

INSPECTION CHAMBERS

Underground quality proprietary UPVC 450mm diameter inspection chambers to be provided at all changes of level, direction, connections and every 80m in straight runs. Inspection chambers to have bolt down double sealed covers in buildings and be adequate for vehicle loads in driveways.

ABOVE GROUND DRAINAGE

All new above ground drainage and plumbing to comply with BS EN 12056-2:2000 for sanitary pipework. All drainage to be in accordance with Part H of the Building Regulations. Wastes to have 75mm deep anti vac bottle traps and rodding eyes to be provided at changes of direction.

Size of waste pipes and max length of branch connections (if max length is exceeded then anti vacuum traps to be used)

Wash basin - 1.7m for 32mm pipe 3m for 40mm pipe
Bath/shower - 3m for 40mm pipe 4m for 50mm pipe

WC - 6m for 100mm pipe for single WC

All branch pipes to connect to 110mm soil and vent pipe terminating min 900mm above any openings within 3m.

Or to 110mm upvc soil pipe with accessible internal air admittance valve complying with BS EN 12380, placed at a height so that the outlet is above the trap of the highest fitting.

Waste pipes not to connect on to SVP within 200mm of the WC connection.

Supply hot and cold water to all fittings as appropriate.

SOIL AND VENT PIPE

Sp to be extended up in 110mm dia UPVC and to terminate min 900mm above any openings within 3m. Provide a long radius bend at foot of SVP.

PIPEWORK THROUGH WALLS

Where new pipework passes through external walls form rocker joints either side wall face of max length 600mm with flexible joints with short length of pipe bedded in wall.

Alternatively provide 75mm deep pre-cast concrete plank lintels over drain to form opening in wall to give 50mm space all round pipe; mask opening both sides with rigid sheet material and compressible sealant to prevent entry of fill or vermin.

COLD WATER SUPPLY

There must be a suitable installation for the provision of a wholesome water supply in accordance with Approved Document G. Cold water supply to be provided to washbasins, bidets, baths, WCs, showers, any place where drinking water is drawn off and to any sink provided in areas where food is prepared.

Supply of cold water to comply with section 67 of the water industry act 1991 and the Water Supply Regulations 2006.

HOT WATER SUPPLY

All bathrooms, washbasins, bidet, baths and showers to be provided with adequate hot and cold water supply in accordance with Approved Document G3. Washbasin with hot and cold water supply to be provided in or adjacent to all rooms containing a WC. A sink with hot and cold water also to be provided to any area where food is being prepared.

HOT WATER STORAGE SYSTEMS

Hot water storage systems should be designed and installed in accordance with BS 12897 2006. Hot water vessels, cylinders etc and must be adequately supported.

Any hot water storage system including any cylinder or other vessel shall incorporate precautions to ensure it is viable but will not cause harm to persons in or about the building. Precautions to be in place to prevent stored water stored exceeding 100°C. Hot water vessels to be fitted with a non self resetting energy cut out to instantly disconnect the power supply.

Cylinders from domestic hot water storage vessels to be fitted with an in line valve to prevent water temperatures exceeding 60°C. All pipes carrying hot water to be insulated where they pass through unheated spaces. Hot water storage system to be provided with suitable warning labels. Relevant certificates for the heating system i.e. Benchmark certificate, and commissioning certificates for fixed building services are to be given to the building owner and a copy provided to Building Control on completion.

RAINWATER DRAINAGE

New rainwater goods to be new 110mm UPVC half round gutters taken and connected into 68mm dia UPVC downpipes. Rainwater taken to new soakaway, situated a min distance of 5.0m away from any building, via 110mm dia UPVC pipes surrounded in 150mm granular fill. Soakaway to be min of 1 cubic metre capacity (or to depth to Local Authorities approval) with suitable granular fill and with geotextile surround to prevent migration of fines. If necessary carry out a porosity test to determine design and depth of soakaway.

