FOUNDATIONS
Foundations to be designed by Structural Engineer and constructed in strict accordance with Engineers details and as directed by the Building Inspector.
Concrete must not be poured in freezing conditions.

EXTERNAL WALL FOOTINGS
Walls below damp proof course to be built in solid or cavity construction to suit wall construction above and as shown on drawings.
Footings to be constructed using FL or FN bricks or suitable brick specified by the manufacturer.
Blockwork used for the inner skin of cavity construction or to internal walls should be strictly in accordance with manufacturer's specification.
For cavity walls, provide concrete cavity fill to within 225mm of the DPC.
Damp proof courses to be bitumen, to BS 6398, or minimum 0.5mm black polyethylene, to BS 6515, with welted or 100mm lapped joints, to each skin of footings. Backfill trenches in compacted layers to a maximum of 150mm below DPC.

GROUND FLOORS (insulated suspended beam and block - 0.22 U-value)
Floor to be minimum 75mm sharp sand and cement screed, to BS 8204, reinforced with D49 fabric mesh poured on vapour control/slip layer over 100mm Polyfoam Floorboard Standard floor insulation, or similar equivalent performing floor insulation achieving 0.22W/m²k or better U-value. (P/A=0.49 elemental method). Insulation to be closely butted and taped with a 25mm upstand to perimeters, and laid in accordance with manufacturers details and Robust Details. Provide a 1200 gauge polythene DPM laid over pre-cast reinforced concrete beam and block suspended floor, to BS 8110.
Floor beams to be designed and supplied by specialist, with light weight infill blocks and laid in accordance with manufacturers details on DPC and over minimum 300mm void. Void to be provided with 1500mm² ventilation per metre run of external walls (typically 215 x 75mm truncated air bricks with 2400mm² ventilation capacity at 1.6m c/cs to BS 493). Provide additional DPC on top of floor beams where underside of beam is less than 150mm above finished external ground level.

RAIN WATER DISPOSAL
Form flat roof internal concealed eaves box gutters as detailed on the drawings discharging to rainwater outlets to positions shown. Provide new rainwater pipes connected to new roddable bottle gullies connected to drain runs discharging into new soakaway (where possible,subject to soil conditions). Soakaway size to be calculated in relation to the drained area and the permeability of the ground (calculated using percolation test if required) in accordance with BRE Digest 365 and/or NHBC Chapter 5.3. Soakaways to be constructed using honeycomb brickwork or perforated concrete rings surrounded with granular material and positioned at least 5.0m from the nearest building's foundation.

BELOW GROUND DRAINAGE
Provide 110mm diameter PVC-u Osmadrain, or similar equivalent, with flexible joints and laid to falls (minimum 1:40-foul, minimum 1:60-surface water) and bedded on minimum 50mm, surrounded by 150mm, and covered by 100mm of granular bedding material.
Drains to be laid in accordance with manufacturers recommendations and discharge to inspection chambers/ manholes/connections with existing drains as shown.
Where flexible pipes are to be laid shallower than 900mm below roads or drives the run affected is to be protected by a reinforced concrete raft supported beyond the width of the drainage excavation 100mm above the drain to allow for a cushion of fill.
For flexible drain runs less than 600mm below non-vehicular areas provide bridging slabs.
Protect drains passing through foundations by encasing drain in plywood ducting and 100mm glassfibre quilt within foundation and install 2no 12mm m.s. rods over. For shallow drains install concrete lintels over drains within brickwork with a minimum of 50mm void around the pipe.

SHALLOW INSPECTION CHAMBERS
Shallow inspection chambers to be used only for invert depths of 600mm maximum.
250mm diameter one piece moulded polypropylene unit bedded on and surrounded with minimum 150mm granular material to BS 7158. Chamber to be fitted with 325mm diameter cast iron cover and frame. Only to be used in situations inaccessible to vehicles.

UNIVERSAL INSPECTION CHAMBER
Universal inspection chambers to be used only for invert depths of 1000m maximum.
450mm diameter moulded polypropylene unit bedded on and surrounded with minimum 150mm granular material to BS 7158 with 150mm concrete around top of shaft to support 450mm diameter Class C cast iron cover and frame. Where situated on driveways provide shuttering around chamber and form 150mm thick concrete slab at a suitable level for Class B cover and frame.

