

GTC

**STANDARD REFERENCE SPECIFICATION
FOR BUILDING REGULATIONS**

FOR

**4no. DETACHED DWELLINGS - THE CONIFERS, HINGHAM ROAD,
GT ELLINGHAM**

JAN '19

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1.00	GENERAL	
1.1	This specification is prepared to comply with the current Building Regulations and is to be read in conjunction with relevant Structural Engineers calculations and details for structural elements and all relevant specialist supplier's calculations and details. This Specification may not include all details of fittings and finishes for this project. Contractor to agree these items with Client before proceeding.	
1.2	Comply with all requirements of the CDM Regulations in relation to Health and Safety requirements. Allow for preparation of a User Manual to be handed to the client upon completion of the Works.	
1.3	Materials used as external finishes may be subject to approval by the Local Authority Planning Department. Samples may be required for approval.	
1.4	The Contractor shall be responsible for all works under the contract and will liaise with the Client on all matters arising out of the works.	
1.5	All provisional quantities detailed in this section shall not be exceeded without the prior written agreement of the Client.	
1.6	Accredited Details may form part of this design and must be followed on site to improve air tightness.	
1.7	Take all reasonable precautions against inclement weather and protect the works. Allow for temporary weatherproofing during work to roofs and open walls, etc.	
1.8	Contractor's compound: Set up contractor's compound, including secure storage and facilities as required by the Health & Safety File and good site practice. Alternatively, agree use of facilities with Client.	
1.9	Allow for any temporary support as a result of alterations to the existing structure. Provide all necessary temporary scaffolding for execution and completion of the works. Provide all necessary labour, supplies, scaffolding, hoists, machinery and plant for the execution of the works including those works not specifically indicated but necessary to carry out the described work.	
1.10	Keep the site tidy and clean at all times. Allow for removal of all rubbish, debris and surplus materials, including that of all sub-contractors, during the progress of the works and on completion clean the whole of the works.	
1.11	Allow for asbestos removal and disposal from existing site as noted by any attached Survey and Schedule of Works. Carry out an Asbestos survey prior to start on site where the presence of asbestos is anticipated.	
1.12	Contractor to ensure the Highway is maintained clean and clear of construction vehicles during the works.	
1.13	Temporary services supplies. Contractor to liaise with employer for temporary water and electricity supplies for the Works	
1.14	Before tendering – ascertain the nature of the site, access and all local conditions and restrictions likely to affect the execution of the Works.	
1.15	The contractor shall submit their proposals and method statement for the purposes of site access and storage and provide a statement on how they intend to secure the building during the construction phase.	
1.16	At the end of the works phase, the contractor must make adequate allowance	

	within their programme for the completion of all snagging works.	
1.17	Make good all surfaces affected by the works on completion. Prevent over-compaction of topsoil and subsoil in those areas which may be affected by construction traffic, etc. Any damage resulting from the works will be the responsibility of the contractor and the cost of rectifying will be borne by the contractor. Protect fence and access track throughout the contract.	
1.18	Smoking is not permitted.	
	To Summary	
2.00	CURRENT BUILDING STANDARDS/CODES, WARRANTIES & MANUFACTURER REQUIREMENTS	
2.1	All materials and workmanship shall comply with Standards and Codes of Practice. All proprietary materials and fittings incorporated in the works shall be used in accordance with relevant manufacturer's instructions.	
2.2	Ensure all works are carried out fully in accordance with the preliminaries and materials and workmanship section of this specification, all manufacturers' recommendations, and relevant British Standards Building Regulations and Codes of Practice.	
2.3	For new dwellings/conversions, the whole of the works are to comply with the current warranty requirements for the selected warranty scheme (refer to employer for warranty details). If any works specified or shown on the drawings are found to conflict with the requirements of the Regulations these are to be brought to the notice of the architect or employer. Contractor to liaise with warranty inspector to ensure the dwelling receives the 10 year guarantee. All warranty fees associated with the site to be paid by Employer.	
	To Summary	
3.00	HEALTH & SAFETY	
3.1	<p>Notifiable projects</p> <p>For a notifiable project under the Health and Safety CDM Regulations. A CDM advisor has been appointed. Refer to CDM-advisor's information and requirements.</p> <p>Construction Phase Health & Safety Plan</p> <p>Maintain a Health and Safety file in accordance with current CDM requirements prior to and during the contract.</p> <p>Submission – present to the Employer not less than two weeks before commencement on site.</p> <p>Confirmation – do not start construction work until the Employer (through the CDM Co-ordinator) has confirmed in writing that the Construction Phase Health & Safety Plan includes the procedures and arrangements required by current CDM Regulations.</p>	
3.2	<p>Domestic private clients</p> <p>If the project is a domestic extension for a private client and can be built within 500 man days it is non-notifiable.</p> <p>The Principal Designer for the pre-construction phase will provide Pre-construction Information to be issued with the drawings at Building</p>	

