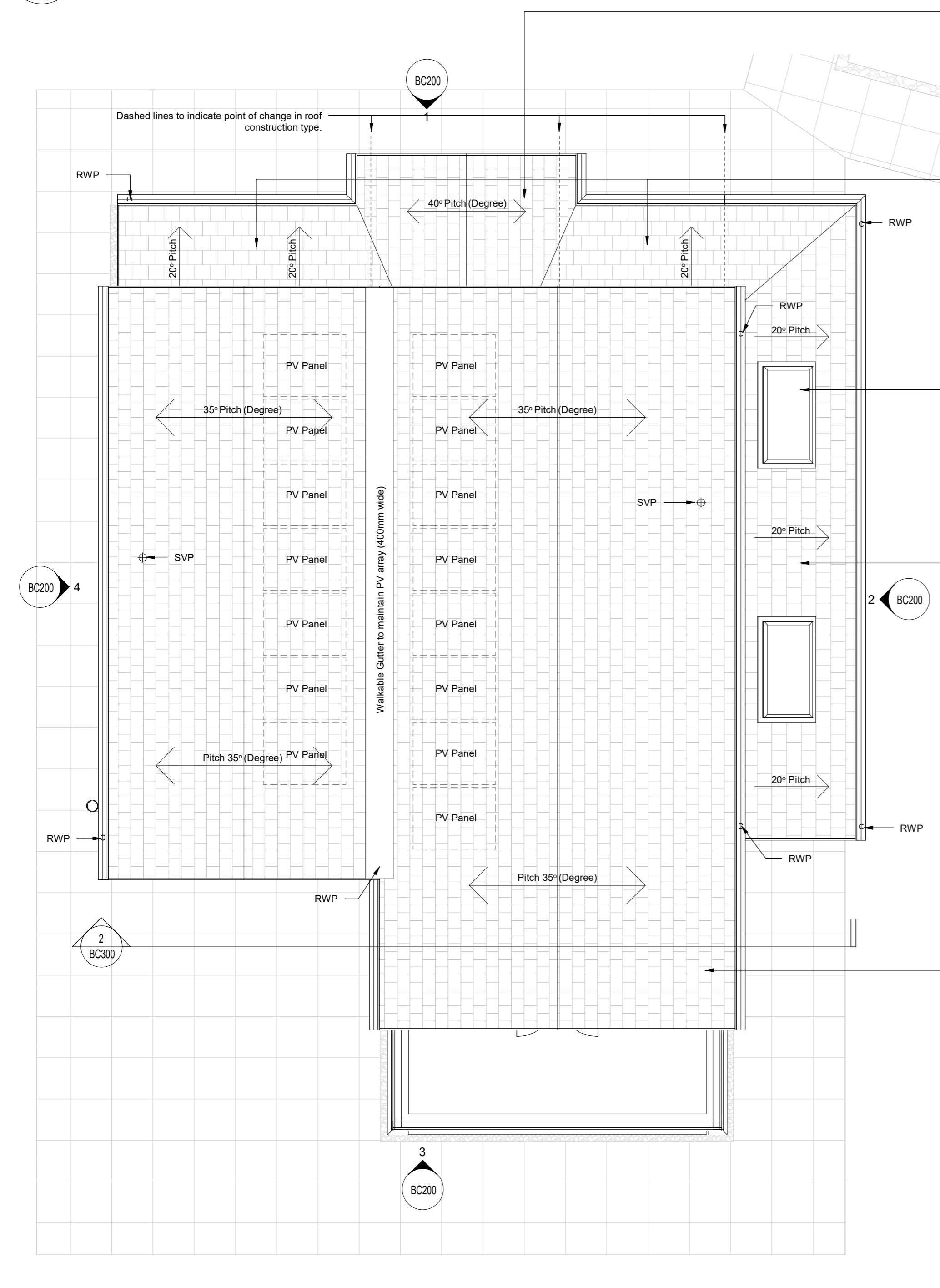


# 1 GA - 02 Proposed Roof Plan

Scale - 1 : 50



**ROOF STRUCTURE - VAULTED CEILINGS TO ENTRANCE HALL**  
 Pitched 47 x 200mm rafters to form roof structure with 1 x layer of 120mm Kingspan Kooltherm K107 between rafters with top face of boards battened to ensure a 25mm clear gap (based on 200mm rafters) between underside of roof underlay and top of boards to provide a void to drape roof underlay. Provide a continuous layer of TLX Gold multi-foil insulation draped over rafters with Kingspan boards flush with underside of rafter. Tiling to be battened over all-in-one TLX membrane in strict accordance with manufacturer's guidelines. Knauf 12.5mm Plasterboard Tapered Edge with end joints staggered and fixed to u/s of timber rafters at 450mm centres with 60mm Gyproc Drywall screws. Before skimming reinforce joints using Gyproc Joint Tape and pre-fill any gaps between boards exceeding 3mm.  
 NOTE: Pitched roof construction to achieve a maximum U-Value of 0.18W/m<sup>2</sup>K.

