PROJECT SPECIFICATION

Client:	Mrs Woodcock
Project:	2 storey side extension, new open oak frame porch to rear & alterations & remodelling of WC & utility
Location:	Sunnymead Horsley Lane Coxbench Derby DE21 5BH
Doc Ref:	SP2613
Date:	February 2019

MAKING PLANS
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Specification:

To be read in conjunction with drawing numbers J2613-03A, 04A & 05.

Due to the relatively large areas of glazing within the extension, thermal insulation has been upgraded elsewhere to the floor & walls compensate. Area weighted thermal calculations may be required by Building Control to demonstrate compliance with part 'L' of the Building Regulations.

Foundations:

Drain invert levels are to be checked prior to commencement of trench excavations.

Trench excavations are to be a minimum of 1000mm deep below the lowest ground level and 600mm wide for outer cavity walls and 450mm wide for internal single skin load bearing walls. All depths are to be approved on site by the Building Control Officer which will be determined by the ground conditions. Grade ST4 trench-fill concrete laid to max 150mm from finished ground level. Good quality brickwork to both skins underground or suitable alternative i.e. trench block.

Note:

- It is recommended for the Building Control Officer to be called to site prior to commencement of trench excavations to discuss foundation depths and any trees within a localised zone of influence, etc.
- The underside of footing is to be below invert level of any new or existing drain.
- Where drainage pipes pass through footings they are to be protected by bridging over them with concrete lintels to the Building Inspectors approval.
- Water levels to be checked on site for any impact on the concrete installation.
- We have based our foundation specification on the assumption that the original house is sitting on strip footings.

Trees:

If requested by building control, any trees within a localised zone of influence are to be fully investigated by a structural engineer and the species identified. This is due to the fact that they can affect foundation depths should cohesive clays be encountered.

Note: Should the foundation depths exceed 1.5m (due to the presence of trees on site), 'Clayboard' or similar will be required together with a suspended floor slab.

Below Ground Drainage:

Foul water from the new shower room & utility is to connect to the existing drain under the floor as shown.

Proprietary plastic inspection chambers are to be installed at all changes in direction and bedded on a suitable concrete base.

Trapped gullies required to take rainwater pipes. Under-ground drainage to be 110mm diameter plastic pipes to a minimum 1 in 40 fall laid on a 150mm granular bed. Any pipes which pass under the building are all to be surrounded and bed in 150mm pea gravel. Where drainage pipes pass through footings they are to be protected by bridging over them with concrete lintels.

Rainwater down pipes to discharge through storm drains and into a soakaway (subject to percolation test). Design and location is to be approved on site by Building Control Officer - minimum 5m clear of any buildings or highways.

Foul water drains should be laid to a gradient with a minimum fall of 1 in 40 where the peak flow is less than 1 litre/ second.

Foul water drains should be laid to a gradient with a minimum fall of 1 in 80 where the peak flow is more than 1 litre/ second.

Ground Floor (Solid): for highly glazed extension

Install 100mm grade ST2 ready mixed concrete in-situ floor slab, hand finished on a 1200g polythene vapour control layer with 120mm Celotex XR4000 insulation on 2000g polythene DPM made continuous with DPC on sand-blinded well consolidated hardcore, min 150mm over cleared topsoil (max 600mm deep). All to provide a U-value of well under the standard of 0.22W/m^2K to compensate for the excessive glazing.

Note:

- The finished ground floor level is to be a minimum of 150mm above the finished ground level. Height is to be agreed on site.

- Provide 25mm flooring grade Celotex insulation upstand around the perimeter of the floors, including where the floor slab touches outside walls i.e. at door thresholds.

- DPM to be lapped under wall DPC and fully sealed using Visqueen Double Sided Jointing Tape making sure there are no air gaps and the DPM is not stretched or displaced. All services and drains to be installed prior to pouring slab/screed including any under-floor heating system where required. Any services or drains which penetrate the DPM are to be fully sealed using Visqueen Zedex Pre-formed units and Double Sided Jointing Tape ensuring there are no air gaps. This is to ensure there is a sufficient radon protection barrier.

Damp Proof Course:

Horizontal and vertical Damp Proof Course to B.S. 743 Vertical Damp Proof Course to all new walls and openings, minimum 150mm wide. Horizontal Damp Proof Course to be continuous with Damp Proof Membrane in the floor and positioned 150mm minimum above finished ground level. Cavities to be filled with a weak mix concrete 225mm below DPC.