	<p>Regulations stage or Tender stage, whichever is the later.</p> <p>Client must ensure the competency of the Contractor.</p> <p>Client can choose either to appoint one Principal Contractor or use more than one contractor. In that case, one of the contractors will have to take on the role of Principal Contractor, usually the contractor who is in control of the Construction Phase. The Principal Contractor has to produce a Construction Phase Plan.</p> <p>A Form called an F10 has to be submitted to the Health and Safety Executive if the project is likely to exceed 500 man days.</p>	
3.3	<p>Construction Phase Health & Safety Plan</p> <p>Maintain a Health and Safety file in accordance with current CDM requirements prior to and during the contract.</p> <p>Submission – present to the Employer not less than two weeks before commencement on site.</p>	
3.4	<p>Information – the accuracy and sufficiency of this information is not guaranteed by the employer or the Employer’s representative. Ascertain if any additional information is required to ensure the safety of all persons and the Works.</p>	
3.5	<p>Site staff – draw to the attention of all personnel working on the site the nature of any possible contamination and the need to take appropriate precautionary measures.</p>	
3.6	<p>On completion of the works, provide a maintenance manual to hand to the client, including all services information, guarantees, etc. Release of retention is dependent upon this.</p>	
	To Summary	
4.00	UTILITY WORKS	
4.1	<p>Contractor to serve all statutory or other notices and liaise with local authority and other utility undertakings i.e., electric, gas, water & telephone required to allow their connection or alterations to the dwelling.</p> <p>Contractor to price for all associated works and trenching for all services inside and outside the site.</p>	
4.2	Contractor to ascertain position of existing services	
4.3	Upgrade mains water intake from road to new stopcock position, to be agreed, 32mm.	
4.4	Provide and fit new digital aerial on roof and new satellite dish	
4.5	A physical point and ducting is to be provided within new dwellings in order for an electronic communications network which is capable of delivering broadband access services at speeds of at least 30Mbps.	
4.6	Arrange for electricity meter to be repositioned	
	To Summary	
5.00	SITE PREPARATIONS & DEMOLITIONS	
5.1	<p>Areas of construction, buildings and access tracks: clear away top soil; make good affected areas with well-compacted hardcore, free from deleterious materials. Treat areas under new floors with herbicide.</p>	

5.2	Carefully take down other existing buildings or parts of building as specified and clear the site of debris to provide clean working conditions.	
5.3	Erect solid site screen around areas of the works as necessary, 1.8m high boarding.	
5.4	Strip out sanitary services and fittings and drainage where indicated; strip out kitchen fittings and dispose off site.	
5.5	Strip out all heating and hot water system including all pipework in areas affected by the works; make good all surfaces where services removed.	
5.6	Strip out heating and services throughout; make good all surfaces where services removed	
	To Summary	
6.00	FOUNDATIONS	
6.1	Foundations sizes and depths shall be instructed by the structural engineer, generally 600mm wide, to external walls and 600mm to internal loadbearing partitions and to suit pre-cast concrete B&B floors or ground bearing slab; commencing 1000mm below finished ground level (or as otherwise instructed by the Structural Engineer or Local Authority Building Control Officer to suit site conditions with special regard to tree influence and soil type). Allow 1000mm depth unless advised otherwise. Foundations must penetrate sub-soil at least 500mm and penetrate at least 150mm below the invert of any drains within 1000mm.	
6.2	State costs per cubic metre or other method of charging for additional depth if found necessary by Building Control.	
6.3	Layout as shown on plans and any additional lengths as required by timber frame supplier and or beam and block floor supplier or structural engineer.	
6.4	Allow for any remedial / underpinning work as detailed in Structural Engineers report.	
	To Summary	
7.00	FOUL DRAINAGE EXTERNAL	
7.1	New private drainage to be in Hepworth 'Supersleve' 110mm uPVC or similar approved, to Local Authority approval. Drains to be laid at self cleansing falls (min. 1:100 for storm & 1:80 for foul for 100mm dia drains). Max. distance between manholes 45m. Contractor to check levels and depths prior to commencing works.	
7.2	Pipes shall be provided with a minimum cover of 400mm in the soft and 600mm below driveway. Where it is not possible to provide the minimum cover, protection shall be provided by laying 600x600mm precast concrete paving slabs on 75mm granular material over the line of the drains or surrounding with concrete to a minimum 100mm thickness and maintaining flexibility to all joints.	
7.3	Drains passing through foundations or beneath external walls shall be ducted (or if cast-in, shall be provided with flexible joints both sides of foundation at distances of 150mm and 750mm from the face) to permit differential settlement. Minimum thickness of 150mm of concrete shall be provided above	

