

Construction specification for New Dwelling on Land at Rock Road Rhosymedre

Preliminaries.

Drawings:

This brief specification is to be read in conjunction with the relevant drawings and has been prepared to obtain Building Regulation Passing of Plans only.

Regulations:

All work is to comply with the relevant Building Regulations, relevant Eurocodes and all statutory notices are to be given to the Building Control department at the local authority at the appropriate stages. All contractors are to visit site to acquaint themselves with the layout and access to the site prior to tendering. If an approved inspector is used then the AI must notify the local authority that the building regulations will be carried out under the initial notice procedure.

Dimensions:

All dimensions to be checked on the drawing and on the site by the nominated contractor all discrepancies are to be notified to the agent.

Structural Engineer

It is the clients responsibility to engage the services of a Chartered Structural Engineer for the structural elements (Steel or Timber Beams, roof construction etc) and to provide full structural details and supporting calculations to the Building Control Section of the Local Authority. Conditional Approval is requested for any structural elements.

Health And Safety :

Contractor, sub-contractors etc. to comply with Health and Safety Regulations during execution of the works.

Locate existing services before works commence. The use of CAT is advisable. Take all necessary precautions when carrying out any demolition works, forming new openings, excavations and working at roof or/and high level. For alteration work requiring new openings in walls or the removal of existing walls, the contractor is to follow the guidance in the Building Research Establishment 'Good Building Guides' 15 and 20 - ' Providing temporary support during work on openings in external walls' and 'removing internal load-bearing walls in older dwellings'.

Any live mains electrical cables within working distance to be sheathed / protected.

Please note that all the materials specified and the construction details shown are not to be changed) without the full knowledge and prior approval of the agent as any changes may have a detrimental effect on the designed/required carbon emissions of the structure as designed.

Rubbish:

Rubbish and debris must not be allowed to accumulate on site and is to be carted away to licensed tip as occasion demands. Site to be left clean and tidy on completion.

General

All dimensions are to be checked on site prior to the commencement of works. Any modifications considered an improvement by the contractor are to be submitted to the Local Authority and comply with any approval necessary. All work to comply with current Building Regulations and good building practice. If the Contractor wishes to use any alternative materials to those specified, they must be submitted to the Building Control Officer and Planning Officer for approval. No work carried out under this specification will be valid unless full planning / building regulation permissions have been approved.

Structural Notes

All drawings and specification to be read in conjunction with structural engineers design and details. Contractor to ensure that no elements of existing structure to be removed are reliant upon the same for load bearing support.

Timber Treatment

All softwood timbers to be adequately treated to prevent infestation by the house longhorn beetle in accordance with current Building Regulations. All structural timbers, external frames, window & softwood cladding shall be treated against fungal attack All structural timber to be marked DRY or KD and to have stress grade mark

Foundations

To be a minimum 600x325mm deep concrete strip foundations, minimum depth 1000mm. Actual type and depth of foundation to be determined on site following inspection of ground conditions by Local Authority Building Control Officer. If deemed ground conditions require more specialist foundations than those specified above, the Client must seek the advice of a Structural Engineer. All foundations to be taken down beyond any invert drainage levels.

External Walls

Cavity Masonry Below D.P.C.

Cavity construction comprising of trenchblock or 2 leaves of common concrete brickwork with cavity filled to ground level with weak concrete and with perpends left open @ 900mm centres on first course above ground level or 300mm trench block with gaps to allow radon ventilation below slab.

Cavity Masonry Above D.P.C.

(SAP 2012 Calculated but minimum fabric target - U-value: 0.18 W/m²°K.)

300mm cavity construction, consisting of 100mm facing brick outer leaf, 100mm cavity, 100mm Thermal block work (min 3.5N strength), Cavity insulation to consist either full fill Dritherm OR of 75mm Kingspan Kooltherm K106 (or similar) Provide galvanised steel cavity wall ties (750mm horizontally, 450mm vertically, decreased to 225mm vertically around openings). 12.5mm Superlux board cavity closer to top of wall. Close cavities at openings including installation of insulated vertical DPC.

