

BUILDING REGULATIONS NOTES

PARTY WALL ACT
The owner, should they need to do so under the requirements of the Party Wall Act 1996, has a duty to serve a Party Structure Notice on any adjoining owner if building work on, to or near an existing Party Wall involves any of the following:

- Support of beam
 - Insertion of DPC through wall
 - Raising a wall or cutting off projections
 - Demolition and rebuilding
 - Underpinning
 - Insertion of lead flashings
 - Excavations within 3 metres of an existing structure where the new foundations will go deeper than adjoining foundations, or within 6 metres of an existing structure where the new foundations are within a 45 degree line of the adjoining foundations.
- A Party Wall Agreement is to be in place prior to start of works on site.

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.

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 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.
- (b) Exceeds 500 person days

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). Reasonable provision shall also be made to ensure the extension is constructed to minimise unwanted air leakage through the new building fabric.

MATERIALS AND WORKMANSHIP
All works 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.

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

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 NICEIC Certification Limited, BS, 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 provided to Building Control on completion.

INTERNAL LIGHTING
Install low energy light fittings that only take lamps having a luminous efficiency better than 80 lumens per crosst watt. All fixed to have lighting capacity (lm) 165 x total floor area, to comply with Part L of the current Building Regulations and the Domestic Building Services Compliance Guide.

HEATING
Extend all heating and hot water services from existing and provide new TVRs to radiators. 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.

OPENINGS AND RETURNS
An opening or recess greater than 0.1m² shall be at least 550mm from the supported wall (measured internally) construction for pier less than 550mm to be specified by engineer.

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 500mm above floor level in windows.

NEW AND REPLACEMENT WINDOWS
New and replacement windows to be double glazed with 16mm argon gap and soft coat low-E glass. Window Energy Rating to be Band C or better and to achieve U-value of 1.4 W/m²K. The door and window openings should be limited to 25% of the extension floor 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 1.40W/m²K. Glazed areas to be double glazed with 16mm argon gap 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 - Controllable background ventilation at least 1700mm above floor level to be provided to habitable rooms and kitchens at a rate of min 10,000cm³/h, and to wet rooms at a rate of min 5000cm³/h.
Background ventilators to be tested to BS EN 13141-1.
Background ventilator equivalent area and operation to be measured and recorded.
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 operable area in excess 1/10 of the floor area of the room.
Sash windows, external doors or hinged pivot windows with an opening angle of equal to or greater than 30 degrees to have an operable 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.

NEW EXTERNAL DOORS
New external doors to achieve a U-Value of 1.40W/m²K. Glazed areas to be double glazed with 16mm argon gap 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.

INTERNAL DOORS
A lintel suitable for the loads above will be required; a single door will generally require a 150mm deep concrete lintel with 100mm bearings onto masonry. If the dwelling has a protected route for means of escape or is a 3-storey house new doors on to the hallway are to be half hour fire doors.

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 60mm 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 8110, with a concrete strength of 50 or 40 N/mm² and incorporating steel strands to BS 5996 to support loadings assessed to BS 5977 Part 1.
For other structural openings provide proprietary insulated steel lintels suitable for spans and loadings in compliance with Approved Document A and lintel manufacturers standard tables. Stop ends, DPC trays and weep holes to be provided above all externally located lintels.

TYING EXISTING TO NEW WALL
Cavities in new wall to be made continuous with existing where possible to ensure continuous weather break. If a continuous cavity cannot be achieved, where new walls abuts the existing walls provide a movement joint with vertical dpc. All tied into existing construction with suitable proprietary stainless steel profiles connected to the existing wall and tied centrally to the proposed brickwork at 450 centres.

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/1.5m 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 5628 Code of practice for use of masonry.

INTERMEDIATE FLOORS
Intermediate floor to be PS moisture resistant structural grade flooring board to EN312-5 and EN13986 laid on C24 joists at 300mm ctrs (use engineer's calculation for sizes and details). Lay 100mm Rockwool mineral fibre quilt insulation then 19mm of equivalent below 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 hermigrope 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 1312:2010. 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 20mm x 5mm galvanneal mid steel straps or other approved in compliance with BS EN 845-1 at max 2.0m centres; straps to be taken across minimum 3 no. joists. Straps to be built into walls. Provide 38mm wide x 1% depth solid nogging between joists at strap positions.

