

1.0 FOUNDATIONS

- Standard concrete strip foundations are to be a minimum 600mm wide x 225mm deep set at a formation level of at least 900mm below the existing ground level. The final size and depth of the foundations are to be determined on site when the ground is exposed by the main contractor for inspection by the local building control officer.

2.0 CAVITY WALLS

- Cavity walls in the sub-structure up to ground level are to be constructed using class 'B' engineering bricks, to BS EN771, laid in stretcher bond bedded on a 1:3 cement/sand mortar.
- The cavity is to be filled with a lean mix concrete up to 75mm below ground level and every third perpend in the first course above ground level is to be left open for drainage. Damp proof course is to be set at 150mm above ground level, positioning the cavity fill 225mm below the DPC.
- DPC to be lapped with the damp proof membrane of the floor slab. DPC must not project into the wall cavity.
- Cavity walls in the superstructure are to be constructed with a minimum 100mm thick outer leaf in brick facings, a 100mm wide cavity filled with "Knauf 100mm DriTherm Cavity Slab 32 Ultimate", an inner leaf of 100mm thick "Plasmor Fibolite 3.6N Lightweight Aggregate Blocks", all in gauged mortar (1:1:6) finished with a 12.5mm thick plasterboard 'Dot & Dabbed' to the inner leaf with a 3mm plaster finish to provide a 'U' value of 0.26 W/M²/°C.
- The cavity is to be tied with stainless steel wall ties to current DD140 specifications at vertical spacings of 450mm with horizontal spacings of no more than 750mm. Wall ties within 225mm of structural openings are to be spaced no greater than 300mm. All wall ties should be embedded to a minimum depth of 50mm.
- Walls of new extensions are to be tied to the existing structure using crocodile starters.
- The existing wall of the property is to be cut adjacent to the new extension wall to provide a continuous cavity between both.
- Cavity wall insulation is to lap the floor and roof insulation.

3.0 INTERNAL WALLS

- Load bearing internal walls are to be a minimum 100mm thick constructed from either facing bricks or concrete blocks (min 3.5N/mm²) in gauge mortar on approved foundations. Walls to be finished with a plasterboard and 3mm skim coat.
 - Non load bearing walls are to be constructed from 100mm x 39mm softwood studs at 400mm centres with 100mm x 39mm softwood nogginns at 900mm centres. All voids are to be filled with mineral wool insulation with a minimum density of at least 10kg/M² and both sides of the studs covered with a minimum 9.5mm plasterboard with 3mm skim finish.
- ### 4.0 LINTELS
- Standard duty lintels for a typical 300mm cavity wall in brick & block construction are to be **Catnic CG90/100** in a sand/cement mortar with minimum end bearings of 150mm.
 - Where larger openings are needed, heavy duty lintels should be used from **Catnic** or similar approved supplier. Expert advice should be sought when specifying larger span lintels to ensure they are fit for purpose.
 - If structural steelwork is needed for larger openings with a greater load bearing capacity then structural calculations and designs will be provided by a qualified structural engineer to include all foundation details, padstones, steel sizes and connections.

5.0 DRAINAGE BELOW GROUND

- All new waste to connect to the existing foul drainage system on site.
- The exact location and flow of the existing drains are to be determined on site and all alterations are to be agreed with the building control officer prior to changes being made.
- New drains are to be designed to BS EN752 and are to be connected to the drainage system as shown on the floor plans **or** as agreed with the on site building inspector, using 110mm Osma underground pipe to BS4660 & BS5491 (or similar), laid on a granular bed material to BS892 table 4. Where rigid pipes of less than 150mm diameter have less than 300mm cover, the pipes should be encased in 150mm concrete. Where drainage runs are within 1000mm of foundations the drain trench should be back filled to foundation level with concrete.
- Any pipe penetrating through a structure below ground level should have a lintel above the opening and a settlement gap of 50mm. Corkpaw or similar flexible material should be inserted to provide protection to the drain below.
- All gravity drainage should have a minimum fall of 1:40 to provide self cleaning velocities.
- All gullies to be back inlet trapped with rodding facility unless otherwise stated.
- Inspection chambers of up to 900mm are to be made from UPVC or GRP material or constructed out of 150mm concrete base slab with benching formed in 1:2 cement mortar to 1:2 gradient, troweled smooth with all channels branches and collecting bends. The walls are to be 225mm, class 'B' engineering bricks to BS3921 to the required invert depth. 150mm concrete cover slab with haunching forming the cover level complete with frame and lid.
- 110mm PVC gutters & 75mm PVC downpipes to existing gullies. Fascias and soffits to match existing where possible.

