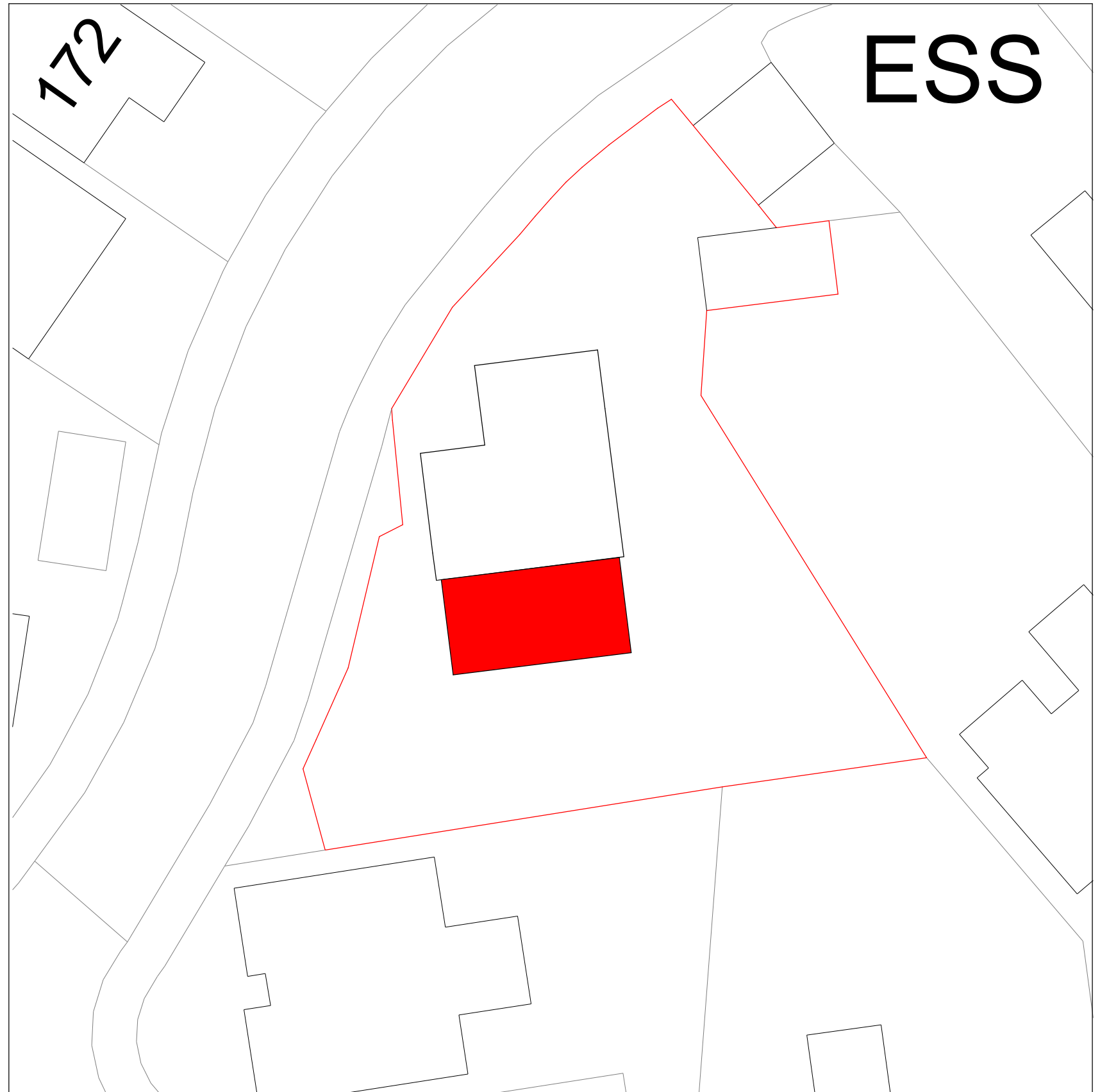


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**LOCATION PLAN - 1:1250**



**SITE PLAN - 1:500**

**PROJECT DESCRIPTION**

Add a new two-storey extension to the rear of the property and reconfigure the internal layout to create an open-plan kitchen, dining and living space downstairs, and enlarge three bedrooms, remove the family bathroom and add two ensuite bathrooms upstairs.

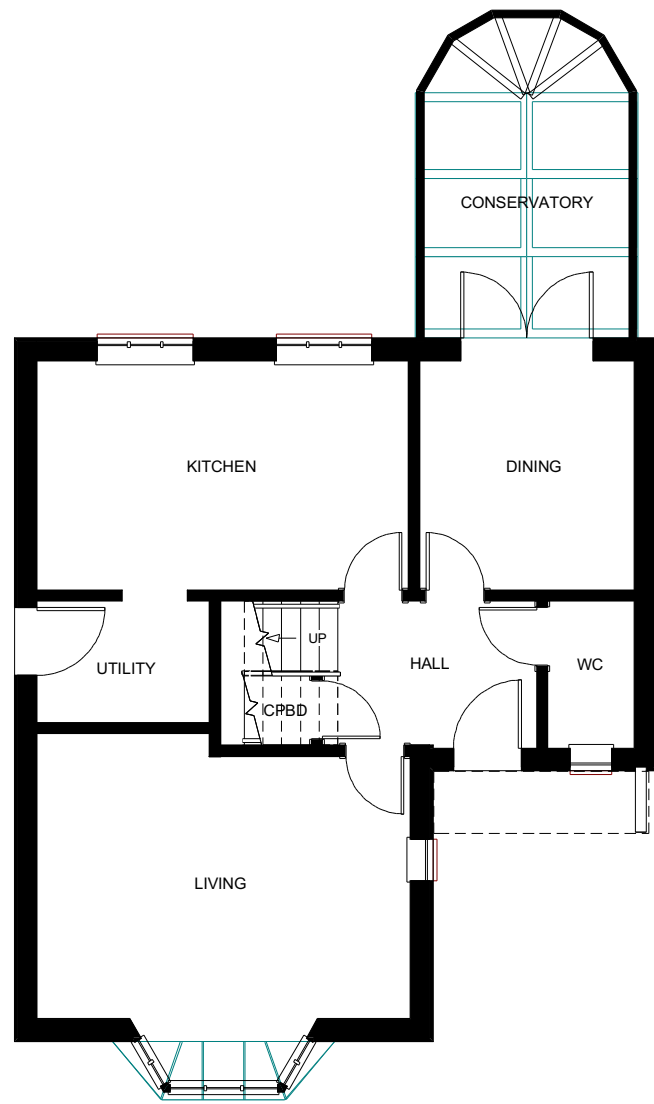
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PLANNING DRAWINGS  
**SITE AND LOCATION PLANS**

