

CONSTRUCTION NOTES
EXTENSIONS AND ALTERATIONS

GENERAL NOTES
On account shall these drawings be scaled, all drawings shall be read in conjunction with the standard specification and schedule of work.

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.

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:

- 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 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 2006.

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.

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 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 50m² 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 1994 and a Health and Safety plan is to be provided by the principal contractor.

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.

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.

SITE PREPARATION

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FOUNDATIONS

STRIP FOUNDATION

Provide 225mm x 600mm concrete foundation, concrete mix to conform to BS EN 206-1 and BS 8500-2. All foundations to be a minimum of 1000mm below ground level, exact depth to be agreed on site with Building Control Officer to suit site conditions. All foundations to be constructed in accordance with 2004 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 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.

Minimum depth of strip foundations

Except where strip foundations are founded on rock, the strip foundations should have a minimum depth of 0.45m to their underside to avoid the action of frost. This depth, however, will commonly need to be increased in areas subject to long periods of frost or in order to transfer the loading onto satisfactory ground. In clay soils subject to volume change on drying

(‘shrinkable clays’, with Modified Plasticity Index greater than or equal to 10%), strip foundations should be taken to a depth where anticipated ground movements will not impair the stability of any part of the building taking due consideration of the influence of vegetation and trees on the ground. The depth to the underside of foundations on clay soils should not be less than 0.75m on low shrinkage clay soils, 0.9m on medium shrinkage clay soils and 1.0m on high shrinkage clay soils, although these depths may need to be increased in order to transfer the loading onto satisfactory ground, or where there are trees nearby.

BEAMS / LINTOLS

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

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 8110, with a concrete strength of 50 or 40 N/mm² and incorporating steel strands to BS 5896 to support loadings assessed to BS 5977 Part 1.

For other structural openings provide proprietary insulated steel 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.

BEAMS

Supply and install new structural elements such as new beams, roof structure, floor structure, bearings, and padstones in accordance with the Structural Engineer’s calculations and details. New steel beams to be encased in 12.5mm Gyproc Freline 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.

FULL FILL CAVITY WALL (Render Finish)

To achieve minimum U-value of 0.18W/m²K
20mm 2 coats sand/cement render to comply to BS EN 13914-1:2005 with waterproof additive on 100mm outer leaf plasterboard on dabs with plaster skin finish. Walls to be built with 1:1:6 cement mortar.

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DPC

Provide horizontal strip polymer (hyload) 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 (External Walls)

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 5628-6.1: 1996 and BS EN 845-1: 2003

MOVEMENT JOINTS

Generally movement joints should be provided in accordance with manufacturers design specification.

CAVITIES

Provide cavity trays over openings. All cavities to be closed at eaves and around openings using Thermabrite 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 at tops of walls, gable end walls and vertically at junctions with separating walls & horizontally at separating walls with cavity tray over installed according to manufacturers details.

INTERNAL WALLS

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 1/2 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 noggins where at right angles, or built off DPC on thickened concrete slab if solid ground floor. Walls faced throughout with 12.5mm vapourcheck plasterboard plaster skin finish. Taped and jointed complete with beads and stops.

BEAMS / LINTOLS

EXISTING STRUCTURE

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LINTELS

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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 8110, with a concrete strength of 50 or 40 N/mm² and incorporating steel strands to BS 5896 to support loadings assessed to BS 5977 Part 1.

For other structural openings provide proprietary insulated steel 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.

BEAMS

Supply and install new structural elements such as new beams, roof structure, floor structure, bearings, and padstones in accordance with the Structural Engineer’s calculations and details. New steel beams to be encased in 12.5mm Gyproc Freline 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.

FLOORS

VENTILATION OF FLOOR

Provide cross-ventilation 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 gives the greater opening area. All sleeper walls or similar under floor obstructions shall be of honeycombed construction or have similar provision for distribution of ventilation. The under floor space shall be free from debris. Ducts to be sealed using gas proof tape if they pass through the radon barrier.

