SGT Building Design

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Specification

Extensions and Alterations
at

Job No. 0616

Specification to be read with drawing nos. 0616-01, 02, 05, 06, 07, 08 and structural engineer's details.

FOUNDATIONS

Trench fill type, min 600mm wide, taken down to depth(s) shown on plans/sections (refer to drawing no. 8920-05 & 08). In any case foundations to be taken a minimum of 600mm below any visible roots. Subsoil type is Clay. Concrete to be 1:2:4 mix incorporating sulphate resisting cement. Trees as shown on drawing 0616-05. Foundation depths designed in accordance with NHBC Standards chapter 4.2 (Building near trees - 2003 edition). Drains to be bridged, where passing through walls/foundations with pre-cast concrete lintels (**not** pre-stressed type). At least 50mm clearance to be maintained all around the pipe.

ANTI-HEAVE PRECAUTIONS

Inner faces of foundations to be lined with 75mm of Claymaster low density expanded polystyrene by Vencel Resil Ltd. (*BBA Cert No. 90/2543*). Claymaster to be omitted from bottom 500mm of trench as shown on section drawing.

EXTERNAL WALLS (Cavity Construction)

102mm facing brick outer skin to match existing (or to planning requirements where applicable). 100mm cavity insulated with 100mm **Crown Dritherm** cavity wall batts (*BBA Cert No. 95/3212*). 100mm **Celcon Standard** block inner skin (*BBA Cert No. 86/1689*). Internal finish to be 13mm lightweight plaster in accordance with BS 5492:1990. U-value of wall - 0.30W/m^2K.

Stainless steel wall ties conforming to BS 1243:1978 to be used at 750mm centres horizontally, 450mm centres vertically (staggered), at every block course at the edges of openings and at 450mm centres horizontally at dpc level to support the insulation batts.

Hyload damp proof course (*BBA Cert No. 86/1770*) to be provided to both skins at least 150mm above external ground level linked to existing house dpc. All laps to be a minimum of 100mm, sealed using **Hyload** contact adhesive. Dense concrete blockwork to be used below ground/dpc level as appropriate. Cavity to be filled with fine concrete up to 225mm below lowest dpc level. Walls to be bonded to existing using **Furfix** stainless steel profiles (*BBA Cert No. 91/2682*). **Thermabate 100** insulated cavity closers (*BBA Cert No. 91/2648*) to be provided at all reveals and to all other cavity closers.

See drawing 0616-08 for detail of additional dpc at lower level to protect ends of floor joists.

Mortar mix to be Class III to BS 5628:Part 1:1978 or 1:1:6, cement:lime:sand.

EXPANSION JOINTS

Expansion joints to be provided as shown on floor plans. To be installed in accordance with block manufacturers instructions. Debonded movement joint ties to be provided in alternate courses. External joints to be filled with a mastic sealant as the wall is constructed.

GROUND FLOOR CONSTRUCTION (Suspended Timber)

21mm T & G flooring grade chipboard on 50mm x 150 mm C16 grade timber joists @ 400mm centres supported on joist hangers or off hangers fixed to timber plate bolted to wall construction. Provide dpc below timber wall plate. M10 bolts and washers @ 600mm centres.

Ground covering to be 100mm thick concrete, minimum ST1 grade, on a hardcore bed of clean broken brick or similar inert material. A ventilated air space is to be maintained below the floor measuring at least 75mm from the ground covering to the underside of any wall plates and at least 150mm to the underside of the floor joists or insulation.

Cross ventilation to be provided on two opposing sides to achieve a ventilation opening equivalent to at least 1500mm^2 per metre run of wall. (i.e. 215mm x 65mm terracotta air bricks @ 900mm centres.)

120mm **Jablite Jabfloor 70** insulation to be provided between floor joists, supported on metal pins. U-value of insulation material - 0.22W/m^{2}K.

FIRST FLOOR CONSTRUCTION (Suspended Timber)

21mm T & G flooring grade chipboard on min. 50mm x 175mm (or same size as existing if greater) C16 grade timber joists @ 400mm centres supported on joist hangers (*hooked type*) built into wall construction. Timber noggins at mid-span and to ends. 100mm mineral wool insulation between joists for sound insulation. Ground floor ceiling to be 12.5mm plasterboard with min. 5mm skim. Rear wall to be strapped across new joists at min. 1.8m centres with noggins between with ms restraint straps.

