

Building Regulations/General Construction

Foundation line loads / point loads to be calculated, foundation design, dimensioning and detailing by a suitably qualified structural engineer. Deep strip concrete foundations to be dug to suitable bearing subsoil of suitable bearing capacity. Reference should be made to the structural engineer's assessment using the ground investigation report and assessment of nearby trees and potential soil shrinkage issues. Bearing strata to be visually inspected and determined in-situ with building inspector and structural engineer. Excavate for and construct new concrete footings in accordance with structural engineer's details and associated specification sheets. Footings to be located centrally under new walls unless specified otherwise by engineer. Full foundation details including reinforcement, bearing depth and tie in detail to be advised on site by structural engineer. Min. void dimension formers of compressible material to be used to the side of ground beams and foundations in high heave potential locations, this is to be adhered to particularly in clay soils, volume potential to be assessed and min clearance given ranging from min. 0mm for low potential to 35mm for high potential. Trees on the site – The presence and impact of the trees / hedges on site must be accounted for by the Structural Engineer in his design for the foundations, underground drainage, service routes and substructure.

Service Intakes – Standard 25mm MDPE Domestic Mains water normally laid at a depth of between 0.75m and 1.35m from finish ground level to rise to intake through slab to be ducted and fully insulated / sealed and bonded to DPM all in full accordance with the water authorities' requirements. Soil and ground water samples should be taken and tested in which the water service is laid within to allow in remediation measures / alternative barrier pipe material selections be made to maintain a safe water supply. Reference should also be made to the radon risk exposure potential in the site location and requirements for a suitable barrier pipe in risk areas. (Refer to www.ukradon.org) for risk potential and BRE 211:2015 for required specific site measures.

All cables and pipework routing from the rear of the Electric consumer meter box are to be fully sealed around. No air gaps are to be present. Electric consumer meter box to be located within the standard 1.8m tail distance to the Consumer Switch box location.

Walls below dpc – 100mm 7N frost resistant block inner leaf, 100mm cavity and 100mm 7N frost resistant block outer leaf. Alternatively use Thermalite T&G Trench blocks in accordance with the structural engineers' details. Outer leaf from DPC down to min two courses below ground level to be red engineering bricks. Leaves tied together using min. 225mm long stainless steel wall ties as recommended by the manufacturer as suitable for this application, set with min. 62.5mm embedment in each leaf. Ties to be installed at 750mm centres horizontally and 450mm centres vertically staggered. Cavity to be backfilled with lean mix concrete (1:12) to a min. of 225mm below DPC. Upper surface of lean mix to be angled so as to shed moisture to the outer leaf. All intermediate span sleeper walls for beam and block flooring to be honeycomb pattern to allow full cross void ventilation through the void. Cranked underfloor ventilators to each have an equivalent ventilation area of 6,000mm2 and coursed to suit the construction details. Underfloor vents to be attached to an air brick to terminate to external air and spaced to achieve an overall minimum linear ventilation area of 1,500mm2 vent area per metre run of wall. All drains and services passing through substructure walls to have min 50mm clearance all around. Substructure walls should have precast concrete lintels over as required in accordance with Engineer's details and protect and mask around openings in accordance with diagram 7b of Approved Document H 2010 editions (incorporating 2015 amendments).

External walls 102.5mm facing brick outer leaf, type, colour, finish and bond TBC, 150mm cavity fully filled with 150mm Dritherm 32 full-fill insulation batts U=0.18 w/m2k, all built in as work proceeds in strict accordance with manufacturer's instructions, 100mm lightweight, loadbearing insulating blockwork, strength to SE specification. Wall insulation to continue down to 150mm below top surface of floor insulation to ensure effective thermal lap. All perpend and bed joints to be fully filled. Leaves tied together using min. 275mm long stainless-steel wall ties as recommended by the manufacturer as suitable for this application, set with min. 62.5mm embedment in each leaf. Ties to be installed at 750mm centres horizontally and 450mm centres vertically, staggered. Additional wall ties to be installed at 225mm vertical centres within 300mm of all unbonded reveals. All wall ties should be installed so that they slope towards the outer leaf when embedded in mortar joints.

