

**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.

**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 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.

**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.

**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.

**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 Nulifire 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.

**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, with a concrete strength of 50 or 40 N/mm<sup>2</sup> 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 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. Common leaf lintels base plates should not be continuous and the lintel core to be insulated.

**TRENCH FOUNDATION**

Provide 750mm x 600mm trench fill foundations, concrete mix to conform to BS EN 206 and BS 8500-2. All foundations to be a minimum of 100mm 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 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.

**PIPES PASSING THROUGH TRENCH FOUNDATIONS**

The load-bearing capability of foundations must not be affected where services pass through.  
The pipe work should be sleeved and be provided with 'rocker pipes' at a distance of 150mm either side of the foundation concrete. The 'rocker pipes' should have flexible joints and be a maximum length of 600mm.  
Alternatively  
Pipework should pass through a suitably strengthened opening in the foundation, i.e. foundation shuttered and a provided with suitable lintel over the pipe allowing for sufficient space for movement to ensure that the drain is capable of maintaining line and gradient. Opening should be masked with granular backfill (pea shingle) around pipe.  
DPC to be provided as required by BCO.  
Advice from Building Control to be sought on suitability of pipe running through foundation before construction.

**PIPES PASSING THROUGH WALLS**

Walls above pipes passing through substructure walls to be supported on suitable lintel on semi-engineering bricks. Pipe to be provided with a 50mm clearance all round, opening to be masked with granular backfill (pea shingle) around pipe. DPC to be provided as required by BCO.  
Alternatively  
Where new pipework passes through external walls the pipe work 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.

**SOLID FLOOR INSULATION OVER SLAB**

To meet min U value required of 0.18 W/m<sup>2</sup>K  
P/A ratio 0.5  
Solid ground floor to consist of 150mm consolidated well-rammed hardcore. Blinded with 50mm sand blinding. Provide 150mm 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 Ecotherm Eco-Versal insulation. 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 22mm cable floor (underfloor floor heating discussed with building control). 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.

**GROUND SLAB CONSTRUCTION TO BE CONFIRMED WITH BUILDING CONTROL BEFORE CONSTRUCTION**

**PITCHED ROOF**

(imposed load max 0.75 kN/m<sup>2</sup> - dead load max 0.75 kN/m<sup>2</sup>)  
To achieve U-value 0.15 W/m<sup>2</sup>K  
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 on 25 x 38mm tanalised sw treated battens on breathable sarking felt to relevant BBA Certificate. Supported on 170 x 50mm grade C24 rafters at max 400mm centres. Rafters supported on 100 x 50mm treated sw wall plates. Allow min 20mm air space to allow for drape of breathable felt. Insulation to be 120mm Ecotherm Eco-Versal between rafters and 50mm under. Fix 12.5mm foil backed plasterboard (joints staggered) using galvanized plasterboard nails. Finish with 5mm skim coat of finishing plaster. Restraint strapping - 100mm x 50mm wall plate strapped down to walls, rafters to be strapped to walls and gable walls, straps built into cavity, across at least 3 timbers with noggins. All straps to be 1000 x 30 x 5mm galvanized straps or other approved to BSEN 845-1 at 2m centres.

**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 BELOW GROUND**

All new walls below ground to be constructed using blockwork compliant with BS EN 771 and suitable for below ground level or semi engineering brickwork. Walls to be built using 1:4 masonry mortar mix or equal approved specification to BS EN 1996-1-1. 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.

**FULL FILL CAVITY WALL WITH INTERNAL INSULATION**

To achieve minimum U Value of 0.18 W/m<sup>2</sup>K  
New cavity wall to comprise of 103mm suitable facing brick. Full fill the cavity with 100mm Rockwool Cavity insulation as manufacturer's details and provide 50mm PIR insulation over ci, e.g. Celotex GA4000 internally. Inner leaf constructed using 100mm lightweight block, 0.15 W/m<sup>2</sup>K, e.g. Celcon solar, Thermalite turbo. 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 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 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 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.

**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/m<sup>3</sup> - 6m.  
Dense concrete block - density exceeding 1,500kg/m<sup>3</sup> - 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.