INTERNAL WALLS/PARTITIONS (Studwork)

50mm x 100mm vertical timber studs @ 600nmm centres (400mm centres to kitchens and bathrooms) with top and bottom plates and intermediate noggins. 100mm **Rockwool** insulation between studs and 12.5mm **Gyproc SoundBloc** plasterboard (10.6Kg/m^2) to both sides with joints taped and skimmed.

STEEL/TIMBER - BEAMS/COLUMNS

Steel and timber beams/columns shown on plans to be in accordance with structural engineer's design details. Client to instruct structural engineer. Details of structural beams design to be the subject of a conditional approval under the Building Regulations. Builder/Client to ensure that the condition relating to structural details is satisfied prior to the commencement of works.

LINTELS

Lintels to be **Catnic** CG90/100 unless otherwise specified. Lintels to be installed with at least 150mm end bearings. Void within lintels to be filled with insulation material to prevent cold bridging. Weep holes to be provided above all lintels to external walls.

FIRE PROTECTION TO STEEL BEAMS

Encasement to steel beams to be expanded metal lathing (EML) with minimum 12.5mm thick Gypsum plaster finish to achieve a 30 minute period of fire resistance. Alternatively beams to be painted with intumescent – fire resisting – paint to achieve 30 minute period of fire resistance. i.e. Nullifire or similar product.

PITCHED ROOF CONSTRUCTION

Plain tiles to match existing on 38mm x 25mm tanalised timber battens on sarking felt. Rafters to be 50mm x 150mm C16 grade timber @ 400mm centres birdmouthed over 50mm x 100mm timber wall plate anchored to inner skin of cavity wall with 600mm long 30mm x 5mm galvanised mild steel straps at max. 1.8m centres. Ceiling joists to be 50mm x 150mm C16 grade timber @ 400mm centres bolted to rafters with toothed washer between. Refer to section drawing 0616-08 for additional details of roof construction.

Main roof to be insulated with 270mm thick **Rockwool Rollbatts.** U- value **-** 0.16W/m^{2}K. 10mm ventilation gap to be provided at eaves level with proprietary ventilators. Maintain ventilation path above insulation.

Valleys to be formed in code 5 lead sheet on 12mm plywood or pre-formed GRP gutters installed in accordance with the manufacturers instructions

MONOPITCHED ROOF CONSTRUCTION

Plain tiles to match existing on 38mm x 25mm tanalised timber battens on sarking felt. Rafters to be 50mm x 100mm C16 grade timber @ 400mm centres fixed to 50mm x 100mm timber plate bolted to new wall @ 600mm centres. Feet of rafters to be fixed to 50mm x 100mm timber wall plate. Ceiling joists to be 50mm x 100mm C16 grade timber @ 400mm centres. Ceiling finish to be 12.5mm plasterboard and 5mm Gypsum plaster skim. Roof to be insulated with 270mm thick **Rockwool Rollbatts.** 10mm ventilation gap to be provided at eaves level with proprietary ventilators and 2 no. tile vents at high level to provide cross ventilation to roof void. Ventilation path to be maintained above insulation at eaves.

FLAT ROOF CONSTRUCTION GROUND FLOOR (Warm Deck)

Bitumen bedded stone chippings covering the whole surface to a depth not less than 12.5mm on three layers of built up roofing felt complying with BS 747:1977(1986) laid in accordance with CP144:Part 3:1970. Top and second layer of felt to be type 3B felt. Base layer to be partially bonded using a type 3G felt on 105mm **Celotex Tempcheck Deck TD3105** composite insulation roofing board on firing pieces to provide a minimum fall of 1:40 (25mm/m). U-value - 0.20W/m^2K.

Roof joists to be 50mm x 150mm C16 grade timber @ 400mm centres. Lateral restraint to be provided to top of walls running parallel to roof joists with 1200mm long 30mm x 5mm galvanised mild steel straps at max. 1.8m centres. Straps to be built into cavity construction and fixed back over 3 no. joists with timber noggins between. 50mm x 100mm timber wall plate to be bedded to top of wall and held down with 30mm x 5mm mild steel straps at 1.8m centres.

Ceiling finish to be 12.5mm plasterboard with a 5mm Gypsum plaster skim. External walls to be built up to the underside of the roof decking and sealed. Roof to be unvented.

FLAT ROOF CONSTRUCTION FIRST FLOOR (Cold Deck)

Bitumen bedded stone chippings covering the whole surface to a depth not less than 12.5mm on three layers of built up roofing felt complying with BS 747:1977(1986) laid in accordance with CP144:Part 3:1970. 21mm exterior quality plywood decking on firing pieces to provide a minimum fall of 1:40 (25mm/m). Firing pieces to be minimum 75mm to allow for 50mm air gap above insulation.