Horizontal damp proof course (DPC) to be installed at base of all walls (both leaves) minimum 150mm above adjacent ground level. DPC to be Caviroll Premium solid polyethylene with grip grid surface (conforming to BS6515:1984) by 'Cavity Trays Ltd' or equal approved installed in strict accordance with manufacturer's recommendations.

Proprietary cavity trays above all openings (doors, windows, meter boxes etc), where not protected by deep eaves overhangs, by 'Cavity Trays of Yeovil' or equal approved installed in strict accordance with manufacturer's recommendations. Trays to continue minimum 150mm beyond lintel ends and to have stop ends as recommended by the manufacturer. Perpend to be left open at 450mm horizontal centres (minimum 2no) to full length of tray and to have proprietary weephole inserts installed.

Timloc Thermo-loc FR, fire-rated Insulated cavity closers to jambs and sills of all openings. Closers to suit cavity (150mm or greater up to 300mm – giving a min. thermal bridging resistance of 0.77w / m K). Closers to be installed in strict accordance with manufacturer's recommendations.

Movement joints to all brick walls at maximum 12m centres and blockwork at maximum 6m centres (and at points where there are significant changes in wall height). Proprietary jointing system (debonding sleeve ties) to be used, by Ancon or equal approved installed in strict accordance with manufacturer's recommendations. Backers and sealants to be installed as recommended by manufacturer.

For 100mm cavity walls use a low linear thermal transmittance cavity lintel (Psi value 0.05 W / m k or less), to be installed over new openings to door and window by Catnic (or similar). Lintels to be high quality grade galvanized steel to BS EN 10346:2009 Z275 with black coloured polyester resin finish. Lintels to be the required duty open backed lintels as recommended by the manufacturer / structural engineer for this application (including length, load, bearing and span). Lintels to be installed in strict accordance with manufacturers recommendations in all respects.

Inner face of blockwork to receive 2 coat plaster + skim finish.

Internal partitions to ground floor to be 100mm loadbearing blockwork (strength to SE specification). All internal blockwork to receive 2 coat plaster + skim finish. Part E type C acoustic partitions to be min mass 120 kg/m3 excluding finish.

Internal partitions to first floor to be 75mm timber (or metal) stud with 1no layer 15mm plasterboard & skim. Part E type B acoustic partitions to have 25mm 10kg/m3 acoustic insulation and 10kg/m3 plasterboard (Soundbloc) both sides. (Alternatively 2 layers 10kg/m3 plasterboard both sides). All joints well sealed. 12mm ply pattressing fixed to studs to partition where sanitary appliances, fittings, etc are to mounted.

Strip top soil and vegetable matter to suitable depth to allow construction of new floor. Spray to prevent weed growth etc. Excavate to correct levels and install new floor as follows to finish flush with existing floor in dwelling. Min. void dimension to be adhered to particularly in clay soils, volume potential to be assessed and min clearance given ranging from min. 200mm for low potential to 300mm for high potential.

New floor to comprise minimum 75mm proprietary screed with integral fibre reinforcement or lightweight mesh, screed to integrate underfloor heating pipe network, laid on 500–gauge slip membrane on minimum 150mm Xtratherm XT/UF insulation or equal approved (with 30mm upstand to FFL at perimeter to reduce cold bridging) on 1200–gauge polythene damp proof membrane, fully lapped (min 300mm), sealed and bonded to dpc in walls (min 100mm sealed overlap), at perimeter on grouted beam and block floor (150mm beam depth). Floor DPM to be rated according to site conditions with test data and Certification provided to suit ground condition exposure at this location.

Beam and block floor to be to specialist's design. Full details to be produced by specialist and to be submitted to and approved in writing by Local Authority Building Control and Structural Engineer prior to fabrication. Top surface grouted with a 1:6 cement: sand mix in accordance with the manufacturer's instructions. Blockwork should be flooring grade and loadbearing to suit the manufacturers tests and certification. Beam and block floor to be seated on Cavi-roll Premium DPC (or equal) at all support points.

Overall floor U–Value to be 0.12W/m2K based on a floor P/A ratio of 0.75. Ventilated void to be provided immediately beneath underside of beam and block floor. Void beneath floor beams to be a minimum of 200mm clear.