	and/or below the duct, with extra concrete poured as required to maintain this minimum allowance.	
7.4	Inspection chambers to be proprietary plastic type as by Hepworth (or similar) where inverts are less than 900mm (refer to site plan).	
7.5	Foul drainage gullies shall be trapped back-inlet type (with rodding access where drains do not run directly to an inspection chamber) bedded in concrete. Where excavated material is not suitable for backfilling then pipes shall be laid on and surrounded by a 100mm thick layer of pea gravel.	
7.6	Where necessary, manholes to be formed of 215mm brickwork using Class B semi-engineering bricks, flush pointed. Base to be 150mm concrete slab with A142 mesh with 50mm bottom cover. Manholes to be complete with step irons as applicable. Size of manhole to suit depth of invert, number of connections and pipe sizes.	
7.7	New private drainage as shown on Plans. Connect into existing mains drainage. Inspect existing pipework and check levels prior to finalising layout on site, to be agreed with Building Inspector.	
	To Summary	
8.00	WALLS BELOW DPC & DAMP PROOFING	
8.1	Minimum 150mm external ground - finished floor level; Hy-load DPC across cavity wall. The cavity shall be filled with lean mix concrete up to a level of 225mm below DPC level. All bricks and blocks below ground to be sulphate and frost resistant.	
	To Summary	
9.00	CAVITY WALLS, TIES AND EXPANSION JOINTS	
9.1	Masonry as specified in sand cement lime mortar; all vertical and horizontal joints shall be full and flush pointed; Expansion joints positions min. 6m ccs. Joints shall be "Thioflex 600" (polysulphide mastic) by Expandite or equal, with foamed plastic backing.	
	To Summary	
10.00	WALLS	
10.1	BRICK/BLOCKWORK CAVITY WALLS 300mm cavity wall construction to be built off the top of the foundations using cavity common brickwork to damp proof course level. Use facing bricks as specified on outer skin only. Bed Hyload DPC to BS5628 Pt3 or similar into both skins of brickwork min 150mm lapped joints and fully lapped at corner returns. DPC to be minimum of 150mm above any adjacent ground or paving level. Walls to be built with 1:1:6 cement mortar and tied with BBA approved 275mm long Ancon ST1 stainless steel wall ties or other approved double dip type tie in, 75mm min into each wall at maximum spacing in compliance with wall tie manufacturers details and typically at 600mm max horizontal, 450mm max vertical and 225mm max at reveals, verges and closings for cavities up to 125mm wide.	

	<p>Back fill cavity to 225mm below DPC with weak mix concrete sloping outwards. 300mm cavity wall to be built up from DPC using two skins, outer skin to be 100mm Hanson Fenlite concrete block (or similar approved) or facing brick as specified on drawings. Inner skin to be Thermalite Shield 2000 concrete block concrete block (or similar approved). Build in as work proceeds 100mm Knauf Crown Dritherm 32 (or similar approved), Full fill cavity wall batts to achieve a U value of 0.23W/mK.</p> <p>Install cavity tray to lap with the DPC in the outer skin. Install perpend type plastic weep hole inserts above the cavity tray in the external leaf. All lintels specified should be installed and cavity trays (where appropriate) and weep holes inserted above each one. Build in windows and doors as shown on the floor plan. Bed in vertical DPC. Tie in windows and doors to brickwork using 'P' ties. All wall ties should be built into jambs and adjacent to all openings at 300mm centres. Close all cavities with Thermabate type closers or similar and approved.</p> <p>Cavity tray and code 4 lead to be provided where roof abuts a wall (where applicable). Finish internal walls with 13mm plaster and skim or dot and dab plasterboard with plaster skim finish.</p> <p>External finish (if applicable): Fix expanded stainless steel metal lathing to blockwork. Apply sand and cement render in 3 coats to BS 8000: Part 10: 1995, render stops, corners and drips as necessary.</p> <p>Or - weber.pral M, one coat through colour render - Application should be carried out strictly in accordance with the manufacturer's instructions and specifications, uPVC colour matched render stops, corners, movement joints and drips as necessary.</p>	
10.2	<p>BRICK/BLOCKWORK CAVITY WALLS, INCLUDING FLAT BRICK PLINTH BELOW RENDERED FINISH</p> <p>300mm cavity wall construction to be built off the top of the foundations using cavity common brickwork to damp proof course level. Use facing bricks as specified on outer skin only. Bed Hyload DPC to BS5628 Pt3 or similar into both skins of brickwork min 150mm lapped joints and fully lapped at corner returns. DPC to be minimum of 150mm above any adjacent ground or paving level.</p> <p>Walls to be built with 1:1:6 cement mortar and tied with BBA approved 275mm long Ancon ST1 stainless steel wall ties or other approved double dip type tie in, 75mm min into each wall at maximum spacing in compliance with wall tie manufacturers details and typically at 600mm max horizontal, 450mm max vertical and 225mm max at reveals, verges and closings for cavities up to 125mm wide.</p> <p>Back fill cavity to 225mm below DPC with weak mix concrete sloping outwards. 300mm cavity wall to be built up from DPC using two skins, outer skin to be 100mm Hanson Fenlite concrete block (or similar approved) or facing brick as specified on drawings.</p> <p>Inner skin to be Thermalite Shield 2000 concrete block (or similar approved). Build in as work proceeds 100mm Knauf Crown Dritherm 32 (or similar approved), Full fill cavity wall batts to achieve a U value of 0.23W/mK.</p> <p>Install cavity tray to lap with the DPC in the outer skin. Install perpend type plastic weep hole inserts above the cavity tray in the external leaf.</p> <p>All lintels specified should be installed and cavity trays (where appropriate) and weep holes inserted above each one. Lintels to be Keystone 'Hi-Therm' or similar thermally broken lintels, 0.05W/mK, sized to suit each opening.</p>	

