Refer to Building Regulation Drawings for Full Specifications - Please Note: We Recommend All Drainage is Surveyed

Copyright 2022

0m 1m 2m 3m 4m 5m

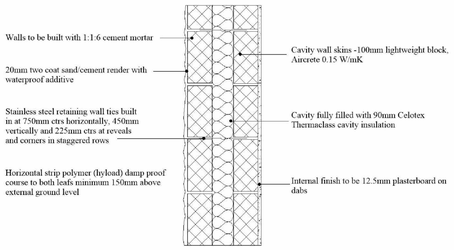
VISUAL SCALE 1:50 @ A1

0m 2m 4m 6m 8m 10m

VISUAL SCALE 1:100 @ A1

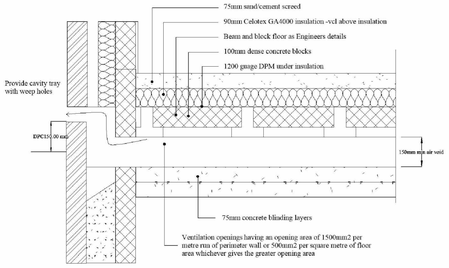
FULL FILL CAVITY WALL

U-value 0.17 W/m²K



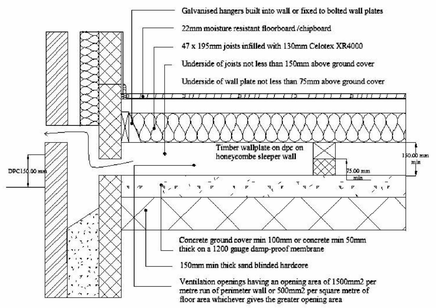
BEAM AND BLOCK FLOOR

U-value 0.18 W/m²K



TIMBER SUSPENDED FLOOR

U-value 0.18 W/m²K



TRENCH FOUNDATION
Provide 650mm 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.

PIPES PASSING THROUGH TRENCH FOUNDATIONS
The load-bearing capability of foundations must not be affected where services pass through.
The pipe work should be sleeved and be provided with 'rocker pipes' at a distance of 150mm either side of the foundation concrete. The 'rocker pipes' should have flexible joints and be a maximum length of 600mm.
Alternatively
Pipework should pass through a suitably strengthened opening in the foundation, i.e. foundation shuttered and a provided with suitable lintel over the pipe allowing for sufficient space for movement to ensure that the drain is capable of maintaining line and gradient. Opening should be masked with granular backfill (pea shingle) around pipe.
DPC to be provided as required by BCO.
Advice from Building Control to be sought on suitability of pipe running through foundation before construction.

PIPES PASSING THROUGH WALLS
Walls above pipes passing through substructure walls to be supported on suitable lintel on semi-engineering bricks. Pipe to be provided with a 50mm clearance all round, opening to be masked with granular backfill (pea shingle) around pipe. DPC to be provided as required by BCO.
Alternatively
Where new pipework passes through external walls the pipe work is to be provided with 'rocker pipes' at a distance of 150mm either side of the wall face. The 'rocker pipes' must have flexible joints and be a maximum length of 600mm.

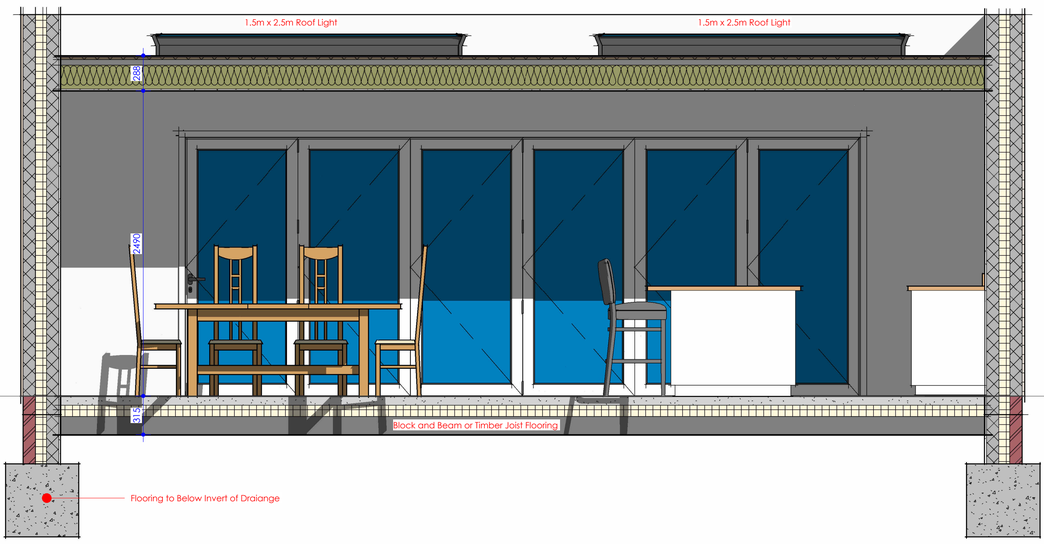
STEPPED FOUNDATION (trench)
Stepped foundations should overlap by twice the height of the step, or 1m whichever is the greater.
The height of the step should not be greater than the thickness of the foundation.