All steelwork and padstones to structural engineer's specification. Full calculations, connections and fixings shall be specified by the engineer, provided to and fully approved by the local authority prior to fabrication All steelwork coated with intumescent paint to achieve 30 minutes fire resistance, any steel within masonry to be coated with bitumen paint.

Lintels – proprietary galvanised steel lintels to most openings with 150mm min. end bearing and dpc cavity tray over discharging through weepholes (min 2no per lintel). Large opening in lounge/dining assumed to need a steel beam and baseplate designed by structural engineer, cavity tray and weepholes as lintels. All jambs and sills closed with proprietary insulated cavity closers.

Windows and external doors – uPVC Windows to achieve an overall whole–unit U–value of no worse than 1.4W/m²K. External doors and sidescreens to have minimum whole unit U–value of 1.5 W/m²K. Windows should achieve a weather tightness performance standard as defined in BS 6375–1:2015 (+A1:2016), BS EN 12207:2016, BS EN 12208:2000 and BS EN 12211:2016. The window shall be sized with a perimeter gap of between 5 –10mm to allow for thermal expansion.

Controls / handles for opening and operating opening sashes of windows shall be located at a max height of 1900mm AFFL if unobstructed and 1700mm AFFL if obstructed by a fixed worktop or fitted obstruction. Before starting work take site dimensions, record on shop drawings and use to ensure accurate fabrication. Frames screwed directly to masonry jambs or fixed with galvanised steel cramps, allow 8mm building-in tolerance. Sealant joints to all perimeters finish with triangular fillets to a flat or slightly convex profile. Window frame colour TBC.

All windows to habitable rooms to have minimum opening areas for purge ventilation that equate to at least 5% of the floor area of the room being ventilated and must also be fitted with controllable trickle ventilators located at least 1.70m above finished floor level and to provide at least 8000mm² equivalent area for the habitable room. Trickle vent units to be colour matched to frame. Contractor to ensure minimum window ventilation areas as indicated are achieved. External doors and sidescreens to have minimum whole U–value of 1.4 W/m²K. Window opening casements for two storey dwellings to all habitable rooms and inner rooms to have the opening part of the window having an openable area of a min. 0.33m², which must be a min of 450mm clear width x 750mm clear height OR 750mm clear width x 450mm clear height. The opening part of the window must be at least 800mm AFFL and no higher than 1100mm AFFL.

For all Juliet balcony openings, railings shall be installed in full accordance with Approved Document Part' K with the top rail set at exactly 1100mm AFFL with the railings infill to be non-climbable and not allow a 100mm sphere to pass. All glazing to windows and doors to be class 3 to BS EN 12600 or BS 6206 (see diagram on right). All window frames shall be installed within opening reveals so that they overlap the cavity insulation / insulated cavity closer by a minimum of 40mm to maintain minimal thermal bridging.

All outward opening windows which project a greater distance than 100mm, if within 2m from the external finished ground level shall be guarded or the pavement level surface changed in level / type to prevent people from walking in that zone to provide protection against collision with opening windows in accordance with Approved Document K5.1.

Velux type roof windows electrically operated top hung pivot type FK04 660mm wide x 978mm high, U–Value of 1.0w/m²k. (Glazing 2x3mm laminated float inner pane with low-e coating +13mm Argon air gap + 3mm middle pane of heat strengthened float with low-e coating + 13mm Argon air gap + an outer pane of 4mm toughened with 'Easy clean / anti-dew coatings to client selection). Rooflights to be supplied complete with manufacturers' flashings, couplings and all other components recommended by the manufacture as required to complete the installation. Rooflights incorporating electronically operated window operators and rain sensor and RF controlled Integra battery operated wall switch for flexible positioning (approx. 30m range) to suit the needs of the client. Optional extras (blinds etc) to be to client selection.

Principle Entrance doors min effective clear width subject to Part M building categorisation as follows. (Refer to Planning Conditions / Clients Future Homes Standards / Employers Specification): – Statutory Category 1 = Visitable Dwellings The effective clear width of the entrance door for Private dwellings should achieve the following for each Category required: Category 1 = Min. effective clear width of 775mm.

Principal entrance door must have a minimum 300mm clearance at the leading edge.

External doors and frames to be uPVC finished in grey and to achieve an overall Whole Unit U–value of no worse than 1.0W/m²K. (1.2W/mw K for doors with greater than 60% glazed area).

