

CONSTRUCTION SPECIFICATION

ADDRESS: REAR OF 29, MAIN STREET, LITTLE THETFORD, ELY. CB6 3HA

CLIENT: MR & MRS SIMPKINS

JOB NUMBER: 16.385

PROJECT: NEW DWELLING

SPECIFICATION ISSUE DATE: 16/02/2017

SPECIFICATION REVISION [1]

This specification should be read in construction with the following Building Regulations drawings:

Drawing number	Drawing name	Scale	Size	Revision	Issue date
16.385-B1	Proposed elevations & Block location plan	1:100 & 1:200	A1	1	16/02/2017
16.385-B2	Foundation setting out	1:50	A1	1	16/02/2017
16.385-B3	Sub structure setting out	1:50	A1	1	16/02/2017
16.385-B4	General arrangements	1:25	A1	1	16/02/2017
16.385-B5	Sections & details	1:25	A1	1	16/02/2017
16.385-SAP	SAP/Heatloss calculations	N/A	A4	1	16/02/2017
16.385-C	Structural design calculations	N/A	A4	1	16/02/2017
16.366-WAT	Water consumption calculations	N/A	A4	1	16/02/2017



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General

This scheme consists of:

- New dwelling

All dimensions, floor layouts are to be checked and confirmed on-site by the contractor to prevent any abortive work. The external materials and finishes are to match those agreed with the Local Planning Authority and client.

All works on site are to be in accordance with the relevant Building Regulations, British Standards, BBA certificates and NHBC best practice guidance.

The Building Inspector and warrantee provider should be notified as the work proceeds (i.e. before work is covered up).

The work described in the table below should be carried out by a person registered with the relevant “competent persons” scheme- If in doubt consult the Building Inspector:

Description	Scheme	Relevant schemes
Controllable Electrical installations	Part “P”	NICEIC, NAPIT, ELECSA
Unvented Hot water systems (storage volume >15L)	Part G3	CITB, Corgi
Gas fired appliances		Gas safe

Work **should not** commence until the Local Authority or Approved Inspector has issued a full planning and Building Regulations approval. If work commences before this date it is at the Contractors/Clients own risk.

AP Consulting Engineers LTD will not be held responsible for deviations in the Contractors estimate/quotation prior to obtaining full Building Regulations approval.

The drawings and details have been prepared based on a limited survey and prepared primarily to obtain Building Regulation approval and does not constitute the basis of any form of contract. It is recommended that a repeat survey is required once the site has been prepared for the construction works and the designer should be notified immediately.

Further consideration to details may be necessary before or during the construction works.

If there is **any** doubt the designer should be consulted before that element of the work proceeds. If the contractor considers that any work on this document entails extra expense above contract, he must obtain the designers written agreement to the cost before the work is started otherwise claims will not be considered. The designer accepts no responsibility as to any expense incurred due to unforeseen problems or inaccessible areas of the existing building structure.

Drainage & service layouts are indicative and are based on a restricted survey. The contractor should proceed with caution until all services are exposed and located.



[Section 1] Foundations:

DPC levels to be set out based on survey reference datum's and approved planning drawings. The contractor is to confirm DPC & floor levels prior to setting out & allow for sloping ground or other site conditions not shown on the drawings.

600mm wide, 800mm deep trench fill concrete foundations to be formed as indicated on drawing 16.385-B2 (depths based on geological mapping).

New foundation excavations **MUST** be inspected and approved by the Building Inspector prior to pouring concrete. Final foundation trenches must be taken to a depth at the direction of the Building Inspector and account for any fill material, drains and the existing foundation depths.

[Section 2] Floors:

Suspended Concrete Beam & block

150mm deep precast concrete beams with infill medium density blocks, installed as per manufacturers details and as annotated on drawing 16.385-B2. Beams to be set on hyload DPC and a minimum void of 200mm provided beneath the underside of the beams. 75mm sand/cement 1:3 screed over 200mm Celotex FF3000 floor insulation. Overall construction to achieve a U-value of 0.08W/m². The insulation should be isolated from the concrete or screed by using 2 layers of DPM either side of the insulation.

This avoids any possible thermal bridging by concrete penetrating the insulation board joins and also any chemical reaction between the screed/concrete and insulation product. Manufacturer's details and calculations for the floor construction to be provided to Building Control.

Existing vegetation within extension footprint should be removed and treated with weed killer

Floor void to be ventilated as per AD part C and provide a minimum of 1500mm²/m run of external wall

[Section 3] Walls:

External walls to consist of 215mm O/A 3.6N blockwork insulated externally with 100mm extruded polystyrene insulation system (XPS). Insulation to be fixed in strict accordance with manufacturer's details and BBA approvals. All external materials to match planning approvals.