**ROOF STRUCTURE - COLD ROOF TO SINGLE STOREY GROUND EXTENSION**  
 Pitched 47 x 200mm rafters to form roof structure with 1 x layer of 120mm Kingspan Kooltherm K107 between rafters with top face of boards battened to ensure a 25mm clear gap (based on 200mm rafters) between underside of roof underlay and top of boards to provide a void to drape roof underlay. Provide a continuous layer of TLX Gold multi-foil insulation draped over rafters with Kingspan boards flush with underside of rafter. Tiling to be battened over all-in-one TLX membrane in strict accordance with manufacturer's guidelines. Knauf 12.5mm Plasterboard Tapered Edge with end joints staggered and fixed to u/s of timber rafters at 450mm centres with 60mm Gyproc Drywall screws. Before skimming reinforce joints using Gyproc Joint Tape and pre-fill any gaps between boards exceeding 3mm.  
 NOTE: Pitched roof construction to achieve a maximum U-Value of 0.18W/m<sup>2</sup>K.

**ROOFLIGHTS**  
 All rooflights to be Roof Maker Luxite Frameless Fixed in anthracite grey colour (RAL 7016) 700x1200mm double glazed units. Rooflights to be fitted in strict accordance with manufacturer specification and detail. Supplied rooflights to include proprietary flashing kits.

**ROOF STRUCTURE - EXTERNAL SHELTER**  
 Pitched 47 x 200mm rafters to form roof structure with weather treated Douglas fir 100x 25mm cladding battens with 5mm spacings fixed to underside of rafters installed across rafter direction to provide soffit line. Tiling to be battened with Proclor non-woven polypropylene breather membrane or similar approved lapped 100mm horizontally and vertically. 150mm at hips, 300mm at valleys and sealed with recommended adhesives. Membrane to be draped over rafters to allow for water run off under tiling battens. Membrane to discharge over fascia into rainwater gutters on proprietary eaves carrier. Where membrane meets TLX gold to roof areas housing internal spaces, membrane to overlap and tape to seal over TLX to suit. All in strict accordance with manufacturer's instructions and BBA certificate.

**ROOF STRUCTURE - VAULTED CEILINGS TO FIRST FLOOR**  
 Pitched 47 x 200mm rafters to form roof structure with 1 x layer of 120mm Kingspan Kooltherm K107 between rafters with top face of boards battened to ensure a 25mm clear gap (based on 200mm rafters) between underside of roof underlay and top of boards to provide a void to drape roof underlay. Provide a continuous layer of TLX Gold multi-foil insulation draped over rafters with Kingspan boards flush with underside of rafter. Tiling to be battened over all-in-one TLX membrane in strict accordance with manufacturer's guidelines. Knauf 12.5mm Plasterboard Tapered Edge with end joints staggered and fixed to u/s of timber rafters at 450mm centres with 60mm Gyproc Drywall screws. Before skimming reinforce joints using Gyproc Joint Tape and pre-fill any gaps between boards exceeding 3mm. U/s moisture resistant plasterboard to wet areas.  
 NOTE: Pitched roof construction to achieve a maximum U-Value of 0.18W/m<sup>2</sup>K.

**IMPORTANT NOTE: Extension and Alterations**  
 These drawings have been prepared without the benefit of exposing underlying construction and therefore assumptions have been made. Prior to commencement the contractor must contact designer to agree the necessary scope of investigation works, to confirm on site conditions. It should be noted that results of these investigations may require the drawings and structural design to change.

**IMPORTANT NOTE: General**  
 All dimensions are in millimetres. Where dimensions are not given, drawings must not be scaled. In the event of any detail or dimensional conflict between these drawings and site conditions, the matter must be referred back to designer for clarification.

All dimensions and conditions are to be checked on site by the contractor prior to commencing any work.