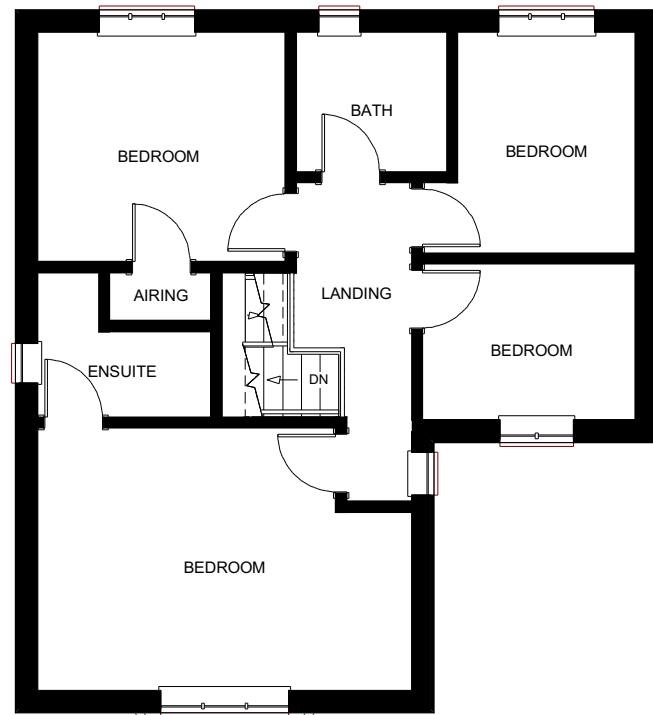
PROPERTY  
 HIDDEN

**STEVE ROBINSON**  
 DESIGN

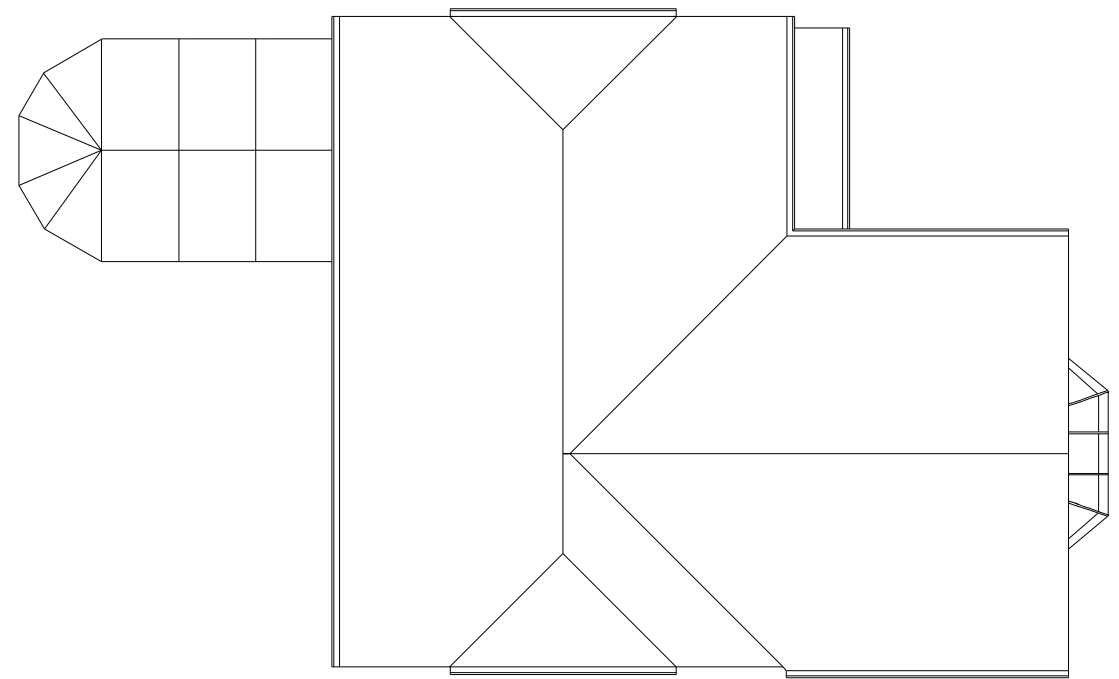




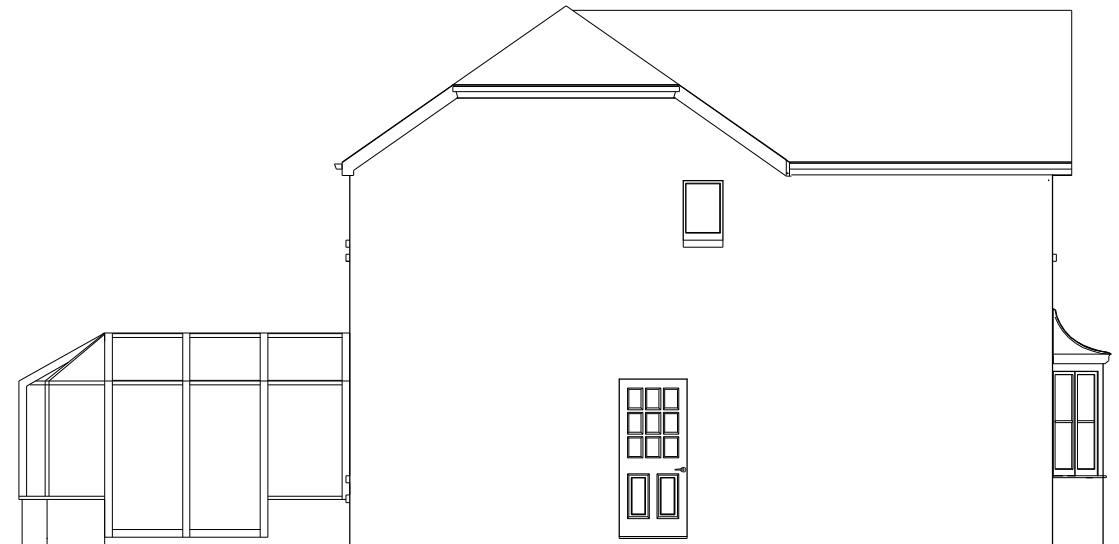
EXISTING GROUND FLOOR - 1:100



EXISTING FIRST FLOOR - 1:100



EXISTING ROOF PLAN - 1:100



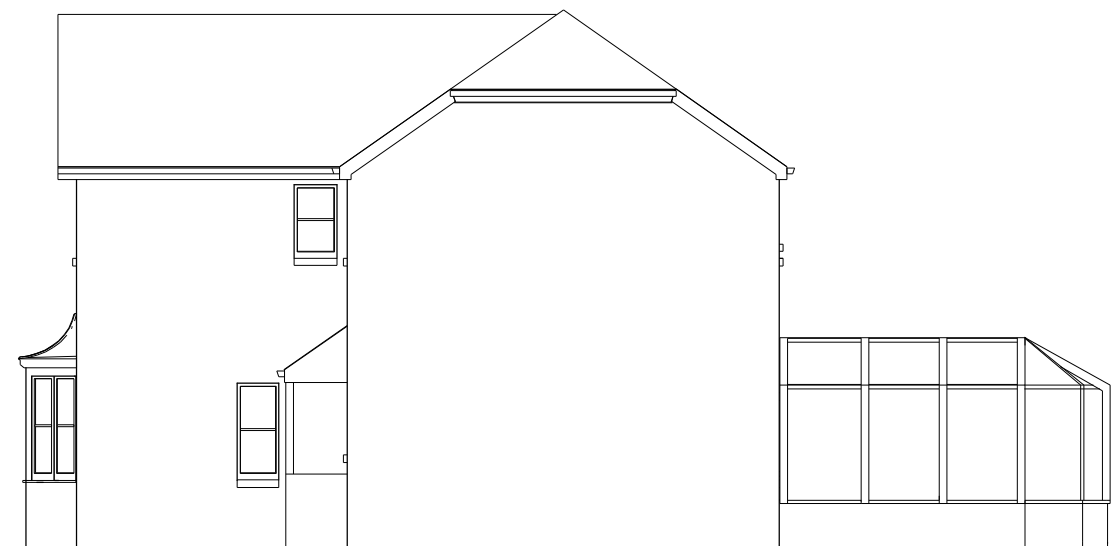
EXISTING LEFT ELEVATION - 1:100



EXISTING FRONT ELEVATION - 1:100

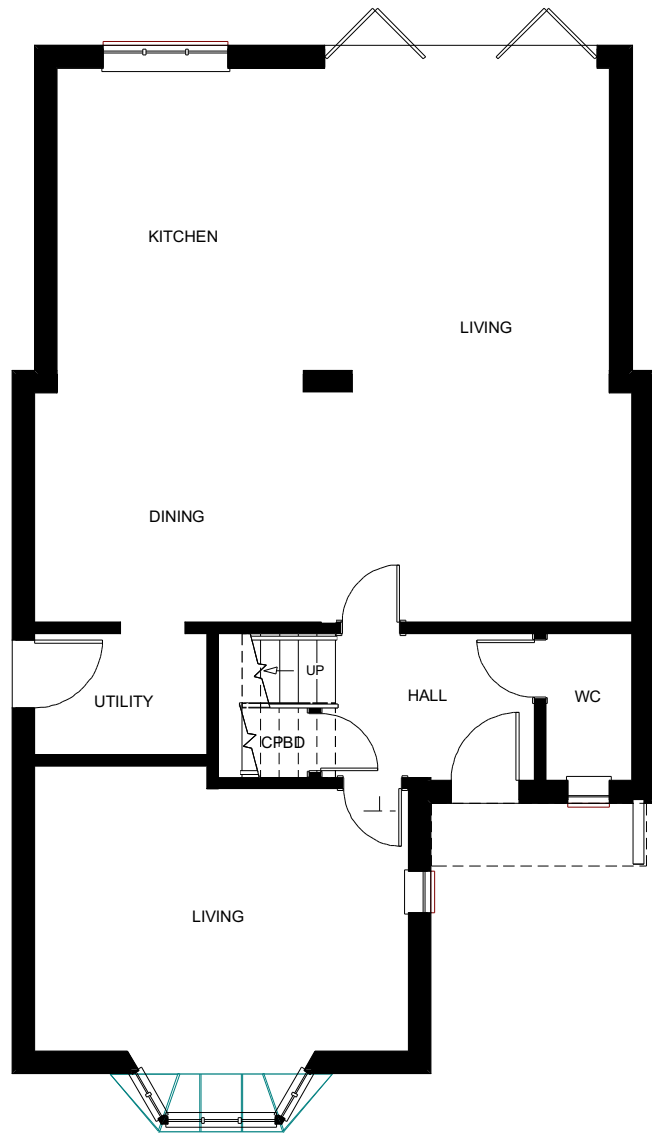


EXISTING REAR ELEVATION - 1:100

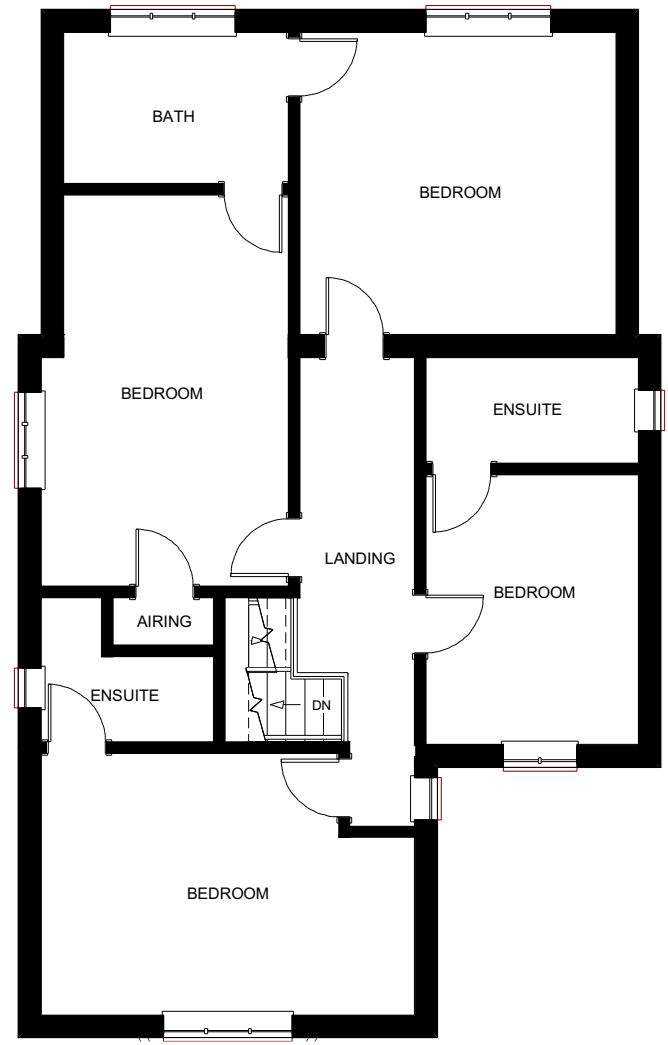


EXISTING RIGHT ELEVATION - 1:100

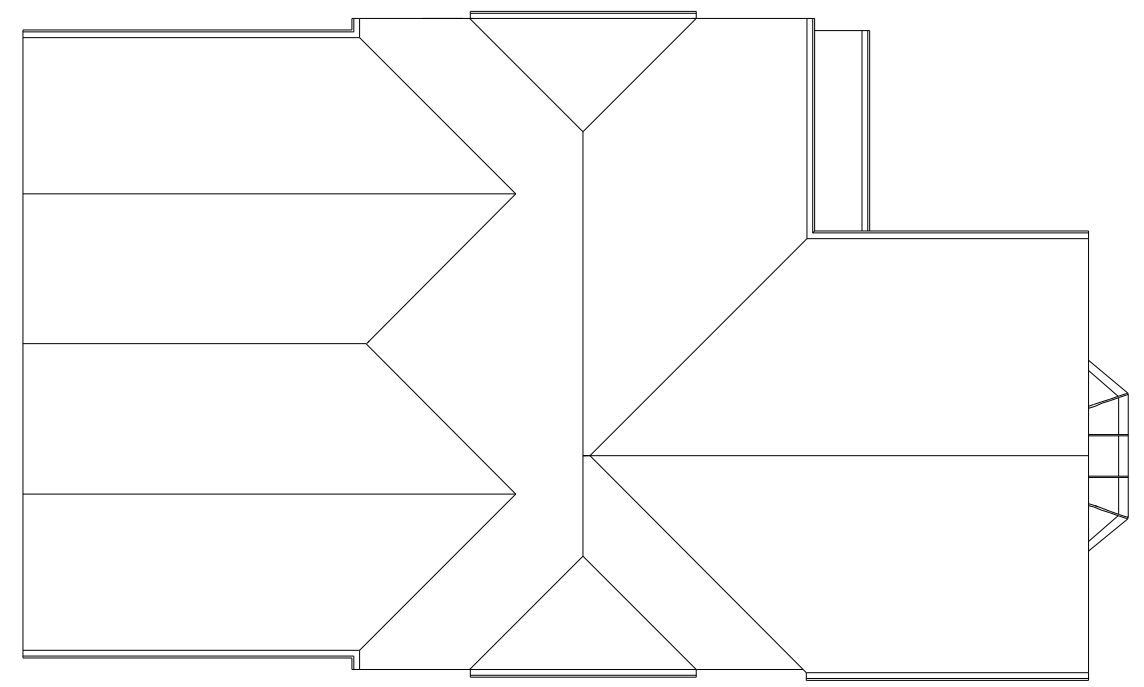




PROPOSED GROUND FLOOR - 1:100



PROPOSED FIRST FLOOR - 1:100



PROPOSED ROOF PLAN - 1:100



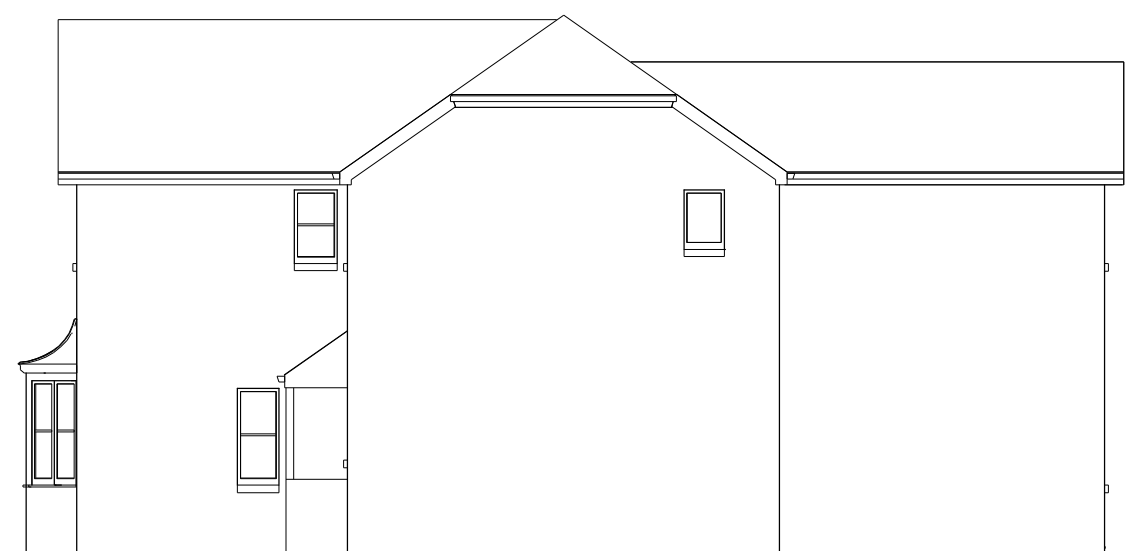
PROPOSED LEFT ELEVATION - 1:100



PROPOSED FRONT ELEVATION - 1:100



PROPOSED REAR ELEVATION - 1:100



PROPOSED RIGHT ELEVATION - 1:100

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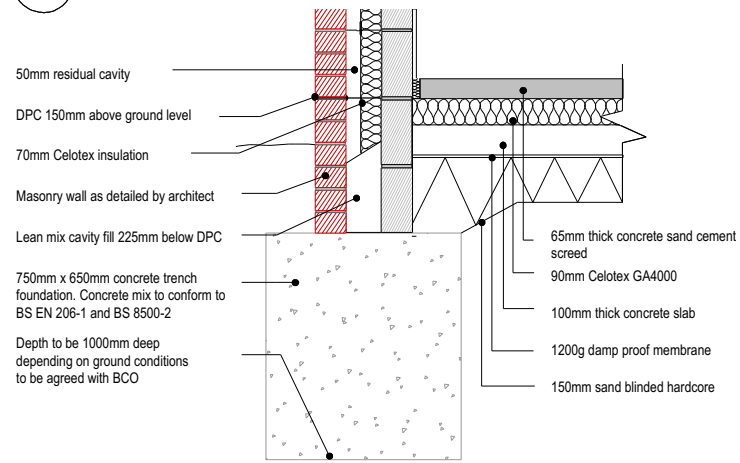
PLANNING DRAWINGS  
**PROPOSED FLOOR PLANS  
 AND ELEVATIONS**

PROPERTY  
 HIDDEN

**STEVE ROBINSON**  
 DESIGN

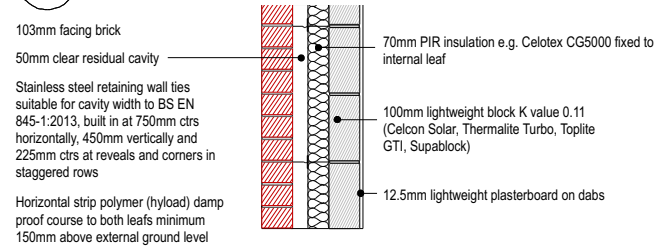


### D1 TRENCH FOUNDATION 1:25



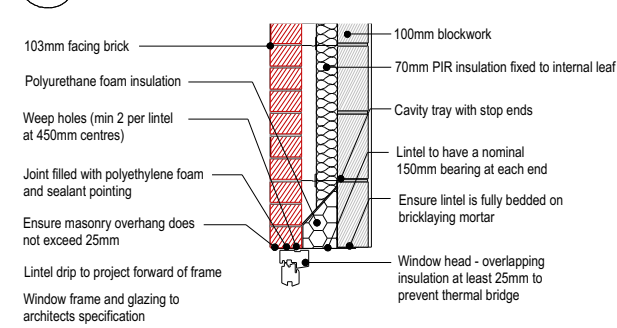
Provide 750mm x 600mm trench fill foundations, concrete mix to conform to BS EN 206-1 and BS 8500-2. All foundations to be a minimum of 1000mm below ground level, exact depth to be agreed on site with Building Control Officer to suit site conditions. All constructed in accordance with 2010 Building Regulations A1/2 and BS 8004:1986 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.