STAIRS
Dimensions to be checked and measured on site prior to fabrication of stairs. Timber stairs to comply with BS686 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. Tany wall and 30% 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 staircases 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 count no space through which a 100mm sphere could pass. Allow for all structure as designed by a Structural Engineer.

SMOKE DETECTION
Mains operated linked smoke alarm detection system to BS EN 14604 and BS6869-6:2004 or at least a Grade 0 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 7.5m 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.

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; Interim 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.

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 100mm x 20mm x 5mm galvanneal mid 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 nogging between rafters at strap positions. All wall plates to be 100 x 50mm and to inner skin of cavity wall using 30mm x 5mm x 1000mm galvanneal metal straps or other approved to BS EN 845-1 at maximum 2m centres.

LEAD WORK AND FLASHINGS
All lead flashings, any valleys or spakers to be Code 5 lead and laid according to Lead Development Association. Flashings to be provided to all joints 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.

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 by 150mm granular fill. Soakaway to be min of 1 cubic metre capacity (per 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 140 l/s. Summed pipes in 100mm pipe spacing. 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 ducting to comply with BS EN 14011-1:2009.

INSPECTION CHAMBERS
Underground quality proprietary UPVC 450mm diameter inspection chambers to be provided at all changes of level, direction, connections 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.

AUTOMATIC AIR VALVE
Ground floor fittings from WC to be connected to new 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 and connected to underground quality drainage encased with pea gravel to a depth of 150mm.

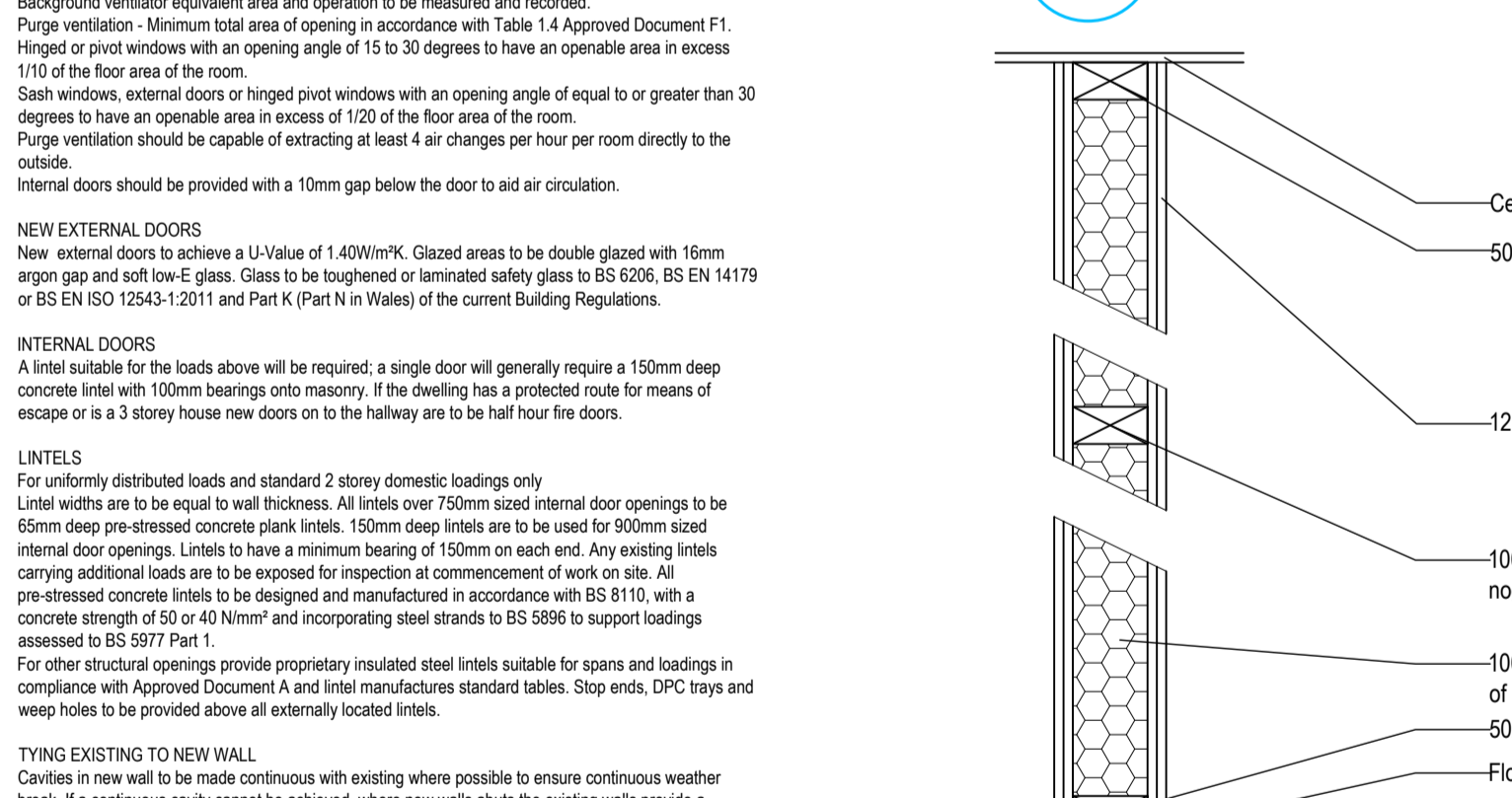
ESCAPE WINDOWS / DOORS
Provide emergency egress windows / doors to any newly created first floor habitable rooms and ground floor inner rooms. Windows to have an unobstructed openable area of 450mm high x 450mm wide, minimum 0.33m sq. The bottom of the openable area should be not more than 1100mm above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