	<p>Build in windows and doors as shown on the floor plan. Bed in vertical DPC. Tie in windows and doors to brickwork using 'P' ties. All wall ties should be built into jambs and adjacent to all openings at 300mm centres. Close all cavities with Thermabate type closers or similar and approved.</p> <p>Cavity tray and code 4 lead to be provided where roof abuts a wall (where applicable). Finish internal walls with 13mm plaster and skim or dot and dab plasterboard with plaster skim finish.</p> <p>External finish above brick plinth (if applicable): Fix expanded stainless steel metal lathing to blockwork. Apply sand and cement render in 3 coats to BS 8000: Part 10: 1995, render stops, corners and drips as necessary.</p> <p>Or - weber.pral M, one coat through colour render - Application should be carried out strictly in accordance with the manufacturer's instructions and specifications, uPVC colour matched render stops, corners, movement joints and drips as necessary.</p>	
10.3	<p>PROJECTING BRICK PLINTH</p> <p>350mm overall cavity wall construction (150mm on outer skin) to be built off the top of the foundations to min. one course below ground level, using blockwork suitable for below-ground situation. Min. one course below ground level: facing bricks as specified, with 50mm block slip, all up to DPC level. Bed Hyload DPC to BS5628 Pt3 or similar into both skins of brickwork min 150mm lapped joints and fully lapped at corner returns. DPC to be minimum of 150mm above any adjacent ground or paving level.</p> <p>350mm cavity wall to be built up from DPC using two skins, outer skin to be facing brick as specified on drawings, including plinth brick, plus 50mm block slip.</p> <p>Inner skin to be Thermalite Shield 2000 concrete block (or similar approved). Build in as work proceeds 100mm Knauf Crown Dritherm 32 (or similar approved), Full fill cavity wall batts to achieve a U value of 0.23W/mK.</p> <p>Walls to be built with 1:1:6 cement mortar and tied with BBA approved 275mm long Ancon ST1 stainless steel wall ties or other approved double dip type tie in, 75mm min into each wall at maximum spacing in compliance with wall tie manufacturers details and typically at 600mm max horizontal, 450mm max vertical and 225mm max at reveals, verges and closings for cavities up to 125mm wide.</p> <p>Back fill cavity to 225mm below DPC with weak mix concrete sloping outwards.</p> <p>Install cavity tray to lap with the DPC in the outer skin. Install perpend type plastic weep hole inserts above the cavity tray in the external leaf.</p>	
	To Summary	
11.00	INTERNAL WALLS	
11.1	<p>Loadbearing blockwork walls</p> <p>100mm concrete block built off a DPC, with min. compressive strength of 2.9N/mm² for 2 storey and 7.3N/mm² for 3 storey or where individual storeys exceed 2.7m Common brickwork or dense concrete foundation blocks below DPC to foundation.</p> <p>Loadbearing walls should be provided with lateral restraint at each floor level and at ceiling level below a roof. Where the joists are not built into a masonry wall, restraint should be provided at 2m centres by means of restraint type hangers to BS EN 845-1 or restraint straps with a cross section of a least</p>	

	30mm x 5mm. The straps must be at least 300mm long on each joists; fixed with four fixings to each joist & no more than 2m apart.	
11.2	<p>Internal blockwork walls 100mm concrete block built off a DPC, with min. compressive strength of 2.9N/mm². Common brickwork or dense concrete foundation blocks below DPC to top of screed off a localised slab thickening. Catnic CN102 lintel or similar and approved over internal doors.</p>	
11.3	<p>Loadbearing internal stud walls Use 100mm x 75mm head and sole plates and ex 50mm x 100mm studwork at maximum 400mm centres (treated timbers), built off masonry foundation & DPC. Partitions lined both sides with 12.5mm Gyproc TEN board and 25mm Rockwool acoustic slab between studs. Install OSB sheathing if required by Structural Engineer.</p> <p>Where internal walls are made up of panels, structural continuity should be maintained, for example by the use of a continuous top binder. For openings, cripple studs and lintels to be provided to Structural Engineers design.</p> <p>Joints covered with scrim tape to receive skim coat plaster finish. Additional noggins should be used as necessary to suit plasterboard and all fixtures and fittings within the room. Wall construction to achieve a minimum of 40dB. Sound insulation is not required on walls that have a door opening.</p>	
11.4	<p>Internal stud walls Use ex 100mm x 50mm head and sole plates and ex 50mm x 100mm studwork at maximum 400mm centres (treated timbers), build of DPC. Partitions lined both sides with 12.5mm Gyproc TEN board and 25mm Rockwool acoustic slab between studs.</p> <p>Where internal walls are made up of panels, structural continuity should be maintained, for example by the use of a continuous top binder. For openings, use double cripple studs and double members to form lintels.</p> <p>Joints covered with scrim tape to receive skim coat plaster finish. Additional noggins should be used as necessary to suit plasterboard and all fixtures and fittings within the room. Wall construction to achieve a minimum of 40dB. Sound insulation is not required on walls that have a door opening.</p>	
12.00	GROUND FLOORS	
12.1	<p>Beam and Block floor Precast concrete beam and block floor to specialist manufacturer's layout, structural design and installation details. Ducts are to be formed in the screed for services pipes etc, to suit services requirements.</p> <p>Telescopic connectors and airbricks to floor void.</p> <p>Preparation of Ground, etc. If ground below the floor is excavated below the lowest level of the surrounding ground and will not be effectively drained, provide DPM.</p> <p>Ensure ventilated air space min.150mm clear from the ground to u/side of floor. Two opposing external walls to have ventilated openings to create a free path of air between the two sides and to all parts of the floor void. Openings to be min. 1500mm²/m run of external wall or 500mm²/m² of floor area. Ventilation pipes (if needed) to be min. 100mm Ø. Vermin covers to all openings.</p>	