Internally walls to receive sand/cement parge coat followed by 5mm plaster skim. Overall construction should achieve a minimum U-value of 0.21W/M²k. Refer to drawings 16.385-B3 for wall keys.

Wall ties to be stainless steel ties to BS EN 845-1. Ancon RT3 150mm long or similar. Wall ties spacing to be 750mm horizontal centres and 450mm vertical centres and staggered. Ties to be installed at 225mm centres at window, door and any other opening. Ties to be embedded at least 50mm into each leaf with drip in the centre of the cavity.

Drains passing through walls to be lintelled over below ground using 100x65mm deep PCC lintel- max span 800mm.

Cavity closers:

25mm composite thermal plasterboard to be installed in all window and door reveals installed as per manufacturers details.

Internal load bearing walls:

To consist of 3.6N 'Plasmor fibolite' blockwork built off foundations as indicated on drawing 16.385-B3.

Walls to receive 12mm brown base coat followed by 3mm plaster skim.

Internal stud walls:

To consist of 70mm metal stud at 600mm centres with 12.5mm plasterboard and plaster skim both sides. Void to be filled with 75mm mineral wool with a minimum density of 25kg/m³.

ALL Junctions between walls and floors should be sealed to prevent air leakage. Provide ply noggins to provide solid fixing point for radiators and shelves. Junctions between floor and stud walls to be sealed with acrylic sealant to limit air leakage. Provide ply wood or solid timber noggins for radiator or shelf fixing.

[Section 4] Roof:

Roof covering	In situ GRP
Colour	Grey
Fall	1:60
Guarantee period	25 years

Wall plates to be set out to match levels shown on drawing 16.385-B5 and contractor should verify this prior to commencing work. Wallplate to be bed onto inner leaf masonry using a 3:1 sand/cement bed and strapped to inner leaf wall using 1200mm long galvanized BAT straps at 1500mm centres.

Roof structure to consist of metal web engineered joists at 400mm centres as indicated on drawing 16.385-B4. Final design to be confirmed by specialist supplier.

18mm WBP plywood decking over firing timbers laid to falls with single ply or fibreglass flat roofing system (contractor is to ensure roofing membrane achieves a minimum of AA rating for surface spread of flame).

Insulation to be a non-ventilated warm roof system consisting of 200mm Celotex GA 4000 insulation fixed over 500g-vapour control layer fixed to the top of ply decking.

12.5mm tapered edge plasterboard to be fixed to the underside of rafter/ceiling joists using 40mm drywalls screws at 400mm centres.

Lead flashing

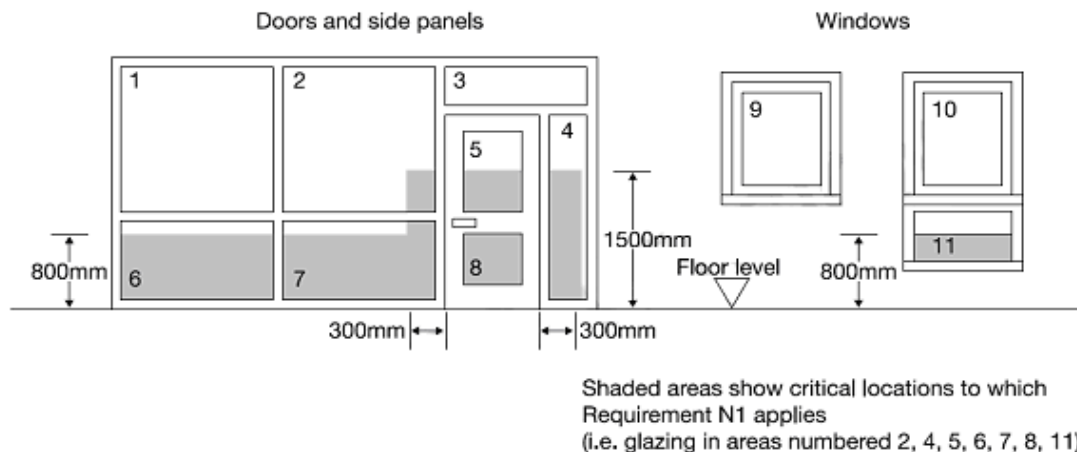
Code 4 lead flashing to be installed in 1200mm sections with 100mm overlap. Upstands to be a minimum of 150mm. Flashing to be wedged and pointed into 30mm deep raked out bed-joint.

Insulation and vapour control layers to be installed following Manufacturers guidance notes. All roof insulation to achieve a minimum U-value of 0.13W/m²k.

All new roof installation work to comply with BS5534. All pitched roofs to maintain 25mm air gap at all times over insulation. Any penetrations through the ceiling are to be fully sealed.