DOOR BETWEEN HOUSE AND GARAGE
Door between garage and house to be F30 self closing with a 100mm step down into garage, fitted with 3 steel hinges, intumescent strips and smoke seals. Construction between house and garage to be 30 minutes fire resisting.

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 litres per second. Vent to be connected to light switch and to have 15 minute over run if no window in the 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; Interim 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.

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 nogginns at 1/3 height or 450mm. Provide min 10kg/m³ density acoustic soundproof quilt tightly packed (eg. 100mm Rockwool or Iso wool mineral fibre sound insulation) in all voids the full depth of the stud. Partitions built off doubled up joists where partitions run parallel or provide nogginns 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.

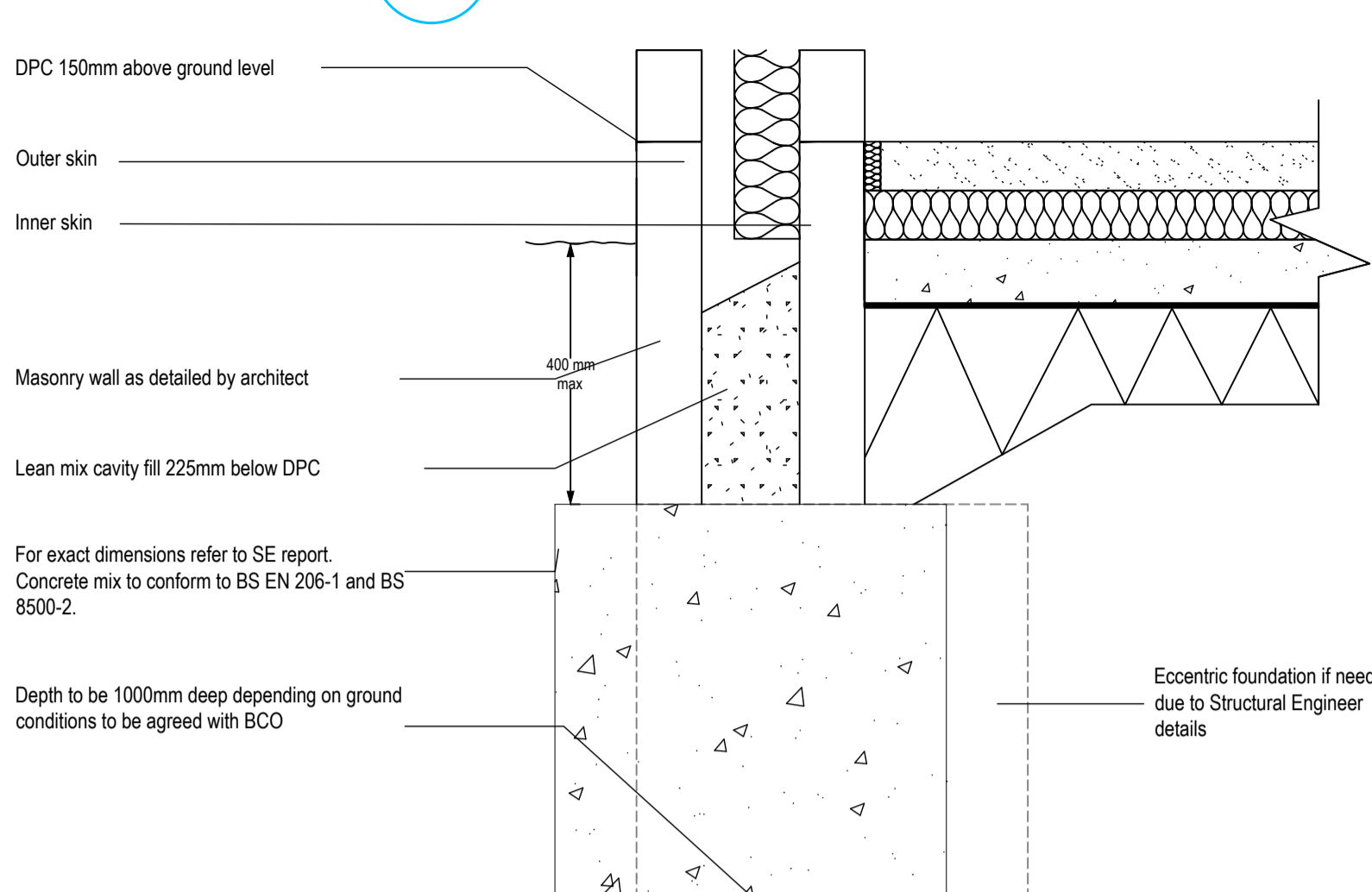
4 STUD WALL



INTERMEDIATE TIMBER FLOOR
PS moisture resistant structural grade flooring board to EN312-5 and EN13986

Labels: 100mm mineral wool with 10kg/m³ density laid between joists, 12.5mm Gyproc Fire-Line board to be provided under joists over vcj.

1 TRENCH FOUNDATION



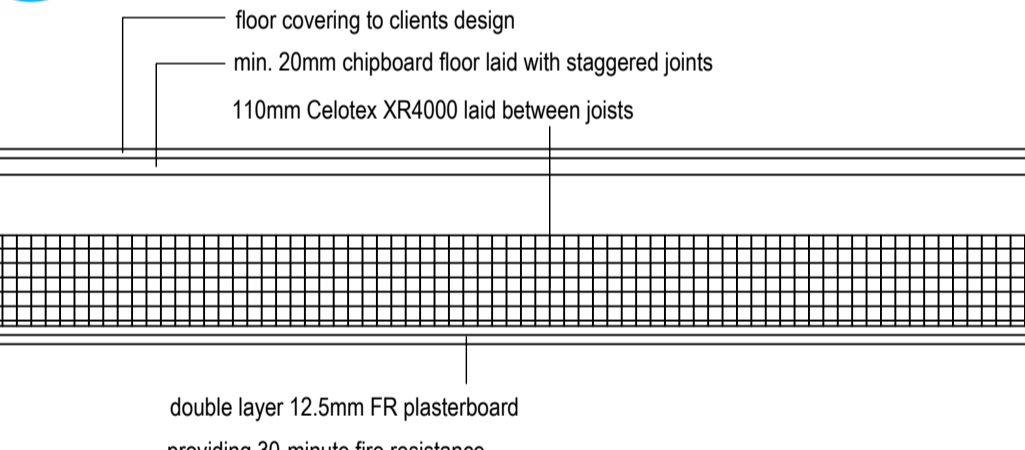
TRENCH FOUNDATION

Provide trench fill foundation, exact dimensions to SE report, concrete mix to conform to BS EN 206-1 and BS 8500-2. All foundations to be a minimum of 1000mm below ground level, exact 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. Sulphate resistant cement to be used if required. Please note that should any adverse soil conditions or difference in soil type 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.