6.0 GROUND FLOOR CONSTRUCTION (Concrete)

- Ground floor to be constructed using 50mm sand/cement screed on a 125mm thick concrete slab with A193 anti crack mesh 40mm from the top, sat on 120mm thick **Jablite, Jabfloor Premium 70** polystyrene insulation on a 1200g damp proof membrane and 150mm thick well consolidated hardcore to give a 'U' value of 0.22 W/M²/°C.

7.0 CEILING CONSTRUCTION

- Ground floor ceilings to be insulated using a minimum 100mm thick mineral wool and finished with a single layer of 12.5mm plasterboard with a 3mm skim finish.
- First floor ceiling to be constructed as part of the roof structure, insulated using a minimum 270mm thick mineral wool and finished with a single layer of 12.5mm plasterboard with a 3mm skim finish. Mineral wool insulation to be placed in two layers at right angles to each other.
- Vaulted ceilings to be constructed as part of the roof structure and insulated using **Kingspan** roofboard and finished with a single layer of **Kingspan** insulated dry lining board complete with a 3mm plaster skim. See enlarged detail for exact construction.

8.0 PITCHED ROOF CONSTRUCTION (Rafters)

- Roof to be constructed using 195 x 47 x C16 rafters at no more than 600mm centres as detailed in the Eurocode 5 Span Tables 4th Edition. Rafters are to be birds mouthed on to the wall plate at the soffit end and secured to a 200mm x 50mm bearer using timber to timber joist hangers. New bearer to be resin bolted to the existing wall of the property at 600mm centres.
- Roof insulated as per enlarged details to provide a maximum u-value of 0.16 W/M²/°C.
- 25mm x 50mm tiling batons to be used, no less than 1200mm long.
- 100mm x 50mm softwood timber braces to be fixed across all trusses and ceiling joists at 1000mm centres to avoid lateral spread.
- All bracing to be held in place using 90mm long galvanised nails.
- 30mm x 5mm straps to be fixed to the longitudinal bracing at each truss and rafter. Straps to be fixed using 75mm long galvanised nails.
- To prevent the uplift of the roof vertical strapping of at least 1000mm in length should be fixed to the rafter and wall at no more than 2000mm intervals.
- Roof to be covered with **WEBUV15** breathable membrane, (or similar approved product), from **Web Dynamics Ltd.** to allow sufficient ventilation.
- Ridge and hip tiles are to be bedded in place with mortar as well as a suitable mechanical fixing.
- All single-lapped roof tiles must be mechanically fixed to the battens below. All perimeter tiles are to be secured to the battens with a minimum of two fixings.
- Roof to be fixed in accordance with BS5534.

9.0 VENTILATION

- Windows to habitable rooms are to provide adequate purge ventilation. For windows that open 30° or more, the opening part of the window should be at least 1/20th of the floor area of the room. For windows opening between 15° and 30°, the opening part of the window should be at least 1/10th of the rooms floor area. Windows that open less than 15° are not suitable for purge ventilation.
- Background ventilation should be provided to all habitable rooms by means of trickle vents across the top of window / door heads to give a total area of 10,000mm². A single routed opening of 20mm x 500mm (or multiple smaller openings) will achieve this.
- Background ventilation should be provided to all non-habitable rooms by means of trickle vents across the top of window / door heads to give a total area of 5,000mm². A single routed opening of 20mm x 250mm (or multiple smaller openings) will achieve this.
- Extract fans are required to WC, Bathrooms & En-Suites rated at 15 litres per second. Fans to be located within 400mm of the ceiling and at least 500mm from background ventilation. Fans to be fitted with a minimum 15min overrun and be operated via the light switch.
- Extract fans are required to Kitchens rated at 60 litres per second or 30 litres per second if located adjacent a cooker hob. Fans to be located within 400mm of the ceiling and at least 500mm from background ventilation.
- Extract fans are required to Utilities rated at 30 litres per second. Fans to be located within 400mm of the ceiling and at least 500mm from background ventilation.
- Through ventilation to the roof to be provided using soffit vent strips or low level roof vent tiles.

