and then plaster over 600mm width and plaster to properly line through the surrounding surfaces.
D02-8	Bed joint reinforcement repairs (Helibar system by Helifix Ltd.). Rake out or cut slots into horizontal mortar bed joints for at least 500mm each side of the crack and, where within 500mm of a corner, returned around the corner by 100mm. Slots to be 450mm centre to centre maximum, 25-35mm deep in a single skin or cavity wall leaves up to 140mm thick. Clean out slots with blow pump and flush with water to prepare Helibond. Inject continuous bead of Helibond along the back of the slot using grout gun. Place 1 no. Helibar (6mm ribbed grade 304 stainless steel bar) over full length of slot. Push helibar into grout to obtain good coverage. Inject a further bead of Helibond to cover rod and iron into slot using finger trowel. Cover with wet Hessian during curing of grouting. Re-point slot.

Item	Description
D02-9	Adhesive / resins Fine Cracks up to 10mm Width: Pressure inject Conbextra EP10 to full depth of crack at intervals to ensure continuous extrusion to face of crack. Allow curing.
D02-10	Open Joints: Using a low-pressure handgun, inject Plus Bond 25 to rear of recess, filling total recess along line of raked joint and recessed from front face of brick by 25mm. Allow curing.
D02-11	Re-pointing OPC/Lime/Sand mix to be carefully blended and/or coloured to match existing. Pointing to be applied and struck to match existing. Allow for pointing an area of approximately 2 bricks either side of crack. Allow curing.
D02-12	Dowel Bars (Fosroc Expandite Lokset P25 or equal) Drill 12mm dia. holes into masonry at centres and to depths specified. Inject Lokset P25 to base of hole, filling to ¾ full. Immediately insert 6mm dia. stainless steel ribbed dowel bar to lengths specified, recessed 25mm from surface. Make good pointing of hole. Allow curing. Epoxy resin to be handled, mixed and applied strictly in accordance with manufacturers' specifications and detail.

Item	Description
E	**Redecoration Works**
E01	**Redecoration Work**
E01-1	General: All brands of paint and other coating materials shall be to the Contract Administrator's approval. Colours shall be from the BS4800 range and the selection will be confirmed. Undercoats to have differential tints. Where re-painting existing emulsion walls and ceilings, the Contractor shall thoroughly clean the surface and apply a minimum of two coats of emulsion paint (produced by a leading manufacturer eg. ICI, Crown, etc.). The Contractor shall check the compatibility of the new and existing paintwork and carry out a trial panel if necessary. New plasterwork or local plaster repairs shall be sealed with either a watered coat of emulsion or an approved sealer, prior to applying finishing coats. No paint shall be applied to damp surfaces. Where a full gloss paint system is specified this shall comprise knotting, stopping and priming to new timberwork, one undercoat and two gloss finishing coats in approved colours. The Contractor shall allow for sanding between all coats. Ensure that all holes, cracks, defects in surfaces to be prepared and decorated have been made good so that they are not visible. The Contractor shall report cracks wider than 1mm and any other significant imperfections to the Contract Administrator and shall await instruction before carrying out surface preparation. Surfaces to be redecorated shall be prepared by raking out and fine filling cracks less than 1mm wide and fine filling minor indentations and cleaning and rubbing down the surface. Before decorating, allow surfaces to dry thoroughly. All surfaces to be brushed down immediately before decorating to remove dust, dirt and loose materials. Take all necessary precautions to protect all floors and surfaces and maintain constant cleanliness; remove all rubbish and dirt as it accumulates. Ensure that at the time of decorating, timber has a moisture content appropriate for its use. Ensure that surfaces have a smooth, even finish with arises rounded or eased. Remove resinous exudations and apply knotting to resinous timber and all knots and allow to dry. Prime, allow 24 hours to dry, stop nail and screw holes or similar depressions with cellulose filler, press well in and finished off flush with surface. Fill pore and grain irregularities with brush or knife applied filler, remove surplus, rub down and leave a smooth, even surface. Where clear coatings are anticipated (ie. hardwood skirtings, sills, staircase, etc.) nail and screw holes and similar depressions to be filled with stopping to match the colour of the timber, pressed well in. Finish off flush with surface. Where smoke staining has occurred to masonry surfaces to be painted, provide a coat of a proprietary stain killer (Zinsser BIN Primer sealer or similar)
E01-2	<u>Wallpaper Coverings</u> Redecorations shall be carried out to match existing decorations using materials of similar type and colour. Where materials such as wallpapers are no longer available, wallpaper of similar quality shall be used. Where new wallpaper is required the Employer shall choose the colour and type. Where chosen decorative finishes are of a superior quality and more expensive than the original decorations, and where additional expense is incurred in the application of superior decorations, the Employer shall be required to cover the additional material and/or labour costs. Paper hanging shall not commence until wall surfaces are dry and all other work is completed. Ensure complete quantity of material is supplied and check each roll to ensure pattern shade and other references are correct and identical. Fill and rub down wall surfaces until perfectly flat and smooth, apply size or primer to control porosity as recommended by the adhesive manufacturer and use adhesive for wallpaper hanging as recommended by the paper manufacturer. Hang wallpaper linings with pattern aligned and close butted edges. Finish perfectly smooth with imperceptible joints and without any adhesive marks or any other imperfections. Trim junctions with other finishings neatly. Where existing wallpaper has been removed, wash down with soap and water detergent solution to remove paper residues, paste and size. Cut out cracks and make good imperfections by filling and rubbing smooth. Rinse with clean water.

