ALPHA
STRUCTURAL ENGINEERS

BUILDING REGS. SPEC AND DETAILS

Project No	24706
Description	DOUBLE STOREY SIDE EXTENSION
Client Name	
Address	53 Warminster Road London SE25 4DQ
Date	12.2024
Prepared By	KE

Building Regulations Specifications

BUILDING REGULATIONS NOTES

NOTICE OF COMMENCEMENT

A notice of commencement is to be submitted to Building Control within 5 days of work being regarded as commenced, under regulation 16 of The Building Regulations etc. (Amendment) (England) Regulations 2010.

Work will be deemed to have commenced when the build has progressed to at least one of the following:

For complex buildings – Foundations are constructed, and the structure of the lowest floor level is complete.
For new buildings and horizontal extensions - Sub surface structure of the building or the extension including all foundations and the structure of the ground floor level is completed.
For all other works – constructed 15% of the overall work.

NOTICE OF COMPLETION

A Notice of Completion to be given to Building Control not more than 5 days after the work has been completed. The notice to contain the following information:

- The name, address, telephone number and (if available) email address of the client, principal contractor, and principal designer.
- A statement from the applicant to say that the works have been completed and complies with all the applicable regulations to the best of their knowledge.
- A statement from both the principal contractor and principal designer to confirm they have fulfilled their duties under Part 2A (duty holders and competence).

CDM REGULATIONS 2015

The client must abide by the Construction Design and Management Regulations 2015. The Client must appoint a Contractor, if more than one Contractor is to be involved, the Client will need to appoint (in writing) a Principal Designer (to plan, manage and coordinate the planning and design work), and a Principal Contractor (to plan, manage and coordinate the construction and ensure there are arrangements in place for managing and organising the project).

Domestic Clients

The Domestic Client is to appoint a Principal Designer and a Principal Contractor when there is more than one Contractor, if not your duties will automatically be transferred to the Contractor or Principal Contractor.

The Designer can take on the duties, provided there is a written agreement between you and the Designer to do so.

The Health and Safety Executive is to be notified as soon as possible before construction work starts if the works:

(a) Last longer than 30 working days and has more than 20 workers working simultaneously at any point in the project.
Or:
(b) Exceeds 500 person days.

PARTY WALL ACT

Should they need to do so under the requirements of the Party Wall Act 1996, the owner has a duty to serve a Party Structure Notice on any adjoining owner if the building work involves any of the following to a Party Wall:

- Support of beam
- Insertion of DPC through wall
- Raising a wall or cutting off projections
- Demolition and rebuilding
- Underpinning
- Insertion of lead flashings

A Party Wall Notice is also required for:

- Any excavtions within 3 metres of any part of a neighbouring owner's building or structure, where any part of that work will go deeper than the neighbour's foundations; or
- Any excavations for a new building or structure, within 6 metres of any part of a neighbouring owner's building or structure, where any part of that work will meet a line drawn downwards at 45° in the direction of the excavation from the bottom of the neighbour's foundations, see diagram 7 in the following Government guidance,
https://www.gov.uk/government/publications/preventing-and-resolving-disputes-in-relation-to-party-walls/the-party-wall-etc-act-1996-explanatory-booklet#para_28

A Party Wall Agreement is to be in place prior to start of works on site.

HEALTH AND SAFETY

The contractor is reminded of their liability to ensure due care, attention and consideration is given in regard to safe practice in compliance with the Health and Safety at Work Act 1974.

MATERIALS AND WORKMANSHIP

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.

The latest edition of the British Standard (including any amendments) applies to any undated references within these specifications.

FULL RADON PROTECTION: BEAM-AND-BLOCK CONCRETE FLOOR

Lay a 1600g (400 micrometre) continuous polythene DPM radon-proof barrier lapped and sealed at all joints, around service penetrations with radon gas proof tape over the floor structure and linked to cavity trays at the edges. Provide additional protection by underfloor vents on two or more sides of the underfloor space.

Radon test to be undertaken, if required by building control, after completion, and if unacceptably high levels of radon are found, provide an electrically powered fan to the underfloor. BRE GBG 74

DEMOLITION

Measures to be put in place during and after the demolition to ensure the protection of the public, public amenities and adjoining properties.

Such measures to include:

- The shoring of adjoining buildings.
- The control of dust and noise generation.
- The weatherproofing of any parts of adjoining buildings which are left exposed by the demolition.
- The repairing and making good any damage to any adjacent building effected by the demolition.
- The removal of material or rubbish resulting from the clearance and demolition of the site.
- The disconnection, sealing or removal of any drain or sewer, as required.
- The making good of any disturbed ground.
- Any arrangements necessary for the disconnection off all services (e.g. gas, water, electricity).

Consultation with the Health and Safety Executive, and Fire Authority should be sought if burning structures or materials on site.

If the demolition is more than 50m³ in volume a formal notice of demolition is to be given to building control at least six weeks before any demolition work starts, in accordance with The Building Act 1984: Sections 80-83.

Consultation to be undertaken with the occupiers of adjacent buildings where applicable and a Party Wall agreement put in place. A planning application to demolish to be made where required.

All demolition work to comply with the Construction (Design and Management) Regulations 2015 and a Health and Safety plan is to be provided by the Principal Contractor.

SITE INVESTIGATION

A survey of the site is to be carried out by a suitably qualified person including an initial ground investigation, a desk study and a walk over survey. A copy of all reports and surveys to be sent to building control for approval before works commence on site.
Any asbestos, contaminated soil or lead paint found on the site is to be removed by a specialist. Asbestos is to be dealt with in accordance with the Control of Asbestos Regulations 2012.

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.

BEAMS

Supply and install all structural elements such as 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 Nullifire S 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.

STRAPPING OF FLOORS

Lateral restraint to be provided where joists run parallel to walls. Floors to be strapped to walls at max 2.0m centres with 1200mm x 30mm x 5mm galvanised mild steel straps or other approved, in compliance with BS EN 845-1 (+A1:2016). Straps to be taken across minimum of 3 joists and built into walls. Provide 38mm wide x ¾ depth solid noggins between joists at strap positions.

FLAT ROOF RESTRAINT

100m x 50mm C16 grade timber wall plates to be strapped to walls using 1200mm x 30mm x 5mm galvanised mild steel straps at maximum 2.0m centres, straps to be fixed to internal wall faces.

OPENINGS AND RETURNS

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

LINTELS

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

Lintel widths are to be equal to wall thickness. All lintels over 750mm sized internal door openings to be 65mm deep pre-stressed concrete plank lintels. 150mm deep lintels are to be used for 900mm sized internal door openings. Lintels to have a minimum bearing of 150mm on each end. Any existing lintels carrying additional loads are to be exposed for inspection at commencement of work on site. All pre-stressed concrete lintels to be designed and manufactured in accordance with BS EN 1992-1-1:2023 Eurocode 2, with a concrete strength of 50 or 40 N/mm² and incorporating steel strands to BS 5896 to support loadings assessed to BS EN 845-2:2013.

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

Independent lintels to have an insulated cavity closure between the inner and outer lintel.

Unless only supporting a roof, lintels to be encased in 12.5mm Gyproc FireLine board with staggered joints, Gyproc FireCase or painted in Nullifire S or similar intumescent paint to provide 1/2 hour fire resistance. All fire protection to be installed as detailed by specialist manufacturer.

STEEL LINTELS

Lintel and lintel installation to be in accordance with BS 5977-1 Lintels. Method of assessment of load and BS EN 845-2 Specification for ancillary components for masonry.

Lintel to be galvanised steel, powder coated lintel, such as Catnic, with a built-in damp-proof course.

The lintel to be wide enough to provide adequate support to the walling above, to be installed with a nominal 150 mm bearing area at each end and be fully bedded on a solid bed of mortar. Only full bricks or blocks to be part of the bearing area - lintels not to be placed directly onto part bricks. Padstones and spreaders to be provided under the bearings, where required. Installation to be in accordance with manufacturer’s recommendations.

Overhang of any masonry to be a maximum of 25mm and lintel toe to project beyond window head externally.

Risk of condensation at potential cold bridges to be minimised, wall insulation should abut the head of the window frame and insulation to be provided at the underside of the lintel unless the manufacturer produces an alternative.

(In severely exposed locations or where the lintel does not offer a built-in DPC, a separate membrane to be fitted, turned up at the edge to ensure the water is not directed into the cavity. For coastal areas, the use of soffit cladding to also be considered to provide further protection).

Unless only supporting a roof, lintels to be encased in 12.5mm Gyproc FireLine board with

staggered joints, Gyproc FireCase or painted in Nullifire S or similar intumescent paint to provide 1/2 hour fire resistance. All fire protection to be installed as detailed by specialist manufacturer.

SUSPENDED BLOCK AND BEAM FLOOR

To meet min U value required of 0.18 W/m²K - P/A ratio 0.5

Remove top soil and vegetation and apply weed killer – provide 50mm concrete ground cover if required by Building Control.

The underside of beams to be not less than 150mm above the top of the ground. PCC beams to be supplied and fixed to beam manufacturer's plan, layout and details (details and calculations to be sent to Building Control for approval before works commence). Beam to have a minimum bearing of 100mm onto DPC and load bearing walls. Provide concrete blocks to BS EN 772-2, wet and grout all joints with 1:4 cement/sand mix. Provide double beams below non-load bearing partitions. Lay 1200g DPM/radon barrier over beam and block floor, with 300mm laps double welted and taped at joints and service entry points using radon gas proof tape. Lay floor insulation over DPM, 90mm Celotex GA4000 applied as a rigid material. 25mm insulation to continue around floor perimeters to avoid thermal bridging.

Lay 500g separating layer over insulation and provide 75mm sand/cement screed over and prepare for floor finishes as required. The top surface of the ground cover under the building shall be above the finished level of the adjoining ground.