UNDERGROUND FOUL DRAINAGE

Underground drainage to consist of 100mm diameter UPVC proprietary pipe work to give a 1:40 fall. Surround pipes in 100mm pea shingle. Provide 600mm suitable cover (300mm under drives). Shallow pipes to be covered with 100mm reinforced concrete slab over compressible material. Provide rodding access at all changes of direction and junctions. All below ground drainage to comply with BS EN 13401-1:2009. Foul drainage to discharge into existing septic tank.

EXTRACT TO BATHROOM

Bathroom to have mechanical vent ducted to external air to provide min 15 litres / sec extraction. Vent to be connected to light switch and to have 15 minute over run if no window in room. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic Ventilation Compliance Guide. Interimittent extract fans to BS EN 13141-4. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.

EXTRACT TO UTILITY ROOM

To utility room provide mechanical ventilation ducted to external air capable of extracting at a rate of 30 litres per second. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic Ventilation Compliance Guide. Interimittent extract fans to BS EN 13141-4. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.

EXTRACT TO KITCHEN

Kitchen to have mechanical ventilation with an extract rating of 60l/sec or 30l/sec if adjacent to hob to external air, sealed to prevent entry of moisture. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic Ventilation Compliance Guide. Interimittent extract fans to BS EN 13141-4. Cooker hoods to BS EN 13141-3. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.

WOOD BURNING STOVE

Ensure the wood burning stove is installed by an APHC, HETAS, NAPIT or NICEIC accredited specialist in compliance with Part 1. Supply a suitable fire, hearth and CO / Carbon Monoxide alarm and provide ventilation to ensure the necessary combustion air and to prevent the depletion of oxygen in the room. There must not be an extractor fan fitted in the same room as the stove. A notice plate giving operating and maintenance instructions must be provided and fixed in an obvious place and the Part 1 installation checklist is to be completed and a copy given to Building Control.

WATER EFFICIENCY

The estimated water consumption not to exceed 125 litres per person per day in accordance with Approved Document G2 (or 110l per-person if required by the planning conditions). Water Efficiency to be calculated using the 'Water Efficiency Calculator for New Dwellings' or from the list of fitting from the 'Table of fittings' in ADG to comply with part G. The results submitted to building control before works commence on site.

Water calculation to be in compliance with Code for Sustainable Home Level 3/4 as stipulated by the local Planning Authority. Example calculation below:

WC 5/2 (dual flush)

Taps (excluding kitchen taps) 4

Baths 180

Shower 8

Kitchen sink taps 6

Washing machine 8.17 (not supplied)

Dishwasher 1.25 (not supplied)

Water recycling 0 (not supplied)

Predicted per capita consumption (Code) 103.28

FIXED EXTERNAL LIGHTING

External light fittings to be fitted as calculated in the DER and in compliance with the Domestic Lighting Services Compliance Guide.

a. lamp capacity not greater than 100 lamp-watts per light fitting and provided with automatic movement detecting devices (PIR) and automatic daylight sensors ensuring lights shut off automatically when not required.

b. lamp efficacy greater than 45 lumens per circuit-watt; fitted with manual controls and automatic day light cut-off sensors so that lights switch off when daylight is sufficient.

SMOKE DETECTION

Mains operated linked smoke alarm detection system to BS EN 14604 and BS5839-6:2013 to at least a Grade D category LD3 standard and to be mains powered with battery back up. Smoke alarms should be sited so that there is a smoke alarm in the circulation space on all levels/ storeys and within 1.5m of the door to every habitable room. If ceiling mounted they should be 300mm from the walls and light fittings. Where the kitchen area is not separated from the stairway or circulation space by a door, there should be an interlinked heat detector in the kitchen.

ESCAPE WINDOWS

Provide emergency egress windows to any newly created first floor habitable rooms and ground floor inner rooms. Windows to have an unobstructed operable area of 450mm high x 450mm wide, minimum 0.33m sq. The bottom of the operable area should be not more than 1100mm above the floor. The window should enable the person to reach a place free from danger from fire.

SAFETY GLAZING

All glazing in critical locations to be toughened or laminated safety glass to BS 6206, BS EN 14179 or BS EN ISO 12543-1:2011 and Part K (Part N in Wales) of the current Building Regulations, i.e. within 1500mm above floor level in doors and side panels within 300mm of door opening and within 800mm above floor level in windows.