Item	Description
E01-3	Painting Where re-painting existing emulsion walls and ceilings, the Contractor shall thoroughly clean the surface and apply a minimum of two coats of emulsion paint (produced by a leading manufacturer eg. ICI, Crown, etc.). The Contractor shall check the compatibility of the new and existing paintwork and carry out a trial panel if necessary. New plasterwork or local plaster repairs shall be sealed with either a watered coat of emulsion or an approved sealer, prior to applying finishing coats. No paint shall be applied to damp surfaces. Where a full gloss paint system is specified this shall comprise knotting, stopping and priming to new timberwork, one undercoat and two gloss finishing coats in approved colours. The Contractor shall allow for sanding between all coats. For preparing new and bare timber, all surfaces to be brushed down immediately before decorating to remove dust, dirt and loose materials. Take all necessary precautions to protect all floors and surfaces and maintain constant cleanliness; remove all rubbish and dirt as it accumulates.
E01-4	Defects Ensure that all holes, cracks, defects in surfaces to be prepared and decorated have been made good so that they are not visible. Before decorating, allow surfaces to dry thoroughly. Ensure that at the time of decorating, timber has a moisture content appropriate for its use. Ensure that surfaces have a smooth, even finish with arises rounded or eased. Remove resinous exudations and apply knotting to resinous timber and all knots and allow to dry. Prime, allow 24 hours to dry, stop nail and screw holes or similar depressions with cellulose filler, press well in and finished off flush with surface. Fill pore and grain irregularities with brush or knife applied filler, remove surplus, rub down and leave a smooth, even surface. Where clear coatings are anticipated (ie. hardwood skirtings, sills, staircase, etc.) nail and screw holes and similar depressions to be filled with stopping to match the colour of the timber, pressed well in. Finish off flush with surface.
E01-5	Gloss Surface During general preparation (whilst still wet but before rinsing down) rub down with abrasive paper or block to provide key for subsequent decoration.
E01-6	Painted Windows Remove the existing paint to the extent specified or instructed. Thoroughly clean junctions of previously painted surfaces with glass. Remove all paint splashes and paint encroaching beyond the site line. Remove loose and defective putty. When dry, patch prime, re-putty and paint as soon as sufficiently hard. Apply priming coats by brush unless other methods are approved. Work priming surface, joints, angles and end grain. Ensure that priming coats are of adequate thickness and suit surfaces' porosity. Ensure that any primed surfaces which have deteriorated, on site or in transit, are touched up or re-primed.
E01-7	Schedule of Types of Coatings: Bare woodwork – prepare, acrylic primer, one undercoat, one gloss finish Painted woodwork – prepare, patch prime, one undercoat, one gloss coat finish. Emulsion to bare plaster – prepare, matt emulsion mist coat, two matt emulsion finishing coats. Emulsion to textured finishes – patch repair or re-coat Artex finish to areas, prepare and apply two matt emulsion finishing coats. Eggshell – prepare, patch prime, two silk vinyl emulsion finishing coats. Clear finish to hardwood – sand smooth and level with electric sander, finish as existing. Staining - Check with stain manufacturer whether or not a primer is required for the type of timber and type of previously applied treatment. Apply stain in flowing eases. Re-distribute excess material by brushing 15-20 minutes after first applying.

Item	Description
E01-8	Application Application generally: apply coatings in accordance with the manufacturer's recommendations, to clean dry surfaces in dry atmospheric conditions and after any previous coats have hardened. Unsuitable Conditions: do not apply coatings. Apply an even film over all exposed surfaces, avoid brush marks, sags, runs and other defects. - to surfaces affected by moisture or frost - where ambient temperature is below 4° centigrade - where heat is likely to cause blistering or wrinkling The decorations to be applied to each area of the building are as specified in the Schedule of Finishes and Scope of the Works.
E01-9	Ancillary Materials Including paint strippers, abrasive papers and blocks, cleaning agents, etching solutions, mould inhibitors, rust inhibitors, size, stopping, knotting fillers – types recommended by their manufacturers for the surface being prepared unless otherwise specified.
E01-10	Ironmongery and Radiators Remove ironmongery and radiators from surfaces to be redecorated and re-fix on completion of decoration.
E02	**Plaster work**
E02-1	Materials Portland cement to be as previously described. The sand for plastering shall be clean, sharp graded river or pit sand, free from loam, silt or organic impurities and shall be well graded from course to fine and washed if required and comply to BS 1199 and 1200 (1976). The sand for external render shall comply with BS 1199. Samples of the sand are to be submitted for approval to the Contract Administrator if required before plastering commences. The lime for plastering shall be best well burnt Buxton Stone Lime or Hydrated lime. Retarded semi-hydrated gypsum plaster is to be 'Thistle' or other equal and approved to BS 1191 Class 'B' applied strictly in accordance with manufacturer's instructions. Materials to be stored, measured and mixed and used in accordance with BS 5492: (1977). All branded materials shall be delivered to their site in their original packages bearing the trade name of the materials concerned, and all cements and plasters shall be stored in a dry place. Gypsum plasterboard shall comply with BS 1230 fixed with sheradised or galvanized clout head jagged shank nails with joints scrimmed with 75mm Hessian based scrim tape. Joints of boards to be suitably nogged. Metal lathing shall comply with BS 1369. Metal angle beads shall comply with BS 2452 Part 1 1984. Beads for internal plastering and dry lining. Metal corner strip, stop beads, render stop and movement beads shall comply with BS 5262: 1967 Code of Practice, external rendered finishes.
E02-2	Specification Plastered / Rendered / Roughcast coatings Undercoat: 1:1:6 Cement: Lime: Sand Thickness 10mm Final Coat: Thickness 3mm
E02-3	Workmanship Surfaces are to be cleaned and well wetted before plastering is commenced. Plasterwork is to be finished to true and even surfaces perfectly free from defects and with angles, arises and the like accurately formed. Adequate time is to be allowed for one coat to dry before the next is applied and undercoats shall be well scored.

Item	Description
	Cement and sand mixes are to be used within 2 hours of mixing. No mix is to be re-tempered. Metal lathing is to be fixed at centres not exceeding 100mm with galvanized staples. Waterproof rendering to be 2-coat work and composed of cement lime and sand mix to BS 5262, the proportions varied to suit the respective background and materials. A water proofing additive is to be incorporated. Waterproof external rendering to be multi coat work and composed of cement lime and sand mix to BS 5262 with the proportions varied to suit the respective background materials. A waterproof additive is to be incorporated to give a water absorption of less than 1%. It is essential that the render system and surface finishes should be breathable. The rendering may be either mechanically applied to a thickness of not less than 20mm before finish is applied, or hand applied, in 3 coats similarly. The Contractor must allow in his price for all dubbing out and filling to defective bricks and for providing a suitable key to the existing wall. Any hollow or defective render shall within an area of wall shall require the whole of the wall to be removed and re-rendered at the Contractors own expense. Granular finishes when required shall be specified in the schedule of works otherwise render shall be finished with a wood float.
E03	**Ceramic Tiling**
E03-1	General Remove all loose, blown or cracked tiles in panels suitable for indistinguishable renewal as follows: Remove all tiles to match existing Re-grout all tiles and reform junction seals to equivalent/fixtures as existing. Re-fix all items for re-use, including making good to disturbed areas, and replacement of any and all damaged or missing items to match existing. Reinstate all surfaces removed to facilitate works to the current standards required. Re-commission and re-balance the central heating system. The central heating system to be used only for testing purposes and not for the drying out of wet trades. Flush out all tanks and pipes to remove debris.