Ventilation - Provide cross-ventilation of the under floor to outside air by ventilators in at least 2 opposite external walls of the building. Ventilation openings having an opening area of 1500mm² per metre run of perimeter wall or 500mm² per square metre of floor area, whichever is the greater. Sleeper walls shall be of honeycombed construction or have provision for distribution of ventilation.

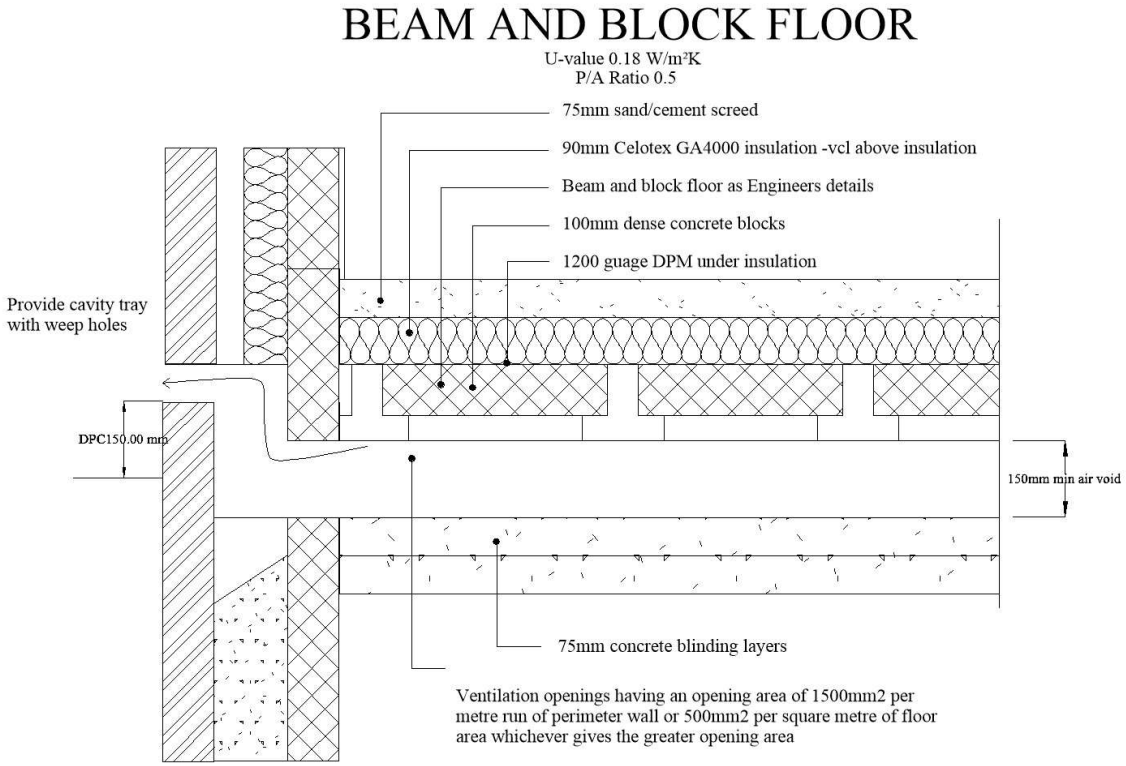


Fig. 1 Suspended block and beam floor (Not to Scale)

PARTIAL FILL CAVITY WALL

To achieve minimum U Value of 0.18 W/m²K

Provide 103mm suitable facing brick. Ensure a 50mm clear residual cavity and provide 100mm Celotex CW4000 insulation fixed to internal leaf. Inner leaf constructed using 100mm, 0.45 W/m²K standard block. Internal finish to be 12.5mm plasterboard on dabs. Walls to be built with 1:1:6 cement mortar.

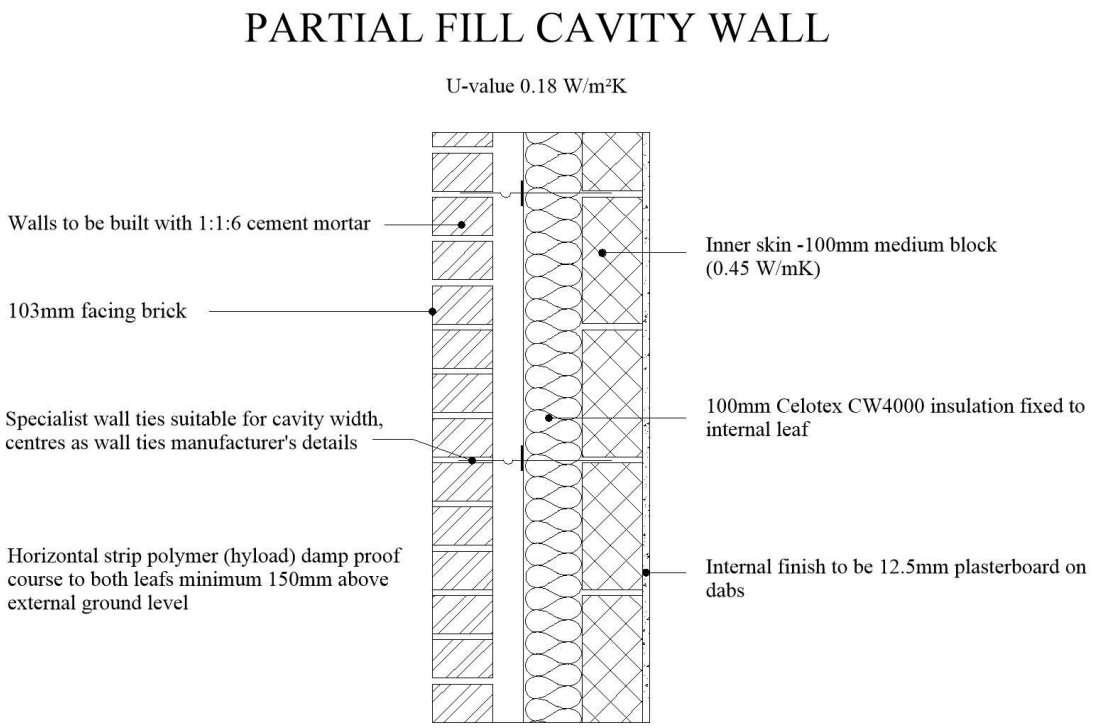


Fig. 2 Partial fill cavity wall (Not to Scale)

DPC

Provide horizontal strip polymer (hyload) damp proof course to both internal and external skins, DPC to be placed a 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, 450mm vertically and 225mm ctrs at reveals and corners in staggered rows. Wall ties to be suitable for cavity width and in accordance with BS EN 845-1:2013.

Wall ties for cavities over 150mm to be suitable for cavity width, and installed as manufacturer's details.

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.

CAVITY BARRIERS

30 minute fire resistant cavity barriers to be provided around openings, at tops of walls, gable end walls, vertically at junctions with separating walls and horizontally at separating floors. Cavity trays to be provided over barrier where required. Trays and cavity barriers to be installed according to manufacturer's details.

MOVEMENT JOINTS

Movement joints to be provided at the following maximum spacing:

Clay brickwork - 12m.

Calcium silicate brick - 7.5-9m.

Lightweight concrete block - density not exceeding 1,500kg/m³ - 6m.

Dense concrete block - density exceeding 1,500kg/m³ – 7.5-9m.

Any masonry in a parapet wall (length to height ratio greater than 3:1) - half the above spacings and 1.5m from corners.

Movement joint widths for clay bricks to be not less than 1.3mm/m i.e. 12m = 16mm and for other masonry not less than 10mm.

Additional movement joints may be required where the aspect ratio of the wall (length :height) is more than 3:1.

Considerations to be given to BS EN 1996-1-2:2005 Eurocode 6. Design of masonry structure.

WALLS BELOW GROUND

All new walls to have Class A blockwork below ground level or alternatively semi engineering brickwork in 1:4 masonry cement or equal approved specification. Cavities below ground level to be filled with lean mix concrete min 225mm below damp proof course. Or provide lean mix backfill at base of cavity wall (150mm below damp course) laid to fall to weepholes.

PARTY WALL

To achieve minimum U Value of 0.0 W/m²K

Separating party wall to consist of 2 leaves of dense aggregate blocks (1850 to 2300 kg/m³) with a minimum 100mm cavity, fully filled with 100mm Rockwool insulation. Finish with 13mm plaster or cement: sand render with plaster skim (min 10 kg/m²) to both sides.

Ensure cavity stops are installed where required, and joints, voids around floor joists, chases, etc.

have been fully filled or sealed.

Where there is a separating floor a resilient flanking strip to be installed.

Wall to be tied using Approved Document E Tie Type A - Butterfly ties as described in BS EN 845-1:2013 Metal ties for cavity wall construction, and spaced as required for structural purposes (BS EN 1996-1-2:2005 Eurocode 6: Design of masonry structures).

Pre completion sound testing to be carried out by a suitably qualified person with appropriate third party accreditation (either UKAS accreditation or be a member of the Association of Noise Consultants Registration Scheme). Test to be carried out once the dwelling is complete but before carpeting and a copy of the test results given to Building Control.

WARM FLAT ROOF

(imposed load max 1.0 kN/m² - dead load max 0.75 kN/m²)

To achieve U value 0.16 W/m²K

12.5mm spa solar reflective chippings to achieve BROOF(t4) designated fire rating for surface spread of flame bedded in bitumen on three layer felt to BS EN 13707:2013 on 18mm external quality ply (ply optional, see manufacturer's details) over 140mm Celotex XR4000 insulation. Insulation bonded to VCL fixed to 18mm exterior grade plywood on firrings to give 1:40 fall on 47 x 195mm C24 timber joists at 400 ctrs, max span 4.51m (see Engineer's details for sizes). Fix 12.5mm plasterboard over vapour barrier to underside of joists, finish a with plaster skim.

