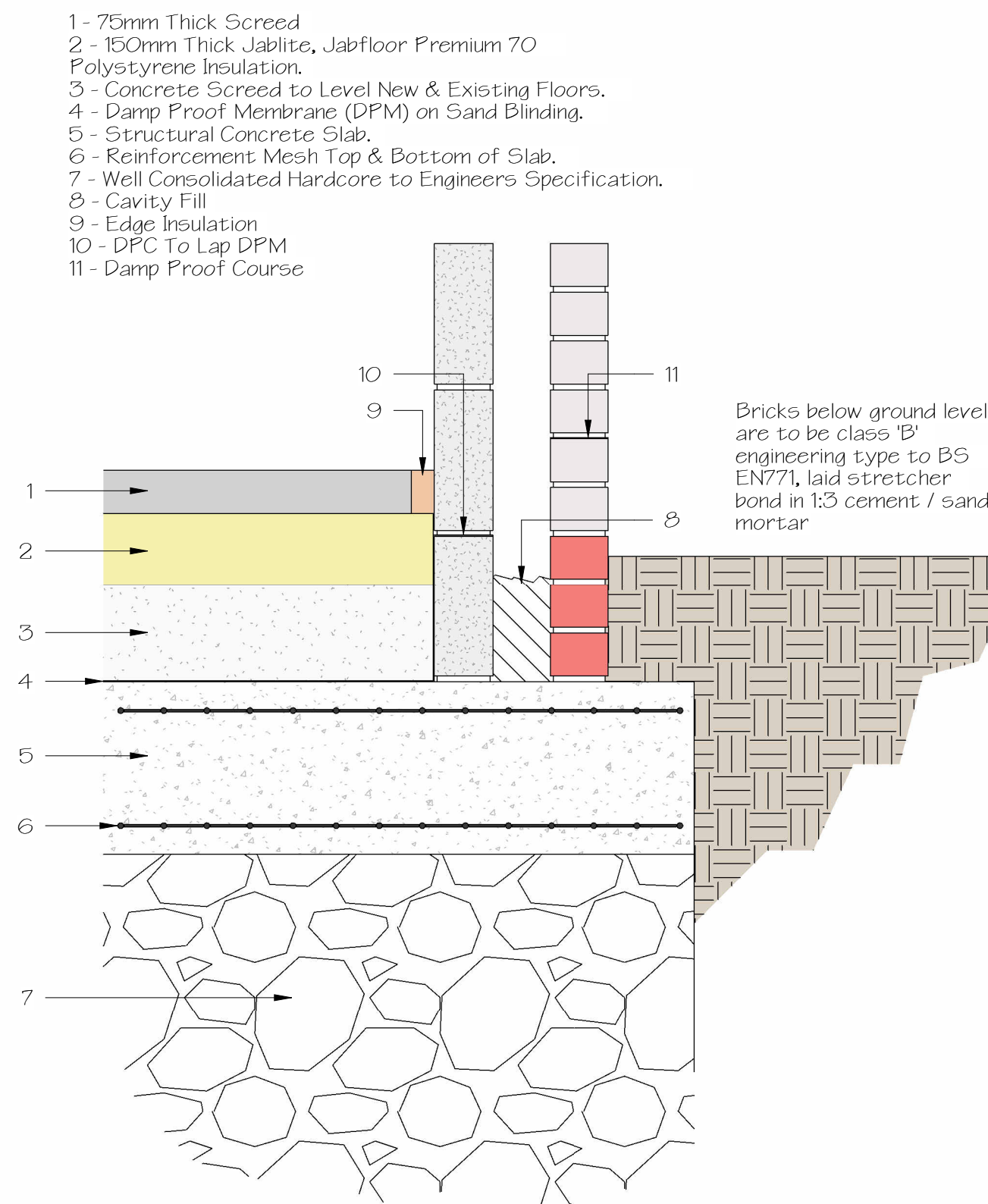


1.0 FOUNDATIONS

- A raft foundation will be required due to the proximity of the Leylandii trees in the neighbouring property. Standard strip foundations for a Leylandii tree at a distance of 2mtrs is approximately 2400mm deep. Structural engineer to provide calculations for the raft design.