NEW AND REPLACEMENT WINDOWS

New and replacement windows to be double glazed with 16mm argon gas and soft coat low-e glass. Window Energy Rating to be Band C or better and to achieve U-value of 1.6 W/m²K. The door and window openings should be limited to 25% of the extension floor area plus the area of any existing openings covered by the extension.

NEW AND REPLACEMENT DOORS

New and replacement doors to achieve a U-Value of 1.80W/m²K. Glazed areas to be double glazed with 16mm argon gas and soft low-e glass. Glass to be toughened or laminated safety glass to BS 6206, BS EN 14179 or BS EN ISO 12543-1:2011 and Part K (Part N in Wales) of the current Building Regulations

BACKGROUND AND PURGE VENTILATION

Background ventilation - Controlable background ventilation via trickle vents to BS EN 13141-3 within the window frame to be provided to new habitable rooms at a rate of min 5000mm²; and to kitchens, bathrooms, WCs and utility rooms at a rate of 2500mm²

Purge ventilation - New Windows/rooftops to have operable area in excess of 1/20th of their floor area, if the window opens more than 30° or 1/10th of their floor area if the window opens less than 30°

Internal doors should be provided with a 10mm gap below the door to aid air circulation.

Ventilation provision in accordance with the Domestic Ventilation Compliance Guide.

FULL FILL CAVITY WALL

To achieve minimum U Value of 0.28W/m²K

Timber cladding fixed to 25mm x 50mm timber battens and breather membrane, installed according to BS EN 12680, over 100mm block. 4 value 1.13, e.g. Lafarge Stancerte with fully filled cavity of 100mm Dritherm32 cavity insulation. Inner roof to be 100mm block, 4 value 1.13, e.g. Lafarge Stancerte. Internal finish to be 12.5mm plasterboard on dabs. Walls to be built with 1:1:6 cement mortar.

DFC

Provide horizontal strip polymer (hyloid) damp proof course to both internal and external skins minimum 150mm above external ground level. New DPC to be made continuous with existing DPC's and with floor DPM. Vertical DPC to be installed at all reveals where cavity is closed.

WALL TIES

All walls constructed using stainless steel vertical twist type retaining wall ties built in at 750mm ctrs horizontally, 400mm vertically and 220mm ctrs at reveals and corners in staggered rows. Wall ties to be suitable for cavity width and in accordance with BS 5628-6-1:1996 and BS EN 845-1:2003

CAVITIES

Provide cavity trays over openings. All cavities to be closed at eaves and around openings using Thermabate or similar non combustible insulated cavity closers. Provide vertical DPCs around openings and abutments. All cavity trays must have 150mm upstands and suitable cavity weep holes (min 2) at max 900mm centres.

EXISTING TO NEW WALL

Cavities in new wall to be made continuous with existing where possible to ensure continuous weather break. If a cavity cannot be achieved, where new walls abut the existing walls provide a movement joint with vertical DPC. All tied into existing construction with suitable proprietary stainless steel profiles.

CAVITY BARRIERS

30 minute fire resistant cavity barriers to be provided at all tops of walls, gable and walls and vertically at junctions with separating walls & horizontally at separating walls with cavity tray over installed according to manufacturers details.

INTELS

- For uniformly distributed loads and standard 2 storey domestic loadings only

Intel widths are to be equal to wall thickness. All intels over 750mm sized internal door openings to be 60mm deep pre-stressed concrete plank lintels. 150mm deep lintels are to be used for 900mm sized internal door openings. Intels to have a minimum bearing of 150mm on each end. Any existing intels carrying additional loads are to be exposed for inspection at commencement of work on site. All pre-stressed concrete lintels are to be designed and manufactured in accordance with BS 8135, with a concrete strength of 50 or 40 N/mm² and incorporating steel strands to BS 5896 to support loadings assessed to BS 5977 Part 1.

For other structural openings provide proprietary insulated steel intels suitable for spans and loadings in compliance with Approved Document A and intel manufacturers standard tables. Stop ends, DPC trays and weep holes to be provided above all externally located intels.