Drawings to be read in conjunction with Structural Engineer's, Mechanical and Electrical Engineer's, Specialist Manufacturer's and Sub-contractor's drawings and specification.

## SUBSTRUCTURE

**FOUNDATIONS**  
 The following foundations notes assume soil conditions as described and defined in The Building Regulations Approved Document A. The final foundation design is to be completed on confirmation of the ground conditions on site in conjunction with Local Authority Building Control Inspector. Should clay sub-soils be exposed and heave protection required, contact the Client's Consultant Engineer for advice on foundation design.  
 PLEASE NOTE: All foundations must be designed and constructed in accordance with National House Building Council Chapter 4.2, BRE Digest 298 and BS 5837: 1991

**EXISTING FOUNDATIONS**  
 Existing foundations to be exposed and checked by Local Authority Building Control or Structural Engineer to check for adequacy in taking increased loads.

**TRENCH FILL FOUNDATIONS**  
 PLEASE NOTE: ALL FOUNDATIONS TO STRUCTURAL ENGINEER'S DESIGN AND SPECIFICATION.  
 Trench foundations comprising of grade GEN 1 to BS 5328:2 Foundations to be min. 600mm wide placed centrally under walls and taken down to load bearing strata. Ground to be a minimum of 150mm above finished ground level, with slight projection to outer face of wall. All in accordance with manufacturer's instructions and BS 5628.3

**BLOCK/BLOCK CAVITY WALLS BELOW DPC**  
 275mm cavity wall comprising of 2 skins of 100mm 7n concrete block to BS6073 with a density of no less than 1500kg/m<sup>3</sup>. 75mm clear cavity between. Cavity to be filled with lean mix concrete and splayed to discharge water externally. Skins to be tied together with stainless steel wall ties to DD140 Type 4 tie, and to suit cavity width. Wall ties bedded to full towards external skin spaced at 450mm centres vertically and 750mm centres horizontally. Minimum embedment of wall tie to be 50mm in each leaf with drip placed centrally within cavity.

**MORTAR BELOW DPC**  
 Mortar to be 1:3 cement, sand (plasticised) and in accordance with BS 5628.3 using ordinary Portland cement and clean yellow sand correctly stored on site to prevent ingress of surface water.

**DPC**  
 Proprietary DPC system to be pitch free, full width of each skin of cavity wall and fully bedded in mortar. DPC to be installed in one continuous piece where possible, otherwise all laps in DPC to be minimum of 100mm and bonded using recommended adhesive. External DPC to be a minimum of 150mm above finished ground level, with slight projection to outer face of wall. All in accordance with manufacturer's instructions and BS 5628.3

**GROUND FLOOR CONSTRUCTION**

**BEAM AND BLOCK GROUND FLOOR**  
 See chosen manufacturer's additional design details for suspended concrete ground floor. Block type to be as recommended by manufacturer. Beams to be built into block inner skin with joints fully filled with mortar. Infill blocks to be minimum 100mm thick 3.5N/mm<sup>2</sup> sq or as recommended by manufacturer. 2 layers of DPC to be placed below concrete beams and supporting blockwork, all to be in accordance with manufacturers recommendations. Provide (min) 150mm void below beams and (min) 150mm well consolidated ground. Floor void to be ventilated using proprietary air bricks and telescopic vents to give ventilation equivalent free area of 1500mm sq per 1000mm run of wall. Ventilators to be placed in any sleeper walls to allow cross ventilation. Sand and cement screed [75mm thickness] 4:1 with steel trowelled finish (tolerance of +/- 3mm in 1m) with 20.50 wire mesh laid in accordance with BS 8204 Part 1. Minimum of 1200g Polythene DPM laid between beam/block and insulation above, lapped and sealed at all joints. Vapour control layer (minimum 500g) to be laid between insulation and screed above. 75mm Kingspan Kooltherm K103 rigid insulation floorboard (or similar approved) to provide 0.18W/m<sup>2</sup>K with 25mm Kingspan upstands cut to same depth as screed.

**SUPERSTRUCTURE**

**EXPOSED STRUCTURAL TIMBER ELEMENTS**  
 All exposed structural timber elements to be suitable treated Douglas fir strictly to fabricator's detail and specification.