25mm ventilation gap to be provided above fascias with proprietary ventilators (i.e**. Glidevale FV250** Ventilators and gutter bracket extension pieces as required).

Roof joists to be 50mm x 150mm C16 grade timber @ 400mm centres. 50mm x 100mm timber wall plate. Joists supported on hangers off new trimmer beam (to structural engineer's design). Lateral restraint to be provided to top of walls running parallel to roof joists with 1200mm long 30mm x 5mm galvanised mild steel straps at max. 1.8m centres. Straps to be built into cavity construction and fixed back over 3 no. joists with timber noggins between. Roof to be insulated with 170mm thick **Kingspan Thermapitch TP10** rigid insulation board to achieve U-value of 0.20W/m^2K.

Ceiling finish to be 12.5mm plasterboard with a 5mm Gypsum plaster skim.

BOX GUTTER

Code 5 Lead box gutter and flashing laid to a fall of 1:80 with drips at max 2.0m centres. Min width of gutter to be 225mm. Cover flashings to lap gutter upstands by at least 75mm. All flashings to be pointed with Lead Sheet Sealant. Patination Oil to be applied to all leadwork.

FLASHINGS

Lead flashings to be laid in accordance with BS 6915:1988 as follows:

(a) Minimum 150mm upstand in Code 4 lead to BS 1178:1982 chased 25mm into wall with lead wedges at approx. 450mm centres. Maximum single length of lead to be 1500mm. Patination oil to be applied to lead as soon as possible after fixing to prevent carbonation of the surface;
(b) Horizontal and racking abutment flashings to have a minimum 100mm upstand in Code 4 lead to BS 1178:1982 chased 25mm into wall with lead wedges at approx. 450mm centres (lead wedges at each step to stepped flashings). Lead to extend over the tiles/slates at least 150mm (200mm where plain tiles are used). Soakers to be Code 3 lead.

BELOW GROUND DRAINAGE (Foul & Surface Water)

110mm diameter **Osmadrain** PVC-U system to be used complying with BS 4660:1989 and laid in accordance with BS 8301:1985 and BS 5955:Part 6:1980. Pipes to be laid to a minimum gradient of 1:40 (1:80 where serving at least 1 w.c.) on a 100mm base of pea shingle. Trench to be backfilled to the top of the pipe with pea shingle then a 100mm layer of selected granular fill, free from stones larger than 40mm, to be placed before back filling with suitable as dug material. Access points to be provided as shown on plans.

Drains to be bridged, where passing through walls/foundations with pre-cast concrete lintels (**not** pre-stressed type). At least 50mm clearance to be maintained all around the pipe.

MANHOLES/INSPECTION CHAMBERS

Manholes/Inspection chambers to be **Osmadrain** PVC-U type complying with BS 7158:1989. Sizes and invert levels as noted on plans.

ABOVE GROUND DRAINAGE

Waste plumbing to be Osma MUPVC solvent weld system or similar complying with BS 4514:1983, laid in accordance with BS 5572:1994.

Trap and branch sizes as follows:

Appliance Type	**Trap & Branch Pipe Minimum diameter (mm)**	**Maximum length of run (m)**
Wash Hand Basin	32 (*max. gradient 20mm/m*)	1.7
"	40	3.0
Sink/Waste Disposal	40	3.0
Bath/Shower	40	3.0
Washing Machine	50	4.0
Dish Washer	50	4.0

All appliances to be fitted with 75mm deep seal traps. Rodding access to be provided at all changes of direction.

Vertical stack to be 110mm diameter **Osmasoil** system vented to external air. Top of ventilation stack to terminate at least 900mm above any opening into the building within 3.0m and be fitted with a balloon grating.

Drainage runs and stack position as shown on plans.

RAINWATER GOODS

Rainwater goods to be **Osma Roundline** PVC-U system or similar. 112mm diameter half round gutters, 68mm diameter downpipes, connected to the below ground surface water drainage system discharging to soakaway(s) as shown on plans.

SOAKAWAYS

Soakaway(s) to be a minimum 1.0m^3 capacity measured below the invert level of the inlet pipe. To be filled with clean broken brick and positioned not less than 6.0m from any building. Capacity of soakaway to be based on the effective roof area being drained. Capacity to be calculated as 1.0m^3 for every 20m^2 of roof area being drained.

SAFETY GLAZING

Glazing within 800mm of finished floor level in internal and external walls/partitions to be toughened or laminated safety glazing achieving a Class C standard when tested to BS 6206:1981.