Visqueen Zedex CPT (Co-Polymer Thermoplastic) DPC with min. 100mm laps and fully sealed using Visqueen Double Sided Jointing Tape, laid in 1:3 mix cement mortar, min. 150mm above ground level.

Visqueen Zedex CPT Pre-Formed Cavity Tray Units to be installed between ground level and lapping under the DPC on the inner leaf blockwork 150mm above ground level. Cavity tray and DPC to be fully sealed using Visqueen Double Sided Jointing Tape.

Weep holes are to be provided at maximum 900mm c/s, at course immediately above external ground level by raking perpends and installing Glidevale MV650 weep vents (colour to match brickwork).

New External Cavity Walls (Stone & Block):

440mm cavity walls constructed with Ancon Staifix HRT4 Stainless Steel wall ties at 750 c/c horizontally and 400 c/c vertically staggered, 225 c/c vertically at reveals. 100mm coursed stone outer-leaf, 200mm cavity partially filled with 150mm Knauf Earthwool DriTherm 32 Ultimate insulation and 140mm concete block (aerated blockwork) or equal approved by Building Inspector.

Walls are to be finished internally with 12.5mm British Gypsum Wallboard; with all joints staggered and all edges supported; sealed with polysulphide sealant at all perimeters, junctions and openings; set on dabs; finished with scrim and British Gypsum 'Thistleboard finish' plaster skim.

All to provide a U-value under the standard of 0.28W/m^2K to compensate for the excessive glazing.

Lintels to external walls shall be proprietary galvanized mild steel IG Standard L1/S 100 to BS 5977, with a minimum 150mm bearing and integral insulation. Install Visqueen Zedex CPT Pre-Formed Cavity Tray Units over lintels. Weep holes are to be formed above lintels at maximum 450mm centres by raking perpends and installing Glidevale MV650 weep vent’s (colour to match brickwork).

Note:

- The coursed stone is to match the existing and a sample should be approved by the client prior to commencement.

- All jambs and cills to cavities to be closed with Cemex Thermabate PVC-U insulated cavity closer with integral DPC and fixed in accordance with the manufacturer's instructions.

- The cavity wall insulation must be taken down below the Damp Course level, finishing at the same level as the underside of the floor slab insulation.

- The cavity wall insulation must be continuous within the cavity and up to the roof insulation.

- For internal face of the shower room use 12.5mm British Gypsum 'Gyproc Moisture Resistant Board'.

- Existing walls are solid with insulated dry lining internally.

Steelwork:

All steelwork shown on the plans is indicative only and is to be designed by a structural engineer and calculations submitted by the applicant to Building Control prior to commencement on site. The structural engineer must survey the property prior to undertaking any calculations.

All structural steel work is to receive two coats of factory applied red oxide primer, or an alternative primer to British Standards. Any steelwork which is to be installed in exposed areas is to be hot dip galvanized. Any steelwork which is to be bedded into external walls is to be coated in bitumen.

Where the steel beams are deeper than the floor joists, the joists will need counter battening so that the steels are hidden within the ceiling.

All structured steelwork should be grade S355. The grade of steel specified is what generally comes from the mills. All the fabricators we work with have confirmed this in the past that 355 is the standard grade these days. The builder should get certification from his fabricator that this is what has been purchased.

Lintels to external walls shall be proprietary galvanized mild steel IG Standard L1/S 100 to BS 5977, with a minimum 150mm bearing and integral insulation. Install Visqueen Zedex CPT Pre Formed Cavity Tray Units over lintels. Weep holes are to be formed above lintels at maximum 450mm centres by raking perpends and installing Glidevale MV650 weep vent's (colour to match brickwork).

Internal wall lintels can be either; proprietary galvanized mild steel to BS 5977, with a minimum 150mm bearing, or; a pre-cast concrete lintel with 150mm bearing as sized by the structural engineer.

All steel beams within floors and ceilings are to be 30mins fire resistant i.e. install 2 layers of 12.5mm British Gypsum Wallboard plasterboard and skim finish around or 1 layer of 12.5mm (Pink) British Gypsum Wallboard fireboard plasterboard with all joints staggered and all edges supported; finished with scrim and British Gypsum 'Thistleboard finish' plaster skim to approx. 5mm thickness.