**FACING BRICKWORK CAVITY WALLS ABOVE DPC**  
 300mm cavity wall comprising of 102.5mm facing brickwork outer leaf, with 100mm cavity and Kingspan Kooltherm K103 Partial fill cavity board (30mm thickness) insulation with 50mm clear cavity remaining (provides 0.24W/m<sup>2</sup>K). Insulation batts fixed strictly in accordance with manufacturer's requirements. Insulation to be carried down cavity at least 150mm below top of floor perimeter insulation and supported on row of wall ties. Wall ties to be tied together with stainless steel wall ties to DD140 Type 4 tie, and to suit cavity width (ANCON Stalfix HR7A). Wall ties bedded to full towards external skin spaced at 450mm centres vertically and 750mm centres horizontally. Wall ties spaced with 25mm horizontally from un-bonded jambs of openings at 300mm maximum vertical centres. Minimum embedment of wall ties to be 50mm into each leaf.  
 NOTE: Cavity wall construction to achieve U-Value of 0.18 W/m<sup>2</sup>K.  
 NOTE: To reduce cold bridging ensure that the wall insulation abuts and joins to the roofing insulation to form continuous thermal barrier.

**RETAINED EXISTING RENDEROED SLOPP WALLS**  
 All existing walls being retained to be stripped of existing rendered finish and prepared ready for application of Proshield Prootherm vapour permeable insulated render at 20mm coating with a decorative top coat of ProofDeco paintable render main coat and painted with off-white external render paint.

**NATURAL FLINT FACING WALLS WITH SIPS INTERNAL STRUCTURE**  
 304.5mm external wall comprising of 100mm natural flint external facade installed with suitable hydraulic lime mortar with a typical mix of 1lime and 2.5 sand. SURECAV25 moulded cavity space system to provide structural backing to natural flint buildup and maintain open 25mm cavity fixed through to internal SIPs leaf using standard stainless steel wall ties (Ancon STF-50) with additional support using frame ties fixed through the SURECAV25 pods. Wall ties fixed to fall towards external skin spaced at 450mm centres vertically and 750mm centres horizontally. Wall ties spaced with 25mm horizontally from un-bonded jambs of openings at 300mm maximum vertical centres. Kingspan 142mm TEK structural insulated panel (SIP) (or similar approved) to form internal leaf structure with YBSinsulation Breather Foil-FR (or similar approved) foil faced breathable membrane dressed between external SIPs face and SURECAV25. Suitable VCL to be installed between SIPs and internal plasterboard backing support.  
 NOTE: Wall construction to achieve U-Value of 0.18 W/m<sup>2</sup>K.  
 NOTE: To reduce cold bridging ensure that the SIPs panel butts and joins to the roofing insulation to form continuous thermal barrier.

**RENDERED BLOCKWORK WALLS WITH SIPS INTERNAL STRUCTURE**  
 304.5mm external wall comprising of external leaf 100mm 7n concrete blockwork to BS 6073 with a density of no less than 1500kg/m<sup>3</sup>. Applied render to be either a through colour proprietary system or finished with 3 coats of sand/cement render (1:1.5 to 6, cement:lime:sand), applied strictly in accordance with Manufacturer's specification and colour to match areas of existing walls with applied Prootherm as stated above. SURECAV25 moulded cavity space system to maintain open 25mm cavity fixed through to internal SIPs leaf using standard stainless steel wall ties (Ancon STF-50) with additional support using frame ties fixed through the SURECAV25 pods. Wall ties fixed to fall towards external skin spaced at 450mm centres vertically and 750mm centres horizontally. Wall ties spaced with 25mm horizontally from un-bonded jambs of openings at 300mm maximum vertical centres. Kingspan 142mm TEK structural insulated panel (SIP) (or similar approved) to form internal leaf structure with YBSinsulation Breather Foil-FR (or similar approved) foil faced breathable membrane dressed between external SIPs face and SURECAV25. Suitable VCL to be installed between SIPs and internal plasterboard backing support.  
 NOTE: Wall construction to achieve U-Value of 0.18 W/m<sup>2</sup>K.  
 NOTE: To reduce cold bridging ensure that the SIPs panel butts and joins to the roofing insulation to form continuous thermal barrier.

**TIMBER CLADDED WALLS WITH SIPS INTERNAL STRUCTURE**  
 External wall comprising of horizontally installed (vertically installed on annex) weather treated Douglas fir 100x 25mm cladding panels with 5mm spacings fixed back to treated softwood cladding battens installed at an opposite orientation. Supporting battens fixed back to Kingspan 142mm TEK structural insulated panel (SIP) (or similar approved) forming internal leaf structure with YBSinsulation Breather Foil-FR (or similar approved) foil faced breathable membrane dressed between external SIPs face and cladding battens. Suitable VCL to be installed between SIPs and internal plasterboard backing support.  
 NOTE: Wall construction to achieve U-Value of 0.18 W/m<sup>2</sup>K.  
 NOTE: To reduce cold bridging ensure that the SIPs panel butts and joins to the roofing insulation to form continuous thermal barrier.