Item	Description
F	**Services**
F01	**General**
F01-1	The Contractor shall be responsible for ascertaining what services exist on site and around the site, the position of such services and whether they are live or no. No claims will be considered arising from a lack of knowledge regarding this. The Contractor is to be responsible for notifying all service authorities or private owners of proposed works in good time (not less than one week before commencing site operations) and to observe all service authority recommendations for carrying out work adjacent to existing services. Any damage arising is to be made known to the Contract Administrator and the relevant services authority immediately and all repairs carried out to the satisfaction of the services authority without delay. No diversion of services to be carried out without the express permission of the Contract Administrator.
F02	**Plumbing**
F02-1	Internal Plumbing All internal plumbing is to be in accordance with the regulations of the local Water Authority and in cases where they are found to be at variance with the specification immediate notice in writing is to be given to the Contract Administrator. All plumbing installations are to be carried out by or under the direction of an authorized or registered plumber. All hot water systems to be thoroughly tested and left in perfect working order. All plumbing works to be carried out by an IOP or suitably qualified plumber. All works shall comply with all current and relevant regulations including Building Regulations where appropriate. All works to be carried out in accordance with BS5572: 1978, CP304. General internal plumbing layout is indicated on the original plans appended to this Specification. All works to be completed to existing locations. All pipework to be uPVC to BS4514:1969 and BS5255. Pipe sizes to be as existing or as follows; Soil vent stack 100mm diameter Waste to sink, baths, showers etc. 40mm diameter Waste to wash hand basins, bidets etc 32mm diameter Overflows 19mm diameter Any waste runs from basins, baths or sinks of excessive lengths between 1700mm and 4000mm to be 50mm. Self re-sealing 76mm u traps to bath, shower and washer positions.76mm bottle traps to sinks and wash hand basins. Anti-syphon bottle traps to be provided where necessary i.e. more than 3m from a SVP (40mm pipe) or 1.7m from an SVP (32mm pipe). All drainage wastes to fall at min 35mm per metre run and discharge to SVP's connected to below ground drainage system. Cast iron soil, waste and rainwater goods shall comply with BS 416 and BS 460 as appropriate and fixed 25mm clear of walls. All copper tubing is to be solid drawn copper of approved British Manufacture and to comply with BS3931 and to be from an approved supplier to the satisfaction of the Contract Administrator. All joints and fittings are to be 'Yorkshire' or other equal approved capillary type with integral "Potable" solder rings and comply with BS 864. Copper traps shall comply with BS 1184. Stop valves and taps are to comply with BS 1010. Drain off taps are to comply with BS 2879, Type B. Potable cold water storage tank to conform to Water Bylaws 30 (1) and (2) complete with lid and lagging set when sited in roof. Expansion tank to be BS 417: Part 2, Table 1 complete with lid and lagging set when sited in roof. Cylinder to be to BS 1566: Part 1, 1972 with top entry boss for immersion heater, sacrificial anode, pre lagged at manufacture. Wheel valves are to be brass to BS 5154, low pressure. Ball valves to be brass to BS 1212 pattern 1, with silencing pipe and plastic float for high pressure and low pressure. Pipe insulation to the approval of the Contract Administrator and in accordance with current regulations.

Item	Description
F02-2	Soil Vent Pipe SVP to be supported in accordance with manufacturers requirements in the riser duct. At access plates within the SVP, provide a removable panel with supped screws to be provided. Where a duct passes through habitable rooms, provide insulation with mineral fibre wrap. The boarding to be two layers of plasterboard to specification. Pipe work/ducts passing through floor to be insulated. SVP to terminate with an air admittance valve covered by current Agrement Certificate, fixed in accordance with manufacturers instruction above the flood level of the WC cistern and softwood shelf provided on top of the SVP duct. In cases where the SVP is the head of the drainage run, the SVP will carry on up within the duct to the roof space to terminate at standard vent slate or tile as appropriate. Provide rodding points where required to allow rodding of all lengths of pipe. For example, access points to be considered at bends in wastes, at the base of each SVP at ground level before the drainage passes underground etc. SVP's to be surrounded for entire length within the flats within minimum 25mm fibreglass insulation (min density 10 kg/m^3) or equal, SW pressure preservative treated timber framing (38mm x 38mm softwood battens) and two layers of 12.5mm plasterboard (min mass per unit area 8 kg/m^2) with staggered and taped joints and skim plaster finish. Pipes to be fitted with Quelfire intumescent collar or equal where they pass through Party Floor fire compartment. Seal around all pipes with fire resistant mastic. For alteration and adaptation work, Soil Pipes and fittings and Rainwater Goods provided and fixed shall match as near as practicably possible the existing material and profile and comply with the relevant BS applicable. Soil and waste pipe joints are to be properly caulked or jointed in accordance with manufacturers recommendations. Cast iron gutters shall be jointed in mastic or putty to manufacturers recommendations.
F02-3	Junctions with floor penetrations Pipes and ducts that penetrate a floor separating habitable rooms in different flats should be enclosed for their full height in each flat. The pipework should be surrounded for the entire length within the flats with minimum 25mm fibreglass insulation (min density 10 kg/m^3) or equal, softwood pressure preservative treated timber framing (38mm x 38mm softwood battens) and two layers of 12.5mm plasterboard (min mass per unit area 8 kg/m^2) with staggered and taped joints and skim plaster finish. Pipes to be fitted with Quelfire intumescent collar or equal where they pass through Party Floor fire compartment. Pipe boxing to consist of soft wood framing, 2 layers of 15mm plasterboard and skim and void filled with mineral wall quilt for sound insulation and fire/smoke stopping. Boxing to be continuously carried up to ceiling space for soil and vent pipe and provided with air grills where an air admittance valve is used. Ensure all gaps & all voids are sealed to prevent any air leakage. Partition to provide 30 minimum fire resistance. Fire stopping should be flexible and also prevent rigid contact between the pipe and floor.
F02-4	Sanitary ware uPVC Rainwater, Soil and Vent Pipes, Polypropylene overflows and High Temperature Polypropylene Water pipes and fittings are to be obtained from an approved reputable supplier to the satisfaction of the Contract Administrator. All sanitary pipework to be in accordance with BS 5572. Sanitary fittings as described in the schedule of works and installed in accordance with manufacturer's instructions and recommendations. Washing machine taps are to comply with BS 1010 chromium plated to BS 1224.
F03	**Water Supply** Cold water supply to be via water board approved pipe to rise minimum 750mm in from the external face of the wall and with main house stop cock forming interface to copper supply pipework. Where the supply passes through a ventilated void, under suspended floors or rises within 750mm of an external wall, ensure that the pipe work is adequately insulated. Outlet sizes as follows; Sinks, wash hand basins , washer positions — 15mm hot and cold Baths — 22mm hot and cold WCs — 15mm All work to be completed in accordance with CP310 and CP342 and Local Company By-laws