Any exposed steel beams are to be fire encased to provide 30 mins. fire resistance. Fix 38mm x 38mm SW timber framework at max. 600mm c/s into flanges of steel beams or columns. Face beams or columns with 2 layers 12.5mm British Gypsum Wallboard; with all joints staggered and all edges supported; finished with scrim and British Gypsum 'Thistleboard finish' plaster skim to approx. 5mm thickness.

Internal Load Bearing Walls:

Structural Engineer to check if existing walls to be removed are load bearing and whether support is required above. Any new load bearing walls to be built are to be constructed with whatever the structural engineer specifies. Walls are to be taken up to roof height.

Internal wall lintels can be either; proprietary galvanized mild steel to BS 5977, with a minimum 150mm bearing, or; a pre-cast concrete lintel with 150mm bearing as sized by the structural engineer.

Continual Insulation:

It is necessary to maintain continual insulation throughout the construction of the building, in particular floor / wall and wall / roof junctions.

Ground Floor / Cavity Wall

It is necessary for the cavity wall insulation to pass below the DPC level / ground floor insulation and the ground floor insulation turned up the edges to prevent a direct cold bridge.

First Floor/Cavity Wall

To provide minimum air leakage, it is necessary to support joists of hangers in cavity walls, thus maintaining consistent insulation within the cavity wall.

Cavity Wall / Roof

During construction, prior to the roof covering being fitted, it is necessary to wrap min 100mm glassfibre insulation from the cavity (made continuous with the cavity wall insulation over the wallplate and adequately into the roof void, where at the stage of the roof insulation being fitted, both can be abutted.

Also over the wallplate insulation suitable ducting should be placed to maintain a minimum of 50mm continuous airflow.

First Floor:

Install 63 x 95mm C24 grade timber floor joists at maximum 600mm centres spanning the shortest distance. 1 row of strutting is to be installed where spans exceed 2500mm and 2No rows where spans exceed 4500mm of either 175 x 38mm solid strutting or 38 x 38mm herringbone strutting equally spaced perpendicular to joist span.

Min 22mm tongue and grooved water-resistant chipboard is to be laid over and nailed into joists to form the floor platform. One layer of 12.5mm thick plasterboard is to be screwed underneath the floor joists with taped and skimmed joints, with 100mm rockwool insulation in between floor joists.

Note:

- Where the steel beams are deeper than the floor joists, the joists will need counter battening so that the steels are hidden within the ceiling.

- Joists to be doubled or additional joists placed where stud partitions over run parallel to floor joists and 50 x 100mm noggins under partitions where partitions run perpendicular to floor joists.

- To provide minimum air leakage, it is necessary to support joists off hangers in cavity walls, thus maintaining consistent insulation within the cavity wall.

- Metal anchor ties are to be installed at max 2000mm c/c at first floor level where floor joists run parallel to wall, all tie irons are to be stainless steel.

Traditional Vaulted Roof to Main Extension:

Staffordshire Blue plain clay roof tiles to match existing laid on 50 x 25mm SW treated tiling battens on Monarperm 700 roofing membrane (min 150mm laps). Traditional 50 x 250mm rafters at maximum 600mm centres, steel UB to act as a 'ridge beam' and restrain the rafters - to be qualified by Structural Engineer. 100 x 75mm wall plate secured with 30 x 5mm galvanised steel restraint straps at maximum 2000mm centres and bracing all to B.S 5268 & 5628.

Purlins shown on the drawings are decorative only, they are not load-bearing.

To sloping ceilings install 1 layer of 165mm thick Celotex XR4165 insulation between the rafters with 13mm plasterboard and skim finish to the underside. Note - Minimum 50mm air gap is to be maintained above the insulation for ventilation purposes. All to provide a maximum U-value of 0.18 W/m^2K.

To flat ceilings install a minimum of 400mm total Insulation quilt within roof void, 200mm Crown Wool or equal laid between ceiling joists and 200mm Crown Wool or equal laid perpendicularly over. Install 12.5mm plasterboard and skim finish to underside. 50mm airflow is to be maintained over wall plates and across ridge. All to provide a maximum U-value of 0.16W/m^2K.