Glazing within 1500mm of finished floor level in doors or side panels within 300mm of a door to be toughened or laminated safety glass achieving at least a Class C standard when tested to BS 6206:1981. If the width of a panel exceeds 900mm then that panel should achieve at least a Class B standard when tested to BS 6206:1981.

Glazing in small panes (maximum area 0.5m^2, maximum width 250mm) should comply with the above or may be annealed glass at least 6.0mm thick.

GLAZING

All new windows and external glazed doors to be PVC-U fitted with double glazed units with a minimum 20mm gap between panes and low-e glass (i.e. Pilkington k-glass). Minimum U-value of 1.8W/m^2K.

ESCAPE WINDOW (Inner Room)

Study room to be provided with a window having an unobstructed opening of at least 735mm high and 450mm wide positioned so that the bottom of the opening is between 800mm and 1100mm above floor level.

ESCAPE WINDOW (First Floor Rooms)

Bedroom 2 and 5 to be provided with an escape window with a clear opening of at least 735mm high x 450mm wide. Bottom of opening to be within 800-1100mm above finished floor. Window fitted with fire escape hinges.

VENTILATION

Ventilation to habitable rooms to be provided by opening windows at least $^1/_{20}{}^{th}$ of the floor area of the room. Some part of the ventilation opening to be at least 1.75m above floor level.

Ventilation to the kitchen, in addition to any opening windows, to be provided by mechanical extract ventilation capable of extracting at a rate of not less than 60 litres per second or not less than 30 litres per second if incorporated within a cooker hood.

Ventilation to bathrooms/shower rooms to be provided by mechanical extract ventilation capable of extracting at a rate of not less than 15 litres per second operated intermittently.

Ventilation to w.c. room to be provided by an opening window at least $^1/_{20}{}^{th}$ of the floor area of the room or by mechanical extract ventilation capable of extracting at a rate of not less than 3 air changes per hour operated intermittently with a 15 minute overun.

Ventilation to utility room to be provided by mechanical extract ventilation capable of extracting at a rate of not less than 30 litres per second.

Background ventilation to be provided to habitable rooms and kitchen having a total area not less than 8000mm^2. (i.e. a trickle ventilator, which should be controllable and secure and located, so as to avoid undue draughts.)

Background ventilation to be provided to bathrooms, utility rooms and w.c. accommodation having a total area of not less than 4000 mm^2.

SMOKE DETECTORS

Smoke detectors/alarms to be provided on as noted on plans. The smoke alarms should be mains-operated, interlinked and conform to BS 5446:1990 - components of automatic fire alarm systems for residential premises, Part 1 Specification for self-contained smoke alarms and point-type smoke detectors. Smoke detectors to have battery back up.

LIGHTING

New lighting to proposed extension to be by way of energy efficient units having a luminous efficiency greater than 40 lumens/circuit watt – e.g. fluorescent tubes or compact fluorescent lamps, (**not** GLS tungsten lamps with bayonet cap or Edison screw bases).

ELECTRICAL WORK

Provide electrical sockets and lighting to Client's requirements.

All electrical installations required to meet the requirements of Part P (Electrical Safety) **must** be designed, installed and tested by a person competent to do so. Prior to completion the Council should be satisfied that the requirements of Part P has been complied with. This may require an appropriate BS 7671 electrical installation certificate to be issued for the work by a person competent to do so.

A person who is a competent person registered with an electrical self-certification scheme authorised by the Secretary of State should preferably, undertake the proposed installation work. In this case, this person is responsible for ensuring compliance with BS 7671: 2001 and all relevant Building Regulations. On completion of the work, the person ordering the work should receive a signed Building Regulations self-certification certificate, and the relevant building control body (The Local Authority) should receive a copy of the certificate. The person ordering the work should also receive a duly completed Electrical Installation Certificate as or similar to the model in BS 76713 (see paragraphs 1.6 to 1.12). As required by BS 7671, the certificate must be made out and signed by the competent person or persons who carried out the design, construction, inspection and testing work.

CENTRAL HEATING

Extend existing central heating system to serve new radiators. Suitability/condition of existing boiler to be checked. Extended system to be fitted with a suitable control device (i.e. a room thermostat or thermostatic radiator valves).

Where the existing boiler is to be replaced, the replacement boiler should be a gas condensing boiler with a SEDBUK of not less than 86% together with appropriate controls.

THE PARTY WALL ACT

It is the owners responsibility to ensure that the requirements of the ***Party Wall etc. Act 1996*** are complied with. A copy of an Explanatory Booklet on the Party Wall etc. Act 1996 can be downloaded from the government website - **www.communities.gov.uk**.