Item	Description
F04	**Heating**
F04-1	General Heating appliance as described in the schedule of works and installed in accordance with manufacturers instructions and recommendations. Gas installations including plumbing, meters and appliances shall be installed to comply in every aspect with the latest regulations and installation must be by a CORGI registered plumber. The prices for all pipes shall include all bending and jointing and adequate clipping to the building or another supporting structure at every change in direction and at 1000mm intervals on all straight runs. All works to be carried out by a Gas Safe registered or approved sub-contractor. Upon completion of the works, ensure that all heating services are fully working.
F04-2	Water Heating (non-vented) Minimum 115 litre pre-insulated non-vented hot water cylinder (to limit heat loss to 90 W/m2 of surface area) fitted on 50 x 50mm softwood bearers. System to be installed in accordance with BBA and manufacturer's instructions.
F04-3	Radiator Central Heating Radiator system to be small bore design serving steel radiators. Layout and sizing to be to BS5449 to be by specialist sub-contractor to achieve required temperature. All radiator sizes and pipe sizes and details of layout to be designed by heating engineer.
F04-4	Heating Cylinder Manufacturer and make to be to similar specification and the size / capacity to be suitable for the size of the flat. Minimum 115 litre pre-insulated non-vented hot water cylinder (to limit heat loss to 90 W/m2 of surface area) fitted on 50mm x 50mm softwood bearers in roof void. System to be installed in accordance with BBA and manufacturers instructions. Provide 3kW thermostatically controlled immersion heater in cylinder, powered from switched fused spur outlet in roof void.
F04-5	Hot and Cold systems: Include for the provision of incoming hot and cold supply to kitchen, main bathroom and en-suite. Provide 12mm cold water supply to all sanitary fittings. Lag all pipework in ducts and roof space. All pipework to be run in copper. Provide as necessary hot and cold water services to new sink / washing machine / dishwasher as necessary to service kitchen and bathroom layouts. All work to be in accordance with CP310 and CP342 and local water company by-laws.
F04-6	Cold water pipe from mains Cold supply from main via water board approved polythene pipe to rise minimum 750mm in from external fact of wall and with the main stop cock forming interface to copper supply pipework. Where supply pipe passes through ventilated void under suspended floors or rises within 750mm of external wall, ensure that it is adequately insulated.
F04-7	Internal Potable Water Use Showers to be flow rate of 6-9 litres per minute WC's to be 6 / 4 litre dual flush Bath to be standard size – 150-200 litres volume to overflow Wash Hand basin: Including vitreous china wash hand basin including fixing brackets, taps, waste, trap and connection to existing waste. Allow for 32mm diameter PVCu waste pipes and 75mm deepseal PVCu bottle trap.

Item	Description
F04-8	Shower enclosure and shower tray Include for 40mm diameter PVCu waste pipe from shower area.
F04-9	WC Including flush mechanism, seat, cistern and all connectors. Include for 110mm diameter soil pipes, soil vent and stub stack pipes.
F04-10	Traps 76mm sealed U traps to bath and shower . 76mm bottle traps to sinks and wash hand basins. Anti syphon bottle traps to be provided where necessary i.e. more than 3m from SVP (400mm pipe) or 1.7m from SVP (32mm pipe). 40mm pipes to fall at 18-90mm/m. 32mm pipes to fall as follows; Length / fall per metre – 0.5m / 120mm, 0.75m / 80mm, 1.25m / 35mm 1.5m / 25mm 1.75m+ / 20mm.
F05	**Electrical Installation**
F05-1	General All wiring and electrical work to be designed, installed, inspected and tested in accordance with; - BS 7671, the current IEE Wiring Guidance Regulations - Part P of the Building Regulations. - Local Electricity Company requirements All works to be carried out by a competent person registered with an electrical self-certification scheme authorised by the Secretary of State and in compliance with NICEIC or ECA regulations. The competent person is to send to Building Control a self-certification certificate within 30 days of the electrical works completion. The client is to receive both a copy of the self-certification certificate and a BS 7671 Electrical Installation Test Certificate as required by the Building Regulations. Note the Contract Administrator. will only issue the practical completion certificate upon receipt of a N.I.C.E.I.C or E.C.A Completion Certificate together with test certificate. The Contractor shall allow for taking out all existing switches, lighting points, power points, consumer units, cooker control panels etc., and any wiring necessary as instructed in the schedule of works. Allow in areas where existing plaster is not to be replaced for making good to plaster work upon completion of this operation, to the satisfaction of the Contract Administrator Cables to be BASEC certified. Select types and sizes to suit operating conditions, ensuring compliance with BS 7671 (The IEE Wiring Regulations). Consumer units are to be MCB types from approved manufacturers and be metalclad or plastic double pole switching, suitably sized for their intended use with all circuits labelled correctly. All fittings to include, ceiling roses, lamp holders, pull cords, switch plates, socket outlet plates, cooker switches, fused spurs, immersion switches, etc., shall be from an approved supplier and have consistent uniformity throughout the building and fixed in accordance with manufacturer's instructions. Allow for re-fixing Employer's light fittings in lieu of new where applicable. All shall comply with the relevant British Standard. For the purposes of pricing the Contractor shall allow for a like for like comparison of the existing electrical layout and number of points and switches etc. It is the Contractors responsibility to check the positions and numbers even if specified in the schedule of works and bring to the attention of the Contract Administrator before submitting a price. Any variation of position or height may be allowed without charge following specific request from the Employer. The electricity supply to the building shall be 240 volts AC 50HZ.