Note:

- Tiles used to be suitable for roof pitch and installed in accordance with manufacturer recommendations.

- There must be a continuous 50mm gap above the between-rafter insulation which is vented to the eaves and the ridge. When locating the insulation between the rafters, it is common to include 50mm battens attached to the rafters in the ventilation zone up to which the insulation can butt. Ventilation is required at the eaves equivalent to a 25mm continuous strip and at the ridge equivalent to a 5mm continuous strip.

- During construction, prior to the roof covering being fitted, it is necessary to wrap min 150mm glassfibre insulation from the cavity (made continuous with the cavity wall insulation over the wallplate and adequately into the roof void, where at the stage of the roof insulation being fitted, both can be abutted.

- Over the wallplate insulation suitable ducting should be placed to maintain min 50mm continuous airflow.

- Metal anchors are to be installed at max 2000mm c/c to tie gable wall to the roof construction at verge and ceiling level all tie irons are to be stainless steel.

Note: Overall roof design to be qualified by Structural Engineer. Timber sizes may vary according to design.

Traditional Vaulted Roof to New Oak Porch Canopy:

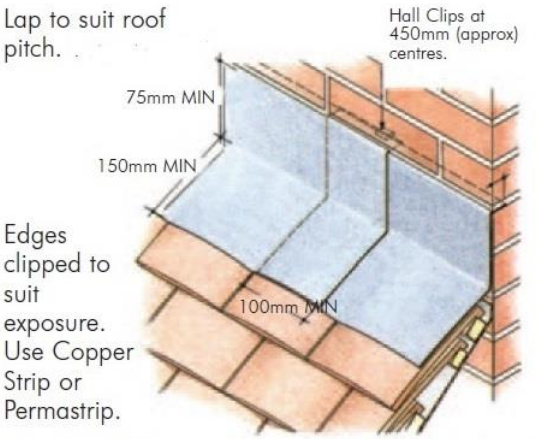
Staffordshire Blue plain clay roof tiles to match existing laid on 50 x 25mm SW treated tiling battens on Monarperm 700 roofing membrane (min 150mm laps). Traditional oak timbers to the satisfaction of the Building Inspector and Structural Engineer.

Valley Gutter to New Oak Porch Canopy:

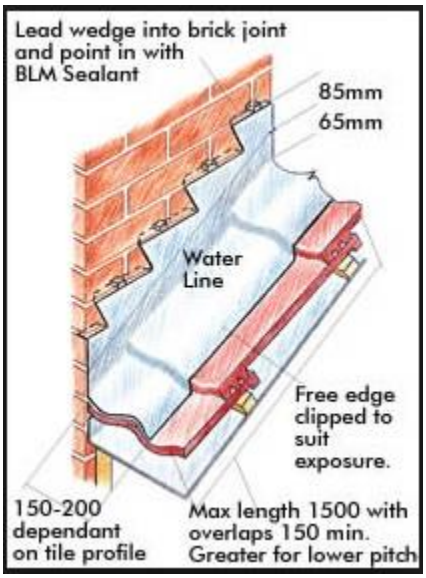
Code 4 lead flashing laid over 20mm marine plywood (BS 1088) and tilting fillets supported by gutter bearer. To have a 55mm step/expansion joint every 1.5 metres.

Lead Flashing:

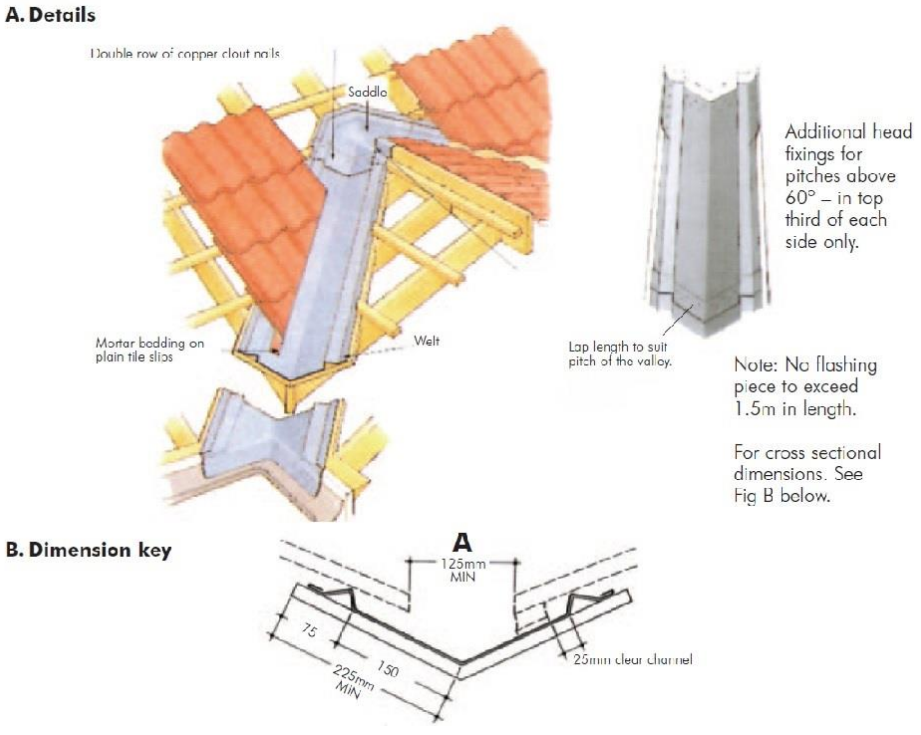
Code 4 lead flashing is to be fixed to the roof where it meets the wall. All flashings should be secured against the risk of wind lift. Position fixing clips at between 300-500mm centres depending upon the degree of exposure to wind. Clips should be made from quarter hard copper, at least 0.6mm thick or stainless steel at least 0.38mm thick. Turn the clips over by at least 25mm. Contractor to apply patination oil to all new lead work to create a crisp dark grey finish.



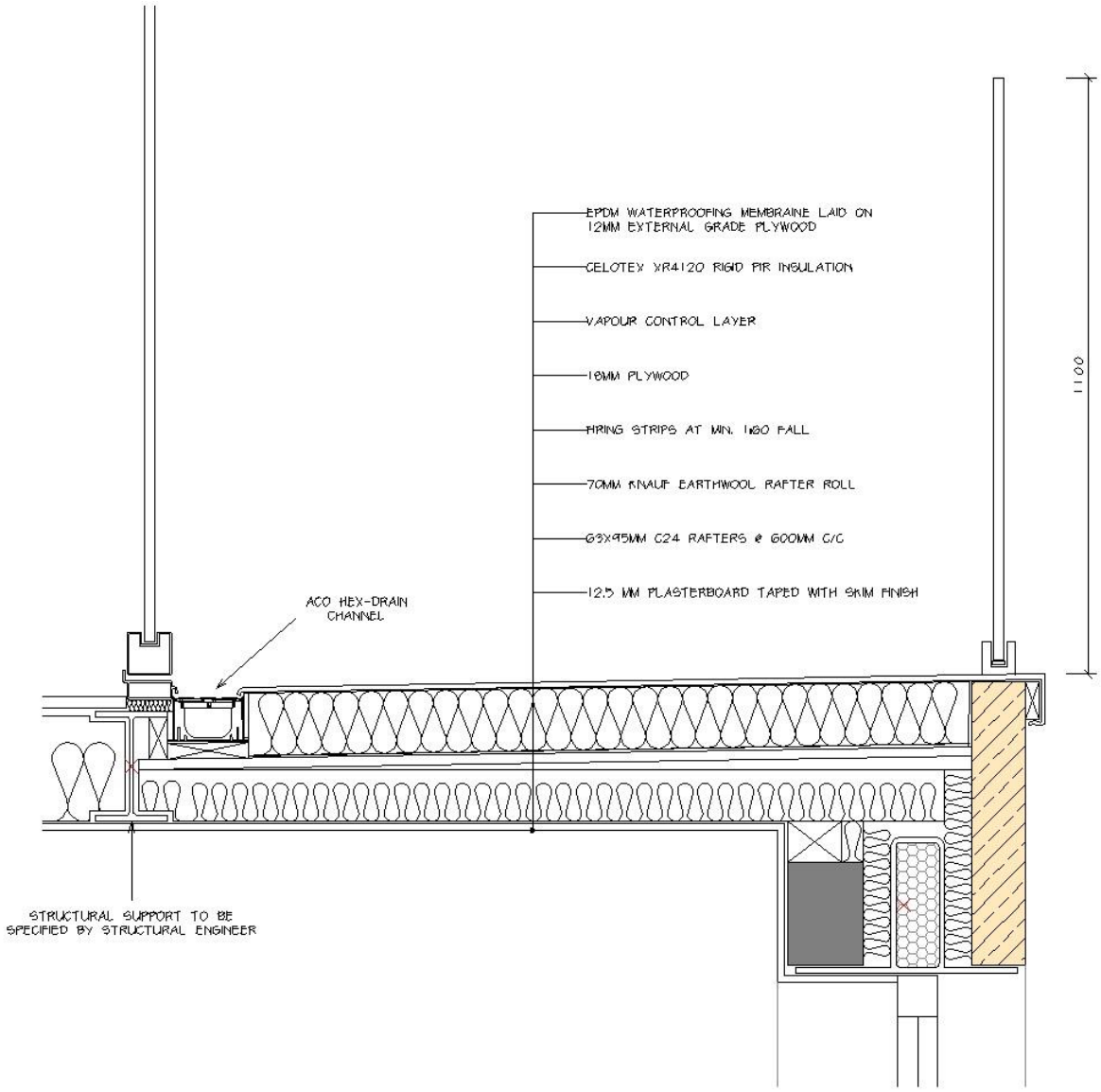
Note: No flashing piece to exceed 1.5m in length.