NOTE : RAFT TO BE DESIGNED BY STRUCTURAL ENGINEER AND APPROVED BY BUILDING CONTROL PRIOR TO COMMENCEMENT ON SITE.

1 Foundation Detail (Slab Raft) 1:10

2.0 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 & BS5481 (or similar), laid on a granular bed material to BS592, 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. Corkpack 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 300mm 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.

3.0 CAVITY WALLS (Brick / Block)

- 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 perpendicular in the 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 "90mm thick Celotex Thermoclass Cavity Wall 21", with an inner leaf of 100mm thick "Aerated Standard Blocks (0.15 lambda)", all in gauged mortar (1:1:6) finished with a 12.5mm thick plasterboard on 5mm 'dabs' to the inner leaf with a 3mm plaster finish to provide a U value of 0.18 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.

4.0 GROUND FLOOR CONSTRUCTION (Concrete)

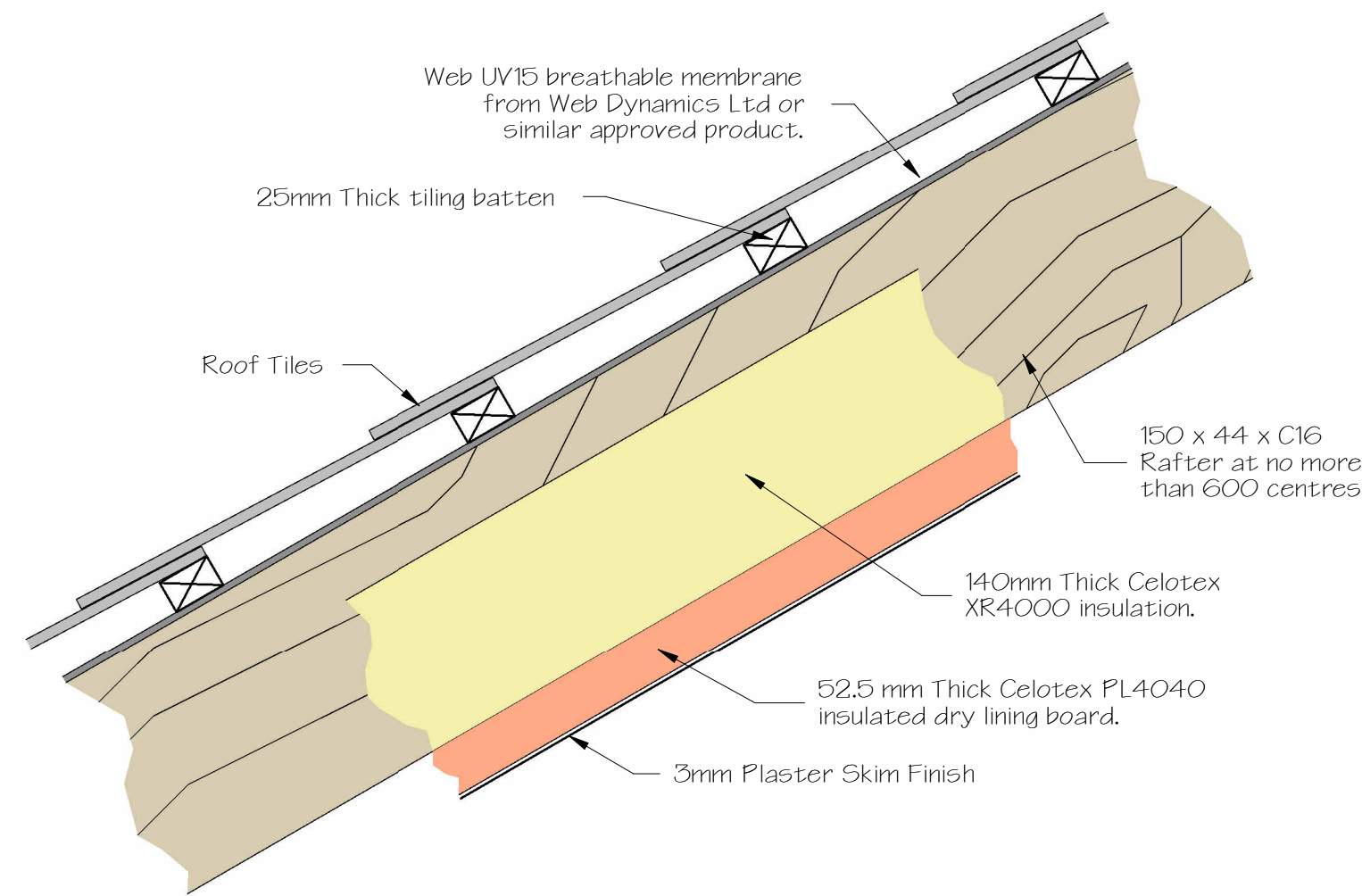
- Ground floor to be constructed using 50mm sand/cement screed on a 150mm thick concrete slab with A193 anti crack mesh 40mm from the top, sat on 150mm thick Jablite, Jabfloor Premium 70 polystyrene insulation on a 1200g damp proof membrane and 150mm thick well consolidated hardcore to give a U value of 0.18 W/M²/°C. P/A ratio calculated as 0.94.