		To Summary
13.00	ROOFS	
13.1	Roof structure	
	Specialist designed trussed rafter roof, pitch as indicated; rafters 200mm overhang from outer face. Specialist manufacturer's details to follow, as a condition of B Regs approval.	
	Each rafter shall be fixed to a treated softwood wallplate which is to be strapped to the wall at 1200mm centres with 32x4x1000mm galvanised mild steel anchors. GMS anchors are to be provided to gable ends at 1.8m centres to improve lateral restraint with solid noggins between trusses and a sliding wedge against the wall at strap locations. All to be designed by specialist timber frame manufacturer.	
	<p>Frame roof as detailed on the section using strength class timber as specified. Rafter and ceiling joists to be strapped to walls with 30mm x 5mm x 1200mm straight or 30mm x 5mm x 100mm x 12mm 'L' shaped fully galvanised steel straps either built into the wall or mechanically fixed to existing walls and then galvanised nailed into timber. Straps should span at least 3 joists and should be at 1800mm centres minimum. Eaves overhang to be 200mm, or to match existing (where applicable).</p> <p>The membrane, when installed as an unsupported system, i.e. draped between the rafters in the traditional method. Must have a min. gap of 25mm between it & the insulation, to provide a gap beneath the tiling battens for drainage & air movement. When this gap is not possible, i.e. in a fully supported system, 25mm thick counter battens are required to secured the membrane, this additional counter batten is also required when tightly layed roof finishes are used, e.g. interlocking manmade tiles, natural slates and metal roof coverings (check with manuf. requirements), regardless of whether a supported system is used. The tiling battens are fixed to the counter battens leaving an air space between the membrane and the tiles / slates for drainage & ventilation. Ventilation to this space to be provided using Glidevale over fascia vent FV 250; abutment ventilation to be provided via Glidevale MR50 and use dry ridge system to provide a vent gap equivalent to 5mm continuous strip at high level. 20mm softwood fascia to be fixed to the rafter feet.</p> <p>100mm x 50mm timber wall plate to be bedded onto and strapped to walls using Bat M305 straps at 1800mm centres. 12.5mm plasterboard ceiling with filled joints and skim coat. Lay 170mm fibreglass insulation between joists and 100mm across top of joists to achieve a U value of 0.16W/mK. Where ceiling line follows pitch of roof install 100mm thick Celotex Insulation between rafters, or similar approved insulation and 45mm below, tape joints with foil tape for vapour check, all to achieve a U value of 0.18W/mK. Provide a 600mm x 600mm loft access (if applicable).</p>	
13.2	Roof finish	
	Tile/slate laid to manufacturer's details on treated softwood battens. Fully breathable roofing membrane (e.g. by Tyvek or Klobber) throughout (no eaves ventilation required).	
	Half round ridge tiles throughout, bedded in 1:3 mortar mix using white cement and sharp sand, and mechanically restrained. Lead valley trays, soaker and flashings etc as required, all to Lead Development Association details.	

	Fascias to be ex 32mm softwood with 9mm WBP plywood soffits, all for staining.	
13.3	Ceiling & Insulation	
	Flat sections of main ceilings - U-VALUE REFER TO SAP 100mm thick Earthwool 40 insulation between joists & 300mm thick over the top at 90 degrees, vapour barrier; 12.5mm plasterboard & skim plaster finish.	
	Insulated & air tight loft hatch, with pull down aluminium loft ladder.	
	Vaulted ceilings - U-VALUE REFER TO SAP 125mm thick Celotex insulation between rafters & 50mm thick Celotex insulation below rafters, seal all joints to create a vapour control barrier with aluminium foil tape; additional 500g polythene vapour barrier; line with 12.5mm plasterboard.	
	Steelwork any structural steelwork to have 1/2hr fire protection – 2 layers plasterboard or equivalent.	
	To Summary	
14.00	NEW PARTITIONS	
14.1	Timber partitions generally 50mm x 100mm studwork at maximum 400mm centres (treated timbers). Partitions lined both sides with 12.5mm Gyproc TEN board and 25mm Rockwool acoustic slab between studs. Thistle One Coat finish. Additional noggins should be used as necessary to suit plasterboard and all fixtures and fittings within the room. Wall construction to achieve a minimum of 40dB.	
14.2	Check stability of existing floors under new partition positions; install noggins under new partitions.	
	To Summary	
15.00	TIMBER FIRST FLOORS	
15.1	Specialist designed floor joists by timber frame supplier or structural engineer, or standard timber floor joists. Floor construction to achieve minimum of 40dB. All fixed in accordance with manufacturer's instructions. Lateral resistant to be provided by 1000mm long 32x6mm galv. mild steel straps to joists running parallel to the walls at 1800mm centres. At the strap position a sliding wedge is to be fitted between the wall and first joist and minimum 150mm deep noggins between the remaining joists to lap at least 3 joists, or as otherwise instructed by structural engineer or manufacturer.	
	To Summary	
16.00	STAIRS	
16.1	Maximum 42° pitch stair case, equal risers at max 220mm and goings at min 220mm. Height of handrail to be 900mm above pitch line and 900mm above landing level. Gap of no more than 99mm between any elements. Guarding to be capable of resisting the minimum horizontal force. Winders to be no narrower than 50mm at the newel. 2m min vertical headroom to be provided above the pitch line, with a minimum of 1.5m perpendicular to the pitch line.	