Provide restraint to flat roof by fixing of 30 x 5 x 1200mm ms galvanised lateral restraint straps at maximum 2000mm centres fixed to 100 x 50mm wall plates and anchored to wall.

THIS IS A GENERAL GUIDE BASED ON NORMAL LOADING CONDITIONS FOUND IN DOMESTIC CONSTRUCTION. IT IS YOUR RESPONSIBILITY TO ASSESS YOUR DESIGN TO ASCERTAIN WHETHER ENGINEER'S DETAILS/CALCULATIONS ARE REQUIRED. PLEASE REFER TO THE TRADA DOCUMENT – 'SPAN TABLES FOR SOLID TIMBER MEMBERS IN FLOORS, CEILINGS AND ROOFS FOR DWELLINGS' OR ASK YOUR STRUCTURAL ENGINEER FOR ADVICE.

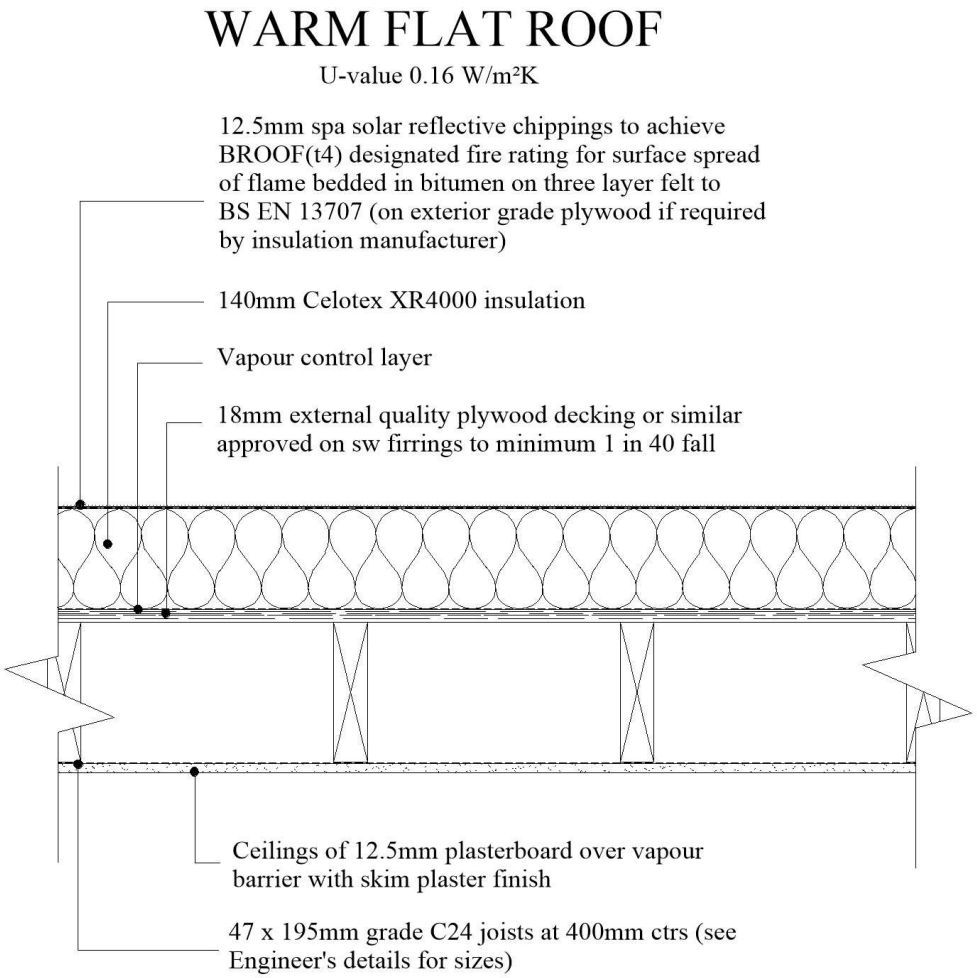


Fig. 3 Warm flat roof (Not to Scale)

LEAD WORK AND FLASHINGS

All lead flashings, any valleys or soakers to be Code 5 lead and laid according to Lead Development Association. Flashings to be provided to all jambs and below window openings with welded upstands. 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.

LEAD VALLEYS

Lead-lined valleys to be formed using Code 5 lead sheet. Valley lead and two tiling fillets to be supported on min 19mm thick and 225mm wide marine ply valley boards on either side of the rafters. Lead to be laid in lengths not exceeding 1.5m with min 150mm lap joints and be dressed 200mm under the tiles.

Roofing tiles to be bedded in mortar placed on a tile slip to prevent direct contact. Valley to have a minimum 100mm wide channel (125mm minimum for pitches below 30°).

All work to be in accordance with the roof cladding manufacturers and 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 c/cs. Provide min 10kg/m³ density acoustic soundproof quilt tightly packed (e.g.100mm Rockwool or Isowool mineral fibre sound insulation) in all voids the full depth of the stud. Partitions to be built off doubled up joists where partitions run parallel or provide noggins where at right angles, or to be built off DPC on thickened concrete slab if solid ground floor. Walls faced throughout with 12.5mm plasterboard with skim plaster finish. Plasterboard to be taped and jointed complete with beads and stops.

INTERNAL LOADBEARING MASONRY PARTITIONS

Construct load bearing internal masonry partitions using dense concrete blocks built off concrete foundation. Concrete mix to conform to BS EN 206-1. Depth to engineers details and dependent on ground conditions to be approved by Building Control. Wall 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.

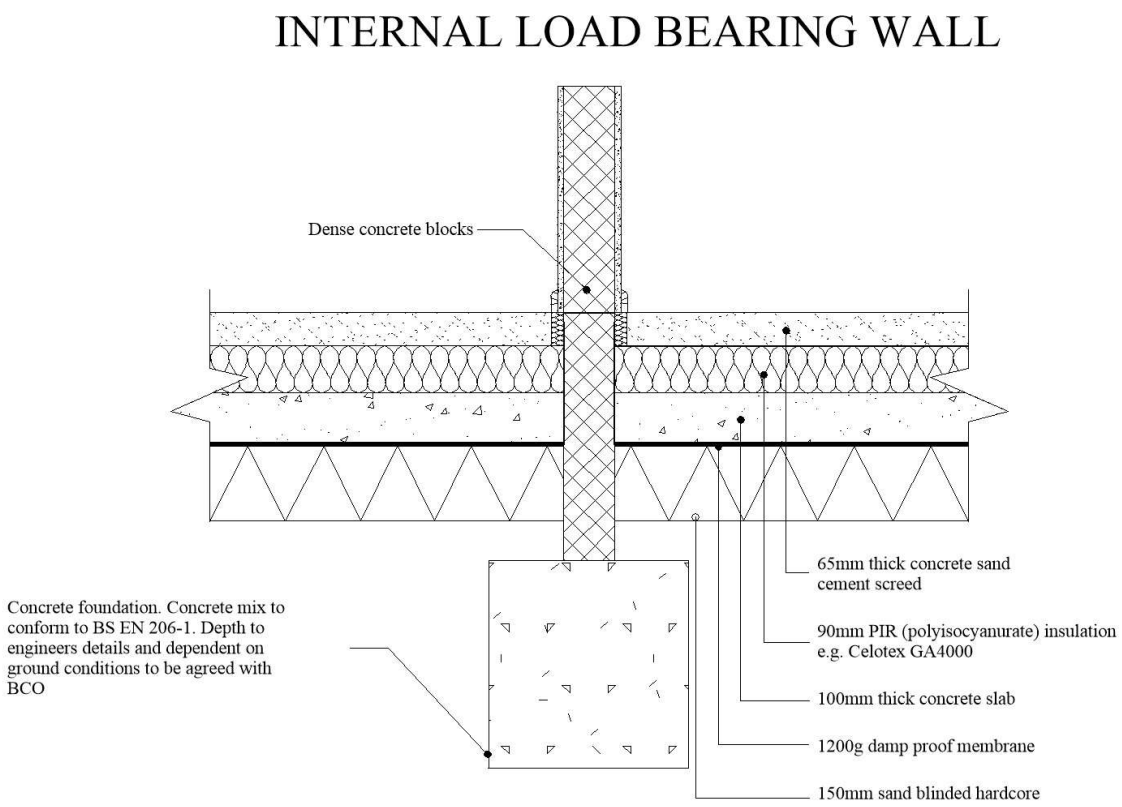


Fig. 4 Internal loadbearing masonry partitions (Not to Scale)

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/m³ or equivalent between floor joists. Ceiling to be 12.5 Fire-Line plasterboard with skim plaster set and finish. Joist spans over 2.5m to be strutted 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 312. 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 1200mm x 30mm x 5mm galvanised mild steel straps or other approved in compliance with BS EN 845-1 (+A1:2016) at max 2.0m centres, straps to be taken across minimum 3 no. joists. Straps to be built into walls. Provide 38mm wide x ¾ 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 BS585 and with Part K of the Building Regulations. Max rise 220mm, min going 220mm. Two risers plus one going should be between 550 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. Cupboard doors may open across the top landing where the swing is a minimum of 400mm from the tread. 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 1m 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, BSI, NICEIC Certification Services or Zurich Ltd. An appropriate BS7671 Electrical Installation Certificate is 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

Internal energy efficient light to be fitted as calculated within the dwelling primary energy rate and dwelling emissions rate for account for the efficacy of lamps.

Provide low energy light fittings lamps with a luminous efficacy better than 80 lamp lumens per watt. All fixed lighting to have lighting capacity (lm) 185 x total floor area.

HEATING

All radiators to have TRVs. Heating system to be designed, installed, tested and fully certified by a GAS SAFE registered specialist. All work to be in accordance with the Local Water Authorities bye laws, the Gas Safety (Installation and Use) Regulations 1998 and IEE Regulations.

The energy performance of the new components to be assessed. The results should be recorded and given to the building owner.