**NATURAL STONE MORTAR**  
 Hydraulic lime mortar with a typical mix of 1lime and 2.5 sand to be used in areas of natural stone construction.

**BLOCKWORK MORTAR**  
 Where general mortars are to be used instead of lime based mortars, mix to be in accordance with BS 5628 to suit exposure rating using ordinary Portland cement and clean yellow sand correctly stored on site to prevent ingress of surface water.

**INTERNAL PLASTER FINISH**  
 All walls finished internally using Knauf 12.5mm (Fire-Resistant when facing over SIPs) Plasterboard Tapered Edge. Board fixed back to SIPs structure using 25 x 50mm (50 x 50mm for timber clad external walls and annex walls) vertically installed battens to allow for suitable ventilation. Stainless steel beads and stops to be used at all external corners and junctions. Plaster to terminate at base of wall with continuous 25 x 13mm treated softwood timber batten behind skirting ensuring 15mm gap to top of finish.

**LINTELS TO WINDOW/DOOR OPENINGS**  
 For openings in rendered blockwork walls, 200 x 100 precast concrete lintels installed within external blockwork leaf. For openings within natural flint walls, the use of universal angle steelwork to Structural Engineer's design and specification to be used to support alone. 150mm minimum end bearing all in strict accordance with and manufacturer's instructions and BBA certificate.

**CAVITY TRAYS**  
 Proprietary flexible cavity tray system and stop ends in accordance with BS 5628 to be installed over all lintels, meter boxes and air blocks in external wall. All joints to be fully supported with 100mm laps bonded using recommended adhesive. All in accordance with manufacturer's instructions. Where over lintel, cavity trays to extend to edge of front toe and 50mm minimum beyond end of lintel. Stop ends to be formed minimum 75mm beyond cavity return with minimum 2 x proprietary weep holes to each opening and at 450mm max. centres.

**THERMAL/FIRE RESISTANT CLOSERS TO WINDOW/DOOR OPENINGS**  
 All openings in external walls to have vertical DPC's. 25mm Cavity will be closed around all openings with Type D Interfacing profile insulated cavity closers by CAVITY TRAYS or similar approved to prevent cold bridging and achieve a maximum U Value of 1.2W/m<sup>2</sup>K.  
 NOTE: It is now a requirement to use a tested product that achieves a minimum of 30 minute fire resistance.