All door frames shall be installed within opening reveals so that they overlap the cavity insulation / insulated cavity closer by a minimum of 40mm to maintain minimal thermal bridging.

Glazing generally – All full height glazing and glazing located in 'Critical Areas' as defined within diagram 5.1 of Approved Document K4 of the Building Regulations 1998 Editions (amended 2010) (reproduced on these drawings) shall be compliant with the appropriate standard within BS6206.

Sealants – gaps to the perimeter of all external door and window frames and at the perimeter of rooms (under skirtings and at wall/partition to ceiling junctions) shall be kept to a minimum and shall be sealed both internally and in the case of external doors and windows, externally, to minimize air leakage and hence heat loss. Flexible sealants shall be used for this purpose. Sealants selected shall be as recommended for the application by the manufacturer. All sealants shall be installed, tooled off and finished in a neat fashion in strict accordance with the manufacturer's recommendations and shall be installed over proprietary backers where appropriate.

Heating & ventilation to be designed by specialist. Intermittent extract ventilation to be provided to the following minimum extract vent rates: WC, bathrooms, utility room 30 litres/sec with 15 mins overrun linked to light switch. Kitchen 30 litres/sec where extract is over hob, 60 litres/sec where extract is remote from hob.

Space and Hot Water Provision – Domestic hot water systems should be designed by specialists and sized for the anticipated hot water demand of the dwelling based on BS EN 12831–3:2017. All hot water storage should be at a temperature of at least 60 deg. C to combat risk of Legionella bacteria. Distribution from the hot water storage may be blended to achieve the lower operating temperatures required.

Domestic hot water circuits supplied form the hot water store shall have both time control that is independent of the space heating circuits and electronic temperature control. Central heating circuits to floor areas of 150m2 or greater to be split into a minimum of two independently controlled heating circuits. System controls should be wired to allow when no hot water / heating demand is present then the heating appliances and pumps switch off. The system should also be fitted with a Weather compensation sensor or internal temperature control. A programmable heating thermostat shall be installed to each heating zone and a TRV to each radiator.

All ground floor areas are to be heated by a specialist designed and installed underfloor heating pipe network complete with manifolds and balancing valves set at an operational temperature of 35 Deg. C and set within the 65mm thin screed system. All circuits relating to radiators shall be set to a slightly higher optimal temperature to suit the radiators specification used and at a max operational flow temperature of 50 Deg.C.

All circuits should have electronic controls to allow adjustment to the operating temperature. Ladder towel radiators to be provided to all wet rooms. New low water content and lower operational temperature radiators to be provided in all new upper floor areas and fitted with TRVs. Design to be undertaken by specialist with full documentation submitted to and approved in writing by Local Authority Building Control prior to installation. All works to be in accordance with current relevant British and European standards and to be installed, commissioned, calibrated and certified by a suitably qualified installer registered with an appropriate competent person's scheme. Commissioning and Operating manuals to be supplied to client on completion of the works. All installed equipment in underfloor heating systems should be commissioned in accordance with BS EN 1264–4. All hot water storage vessels for a hot water or heating system shall have standing heat losses which do not exceed the heat loss values given in Approved Document L1 Table 4.5.

All the following pipework should be fully insulated to exceed the minimum heat loss requirements stated in Approved Document L1 Table 4.4: – Heating primary circulation pipework including pipework in voids. Domestic hot water supply primary pipes All pipework connected to hot water vessel within 1m of connection. All secondary circulation pipework.

Electrical – All electrical work is to comply with Approved Document P (Electrical Safety – Dwellings) (2013 edition) and BS7671: The Requirements for Electrical Installations 18th [or current] Edition incorporating all amendments as published by the Institution of Electrical Installations. The connection to the electrical supply shall be in accordance with the requirements of the Supply Authority.

Light switches and thermostats to be not more than 1200 above FFL. Socket outlets, telephone points, TV aerial points etc to be no less than 450mm above FFL and not within 300mm of internal corners in accordance with diagram 29 of Approved Document M (Access to and use of buildings) (2004 edition incorporating 2010 amendments). All consumer units in new dwellings shall be located where they are accessible with all breaker switches mounted at a height of between 1350 and 1450mm above floor level. See diagram on ground floor plan.