Item	Description
F05-2	Workmanship Wiring shall be carried out upon the "looping in" principle. All joints shall be made at main switches, ceiling rose boxes and socket outlets. No through joints will be allowed. All carcassing work to be concealed wherever possible and all cables buried in plaster or screed are to be protected mechanically by steel conduit or other approved materials. Cables shall be run so far as possible in the roof and floor void and secured to joists by means of clips at not more than 900mm centres and where liable to be disturbed shall be secured to timber battens when running across joists. Steel boxes for the mounting of flush accessories are to be earthed and bare earth wires are to be sleeved. All cables to be spaced at least 230mm from hot water pipes. Cables should not be buried within solid floors unless enclosed within earth conduit. All batten holders and ceiling switches to be fixed to noggins positioned between joists. From the 30-amp circuit breakers on the distribution board run 2 No circuits 2.5sq mm twin with earth sheathed wiring cables in ring mains to the socket outlet points. Outlets to be mounted at least 350mm above finished floor level or 1040mm from F.F.L. for above kitchen worktops. From the 15amp breaker on the distribution board run 2.5mm twin with earth for the immersion heater, terminating in a 20-amp double pole switch. Connection between the spur bow and heater to be made with 4mm^2 heat resistant cable. From the 45-amp breaker on the distribution board run 6sq mm twin with earth sheathed wiring cable to the cooker control unit. From the cooker control unit drop in close joint conduit set flush in wall to a lug grip terminal box at a height of 600mm above the floor level and the box is to be provided with cooker connection unit. The Contractor shall serve all notices on the supply authority for testing, pay all fees in connection therewith and should any additional charges be made for re-testing the Contractor shall pay them. A copy of all test notices is to be supplied to the Contract Administrator at the time of application to the testing authority. The Contract Administrator shall have full power to require any materials of work to be tested at the Contractor's expense in order to prove their soundness, efficiency and compliance with relevant standards.
F05-3	Materials Provide energy efficient lighting outlets which only accept lamps having luminous efficiency greater than 40 lumens per circuit watt. Lighting circuits are wired in 1.5mm T&E cable clipped direct. Power points to be in positions as existing and 450mm above the finished floor level to the bottom of the face plate. Light switches to be in positions as per the existing installation and to be 1300mm above finished floor to the bottom of the face plate. Electrician to provide and fit all necessary protection to cables within the dry-lined walls. Any meter installations to be in accordance with the Electricity Board requirements. Power circuits have been wired in 2.5mm T&E cable clipped direct and wired on a ring main and divided into various circuits. All ring main circuits are protected by C type RCBO 32amp 30ma circuit breakers having a 6KA current limiting capacity. Smoke and Heat Detectors fitted to be Firex 230v with battery back-up or similar. Hot water to be controlled via 2no 13amp switch spurs. Low energy down lights to be fitted with GU10 7w aurora lamp.
F05-4	Mechanical Ventilation Where required, reinstatement of the mechanical ventilation system to be a 'Whole House Ventilation System', providing extract ventilation to Bathrooms, Kitchens and Utility Rooms and minimum 8000mm^2 background ventilation to all habitable rooms. All bathrooms and shower rooms to have ventilation equal to minimum 15 litres/sec. All fans to be connected via light switch and to have a 15 minute over-run. Room doors to bathrooms and shower rooms to have a min 10 mm gap at the bottom for air passage.

Item	Description
	Extract fans to Kitchens and Utility Rooms to provide 60 litres/sec extraction (Nuaire or similar). Ventilation system is to pass through a heat-exchange and ventilated to external walls via air bricks. Ducts are not to pass through Party Wall/Floor construction.
F05-5	Mechanical extraction vent Allow for the installation of the mechanical extraction venting system as per the specification. To be provided to the first floor main bathroom, kitchen and ground floor WC. Background ventilation to be provided to new areas and to existing areas where alterations have taken place, as follows: Habitable room - 5000mm² All other rooms - 4000mm² Inner rooms (through another - 8000mm² Vents to be provided either in window heads (trickle vents) or through wall vents. Mechanical ventilation, ducted to external air, to be provided as follows; Kitchen - 60 litres per second, 30 litres per second adjacent to hob, ducted to external air. Utility rooms - 30 litres per second. Bathrooms - 15 litres per second. Other Sanitary accommodation - 6 litres per second. Provide adequate replacement air to ventilated spaces by providing a 10mm air gap under the door.
F05-6	Electrical fittings Power points to be 450mm above finished floor to bottom of face plate. Light switches to be 1300mm above finished floor to bottom of face plate.
F06	**Alarm system:**
F06-1	General All floors to be provided with mains operated interconnected fire detection and fire alarm system to BS 5446 & installed in accordance with the relevant recommendations of BS 5839 – 6: 2004 to at least a Grade D Category LD3 standard. Self-contained mains operated smoke alarms (heat alarms installed in kitchens if open to stairway) with battery back-up to be fixed at ceiling level in all circulation areas at each storey level, within 7.5m of all doors to habitable rooms.
F06-2	Fire detection system Contractor to provide self-contained mains powered smoke detector alarms to Specification. Contractor to provide self-contained mains powered smoke detector alarms to BS5446 Part 1 ad BS5839-1: 2002 fire detection and alarm systems for buildings, Code of Practice for system design; installation, commissioning and maintenance. Units are to have battery back-up in case of power failure and be interlinked and be capable of being audible in all areas of the dwelling to BS EN 14604. Allow for one no. unit per floor. In multiple unit installations, all units are to be interconnected so that when one is activated, all will alarm. All units to be ceiling mounted. Do not fix over heaters or where access for maintenance will be difficult. Allow for the affixing of escape signage as required.
F07	**Fire Detection and Protection**
F07-1	General Smoke alarms to be self-contained mains powered and permanently wired to a separate fused circuit at the distribution board. Where more than one smoke alarm is fitted, each alarm is to be interconnected.