	Contractor to check all minimum headroom, pitch, etc. are achievable prior to manufacture.	
	To Summary	
17.00	DOORS & WINDOWS	
17.1	All easily accessible doors and windows will meet the requirements of PAS 24:2012	
17.2	Internal doors Internal doors to have min 7,600mm ² undercut (average 10mm gap). Ground floor doors min. clear width 750mm or as shown on drawing to suit approach situation.	
17.3	External Doors Level access threshold to new front entrance door to Part M, see Typical Drawing TYPI6	
17.4	Windows, max. 1.5 W/m²K Windows to have openable area min 1/20 th of floor area All Bedrooms to include a min 750 high and min 450 wide clear opening, 800-1100mm sill height, for escape purposes. Any window or door glass below 800mm above FFL or adjacent to doors to be toughened or laminated outer pane.	
17.5	All new hardwood timber or double-vacuum treated softwood, purpose-made or standard double glazed units - one pane low E glass, to provide max. 1.5W/m ² K, Generally casements and sliding sashes as shown.	
	To Summary	
18.00	ELECTRICS	
18.1	Electrical installation to be carried out by a registered sub-contractor in accordance with the current edition of the IEE Regulations and Part P of the Building Regulations, to be designed, installed, inspected and tested by a person competent to do so. Provide an electrical installation certificate following completion of the work, by a person competent to do so. All fittings by MK or similar approved.	
18.2	All circuits shall be supplied from a distribution board, with MCB and ELB protection.	
18.3	All low-level sockets to be fixed min. 450mm above FFL; Light switches to be max. 1200mm above FFL. Consumer units to be appropriately placed and sited between 1350-1450mm from finished floor.	
18.4	Channels to be provided where cables run in plastered walls and capping for studwork partitions/dry-lining.	
18.5	Provide min. 75% fixed lighting outlets – (either basic outlets or complete luminaries) only for lamps of luminous efficacy more than 45 lumens per circuit-watt.	
18.6	Smoke, Heat and CO₂ detectors	

	Smoke detectors to be provided as shown on Plan, to be mains operated with battery backup and interconnected to comply with the Building Regulations. Alarms to be located within 7m of living room doors and 3m of bedroom doors. Interconnected heat detector in Kitchen. Battery powered carbon monoxide detectors to be fitted in rooms with solid fuel burning appliance.	
18.7	External Lighting External security lighting to be a maximum of 30W, with an efficacy greater than 45 lumens per circuit watt, fitted with movement detection and daylight shut-off devices and manual override;	
	To Summary	
19.00	FIRE & BURGLAR ALARM SYSTEM	
19.1	New integrated fire and burglar alarm system to be supplied and installed throughout the property. Allow for attendance on specialist supplier.	
19.2	Provisional Sum for specialist designed and installed fire and burglar alarm. Provisional Sum	£2,000
	To Summary	
20.00	HEATING AND HOT AND COLD WATER	
20.1	Heating engineer is to be a member of an 'approved competent persons scheme, (as defined within the Building Regulations) and is to provide a 'Benchmark' log book or commissioning certificate'. Air source heat pump, under floor heating, temperature zone controls to space heating & 220l cylinder (size TBC by heating eng); 80mm foam insulation; cylinder stat & programmer; primary pipework fully insulated; MCS Installation certificate.	
20.2	Heating and hot water system to be all in accordance with manufacturer's instructions with regard to adjacent structures and openings, height, etc. System to include interlock to switch off when no demand for hot water. Heating Controls – Time & temperature zone controls are required for the heating system in accordance with Domestic Heating Compliance Guide and accompanying Design SAP calculation (if applicable).	
20.3	Underfloor heating system to be fully zoned with timers and thermostatically controlled.	
20.4	Design temperatures 18°C in Bedrooms and living rooms and 22°C in Bathrooms. Positions of appliances to be confirmed and agreed with employer.	
20.5	Any changes in the heating system to the final SAP rating must be agreed with the local authority.	
20.6	HOT WATER SUPPLY & SYSTEMS Heated wholesome water or heated softened wholesome water must be provided to any basin, bidet, bath or shower provided in any bathroom or ensuite and any sink provided in any areas where food is prepared. Hot water systems, including any cistern or other vessel that supplies water to	