All accessible pipes to be insulated to the standards in Table 4.4 Approved Document L.

NEW GAS BOILER

Heating and hot water will be supplied via a wall mounted condensing vertical balanced flue pressurised boiler with a minimum efficiency of 92% (as defined in ErP) and boiler control interlocks. Each room to be fitted with thermostatic radiator valves and all necessary zone controls. Energy-Related Products Directive for Standard Assessment Procedure modelling, SEDBUK values to be used.

The energy performance of the new components to be assessed. The results to be recorded and given to the building owner.

All pipes to be insulated to the standards in Table 4.4 Approved Document L.

All parts of the system including pipework and emitters should be sized to allow the space heating system to operate effectively and in a manner that meets the heating needs of the dwelling, at a maximum flow temperature of 55°C or lower.

The system will be installed, commissioned and tested by a GAS SAFE Registered Specialist and a certificate issued to demonstrate that the installation complies with the requirements of Part L.

Carbon monoxide alarm to be positioned near boiler.

Boiler flue to be installed in accordance with Approved Document J, British Gas requirements and manufacturer's guidance. Flues to be terminated externally with metal terminal guard and positioned a minimum of 600mm away from any openings into the building. Where the flue passes through a wall, floor or roof, enclose in a non-combustible sleeve. Where the flue is within a void provide appropriate and sufficiently sized access to allow inspection of the flue. No combustible materials to be within 50mm of the flue.

Provide new metered gas supply to the dwelling. All works to comply with gas authority standards.

Heating system to be designed, installed, tested and fully certified by a GAS SAFE registered specialist. All work to be in accordance with the Local Water Authorities bye laws, the Gas Safety (Installation and Use) Regulations 1998 and IEE Regulations.
Battery operated or mains-wired Carbon monoxide alarm to be fitted between 1m and 3m of the boiler in compliance with Approved Document J.

SOLID TIMBER JOISTS SEPARATING FLOOR E-FT-2

As Robust Detail E-FT-2. Ensure construction fully complies with all Robust Details and British Gypsum guidance.

Robust Detail (RD) is an alternative to Pre-Completion Testing. If you are following the RD route, you must register each plot, with details of the details you intend to use, and pay a fee. You will then be given a registration certificate to hand to your Building Control authority before work starts. As with any Robust Detail the correct external wall, separating wall internal wall and ceiling detail must be adhered to. The Robust Detail handbook should be consulted to ensure that the separating wall is compatible with the separating floor and vice versa. The Robust Detail checklist should be used to ensure that details are adhered to throughout each sequence of the build.

New timber floor to consist of solid timber joists 220mm (min) with 100mm Earthwool Acoustic Roll inserted into the voids between the joists. Over joists lay 11mm OSB or Walker Timber perforated deck system.

Install FFT-1 resilient composite deep battens (resilient layer must be continuous and pre-bonded to batten) foam side down on to deck (centres as manufacturers details) and provide 60mm (min) Earthwool Acoustic Timber Roll RD10 between resilient composite deep battens. Finish floor with18mm chipboard spot bonded to19mm Knauf Drywall Plank.

Ceiling construction
Knauf Drywall Resilient Bars to be fixed at right angles to the underside of the timber joist at 400mm centres.

Ceiling lining to be one layer of 19mm Knauf Drywall Plank and one of layer 12.5mm Knauf Drywall Standard Wallboard.

Floorfoam Easy Edge Strip should be adhered to the perimeter wall with the integral self adhesive strip. The floor deck is laid and butted up to the Polyfoam Easy Edge Strip, which is later folded under the skirting to provide acoustic isolation of the floor deck from the walls.

The acoustic battens must achieve a minimum laboratory performance of rdΔRw+Ctr=13dB and

rdΔLw=15dB.

Resilient battens must have a continuous pre-bonded layer with a minimum height of 70mm.

THIS CONSTRUCTION HAS THE POTENTIAL TO COMPLY WITH THE REQUIREMENTS OF THE BUILDING REGULATIONS WHEN FORMING A SEPARATING FLOOR. HOWEVER, AN ACOUSTIC ENGINEER MUST BE CONSULTED TO ENSURE THE CONSTRUCTION IS SUITABLE FOR THE BUILD. COMPLIANCE CAN ONLY BE DEMONSTRATED BY A PACKAGE OF SOUND TESTING AGREED WITH BUILDING CONTROL.

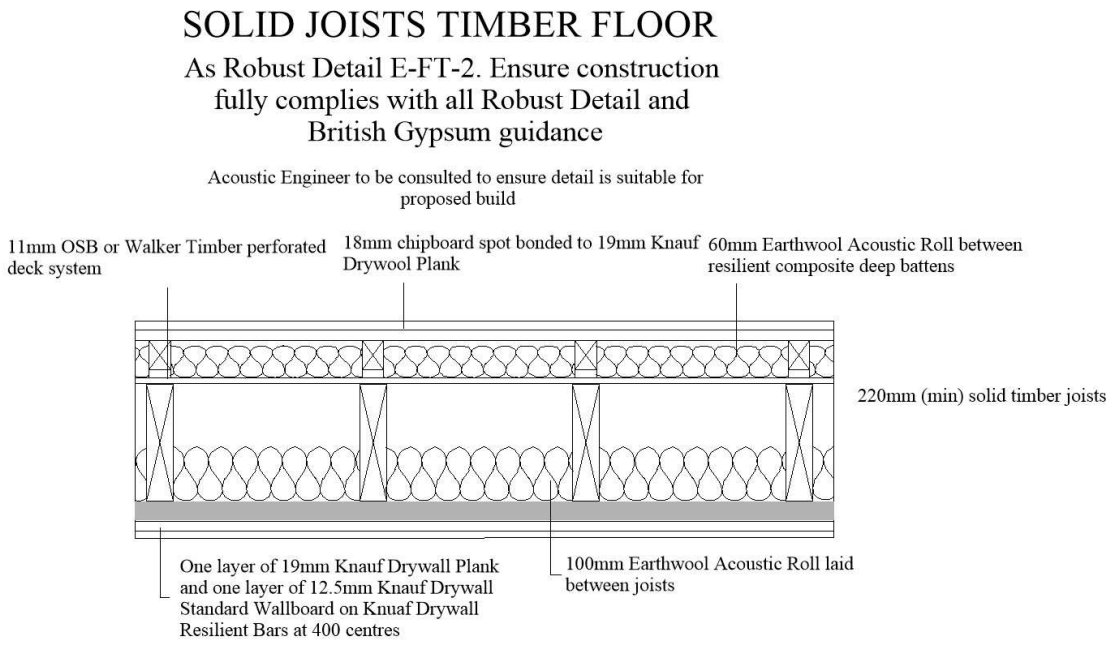


Fig. 5 Solid timber joists separating floor e-ft-2 (Not to Scale)

SOLID INTERNAL WALL

Minimum total mass per unit area 415kg/m²

As detailed in British Gypsum Separating Walls

Construct solid separating wall using dense aggregate blocks laid flat, blocks to have a density of 1840/kg/m². Finish with 13mm Thistle plaster with a minimum mass per unit area of 10kg/m² on each face of wall.

THIS CONSTRUCTION HAS THE POTENTIAL TO COMPLY WITH THE REQUIREMENTS OF THE BUILDING REGULATIONS WHEN FORMING A SEPARATING WALL. HOWEVER, AN ACOUSTIC ENGINEER MUST BE CONSULTED TO ENSURE THE CONSTRUCTION IS SUITABLE FOR THE BUILD. COMPLIANCE CAN ONLY

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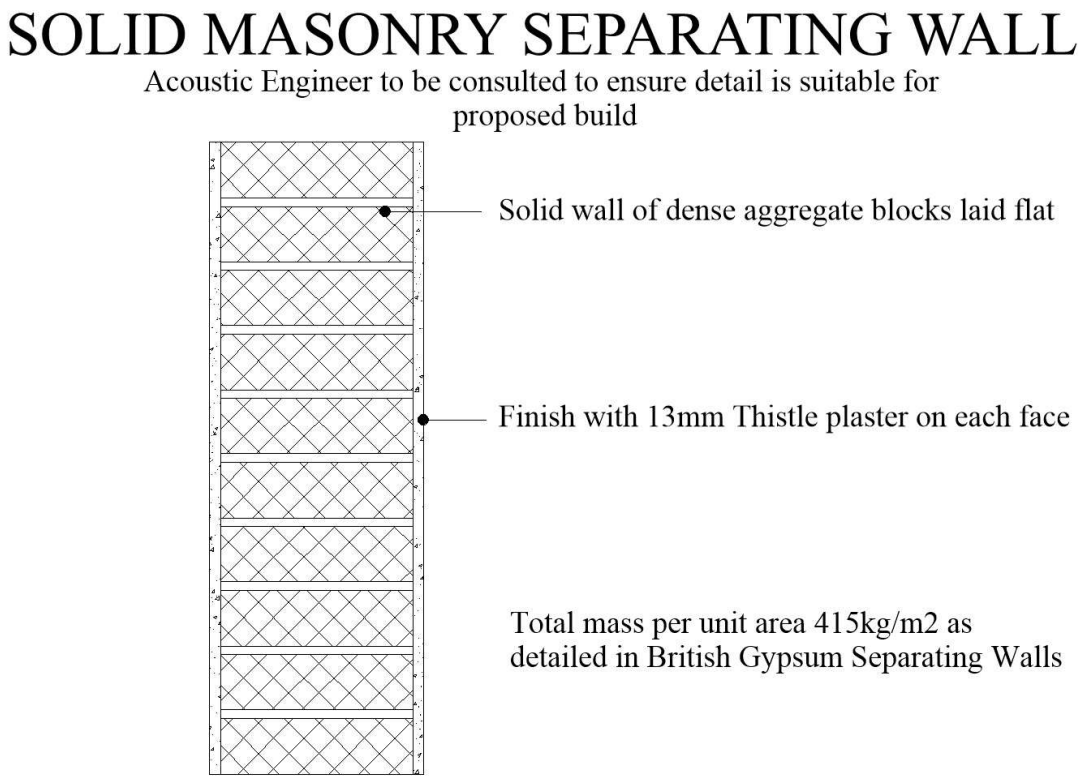


Fig. 6 Solid internal wall (Not to Scale)

MEANS OF ESCAPE – (Internal planning of flat)

All flats to be provided with a protected entrance hall (lobby) with half hour partitions between the hall and all rooms. Entrance hall to lead directly to a protected common hallway or lobby. The travel distance from the flat entrance door to the door of any habitable room not to be greater than 9m. Inner rooms are not acceptable.