### D2 PARTIAL FILL CAVITY WALL 1:25



To achieve minimum U Value of 0.21W/m<sup>2</sup>K Provide 103mm facing brick to match existing construction. Ensure a 50mm clear residual cavity and provide 70mm Celotex CG5000 insulation fixed to 100mm lightweight blockwork, K value 0.11 (Celcon solar, Thermalite turbo, Toplite GTI, Supablock). Internal finish to be 12.5mm plasterboard on dabs. Walls to be built with 1:1.6 cement mortar.

### D3 WINDOW HEAD AND LINTEL 1:25



#### EXISTING STRUCTURE

Existing structure including foundations, beams, walls and lintels carrying new and altered loads are to be exposed and checked for adequacy prior to commencement of work and as required by the Building Control Officer.

#### WALL TIES

All walls constructed using stainless steel vertical twist type retaining wall ties built in at 750mm ctrs horizontally, 450mm vertically and 225mm ctrs at reveals and corners in staggered rows. Wall ties to be suitable for cavity width and in accordance with BS EN 845-1.

#### DPC

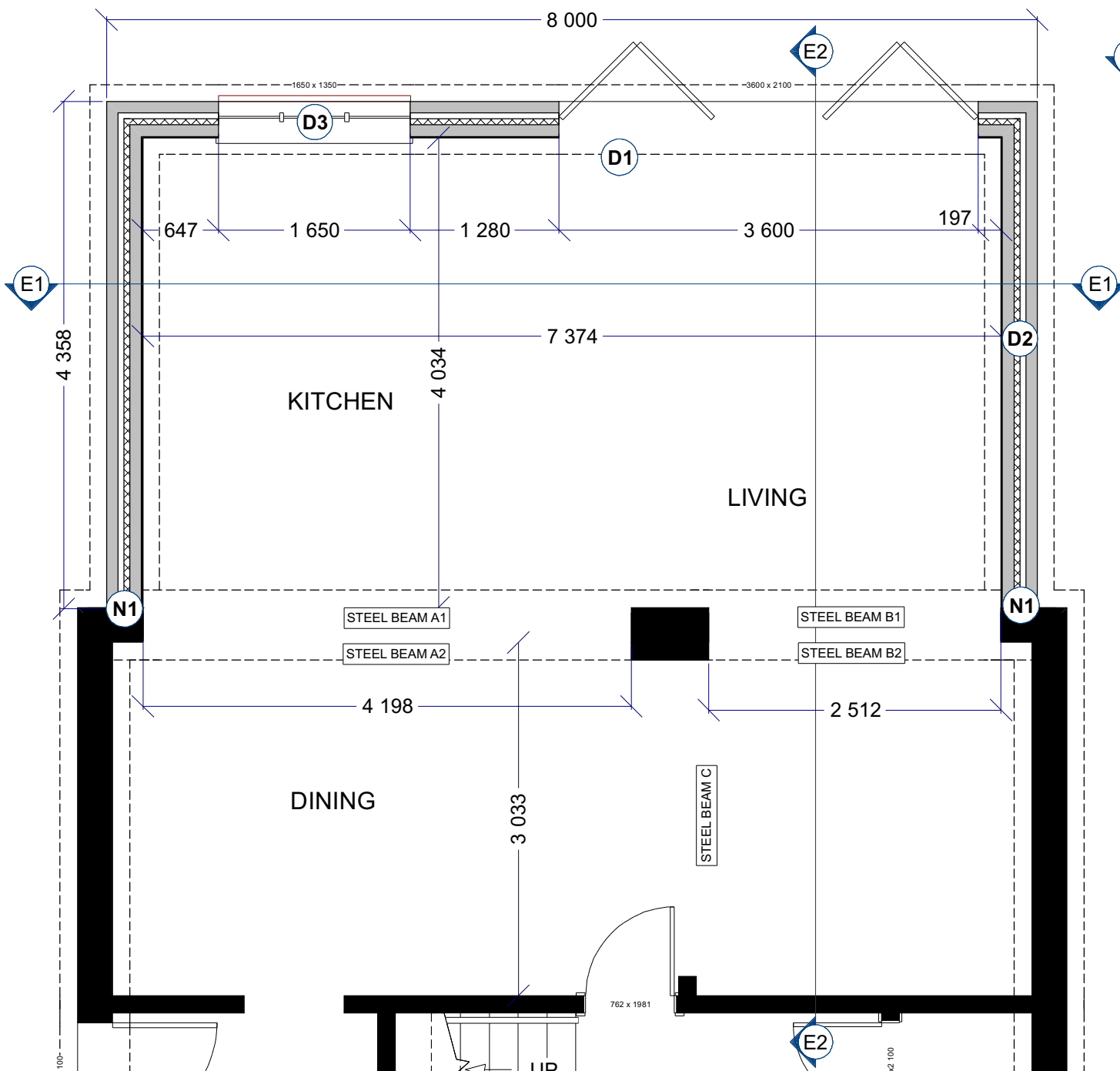
Provide horizontal strip polymer (hyload) damp proof course to both internal and external skins minimum 150mm above external ground level. New DPC to be made continuous with existing DPC's and with floor DPM. Vertical DPC to be installed at all reveals where cavity is closed.