Item	Description
	All smoke alarm systems to BS 5446 Part 1 and BS5839-1: 2002 *fire detection and alarm systems for buildings, Code of Practice for system design; installation, commissioning and maintenance.* Installation to be at least a Grade D Category LD3 standard. Smoke alarms to have battery back-up in case of power failure. All units to be ceiling mounted. Do not fix over heaters or stairwells or where access for maintenance will be difficult. Units to be within 7m of kitchen doors. Where required, provide illuminated Fire Exit signs to BS 5266 Part 1 to all escape routed from flats, at the top and bottom of all stairs and above final exit doors. Pipe work/ducts passing through floors to be insulated. Soil vent pipework (SVP's) to be surrounded for entire length with min 25mm Rockwool insulation (min density 10 kg/m^3) or equal, Softwood (SW) pressure preservative treated timber framing and two layers of 12.5mm plasterboard (min mass per unit area 8 kg/m^2) with staggered and taped joints and skim plaster finish. Pipes to be fitted with Quelfire intumescent collar or equal where they pass through Party Floor and Wall fire compartments. Seal around all pipes with fire resistant mastic. Party wall construction to be carried up to the underside of the floor soffit / roof and fire stopped. Party wall cavity to be closed at junctions of party walls and party floors with Rockwool or equal continuous flexible cavity closer and fire stop. All steelwork to be protected by 1 No. layer 12.5mm Fireline board or equal and No. 1 layer 12.5mm plasterboard with staggered and taped joints and skim plaster finish. Provide high level manual opening smoke vents to all common stairs with minimum 1m^2 clear open area and 1.5m^2 clear area to corridors. Provide permanently fitted hand cranked opening mechanism. Internal partitions forming protected corridor/lobby to provide min 30 minute fire resistance. All internal doors to be flats opening onto protected corridor/lobby to be fire doors and provide min 20-minute fire resistance. Internal doors to be fitted with self-closing devices but no smoke seals (Bathroom and cupboard doors need not be self-closing or fire doors). Partitions forming service risers in common areas to provide min 30-minute fire resistance. Service riser access doors to be fire doors and provide min 30-minute fire resistance. Doors to risers to be locked shut. All steel beams where exposed to be cleaned and prepared prior to fixing. All internal brickwork faces to external walls to be cleaned of smoke damage / staining and any heat induced cracking to brickwork to be prepared). Plasterboard to be fixed with 1.6mm wire binding at 100mm centres. Particular reference is made to the internal timber and cast iron columns located within the flats. These will require boxing in where they pass through the floor void.

Item	Description
G	**External Works**
G01	**Drainage**
G01	General When repairing or replacing drain runs the Contractor is to fully comply with the requirements of the local authority in respect of arrangement, flexible jointing, type of pipe, pipe bedding/surround and type and placement of backfill material. All manholes and connection to existing sewers are to be Local Authority requirements. Existing clay and pitch fibre pipes may be replaced with suitable plastic pipes, providing the Employer and Local Authority have no objections and the appropriate bed and surround is installed. All drains shall be laid carefully, true to line and slope and shall be bedded and surrounded with pea shingle to BS 882 or lean mix concrete below paved or concreted areas. The minimum thickness of bedding and surround shall be 150mm. The approximate location of drains (if known) are shown on the contract drawings. However the Contractor should visit the site and verify the works before pricing for them. Any variations to the drawing must be notified to the Contract Administrator before works commence. Where drain replacement necessitates the breaking out of existing concrete paths, hard standings and slabs, etc. reinstatement of these will be required by the provision of 100mm thick grade C25 concrete laid upon 150mm of well compacted hardcore. Footpaths should unless significantly in excess of 1.0m wide should generally be replaced for their full width. Making good of narrow cut sections of concrete will not be acceptable. Where the drains are in use during the course of the works, the Contractor is to allow for taking any necessary measures to maintain the use of the services and avoid inconvenience to the occupiers. New manholes shall where unless otherwise specified be constructed in 225mm thick engineering brickwork in English bond off new concrete base 150mm thick. Channels and branches shall be vitrified clay with adapters for connections to Supersleve pipes. The concrete benching shall average 225mm thick. All manholes rebuilt and where any of the existing ones have been damaged shall be fitted with medium duty galvanized screw down steel covers and frames. Where the existing covers and frames are in good condition they shall be reused. On completion of drainage works, all drains shall be left and shall be tested in accordance with CP301 to the satisfaction of the Contract Administrator. Following completion of the drain repairs, the drain runs concerned are to be flushed and tested to approval of the Contract Administrator and Local Authority. On completion of the works any concreted, paved, tarmac, single or grassed areas disturbed, discolored, rutted or damaged in any way shall be reinstated. All surface soil and debris should be removed from site. The site should be left clean and tidy.
G01-2	Workmanship Extreme care should be exercised in matching existing levels, with appropriate falls being laid to existing, and where specified, new surface water gullies or drainable extremities and edges of the concrete construction. Ponding of water on reinstated concrete surfaces will be considered as being contrary to the generally acceptable requirements of this specification, and will be required to be corrected by the Contractor at his own expense. Drain trenches shall be excavated to the full depth specified and any over excavations shall be filled in and made good with weak mix concrete at the Contractors expense. 150mm pea gravel shall be used for bedding and surrounding pipes. The whole of the drains are to be laid using Vitrified Glazed Clay or Plastic pipes (or Cast Iron where specified) to the satisfaction of the Contract Administrator. Under no circumstances are materials to be mixed from the head of the drain to the boundaries of the Employers responsibility. Drains are to be laid to even and regular falls and in straight lines from point to point. Great care is to be exercised in the levels and falls and setting out so that correct gradient is obtained. The Contractor is to allow for keeping the whole of the drainage excavation free from water. The drains and connections shall be left open for inspection by the Contract Administrator & Local Authority and the Contractor shall provide all appropriate equipment to allow for suitable testing as directed and instructed in the presence of the Contract Administrator. The Contractor at his own expense shall replace any drains, which fail testing.