All doors from rooms on to the entrance hall must be FD20 rated fire doors to BS 476 (fitted with intumescent strips rebated around sides & top of door or frame if required by Building Control). Where applicable, any glazing in fire doors to be half hour fire resisting and glazing in the walls forming the escape route enclosure to have 30 minutes fire resistance to at least 1.1m above the floor level.

Flat entrance door to be FD30 with a self-closer, 3 hinges (made from materials that have a minimum melting point of 800°C), intumescent strips and smoke seals and to have simple, easily and immediately openable locks, without the use of a key i.e. thumb-turn locks.

SMOKE DETECTION

Provide a linked smoke alarm detection system to BS EN 14604 and BS 5839-6:2019 to at least a Grade D2 category LD1 standard. System to be mains powered with battery back up.
Detectors to be installed throughout the dwelling, in all circulation areas that form part of the escape routes, and in all rooms, other than those with negligible sources of ignition.
An interlinked heat detector to be provided in the kitchen.
In hallways exceeding 7.5m in length, no point within the hallway should exceed 7.5m from the nearest detector and no bedroom door should be further than 3m from the nearest smoke alarm. If ceiling mounted detectors to be 300mm from the walls and light fittings.

SMOKE VENTILATION IN COMMON WAYS

Provide an automatic opening smoke vent with a geometric free area of at least 1.0m² located on an external wall at the top of the stair as high as practicable and so the top edge is at least as high as the top of the door. Vent to be opened on detection of smoke on any storey in the stair (vents to be placed on every level if required by Building Control).

COMMON STAIRS AND CORRIDORS

Fire Brigade to be consulted on the means of escape within the common areas of flats.
Common corridors and stairs should be protected, i.e. within a 30 minute fire resisting enclosure, and should lead directly to outside. Wall and ceiling surfaces are to have the appropriate linings to inhibit surface spread of flame in accordance with BS476.
Meters located within the stairway should be enclosed with a secure cupboard which is separated from the escape route with fire resisting construction. All gas services within a protected stairway must be installed in accordance with The Gas Safety (Installation and Use) Regulations 1998.
Escape routes to be provide minimum 2m headroom, to be adequately lit and exits are suitably signed in accordance BS ISO 3864-1 and BS 5499-4, as required.
Any cupboards to be contructed with half hour fire resistant construction with an FD30 fire door marked ‘Fire door keep locked shut’ in accordance with BS 5499-5.

EMERGENCY LIGHTING

Emergency Lighting to BS 5266 Pt 1 will be required in common escape routes, including stairways, Some buildings will, in addition, require emergency escape lighting in other areas. These will include:
- Large buildings with long escape routes.
- Buildings with a complex layout.
- Buildings with no natural or borrowed lighting along the escape route; and buildings with vulnerable occupiers or those posing a specific risk.

It is recommended that the Emergency Lighting system is tested on a monthly basis with a record of the test maintained.

ACCESS AND FACILITIES FOR THE FIRE BRIGADE

Consultation with the local Fire Authority is required to ensure the provision is made within the site of the building to enable fire appliances to gain access to the building. This provision shall include:

- Vehicle access for fire appliances.
- Access for fire fighting personnel.
- Venting for heat and smoke from basement areas.
- The provision of adequate water supplies.

REGULATION 38: FIRE SAFETY INFORMATION

On completion or occupation of the building fire safety information to be provided to the building owners which will include.

An as-built plan of the building showing all of the following.

a. Escape routes – this should include exit capacity (i.e. the maximum allowable number of people for each storey and for the building).

b. Location of fire-separating elements (including cavity barriers in walk-in spaces).

c. Fire doorsets, fire doorsets fitted with a self-closing device and other doors equipped with relevant hardware.

d. Locations of fire and/or smoke detector heads, alarm call points, detection/alarm control boxes, alarm sounders, fire safety signage, emergency lighting, fire extinguishers, dry or wet fire mains and other firefighting equipment, and hydrants outside the building.

e. Any sprinkler systems, including isolating valves and control equipment. F

Any smoke control systems, or ventilation systems with a smoke control function, including mode of operation and control systems.

g. Any high risk areas (e.g. heating machinery). 17.4

Details to be provided of all of the following.

a. Specifications of fire safety equipment provided, including routine maintenance schedules.

b. Any assumptions regarding the management of the building in the design of the fire safety arrangements.

Building Control to be provided with written confirmation from the responsible person that they have received and understood the information contained within the Regulation 38 package.

ESCAPE WINDOWS

Where escape windows are required.

The window should have an unobstructed clear openable area that is at least 0.33m² and have no clear dimension less than 450mm high or 450mm wide.

The bottom of the openable 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.

ROOF LIGHTS

Min U-value of 1.6 W/m²K.

Roof-lights to be double glazed with16mm argon gap and soft low-E glass. Window Energy Rating to be Band B or better. Roof lights to be fitted in accordance with manufacturer's instructions with rafters doubled up to sides and suitable flashings provided.

SAFETY GLAZING

All glazing in critical locations to be toughened or laminated safety glass to BS EN 12600:2002, BS EN 14179 or BS EN ISO 12543-1 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.

DOORS

Doors to achieve a U-Value of 1.6 W/m²K. Glazed areas to be double glazed with 16-20mm argon gap and soft low-E glass. Glass to be toughened or laminated safety glass to BS EN 12600:2002, BS EN 14179 or BS EN ISO 12543-1 and Part K (Part N in Wales) of the current Building Regulations.

Insulated plasterboard to be used in reveals to abut jambs and to be considered within reveal soffits. Fully insulated and continuous cavity closers to be used around reveals.

Windows and door frames to be taped to surrounding openings using air sealing tape.

WINDOWS

Windows to be double glazed with argon filled gap and with a soft coat low-E glass. Window Energy Rating to be Band A or better and to achieve U-value of 1.6 W/m²K.

Insulated plasterboard to be used in reveals to abut jambs and to be considered within reveal soffits. Fully insulated and continuous cavity closers to be used around reveals.

Windows and door frames to be taped to surrounding openings using air sealing tape.

EXTRACT FOR SHOWER ROOM

Provide mechanical extract ventilation to shower room ducted to external air capable of extracting at a rate of not less than 15 l/s. Vent to be connected to light switch. Vent to have a 15min overrun if no window in room. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Intermittent 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 BATHROOM

Bathroom to have mechanical vent ducted to external air to provide min 15 l/s 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. Intermittent 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 WC

WC to have mechanical ventilation ducted to external air with an extract rating of 6l/s operated via the light switch. Vent to have a 15min overrun if no window in room. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Intermittent 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 l/s. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Intermittent 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 60 l/s or 30 l/s 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. Intermittent 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.
Height of Cooker hood to be as manufacturer’s specification or between 650mm and 750mm

PURGE VENTILATION

Minimum total area of opening in accordance with Table 1.4 Approved Document F1.

Hinged or pivot windows with an opening angle of 15 to 30 degrees to have an openable area in excess 1/10 of the floor area of the room.

External doors and sash, hinged or pivot windows with an opening angle of equal to or greater than 30 degrees to have an openable area in excess of 1/20 of the floor area of the room.

Purge ventilation should be capable of extracting at least 4 air changes per hour per room directly to the outside.

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

BACKGROUND VENTILATION

Controllable background ventilation at least 1700mm above floor level to be provided to habitable rooms and kitchens at a rate of min 10,000mm², and to bathrooms at a rate of min 4000mm².

Total number of ventilators installed in a dwellings habitable rooms to be at least 4 ventilators for one bedroom dwellings and 5 ventilators for dwellings with more than one bedroom.

Background ventilators to be tested to BS EN 13141-1.

Background ventilator equivalent area and operation to be measured and recorded.

Noise attenuating background ventilators should be fitted to facades with sustained loud noise.

BACKGROUND VENTILATION

Controllable background ventilation at least 1700mm above floor level to be provided to habitable rooms and kitchens at a rate of min 8,000mm², and to bathrooms at a rate of min 4000mm²,

Total number of ventilators installed in a dwellings habitable rooms to be at least 4 ventilators for one bedroom dwellings and 5 ventilators for dwellings with more than one bedroom.

Background ventilators to be tested to BS EN 13141-1.

Background ventilator equivalent area and operation to be measured and recorded.

Noise attenuating background ventilators should be fitted to facades with sustained loud noise.

BLOCK AND BEAM FLOOR VENTILATION

Provide cross-ventilation of the under floor to outside air by ventilators in at least 2 opposite external walls of the building. Ventilation openings having an opening area of 1500mm² per metre run of perimeter wall or 500mm² per square metre of floor area, whichever is the greater.

FLAT ROOF VENTILATION

Cross-ventilation to be provided on opposing sides by a proprietary eaves ventilation strip equivalent to 25mm continuous with fly proof screen. Flat roof insulation is to be continuous with the wall insulation but stopped back to allow a 50mm air gap above the insulation for ventilation.

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 Authority approval), filled with suitable granular fill and provided with geotextile surround to prevent migration of fines. If necessary carry out a porosity test to determine design and depth of soakaway.
Paved areas to be suitably drained free from storm water.

