

# Building Regulation Notes - Single Storey Extension

## FOUNDATIONS

Provide 450mm foundation, Reinforced concrete mix (C35). 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. 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.

## 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.

## GROUND FLOOR

Solid floor 150mm sand blinded hardcore, 1200g dpm, 75mm celotex insulation, a VCL should be laid over the insulation, 100mm concrete, 65mm reinforced screed. Where required duct any existing air bricks through the new solid floor via 75mm diameter ducts connecting to new air brick placed in the new external wall.

## EXTERNAL WALL

Face brickwork to match existing, 100mm cavity filled with 100mm crown dritherm 32, 100mm supaloc to inner face, 13mm lightweight plaster, stainless steel wall ties spaced at 750mm max horizontal and 450mm max vertical, reduce to 300mm around openings, provide a full profile for both skins for connecting to existing wall. DPC with cavity filled with concrete to 3 courses below DPC.

## WARM FLAT ROOF

Flat roof to be single ply membrane roofing, providing aa fire rating for surface spread of flame with a current BBA or WIMLAS Certificate and laid to specialist specification. Single ply membrane to be fixed to 22mm exterior quality plywood over 120mm Celotex Crown-Bond. Insulation bonded to vcl on 22mm external quality plywood decking or similar approved on sw firings to minimum 1 in 80 fall on sw treated to rear of property on 200mm x 50mm C24 flat roof joists at 400c/s with 2 rows of hogging. Joists to be fitted to wall with hangers. Underside of joists to have 12.5mm foil backed plasterboard and skim. Provide cavity tray to existing house where new roof abuts existing house. Flat roof to be dressed min 225mm flashing to existing dwelling and 150mm to roof lantern.

## SAFETY GLAZING

All glazing in critical locations to be toughened or laminated safety glass to BS 6206, BS EN 14179 or BS EN IS O12543-1:2011 and Part K (Part N in Wales) of the current Building Regulations, i.e. within 1500mm above floor level in doors and side panels within 300mm of door opening and within 800mm above floor level in windows.

## NEW AND REPLACEMENT WINDOWS

New and replacement windows to be double glazed with 16mm argon gap and soft coat low-E glass. Window Energy Rating to be Band C or better and to achieve U-value of 1.6 W/m<sup>2</sup>K. The door and window openings should be limited to 25% of the extension floor area plus the area of any existing openings covered by the extension.

## NEW AND REPLACEMENT DOORS

New and replacement doors to achieve a U-Value of 1.80 W/m<sup>2</sup>K. 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 IS O12543-1:2011 and Part K (Part N in Wales) of the current Building Regulations.

## ROOF LANTERN

Min U-value 1.2  
Lantern frame to consist of 100mm x 75mm as per manufacturer instructions.

## INTERNAL LIGHTING

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

## 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.

## 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. Intermitent 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.

## VENTILATION OF SOLID 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 1500mm<sup>2</sup> per metre run of perimeter wall or 500mm<sup>2</sup> 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 a radon barrier. Where required duct any existing air bricks through the new solid floor via 75mm diameter ducts connecting to new air brick placed in the new external wall.

## 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 guttering fitted to match existing white UPVC and 75mm down pipe fixed to fascia and walls all to suitable falls. Rain water disposal to existing surface water system.

## UNDERGROUND FOUL DRAINAGE

Underground drainage to consist of 100mm diameter UPVC proprietary pipe work to give a 1:40 fall. Surround pipes in 100mm pea shingle. Provide 600mm suitable cover (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: 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.

## ABOVE GROUND DRAINAGE

All new above ground drainage and plumbing to comply with BS EN 12056-2:2000 for sanitary pipework. All drainage to be in accordance with Part H of the Building Regulations. Wastes to have 75mm deep and 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 and vacuum traps to be used) Wash basin - 1.7m for 32mm pipe 3m for 40mm pipe Bath/shower - 3m for 40mm pipe 4m for 50mm pipe W/C - 6m for 100mm pipe for single W/C 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.

## PIPEWORK THROUGH WALLS

Where new pipework passes through external walls form rocker joints either side wall face of max length 600mm with flexible joints with short length of pipe bedded in wall. Alternatively provide 75mm deep pre-cast concrete plank lintels over drain to form opening in wall to give 50mm space all round pipe: mask opening both sides with rigid sheet material and compressible sealant to prevent entry of fill or vermin.

## BEAMS

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

## 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 40N/mm<sup>2</sup> and incorporating steel strands to BS 5896 to support loadings as 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.

## BASIC RADON PROTECTION

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

## EXISTING STRUCTURE

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.

## STRAPPING OF FLOORS

Provide lateral restraint where joists run parallel to walls, floors are to be strapped to walls with 1000mm x 30mm x 5mm galvanised mild steel straps or other approved in compliance with BS EN 845-1 at max 2.0m centres, straps to be taken across minimum of 3 joists. Straps to be built into walls. Provide 38mm wide x 14 depth solid noggin between joists at strap positions.

## FLAT ROOF RESTRAINT

200m x 50mm C24 grade timber wall plates to be strapped to walls with 1000mm x 30mm x 5mm galvanised mild steel straps at maximum 2.0m centres fixed to internal wall faces.

## OPENINGS AND RETURNS

An opening or recess greater than 0.1m<sup>2</sup> shall be at least 550mm from the supported wall (measured internally).

## 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

All walls constructed using stainless steel vertical twist type retaining wall ties built in at 750mm c/s horizontally, 450mm vertically and 225mm c/s 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.

## CAVITY S

Provide cavity trays over openings. All cavities to be closed at eaves and around openings using Themabate or similar non combustible insulated cavity closers. Provide vertical DPC's 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 abut the existing walls provide a movement joint with vertical DPC. All tied into existing construction with suitable proprietary stainless steel profiles.

## CAVITY BARRIERS

30 minute fire resistant cavity barriers to be provided at 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.

## 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. Joists to be lapped min 150mm and lead to be dressed 225mm to existing dwelling, etc. All work to be undertaken in accordance with the Lead Development Association recommendations.

## 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, BS1, NICEIC Certification Services or Zurich Ltd. An appropriate BS 7671 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.

## HEATING AND HOT WATER

Existing boiler to be retained after being checked by gas safety engineer. All additional radiators to be fitted with TRVs.

PROJECT	TITLE	CLIENT	DRAWING NUMBER	PROJECT NUMBER	REV	SCALE (@ A1)	DATE
25 Havengore Close, GT Wakering, Essex SS3 0PH	Unamed	Kevin Anderson		001			13/04/2020