Leaded Valley Details:



Balcony, Flat Warm Roof Detail:



Glazed Balcony Handrail:

The glazed balcony handrail will be constructed so that a 100mm sphere cannot pass through the openings and finish at a height no less than 1100mm from the finished floor level and to be unclimbable.

The glazing should resist an impact of 74Kn/m.

Guttering and Downpipes

New 110mm half round PVC guttering connected to existing and supported off brackets at 1000mm centres. New 68mm diameter downpipe off brackets fixed to wall at max 2000mm centres.

Doors and Windows:

No new habitable room is to have a window with an opening of less than 0.33m², (450mm x 750mm minimum opening width and height). The bottom of the opening is to be positioned not more than 1100mm above finished floor level in accordance with the building regulations approved document B.

All window and door jambs and cills to cavities are to be closed with Cemex Thermabate PVC-U insulated cavity closers with integral DPC and fixed in accordance with the manufacturer's instructions. Window or door frames are to lap the cavity closer by a minimum of 10mm. Frames are to be sealed externally on all perimeters with 1 part polysulphide sealant.

New white UPVC window to NE elevation (to shower room) styled as indicated on the drawings and agreed with the client to be fixed strictly in accordance with the manufacturer's instructions.

Openable windows to be fitted with easy-clean hinges and brushed aluminium ironmongery to approved sample. Ironmongery to ground floor windows to be fitted with locks. (Note that no locks shall be fitted to windows noted M.O.E. – means of escape).

New aluminium doors and windows to SW & SE elevations styled as indicated on the drawings and agreed with the client to be fixed strictly in accordance with the manufacturer's instructions.

External doors to be hung in fully weather-stripped frame with proprietary threshold strips and anti-finger trap devices.

New window and door frames to be fitted with double glazing units incorporating an air gap between glass which is to be argon gas filled. Glass to be Celcius Clear Elite performance glazing, which has a U-value of 1.0 W/m^2K, a solar factor of 42%, 58% heat reflection, is toughened to BS EN 12150-1, is manufactured to BS EN 1279-2 and is Argon filled. All to provide a maximum U-value of 1.4W/ m²k. All to be fully draught proofed.

Toughened or laminated glass to BS 952-1:1995 shall be installed into all critical locations to resist breakage in accordance with BS 6206: 1981. All in accordance with part N of the building regulations.

This includes:

- All internal and external glazed doors from ground level to a minimum height of 1500mm.

- Any glazed side panels within 300mm of the door from ground level to a minimum height of 1500mm.

- Any internal and external partitions from ground level to a minimum height of 800mm, glazing sealants must be resistant to moisture and ultra-violet light.

Door and window security to be in accordance with PAS 24:2012, in accordance with Approved Document Q.

External windows and doors shall only be installed by a registered FENSA installer. A certificate shall be forwarded to building control within 30 days of completion of the installation work.