ALL BRICKWORK TO BE AS PER APPROVED SAMPLES

Movement Joints

Generally to be provided at not greater than 12 metre centres for blockwork and 6 metre centres for brickwork. movement joints to be 10mm minimum wide, located behind rain water down pipes where possible and famed with proprietary polyurethane sealing strip, with flat ties between panels at 450mm vertical centres with one end de-bonded with poly-sulphide sealant to external face of brickwork/render - colour to match. Note : provide cavity wall ties within 150mm horizontally, at 225mm maximum vertical centres, either side of movement joints.

Cavity Trays

Provide cavity trays wherever roof abuts brickwork and at base of all cavity walls, fitted to current regulations and manufacturers spec.

Lintels

All lintels (unless subject to engineers design) to be Catnic insulated steel lintels as indicated on drawing (or similar) over all new openings, 150mm end bearing to all lintels.

Ground Floor slab

100mm thick concrete slab over 1200g visqueen dpm turned up around perimeter, on 25mm sand blinding, over a minimum of 150mm crushed limestone hardcore. All new dpc's to be minimum 150mm above ground level and to lap into dpm. If excessive made up ground is present beneath slab, then either remove fill down to good ground and build up levels in 150mm layers of crushed limestone hardcore, mechanically compacted at each level or provide engineer's details of suspended slab or beam and block floor. All to the satisfaction of the local authority building control surveyor.

Gas Protection Measures

Provide radon sump with ventilation pipework to discharge outside of slab footprint, capped off to prevent vermin entry. Provide Visqueen (Yellow) Low Permeability Gas Membrane under floor slab lapped 300mm double welded and taped with Visqueen gas proof tape at joints and service entry points. Carry membrane over cavity and provide suitable cavity tray and weep holes linked to floor DPM. Slab to be taken over inner course and reinforced around perimeter with A142 mesh to prevent slab settlement.

First Floor

22mm flooring grade C4 moisture resistant chipboard on 195mm x 50mm C16 Joists at 450mm centres as indicated on plan. Provide full depth strutting between joists. One row of strutting for joist spans between 2500 and 4500mm and two rows of strutting for spans over 4500mm.. All structural timbers to be at least 40mm from outer surface of any heat source.

Any notching for services into floor joists to be kept to a minimum and where necessary minor notching to occur as close as possible to end bearings. 100mm Isover spacesaver mineral wool provided between joists.

Internal Stud Work Partitions to accommodation above

63mm x 47mm softwood stud framing built between 63mm x 47mm sole & head plates, with studs @ 600mm closed centres max, noggins @ 900mm closed centres, & with 75mm x 75mm jambs to openings; finished both sides with 12.5mm Gyproc wallboard plasterboard & skim with 25mm isowool insulation laid between studs.

Roof Trusses

SAP 2012 Calculated but minimum fabric target 'U' value of 0.13 W/m²K at Ceiling level

42° / 52° Pitch. Natural slate roof covering, lap and fixings to be in accordance with manufacturers recommendations for the geographical location of the site (Min. 80mm Headlap). 38 x 25mm s/w battens on "tyvec" breathable roofing felt or similar on roof trusses, 1 layer of 200mm Isover Spacesaver insulation laid between ceiling joists and an additional layer of 200mm laid over joists opposite way to first layer. Provide proprietary rafter trays to ensure insulation does not obstruct the air flow.

Prefabricated trusses and mono pitch trusses to BS5268 PT 3 1985 at 600mm centres with joints connected using plates all in accordance with current Agreement Certificate. **Trusses to be designed and manufactured by specialists.** Conditional approval is requested for this item.

Outer three trusses (ceiling joist and rafter levels) to be tied back to gable end walls using 32mm x 6mm straps built into wall and turned minimum 100mm down into cavity at 2000mm maximum centres. Straps to be additionally supported with noggins. Gable ladders to be built in solid.

All strapping and bracing as recommended by the truss manufacturer and to BS 5268 PT 3 1985.