#### CAVITIES

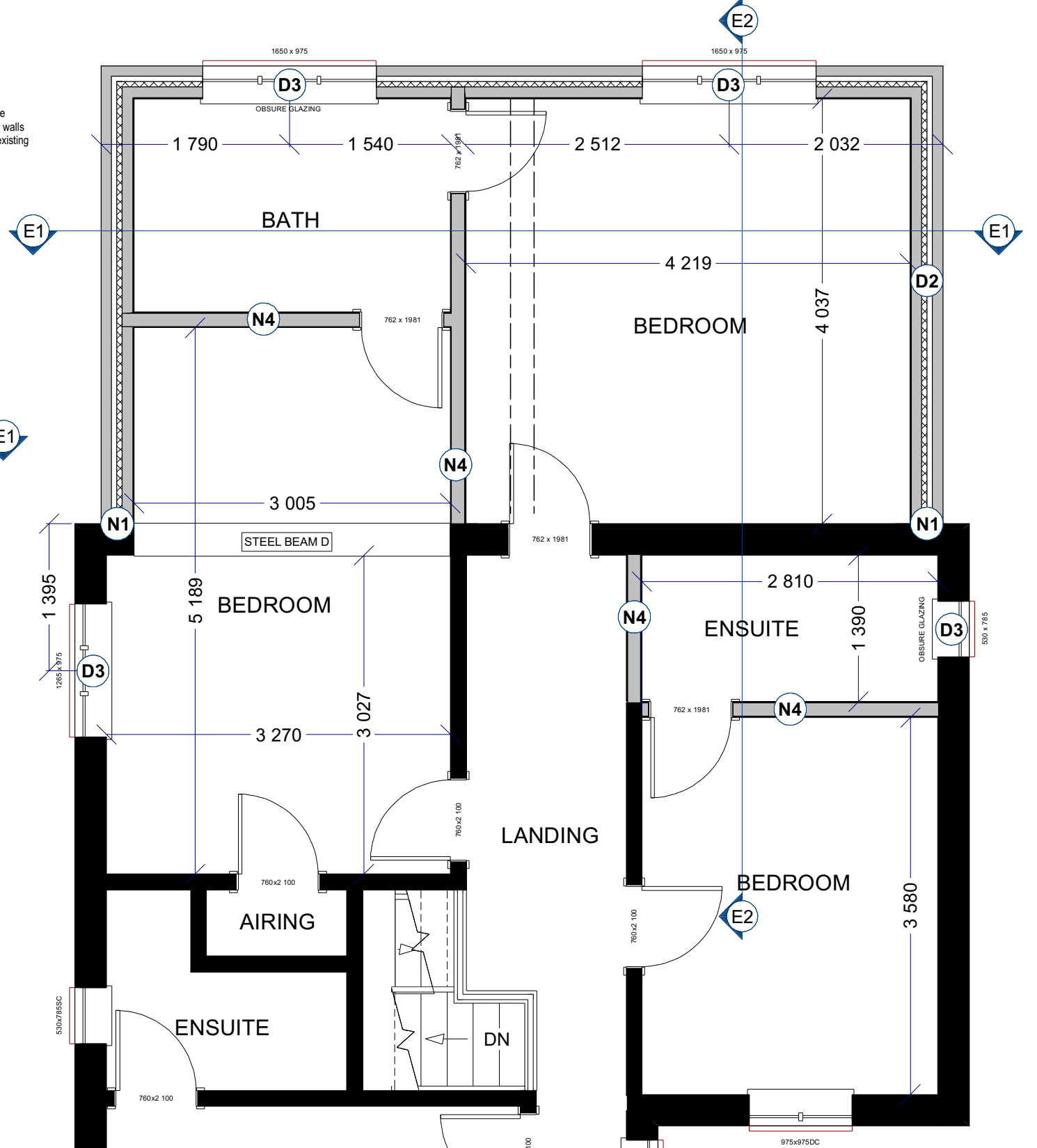
Provide cavity trays over openings. All cavities to be closed at eaves and around openings using Thermabate or similar non combustible insulated cavity closers. Provide vertical DPCs around openings and abutments. All cavity trays must have 150mm upstands and suitable cavity weep holes (min 2) at max 900mm centres.

### N1 EXISTING TO NEW WALL

Cavities in new wall to be made continuous with existing where possible to ensure continuous weather break. If a continuous cavity cannot be achieved, where new walls abuts the existing walls provide a movement joint with vertical DPC. All tied into existing construction with suitable proprietary stainless steel profiles.



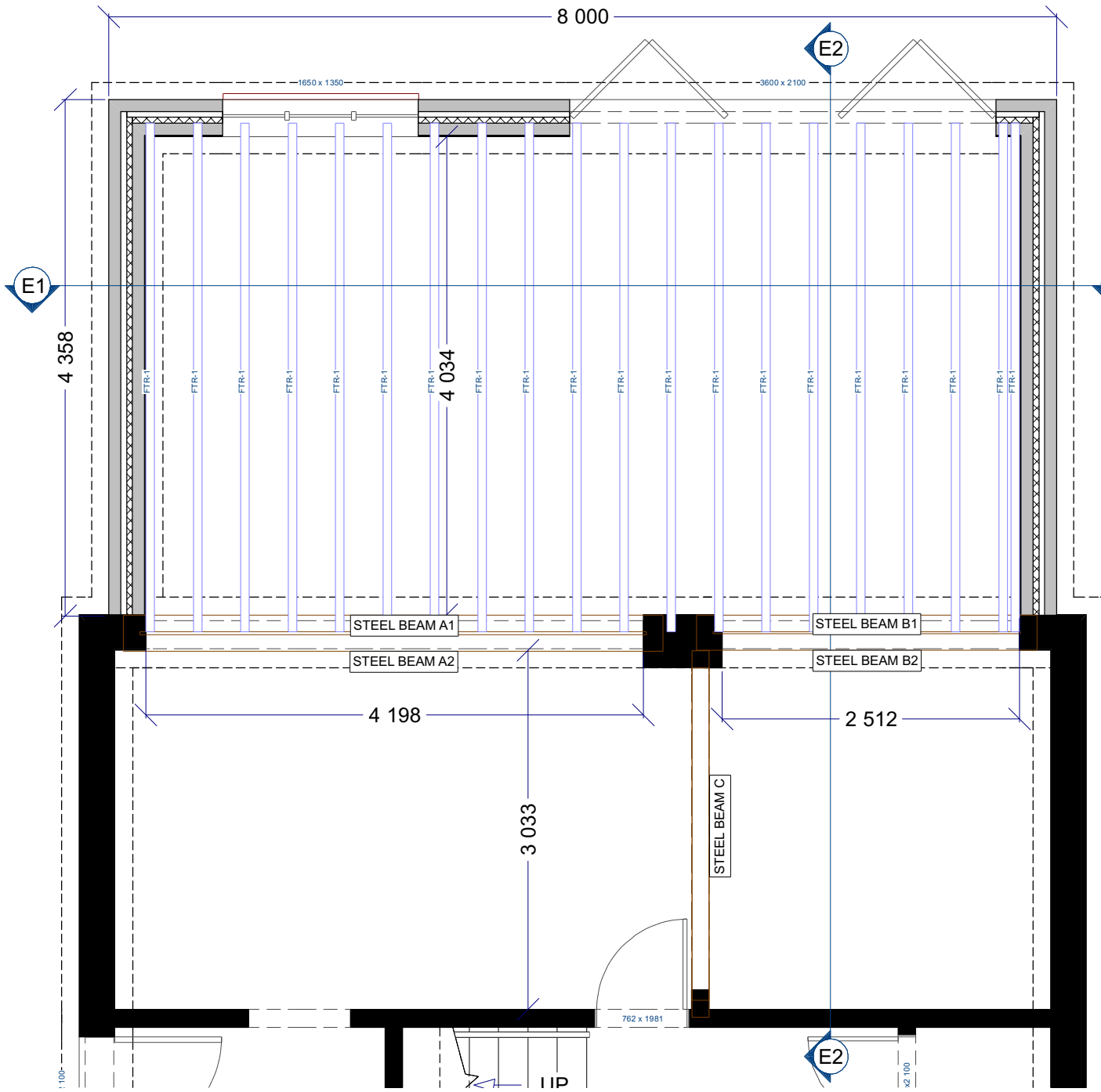
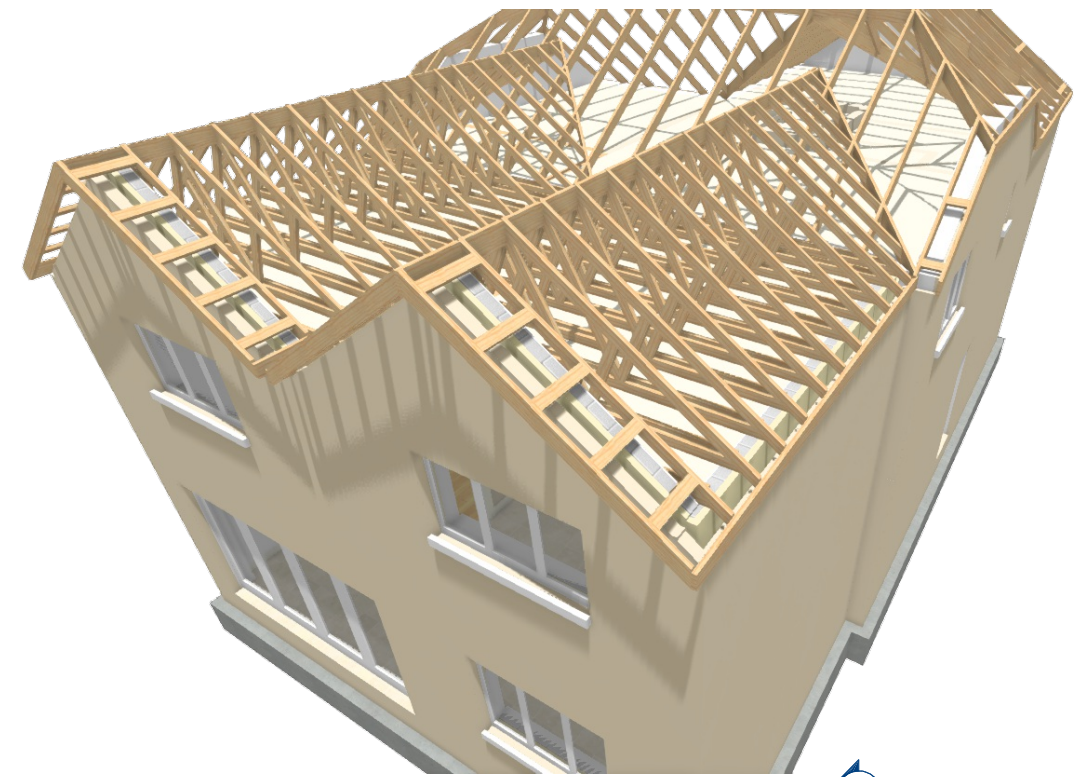
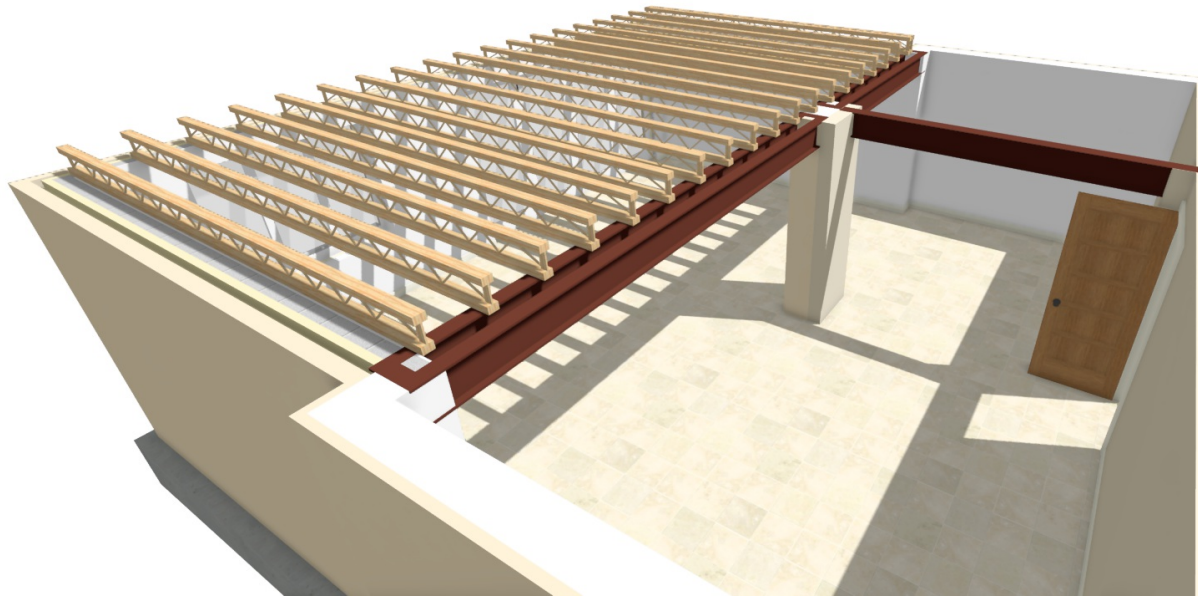
PROPOSED GROUND FLOOR PLAN 1:50