UNVENTED PITCHED ROOF

Pitch 22-45° (Imposed load max 0.75 kN/m² - dead load max 0.75 kN/m²)

To achieve U-value 0.18 W/m²K

Timber roof structures to be designed by an Engineer in accordance with NHBC Technical Requirement RS Structural Design. Calculations to be based on BS EN 1995-1-1. Roofing tiles to match existing on 25 x 38mm tanalised or treated battens on breathable sarking felt to relevant BBA Certificate. Supported on grade C24 rafters. Rafters supported on 100 x 50mm treated or weat plates. Allow min 20mm air space to allow for drapre of breathable felt. Insulation to be 80mm Celotex GA4000 between rafters and 62.5mm Celotex PL4000 insulated plasterboard with VCL under rafters. Provide 5mm skim coat of finishing plaster to the underside of all ceilings. Restrain strapping - Ceiling joists tied to rafters (if raised collar roof consult structural engineer). 100mm x 50mm wall plate strapped down to walls. Ceiling joists and rafters to be strapped to walls and gable walls, straps built into cavity, across at least 3 timbers with noggins. All straps to be 1000 x 30 x 5mm galvanized strips or other approved to BS EN 845-1 at 2m centres.

STRAPPING FOR PITCHED ROOF

Gable walls should be strapped to roofs at 2m centres. All external walls running parallel to roof rafters to be restrained at roof level using 1000mm x 30mm x 5mm galvanized mild steel horizontal straps or other approved to BS EN 845-1 built into walls at max 2000mm centres and to be taken across minimum 3 rafters and screw fixed. Provide solid noggins between rafters at strap positions. All wall plates to be 100 x 50mm fixed to timber skin of cavity wall using 30mm x 5mm x 1000mm galvanized metal straps or other approved to BS EN 845-1 at maximum 2m centres.

UPGRADE OF PITCHED ROOF

(Imposed load max 0.75 kN/m² - dead load max 0.75 kN/m²)

Vented roof - pitch 22-45°

To achieve U-value 0.18 W/m²K

Existing roof structure to be assessed by a structural engineer and any alterations to be carried out in accordance with structural engineer's details and calculations. Repairs must be approved by building control before works commence on site. The existing roof condition must be checked and be free from defects as required by the Building Control Officer any defective coverings or felt to be replaced in accordance with manufacturer's detail.

Roof construction - Existing rafters, insulation to be 50mm Celotex GA4000 infilled between rafters and 70mm under rafters. Fix 12.5mm foil backed plasterboard (joints staggered) and 5mm skim coat of finishing plaster to the underside of all ceilings using galvanized plasterboard nails.

Provide a cavity of 25mm by fixing battens between plasterboard and under rafter insulation (recommended where insulation under rafters exceeds 50mm). Maintain a 50mm air gap above insulation to ventilate roof. Provide opening at eaves level at least equal to continuous strip 25mm wide and opening at ridge equal to continuous strip 5mm wide to promote ventilation or provide equivalent high and low level tile vents in accordance with manufacturers details.

LEAD WORK AND FLASHINGS

All lead flashings, any valleys or skokers to be Code 5 lead and laid according to Lead Development Association. Flashings to be provided to all jamba and below window openings with welded standards, joints to be lapped min 150mm and lead to be dressed 200mm under tiles, etc. All work to be undertaken in accordance with the Lead Development Association recommendations.

INTERNAL STUD PARTITIONS

100mm x 50mm softwood treated timbers studs at 400mm ctrs with 50 x 100mm head and sole plates and solid intermediate horizontal noggins at 1/3 height or 450mm. Provide min 10kg/m² density acoustic soundproof built tightly packed (e.g. 100mm Rockwool or Isovol mineral fibre sound insulation) in all voids the full depth of the stud. Partitions built off double up joists where partitions run parallel or provide noggins where at right angles, or built off DPC on thickened concrete slab if solid ground floor. Walls faced throughout with 12.5mm plaster board with skim plaster finish. Taped and jointed complete with beads and stops.