Lighting – Low energy light fittings (minimum 75%) should have lamps with a luminous efficacy greater than 45 lamp lumens per circuit-watt and a total output greater than 400 lamp lumens. All in accordance with the Domestic Building Services Compliance Guide. Light fittings indicated on the drawings are indicative only.

Fire detection – provide a mains operated interconnected fire detection and alarm system, minimum Grade D1 Category LD2 standard, in accordance with the relevant recommendations of BS 5839–6. All smoke alarms to be D1 grade or mains powered interconnected and incorporating a tamper proof back up standby power supply such as a built in battery or capacitor which will last the lifetime of the unit until its scheduled replacement date.

A new carbon monoxide detector should be installed in accordance with the manufacturers requirements and in accordance with the new Smoke and Carbon Monoxide Alarm (Amendment) Regulations 2022 and tested to meet the requirements of EN 50291–1:2018, for all rental and private domestic properties. The detectors should be located in every room containing a fixed combustion appliance. (This excludes gas cookers). The smoke and CO alarms must comply with BS EN 14604 (Smoke) and EN 50291_1 (CO) and carry a British or European approval mark, such as a Kitemark.

Security – All secure doorsets shall be manufactured to a proven and tested to a design standard and the appropriate certification evidence will be provided to building control. Doorsets manufactured to PAS 24:2012 or other standards defined in Approved Doc Q may be acceptable. All letter plates through doors shall have a max aperture size of 260 x 40mm and be located and/or designed to hinder unauthorised access by incorporating a secondary secure flap or similar. All ground floor or basement windows which are easily accessible (within 2m vertically of an accessible surface or an access balcony or within 2m of a lower flat roof or lower <30 deg. pitch roof that itself is within 3.5m of the ground level) are all to be proven and tested to a design standard and the appropriate certification evidence will be provided to building control. Windows manufactured to PAS 24:2012 or other standards defined in Approved Doc Q may be acceptable. All door and window frames should be mechanically fixed to the structure.

Access & Use of Building – Category 1, Visitable dwelling. Main entrance door to have minimum clear width at entrance door 775mm with level threshold access with stepped access not more than 150mm or ramp to be 900mm wide and max gradient 1:12 (max length 1.8m). Internal doors to habitable room and WC on ground floor min clear width 750mm. WC at ground floor to have min 750mm clear space in front of pan and min. 450mm from wall to centre of pan.

Roof structure to bear on to minimum 50mm deep x 100mm wide preservative treated softwood wall plates to the top of all supporting walls. Plates to be secured to walls using 30x5x1000mm long galvanized, mild steel straps at maximum 2000mm centres and fixed to blockwork with 6no wall plugs & screws per strap spaced evenly.

End trusses strapped to gable wall with 30 x 2.5mm galvanised steel straps at 2m centres, strap to extend across 3no trusses and supported on swd noggings. Allow for tank support in a location TBA once MEP design is complete. Infill between valleys to be formed with diminishing valley frames or cut roof to truss rafter manufacturer's design.

Overlay roof with BBA Approved and BRE Certificate tested breathable sarking membrane sagging between trusses, Forticrete Gemini double cambered tiles (brown) laid on tanalised battens size and spacing to tile manufacturer's specification, complete with proprietary dry fix ventilated ridge tiles (giving ventilation equivalent to continuous 5mm slot) on 38x50mm treated softwood tiling battens on a Glidevale Protect VP400 Plus LR breathable membrane or equal approved.

Insulation to be 150mm thick Xtratherm ECO360 (or equal) insulation between min 200mm depth rafters and 50mm Xtratherm ECO360 Thermal Liner (mech fix) soffit lining board beneath rafters. All insulation to be installed in strict accordance with manufacturer's recommendations including the complete filling, taping and sealing of joints to ensure VCL is not compromised. VCL not to be penetrated by any lights or ceiling mounted services. Overall U–Value of roof construction achieved to be no worse than 0.12 W/sqmK.