**WARM FLAT ROOF**

(imposed load max 1.0 kN/m<sup>2</sup> - dead load max 0.75 kN/m<sup>2</sup>)  
To achieve U value 0.15 W/m<sup>2</sup>K  
Flat roof to be covering to be glass reinforced plastic (GRP) system with aa fire rating and a current BBA or other approved accreditation be laid in compliance with manufacturers details by flat roofing specialist, onto 22mm exterior quality plywood over 165mm Celotex XR4000 on sw firings to minimum 1 in 40 fall on sw treated 47 x 220mm C24 flat roof joists at 400mm ctrs to give a max span of 5.08m or as Structural Engineer's details and calculations. Underside of joists to have 12.5mm foil backed plasterboard and skim. Provide cavity tray to existing house where new roof abuts existing house. Provide restraint to flat roof by fixing of 30 x 5 x 1000mm ms galvanised lateral restraint straps at maximum 2000mm centres fixed to 100 x 50mm wall plates and anchored to wall.

**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

**INTERNAL STUD PARTITIONS**

100mm x 50mm softwood treated timbers studs at 400mm ctrs with 50 x 100mm head and sole plates and solid intermediate horizontal noggins at 1/3 height or 450mm. Provide min 10kg/m<sup>2</sup> density acoustic soundproof quilt tightly packed (eg. 100mm Rockwool or Isovol 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 plaster board with skim plaster finish. Taped and jointed complete with beads and stops

**WINDOWS AND DOORS**

**ROOF LIGHTS**

Min U-value of 1.6 W/m<sup>2</sup>K.  
Roof-lights to be double glazed with 16mm argon gap and soft low-E glass. Window Energy Rating to be Band C or better. Roof lights to be fitted in accordance with manufacturer's instructions with rafters doubled up to sides and suitable flashings etc.

**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 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**

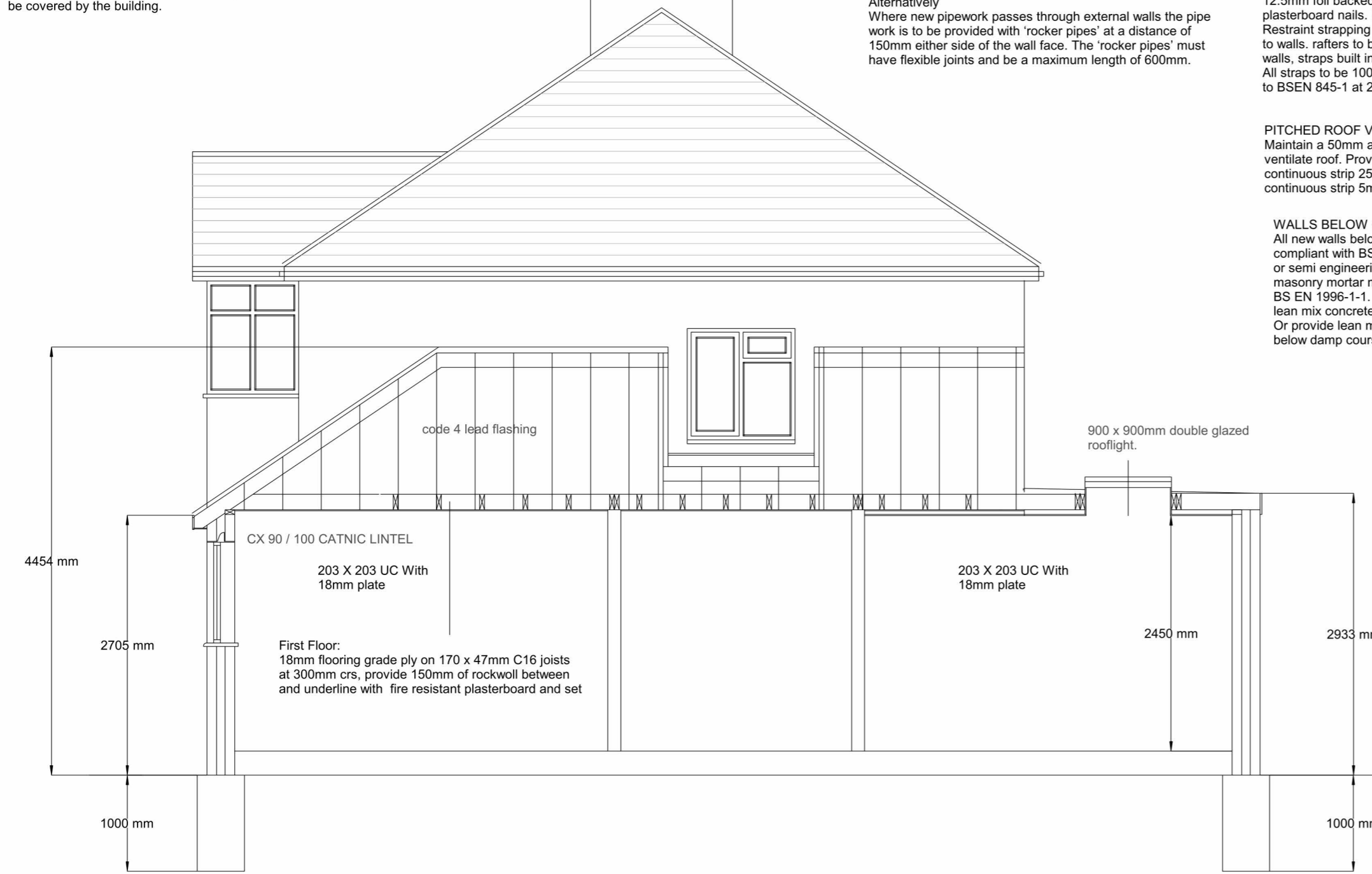
New and replacement windows to be double glazed with 16-20mm argon gap and soft coat low-E glass. Window Energy Rating to be Band B or better and to achieve U-value of 1.4 W/m<sup>2</sup>K. The door and window openings should be limited to 25% of the extension floor area plus the area of any existing openings covered by the extension.  
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 to be fitted with trickle vents to provide adequate background ventilation in accordance with Approved Document F.