VENTILATED FLAT ROOF
(imposed load max 1.0 kN/m² - dead load max 0.75 kN/m²)
To achieve U value of 0.15 W/m²K
Flat roof to be single ply membrane roofing with aa fire rating as specialist specification, with a current BBA or WIMLAS Certificate on 22mm exterior grade plywood, laid on firrings to give a 1:40 fall on 47 x 200mm grade C24 joists at 400 ctrs, max span 4.55m (see engineer's details for sizes). Cross-ventilation to be provided on opposing sides by a proprietary eaves ventilation strip equivalent to 25mm continuous with fly proof screen. Flat roof insulation is to be continuous with the wall insulation but stopped back to allow a continuous 50mm air gap above the insulation for ventilation. Insulation to be 150mm Celotex XR4000 between joists and 40mm TB4000 under joists. Ceilings to be 12.5mm plasterboard over vapour barrier with skim plaster finish
Provide cavity tray where pitched roof meets e.xisting wall. Provide restraint to flat roof by fixing using 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. ,
THIS IS A GENERAL GUIDE BASED ON NORMAL LOADING CONDITIONS FOUND IN DOMESTIC CONSTRUCTION. IT IS YOUR RESPONSIBILITY TO ASSESS YOUR DESIGN TO ASCERTAIN WHETHER ENGINEER'S DETAILS/CALCULATIONS ARE REQUIRED. PLEASE REFER TO THE TRADA DOCUMENT– 'SPAN TABLES FOR SOLID TIMBER MEMBERS IN FLOORS, CEILINGS AND ROOFS FOR DWELLINGS' OR ASK YOUR BUILDING CONTROL OFFICER FOR ADVICE.

SUSPENDED BLOCK AND BEAM FLOOR
To meet min U value required of 0.18 W/m²K
Remove top soil and vegetation, apply weed killer – provide 50mm concrete ground cover if required by BCO.
The underside of beams not less than 150mm above the top of the ground. PCC beams to be supplied and fixed to beam manufacturer's plan, layout and details (details and calculations to be sent to Building Control and approved before works commence). Minimum bearing 100mm onto DPC and load bearing walls. Provide concrete blocks to BS EN 772-2, wet and grout all joints with 1:4 cement/sand mix. Provide double beams below non-load bearing partitions. Lay 1200g DPM/radon barrier, with 300mm laps double welted and taped at joints and service entry points using radon gas proof tape, over beam and block floor. Lay floor insulation over DPM, 90mm Celotex GA4000 applied as a rigid material. 25mm insulation to continue around floor perimeters to avoid thermal bridging.
Lay 500g separating layer over insulation and provide 75mm sand/cement screed over and prepare for floor finishes as required. The top surface of the ground cover under the building shall be above the finished level of the adjoining ground.
Ventilation - Provide cross-ventilation of the under floor to outside air by ventilators in at least 2 opposite external walls of the building. Ventilation openings having an opening area of 1500mm² per metre run of perimeter wall or 500mm² per square metre of floor area, whichever is the greater. Sleeper walls shall be of honeycombed construction or have provision for distribution of ventilation.

TIMBER SUSPENDED FLOOR
To meet min U value required of 0.18 W/m²K
gk not more than 0.5
Ground preparation -Remove top soil and vegetation, apply total weed killer and 150mm min thick sand blinded hardcore, then either –
(i) Provide concrete ground cover of at least 100mm thick or
(ii) Prepare the ground to an even surface and lay a ground cover of concrete at least 50mm thick, on a damp-proof membrane of at least 1200 gauge polyethylene, laid on a bed of fine blinding material.
Floor construction - min 20mm tongue and groove softwood boards or moisture resistant particle/chipboard grade type C4 to BS EN 312:2010 as required. Lay with staggered joints on 47mm x 195mm C24 grade soft wood joists at maximum 400mm centres, max span 4.31m. Joists to be supported off proprietary galvanized joist hangers built into new masonry walls or fixed to treated timber wall plates resin bolted to walls at 600mm centres. If required, floor joists also to be supported on 100mm x 50mm treated wall plates and DPC fixed to masonry honeycombed sleeper walls built on thickened oversite concrete. Joists to be infilled with 130mm Celotex XR4000 insulation between joists fixed with proprietary clips.
The top surface of the ground cover under the building shall be above the finished level of the adjoining ground. The underside of the floor joists are not to be less than 150mm above the top of the ground cover.
The underside of any wall plate is to be not less than 75mm above the top of the ground cover.
Ventilation of Floor
Provide cross-ventilation under floor to outside air by ventilators in at least 2 opposite external walls of the building. Ventilation openings having an opening area of 1500mm² per metre run of perimeter wall or 500mm² per square metre of floor area whichever gives the greater opening area. All sleeper walls or similar under floor obstructions shall be of honeycombed construction or have similar provision for distribution of ventilation. The under floor space shall be free from debris. Ducts to be sealed using gas proof tap if they pass through the radon barrier.
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FULL FILL CAVITY WALL
To achieve minimum U Value of 0.18 W/m²K (actual U Value achieved 0.17 W/m²K)
20mm two coat sand/cement render to comply to BS EN 13914-1 with waterproof additive on 100mm lightweight block, 0.15 W/m²K, e.g. Celcon solar, Toplite Standard. Full fill the cavity with 90mm Celotex Thermaclass Cavity Wall 21 as manufacturer's details. Inner leaf to be 100mm lightweight, 0.15 W/m²K, e.g. Celcon solar, Toplite standard. Internal finish to be 12.5mm plasterboard on dabs. Walls to be built with 1:1:6 cement mortar.
Vertical joints in the board must be staggered and all joints tightly butted.
All details including corner and junction to be as relevant BBA certificate.
Location to be assessed for suitability of insulation boards.
10mm cavity to be provided if required.