UNDERGROUND FOUL DRAINAGE

Underground drainage to consist of 100mm diameter UPVC proprietary pipework to give a 1:40 fall. Surround pipes in 100mm pea shingle. Provide 600mm suitable cover (900mm 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 1401-1 (+A1:2023).

INSPECTION CHAMBERS

Underground quality proprietary UPVC 450mm diameter inspection chambers to be provided at all connections, changes of level, changes in direction, and every 45m 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 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 wastes pipes and max length of branch connections (if max length is exceeded then anti-vac 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

Svp 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. Internal soil vent pipes to be wrapped in 25mm unfaced mineral fibre and enclosed in minimum two layers of 12.5mm plasterboard (15g/m² mass per unit area) to provide adequate sound proofing. Soil and vent passing through floors to be enclosed in ducts comprising of timber framing faced with fire line plasterboard to achieve half hour fire resistance. All ducts to be fire stopped at floor levels using mineral wool quilt packing.

AUTOMATIC AIR VALVE

WC to be connected to new 110mm UPVC soil pipe with accessible internal air admittance valve complying with BS EN 12380. Air admittance valve to be placed at a height so that the outlet is above the spill over level of the highest fitting.

PIPEWORK THROUGH WALLS

Where new pipework passes through external walls the pipework is to be provided with ‘rocker pipes’ at a distance of 150mm either side of the wall face. The ‘rocker pipes’ must have flexible joints and be a maximum length of 600mm.

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

H4 BUILDING OVER OR NEAR PUBLIC SEWERS

The developer is to consult the Local Sewers Undertaker when constructing, extending or underpinning over a sewer or within 3m of the centreline of sewer shown on the sewerage undertakers sewer records and when the following applies:

- The building or extension is to be constructed over a manhole or inspection chamber or other access fitting on a sewer.
- The length of the drain or sewer under the proposed building or extension will exceed 6m.
- The Building or extension is to be constructed over or within 3m of any drain or sewer more than 3m deep or greater than 225m in diameter.

PUBLIC SEWER REQUIREMENTS

Special measures may be required for the following:

- Soils easily eroded by ground water leaking into the drain or sewer, e.g. silty sands, saturated silts and peat.
- A rising main (except those used for the building only).
- Any sewer or drain constructed from brick or masonry.

- Drains or sewers in poor condition.
- Sites prone to subsidence.

(Advice to be sought from the Sewerage undertaker).

Other provisions that may apply to Sewers:

- Any repairs or replacements of a sewer public or drain is to be carried out by the sewerage undertaker.
- Access points to sewers to be in places where they are accessible and apparent for use in a emergency.
- All drains or sewers running under a building to be provided with a minimum of 100mm of granular fill around the pipe.
- the crown of a pipe is within 300mm of the underside of a floor slab special protection to be provided.
- Where a pipe runs less than 2m below a building the foundation is to be extended so that the pipe passes through the wall.
- Where the pipe is more than 2m deep to the invert and passes beneath the foundation, the foundation is to be designed as a lintel, spanning over the drain, the lintel should span 1.5m either side of the pipe.
- A drain trench is not to be excavated lower than the foundations of any building nearby.

REGULATIONS 26, 26A AND 26C ENERGY PERFORMANCE

The below to be submitted to Building Control before the work starts:

- Target primary energy rate and the dwelling primary the emission rate.
- The target emission rate and the dwelling emission rate.
- The target fabric energy efficiency rate and the dwelling fabric energy efficiency rate.
- A list of specifications to which the dwelling is constructed.

The dwelling primary energy rate, dwelling emission rate and dwelling fabric energy efficiency rate must not exceed the target primary energy rate, target emission rate and target fabric energy efficiency rate, respectively.

No later than 5 days after the work has been completed Building Control to be provided with:

- The as-built target primary energy rate and as-built dwelling primary energy rate.
- The as-built target emission rate and as-built dwelling emission rate.
- The as-built target fabric energy efficiency rate and as-built dwelling fabric energy efficiency rate.
- A list of specifications used in the as-built calculations, and whether the specifications have changed from those used in the design stage calculations.

All to be calculated using the Standard Assessment Procedure for Energy Rating of Dwellings, SAP 10.

BREL report to be given to Building Control along with photographic evidence of compliance.
Energy Performance Certificate (EPC) accompanied by a recommendation report in compliance with Regulation 29, is to be given to the owner of the building and submitted to Building Control, no later than 5 days after the work has been completed.

REGULATION 43 - AIR PRESSURE TESTING

An air pressure test to be carried out on each dwelling.
Certificate to be given to Building Control by a person who is registered by Elmhurst Energy Systems Limited or the Air Tightness Testing and Measurement Association.
Air pressure tests to be performed following the guidance in the Approved Airtightness Test Methodology CIBSE TM23.
The measured air permeability to be not worse than 5 $m^3/(h \cdot m^2)$ at 50 Pa.
If the required air permeability is not achieved, then remedial measures should be undertaken and a new test carried out until satisfactory performance is achieved. The results of all pressure tests, including any test failures, should be reported to Building Control. A copy of the test results to be sent Building Control no later than 7 days after the test has been carried out.

REG 40 AND 40A PROVIDING INFORMATION

On completion of the works the owner of the dwelling shall be provided with:
- Information about the fixed building services and on-site electricity generation and their operating and maintenance instructions, including timing and temperature control settings, and a Home User Guide.
- A recommendations report generated with the ‘on-construction’ energy performance certificate.
- A signed copy of the Building Regulations England Part L compliance report (BREL).

Information to be easy to understand and in an accessible format.

CONTINUITY OF INSULATION AND THERMAL BRIDGING

Care shall be taken to limit the occurrence of thermal bridging in the insulation layers caused by gaps within the thermal element, i.e. around windows and door openings. The building fabric to be constructed so that the insulation is reasonably continuous across newly built elements.
Drawings to be provided for junctions to prevent thermal bridging, guidance in Building Research Establishment’s BR 497 or other independently assessed thermal junction details to be followed.
Before elements are concealed, photographs of the details and an on-site audit to be undertaken to confirm that the designed details have been constructed in line with the guidance in Appendix B.

REGULATION 25A: CONSIDERATION OF HIGH EFFICIENCY ALTERNATIVE SYSTEMS

Analyse of the use of high efficiency alternative systems to be undertake, taking into account the technical, environmental and economic feasibility of the provision of such systems.

A copy of the analysis to be available for inspection by Building Control to on request.

The document to state whether high-efficiency alternative systems have been included in the dwelling design.

REG 44 AND 44ZA – COMMISSIONING OF FIXED BUILDING SERVICES

All fixed building services to be commissioned and a commissioning plan to be produced identifying:

- Systems that need to be tested.
- How these systems will be tested.

Commissioning plan to be given to the building control body with the design stage dwelling primary energy rate, dwelling emissions rate and dwelling fabric energy rate calculation.

At completion a commissioning certificate to be given to the building control body confirming that the commissioning plan has been followed and that all systems have been inspected and conform with the design requirements.

SYSTEM CONTROLS AND ZONING

Domestic hot water circuits to have:

- Time control that is independent of space heating circuits.
- Electronic temperature control.

Each room or agreed zone should be provided with thermostatic room controls.

Dwellings with a floor area of 150m² or greater to have a minimum of two independently controlled heating circuits.

LIMITING HEAT LOSSES AND GAINS

In accordance with Table 4.4 Approved Document L

Insulation to be provided to:

- Primary circulation pipes for domestic hot water.
- Primary circulation pipes for heating circuits where they pass outside the heated living space and voids.
- Pipes connected to hot water storage vessels for at least 1m from the point at which they connect to the vessel.
- Secondary circulation pipework.

AIR TIGHTNESS

Drawings to be provided which identify the position, continuity and extent of the air barrier. Incoming and penetrating services, ducts and cables, wherever possible, to be grouped to minimize how often the air barrier is penetrated. Grommets or flexible collars to be used around flexible services and sealed to the air barrier with air-sealing tape or sealant.

APPENDIX B: REPORTING EVIDENCE OF COMPLIANCE

BREL report

The Building Regulations England Part L (BREL) report and photographic evidence to be provided to Building Control and to the building owner.

Photographs to show thermal continuity and quality of insulation to be made available to the energy assessor and Building Control of the following details:

- At ground floor perimeter edge insulation
- At external door threshold
- Below damp-proof course on external walls
- Ground floor to wall junction
- Structural penetrating elements
- Joist/rafter level
- Eaves and gable edges
- Window positioning in relation to cavity closer or insulation line
- External doorset positioning in relation to cavity closer or insulation line
- Air tightness details where required
- Plant/equipment identification labels, including make/model and serial number
- Primary pipework and continuity of insulation
- Mechanical ventilation ductwork continuity of insulation (for duct sections outside the thermal envelope)

Each image file name to confirm location, date and time. Plot number and detail reference to be shown on image.

C2. CONDENSATION

Walls, floors and roof of the building to be designed and constructed so that their structural and thermal performance will not be adversely affected by interstitial condensation, surface condensation or mould growth. Account to be taken of the building’s form and orientation in relation to topography, prevailing winds, sunlight and over-shadowing, and the rate at which humidity is generated.

Materials with the highest vapour resistance should be located on the warm side of a thermal

element. VCLs to be provided where necessary.
The junctions between elements are designed to Accredited Construction Details or guidance of BRE IP17/01] and BS 5250:2021 Management of moisture in buildings to be followed.

SOUND PROTECTION AND TESTING -

Separating walls, floors, stairs and party walls to achieve a performance standard of 45 dB (minimum values for airborne sound insulation) and 62 dB to floors and stairs (maximum values for impact sound insulation) to demonstrate compliance with Approved Document E1.
Pre completion sound testing to be carried out by a suitably qualified person with appropriate third party accreditation (either UKAS accreditation or be a member of the Association of Noise Consultants Registration Scheme). Test to be carried out once the dwelling is complete but before carpeting and a copy of the test results given to Building Control.
If any elements were to fail the sound test, remedial works must be undertaken before retesting to the satisfaction of Building Control.
Where flanking walls or floors are continuous across separating walls specialist advice is to be sought to ensure additional treatments are provided to control flanking transmission.

