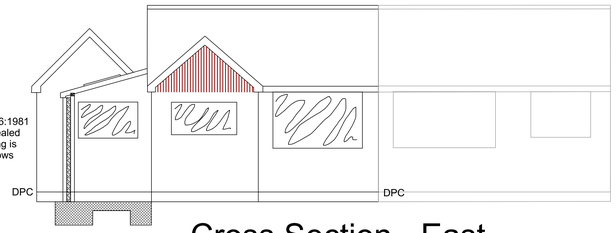
Windows below 800mm from floor level should meet BS6206:1981 regulations in ref to safe breakage toughtened glass or annealed glass to be used and must show BS Kite Mark. Safety glazing is required in doors below 1500mm of the floor level and windows within 300mm of a door.

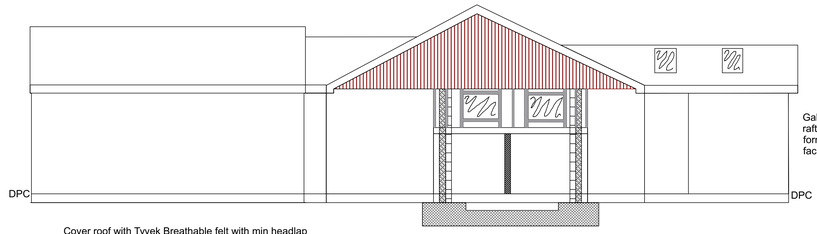


Cross Section - East

Concrete strip footings laid in trenches to same level as existing property. To be 225mm deep x 450mm wide under cavity walls and 250mm wide under internal walls.
Footing blocks built on top of foundation up to g.l. where cavity wall will carry on. Breeze to inner leaf and brick to outer leaf.
Backfill trenches with compacted granular fill and layer a minimum of 150mm on inner floor area. Nominal layer of blinding sand also wackered down on top of hardcore with damp proof membrane laid on top and lapped up onto DPC.

UPVC rainwater goods fastened to the fascia at 1.2m centres and to 100mm diameter gutter size with 63mm diameter outlet size. All surface water to be taken away from any building into existing rainwater drains.

30 x 5mm CSA Galvanised straps to be fastened to gable end wall and taken across 3 No. joists to secure and give lateral restraint set at 1200mm centres.
Also straps to be positioned along gable verge line again at 1.2m centres.
Solid strutting required under lateral restraint straps



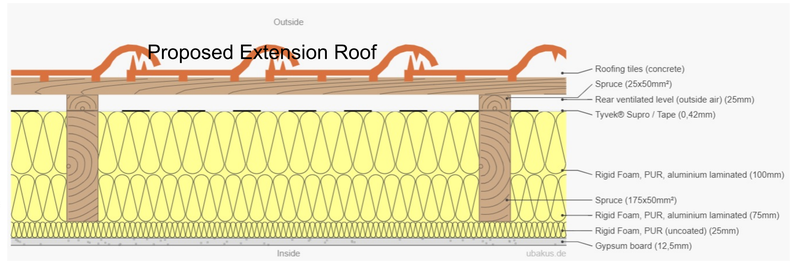
Gable end ladders nailed to end rafter and resting on blockwork to form frame work for gable soffit and facia.

Cover roof with Tyvek Breathable felt with min headlap to 100mm

Cross Section - South

All pipework to be lagged as per part L. i.e. For pipes the insulation material has a thermal conductivity not exceeding 0.045W /mK and a thickness equal to the outside diameter of the pipe up to a max of 40mm

175mm thick PIR board between ceiling members and a further 25mm insulated plasterboard below the timbers to give a 'U' value of 0.13W/m2K
Roof timbers to be set at 600mm centres with a pitch of min. 17.5 degrees. Timbers to be 'doubled up' around the roof windows. Roof to be battened and counter-battened to create the required 25mm air-gap.