MANHOLES (up to 2.7m deep)
Manholes to be 1200 x 750mm internally and consist of 150mm C15 concrete base with 225mm Class B engineering brick flush pointed internally with 1:3 cement mortar and fitted with a reinforced concrete cover slab. Alternatively use 1050mm diameter (1200mm diameter if deeper than 1.5m) pre-cast concrete chamber and shaft rings to BS 5911 fitted to manufacturers specification.
Provide 600mm square or circular BS cover and frame suitable for loading situation.
Form smooth rounded benching at a minimum fall of 1:12. Manholes deeper than 1m to be fitted with metal step irons or fixed ladders.

GRASS SEEDUM EXTENSION FLAT ROOF (warm deck 0.18 U-value)
Provide and single ply felt system with SBS modified bitumen, to BS747 laid to CP144 including mineral surfaced cap sheet on total 130mm Kingspan Thermaroof TR21 insulation (2 layers - 30mm + 100mm). 30mm layer insulation to be laid first on top vapour check / roof deck, then further 100mm layer laid over. System to achieve 0.18 U-value. System to approved by Contract Administrator and include 15 year insurance backed manufacturer's guarantee. System to be installed in accordance with manufacturers specification on 18mm WBP plywood roof deck on SW firrings (min 1:80 fall) flat roof joists with noggins at mid spans and to edges of insulation board.
Flat roof joists to be strapped down to walls with Galvanised twist straps at 1200mm centres. Supply and fit code 4 lead to wall abutments and point using low modulas mastic.
Flat roof to have grass seedum external covering installed on top of single ply roof felt by and in accordance with grass seedum specialist.
Flat roof felt system to have a fire classification A-A and conform to BS476: Part 3.

LEAD FLASHINGS (flat roof)
Form standard flat roof abutment detail, with triangular fillet, and weatherproof with Code 4 lead apron flashing, tucked 25mm into mortar joints with lead wedges, a minimum of 150mm above roof level.
Provide preformed trays to new cavity walls, one course above flashing level. Apply patination oil coat to lead.

PROPOSED EXTERNAL WALLS - CAVITY
Masonry external walls to consist of insulated cavity construction achieving an overall U-value of 0.26 W/m5k U-value subject to a maximum 25% of glazed openings (calculations required for over 25%).
Use vertical twist type wall tie, to BS 1243, to be fitted as work proceeds at 450mm vertical centres and 750mm horizontal centres reducing to 300mm centres at cavity closures and movement joints.
Lintels to be insulated and be "top hat" style, or have a perforated baseplate with a maximum effective conductivity of 30W/mK. Provide suitable stop ends to outer skin to suit perp joints and a minimum 2no weep vents (at maximum 450mm c/cs). Openings to be provided with prefabricated insulated cavity closer profiles achieving 0.45m5K/W thermal resistance path. Refer to Robust Details 3.09-3.12.
Cavity insulation to be taken at least 150mm below the top of the ground floor insulation and, for gable ends of pitched roofs, at least 250mm above the underside of the roof insulation. Insulation to be fitted in accordance with manufacturers recommendations and Robust Details.

Construction Specification :
To all areas except where shown, provide 100mm dense block outer skin (suitable for render application, rendered externally with white render.
Wall to be overclad externally with sw treated horizontal battens (spacing TBC) fixed through render to blockwork. Form 100mm cavity full filled with Knauf Earthwool DriTherm Cavity Slab 32 Ultimate Insulation. Inner wall skin to be 100mm Durox Supabloc (3.5N/mm5). Provide lightweight plaster or plasterboard on dabs internal finish. Over wall construction is to achieve 0.28 U-value.
Alternative products can be used subject to achieving required U-values and minimum compressive strengths required by Structural Engineer.

NEW / EXISTING WALL ABUTMENT
Provide Furfix wall extension profiles, or similar approved, where new and existing walls adjoin. Bed wall ties into mortar joints and maximum 300mm centres and provide external sealing strip or mastic sealant to manufacturers recommendations.

SW WALL PLATES
Bed minimum 75 x 50mm treated softwood wall plates, With half lapped joints, for fixing of roof timbers.
Provide minimum 1000mm long 30 x 2.5mm galvanized Steel straps at a maximum of 2.0m centres to anchor wall plate.
Screw fix straps to walls with a minimum of 3no fixings (1st fixing maximum 150mm from bottom). Top of strap to be turned over and nailed to the wall plate

RENDER
External cement render to be one 12mm thick 1:1:6 cement/lime/sand undercoat with a dry scratch keyed finish to take 8mm thick finishing coat.
The top coat must be weaker and thinner than the undercoat and generally render must not be stronger than the background material (masonry).
Use course sharp sand to BS 1199/1200 for undercoat and avoid excessive proportions of very fine material for finish coats. Use hydrated limes to BS890. Refer to BS 5252 and masonry manufacturers guidelines for recommended application details.