10.0 GLAZING

- All new double glazed door and window units that have a glass line at least 800mm from finished internal floor level can be manufactured using a minimum 6mm float glass, a 20mm air gap and a **Pilkington K** Glass to provide a maximum 'U' value of 1.6 W/M²/°C.
- Where the glazing line is below 800mm from finished floor level or where windows / doors are in critical locations the glass must be either toughened or laminated safety glass and the double glazed unit constructed to provide a maximum 'U' value of 1.6 W/M²/°C.
- Thermabate** or similar approved insulated cavity closers required to all door and window openings to prevent the ingress of water.
- All new doors and windows to be fitted with trickle ventilators to meet background ventilation requirements.
- New escape windows must be ladder accessible. The height to the bottom of the clear opening must not exceed 100mm above the internal finished floor level. The minimum clear opening must be at least 0.33M² in size. A minimum clear opening width & height of 450mm will achieve the 0.33M² requirement. It is good practice to create an escape window with a clear opening of at least 450mm wide x 735mm high.

11.0 HEATING

- All new radiators are to be fitted with thermostatic valves to meet zoning requirements.
- A qualified heating engineer should determine radiator sizes based on the volume of area to be heated and should consider the capacity of existing / new boilers when calculating the number of radiators required.

12.0 FIRE SAFETY

- Interlinked smoke detectors are to be fitted in critical locations within 7.5 meters of any habitable rooms on ground, first and attic floors (when converted to habitable rooms) and within 3 meters of all bedrooms. Smoke detection system to be mains operated and have a battery back up.

13.0 AIR LEAKAGE

- Air leakage will be limited by sealing all element junctions in accordance with the details published by the BRE in 'thermal insulation avoiding risks.