Roof void to be ventilated via proprietary over fascia ventilators to full length of eaves fixed in strict accordance with manufacturer's recommendations. Ventilation requirement to be equivalent to a continuous 25mm strip (see above for ridge ventilation requirement). 50mm free ventilation route to be maintained between top surface of insulation and underside of roof membrane. Lay 2 layers of 200mm mineral wool insulation (Knauf Loft Roll 44 (k=0.044) or equal) over ceiling ties each layer in opposite directions. Cavity wall and loft insulation to be abutted at intersection to knit together and form a continuous thermal bridge with a rating of 2.33m2 K/W in accordance with Accredited Details or alternatively to tightly butt a perimeter proprietary fire rated cavity closer.

All drains and service penetrations below ground to be interconnected using swept connections. No drains will be permitted to connect against the main flow direction.

All foul water drains should be laid to falls towards the mains combined / foul water sewer connection position defined on the drawings. The recommended min even gradient of drains for the following peak flow capacities are to be observed:

For Peak Flow less than 1 L / sec: – Pipe size – 100mm diameter laid to a min fall of 1 in 40 – (Max capacity = 9.2 litres/sec) For Peak Flow of more than 1 L / sec: – Pipe size – 100mm diameter laid to a min fall of 1 in 80 – (Max capacity = 6.3 litres/sec) with at least 1 WC connected. The maximum length of any single appliance connection should be 6m or for multiple appliances the maximum length may be 12m.

All drain runs should be ventilated at the head of each separate drain run to external air. Usually via a vertical SV&WP to high level or to a vent tile within the roof construction.

Rainwater goods – uPVC eaves gutters and rainwater pipes, colour black and of metallic appearance.

Gutters to be min 150mm dia half round, rainwater pipes to be at least size of outlet, i.e. 89mm.

Gutters shall be laid to slight gradient toward outlet position if recommended by manufacturer (back–falls shall be avoided).

New RWPs to discharge to new gullies / drain connections for direction to a nearby soakaway. All surface water drainage systems above ground to be implemented in strict accordance with Approved Document H3 of the Building Regulations (Drainage and waste disposal) 2015 edition. Pipe size – 100mm dia laid to a min fall of 1 in 80; 150mm dia laid to a min fall of 1 in 150.

Above ground drainage – nominal pipe diameters as shown, to be confirmed by plumbing installer but generally:
WC 110mm, max length 6m, gradient 18–90mm/m
Basins 32mm up to 1.7m, gradient 18–22mm/m, max 3no. 40mm up to 3m, gradient 18–44mm/m, max 3no 50mm up to 4m, gradient 18–44mm/m, max 4no

Wastes exceeding these lengths need venting to air or AAV

Basins, washers & dishwashers to have 75mm deep anti–syphon traps. All ends of pipe runs to have access points to enable rodding.

All traps to be either removable for maintenance or be fitted with a cleaning eye. Opposed branch connections to be offset in accordance with diagram 2, Approved Document H of the Building Regulations to prevent cross flow. All SV&WP ventilating stack discharge point should vent a min of 900mm above any opening into the building within 3m of the vent point. Vent stack discharge should incorporate a balloon grating to prevent bird / rodent access.

Final arrangement subject to confirmation of type and location of fittings by client. All foul water drainage systems above ground to be implemented in strict accordance with Approved Document H1 of the Building Regulations (Drainage and waste disposal) 2015 edition.

Tension straps to gable wall at rafter level to be 30x5x1500mm long galvanized mild steel restraint straps with 100mm turn–down to be fixed to blockwork and fastened to rafters of 3no. trussed rafters at gable walls at maximum 2000mm centres. 50 x 100mm softwood noggins to be securely fixed between trussed rafters in line of straps to provide secure fixing and backing.

30x5x1500mm long galvanized mild steel lateral restraint straps with 100mm turn–down to be fixed to blockwork and fastened to ceiling joists of 3no. trussed rafters at gable walls at maximum 2000mm centres. 50 x 100mm softwood noggins to be securely fixed between trussed rafters in line of straps to provide secure fixing and backing.

Lean to roof to be cut roof to structural engineer's design. Membrane, insulation and ventilation all as main roof.

Rev	Date	Remarks
Stat BUILDING REGULATIONS		
Project	Proposed Extension 1 Wiles Avenue Moulton Chapel, PE12 0QB For Mr & Mrs Hyde	
Title	<u>Proposed Extension</u> Building Regulation Notes	
Date	JUN '23	Scale 1:50 1:20 @A1
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