	<p>or receives expansion water from a hot water system shall be designed, constructed and installed so as to resist any effects of temperature and pressure that may occur during normal use or malfunctions.</p> <p>Hot water system that has a hot water storage vessel must incorporate precautions to prevent the water reaching 100 degrees C and ensure that any discharge from safety devices is safely conveyed to where it is visible. This must not cause a danger to any persons in or about the building.</p> <p>Hot water supply to a bath must not exceed 48 degrees as detailed in Approved Document G.</p> <p>Ensure provision of shut-off valve at each fitting.</p>	
20.7	<p>WATER EFFICIENCY – NEW DWELLING</p> <p>A whole water consumption calculation has been completed for the houses to show that consumption will not exceed 125 litres per person per day. The following rates have been used, if these increase or the number of sanitary items change please consult the designer to check that the consumption rate still conforms.</p> <p>Flow Rates: Taps = 6 litres per minute Bath = 190 litres to over flow Dishwasher = 1.08 litres place setting Washing machine = 8.17 litres per kg dry load Shower = 10 litres per minute WC = 6 litres on full flush, 4 litres on half flush – Dual Flush</p>	
		To Summary
21.00	SOLID FUEL BURNING STOVE & FLUE	
21.1	Design and installation of solid fuel appliance and flue to be by a competent person. A report to be provided to demonstrate compliance with Part J. Installation and commissioning to be tested and certified by a person competent to do so.	
21.2	Provide a notice plate within the building (Utility Room) stating the location and category of flue and types of appliances which can be accommodated, manufacturer's name, type & size of flue and installation date.	
21.3	<p>Flue above roof</p> <p>Flue above roof covering: st/st flue extract to be minimum distance above roof pitch as set out in Building Regulations, 600mm above ridge, within 600mm of ridge; lead flashing to flue above roof line.</p>	
21.4	<p>Flue within building</p> <p>Factory made metal chimney to suit appliance and types of fuels; Sleeves to be provided where flue passes through a wall or floor; joints between chimney sections should not be concealed in construction voids. Factory made metal chimney to be located away from combustible materials such as ducts, cupboard walls, etc. as specified by chimney manufacturer. Provide access hatches min. 300mm sq for visual inspection to all aspects of the flue. Form metal-stud and plasterboard surround projecting into any rooms, all dimensions to manufacturer's details.</p>	
21.5	Combustion air	

	<p>Combustion air supply permanent air vent to be ducted under floor to stove position or through external wall, to provide minimum clear vent size as required for wood burner model selected. Technical details to be provided by contractor prior to construction on site.</p> <p>There must be a constant supply of fresh air to the room in which the stove is to be installed. Fixed ventilation must be provided when installing any solid fuel stove which has an output higher than 5kW. For each kilowatt above five, 550 sq mm (2.56 sq ins) of ventilation is required. Any airbricks or grilles fitted for this purpose should be positioned so that they are not liable to blockage. If other appliances requiring ventilation operate in the vicinity of the stove then there must be adequate ventilation to provide for both appliances operating simultaneously.</p> <p>NOTE Extractor fans when operating in the same room or space as the stove, may cause problem</p>	
21.6	<p>Hearth Construction</p> <p>Hearth to be minimum 250mm thick non-combustible material, projecting a minimum 300mm in front of the appliance and minimum 150mm either side of the appliance.</p> <p>NOTE:</p> <p>Full hearth thickness may not be required if the stove & the stove is independently certified not to heat the hearth underneath it to more than 100 degrees centigrade, then hearth regulations are very simple as no constructional hearth is required: allowing a minimum 12mm thick non-combustible superimposed hearth straight onto the floor (even onto carpet/wood floor etc.).</p> <p>In this case the hearth must be a minimum size: 840mm x 840mm. There must also be a minimum 150mm of hearth at each side and rear of the stove and a minimum 225mm in front of the stove door (best practice is 300mm and if the stove is designed to burn with doors open then 300mm is a must).</p>	
	To Summary	
22.00	VENTILATION	
22.1	<p>Where Intermittent extract ventilation in accordance with Reg. F1, Table 1.1a.</p> <p>Kitchen: forced ventilation to be provided by intermittent extract through wall, 60l/s, or 30l/s adjacent to hob, in operation whilst food is being prepared.</p> <p>Bathroom, Shower Room & En-Suite forced ventilation to be provided by a low speed fan capable of extracting a minimum of 15 litres per second, connected to the light switch with an automatic override and humidity stat to enable the fan to run at a rate of at least 12 air changes per hour for a period of not less than 15 minutes after initial operation.</p> <p>Utility: forced ventilation to be provided by fan capable of extracting a minimum of 30 litres/second connected to the light switch, to run for a period of not less than 15 minutes after initial operation. Wall-mounted, ducted through wall.</p> <p>WC min. 6l/s, fan to be ducted to outside wall.</p>	
22.2	<p>Where Trickle Vents</p> <p>All new rooms to have trickle vents through walls to provide 5000mm² clear</p>	