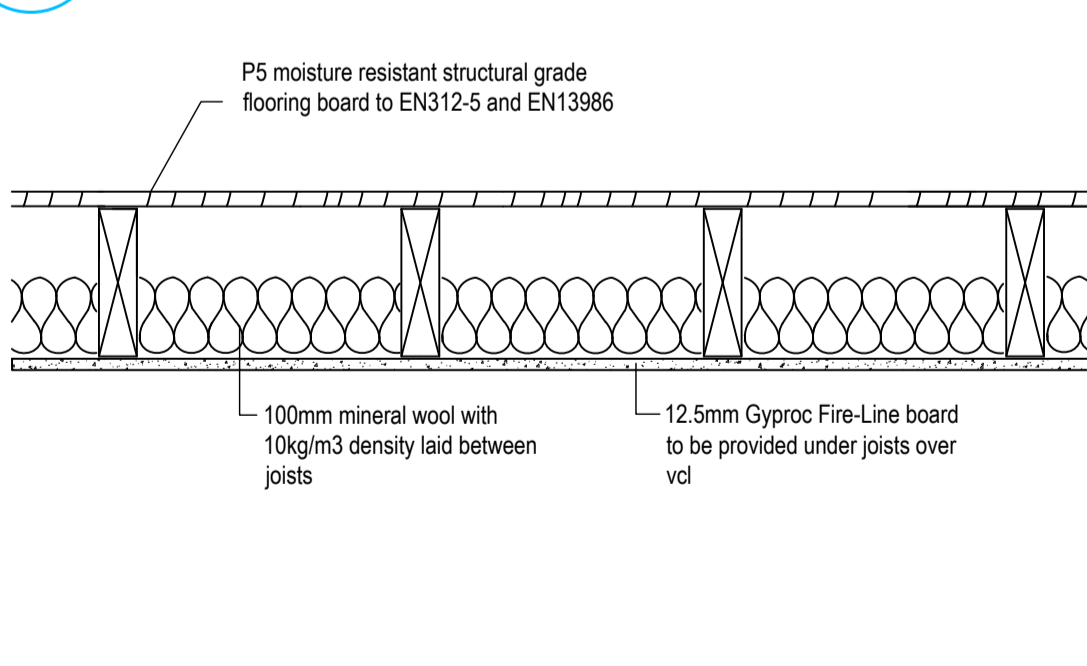
WALLS BELOW GROUND

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.

