BUILDING REGULATIONS NOTES

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.
Or;
(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:
- **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 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.

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/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 manufacturer's standard tables. Stop ends, DPC trays and weep holes to be provided above all externally located lintels.

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 1000mm x 30mm x 5mm galvanised mild steel horizontal straps or other approved to BSEN 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 30mm x 5mm x 1000mm galvanized metal straps or other approved to BSEN 845-1 at maximum 2m centres.

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 ¾ depth solid noggins between joists at strap positions.

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

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 constructed in accordance with 2010 Building Regulations A1/2 and BS 8004:2015 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.

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 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 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.

SOLID FLOOR INSULATION UNDER SLAB
To meet min U value required of 0.22 W/m²K
Solid ground floor to consist of 150mm consolidated well-rammed hardcore. Blinded with 50mm sand blinding. Provide a 1200 gauge polythene DPM, DPM to be lapped in with DPC in walls. Floor to be insulated over DPM with 75mm Kingspan Kooltherm K103.
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, provide 100mm ST2 or Gen2 ground bearing slab concrete mix to conform to BS 8500-2 over VCL. Finish with 65mm sand/cement finishing screed with light mesh reinforcement.
Where drain runs pass under new floor, provide A142 mesh 1.0m wide within bottom of slab 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 to terminate at new 65mm x 215mm air bricks built into new cavity wall with 100mm concrete cover laid under the extension. Ducts to be sleeved through cavity with cavity tray over.

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
To achieve minimum U Value of 0.28W/m²K
New cavity wall to comprise of 105mm facing brick to match existing. Full fill cavity with 110mm Rockwool Cavity insulation as manufacturer's details. Inner leaf to be 100mm block K value 1.13, e.g. (Armstrong dense, Masterblock Monacrete 100s). Internal finish to be 12.5mm plasterboard on dabs. Walls to be built with 1:1:6 cement mortar.

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 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 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.

WARM FLAT ROOF
(imposed load max 1.0 kN/m² - dead load max 0.75 kN/m²)
To achieve U value 0.18 W/m²K
Flat roof to be covering to be glass reinforced plastic (GRP) system with as 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 120mm Celotex XR4000 on sw firings to minimum 1 in 80 fall on sw treated 47 x 145mm C24 flat roof joists at 400mm ctrs to give a max span of 3.22m 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.

PITCHED ROOF INSULATION AT CEILING LEVEL
Pitch 22-45° (imposed load max 0.75 kN/m² - dead load max 0.75 kN/m²)
To achieve U value of 0.16 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 sarking felt 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. Insulation at ceiling level to be 150mm Rockwool insulation laid between ceiling joists with a further 170mm layer over joists (cross direction).
Construct ceiling using sw joists at 400mm centres, finished internally with 12.5mm plasterboard and min 3mm thistle multi-finish 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.
Restraint strapping - 100mm x 50mm 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 galvanized straps or other approved to BSEN 845-1 at 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 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. Provide min 10kg/m³ density acoustic soundproof quilt tightly packed (eg. 100mm Rockwool or Isowool 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.

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 FireLine 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 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 3 no. joists. Straps to be built into walls. Provide 38mm wide x ¾ depth solid noggins between joists at strap positions.

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
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 and the Domestic Building Services Compliance Guide.

HEATING
Extend all heating and hot water services from existing and provide new TRVs 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.

SMOKE DETECTION
Mains operated linked smoke alarm detection system to BS EN 14604 and BS 5839-6:2019 to at least a Grade D 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.

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 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 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/m²K. 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.

ESCAPE WINDOWS
Provide emergency egress windows to any newly created first floor habitable rooms and ground floor inner rooms. Windows to have an unobstructed openable area that complies with:
- **minimum height of 450mm and minimum width of 450mm.**
- **minimum area 0.33m².**
- **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.

BACKGROUND AND PURGE VENTILATION
Background ventilation - Controllable background ventilation via trickle vents in compliance with Approved Document F within the window frame to be provided to new habitable rooms at a rate of min 5000mm²; and to kitchens, bathrooms, WCs and utility rooms at a rate of 2500mm²
Purge ventilation - New Windows/rooflights to have openable area in excess of 1/20th of their floor area, if the window opens more than 30° or 1/10th of their floor area if the window opens less than 30°
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.