ROBUST CONSTRUCTION DETAILS

Robust construction details to be used for all party walls. Before works commence on site Building Control to be given:

- Robust construction purchase certificates.
- The unique reference number issued by Robust Details.
- A valid notification of approved details published by Robust Details Ltd.
- The references of the design details.
- A report of where the details are to be used.

Work on site must comply with details specified in the notification and compliance certificates to be given to Building Control on completion.
Pre-completion testing to be carried out if works on site are found not to adhere Robust Construction design details to demonstrate compliance with Approved Document E.

WATER EFFICIENCY

The estimated water consumption not to exceed 125 litres per person per day in accordance with Approved Document G2. Water Efficiency to be calculated using the ‘Water Efficiency Calculator for New Dwellings’ and 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 5/3 (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

Water recycling 0 (not supplied)

Predicted per capita consumption (Code) 103.28

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 (Water Quality) Regulations 2016.

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. A washbasin with wholesome 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.

CONTROL OF WATER TEMPERATURE

The installation of the hot water supply to comply with Approved Document G3. All baths and showers are to be fitted with an inline thermostatic mixing valve to ensure that the temperature of the water delivered to the bath is limited to 48°C.

HOT WATER STORAGE SYSTEMS

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

Any hot water storage system, including any cistern or other vessel, shall incorporate precautions to ensure suitable pressure relief ,and ensure any discharge from safety devices is safely conveyed to where it is visible, but will not cause harm to persons in or about the building. Precautions to be in place to prevent stored water exceeding 100°C. Hot water vessels to be fitted with a non self

resetting energy cut out to instantly disconnect the power supply.
Outlets 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.

OVERHEATING MITIGATION

Adequate means of removing excess heat and limiting solar gains to be provided.
Compliance to be demonstrated by using either:
- The simplified method for limiting solar gains and providing a means of removing excess heat as set out in Section 1 of Approved Document O. Compliance check list (AD O Appendix B) to be provided to demonstrate compliance, or
- The dynamic thermal modelling method as set out in section 2 of Approved Document O, using the guidance set out in - CIBSE TM59 methodology for predicting overheating risk.
Report to be provided that demonstrates that the building passes CIBSE's TM59 assessment of overheating. Consideration given to provision of adequate daylight as detailed in BS 8206 -2 Code of Maintaining Adequate Level of Daylight, noise pollution and security.

Solar gains in summer to be limited by any of the following means:
a. Fixed shading devices, comprising any of the following.
i. Shutters.
ii. External blinds.
iii. Overhangs.
iv. Awnings.

PROTECTION FROM FALLING AND ENTRAPMENT

Window handles on windows that open outwards are not to be more than 650mm from the inside face of the wall when the window is at its maximum openable angle.
Any guarding to be sized to prevent the passage of a 100mm sphere, to be 1.1m high from floor level, to be not easily climbable and to be capable of resisting at least the horizontal force given in BS 6180:2011.
Any louvered shutters, window railing and ventilation grilles to comply with the following:
- Not allow the passage of a 100mm diameter sphere.
- All holes which allow the passage of an 8mm diameter rod should also allow the passage of a 25mm diameter rod, such holes should not taper in a way that allows finger entrapment.

- All looped cords must be fitted with child safety devices.

PROVIDING INFORMATION

The owner of the building to be given information to allow them to use the overheating mitigation strategy,

Sufficient information about the overheating mitigation strategy and its maintenance requirement to be given to the owner, information to include:

- Overall overheating mitigation strategy
- Location of each element of the strategy
- Instructions for the operation of each element of the strategy
- The time of day the different parts of the strategy should be used
- The time of year the strategy should be used
- Manufacturer’s contact details
- The location of controls and instruction for setting of controls
- The location of sensors and how to recalibrate them
- Cleaning and maintenance instructions
- Home User Guide to include a section on ‘Staying cool in hot weather’

PART Q - SECURITY

Confirmation required that all doors and windows are to be installed in accordance with the advice stated in PAS24:2022 or alternatively comply with the requirements set out in Approved Document Q – Appendix B,

Doors to be manufactured to a design that has been shown by test to meet the requirements of British Standard publication PAS24:2022 or designed and manufactured in accordance with Appendix B or Approved Document Q

For example:

Doors to be fitted with a viewer, door chain and mechanically fixed as the manufacturer's installation guide.

The door set should be manufactured from solid or laminated timber with a minimum density of 600kg/m³.

Any panel in the door must be a min 15mm thick and suitably secured in place.

The smaller dimension of the panel must be no larger than 230mm in either width or height.

Main front doors should be fitted with multipoint locking system.

Windows:

Any part of a window or doorway, which is within 2m vertically of an accessible level surface such as the ground or basement level, or an access balcony, or windows within 2m vertically of a flat or

sloping roof (with a pitch of less than 30 degrees) that is within 3.5m of ground level should be secure windows in accordance with paragraphs 2.2 and 2.3 of Approved Document Q.
Windows to be made to a design that has been shown by test to meet the security requirements of British Standards publication PAS 24:2022.
Frames to be mechanically fixed to the structure of the building in accordance with manufacturer's installation instructions.

PART R

Developers to install at least one functioning gigabit-capable connection from a network distribution point to a network termination point at each new dwelling.
The Developer to provide gigabit-ready infrastructure necessary for gigabit-capable connections up to a network distribution point, or as close as is reasonably practicable where the developer does not have the right to access land up to that distribution point; and
Subject to a £2,000 cost cap per dwelling, a functioning gigabit-capable connection. Where the developer is unable to secure a gigabit-capable connection within the cost cap, the developer to install the next fastest connection available, provided this can be done without that connection also exceeding the cost cap.
Where the developer has no right to install the infrastructure in or on intervening land and no gigabit-capable connection is being provided, the developer is still required to install infrastructure to one of the following points in order of priority
1. As close as reasonably practicable to a location at which it is likely that a distribution point is to be installed with a 2 year period.
2. Where there is no existing network distribution point to which infrastructure can be built and where there is no likely future location for a distribution point, an access point in or on the building.
A connectivity plan to be submitted to Building Control as part of the building regulations application.

FIXED EXTERNAL LIGHTING

Install low energy light fittings that only take lamps having a luminous efficiency better than 80 lumens per circuit watt.
External light fittings to have both the followiing:
- Automatic controls which switch luminaires off in response to daylight
- If luminous efficacy is 75 light source lumens or less automatic controls which switch luminaires off after the area lit becomes unoccupied, if luminous efficacy is greater than 75 light source lumens, manual control can be installed.
Dwelling primary energy rate and dwelling emission rate calculations to account for the efficacy of

lamps installed in the fixed lighting locations.

EXTERNAL SURFACE WATER DRAINAGE

Drainage of paving areas to be carried out in accordance with BS EN 12056-3:2000 and Approved Document H.

Hard surfaces around the building should be provided with a proprietary non slip permeable surface laid to manufacturer's details and in compliance with BS EN 1338:2003 to allow for adequate drainage, or provided with a non slip surface and cross fall of 1:40 – 1:60 draining away from the building for a minimum of 500mm to a suitable soakaway.

Paths, driveways and other narrow areas of paving should be free draining away from any buildings to a pervious area such as grasslands or to a suitable soakaway.

SOLID WASTE STORAGE (REFUSE)

Bin storage to be in accordance with BS 5906:2005 Code of Practice for waste management in buildings to ensure that there is suitable spaces/enclosures for bins.

Adequate provision shall be made for the collection of waste as required by the Waste Collection Authority.

Each new dwellings to be provided with an area of 1.2m x1.2m for refuse storage containers. Separate containers are to be provided for recycling and non recycling household waste. Waste collections that are less than weekly may require increased capacity as agreed with the Waste Collection Authority. If a communal solid waste storage facility is used, storage to have a combined capacity of 0.25m³ per dwelling or as agreed with the Waste Collection Authority.

Refuse storage areas to be sited within 25m of the waste collection point or as specified by the Waste Collection Authority, and placed so that the householder does not need to carry refuge more than 30m. Refuse storage areas are to be positioned away from any windows and ventilators and are not to impede access into the dwellings or building.

DRAINED CAVITY WATER PROOFING SYSTEM

Type C drained protection in accordance with BS 8102:2022 -

RIW Cavity Drain System as BBA certificate for use in new constructions.

Ensure that all materials and products are compatible. Assess structure for suitability of tanking system. The surface must be examined for defects and repaired in accordance with manufacturer's details if required. All retaining elements are to be detailed by a Structural Engineer.

All materials and products to be installed by a competent contractor strictly in accordance with the manufacturer’s recommendations, BS 8102 and BBA certificate.

Prepare wall by cleaning with a stiff brush. Provide a high density polythene (HDPE) cavity drain membrane, e.g. RIW Cavity Drain, fixed using RIW brick plugs to wall and floor slab staggered at 1m

centres. Fixings to be sealed using RIW Sealing Rope.

The horizontal and vertical sheets should be butt jointed at the base of the wall and the joint covered with a pre-formed RIW Wall/Floor Junction piece and sealed with proprietary sealing tape.

The floor membrane is to be covered by reinforced concrete or screed at least 65mm thick.

Provide a suitable drainage channel, e.g. RIW Aqua Channel within the slab around the perimeter of the floor and install a sump and mechanical pump as manufacturer's details with suitable access if required.

Drainage channel to be provided with an adequate fall to a suitable soakaway. Ensure suitable access points and rodding eyes at every 10m and every change of direction.

Penetrations through waterproofing to be kept to a minimum and filled with RIW flexible sealant or sealing rope detailed by RIW specialist waterproofing manufacturer where unavoidable.