INTERNAL MASONRY PARTITIONS

Construct non load bearing internal masonry partitions using dense concrete blocks built off thickened floor slab and tied at 225mm centres with proprietary steel profiles or block bonded to all internal and external walls. Walls faced throughout with 12.5mm plasterboard on dabs with skim plaster finish or 13mm lightweight plaster.

INTERMEDIATE FLOORS

Intermediate floor to be 25mm t&g flooring grade chipboard or floorboards laid on C24 joists at 400mm ctrs (see engineer's calculation for sizes and details). Lay 100mm Rockwool mineral fibre quilt insulation min 10kg/m² or equivalent between floor joists. Ceiling to be 12.5 Fibrice plasterboard with skim plaster set and finish. Joist spans over 2.5m to be dressed at mid span using 38 x 38mm herringbone strutting or 38mm solid strutting (at least 2/3 of joist depth). In areas such as kitchens, utility rooms and bathrooms, flooring to be moisture resistant grade in accordance with BS EN 1321:2010. Identification marking must be laid upper most to allow easy identification. Provide lateral restraint where joists run parallel to walls, floors are to be strapped to walls with 1000mm x 5mm x 5mm galvanized mild steel straps or other approved in compliance with BS EN 845-1 at max 2.0m centres, straps to be taken across minimum 3 m joists. Straps to be built into walls. Provide 38mm wide x N depth solid noggins between joists at strap positions.

STAIRS

Dimensions to be checked and measured on site prior to fabrication of stairs. Timber stairs to comply with BS5835 and with Part K of the Building Regulations. Max rise 220mm, min going 220mm. Two risers plus one going should be between 250 and 700mm. Tapered treads to have going in centre of tread at least the same as the going on the straight. Min 50mm going of tapered treads measured at narrow end. Pitch not to exceed 42 degrees. The width and length of every landing should be at least as great as the smallest width of the flight. Doors which swing across a landing at the bottom of a flight should leave a clear space of at least 400mm across the full width of the flight. Min 2.0m headroom measured vertically above pitch line of stairs and landings. Handrail on staircase to be 900mm above the pitchline, handrail to be at least one side if stairs are less than 2m wide and on both sides if they are wider. Ensure a clear width between handrails of minimum 600mm. Balustrading designed to be unclimbable and should contain no space through which a 100mm sphere could pass. Allow for all structure as designed by a Structural Engineer.

ELECTRICAL

All electrical work required to meet the requirements of Part P (Electrical safety) must be designed, installed, inspected and tested by a competent person registered under a competent person self certification scheme such as BRE certification Ltd, BS, NICEIC Certification Services or Zurich Ltd. An appropriate BS7671 Electrical Installation Certificate to be issued for the work by a person competent to do so. A copy of a certificate will be given to Building Control on completion.

INTERNAL LIGHTING

Install low energy light fittings that only take lamps having a luminous efficiency greater than 45 lumens per circuit watt and a total output greater than 400 lamp lumens. Not less than three energy efficient light fittings per four of all the light fittings in the main dwelling spaces to comply with Part L of the current Building Regulations and the Domestic Building Services Compliance Guide.

BUILDING REGULATIONS NOTES

GENERAL NOTE

Whilst every care has been taken to ensure accuracy, no responsibility will be accepted for any errors contained in this drawing and it should not be relied upon for ordering of any materials. All details and dimensions must be checked on-site before any building work or material ordering. This drawing is copyright the property of the Client. All dimensions to be checked on site before proceeding.

Contractor to check and adjust dimensions of new work to suit existing conditions. Do not assume existing structure or details are plumb, square or level. Contractor must notify the Agent of any discrepancies before proceeding.

SITE PREPARATION

Ground to be prepared for new works by removing all unsuitable material, vegetable matter and tree or shrub roots to a suitable depth to prevent future growth. Seal up, cap off, disconnect and remove existing redundant services as necessary. Reasonable precautions must also be taken to avoid danger to health and safety caused by contaminants and ground gases e.g. landfill gases, radon, vapours etc, on or in the ground covered, or to be covered by the building.