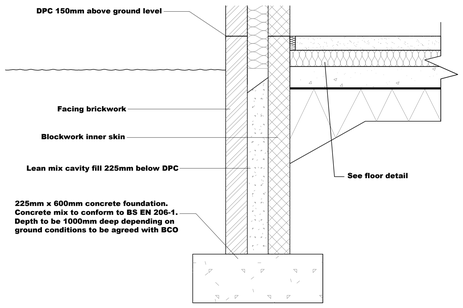
EXTRACT TO W/C
W/C to have mechanical ventilation ducted to external air with an extract rating of 15l/s operated via the light switch. Vent to have a 15min overrun if no window in room. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic Ventilation Compliance Guide. 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 litres / sec 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. Ventilation provision in accordance with the Domestic Ventilation Compliance Guide. 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.

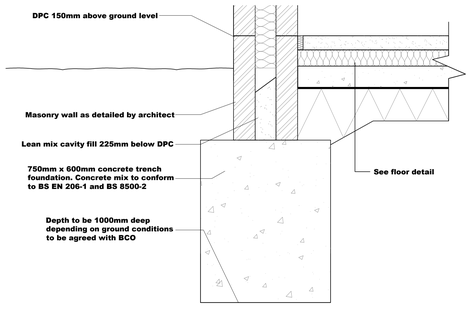
EXTRACT TO UTILITY ROOM
To utility room provide mechanical ventilation ducted to external air capable of extracting at a rate of 30 litres per second. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic Ventilation Compliance Guide. 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 60l/sec or 30l/sec 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. Ventilation provision in accordance with the Domestic Ventilation Compliance Guide. 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.

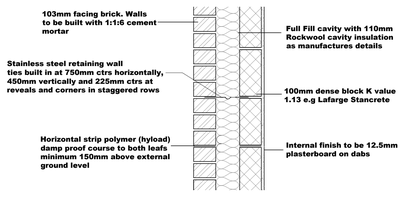
PITCHED ROOF VENTILATION
Maintain a 50mm air gap above insulation in the roof pitch to ventilate roof. Provide opening at eaves level at least equal to continuous strip 25mm wide and opening at ridge equal to continuous strip 5mm wide to promote ventilation.



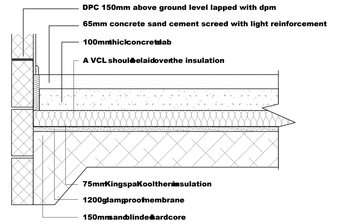
Single Storey Foundation Detail
Scale 1:10



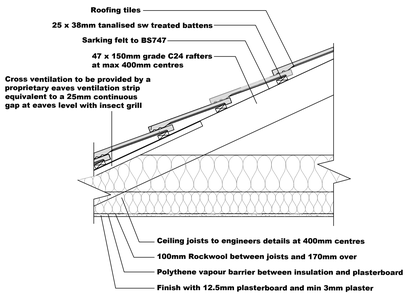
Two Storey Foundation Detail
Scale 1:10



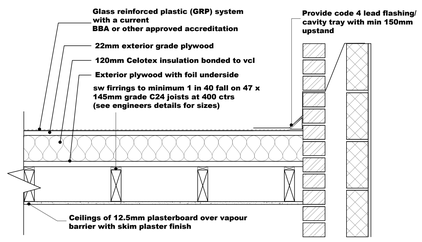
Typical Cavity Wall Detail
Scale 1:10



Typical Ground Floor Detail
Scale 1:10



Typical Pitched Roof Detail
Scale 1:10

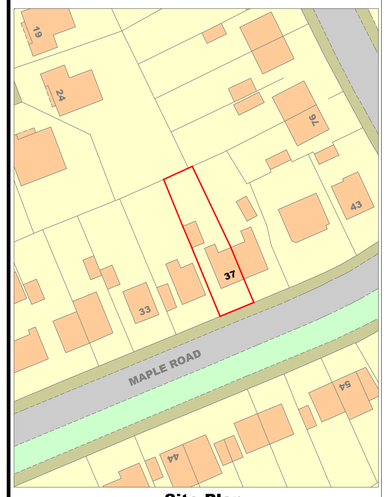


Typical Flat Roof Detail
Scale 1:10

Notes:



Location Plan
Scale 1:1250



Site Plan
Scale 1:500

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SCALE
1:50

Revision Details

Project / Title:

Proposed Single Storey Side / Rear Extension and Two Storey Side Extension

Client:

Mr & Mrs Knoxx,
37 Maple Road
Brooklands, M23 9HN

Drawn: MJD	Scale: As Shown	Date: 10.05.21
AutoCAD Location	D:\BentleyP&PM\Planning Apps\	

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Bentley
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