14.0 ELECTRICAL

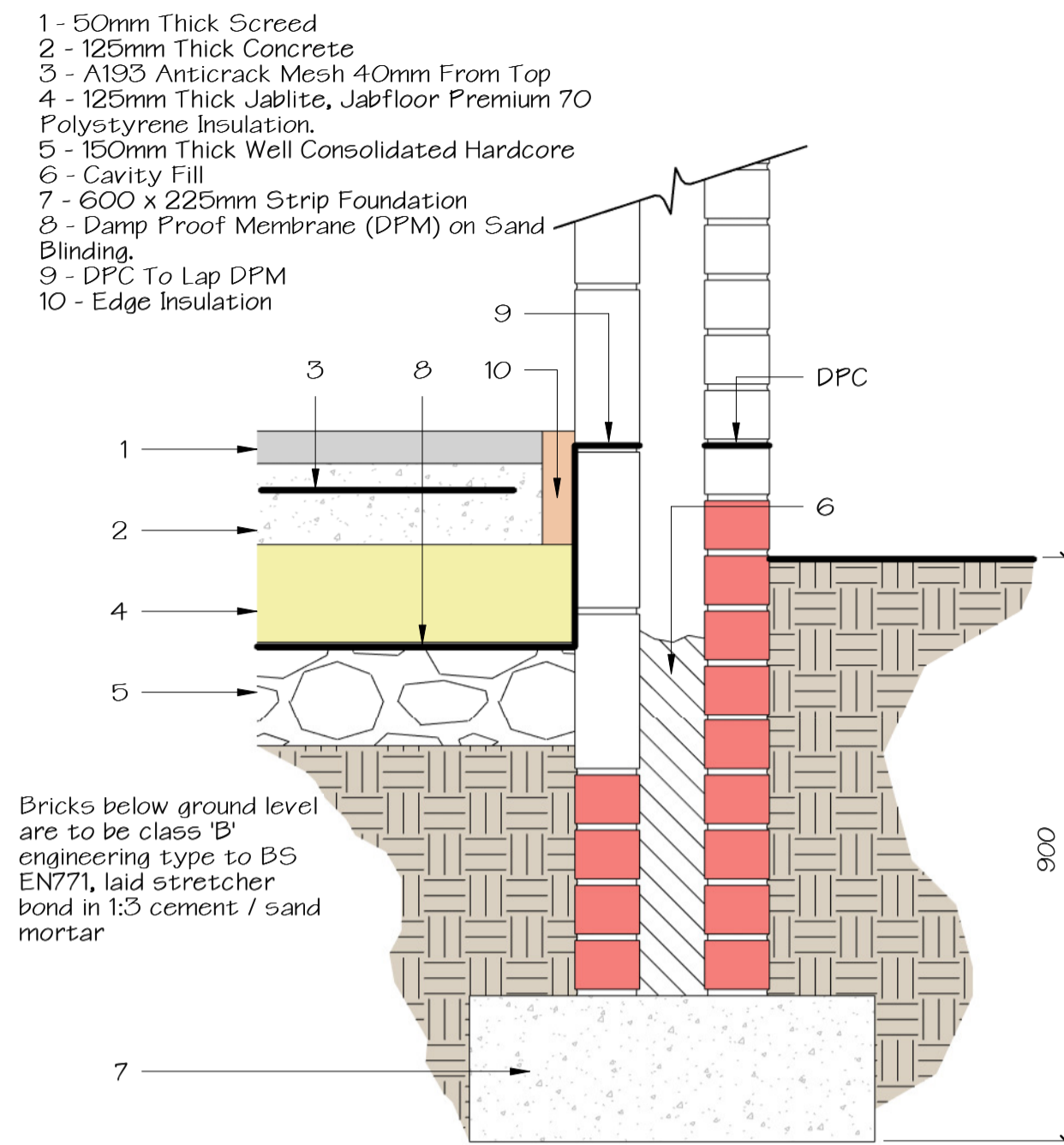
- All electrical work is to be designed, installed, inspected and tested in accordance with the latest version of BS 7671 or an equivalent standard. These installation works are to be undertaken with an electrical self certificate scheme or alternatively by a suitably qualified person with a certificate of compliance produced by that person and handed to building control upon completion of the works.
- Low energy light fittings are to be provided in areas affected by the building works but are not required in storage areas, cupboards or wardrobes. These should number at least 75% of all the fittings, i.e. 3 in 4, within the main dwelling space. Low energy fittings should be capable of accepting lamps with a luminous efficacy greater than 45 lamp lumens per circuit-watt and a total output greater than 400 lamp lumens.
- Light fittings whose supplied power is less than 5 circuit-watts are excluded from the overall count of the total number of light fittings.
- Electric switches and sockets are to be positioned between 450mm and 1200mm from floor level to satisfy approved document 'M' regulations.
- Any new electrical consumer units should be mounted so that the switches are positioned between 1350mm and 1450mm from floor level.