MATERIALS AND WORKSMANSHIP

All works are to be carried out in a workmanlike manner. All materials and workmanship must comply with Regulation 7 of the Building Regulations, all relevant British Standards, European Standards, Agreement Certificates, Product Certification of Schemes (Kite Marks) etc. Products conforming to a European technical standard or harmonised European product should have a CE marking.

THERMAL BRIDGING

Care shall be taken to limit the occurrence of thermal bridging in the insulation layers caused by gaps within the thermal envelope, (i.e. around windows and door openings). Reasonable provision shall also be made to ensure the extension is constructed to minimise unwanted air leakage through the new building fabric.

EXISTING STRUCTURE

Existing structure including foundations, beams, walls and intels carrying new and altered loads are to be exposed and checked for adequacy prior to commencement of work and as required by the Building Control Officer.

BEAMS

Supply and install new structural elements such as new beams, roof structure, floor structure, bearings, and padstones in accordance with the Structural Engineer's calculations and details. New steel beams to be encased in 12.5mm Gyproc Fireline board with staggered joints, Gyproc FireCase or painted in Bullfinch 5 or similar intumescent paint to provide 1/2 hour fire resistance as agreed with Building Control. All fire protection to be installed as detailed by specialist manufacturer.

OPENINGS AND RETURNS

A new opening or recess greater than 0.1m² shall be at least 550mm from the supported wall (measured internally).

STRIP FOUNDATION

Provide 225mm x 600mm concrete foundation, concrete mix to conform to BS EN 206-1 and BS 8500-2. All foundations to be a minimum of 1000mm below ground to extend depth to be agreed on site with Building Control Officer to suit site conditions. All constructed in accordance with 2010 Building Regulations A1/2 and BS 8004:1986 Code of Practice for Foundations. Ensure foundations are constructed below invert level of any adjacent drains. Base of foundations supporting internal walls to be min 600mm below ground level. Suitable resistant cement to be used if required. Please note that should any adverse soil conditions be found or any major tree roots in excavations, the Building Control Officer is to be contacted and the advice of a structural engineer should be sought.

SOLID FLOOR INSULATION OVER SLAB

To meet min U-value required of 0.22 W/m²K

Solid ground floor to consist of 150mm consolidated well-tamped hardcore. Blinded with 50mm sand and blinding. Provide 100mm 372 or dens ground bearing slab concrete mix to conform to BS 8500-2 over a 1200 gauge polythene DPM. DPM to be lapped in with DPC in walls. Floor to be insulated over slab and DPM with min 75mm thick Celotex GA4000.

25mm insulation to continue around floor perimeters to avoid thermal bridging. A VCL should be laid over the insulation boards and turned up 100mm at room perimeters behind the skirting, all joints to be lapped 150mm and sealed. Finish with 65mm sand/cement finishing screed with light mesh reinforcement.

Where drain runs pass under new floor, provide A142 mesh 1.0m wide and min 50mm concrete cover over length of drain.

Where existing suspended timber floor air bricks are covered by new extension, ensure cross-ventilation is maintained by connecting to 100mm dia UPVC pipes with 100mm concrete cover laid under the extension. Pipes to terminate at new 60mm x 215mm air bricks with cavity tray over.

UPGRADE OF SOLID EXTERNAL WALL

To achieve min U-value 0.30W/m²K

Existing wall to be exposed and checked for its suitability. Insulate existing wall on the inside using 50mm Celotex GA4000 insulation board fixed to 25 x 50mm battens at 600mm centres to provide a nominal 25mm cavity between the masonry and insulation.

Fix a vapour control layer on the warm side of the insulation. Finish with 12.5 plasterboard and a plaster skim. All work in accordance with BS 8212:1995 (Code of practice for dry lining).

BASIC RADON PROTECTION

Provide a 1200g (100 um) radon membrane under floor slab lapped 300mm double welled and lapped with gas proof tape at joints and service entry points. Carry membrane over cavity and provide suitable cavity tray and weep holes.

Rev	By	Chk	App	Date	Description
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Project

Drawing

Section C-C

Drawn by	ST	Date:	
Designed by	ST	Date:	
Checked by		Date:	
Approved by		Date:	

Drawing No.	Revision
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