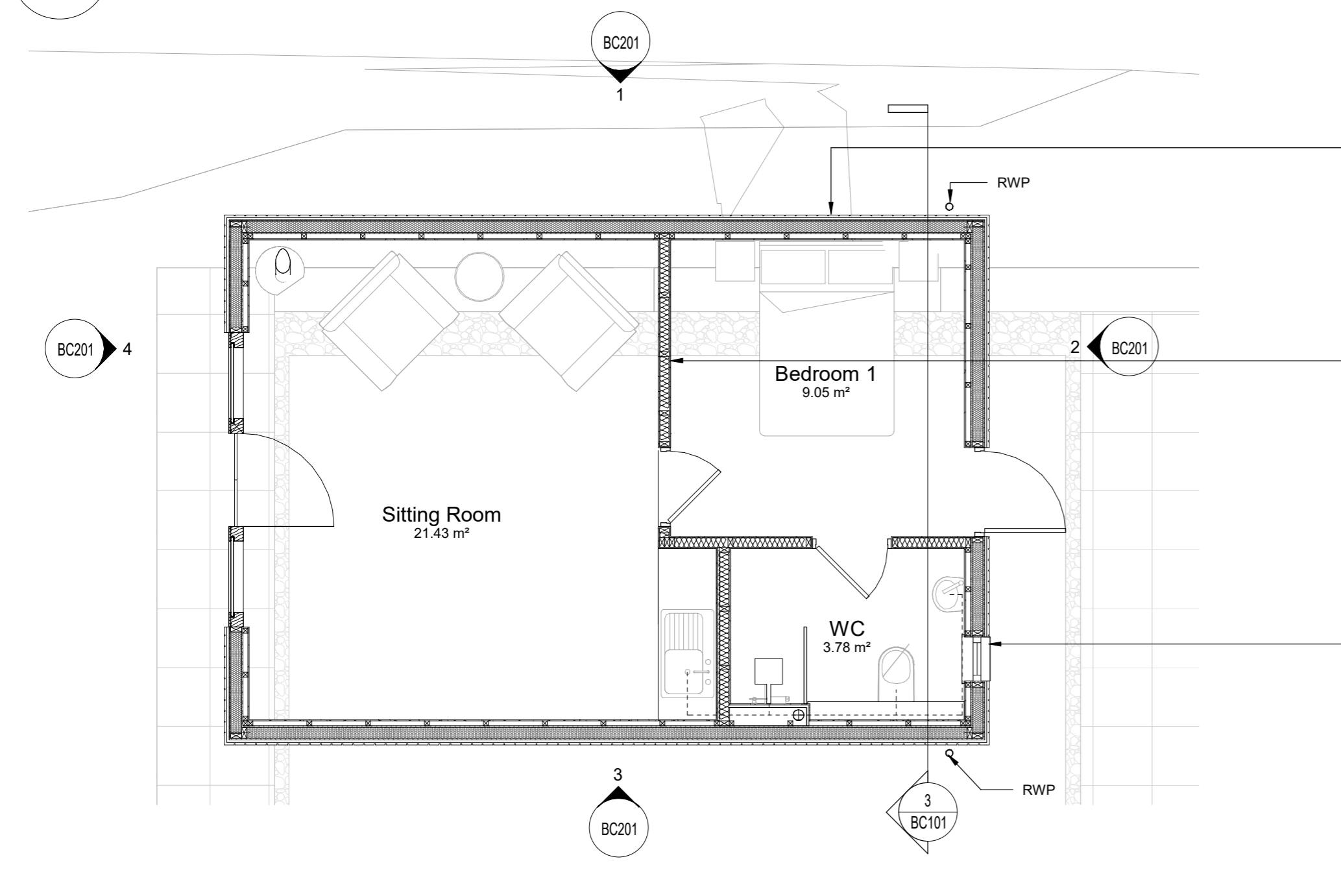
**MOVEMENT JOINTS IN MASONRY AND RENDER**  
 Movement/expansion joints to be suitable located in all masonry faced and rendered blockwork walls. All movement joints to span full height of masonry between window and door openings and located a minimum of 500mm from corners. Where there is no full height path within masonry, movement joint to be engineer designed to avoid openings and introduce a slip plane to link the staggered joint where required. Movement joints to be located where existing construction is joined to newly proposed SIPs structure in both leaves.

**INTERNAL LINING PARTITIONS**  
 Fabricated on site using regularised 94x44mm softwood vertical studs at 400mm centres with one line of solid noggins at mid height. 94 x 44mm head and sole plates mechanically tied to floor and ceiling for lateral support. Provide additional noggins as necessary to provide fixings for radiators etc. Fix 12.5mm Gyproc Wallboard tapered edge plasterboard to timber studs with Gyproc 38mm drywall timber screws with minimum 25mm penetration into timber. All joints taped and prepared to receive a 3mm Gyproc Thistle finish coat, all in accordance with manufacturer's recommendations.  
 For walls to support kitchen cabinetry and bathroom sanitaryware, 18mm OSB to be fixed to studwork before plasterboard installation over face to allow for fixing support.

**MINERAL WOOL INSULATOR TO TIMBER LINING PARTITIONS**  
 All voids between timber studs to be filled with 100mm Rockwool mineral wool with minimum density 19kgm<sup>3</sup> for sound insulation. All to achieve a sound reduction of at least 40dB.