[Section 5] Windows/doors & Glazing:

Powder coated aluminium triple glazed windows and doors to achieve $U_w 1.20W/m^2k$. Ensure opening sashes in habitable rooms achieve a minimum area of at least 5% ($1/20^{th}$) of the internal floor area. Glazing specification to meet current Building Regulations and consist of Pilkington low 'E' glass and toughened to BS: 6206 in areas shaded grey in diagram below. Opening sashes shown on drawings are indicative only and the client should be consulted prior to ordering.



Emergency Escape Windows:

Windows in all new habitable rooms to be fitted with opening sashes suitable for fire escape purposes. Sash area to be a minimum of $0.33m^2$ with no dimension less than 450mm measured from hinge to casement. The maximum cill height should not exceed 1050mm from internal floor level (measured from floor level to casement). Where existing windows are replaced the new window opening size should be no worse than the window it is replacing.

Window installation:

Windows to be installed, set back 70mm from the external blockwork (assuming 90mm casement window profile). Ensure that the internal and external perimeter is fully sealed with expanding foam internally and externally followed by with PU sealant.

[Section 6] Drainage:

Below ground storm drainage:

Downpipes (annotated RWP) to be positioned as indicated on drawing 16.385-B2.

Rainwater to discharge into new hollowcore soakaway formed using 8 No storm crates with a combined volume of 1.60m². Crates to be wrapped in landscape fabric and backfilled with type 1. 110mm diameter PVCu drainage pipe and fittings laid to a minimum fall of 1:60. Pipe bed and backfilled in 10mm graded shingle

Rainwater harvesting:

5000L rainwater harvesting tank to be installed in SW drain route ahead of proposed soakaway. Pressurised system to feed 200L header tank positioned in plant room. Rainwater to be recycled to feed all toilets and washing machine.

Above ground storm water drainage:

Internal rain water downpipes to be located as indicated on drawing 16.385-B3. Down pipes to be boxed in using timber framework and plasterboard. Void to be packed with mineral wool insulation

Foul drainage:

New SVP to be connected into the existing FW drainage runs and inspection chambers to be laid in accordance with approved document H. Where drainage runs pass through walls span opening using 65mm deep pre-stressed concrete lintel.

General:

All non-adoptable underground drains to be in 100mm dia uPVC pipe bedded and surrounded in a minimum of 150mm pea shingle (10mm graded).

Drain runs under roads/drives less than 900mm invert to be encased in 150mm concrete.

Surface water pipework to fall at 1:60

Foul water pipework to fall at 1:40

Pipework:

40mm uPVC solvent weld pipes to provided to basins and showers with a run <3m from SVP. Where in excess of 3m 50mm dia pipe should be used. At each change of direction rodding provision should be included. 75mm deep seal traps to be included on showers and baths. Anti-siphon traps to be fitted to all baths, showers and basins. Internal Soil stacks (Annotated SVP on drawings) to be boxed in using 12.5mm plasterboard on timber framing. Void to be packed with mineral wool insulation.

[Section 7] Heating and hot water installations:

Space heating to be provided by air-to-water heatpump (ASHP) feeding independent heating zones. Ground floor to be underfloor heating zones. Heating plant and zone design to be designed and installed by a MCS registered contractor. The contractor is to commission the completed system and provide provided user guides and certificated to demonstrate compliance with Part L1A. New hot water supplies to be fitted with thermostatic blending valves to limit water temperature to 48°C. Flow rates of water fittings to be meet the target rates shown in the table below. Where the flowrate of chosen fittings exceed the target or technical information is not available, inline flow restrictors should be provided.

Location	Fitting	Flow rate/detail
Kitchen	Sink tap	10
	Washing machine	3Kg/dry load
	Dishwasher	0.75L/place setting
Ground floor WC	Basin tap	4
	Toilet	6L/3L dual flush
Bathrooms	Basin tap	4
	Toilet	6L/3L dual flush
	Shower	8
	Bath capacity (to overflow)	170L
Ensuite(s)	Basin tap	4
	Toilet	6L/3L dual flush
	Shower	8

NOTE: All operating instructions are to be left with the homeowner/occupier upon completion.

[Section 8] Ventilation:

Mechanical extract:

Whole house mechanical ventilation with heat recovery (system 4 MVHR) to be designed, installed and commissioned by specialist. All ductwork to be fully supported and thermally insulated.

Purge Ventilation:

Ensure opening sashes in habitable rooms achieve a minimum area of at least 5% (1/20th) of the internal floor area.

[Section 9] Beams & lintels:

Install CATNIC solid wall lintels over window openings as per manufacturer's details with 450mm DPM as tray. Lintels to have a minimum 150mm end bearing. All beams within bulkheads below ceiling level to be fire proofed by boxing in using 2 layers of 12.5mm plasterboard and skim. Plasterboard to be fixed to solid timber noggins mechanically fixed to steel web and bottom flange.