Due to the relatively large areas of glazing within the extension, thermal insulation has been upgraded elsewhere to the floor & walls compensate. Area weighted thermal calculations may be required by Building Control to demonstrate compliance with part 'L' of the Building Regulations.

Ventilation:

Habitable Rooms - opening windows *1/20th* floor area of room with some part at least 1.75m above floor level & background ventilation, i.e. trickle vents, airbricks with hit'n'miss vents or window night vents providing min 8,000mm^2 free air space ventilation per room.

Kitchen - 6,000mm^2 background ventilation with openable windows with some part at least 1.75m above finished floor and mechanical extract ventilation providing 30 litres/sec adjacent to hob or 60 litres/sec elsewhere.

Utility – Install mechanical extract ventilation providing 30 litres/sec.

Shower Room - 4,000mm^2 background ventilation with mechanical extract providing 15 litres /sec rapid. If insufficient background ventilation is provided, then the mechanical ventilation must have 15 minutes over run.

Electrics:

All electrical installations are to be agreed with the Employer and marked out as necessary. The Contractor is responsible for assessing all alterations to the existing electrical arrangement.

All electrical work required to meet requirements of part P (Electrical Safety) must be designed, installed, inspected and tested by a person competent to do so.

Prior to completion the Building Inspector should be satisfied that Part P has been complied with. This may require an appropriate BS 7671 electrical installation certificate issued for the work by a person competent to do so.

An energy efficient light fitting to be provided where necessary in accordance with section 1.54 of part L of the approved document.

All switches and sockets shall be positioned between a min. height of 450mm and a max. height of 1200mm in accordance with diagram 29, section 8 of the building regulations approved document M. These are to be agreed and marked on site with the Employer at first fix stage.

Note: At least 75% of the new light fittings should be capable of receiving only energy efficient light fittings.

Plumbing:

All plumbing to be in accordance with B.S. 5572:

	Diameter of Trap(mm)	Depth of Seal (mm of water or equivalent)
Wash Hand Basin,	32	75
Shower	40	50
Food Waste Disposal Unit, Sink, Washing Machine Dish Washing machine	40	75
WC pan outlet < 80mm	75	50
WC pan outlet > 80mm	100	50

Minimum common branch diameter of WC to be 100mm and basin 50mm with no bends.

Note: New WC waste pipe to have no more than 6000mm horizontal travel.

New Central Heating Boiler:

New Central Heating Condensing Combination Boiler to be fitted to have a minimum SEDBUK value of 86% for mains gas supply. Boiler to be installed by a “Gas Safe” registered installer.

New radiators to have thermostatic radiator valves fitted. All pipe work with-in roof void to be insulated. A timer switch to be connected to the boiler. New system to be fully commissioned to ensure it is operating at maximum efficiency and that all controls work as intended. The person carrying out this commissioning must provide a certificate confirming that it has been carried out properly and a certificate issued to both the client and the Building Control Officer.

Note:

- The new condensing boiler is to be positioned in the existing garage with the flue discharging vertically through the roof.

- Operating and maintenance instruction to boiler/controls to enable the building to operate in an energy efficient manner will be required.

Radiators:

New radiators are to be fitted to all new rooms with thermostatic valves.

Carbon Monoxide Alarm:

If not already fitted, a carbon monoxide alarm is to be installed any room where a fire is located and comply with BS EN 50291.

Smoke Detection:

If not already fitted, install a mains-powered interlinked smoke detector system to BS 5839 part 6 to both floors around stair/ circulation area including a heat detector in the kitchen and any room where a fire is located. The automatic fire detection and alarm system is to be to BS5638:Part 6 to at least Grade D Type LD3 standard.

Studded Walls:

63 x 38mm CLS softwood studding at maximum 400mm centres, with 63 x 38 CLS mm sole plate and horizontal framing. One layer of 12.5mm thick plasterboard to either side of studding with 60mm thick insulation quilt between studding, all joints to be staggered and skimmed.

Note: Partitions to the new shower room are to be double boarded to one side to provide min 38dB insulation.

Internal Joinery:

Skirtings, architraves and doors are to match existing style with doors and windows fitted with suitable ironmongery to suit client.

NOTE! All dimensions, levels and notes are to be checked on site prior to commencement of works. Any discrepancies found or uncertainties should be notified immediately.