15.0 BUILDING NEAR TREES

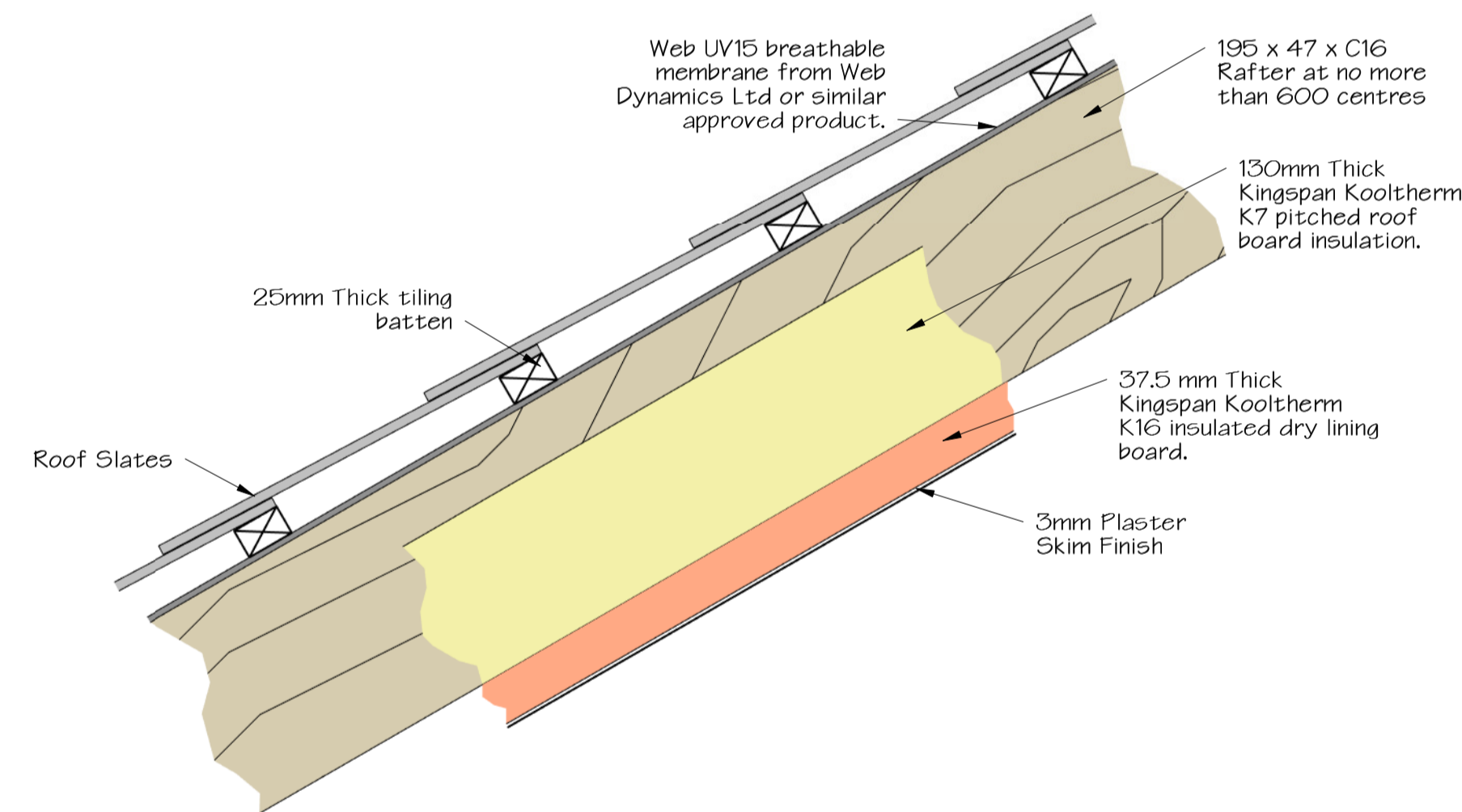
- If there are no trees within the zone of influence, then the foundation depths and construction methods as detailed in the foundation notes can be used.
- If there are trees lying with the zone of influence then a foundation calculation should be carried out to determine the depth of foundation needed. In certain cases a tree survey may need to be submitted to building control to determine the depth and type of foundation to be used.

16.0 SECURITY

- All easily accessible door units, including garage doors, that provide access into the dwelling should be secure door-sets manufactured to a design that has been shown, by test, to meet the security requirements of British Standards publication PAS 24:2012 or designed and manufactured in accordance with appendix B from approved document 'Q'. Letter plates, where provided, should have a maximum aperture of 260mm x 40mm and be located to hinder anyone attempting to remove keys with sticks and/or insert their hand, by incorporating a flap or other restrictive feature.
- The main entrance door to the property should have a door viewer, unless other means exist, to see callers such as a clear glass vision panel within the door leaf or a window next to the door. The same door should have a chain or limiter fitted.
- All door & window frames should be mechanically fixed to the brickwork in accordance with manufacturers recommendations.
- Ground floor windows and accessible roof windows to single storey elements should be secure windows made to a design that has been shown, by test, to meet the security requirements of British Standards publication PAS 24:2012 or satisfying other standards as detailed in paragraph 2.2 from approved document 'Q'.



1 Foundation Detail (Concrete Floor) 1:10



2 Section Through Vaulted Ceiling 1:5

REV	DESCRIPTION	BY	DATE
-----	-------------	----	------

PROJECT : Single Rear Extension

CLIENT : Mr & Mrs Richmond

ADDRESS : 20 Dene Bridge Row, Chilton

DRAWING TITLE : Building Regulations

DH Drawings

Design & Build Services Ltd.

DH Drawings Ltd.
3 Raby Gardens,
Shildon,
County Durham,
DL4 1NF

☎ : 01388 774876
🌐 : www.dhdrawings.com
✉ : info@dhdrawings.com

@DHDrawings

Find us on facebook

DRAWN	DH	DATE	June 2022
SCALE	As indicated		
		2762 - 6	