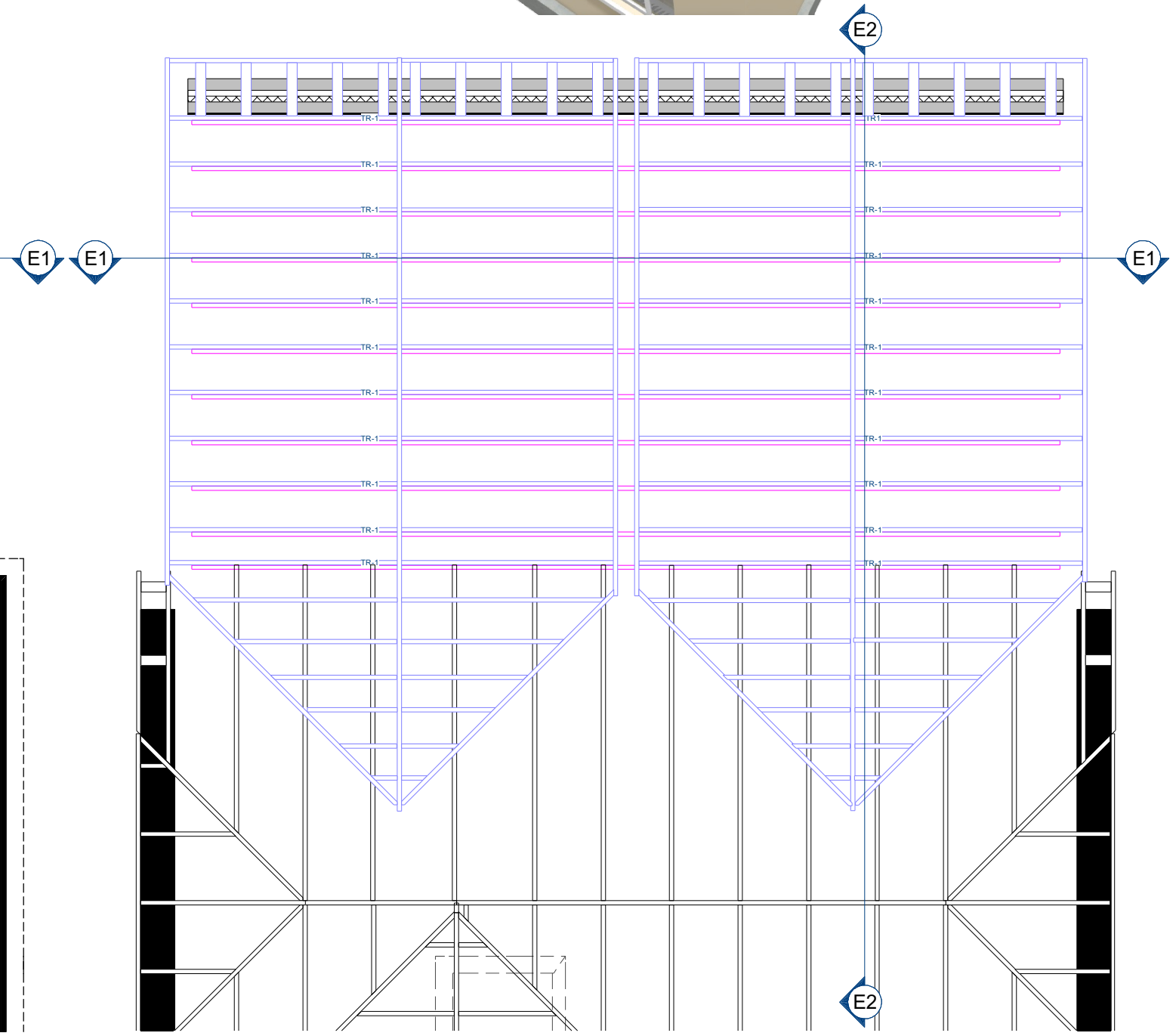
PROPOSED FIRST FLOOR PLAN 1:50

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BUILDING DRAWINGS		
FOUNDATION AND WALL DETAILS		
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PROPERTY		
STEVE ROBINSON		
DESIGN		



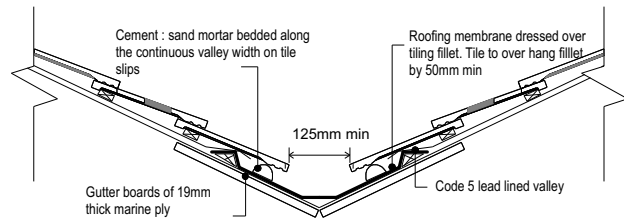


PROPOSED FIRST FLOOR FRAMING PLAN 1:50



PROPOSED ROOF FRAMING PLAN 1:50

**D4 VALLEY DETAIL 1:25**



Lead-lined valleys to be formed using Code 5 lead sheet. Valley lead and two tiling fillets to be supported on min 19mm thick and 225mm wide marine ply valley boards on either side of the rafters. Lead to be laid in lengths not exceeding 1.5m with min 150mm lap joints and be dressed 200mm under the tiles.

Roofing tiles to be bedded in mortar placed on a tile slip to prevent direct contact. Valley to have a minimum 100mm wide channel (125mm minimum for pitches below 30°). All work to be in accordance with the roof cladding manufacturers and the Lead Development Association recommendations.

**N2 TRUSSED RAFTER ROOF**

Pitched roof to be formed using proprietary prefabricated manufactured trusses. Design of roof trusses to be produced by specialist truss manufacturer to BS EN 595:1995 and submitted to Building Control for approval prior to commencement of work. Trusses to be placed at 400ctrs in accordance with BS 8103-3 and BS EN 1995-1 on suitable wall plates fixed using proprietary galvanised steel truss clips. Trusses to be bolted at max 600 centres to C24 47x125 joists. 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 galvanised steel truss clips. Form ceiling using 12.5mm plasterboard and min 3mm thistle multi-finish plaster and lay 150mm Rockwool insulation between ceiling joists with a further 170mm layer over joists (cross direction). Provide polythene vapour barrier between insulation and plasterboard. Ensure opening at eaves level at least equal to continuous strip 25mm wide in two opposite sides to promote cross-ventilation. Mono pitched roofs to have ridge/high level ventilation equivalent to a 5mm gap via proprietary tile vents spaced in accordance with manufacturer's details.

**N3 easi-joist FLOOR JOISTS**

Joists to be minimum 219mm at 600 centres on minimum 75mm bearings. Ceiling to be 12.5mm plasterboard fixed at 230mm centres as per manufacturers specification with 38mm drywall timber screws. Decking to be T&G moisture resistant chipboard fixed with 51mm drywall timber screws and appropriate adhesive. Screws to be spaced at 200mm at the perimeter and 300mm on intermediate support. Adhesive bead to be placed along joist top chord prior to decking placement. Spec to be designed by wolfsystems.

**N4 INTERNAL STUD PARTITIONS**

100mm x 50mm softwood treated timbers studs at 400mm ctrs with 50 x 100mm head and sole plates and solid intermediate horizontal noggins at 1/3 height or 450mm. Provide min 10kg/m<sup>2</sup> density acoustic soundproof quilt tightly packed (eg. 100mm Rockwool or Isowool mineral fibre sound insulation) in all voids the full depth of the stud. Partitions built off doubled up joists where partitions run parallel or provide noggins where at right angles, or built off DPC on thickened concrete slab if solid ground floor. Walls faced throughout with 12.5mm plaster board with skim plaster finish. Taped and jointed complete with beads and stops.

**LEAD WORK AND FLASHINGS**

All lead flashings, any valleys or soakers to be Code 5 lead and laid according to Lead Development Association. Flashings to be provided to all jambs and below window openings with welded upstands. Joints to be lapped min 150mm and lead to be dressed 200mm under tiles, etc. All work to be undertaken in accordance with the Lead Development Association recommendations.

**PITCHED ROOF INSULATION AT CEILING LEVEL**

Pitch 22-45° (imposed load max 0.75 kN/m<sup>2</sup> - dead load max 0.75 kN/m<sup>2</sup>)

To achieve U value of 0.15 W/m<sup>2</sup>K

Timber roof structures to be designed by an Engineer in accordance with NHBC Technical Requirement R5 Structural Design. Calculations to be based on BS EN 1995-1-1. Roofing tiles to match existing on 25 x 38mm tanalised sw treated battens on sarking felt supported on 47 x 100mm grade C24 rafters at max 400mm centres max span 2.12m. Rafters supported on 100 x 50mm sw wall plates. Insulation at ceiling level to be 150mm XR4000 Celotex between ceiling joists with a further 40mm FR5000 over joists. 18mm chipboard to be provided over insulation.