Item	Description
G02	**External Drainage**
G02-1	General All work to be undertaken in accordance with BS8301, approved document H and Engineering Drawings. Drains passing through walls to have a suitable lintel over supporting the brickwork above. Where house drainage connections are made via Y-Junctions, access to the run must be provided by accessible gullies (using rods) or soil vent pipe access points.
G02-2	External Drainage Provide adequate falls to new 110mm diameter uPVC pipework with flexible joints and including for all bends, tee's and fittings which is to be laid in a suitable 100mm layer 6mm pea shingle surround (cutting back any roots) both above the crown and below the invert of the pipework and in accordance with standard building practice. Include for provision of a flexible joint both internally and externally where pipes pass through walls. Include for the provision of a pre-cast concrete lintel to support the brickwork above the pipe where required. Provide selected MOT type 2 or similar approved imported fill material in 150mm layers compacted up to a level of 150mm below existing ground level and blind with sand. Provide a hydraulic test to all new drainage runs upon completion of works to ensure watertight. Storm drainage trenches to be 450mm wide and with a fall to pipework of 1:40.
G02-3	Inspection Chambers Excavate new pit 900mm diameter to an average depth of 900mm within the line of drainage pipework to receive inspection chamber. Provide new standard pre-formed 450mm diameter Upvc inspection chamber including all base, risers and cast iron cover bedded on 100mm of weak concrete mix and surrounded in the same. Flaunch lid with 1:2 sand and cement to perimeter.
G02-4	Rainwater goods – above ground Gutters to be 100mm deepflow PVC gutter on facia mounting brackets. Down pipe to be 68mm diameter PVC with clips to walls. Contractor to ensure a sound connection into the pipework into the ground and ensure that this is free-flowing and free from debris. All fitted in accordance with manufacturers instructions. All materials to BS4514 and BS4576.
G03	**Service installations**
G03-1	General Depth of trench for electrical cables to be a minimum 600mm below finished ground level. Water pipework to have a Blue MDPE material with electrofusion fittings, laid a minimum depth of 900mm to the top of the pipe. The trench should be laid on a washed sand base of minimum depth of 100mm and covered with the same material prior to backfilling. Where waterlogged or unstable soil is encountered, base of the trench shall be 75mm thick Grade C10 concrete with 20mm aggregate. Distance between any water pipe and electrical cables to be a minimum horizontal distance of 600mm. Services to be laid in bed and surrounded by 10mm of selected bedding material to a minimum thickness of 150mm. A yellow warning tape 'electrical cables' shall be installed 250mm and 150mm below finished ground level for the full length of the cable.
G04	**Drives, Paths and Paving**
G04-1	Specification for Relaying of Footpaths All new concrete areas are to be a minimum of 100mm thick grade C25 concrete with a minimum cement content of 300kg/m^3 on 150mm of compacted hardcore. Hardcore is to be free of all vegetable or toxic matter and is to be well compacted to form a level top surface. Finished levels of relied areas are to match existing adjacent levels with minimum falls of 1 in 80 away from building or to existing drainage channels. The finished level should also be a minimum of 150mm below existing D.P.C. levels. The finished texture and overall appearance of the relied area should match the existing as far as possible

Item	Description
G04-2	Specification for Relaying of Drives All drives shall be relied using air entrained concrete with a minimum cement content of 330kg/m^3, maximum aggregate size of 20mm, minimum air content of 4% and a slump of around 75mm. The area should be relied in strips not exceeding 4m wide and the strips reinforced with one layer of A142 mesh, min. 50mm cover from finished surface level. The concrete shall be 125mm thick with an even fall of 1:50 away from the house and towards existing drainage channels. The Contractor should check on site that the driveway can be relied with adequate falls to existing gutters and include in his price for any additional drainage which must be discussed with the Contract Administrator prior to the start of the work. The slabs should be laid on a 1000-gauge polythene sheet slip membrane on 150mm of compacted hardcore overlaid with 25mm sand blinding. The concrete shall be compacted using a poker vibrator and the surface texture should be finished by tamping and then finished by drawing a stiff brush across the surface to provide a brush finish. Construction joints should be formed at straight edge butt joints tied together with 900mm long T12 bars at 600 centres to tie joint. Detail on page 6 of C & CA publication: Finished level of the re-laid drive should match existing and be level with adjoining areas. All work must be in accordance with the C & CA Publication 'Concrete Ground Floors Their Design and Construction'.
G04-3	Laying of Paving Slabs Where specified carefully lift existing paving slabs and set aside in a secure place for re-use. Excavate out as much sub base as necessary to facilitate the relaying of the existing slabs in a 1.6 cement sand bed on 100mm of compacted levelled hardcore. Hardcore to be free of all vegetable matter, plaster and toxic contaminants. The finished level of all re-laid areas should be as close as possible to existing with an even fall of 1:80 away from the buildings to existing drainage outlets. The finished level should be a minimum of 150 below all D.P.C.s. If this cannot be achieved the Contract Administrator must be notified and further instructions sought.
G04-4	Concrete paving works This specification is suitable for most residential projects such as patios and driveways. Excavate to reduced depth of at least 200mm below finished level (350mm below dpc) and cart all spoil to licensed, off-site tip. Excavate any soft spots in sub-grade as required and dispose. Supply, lay and compact minimum of 100mm of DTp1 crushed stone sub-base material to falls and levels. Supply and lay on 100mm concrete bed and haunch, 200x100x60mm block pavers as edge restraint, to lines and curves. Supply and lay on 25-40mm zone 2 sand bed, 200x100x60mm block pavers to falls and levels. Pattern is to be 45° Herringbone. Include all cuts and sealing of joints with silica jointing sand. Blocks to be *as existing* Clear site of all debris and rubble on completion and make good. Inspect paving after 4-6 weeks and top up any empty joints with dry silica jointing sand. All work to comply with BS 7533:Part 3 2005
G04-5	Clay Paviours This specification is suitable for most residential projects such as patios and driveways. Excavate to reduced depth of at least 200mm below finished level (350mm below dpc) and cart all spoil to licensed, off-site tip. Excavate any soft spots in sub-grade as required and dispose. Supply, lay and compact minimum of 100mm of DTp1 crushed stone sub-base material to falls and levels. Supply and lay on 100mm concrete bed and haunch, 200x100x60mm clay pavers as edge restraint, to lines and curves. Supply and lay on 25-40mm zone 2 sand bed, 200x100x60mm clay pavers to falls and levels. Pattern is to be 45° Herringbone. Include all cuts and sealing of joints with silica jointing sand. Clear site of all debris and rubble on completion and make good. Inspect paving after 4-6 weeks and top up any empty joints with dry silica jointing sand. All work to comply with BS 7533:Part 3 2005