In very high water table area an additional moisture barrier may be required.

Construct an independent timber frame with preservative treated timber studwork using 100mm x 50mm treated timbers with head and sole plates and noggins at 400mm ctrs ensuring an adequate clear cavity between wall and new stud for cavity drain membrane.

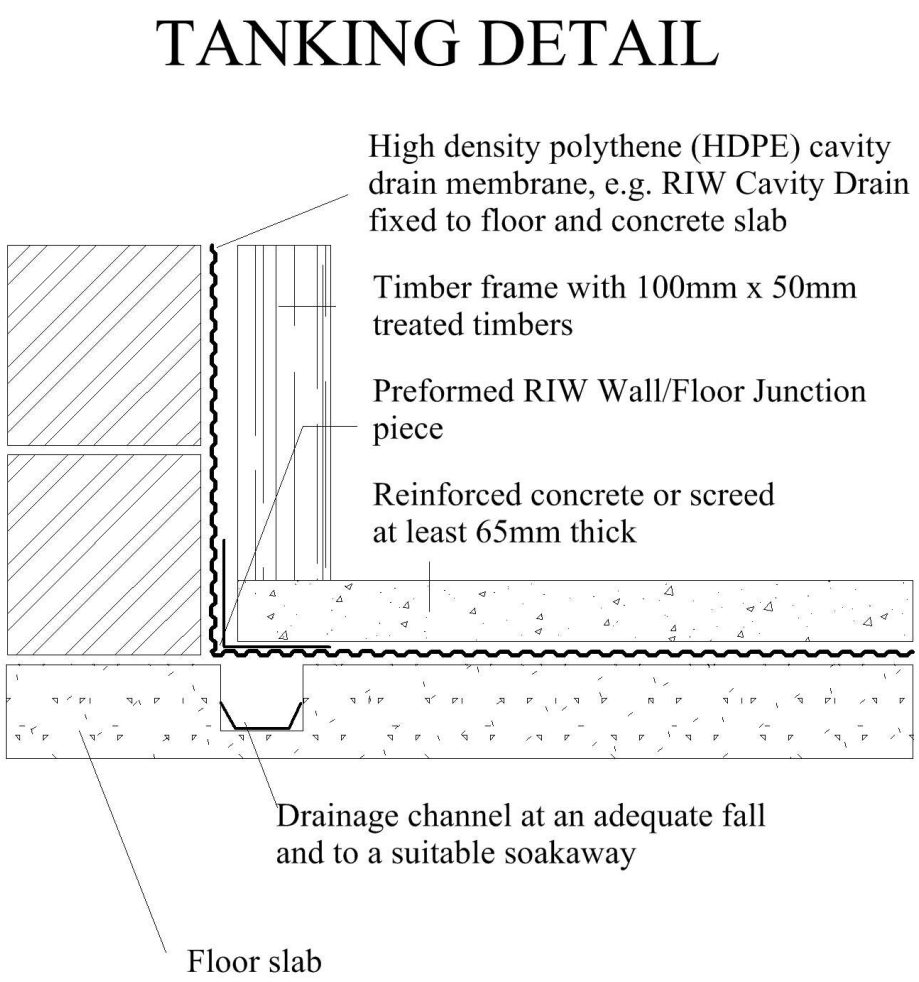


Fig. 7 Drained cavity water proofing system (Not to Scale)

GREYWATER RECOVERY SYSTEM

Greywater recovery system to be installed and commissioned in accordance with the manufacturer's details.

All pipework carrying greywater to be clearly marked and labelled in accordance with the Water Regulations Advisory Scheme Information Guidance Note 90-02-05 and BS 1710:2014 Specification for identification of pipelines and services.

Installation to comply with the Water Supply (Water Quality) Regulations 2016 and suitable materials to be selected from the Water fittings and Materials Directory. Pipes and fittings to be both recognizable and distinguishable from that supplying mains waste.

The reclaimed water system to be designed, operated and maintained so as to deal adequately with the contaminants, solids and organisms in the source waters. A suitable hazard assessment to be undertaken and the necessary safeguards adopted. The chemical, physical and biological properties of proposed water sources to be measured as part of the design and commissioning of the reclaimed water system. Water quality monitoring and reporting arrangements to be put in place.

Suitable fluid Category 5 level (airgap) of backflow prevention to be provided.

Access points for maintenance and clearing of blockages to be provided and filters to be easily accessible for cleaning.

Adequate ventilation to be provided.

Rainwater storage systems to be covered with screens on both inlets and outlets. Insulation to be provided to minimise heat gain and for frost protection. Periods where water is likely to be static for over a week are to be avoided.

Homeowner to be provided with clearly worded operating, maintenance and safety instructions, including instructions for the safe disposal of treatment chemicals or residues.

LEVEL APPROACH

Provide a level approach to the principal entrance door no steeper than 1:20 and at least 900mm wide, with cross falls no greater than 1:40. Approach surface material to be firm, non-slip and capable of supporting the weight of a wheelchair and its user (loose material such as gravel and shingle would not be suitable).

ACCESSIBLE LEVEL DOOR THRESHOLDS INTO THE BUILDING

Entrance door to have an accessible level threshold provided with a weather bar, (maximum height 15mm) with suitable drainage channel. Landings to have a fall of 1:40-1:60 away from the door.

Principal entrance door to have a minimum 775mm clear opening between the door leaf and doorstops.

INTERNAL CORRIDORS AND DOOR WIDTHS

Doorway clear opening width and corridor clear passage way width to comply with the following:

750mm or wider doorway – corridor to be 900mm (when approached head on)

750mm doorway – corridor to be 1200mm (when approach is not head on)

775mm doorway – corridor to be 1050mm (when approach is not head on)

800mm doorway – corridor to be 900m (when approach is not head on)

Door and corridor width to comply with Diagram 1.2 and to be measured in accordance with diagram 1.1, Approved Document M.

Any localised obstruction must not occur opposite or close to a doorway, and should not be longer than 2m in length. The corridor must not be reduced below a minimum 750mm width at any point.

ACCESSIBLE SWITCHES, SOCKETS, CONTROLS ETC

All electric sockets outlets, controls and switches etc to be positioned between 450mm and 1200mm above floor level.

Accessible consumer units should be fitted with a child proof cover or installed in a lockable cupboard.

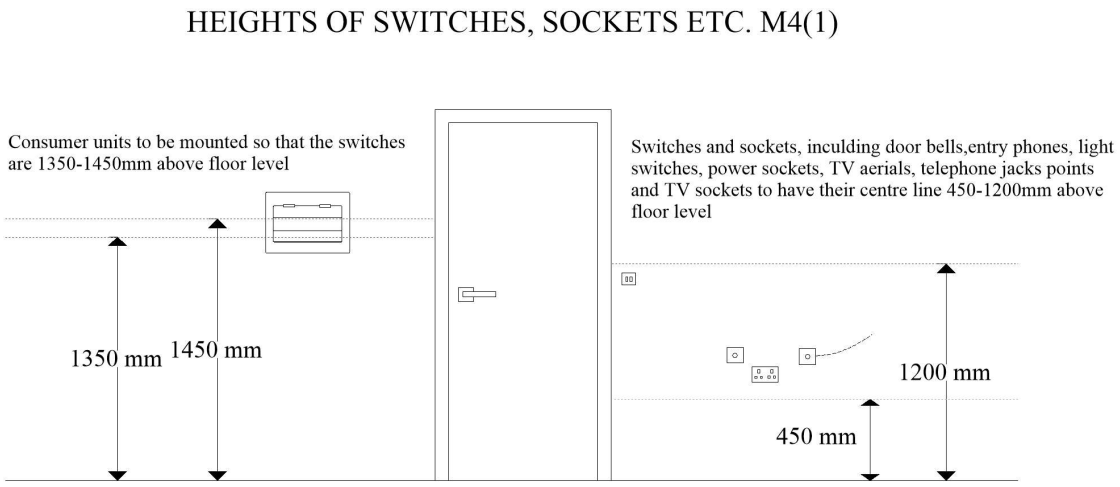
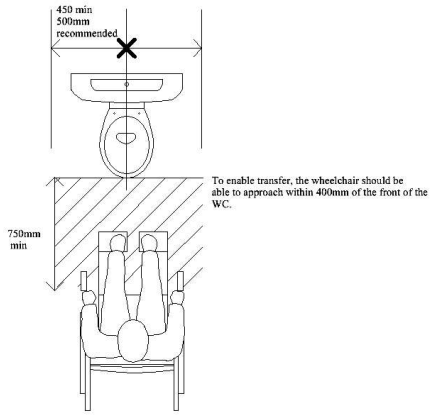


Fig. 8 Accessible switches, sockets, controls etc (Not to Scale)

PROVISION OF A GROUND FLOOR W/C

Wheelchair accessible WC to be provided on the principal entrance storey. A minimum 500mm clear space to be provided either side of the centre of the WC pan and 750mm minimum clear space in front of the pan to allow sufficient space for wheelchair approach and turning. The washbasin and door is to be positioned so as not to impede access or manoeuvrability. Door into WC to be outward opening.

Clear space required for a WC with access from the front



Clear space required for a WC with oblique access

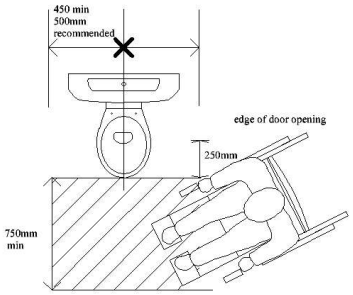


Fig. 9 Provision of a ground floor w/c (Not to Scale)

LIFETIME HOMES

Dwelling to comply with the criteria set out for lifetime homes including:

Parking

Dwelling approach

Entrances

Internal doors and hallways

Circulation space

Entrance level living space

WC

Bathrooms

Glazing

Location of service controls

etc