Cut Roof (Over Porch)

SAP 2012 Calculated but minimum fabric target 'U' value of 0.13 W/m²°K at Ceiling level

28° pitch. Natural slate roof covering, lap and fixings to be in accordance with manufacturers recommendations for the geographical location of the site (Min. 110mm Headlap). 38 x 25mm s/w battens on "tyvec" breathable roofing felt or similar, 1 layer of 200mm Isover Spacesaver insulation laid between ceiling joists and an additional layer of 200mm laid over joists opposite way to first layer. Provide proprietary rafter trays to ensure insulation does not obstruct the air flow.

50 x 100mm C16 rafters @ 450mm centres, with breather membrane draped over rafters. Rafters fixed to wallplates at wall and to 100 x 50 pole plate against house. Rafters notched over pole plate wall plate.

100 x 50 ceiling joists off wall plate and built into wall or on hangers against wall.

Anchor Straps / Wallplate Bolting

30mm x 5mm galvanised anchor straps to be fixed at rafter and ceiling joist levels where running parallel to any external or separating walls. All to be securely fixed at maximum 1800mm centres and tied down wall minimum 450mm & span over rafters & trusses 1200mm minimum. At gables: across 3 rafters @ 2m closed centres max, to inner leaf of masonry Bolt wallplates @ 2m closed centres max to blockwork.

Rafters to be nogged with 44mm x 44mm S.W. under straps and wedged to masonry

Flashings

Code 4 lead flashings to all abutments & stacks; turned up masonry for at least 75mm; dressed 25mm into mortar bed, fixed with lead wedges pointed in.

In cavity walls; insert cavity trays over flashings & lintels including weep vents.

S,V.P's, mechanical vents penetrating roofs to have proprietary flashings.

Ceilings

Generally to be 12.5mm plasterboard and 3mm skim to underside. Min 30 min fire check to all structural steelwork. Joists to garage to be 15mm fireboard and skim to provide 1 hour fire resistance to ceiling.

Below Ground Drainage

New back inlet gullies, and direct connections, to be connected to inspection chambers in 110mm diameter plastic drainage pipes laid to min 1:40 all connected to existing drainage system as indicated on plans.

Drains are to be sleeved through walls and foundations with a flexible joint outside building perimeter.

Both sides to be masked with rigid rot-proof material. Drain runs less than a meter from the building to be provided with a concrete surround.

Chambers to be proprietary plastic or g.r.p. bedded on, & in, lean mix concrete. In vehicular areas chambers to have heavy duty cast iron frames and covers. Elsewhere chambers to have lightweight pressed metal covers and frames.

Above Ground Foul Water Drainage

Sinks to be fitted with 75mm deep seal trap connected/ to 40mm PVCu waste pipes discharging into new gully or SVP.

Basins to be fitted with 75mm deep seal trap connected to 32mm PVCu waste pipes discharging into new gulley or SVP.

WC,s to have 100mm PVCu waste pipes connected either directly to underground system or SVP.

Surface Water Drainage

100 half round UPVC gutters with 75mm dia. UPVC downpipes discharging into a back Inlet Gully.

Drains : 110mm UPVC pipes all as for foul drains laid to a fall of approx. 1 in 100 terminating at new soakaway.

New surface water soakaway to be designed, sited and constructed to provide adequate short term storage for rain/surface water and adequate percolation into the ground. Soakaways to be sited at least 5m from any buildings and constructed on land lower than or sloping away from the foundations of the buildings. Soakaway to have a minimum capacity of 1-2m³ (in free draining granular type sub soils), per rain water pipe serving a roof area up to 30m² as agreed with building control, constructed of clean stone/rubble with particle sizes ranging in size from 20 to 150mm and covered with polythene and top soil or to other methods as shown on the drawing/specification. Soakaways in clay sub soils or serving roof areas exceeding 30m² per rwp to be designed in accordance with BRE Digest 365 or by a drainage specialist (i.e. Hydrologist).

Paved areas / footpaths etc. to be laid to fall away from building. Edges of paved areas to be finished either flush with or above adjacent ground.

