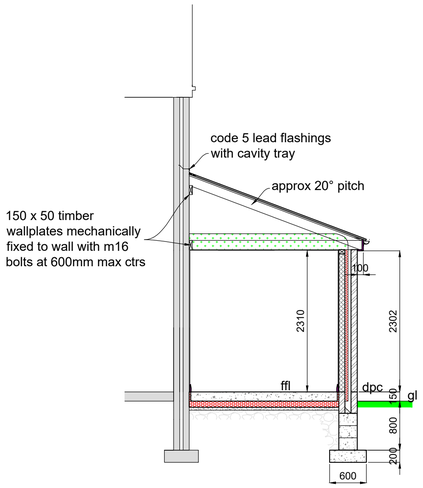
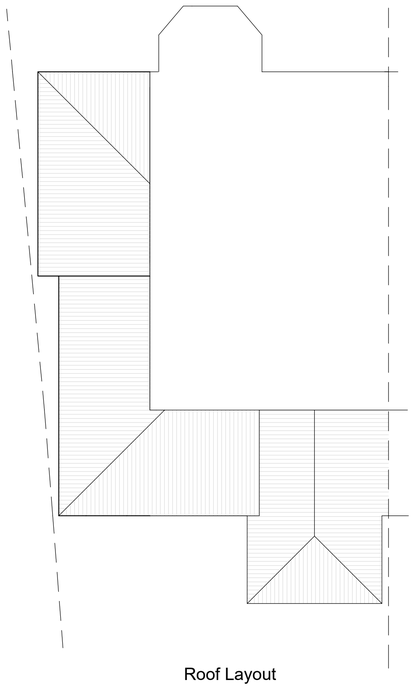


cross section



Roof Layout

Roof (Pitch 20°)

50 x 150mm softwood rafters (C16) at 400mm centres birds-mouthed over 100 x 75mm softwood wall plate bedded to top of internal cavity skin wall and held down with 30 x 5mm x 1.2m long galvanised steel straps bent at right angles to give min 75mm fixing to the top of the wall plate.Top of rafters to be birdmouthed onto a 150 x 50 timber wallplate.150 x 50 (C16) ceiling joists at 400mm ctrs.
Truss clips to be fitted at head and foot of each rafter.
Lateral and vertical restraint straps are to be provided to roof members in accordance with BS 5628 from the roof to adjacent parallel walls at maximum 2m centres using 30 x 5mm galvanised steel straps turned down 150mm minimum over blockwork and fixed over solid blocking to a minimum of three rafters.
Roof tiles are to be Marley 'Modern' low pitched concrete tiles and to be fixed in accordance with manufacturers instructions with 100mm headlap and to BS 5534 on 38 x 25mm preservative treated softwood battens on Kingspan 'Nilvent' breathable membrane.
New roof to be insulated between and over the ceiling joists with 300mm Rockwool cross layered insulation. Separate but linking quilt is to be laid over the softwood wall plate and wedged into the cavity to avoid cold bridging and close the cavity.
The roof is to be cross-vented by proprietary eaves ventilator equivalent to a 25mm continuous air gap within eaves. To ensure a clear air flow from eaves vents through to roof space, proprietary ventilation trays are to be fixed between rafters.All to achieve a U Value of 0.15W/m²K

External Cavity Wall Brickwork :