1 Sectional View
1 : 25

NEW AND REPLACEMENT WINDOWS
New and replacement windows to be double glazed with 16-20mm argon gap and soft coat low-E glass. Window Energy Rating to be Band B or better and to achieve U-value of 1.4 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.
Insulated plasterboard to be used in reveals to abut jambs and to be considered within reveal soffits. Fully insulated and continuous cavity closers to be used around reveals.
Windows and door frames to be taped to surrounding openings using air sealing tape.
Windows to be fitted with trickle vents to provide adequate background ventilation in accordance with Approved Document F.

NEW AND REPLACEMENT DOORS
New and replacement doors to achieve a U-Value of 1.4W/m²K. Glazed areas to be double glazed with 16-20mm argon gap and soft low-E glass. Glass 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.
Insulated plasterboard to be used in reveals to abut jambs and to be considered within reveal soffits. Fully insulated and continuous cavity closers to be used around reveals.
Windows and door frames to be taped to surrounding openings using air sealing tape.

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.

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.

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.

TRUSSED RAFTER ROOF
To achieve U-value 0.15 W/m²K
Pitched roof to be formed using proprietary prefabricated manufactured trusses. Design of roof trusses to be produced by specialist truss manufacturer to BS EN 1995-1-1:2004 Eurocode 5: Design of timber structures and submitted to Building Control for approval prior to commencement of work. Trusses to be placed at max 600cts in accordance with BS 8103-3:2009 and BS EN 1995-1 on suitable wall plates fixed using proprietary galvanised steel truss clips. All strapping, fixing and bracing to be in accordance with manufacturer's instructions. Mechanically fix trusses to 100 x 50mm sw treated wall plates using galvanized steel truss clips.
Form ceiling using 12.5mm plasterboard and min 3mm thistle multi-finish plaster. Insulation at ceiling level to be two layers of Rockwool insulation to total 300mm laid between over joists (cross direction). Provide polythene vapour barrier between insulation and plasterboard.
Where required provide opening at eaves level at least equal to continuous strip 25mm wide on two opposite sides to promote cross-ventilation and provide mono pitched roofs with ridge/high level ventilation equivalent to a 5mm gap via proprietary tile vents spaced in accordance with manufacturer 's details.
Loft hatches should be suitable designed and installed to ensure optimum air tightness.

1	Single Power Socket	FIRE	Fire Alarm Panel
2	Double Power Socket	SS	Shaver Socket
C	Cooker Point	SP	Speaker Point
	Unswitched Fused Spur	TV	TV Aerial Point
	External Power Socket	FB	Floor Box
	Telephone Point	FS–2	Floor Socket
D	Cat 6 Data Point	P	Passive Extract
	Extract Vent	M	Mechanical Extract

	Distribution Board
SD	Smoke Detector
H	Heat Detector
C	Carbon Monoxide Detector
	Extract fan
	Underfloor heating control

Wall Structure Key:

- Cavity Wall: Render
- Cavity Wall: Face Brick
- Block Work: 100mm
- Studwork Wall: 75mm
- Metal Frame: 70mm
- Solid Brick Wall: 215mm
- Solid Block Wall: 215mm
- Structural Opening
- Walls Removed

Please note:
All drawings are for the purposes of planning only unless marked for construction.

All builders to site measure to confirm measurements.

Report all discrepancies to the person named below, do not proceed without instruction.

BRO take no responsibility should any drawing/s unless specified are used for building purposes and measurements aren't checked on site.

All drawings remain the property of BRO Architecture

Drainage Key

S	Storm Drainage
MH	Manhole
FD	Foul Drainage
SVP	Soil Vent Pipe
GP	Gulley Pot
RWP	Rainwater Pipe
AD	ACO Drain

Ducting Colour & Use

Red	Electric cable
Yellow	Gas Pipe
Blue	Water pipes
Green	Data/Comms
Grey	BT
Purple	Security - Cameras
Orange	Garden Lighting non Security

A1

DRAWING NUMBER

B1-0

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CLIENT
Rhys Taylor

SITE ADDRESS
15 Rutland Crescent
Trowbridge BA14 0NX

PROJECT NAME
Proposed Side and Rear Extension

DRAWING NAME
Proposed Sectional View

DATE
6th April 23

REV

DRAWN BY
SH

SCALE (@ A1)
1 : 25

CHECKED BY
Client

PROJECT NUMBER
SH/BRO/050423-R