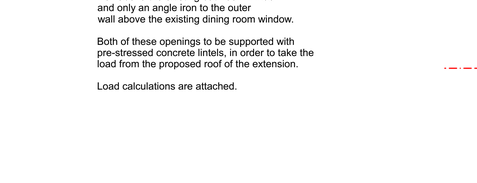


Existing Wall to South Elevation with Timber Cladding

Tiles: Forticrete V2 or Redland 49 -Brown - Smooth
Brick: To match existing brickwork which is to remain exposed
Windows: RAL 7016 Grey UPVC

Gable of East elevation to be clad in the same timber and design as the south elevation of the property, to maintain a matching theme and provide character to the property

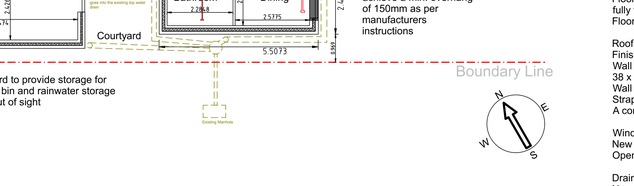
Floor to ceiling height to be minimum of 2100mm



Proposed Elevation - East

Rainscreen Cladding
Thermowood to provide a 30year lifespan

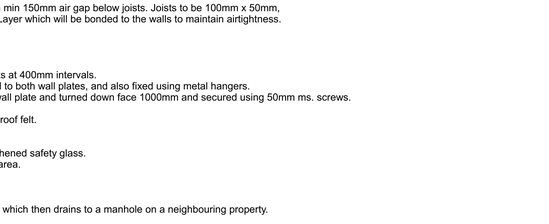
To protect building fabric, in order to prolong its lifespan, and cover up the damaged brickwork facade.



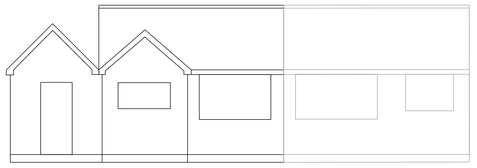
Proposed Elevation - South

Section of existing property which is to be clad with screen cladding to have a make-up as show, which gives an overall u-value of 0.264 w/m²K.

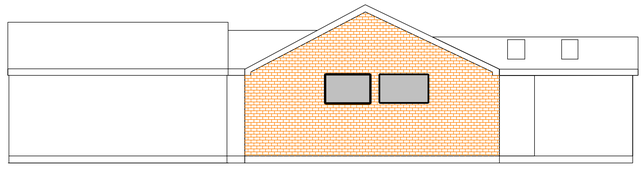
25mm air gap to be created with battens, between the insulation of the final external rainscreen cladding timber.



Existing Walls to East and West Elevation



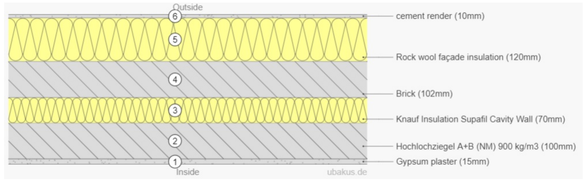
Current Elevation - East



Current Elevation - South

External Wall Insulation system to be used on the remainder of the exposed brickwork from the existing property, to give an overall u-value of around 0.16W/m²K

System to comprise of 120mm thick Rockwool Facade Insulation, topped with reinforced render, and finished with resin brick slips to match existing brickwork

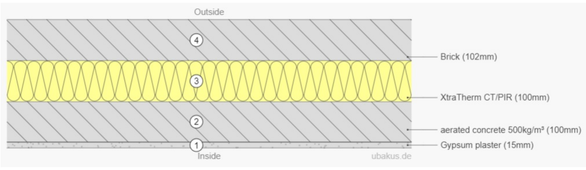


Proposed Extension Walls

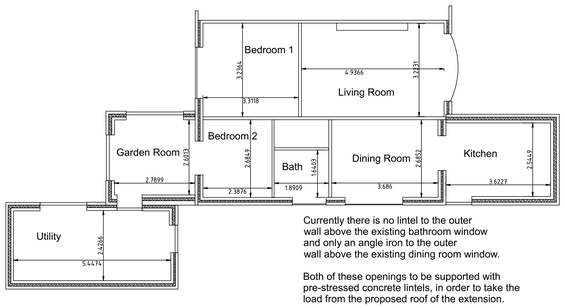
XtraTherm CT/PIR cavity insulation board to be utilised, which is a full fill PIR cavity board, topped with a HIPS layer to prevent moisture penetration.