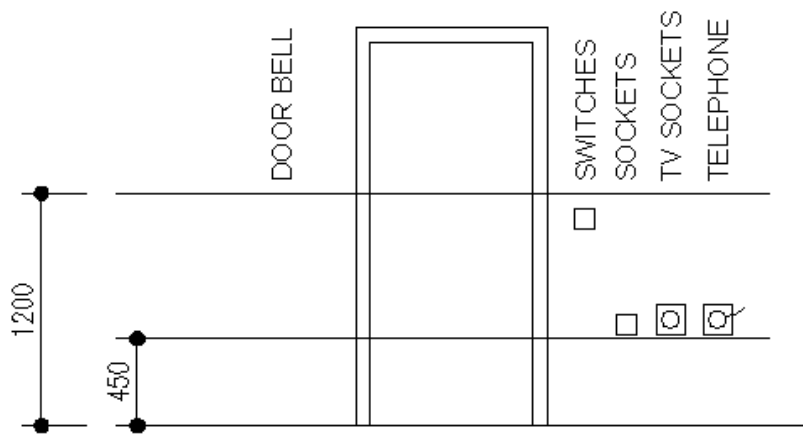
[Section 10] Fire safety:

Interlinked mains operated self contained smoke alarms conforming to BS5446 Part1 (with battery backup) to be installed to ground floor hall, first floor landing as indicated on drawing 16.385-B4. No smoke detector head to be more than 7.5m from a habitable room.

[Section 11] Electrical:

All electrical work to meet the requirements of Part P (Electrical Safety) shall be designed, installed, inspected and tested by a person registered with a Part P competent person scheme. A BS7671 Electrical Installation certificate to be issued for the works undertaken
Refer to electrical layout shown on drawing 16.385-B4 for position/type of outlet. Final position and quantity of sockets & switches to be verified by client prior to first fix commencing.

Fitting layout:



HEIGHTS OF SWITCHES, SOCKETS ETC.

Accessories to be mounted at the following heights where practical:

Light switches 1200mm

TV & phone 450mm

Socket outlets 450mm or 300mm above worktop

Double pole isolation switch to be provided for both extract fans

Energy efficient lighting:

3 per 4 of all new light fittings to be low energy, having a luminous efficacy greater than 45 lamp lumens per circuit-watt and a total output greater than 400 lamp lumens.

Any new external lighting to have integral "dawn to dusk" & PIR sensor.

Note: Recessed down lighters should not be used in sloping ceilings without agreement from building control.

Consumer units to be installed in fire resistant enclosure as per amendment '3' 17th Edition of IET wiring regulations. Height of consumer unit to be 1200mm from finished floor level

[Section 12] Internal materials and finishes:

Floor	Walls	Ceiling	Skirting & Architrave
Floor finish to client specification	Plaster skim primed ready for paint	Plaster skim primed ready for paint	18mm MDF Ogee profiles

[Section 13] External materials and finishes:

Location	Finish
Entrance ramp to front door	50mm Brindle block paviours
Drive finish	TBC
Patio	450x450mm paving slabs (client to confirm)
Rear garden	Laid to lawn

[Section 14] Access and use:

Access:

Dwelling to comply with the guidance in approved document M and shall as a minimum be meet the following requirements:

Ground floor WC/bathrooms complying with section 1.17, diagram 1.3 of AD M.
Access to and circulation in the ground floor to comply with table 1.1 AD, M

Provision of information:

Following completion of the dwelling the following information/tests reports shall be provided:

- Air testing
- Mechanical ventilation (extract fans)
- As built SAP & EPC
- Central heating installation and commissioning certificate
- Hot water cylinder commissioning certificates (if applicable)
- Electrical installation certificate (BS 7671/Part P)
- Home user guide



[Section 15] Materials:

Mortar mix:	Mix/workability
Cement: lime: sand	1: 1: 5 - 6 1: 2 : 8-9 1 : 1/4 : 3
Masonry: cement: sand	1:4 - 5 1: 6
Cement: sand: plasticiser	1:5 - 6 1:7 - 8
Foundations	Mix/workability
Blinding, strip footing, mass concrete fill	GEN 1 (ST2) slump S3
Reinforced concrete foundations in Class 1 sulfate conditions	RC35 slump S3
General Applications	
Kerb bedding and backing	GEN 0 (ST1) slump S1
Drainage works to give immediate support	GEN 1 (ST2) slump S1
Oversite below suspended floors (non-aggressive soils)	GEN 1 (ST2) slump S3
Floors	
House floors with no embedded steel reinforcement	
House floors with permanent finish to be added e.g. screed or floating floor	GEN 1 (ST2) slump S2
No permanent finish to be added e.g. carpeted	GEN 2 (ST3) slump S2
Garage floors with no embedded steel reinforcement	GEN 3 (ST4) slump S2
Paved areas	
House drives, paths and domestic parking Concrete mixes to comply with BS5328:	PAV 1 slump S2