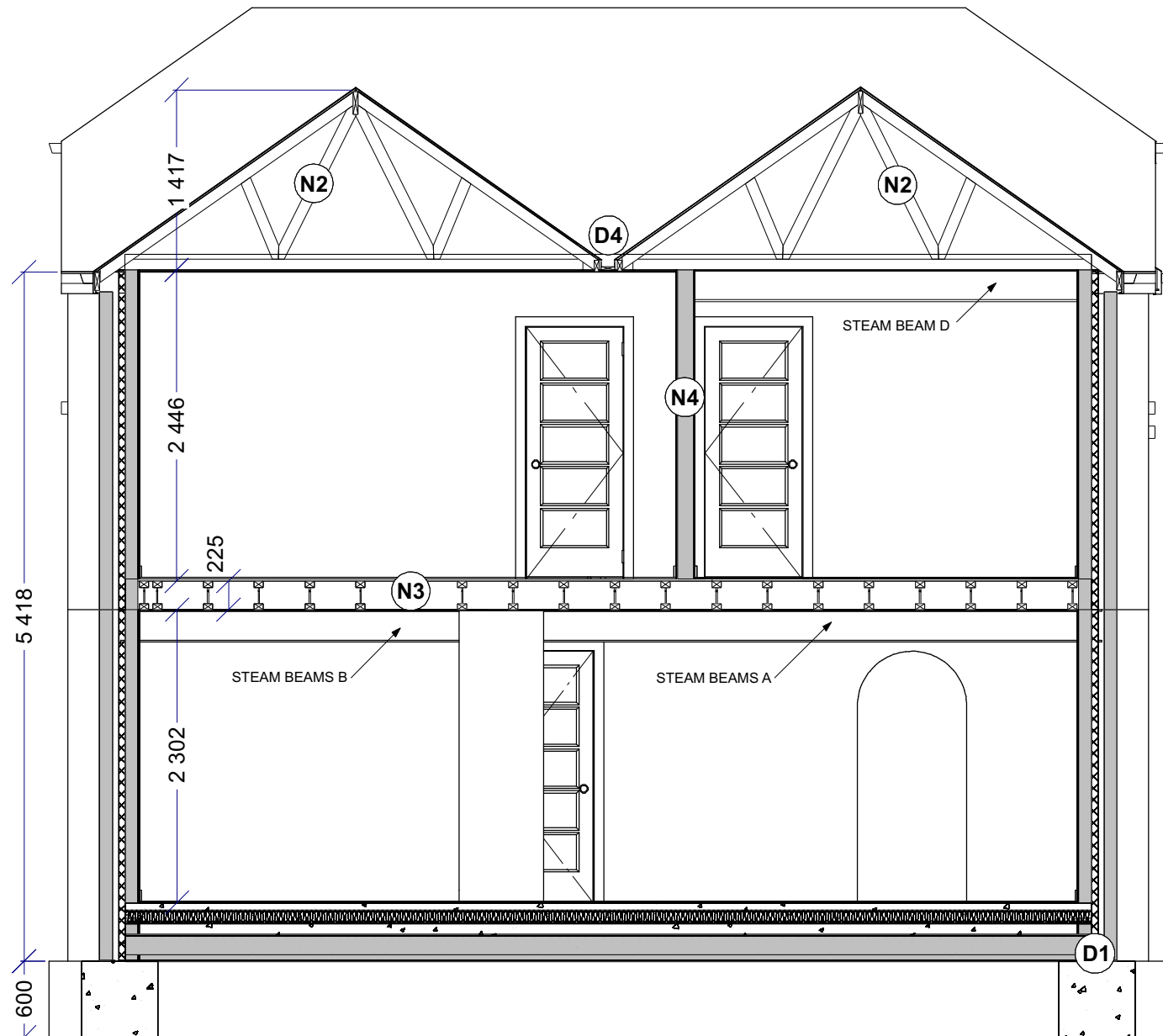
Construct ceiling using sw joists at 400mm centres, finished internally with 12.5mm plasterboard and min 3mm thistle multi-finish plaster. Provide polythene vapour barrier between insulation and plasterboard. Provide opening at eaves level at least equal to continuous strip 25mm wide on two opposite sides to promote cross-ventilation. Mono pitched roofs to have ridge/high level ventilation equivalent to a 5mm gap via proprietary tile vents spaced in accordance with manufacturer's details.

Restraint strapping - 100mm x 50mm wall plate strapped down to walls. Ceiling joists and rafters to be strapped to walls and gable walls, straps built into cavity, across at least 3 timbers with noggins. All straps to be 1000 x 30 x 5mm galvanised straps or other approved to BSEN 845-1 at 2m centres.

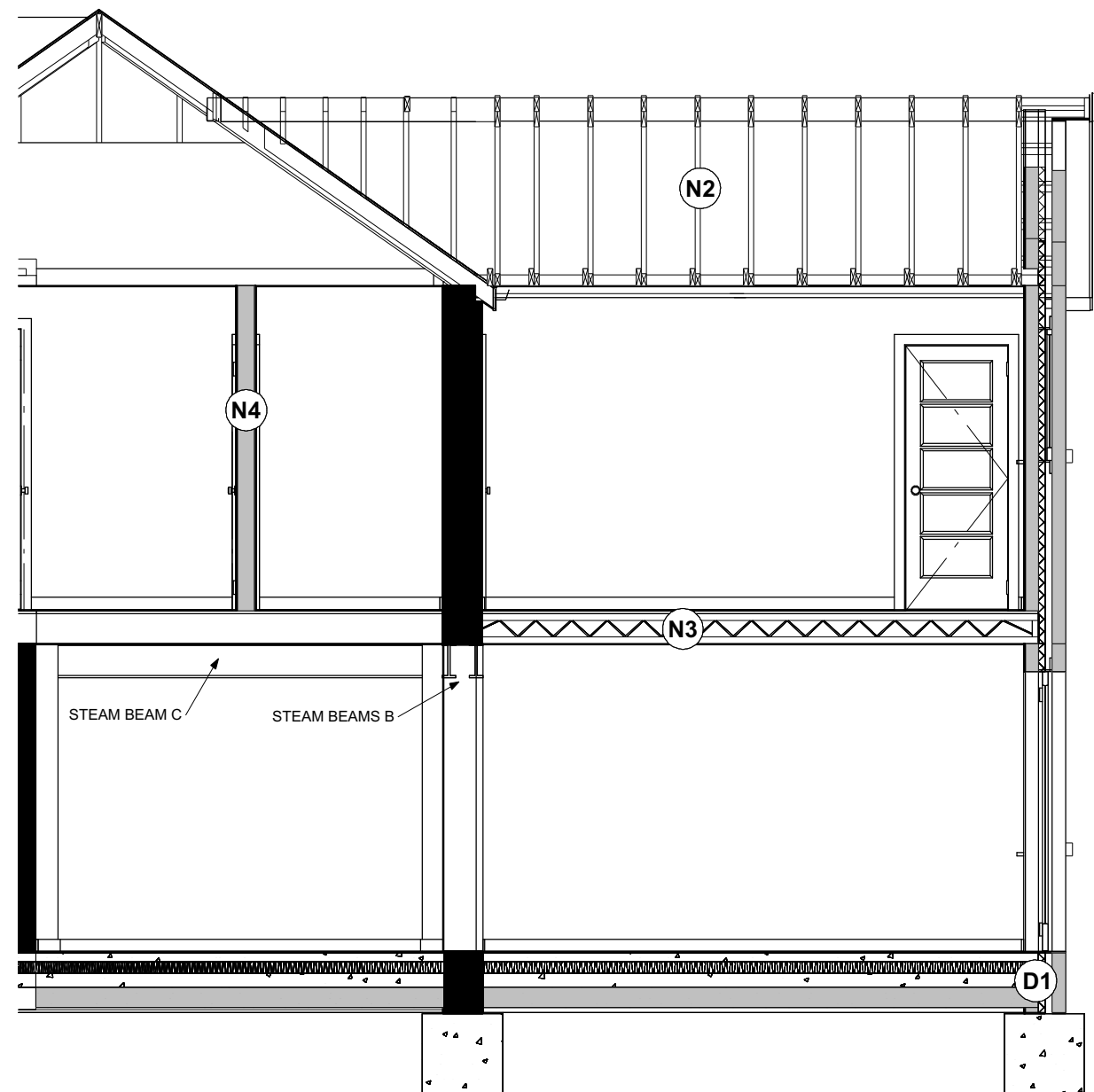
THIS IS A GENERAL GUIDE BASED ON NORMAL LOADING CONDITIONS FOUND IN DOMESTIC CONSTRUCTION. IT IS YOUR RESPONSIBILITY TO ASSESS YOUR DESIGN TO ASCERTAIN WHETHER ENGINEER'S DETAILS/CALCULATIONS ARE REQUIRED. PLEASE REFER TO THE TRADA DOCUMENT - 'SPAN TABLES FOR SOLID TIMBER MEMBERS IN FLOORS, CEILINGS AND ROOFS FOR DWELLINGS' OR ASK YOUR BUILDING CONTROL OFFICER FOR ADVICE.

**BEAMS**

Supply and install new structural elements such as new beams, roof structure, floor structure, bearings, and padstones in accordance with the Structural Engineer's calculations and details. New steel beams to be encased in 12.5mm Gyproc FireLine board with staggered joints, Gyproc FireCase or painted in Nullifire S or similar intumescent paint to provide 1/2 hour fire resistance as agreed with Building Control. All fire protection to be installed as detailed by specialist manufacturer.



SECTION E1 1:50



SECTION E2 1:50



## CDM REGULATIONS 2015

The client must abide by the Construction Design and Management Regulations 2015. The client must appoint a contractor, (if more than one contractor is to be involved, the client will need to appoint (in writing) a principal designer (to plan, manage and coordinate the planning and design work) and a principal contractor (to plan, manage and coordinate the construction and ensure there are arrangements in place for managing and organising the project).

### Domestic clients

The domestic client is to appoint a principal designer and a principal contractor when there is more than one contractor, if not your duties will automatically transferred to the contractor or principal contractor.

The designer can take on the duties, provided there is a written agreement between you and the designer to do so.

The Health and Safety Executive is to be notified as soon as possible before construction work starts if the works:

(a) Last longer than 30 working days and has more than 20 workers working simultaneously at any point in the project.

Or:

(b) Exceeds 500 person days.

### PARTY WALL ACT

The owner, should they need to do so under the requirements of the Party Wall Act 1996, has a duty to serve a Party Structure Notice on any adjoining owner if building work on, to or near an existing Party Wall involves any of the following:

- Support of beam
- Insertion of DPC through wall
- Raising a wall or cutting off projections
- Demolition and rebuilding
- Underpinning
- Insertion of lead flashings
- Excavations within 3 metres of an existing structure where the new foundations will go deeper than adjoining foundations, or within 6 metres of an existing structure where the new foundations are within a 45 degree line of the adjoining foundations. A Party Wall Agreement is to be in place prior to start of works on site.

### THERMAL BRIDGING

Care shall be taken to limit the occurrence of thermal bridging in the insulation layers caused by gaps within the thermal element, (i.e. around windows and door openings). Reasonable provision shall also be made to ensure the extension is constructed to minimise unwanted air leakage through the new building fabric.

### MATERIALS AND WORKMANSHIP

All works are to be carried out in a workmanlike manner. All materials and workmanship must comply with Regulation 7 of the Building Regulations, all relevant British Standards, European Standards, Agreement Certificates, Product Certification of Schemes (Kite Marks) etc. Products conforming to a European technical standard or harmonised European product should have a CE marking.

### SITE PREPARATION

Ground to be prepared for new works by removing all unsuitable material, vegetable matter and tree or shrub roots to a suitable depth to prevent future growth. Seal up, cap off, disconnect and remove existing redundant services as necessary. Reasonable precautions must also be taken to avoid danger to health and safety caused by contaminants and ground gases e.g. landfill gases, radon, vapours etc. on or in the ground covered, or to be covered by the building.

### BASIC RADON PROTECTION

Provide a 1200g (300 um) radon membrane under floor slab lapped 300mm double wetted and taped with gas proof tape at joints and service entry points. Carry membrane over cavity and provide suitable cavity tray and weep holes.

### EXISTING STRUCTURE

Existing structure including foundations, beams, walls and lintels carrying new and altered loads are to be exposed and checked for adequacy prior to commencement of work and as required by the Building Control Officer.