SUSPENDED BLOCK AND BEAM FLOOR

Remove top soil and vegetation, apply weed killer - The underside of beams 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 (drawings and calculations to be sent to Building Control and approved before works commence). Minimum bearing 100mm onto DPC and lead bearing walls. Provide concrete blocks to BS6703 pt. 1, wet and grout all joints with 1:4 cement/sand mix. Provide double beams below non-load bearing partitions. Lay 1200p DPM/radon barrier, with 300mm laps double wetted and taped at joints and service entry points using radon gas proof tape, over beam and block floor. Lay floor insulation over DPM, 100mm Celotex G4000 applied as a rigid material.

Lay 500g separating layer over insulation. Finish with a floating layer of min 20mm tongue and groove softwood boards or moisture resistant particle/chipboard grade type C4 to BS EN 312:2010. Lay with staggered joints or 65mm fibre reinforced screed. 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.

ROOFS

PITCHED ROOF INSULATION AT HORIZONTAL CEILING LEVEL

To achieve U value of 0.15 W/m²K
Roofing tiles to match existing on 25 x 50mm tanalised sw treated battens on breathable roofing membrane supported on softwood rafters / proprietary trusses as indicated. Rafters supported on 100 x 75mm sw wall plates. Insulation at ceiling level to be 150mm mineral wool insulation laid between ceiling joists with a further 150mm layer over joists (cross direction).

Construct ceiling using sw joists as shown, finished internally with 12.5mm vapourcheck plasterboard plaster skin finish. 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.

Restraint strapping - 100mm x 75mm wall plate strapped down to walls. Ceiling joists and rafters to be strapped to walls and gable walls, straps built into cavity, across at least 3 timbers with noggins. All straps to be 1000 x 30 x 5mm galvanised straps or other approved to BS EN 845-1 at 2m centres.

STRAPPING FOR PITCHED ROOF

Gable walls should be strapped to rafters at 2m centres. All external walls running parallel to roof rafters to be restrained at roof level using 1000mm x 30mm x 5mm galvanised mild steel horizontal straps or other approved to BS EN 845-1 built into walls at max 2000mm centres and to be taken across minimum 3 rafters and screw fixed. Provide solid noggins between rafters at strap positions. All wall plates to be 100 x 50mm fixed to inner skin of cavity wall using 3000 x 5mm x 1000mm galvanised metal straps or other approved to BS EN 845-1 at maximum 2m centres.

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 jamps 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.

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PITCHED ROOF VENTILATION

Maintain a 50mm air gap above insulation in the roof pitch to ventilate roof. Provide opening at eaves level at least equal to continuous strip 25mm wide and opening at ridge equal to continuous strip 5mm wide to promote ventilation.

WALLS AGAINST ROOFSPACE

To achieve minimum U Value of 0.18W/m²K
Construct stud wall using 100mm x 50mm head and sole plates and vertical studs (with noggins) at 400mm centres and to structural engineer’s details and calculations. Insulation between and over studs, 60mm Celotex G4000 between plus 37.5mm Celotex PL4000 insulated plasterboard with VCL. Finish with 3mm skim coat of finishing plaster. All junctions to have water tight construction, seal all perimeter joints with tape internally and with silicon sealant externally.

DRY LINING EXISTING CAVITY WALL

To achieve min U-value 0.55W/m²K
The existing external walls must be checked for stability and be free from defects as required by the Building Control Officer. Mechanically fix 62.5mm Celotex PL4000 insulated dry-lining board to 25 x 50mm treated timber battens set at maximum 600mm centres and positioned horizontally at floor and ceiling level. Fix using drywall screws or galvanised clout nails placed at 150mm centres. Tape joints and seal perimeter edges with mastic, to provide a vapour control layer (VCL). All work in accordance with BS 8212: 1995 (Code of practice for dry lining).

UPGRADE OF SOLID EXTERNAL WALL

To achieve min U-value 0.30W/m²K
Existing walls to be exposed and checked for its suitability. Insulate existing wall on the inside using 77.5mm Celotex PL400