Glazing. *(SAP 2012 Calculated but minimum fabric target 'U' value of 1.6W/m²°K*

All glazing to be double glazed sealed units into new uPVC frames with Pilkington "K" glass, to comply with Part L Building Regulations. Any glazing to windows under a height of 800mm and to doors under 1500mm to be safety glass. Any glazing in adjacent panels within 300mm of doors to be safety glass, trickle vents to be fitted to all new windows to provide background ventilation of 8000 sq mm per habitable room.

Staircase

Staircase to be constructed of softwood timber to sizes as noted below and as shown on staircase details.

Headroom to be 2m minimum measured vertically above pitch line.

Handrail Heights:- 900mm above flights, 1100mm on landings.' Balusters to be equally spaced with gaps less than 100mm.

Treads:- 25mm MDF with maximum goings of 243mm.

Risers:- 25mm Plywood with maximum rise of 219mm.

Manufacturer to take dimensions BEFORE commencing manufacture.

Mechanical Ventilation

Mechanical ventilation be provided as follows:-

Kitchen: 60 litres/second OR
(30 l/s if cooker using hood);

Bathroom: 15 litres / second with 15 min over-run timer;

Allow 20mm gap between bottom of door and floor finish.

Electrical Work

All electric work to comply with approved document P (electrical safety) must be designed, installed, inspected and tested by a person competent to do so. Prior to completion the L/A should be satisfied that the part P has been complied with. This may require an appropriate BS 7671 electrical installation certificate to be issued by a person competent to do so.

New internal electrical lighting to use "Philips 14 watt energy saver lamps" or similar recommended energy efficiency lamps, with a (Band A) approval.

Physical infrastructure for high-speed electronic communications networks

The existing telephone network in the area will provide broadband speeds greater than 30 Mbps.

Escape Windows

Any Window to a habitable room at first floor or a ground floor inner room must have provision for at least one emergency fire escape window. Escape window to have unobstructed operable area at least 0.33m² and at least 450x450mm clear opening. opening to be no more than 1100mm from floor level and no less than 600mm from floor level.

Heating

Provide new gas central heating system. Radiators to be sited in room with the required kilowatt output as calculated by the GAS SAFE registered plumbing and heating engineer – positions to be agreed with the client.

The installation of any gas appliances shall comply in all respects with part J of the building regulations and gas safety regulations 1984 and be installed by a fully competent GAS SAFE registered engineer. All heating systems are to be fitted with thermostatic radiator valves as standard.

Smoke Detectors

Smoke or heat alarms are to be mains-operated and conform to BE EN 14604:2005, smoke alarm devices or BS 5446-2:2003, Fire detection and fire alarm devices for dwellinghouses, Part 2 Specification for heat alarms, and installed in accordance with building regulations Approved document B Volume 1. Detectors are to be provided at each level (hall & landings) and to be mains powered on a separate fused circuit with battery back up and inter connected, so in the event of one detector being triggered, all remaining detectors will be activated. Detectors to be sited on the ceiling and at least 300mm away from any wall. . If Kitchen is not separated from the staircase with a door then a interlinked heat detector will be provided to the kitchen.

Fire suppression system

A sprinkler system to BS 9251:2014 (residential) (to specialists design and installation - FIRAS registered or residential sprinkler association) must be installed to both ground and first floor ceilings. BC to be provided with details and specifications for proposed sprinklers system to show accordance with BS 9251:2014. Design to include hydraulic calculation to show minimum flow rates to be achieved. Upon completion the owner should be provided with an installation and commissioning certificate together with operating and maintenance instructions for the fire suppression system.

Thermal Calculations

Thermal calculations (SAP 2012) to be provided to the local authority prior to any work commencing. An air pressure test, as built SAP calculations & an Energy Performance Certificate will be provided by an accredited person no later than 5 days upon completion of the work

Commissioning

Upon commissioning the maintenance and operational instructions for room thermostats to be provided and displayed in suitable location on to be determined and agreed on site. Commissioning certification to be provided for Boiler and central Heating system. Occupant to be provided with operating and maintenance instructions from installer.