### BEAMS

Supply and install new structural elements such as new beams, roof structure, floor structure, bearings, and padstones in accordance with the Structural Engineer's calculations and details. New steel beams to be encased in 12.5mm Gyproc FireLine board with staggered joints. Gyproc FireCase or painted in Nullifire S or similar intumescent paint to provide 1/2 hour fire resistance as agreed with Building Control. All fire protection to be installed as detailed by specialist manufacturer.

### LINTELS

- For uniformly distributed loads and standard 2 storey domestic loadings only Lintel widths are to be equal to wall thickness. All lintels over 750mm sized internal door openings to be 65mm deep pre-stressed concrete plank lintels. 150mm deep lintels are to be used for 900mm sized internal door openings. Lintels to have a minimum bearing of 150mm on each end. Any existing lintels carrying additional loads are to be exposed for inspection at commencement of work on site. All pre-stressed concrete lintels to be designed and manufactured in accordance with BS EN 1992-1-1, with a concrete strength of 50 or 40 N/mm<sup>2</sup> and incorporating steel strands to BS 5896 to support loadings assessed to BS 5977 Part 1. For other structural openings provide proprietary insulated steel lintels suitable for spans and loadings in compliance with Approved Document A and lintel manufacturer's standard tables. Stop ends, DPC trays and weep holes to be provided above all externally located lintels.

### STRAPPING FOR PITCHED ROOF

Gable walls should be strapped to rafters at 2m centres. All external walls running parallel to roof rafters to be restrained at roof level using 1000mm x 30mm x 5mm galvanised mild steel horizontal straps or other approved to BSEN 845-1 built into walls at max 2000mm centres and to be taken across minimum 3 rafters and screw fixed. Provide solid noggins between rafters at strap positions. All wall plates to be 100 x 50mm fixed to inner skin of cavity wall using 30mm x 5mm x 100mm galvanised metal straps or other approved to BSEN 845-1 at maximum 2m centres.

### STRAPPING OF FLOORS

Provide lateral restraint where joists run parallel to walls, floors are to be strapped to walls with 1000mm x 30mm x 5mm galvanised mild steel straps or other approved in compliance with BS EN 845-1 at max 2.0m centres, straps to be taken across minimum of 3 joists. Straps to be built into walls. Provide 38mm wide x ¼ depth solid noggins between joists at strap positions.

### FLAT ROOF RESTRAINT

100m x 50mm C16 grade timber wall plates to be strapped to walls with 1000mm x 30mm x 5mm galvanised mild steel straps at maximum 2.0m centres fixed to internal wall faces.

### OPENINGS AND RETURNS

An opening or recess greater than 0.1m<sup>2</sup> shall be at least 550mm from the supported wall (measured internally).

### TRENCH FOUNDATION

Provide 750mm x 600mm trench fill foundations, concrete mix to conform to BS EN 206-1 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 8004:1986 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. Services should be either sleeved with flexible joints, pipe to be within 150mm of foundation and connected on each side by of rocker pipes by length of at most 600mm with flexible joints or, Pipes to pass through a suitably strengthened opening in the foundation, i.e. foundation shuttered and a suitable lintel provided over on semi engineering bricks if required, sufficient space for movement is required to leave to ensure that the drain is capable of maintaining line and gradient. Opening to be masked with granular backfill (pea shingle) around pipe. DPC to be provided as required by BCO. Advise 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.

### SOLID FLOOR INSULATION OVER SLAB

To meet min U value required of 0.18 W/m<sup>2</sup>K Solid ground floor to consist of 150mm consolidated well-rammed hardcore. Blinded with 50mm sand blinding. Provide 100mm ST2 or Gen2 ground bearing slab concrete mix to conform to BS 8500-2 over a 1200 gauge polythene DPM. DPM to be lapped in with DPC in walls. Floor to be insulated over slab and DPM with min 90mm thick Celotex FR5000.

25mm insulation to continue around floor perimeters to avoid thermal bridging. A VCL should be laid over the insulation boards and turned up 100mm at room perimeters behind the skirting, all joints to be lapped 150mm and sealed. Finish with 65mm sand/cement finishing screed with light mesh reinforcement.

Where drain runs pass under new floor, provide A142 mesh 1.0m wide and min 50mm concrete cover over length of drain.

Where existing suspended timber floor air bricks are covered by new extension, ensure cross-ventilation is maintained by connecting to 100mm dia UPVC pipes with 100mm concrete cover laid under the extension. Pipes to terminate at new 65mm x 215mm air bricks with cavity tray over.

### WALLS BELOW GROUND

All new walls to have Class A blockwork below ground level or alternatively semi engineering brickwork in 1:4 masonry cement or equal approved specification. Cavities below ground level to be filled with lean mix concrete min 225mm below damp proof course. Or, provide lean mix backfill at base of cavity wall (150mm below damp course) laid to fall to weep holes.

### PARTIAL FILL CAVITY WALL

To achieve minimum U Value of 0.21W/m<sup>2</sup>K 20mm two coat sand/cement render to comply to BS EN 13914-1 with waterproof additive on 100mm lightweight block, K value 0.16 or lower, (Aircrete, Celcon Solar, Topblock Toplete Standard). Ensure a 50mm clear residual cavity and provide 60mm Celotex CG5000 fixed to inner leaf constructed using 100mm lightweight block, K value 0.16 or lower,(Aircrete, Celcon Solar, Topblock Toplete standard). Internal finish to be 12.5 mm plasterboard on dabs. Walls to be built with 1:1:6 cement mortar.

### TIMBER FRAME WALL

To achieve minimum U Value of 0.21W/m<sup>2</sup>K 102mm facing brick to match existing with 50mm vented and drained cavity tied to breathable membrane (having a vapour resistance of not more than 0.6 MNs/g) and 12mm thick WBP external quality plywood sheathing (or other approved). Ply fixed to treated timber frame studs constructed using 100mm x 50mm treated timbers with head & sole plates and noggins at 400mm ctrs or to s/engineer's details & calculations. Insulation between and over studs; 100mm Celotex FR5000 between and 20mm over. Provide 12.5mm plasterboard with VCL over studs. Finished with 3mm skim coat of finishing plaster. All junctions to have water tight construction, seal all perimeter joints with tape internally and with silicon sealant externally.

### SOLID BLOCK WALL WITH EXTERNAL INSULATION

U value 0.21. Mechanically fix 80mm Kingspan Kooltherm K5 external wall board to 215mm medium density block wall built using 1:1:6 cement mortar. Insulation boards fixed using thermally broken proprietary telescopic tube fasteners at max 1m centres driven into pre-drilled holes, ensure a minimum of 5 fixings per insulation board. Apply 20mm of suitable reinforced render with waterproof additive with a scraped or textured finish. Render to be applied directly to the insulation incorporating emt or glass fibre mesh. Movement joints to be provided compatible with the render system. All work to be in accordance with render manufacturer's details and BS EN 13914-1. Where surface is uneven it is recommended that a bedding compound be applied prior to fixing the insulation boards. Line wall internally with 12.5mm plasterboard and 3mm skim.

### DPC

Provide horizontal strip polymer (tylodan) damp proof course to both internal and external skins minimum 150mm above external ground level. New DPC to be made continuous with existing DPC's and with floor DPM. Vertical DPC to be installed at all reveals where cavity is closed.

### WALL TIES

All walls constructed using stainless steel vertical twist type retaining wall ties built in at 750mm ctrs horizontally, 450mm vertically and 225mm ctrs at reveals and corners in staggered rows. Wall ties to be suitable for cavity width and in accordance with BS EN 845-1.

### CAVITIES

Provide cavity trays over openings. All cavities to be closed at eaves and around openings using Thermabate or similar non combustible insulated cavity closers. Provide vertical DPCs around openings and abutments. All cavity trays must have 150mm upstands and suitable cavity weep holes (min 2) at max 900mm centres.

### EXISTING TO NEW WALL

Cavities in new wall to be made continuous with existing where possible to ensure continuous weather break. If a continuous cavity cannot be achieved, where new walls abuts the existing walls provide a movement joint with vertical DPC. All tied into existing construction with suitable proprietary stainless steel profiles.

### MOVEMENT JOINTS

Movement joints to be provided at the following maximum spacing: Clay brickwork - 12m. Calcium silicate brick - 7.5-9m. Lightweight concrete block - density not exceeding 1,500kg/m3 - 6m. Dense concrete block - density exceeding 1,500kg/m3 – 7.5-9m. Any masonry in a parapet wall (length to height ratio greater than 3:1) - half the above spacings and 1.5m from corners. Movement joint widths for clay bricks to be not less than 1.3mm/m i.e. 12m = 16mm and for other masonry not less than 10mm. Additional movement joints may be required where the aspect ratio of the wall (length :height) is more than 3:1. Considerations to be given to BS EN 1996-1-2:2005 Eurocode 6. Design of masonry structure.

### LEAD VALLEYS

Lead-lined valleys to be formed using Code 5 lead sheet. Valley lead and two tiling fillets to be supported on min 19mm thick and 225mm wide marine ply valley boards on either side of the rafters. Lead to be laid in lengths not exceeding 1.5m with min 150mm lap joints and be dressed 200mm under the tiles.

Roofing tiles to be bedded in mortar placed on a tile slip to prevent direct contact. Valleys to have a minimum 100mm wide channel (125mm minimum for pitches below 30°).

All work to be in accordance with the roof cladding manufacturers and the Lead Development Association recommendations.

### LEAD WORK AND FLASHINGS

All lead flashings, any valleys or soakers to be Code 5 lead and laid according to Lead Development Association. Flashings to be provided to all jamps and below window openings with welded upstands. Joints to be lapped min 150mm and lead to be dressed 200mm under tiles, etc. All work to be undertaken in accordance with the Lead Development Association recommendations.

### TRUSSED RAFTER ROOF

Pitched roof to be formed using proprietary prefabricated manufactured trusses. Design of roof trusses to be produced by specialist truss manufacturer to BS EN 595:1995 and submitted to Building Control for approval prior to commencement of work. Trusses to be placed at max 600ctrs in accordance with BS 8103-3 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 and lay 150mm Rockwool insulation between ceiling joists with a further 170mm layer over joists (cross direction). Provide polythene vapour barrier between insulation and plasterboard. Ensure opening at eaves level at least equal to continuous strip 25mm wide in two opposite sides to promote cross-ventilation. Mono pitched roofs to have ridge/high level ventilation equivalent to a 5mm gap via proprietary tile vents spaced in accordance with manufacturer's details.

### PITCHED ROOF INSULATION AT CEILING LEVEL

Pitch 22-45° (imposed load max 0.75 kN/m<sup>2</sup> - dead load max 0.75 kN/m<sup>2</sup>)

To achieve U value of 0.15 W/m<sup>2</sup>K

Timber roof structures to be designed by an Engineer in accordance with NHBC Technical Requirement R5 Structural Design. Calculations to be based on BS EN 1995-1-1. Roofing tiles to match existing on 25 x 38mm tanalised sw treated battens on sarking felt supported on 47 x 100mm grade C24 rafters at max 400mm centres max span 2.12m. Rafters supported on 100 x 50mm sw wall plates. Insulation at ceiling level to be 150mm XR4000 Celotex between ceiling joists with a further 40mm FR5000 over joists. 18mm chipboard to be provided over insulation.