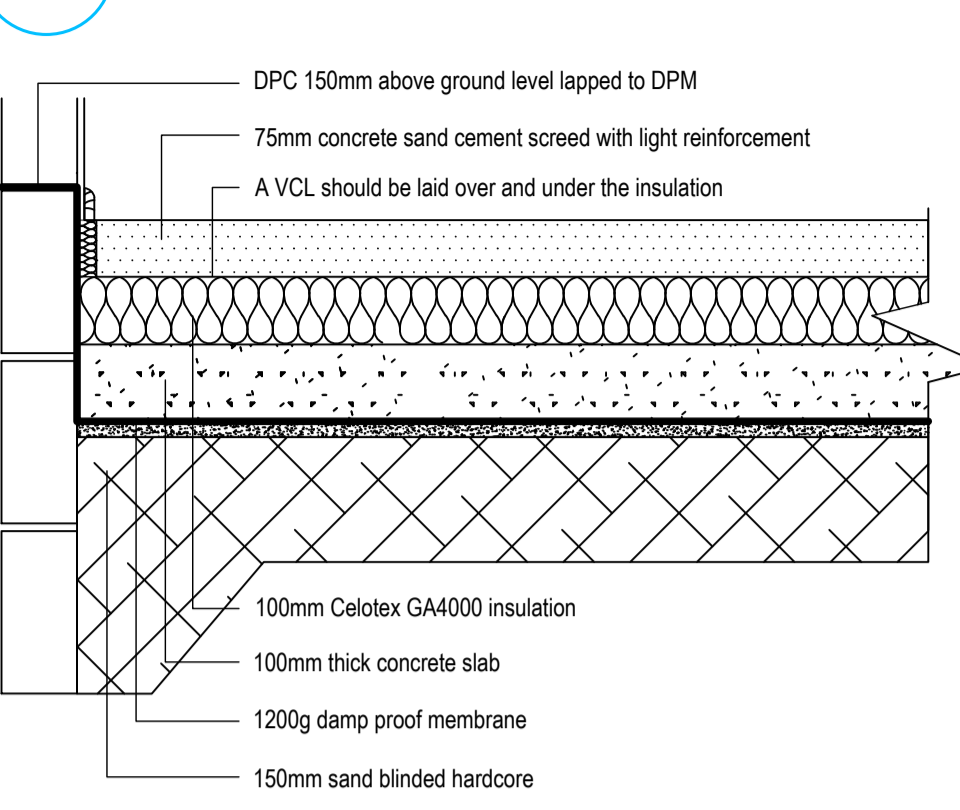
5 FLOOR ABOVE GARAGE



6 INTERMEDIATE TIMBER FLOOR



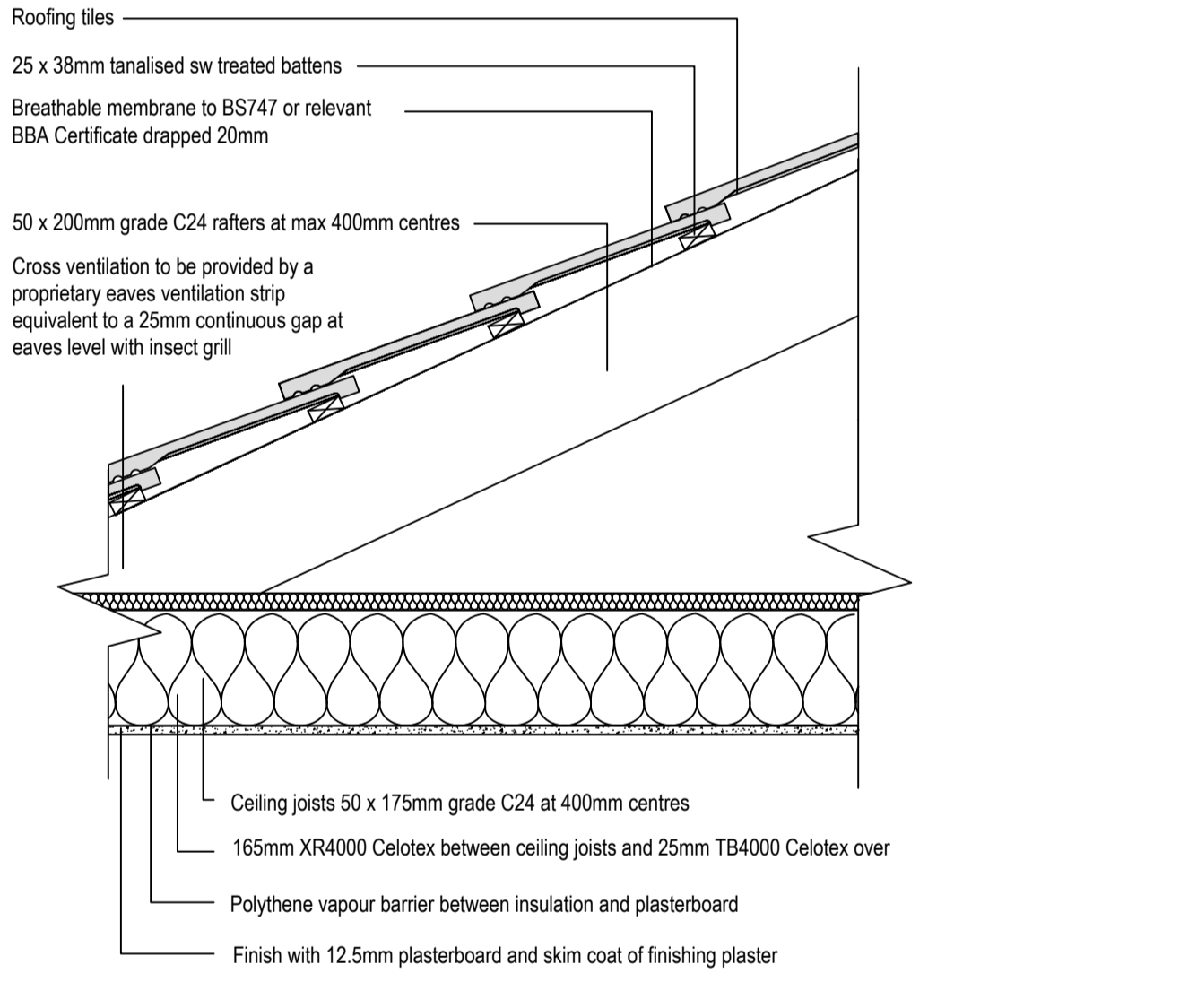
2 SOLID GROUND FLOOR



SOLID FLOOR INSULATION OVER SLAB

To meet min U value required of 0.18 W/m²K
P/A ratio 1.0
Solid ground floor to consist of 150mm consolidated well-rammed hardcore. Blinded with 50mm sand blinding. Provide 100mm ST2 or Gen2 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 100mm 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 75mm 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 65mm x 215mm air bricks with cavity tray over.