# 2 GA - 00 Proposed Annex Plan

Scale - 1 : 50



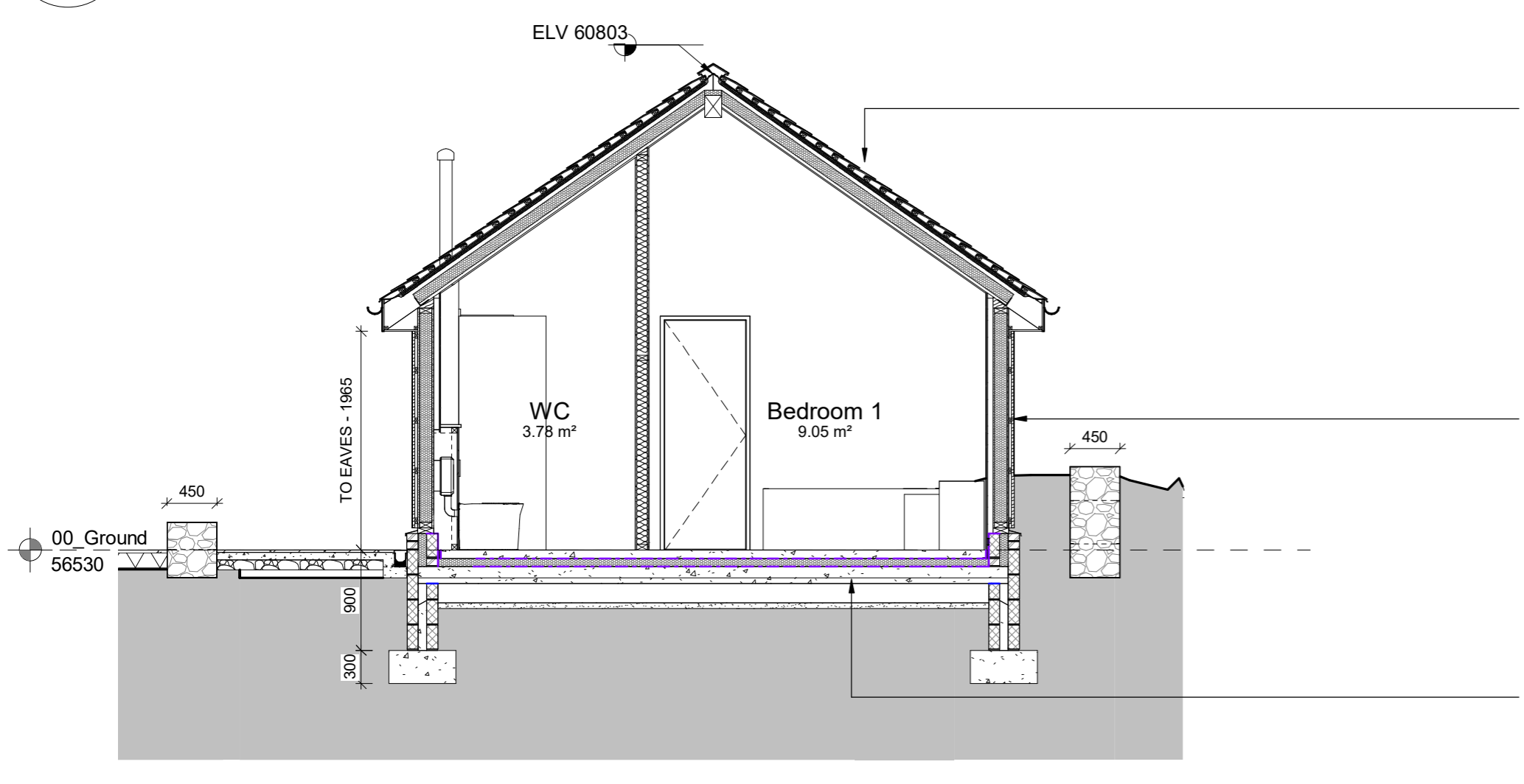
**TIMBER CLADDED WALLS WITH SIPS INTERNAL STRUCTURE**  
 External wall comprising of horizontally installed (vertically installed on annex) weather treated Douglas fir 100x 25mm cladding panels with 5mm spacings fixed back to treated softwood cladding battens installed at an opposite orientation. Supporting battens fixed back to Kingspan 142mm TEK structural insulated panel (SIP) (or similar approved) forming internal leaf structure with YBSinsulation Breather Foil-FR (or similar approved) foil faced breathable membrane dressed between external SIPs face and cladding battens. Suitable VCL to be installed between SIPs and internal plasterboard backing support.  
 NOTE: Wall construction to achieve U-Value of 0.19 W/m<sup>2</sup>K.  
 NOTE: To reduce cold bridging ensure that the SIPs panel butts and joins to the roofing insulation to form continuous thermal barrier.

**INTERNAL LINING PARTITIONS**  
 Fabricated on site using regularised 94x44mm softwood vertical studs at 400mm centres with one line of solid noggins at mid height. 94 x 44mm head and sole plates mechanically tied to floor and ceiling for lateral support. Provide additional noggins as necessary to provide fixings for radiators etc. Fix 12.5mm Gyproc Wallboard tapered edge plasterboard to timber studs with Gyproc 38mm drywall timber screws with minimum 25mm penetration into timber. All joints taped and prepared to receive a 3mm Gyproc Thistle finish coat, all in accordance with manufacturer's recommendations.