Construct ceiling using sw joists at 400mm centres, finished internally with 12.5mm plasterboard and min 3mm thistle multi-finish plaster. Provide polythene vapour barrier between insulation and plasterboard. Provide opening at eaves level at least equal to continuous strip 25mm wide on two opposite sides to promote cross-ventilation. Mono pitched roofs to have ridge/high level ventilation equivalent to a 5mm gap via proprietary tile vents spaced in accordance with manufacturer's details. Restraint strapping - 100mm x 50mm wall plate strapped down to walls. Ceiling joists and rafters to be strapped to walls and gable walls, straps built into cavity, across at least 3 timbers with noggins. All straps to be 1000 x 30 x 5mm galvanized straps or other approved to BSEN 845-1 at 2m centres.

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### WARM FLAT ROOF

(imposed load max 1.0 kN/m<sup>2</sup> - dead load max 0.75 kN/m<sup>2</sup>)

To achieve U value 0.15 W/m<sup>2</sup>K Flat roof to be single ply membrane roofing providing aa fire rating for surface spread of flame with a current BBA or WIMLAS Certificate and laid to specialist specification. Single ply membrane to be fixed to 22mm exterior quality plywood over 140mm Celotex XR4000 insulation.

Insulation bonded to vcl on 22mm external quality plywood decking or similar approved on sw frings to minimum 1 in 80 fall on sw treated 47 x 220mm C24 flat roof joists at 400mm ctrs to give a max span of 5.08m or as Structural Engineer's details and calculations. Underside of joists to have 12.5mm foil backed plasterboard and skim. Provide cavity tray to existing house where new roof abuts existing house. Provide restraint to flat roof by fixing 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.

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### INTERNAL STUD PARTITIONS

100mm x 50mm softwood treated timbers studs at 400mm ctrs with 50 x 100mm head and sole plates and solid intermediate horizontal noggins at 1/3 height or 450mm. Provide min 10(kg/m<sup>2</sup> density acoustic soundproof quilt lightly packed (eg. 100mm Rockwool or Isowool mineral fibre sound insulation) in all voids the full depth of the stud. Partitions built off doubled up joists where partitions run parallel or provide noggins where at right angles, or built off DPC on thickened concrete slab if solid ground floor. Walls faced throughout with 12.5mm plaster board with skim plaster finish. Taped and jointed complete with beads and stops.

### INTERNAL MASONRY PARTITIONS

Construct non load bearing internal masonry partitions using dense concrete blocks built off thickened floor slab and tied at 225mm centres with proprietary steel profiles or block bonded to all internal and external walls. Walls faced throughout with 12.5mm plasterboard on dabs with skim plaster finish or 13mm lightweight plaster.

### INTERNAL LOADBEARING MASONRY PARTITIONS

Construct load bearing internal masonry partitions using dense concrete blocks built off concrete foundation. Concrete mix to conform to BS EN 206-1. Depth to engineer's details and dependent on ground conditions to be agreed with BCO. Wall tied at 225mm centres with proprietary steel profiles or block bonded to all internal and external walls. Walls faced throughout with 12.5mm plasterboard on dabs with skim plaster finish or 13mm lightweight plaster.

### INTERMEDIATE FLOORS

Intermediate floor to be 25mm t&g flooring grade chipboard or floorboards laid on C24 joists at 400mm ctrs (see engineer's calculation for sizes and details). Lay 100mm Rockwool mineral fibre quilt insulation min 10kg/m<sup>2</sup> or equivalent between floor joists. Ceiling to be 12.5 FireLine plasterboard with skim plaster set and finish. Joist spans over 2.5m to be strutted at mid span using 38 x 38mm herringbone strutting or 38mm solid strutting (at least 2/3 of joist depth). In areas such as kitchens, utility rooms and bathrooms, flooring to be moisture resistant grade in accordance with BS EN 312. Identification marking must be laid upon most to allow easy identification. Provide lateral restraint where joists run parallel to walls, floors are to be strapped to walls with 1000mm x 30mm x 5mm galvanised mild steel straps or other approved in compliance with BS EN 845-1 at max 2.0m centres, straps to be taken across minimum 3 no. joists. Straps to be built into walls. Provide 38mm wide x ¼ depth solid noggins between joists at strap positions.

### ELECTRICAL

All electrical work required to meet the requirements of Part P (electrical safety) must be designed, installed, inspected and tested by a competent person registered under a competent person self certification scheme such as BRE certification Ltd, BSI, NICEIC Certification Services or Zurich Ltd. An appropriate BS7671 Electrical Installation Certificate will be issued for the work by a person competent to do so. A copy of a certificate will be given to Building Control on completion.

### STAIRS

Dimensions to be checked and measured on site prior to fabrication of stairs. Timber stairs to comply with BS585 and with Part K of the Building Regulations. Max rise 220mm, min going 220mm. Two risers plus one going should be between 550 and 700mm. Tapered treads to have going in centre of tread at least the same as the going on the straight. Min 50mm going of tapered treads measured at narrow end. Pitch not to exceed 42 degrees. The width and length of every landing should be at least as great as the smallest width of the flight. Doors which swing across a landing at the bottom of a flight should leave a clear space of at least 400mm across the full width of the flight. Min 2.0m headroom measured vertically above pitch line of stairs and landings. Handrail on staircase to be 900mm above the pitchline, handrail to be at least one side if stairs are less than 1m wide and on both sides if they are wider. Ensure a clear width between handrails of minimum 600mm. Balustrading designed to be unclimbable and should contain no space through which a 100mm sphere could pass. Allow for all structure as designed by a Structural Engineer.

### INTERNAL LIGHTING

Install low energy light fittings that only take lamps having a luminous efficiency greater than 45 lumens per circuit watt and a total output greater than 400 lmp lumens. Not less than three energy efficient light fittings per four of all the lighting fixtures in the main dwelling spaces to comply with Part L of the current Building Regulations and the Domestic Building Services Compliance Guide.

### HEATING

Extend all heating and hot water services from existing and provide new TRVs to radiators. Heating system to be designed, installed, tested and fully certified by a GAS SAFE registered specialist. All work to be in accordance with the Local Water Authorities bye laws, the Gas Safety (Installation and Use) Regulations 1998 and IEE Regulations.

### WOOD BURNING STOVE

Ensure the wood burning stove is installed by an APHC, HETAS, NAPIT or NICEIC accredited specialist in compliance with Part J. Supply a suitable flue, hearth and CO / Carbon Monoxide alarm and provide ventilation to ensure the necessary combustion air and to prevent the depletion of oxygen in the room. There must not be an extractor fan fitted in the same room as the stove. A notice plate giving operating and maintenance instructions must be provided and fixed in an obvious place and the Part J installation checklist is to be completed and a copy given to Building Control.

### OIL HEATING APPLIANCES UP TO 45KW

Oil burning appliances up to 45kW to be installed, commissioned and tested by an installer registered with OFTEC, in compliance with Approved Document J. On completion, building control is to be provided with a copy of the commissioning certificates.

### OIL STORAGE TANKS

Oil tanks up to 3500 litres. Oil tanks to be: -placed on a 50mm thick a concrete base which extends 300mm beyond the base of the tank -located in the open air, 1.8m min from buildings or flues and 760mm from boundaries. -provided with a proprietary fire resistant pipe and valve system. If there is a risk of pollution to water courses or drains, the tank should either be: -internally bunded. Or: -provided with an impervious masonry bund equal to capacity of 110% of its volume.

### NEW GAS BOILER

Heating and hot water will be supplied via a wall mounted condensing vertical balanced flue pressurised boiler with a min SEDBUK rating of 89.5%. No combustible materials within 500mm of the flue. System to be fitted with thermostatic radiator valves and all necessary zone controls and boiler control interlocks. The system will be installed, commissioned and tested by a GAS SAFE Registered Specialist and a certificate issued that the installation complies with the requirements of PART L. All work to be in accordance with the Local Water Authorities bye laws, the Gas Safety (Installation and Use) Regulations 1998 and IEE Regulations.

### 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.

### 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 0.33m<sup>2</sup>. - 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.

### ROOF LIGHTS

Min U-value of 1.6 W/m<sup>2</sup>K. Roof-lights to be double glazed with16mm argon gas and soft low-E glass. Window Energy Rating to be Band C or better. Roof lights to be fitted in accordance with manufacturer's instructions with rafters doubled up to sides and suitable flashings etc.

### 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.

### NEW AND REPLACEMENT WINDOWS

New and replacement windows to be double glazed with 16mm argon gas and soft coat low-E glass. Window Energy Rating to be Band C or better and to achieve U-value of 1.6 W/m<sup>2</sup>K. 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.

### NEW AND REPLACEMENT DOORS

New and replacement doors to achieve a U-Value of 1.80W/m<sup>2</sup>K. Glazed areas to be double glazed with 16mm argon gas and soft low-E glass. Glass to be toughened or laminated safety glass to BS 6206, BS EN 14179 or BS EN ISO 12543-1:2011 and Part K (Part N in Wales) of the current Building Regulations.

### BACKGROUND AND PURGE VENTILATION

Background ventilation - Controllable background ventilation via trickle vents to in accordance with Approved Document F within the window frame to be provided to new habitable rooms at a rate of min 5000mm<sup>2</sup>, and to kitchens, bathrooms, WCs and utility rooms at a rate of 2500mm<sup>2</sup> Purge ventilation - New Windows/rooflights to have openable area in excess of 1/20th of their floor area, if the window opens more than 30° or 1/10th of their floor area if the window opens less than 30° Internal doors should be provided with a 10mm gap below the door to aid air circulation.

Ventilation provision in accordance with the Domestic Ventilation Compliance Guide.

### EXTRACT FOR SHOWER ROOM

Provide mechanical extract ventilation to shower room ducted to external air capable of extracting at a rate of not less than 15 litres per second. Vent to be connected to light switch and to have 15 minute over run if no window in the room. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic Ventilation Compliance Guide. Intermittent extract fans to BS EN 13141-4. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.

### EXTRACT TO BATHROOM

Bathroom to have mechanical vent ducted to external air to provide min 15 litres / sec extraction. Vent to be connected to light switch and to have 15 minute over run if no window in room. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic Ventilation Compliance Guide. Intermittent extract fans to BS EN 13141-4. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.

### EXTRACT TO WIC

W/C to have mechanical ventilation ducted to external air with an extract rating of 15l/ s operated via the light switch. Vent to have a 15min overrun if no window in room. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic Ventilation Compliance Guide. Intermittent extract fans to BS EN 13141-4. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.

### EXTRACT TO UTILITY ROOM

To utility room provide mechanical ventilation ducted to external air capable of extracting at a rate of 30 litres per second. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic Ventilation Compliance Guide. Intermittent extract fans to BS EN 13141-4. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.

### EXTRACT TO KITCHEN

Kitchen to have mechanical ventilation with an extract rating of 60l/sec or 30l/sec if adjacent to hob to external air, sealed to prevent entry of moisture. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic Ventilation Compliance Guide. Intermittent extract fans to BS EN 13141-4. Cooker hoods to BS EN 13141-3. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.