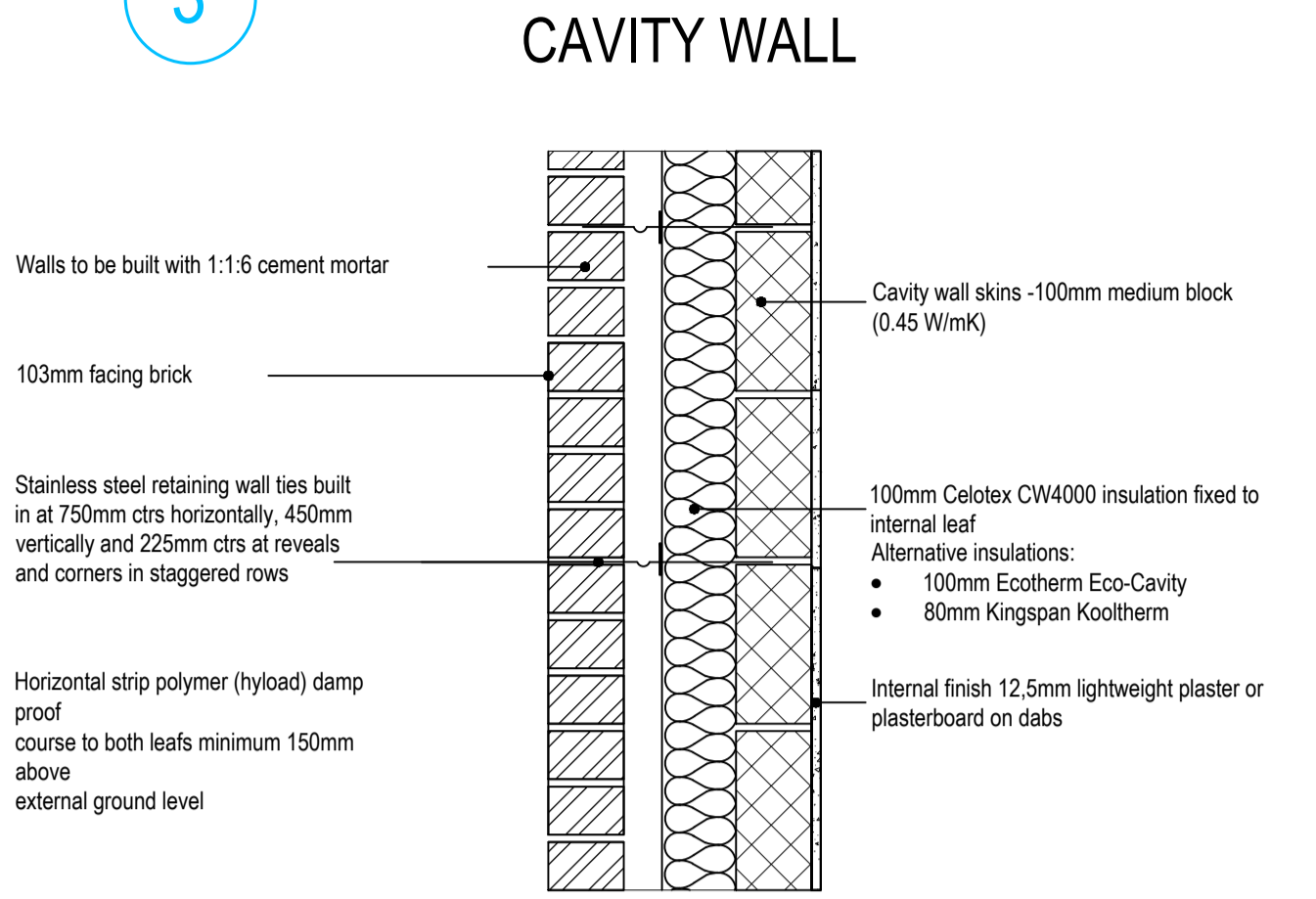
7 COLD PITCHED ROOF



PITCHED ROOF INSULATION AT CEILING LEVEL

To achieve U value of 0.15 W/m²K
Timber roof structures to be designed by an Engineer in accordance with NHBC Technical Requirement R5 Structural Design. Calculations to be based on BS EN 1995-1-1. Roofing tiles to match existing on 25 x 38mm tanalised sw treated battens on breathable membrane supported on 50 x 200mm grade C24 rafters at max 400mm centres. Rafters supported on 100 x 50mm sw wall plates. Insulation at ceiling level to be 165mm XR4000 Celotex between ceiling joists with a further 25mm TB4000 Celotex over joists.
Construct ceiling using sw joists at 400mm centres, finished with 12.5mm plasterboard and skim coat of finishing plaster. Provide polythene vapour barrier between insulation and plasterboard. Provide opening at eaves level at least equal to continuous strip 25mm wide in two opposite sides to promote cross-ventilation. Mono pitched roofs to have ridge/high level ventilation equivalent to a 5mm gap via proprietary tile vents spaced in accordance with manufacturer's details.