**NEW AND REPLACEMENT DOORS**

New and replacement doors to achieve a U-Value of 1.4W/m<sup>2</sup>K. 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 6206, 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.

**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 IP17/011 and BS 5250:2011+A1:2016 Code of practice for control of condensation in buildings to be followed.

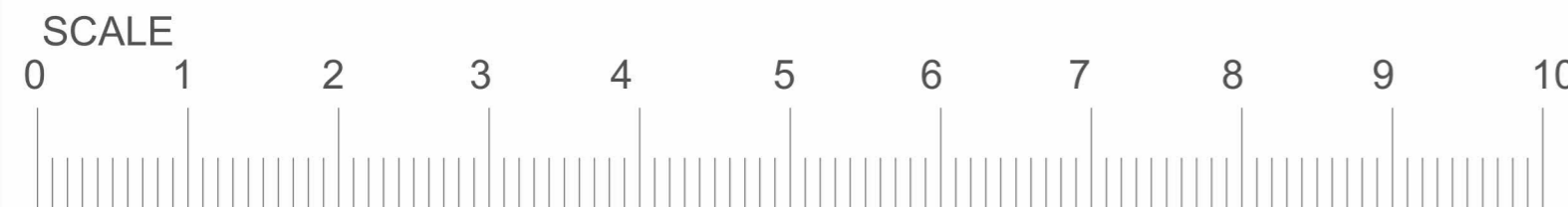



100mm half round guttering on pvc' u' fascias and soffits with fascia vents

Provide adequate lateral restraint straps, 2.0m c/c max, 1.2m long, 30 x 5mm and galvanised mild steel (plugged and screwed). (horizontal and vertical restraint straps)

The under floor ventilation should be equivalent to 1500mm<sup>2</sup> for each meter run of wall and provide cross ventilation to the whole area.

Provide 225mm clear cavity below dpc



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					<p>Scale: 1:50 @A2</p>	<p>Date: 12/12/2023</p>
			<p>ALL STRUCTURAL INFORMATION TO BE IN CONNECTION WITH STRUCTURAL ENGINEERS CALCULATION AND DRAWINGS</p>	<p>CDM Regulations 2007. Party Wall Act 1996, Clients and contractors are reminded that the project is within the scope of these regulations MBL Associates Ltd engaged as designers will not accept any liability for failure of these parties to carryout their duties as required by these statutes</p>	<p>Drawing No</p>	<p>OR10/004</p>