Item	Description
G04-6	<u>Block paving kerbs</u> Supply and lay on 100mm concrete bed and haunch, *existing kerb type* as edge restraint, to straight lines and curves, with *10* mm of upstand above paving level. Allow for use of radial units on curves of less than 2 metres radius. Any open joints to be pointed with a class 1 mortar. Make good to back of kerb on completion. <u>Flags and slabs</u> PCC Flagged driveway Excavate to reduced depth of at least 150mm below finished level (300mm below dpc) and cart all spoil to licensed, off-site tip. Excavate any soft spots in sub-grade as required and dispose. Supply and lay on minimum 100mm C7.5 mass concrete bed, 900x600x50mm pcc flags, natural colour, with full mortar joints. Includes all cuts and pointing. Clear all site of debris and rubble on completion and make good. All work to comply with BS 7533:Part 4 2006 <u>Patio Paving</u> Excavate to reduced depth of 100mm below finished level (250mm below dpc) and cart all spoil to licensed, off-site tip. Supply and lay on 25-40mm 10:1 grit sand/cement bed, Include all cuts and pointing/sealing of joints. Clear all site of debris and rubble on completion and make good.

Item	Description
H	**Other Aspects**
H01	**Disabled Access (where relevant)**
H01-1	General All dwellings and common stairs to comply with Part M of the Building Regulations. Provide level access entrance doors. Provide a level landing at entrance doors of a min 1200 x 1000mm. Ground floor entrance doors to flat blocks to be min 775mm clear opening and internal doors to be min 750mm clear opening. All switches and sockets to be no lower than 450mm and no higher than 1200mm above finished floor level. Provide easy access and manoeuvring for wheelchairs with respect to WC's to comply with Section 10, Part M of the Building Regulations. All bathroom doors to open outward. Controls to be located between 900mm and 1200mm from the floor and at least 400mm from the corner of a wall (500mm from landing corner walls). Lift car doors are to be visually distinguishing from the surrounding walls. Audio and visual indication to be displayed within the lift car and at each landing. At least one entrance to the house must be designed as the Principal Entrance to which must be provided a level, stepped or ramped approach all in accordance with Approved Document M 2000. A level platform must be provided immediately outside the entrance door at the top of the approach. Platform to be minimum 1200mm long measured in the direction of the ramp or stairs.
H02	**Smoke Obliteration**
H01-2	Where specified, the affected area will be de-odourised by the use of Consulting professional restorers using a process known as "thermal fogging." This warm chemical fog penetrates all accessible areas neutralizing the smoke odour as it goes. All partition surfaces which are exposed, and which will remain will be dry cleaned down and adjacent areas hovered to ensure complete removal of smoke particles. Affected materials (from smoke or water damage and including partitions, timbers, walls etc) to be treated using a proprietary specialist coating (Elite Smokote or similar)
H03	**Demolition**
	Subject to the conditions of the contract, all demolition shall be carried out at the Contractors' own risk, notwithstanding any approval by the Contractor in pursuance of his obligations. The prices for demolition of concrete, brickwork, masonry, etc., shall include for cutting out, cutting back and plugging off as necessary any redundant piping, tubing, conduit, wires, bars and the like encountered. The Contractor shall provide and maintain all shoring and strutting necessary to ensure the safety of the existing and adjoining premises, streets, sewers, drains and other services, alter and adapt the same, as necessary, and clear away when no longer required, making good any damage. The Contractor is to be responsible for ensuring that all materials used for strutting etc. are sound, of adequate strength for the forces sustained and that they are properly braced, secured and maintained. Decayed or unsound timber shall be removed from the site. The whole of the materials from the demolition shall become the property of the Contractor. Where the terms "cart away", "clear away", "remove from site", etc., are used this shall be understood to include getting out, filling into barrows or baskets, wheeling or carrying as necessary, loading into transport or skips and carting away to nominated tip by the Contractor which must be authorized under the Town & County Planning Act 1971. None of the materials arising from the demolition may be used in the works without approval from the Contract Administrator or unless specified in the schedule of works. Materials for re-use shall be removed from the site, protected and stored and returned to the site for re-fixing at the appropriate time. The Contractor shall agree the extent of the materials to be re-used with the Contract Administrator. Materials described as "set aside for re-use" shall be cleaned, prepared for re-fixing and stored until required.

Item	Description
	The Contractor shall protect, support and maintain all live services, pipes, etc. that may be required to be maintained during the course of the works, whether or not they are private or public property and shall indemnify the Employer against any claim in this respect. The Contractor shall provide all requisite screens, tarpaulins, dustsheets, barriers, notices and all other measures necessary for the protection from damage, dust and inclement weather of existing and adjoining premises and for the protection from injury of the owners and occupiers thereof and the general public. As work proceeds these shall be altered and adapted as necessary. Where no longer required they shall be cleared away from the site and any damage made good. The Contractor shall comply with the provisions of the Asbestos (Licensing) Regulations 1983 and The Control of Asbestos at Work Regulations 1987 when dealing with asbestos products. The Contractor shall be fully responsible for identifying any asbestos and/or asbestos containing materials. Where these are to be removed or affected by the works, the Contractor is to employ specialist techniques to avoid fibre contamination of the building and ensure the safety & welfare of employees and others in the vicinity. All materials to be removed to licensed waste disposal sites. The Contractor shall be deemed to have identified at tender stage such materials and allowed for all costs in connection.