102mm thk facing brick to match the main property with a 100mm cavity and 100mm thick thermalite shield Aircrete blockwork inner skin.3.6N
Cavity to be closed at window, door junctions and at eaves level with blockwork or propriety cavity closure. Skins to be tied together with stainless steel wall ties spaced at 700mm centres horizontally and 450mm vertically and at 225mm centres at window and door reveals. Provide additional ties within 225mm of side openings at no more than 300mm centres.
At all low roof abutments ensure stepped dpc's, cavity tray, with stop ends are provided and linked to code 5 lead dressed beneath cavity trays and over roof slopes with alternate perpends left open for weep holes all as necessary to form weather proof junction.
Provide polythene lapped and continuous cavity trays with stop ends, above all lintels and over short piers between closely spaced openings. Provide open perpends or pvcu proprietary perpends at 300mm centres, minimum 2 number per openings. Bond new brickwork to existing walls with galvanized steel masonry connectors and ties rawbolted to existing walls.
90mm thick PIR Kingspan K106 full fill or similar approved cavity wall insualtion to achieve a U value of 0.18w/m2K. The cavity wall insulation is to be installed in strict accordance with the manufacturers recommendations commencing below the dpc to avoid cold bridging.
The cavity is to be filled with lean mix concrete up to a level of 225mm below dpc. Provide perpends weep holes every fourth vertical joint in the outer leaf at the base of the cavity at 150mm below the dpc. Maintain a continuous cavity between new and existing walls.
The cavity is to be closed at openings using proprietary cavity closure 'thermabate' or similar approved installed in accordance with manufacturers instructions.
Walls to be finished internally with 12.5mm plasterboard and a 3mm thick skim plaster floated smooth.

Floor Construction

Floor construction to comprise 150mm concrete slab on 100mm thick Kingspan Kooltherm K103 or similar on 1200 gauge visqueen dpm (lapped over internal skin of brick/ blockwork and lapped into dpc) on 50mm sand on 150mm well compacted hardcore.Isolate new floor edge with a min 25mm thk insulation. Floor construction to achieve a minimum 'u' value of 0.18w/m2k.

Foundations:

Strip foundations to be minimum 600 mm wide x 200 mm deep. Formation level to be minimum 1000mm below ground level. These minimum dimensions may be subject to amendment when actual ground conditions are revealed on site. Foundation formation levels and sizes will be to suit soil conditions, original and proposed ground levels, drainage trenches and proximity of trees/hedges, all to the building inspectors requirements.
Concrete for foundations to be grade C20 using OPC cement and 20mm nominal maximum size of aggregate. Foundation trenches shall be clean and true and checked for soft areas. Concrete laying to be undertaken only if ground temperature is likely not to fall below 4 degrees centigrade for 24 hours.

Lintels Above Openings:

External walls: Catnic or similar approved lintels are to be used above all window and door openings (CG90-100) unless otherwise stated with cavity trays above and weep holes every 4 th joint.
All lintels to be securely built in to masonry walls and be of the appropriate length to ensure a minimum 150mm bearing at each end.

Horizontal And Vertical Damp Proof Courses:

The damp proof course shall consist of a layer of 2000 gauge polythene damp course to BS 743/6516 adequately lapped at corners and joints, on a mortar bed maintaining a minimum150mm above adjacent ground level. All joints to be lapped a minimum 150mm. Ensure that damp proof courses do not project into the cavity.

Windows And External Doors:

Windows are to provide minimum opening lights equal to 1/20 (5%) of the floor area of the room served and provide, minimum background ventilation via controlled trickle ventilators to achieve 4000 sq mm in the kitchen and bathroom windows and 8000 sq mm to all other habitable rooms. Part of the ventilation opening must be 1.75m above floor level.
The windows are to be glazed with 24mm (4:16:4) sealed double glazed (low-e: emissivity of 0.05) units (Argon filled) with a maximum 'u' value of 1.4 w/m2k, or a window energy rating of Band B or better. All glass shall be in accordance with BS 6262:1978. Obscure glazing is to be provided to all bathrooms and cloakrooms. All windows and doors are to be weather stripped.
Safety glazing in accordance with BS 6206:1981 shall be fitted in the following critical locations:
(1) All glazed doors
(2) All full height sidelights
(3) Any window within 300mm from a door opening up to a height of 1500mm
(4) Any window between finished floor level and 800mm above that level.

All window and doors must comply with Document Q of the Building Regulations (Security)
Windows and Doors to meet BS publication PAS 24:2012 and be fitted with secure door sets
Frames to be mechanically fixed to the structure.Multi point locking systems to PAS3621 with kitemarks.Glazing to BSEN356.