3 STANDARD PARTIAL FILL BRICK CAVITY WALL



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 constructed of 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.

DPC

Provide horizontal strip polymer (hyalod) 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, 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

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.

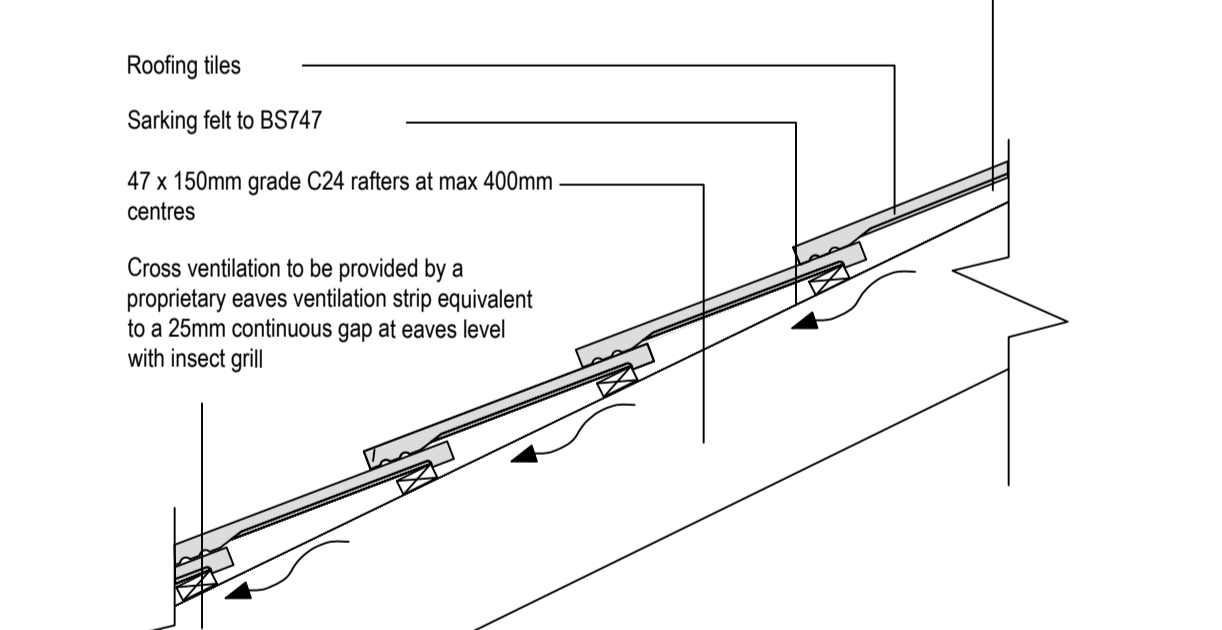
EXISTING TO NEW WALL

Cavities in new wall to be made continuous with existing where possible to ensure continuous weather break. If a continuous cavity cannot be achieved, where new walls abuts 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 end walls and vertically at junctions with separating walls & horizontally at separating walls with cavity tray over installed according to manufacturer's details.

8 PITCHED ROOF ABOVE GARAGE



PITCHED ROOF

(imposed load max 0.75 kN/m² - dead load max 0.75 kN/m²)
Timber roof structures to be designed by an Engineer in accordance with NHBC Technical Requirement R5 Structural Design. Calculations to be based on BS EN 1995-1-1. Roofing tiles to match existing on 25 x 38mm tanalised sw treated battens on sarking felt to relevant BBA Certificate. Supported on 47 x 150mm grade C24 rafters at max 400mm centres max span 3.47m. Rafters supported on 100 x 50mm sw wall plates.

Drawn by:	Project: Woodbourne Road 2, Smethwick, B67 5LY	Date: 18.03.2024	No.: 24-0368
Client:	Drawing Title: BUILDING CONTROL NOTES / DETAILS	Scale @A1: NOT TO SCALE	Rev: 03
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