	opening for habitable rooms & 2500mm ² clear opening for bathrooms.	
22.3	<p>Natural Ventilation</p> <p>All rooms to have opening windows at least 1/20th of room floor area, opening at 1.75m high.</p> <p>Bathrooms to have opening window for rapid ventilation, min. 1/20th of floor area.</p>	
	To Summary	
23.00	FOUL DRAINAGE INTERNAL	
23.1	Contractor to allow for installation of internal plumbing and sanitaryware and supply of all associated pipework.	
23.2	All waste pipes to be proprietary plastic manufacture to match the soil goods and must be accessible and roddable at all changes in direction. SVP's to have access at base.	
23.3	Wastes to be 100mm for WC's, 40mm internal diameter for baths, sinks, dishwashers and washing machines and 32mm diameter for basins and showers with 75mm deep traps to all appliances. Under working conditions the depth of the trap shall not fall below 25mm.	
23.4	75mm vent pipe shall be taken above highest connection, terminating min. 900mm above window heads, with cage.	
23.5	Allow for installing and connecting all sanitaryware and kitchen appliances, including supply of pipework, fittings, etc.	
	To Summary	
24.00	DECORATIONS	
24.1	<p>Preparations</p> <p>All paints and decorator's materials shall be obtained from an approved reputable manufacturer and applied strictly in accordance with their instructions. Use the proper undercoating in each case.</p> <p>All surfaces shall be well cleaned before application of any decorative material and all work shall have the number of coats specified here in addition to the preparation and priming and be properly rubbed down and faced up between each coat and finished in tints to selection. All wood surfaces to be painted shall be thoroughly glass papered, knotted with best shellac knotting, primed and well stopped in.</p> <p>All cut ends are to be primed prior to fixing. Bottom edges of all painted doors to be knotted, primed and painted one finishing coat prior to hanging.</p>	
24.2	<p>Internal plaster – Mist coat on all new plaster, plus 2 coats emulsion, colours to be advised;</p> <p>Making good and 2 coats to all existing surfaces;</p> <p>Specialist Kitchen and Bathroom paint to kitchen and bathrooms.</p>	
24.3	Internal joinery – primer, undercoat and 2 coats eggshell to all internal joinery, new and existing.	
24.4	<p>External joinery – painted in accordance with manufacturer's instructions. Colour to be advised.</p> <p>New windows and doors will be factory finished.</p>	
	To Summary	

25.00	SURFACE WATER DRAINAGE & GUTTERING	
25.1	Surface Water drainage system	
25.1.1	<p>Connect RWP's in positions shown or as agreed on site. Allow for gullies, rodding eyes, Inspection Chambers, 100mm drain runs laid to falls, rodent covers to discharge pipes.</p> <p>Osma SuperLine 110 diam black rainwater guttering to discharge, via 68 diam downpipes, hopper heads, BIG below external tap outside; all or similar approved.</p>	
25.1.2	<p>Soakaway 100mm diameter vitrified clay pipes by Hepworth or UPVC by Osma laid to manufacturer's details to soakaway. Soakaway to be constructed of graded rubble wrapped in a geotechstyle membrane all built below the invert level of pipe. Soakaway to be positioned min. 5m away from buildings or roads and 1m away from boundaries. Final position and size to be agreed with building control office on site, by mean of a percolation test.</p>	
25.1.3	<p>Percolation test Prior to commencing work on surface water drainage, a percolation test should be undertaken and a design for the soakaway to be submitted to Building Control for approval.</p>	
	To Summary	
26.00	ACCESS AND USE	
26.1	<p>Front door level Access – new dwellings Approach to entrance via driveway adjacent to main entrance to comply with Approved Doc M.; parking area and path to entrance door to be bonded surface ramped up to front door level access platform, min. 900x900mm, with suitable weathering threshold. Main entrance door width min. 775mm clear when open 90°.</p>	
26.2	<p>Internal doors Ground floor corridors and access routes to maintain min. 900mm width with no obstructions (all approached head-on). Door widths – all 838mm door leafs to provide min. 750mm clear when open. Gd Fl WC door to open outwards</p>	
26.3	<p>Electrical installation All low-level sockets to be fixed min. 450mm above FFL; Light switches to be max. 1200mm above FFL.</p>	
	To Summary	
27.00	AIR PERMEABILITY AND PRESSURE TESTING	
27.1	Refer to SAP calculation for air permeability target and air pressure test requirement	
27.2	Thermal bridging - All junctions shown on the thermal bridging spread sheet with Accredited Construction are to be completed in accordance with Accredited Construction Details - Follow this link to down load all the different details.	

	<p>http://www.planningportal.gov.uk/buildingregulations/approveddocuments/part/bcassociateddocuments9/acd, and Knauf Accredited Details.</p> <p>The required junction reference is indicated in the reference column of the thermal bridging spread sheet. Confirmation is required that all accredited details have been followed.</p>	
27.3	<p>Maintain low air permeability in construction by:</p> <ol style="list-style-type: none"> a. DO NOT alter above specification of materials under any circumstances b. Ensure all blockwork bed joints and perps are properly and solidly formed, with any voids pointed before completion, straight joints are to be avoided. All abutment profiles and movement joints to be masticed on both faces. c. Seal all service penetrations of walls/ceilings on inner face prior to 2nd fix. d. Close all cavities onto insulating d.p.c. at reveals, cills, eaves and verges. e. Allow no post-construction apertures to be installed. f. Mastic seal first floor skirtings onto floor and wall finishes and windows and window boards into reveals. g. Pay particular attention to kitchens and bathrooms, notably s & v pipes, plumbing and extract fans. Seal and point up after mechanical service trades. h. Pre completion testing, final check all abutments and mastic seal even where only hair line cracking exists. <p>Adhere exactly to Accredited Details.</p>	
		To Summary
	TOTAL	