Electrical Installation:

All electrical installation to be in full accordance with BS 7671 and with the latest edition of the IEE wiring regulations and should be carried out in accordance with current installation techniques applicable to the material and equipment being used.
Note that all cables which are covered or surrounded with thermal insulation to be de-rated in accordance with appendix 'A' of BRE 'thermal insulation: avoiding risks' 2002 edition.
All down-lighters in ceiling voids to be either boxed in with 12.5mm plasterboard or fitted with an intumescent cover to maintain half hour fire resistance.
Fixed internal lighting is to be in accordance with approved document L1B. Fixed energy efficient light fittings, that only take lamps having a luminous efficacy greater than 40 lumens per circuit-watt, are to be provided in numbers not less than the greater of 1 per 25m2 dwelling floor area (excluding garages) or part thereof, or 1 per four fixed light fittings. A light fitting may contain one or more lamps.
Switches and socket outlets to be provided for lighting and other equipment in habitable rooms at appropriate heights between 450mm and 1200mm from finished floor level.
All electrical work covered by part P (electrical safety) must be designed, installed, inspected and tested by a person competent to do so. This person must be registered with an authorised self-certification scheme (eg BRE Certification, ELECSA, NICEIC, or NAPIT Certification) or the installation supervised by an electrician qualified to at least City & Guilds 2391 (18th Edition). Prior to completion an appropriate BS 7671 electrical certificate must be provided by the competent person and forwarded to the Local authority within 30 days of installation.

Plumbing Installation:

Complete installation to be subject to and capable of withstanding testing in accordance with BS 5572 : 1978. Above ground foul drainage pipework shall be pvcu to BS 4514.
Pipework must be designed in accordance with BS 5572 and installed to ensure that appliances drain efficiently without causing crossflow, backfall, leakage or blockage. No air from the drainage system shall enter the building. Provide adequate support to lengths of pipework and at junctions and change in direction. No branch connection to be within 450mm above foot of soil pipe. Minimum pipe sizes for sanitary plumbing to be:

Wc's, soil pipes:	100mm dia nom. size
Common pipe wastes:	50mm dia nom. size
Bath, sink:	50mm dia nom. size
Hand basin:	32mm dia nom. size
Shower:	32mm dia nom. size
Overflow:	19mm dia nom. size

All fittings to have 75mm deep seal traps. Provide waste pipes for washing machine and dishwasher where applicable. All waste pipes shall be laid to falls (25mm per metre run). All plumbing shall be installed in accordance with manufacturer's instructions.
The maximum length of waste pipes shall be as follows:
32mm pipe 1.7m maximum length
40mm pipe 3m maximum length
50mm pipe 4m maximum length
100mm pipe 6m maximum length
Soil and ventilating stacks to terminate minimum 900mm above any window head within 3m horizontally.
Soil pipes passing through habitable rooms (including kitchens) to be lagged with minimum 50mm sound deadening quilt and with two layers of 12.5mm plasterboard on 38 x 38mm softwood framing finished with 3mm thick plaster skim. Access and rodding eye fittings to be provided to ensure all pipework is accessible as required. Pipework laid between joists to be adequately supported.

Below Ground Drainage:

All drains under the building shall be surrounded with at least 100mm of granular material. Where the crown of the pipe is within 300mm of the underside of the floor slab the pipe shall be protected by reinforced concrete cover slabs with flexible filler and at least 75mm of granular material between the top of the pipe and the underside of the flexible filler below the slabs.
Where drains pass through external walls they are to be protected with a pre-stressed concrete lintel over with minimum 150mm end bearings and 50mm clearance all around the pipe. The opening is to be masked with rigid sheet material on both sides to prevent the ingress of vermin and fill material. The void around the pipe where it passes through the construction shall be filled with a compressible sealant to prevent entry of gas. The length of pipe passing through the wall is to be kept as short as possible and 600mm long maximum rocker pipes are to be used either side of the wall structure to provide flexibility. Rocker pipe joints to be positioned maximum 150mm from the face of the wall/structure.
Access points in the form of rodding eyes, access fittings, inspection chambers or manholes to be provided at the following points:
(1) On or near the head of each drain run
(2) At a bend and at a change in gradient.
(3) At a change in pipe size
(4) At a junction unless each run can be cleared from an access point.
450mm diameter plastic inspection chambers shall be constructed with 150mm thick C20 concrete base and surrounded with 150mm of pea shingle for invert levels of 1000mm or less.
Manhole and or inspection chambers should have removable non-venting covers to be either ductile iron or pressed steel dependent upon location and loading conditions. Inspection chambers inside buildings shall have mechanically fixed airtight covers.
Foul and surface water drainage are to be kept as separate systems where separate systems exist on site.

GENERAL NOTES

This drawing is the copyright of DP Design Services and may not be used,copied or lent by any third party without prior written consent from DP Design Services.

This drawing has been prepared for the purpose of obtaining Planning / Building Regulation approval only. All details are to the satisfaction of the Area Building Control Officer (BCO). These drawings must not be acted upon until they have been approved by the local authority. Should the client commence work without the local authority approvals in place, they do so at their own risk.
All of the works are to be carried out in accordance with the latest British standards specification and codes of practice for both materials and workmanship.
All dimensions are to the structure and not plaster finish.
Do not scale from the drawings.All measurements are to be checked on site by the contractor and any descrepencies reported to the client.The contractor shall be responsible for liason and dimensional coordination of all the works including those of specilaist sub contractors.
Contractors tendering for this work must take into all items required wether indicated on the drawing or not.
Before starting work, the nominated contractor shall examine all drawings and carry out a thorough examination of the building structure which will be affected by the works.
Temporary support and protection shall be the responsibility of the contractor and provide temporary support and protection for each stage of the works
Dimensions shown on the drawing are only a guide and will require checking by the contractor before ordering goods.
The quality and design of all finishes and items of fitting out including roof and wall materials,window units,rainwater goods,plumbing,electrics,ironmongery,fixtures and fittings etc are to be agreed between the contractor and property owner

Materials:

All materials are to be used and installed in accordance with the relevant manufacturers instructions and recommendations. The quality of any material shall not be lower than that defined in relevant british standard, or that an appropriate independent body has satisfactorily assessed the material.
All lead flashings to be Code 5 in conjunction with remedial cavity trays at all openings and wall abutments etc.

Existing Structure:

Existing foundations to be exposed together with any existing lintels as directed by the building control inspector on site to assess their suitability for additional loading. Any additional work that may be necessary is to be carried out in compliance with the building inspectors recommendations.

Fire Resistance:

All elements of structure to have a minimum of half hour fire resistance.

Timber Treatment:

All softwood timbers to be adequately treated to prevent infestation. All structural timbers, external frames, window and softwood cladding shall be treated against fungal attack. All structural timber to be marked DRY or KD and to have the stress grade mark.

Ventilation:

All habitable rooms to have rapid ventilation via windows/doors of an openable area of at least 1/20th of the floor area, part of the ventilation opening must be 1.75m above floor level.

Space Heating (extensions):

Existing central heating system to be extended where required into new rooms in accordance with BS 5449. All new radiators to be fitted with thermostatic valves.
Heat producing appliances and flues to be designed and installed by specialist contractor who is to submit relevant calculations and necessary details to the BCO. All heating and hot water systems to be in strict accordance with Approved Document L1B paragraphs 35 to 38. Copies of commissioning certificates for new or altered space heating and hot water systems are to be submitted to the BCO on completion of the works.All gas work to be carried out by a gas registered engineer.

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Project
Proposed Single Storey Side Extension At :
10 Northmount Road
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Drawing	Paper Size
Cross Section & Specification	A1

Dwg. No.	Rev.	Scale	Date
0996/22		1:100,1:50	19.5.22