**EXTERNAL SASH WINDOWS - REPLACED EXISTING AND NEWLY PROPOSED**  
 All windows to be BBA approved timber thermally broken frames with internally beaded sealed double glazing units with 6 split per pane glazing bars. Specified windows to have French Grey frame colour. Glazing bars to match existing French Grey frame colour. Frames to be mechanically fixed with galvanised frame cramps to inner leaf SIPs structure spaced at 150mm from corners and 300mm centres elsewhere. Frames to be weather striped and draught sealed and to be jointed externally with one part non staining facade sealant to ISO 11600 Type F to suit joint width and depth with closed cell polyethylene backing strip.  
 NOTE: All windows to be installed in such a position that the internal face of the frame overlaps the thermal line by a minimum of 25mm. Extended sill units to be provided as necessary to achieve a minimum of 50mm overhang from the outside face of the external wall.  
 NOTE: The supplied window system to achieve a U-Value of maximum 1.2W/m<sup>2</sup>K.

# 3 Proposed Annex Section A-A

Scale - 1 : 50



**ROOF STRUCTURE - VAULTED CEILINGS TO ANNEX**  
 Pitched 47 x 200mm rafters to form roof structure with 1 x layer of 120mm Kingspan Kooltherm K107 between rafters with top face of boards battened to ensure a 25mm clear gap (based on 200mm rafters) between underside of roof underlay and top of boards to provide a void to drape roof underlay. Provide a continuous layer of TLX Gold multi-foil insulation draped over rafters with Kingspan boards flush with underside of rafter. Tiling to be battened over all-in-one TLX membrane in strict accordance with manufacturer's guidelines. Knauf 12.5mm Plasterboard Tapered Edge with end joints staggered and fixed to u/s of timber rafters at 450mm centres with 60mm Gyproc Drywall screws. Before skimming reinforce joints using Gyproc Joint Tape and pre-fill any gaps between boards exceeding 3mm. Use moisture resistant plasterboard to wet areas.  
 NOTE: Pitched roof construction to achieve a maximum U-Value of 0.18W/m<sup>2</sup>K.

**TIMBER CLADDED WALLS WITH SIPS INTERNAL STRUCTURE**  
 External wall comprising of horizontally installed (vertically installed on annex) weather treated Douglas fir 100x 25mm cladding panels with 5mm spacings fixed back to treated softwood cladding battens installed at an opposite orientation. Supporting battens fixed back to Kingspan 142mm TEK structural insulated panel (SIP) (or similar approved) forming internal leaf structure with YBSinsulation Breather Foil-FR (or similar approved) foil faced breathable membrane dressed between external SIPs face and cladding battens. Suitable VCL to be installed between SIPs and internal plasterboard backing support.  
 NOTE: Wall construction to achieve U-Value of 0.19 W/m<sup>2</sup>K.  
 NOTE: To reduce cold bridging ensure that the SIPs panel butts and joins to the roofing insulation to form continuous thermal barrier.

**BEAM AND BLOCK GROUND FLOOR**  
 See chosen manufacturer's additional design details for suspended concrete ground floor. Block type to be as recommended by manufacturer. Beams to be built into block inner skin with joints fully filled with mortar. Infill blocks to be minimum 100mm thick 3.5N/mm<sup>2</sup> sq or as recommended by manufacturer. 2 layers of DPC to be placed below concrete beams and supporting blockwork, all to be in accordance with manufacturers recommendations. Provide (min) 150mm void below beams and (min) 150mm well consolidated ground. Floor void to be ventilated using proprietary air bricks and telescopic vents to give ventilation equivalent free area of 1500mm sq per 1000mm run of wall. Ventilators to be placed in any sleeper walls to allow cross ventilation. Sand and cement screed [75mm thickness] 4:1 with steel trowelled finish (tolerance of +/- 3mm in 1m) with 20.50 wire mesh laid in accordance with BS 8204 Part 1. Minimum of 1200g Polythene DPM laid between beam/block and insulation above, lapped and sealed at all joints. Vapour control layer (minimum 500g) to be laid between insulation and screed above. 75mm Kingspan Kooltherm K103 rigid insulation floorboard (or similar approved) to provide 0.18W/m<sup>2</sup>K with 25mm Kingspan upstands cut to same depth as insulation.