Manufacturer instructions to be followed during installation.

Overall U-Value of the walls of the extension to be around 0.169 w/m²K



Current Floor Plan



Currently there is no lintel to the outer wall above the existing bathroom window and only an angle iron to the outer wall above the existing dining room window.

Both of these openings to be supported with pre-stressed concrete lintels, in order to take the load from the proposed roof of the extension.

Load calculations are attached.

Ventilation & Airtightness Strategy
An airtightness vapour control layer (AVCL) will be installed on the warm side of the insulation on each of the floors in the property to provide an airtight barrier.

A mechanical ventilation system with heat recovery (MVHR) will be installed to provide adequate ventilation to the whole property, with extract vents in the 'wet' rooms, and supply vents in the 'dry' rooms.

Supply and Extract Rates are attached.
MVHR Unit to be Vortice HR200

Pipework is 125mm Rigid PVC to External, and 75mm semi-rigid radial (anti-static and anti-bacterial) supplied by manifolds. MVHR unit to be housed in a cupboard next to the boiler so that it is within the insulated envelope of the property.

Proposed Floor Plan

Lintels fire protected with 2 layers of 12.5mm thick plasterboard to give 30mins protection.

CG90/100 Catnic Lintel of appropriate widths to achieve a min. overhang of 150mm as per manufacturers instructions

Courtyard to provide storage for wheelie bin and rainwater storage tanks out of sight

Foundations
Footings to cavity walls to be 450 wide x 225 deep, concrete class C25. Depth of footings to be 750mm in Sand, 900mm in Clay measured from the finished ground level to the invert level of footing or to LA inspectors recommendation.

Walls
To be constructed in 300mm cavity construction, using 100mm thick 'Celcon' (or similar load bearing lightweight block) of max density 800Kg/m3 to the inner leaf. Outer leaf to be constructed of brick to match existing property. All new block and brickwork to be bonded to the existing alternate courses maintaining continuous cavities and be provided with stainless wire vertical twist ties at 750mm centres and 450mm vertical centres, and at 225mm centres at reveals. Damp proof course to be laid 150mm min above finished ground level.
Inner leaf block work to be tied into existing house using profile plates bolted to existing house wall. Damp Proof Course hyload d.p.c to BS743 to all Cills, Jambs, Heads, as tray over lintels, vertically to all closures and reveals, cavity trays and external walls, horizontally 150mm above g.l and linked to floor d.p.m as required.

Lintels
Lintels as per specification on drawing all to have min 150mm end bearing as per manufacturers instructions. DPC tray to span the cavity on non catnic type lintels to stop water penetration from outer leaf to inner leaf. Blockwork to be protected at all times until fully cured as per BS5623 part 3 in order to prevent salting.

Floor
Floor level to match level in existing property. It will be of suspended timber construction with min 150mm air gap below joists. Joists to be 100mm x 50mm, fully filled with 100mm PIR type insulation board and topped with an Airtight Vapour Control Layer which will be bonded to the walls to maintain airtightness. Flooring boards to be OSB3 type tongue and groove.

Roof
Finished in concrete tiles on extension.
Wall plate on existing gable end to be 150mm x 50mm Timber, anchored with resin fixed bolts at 400mm intervals.
38 x 25mm laths on breathable felt on 175mm x 50mm Timbers. Timbers to be birdsmouthed to both wall plates, and also fixed using metal hangers.
Wall plate anchored to inner leaf by means of 30 x 5mm ms. galv. straps, taken over top of wall plate and turned down face 1000mm and secured using 50mm ms. screws.
Straps to be set at 1200mm centres.
A continuous 25mm wide trickle vent to be installed at eaves to provide clear air path above roof felt.

Windows
New windows to be Triple Glazed. Windows within 800mm of floor level to be fitted with toughened safety glass.
Opening windows equaling 1/20th of the floor area. Max glazed area permitted 25% of floor area.

Drains
New gulley to be installed for rain water drainage, and connected to existing system.
New drainage pipes to be installed for foul water removal, and connected to existing system, which then drains to a manhole on a neighbouring property.