5.0 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.

6.0 CEILING CONSTRUCTION

- Vaulted ceilings to be constructed as part of the roof structure and insulated using 140mm thick Celotex XR4000 insulation between the rafters with a layer of 52.5mm thick Celotex PL4040 insulated dry lining board under the rafters, complete with a 3mm plaster skim.



2 Section Through Vaulted Ceiling 1:5

7.0 PITCHED ROOF CONSTRUCTION (Rafters)

- Roof to be constructed using 150 x 44 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 minimum u-value of 0.15 W/M²/°C.
- 25mm x 50mm tiling battens 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.

8.0 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 38mm softwood studs at 400mm centres with 100mm x 38mm softwood noggin at 900mm centres. All voids are to be filled with mineral wool insulation with a minimum density of at least 10Kg/M³ and both sides of the studs covered with a minimum 9.5mm plasterboard with 3mm skim finish.

9.0 GLAZING

- All new double glazed doors, windows and Dormer windows 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 minimum U value of 1.4 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 minimum U value of 1.4 W/M²/°C.
- Specialist rooflight such as Velux Windows to provide a minimum U value of 2.2 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 1100mm 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.

10.0 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. For replacement windows the purge ventilation should be equal to or better than the existing condition.
- 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 8,000mm², increasing to 10,000mm² for dwellings with more than one floor. 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 4,000mm². A single routed opening of 20mm x 250mm (or multiple smaller openings) will achieve this.
- New windows replacing those that currently have no background ventilation should be supplied with background ventilation as detailed in the note above.
- 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.

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 75 lamp lumens per circuit-watt and a total output greater than 400 lamp lumens.
- Localised controls are to be provided to allow for separate control of lighting in each space or zone, alternatively an automatic control can be installed.
- Automatic controls should be capable of switching the lights of in daylight and where luminous efficacy is 75 light source lumens or less the automatic control is to switch off the lights when the area becomes unoccupied.
- Where luminous efficacy is greater than 75 light source lumens, manual control is acceptable.
- All new external lighting is expected to meet both criteria above.
- 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 within 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 SANITATION AND HOT WATER SAFETY

- All new hot water taps / controls to hand wash basins, baths, sinks, showers and bidets are to be positioned on the left hand side of the equipment and clearly identified.
- For new build properties all hot water supplies to hand wash basins, sinks, baths, showers and bidets are to be fitted with an anti-scald device limiting the temperature of the water to a maximum of 48°C. Anti-scald devices can be in the form of an in-line thermostatic valve on the hot water pipe or a specialist mixer tap with built in thermostatic controls.
- For alterations to existing properties where the introduction of new hot water supplies to bathrooms, shower rooms, toilets, kitchens, utilities and en-suites occur it is good practice to introduce such anti-scald devices as described above.

17.0 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'.

REV	DESCRIPTION	BY	DATE
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PROJECT : Single Storey Side Extension

CLIENT : Mr & Mrs Vacher

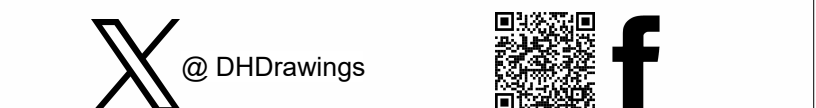
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DRAWING TITLE : Building Regulations



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SCALE	As indicated		
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