PLASTER (lightweight - to existing masonry walls within extension)
Internal plaster finish to be one 11mm thick coat of Carlite Browning undercoat lightly keyed to take 2mm thick, steel float finished, Carlite Finish top coat applied in accordance with BS 1191 and manufacturers guidelines.

NEW STRUCTURAL BEAMS
Install beams and padstones/bearings in accordance with structural engineers drawings/calculations.
Downstand beams to be protected on three sides with 15mm Gyproc FireLine Board, fitted in strict accordance with manufactures details, to achieve half hour fire resistance.

NEW WINDOWS & DOORS
Window/door area of 25% or less of the floor area (plus any openings enclosed by extensions).
All new timber, aluminium or PVC-U windows and rooflights to be double glazed to achieve 1.6 W/m2k U-value, Window Energy Rating (WER) Band C.
Glazed doors (glazed more than 50%) to achieve 1.8 W/m2k U-value. Other external doors to achieve 1.8 W/m2k U-value.
Opening elements of windows, doors and rooflights to be provided with draught strips and be fitted in strict accordance with Robust Details (typically details 3.10 and 3.12).
Frames to be provided with trickle vents to achieve a total of 8000mm2 area of ventilation in habitable rooms and 4000mm2 elsewhere.
Windows and external doors, to habitable rooms, to provide a minimum total opening area equivalent to 1/20th of the room floor area for rapid ventilation.
All glazing within critical locations to be provided with safety glazing to BS 6206:1981.
Critical locations are defined as the following:
* All glazing within 800mm of internal or external finished floor levels.
* All glazing in doors, and glazing within 300mm of doors, that is within 1500mm of internal or external finished floor levels.

FIRE ESCAPE WINDOWS (replacement first floor windows)
Escape windows are to be provided to all habitable rooms at first floor and to ground floor habitable rooms, unless opening directly into a ground floor hall leading to the final exit.
Any window provided for escape purposes should be fitted with an opening light which provides an unobstructed opening of at least 0.33m2, and is at least 450mm wide and 450mm high. The bottom of the opening should be installed at a maximum of 1100mm above finished floor level.

NEW INTERNAL WALL (blockwork)
Internal wall to be 140mm Durox Supabloc with plaster finish (tested to achieve 40dB) built on top of 215mm brickwork footing.
Loadbearing wall to be minimum 3.5N/mm2 unless otherwise specified by the Structural Engineer. Non loadbearing partitions to be connected to loadbearing walls using expanded metal or wall ties at a maximum of 300mm vertical intervals to reduce the risk of cracking.

LATERAL RESTRAINT (Flat roof joists)
Where joists span parallel with external walls, Provide 30 x 5mm galvanized steel lateral restraint straps and solid timber noggins at a maximum of 2.0m centres, carried over 3no joists, for lateral restraint to BS5628.
Provide solid timber packing between end joist and external wall. Notch joists, top or bottom, and fix straps with minimum 2no screws or nails into each joist. Straps to be positioned centrally, built into, and turned over, a full block within the inner skin of the external wall.
Where joists run perpendicular to wall use fully nailed restraint type joists hangers or ensure minimum 90mm bearing of joists built into walls.

ROOF LANTERN
Roof lantern to be fabricated by specialist and be double glazed, openable with louvered trickle vents and worm gear openers. Rooflight to meet 1.8 U-value.

MECHANICAL VENTILATION
Provide Vent-Axia or similar mechanical extractor fans ducted independently to external air to serve Kitchen areas (minimum 60 litres/second or 30 l/s with cooker hood), Utility rooms (minimum 30 l/s)and Bathrooms (minimum 15 l/s).
Sanitary accommodation separate from bathroom and without opening windows of 1/20th of the floor area, to be provided with minimum 6 l/s.
Rooms without windows to have minimum 15 minute fan overrun operated by the light switch or sensor.

NEW / ALTERED ELECTRICAL WORKS
All new and extended electrical work (including lighting) is to be designed, installed, inspected and tested in accordance with BS 7671 (I.E.E. Wiring Regulations 16th Edition)and Approved Document P and M.
The works are to be undertaken by an installer registered under a suitable electrical self-certification scheme, or alternatively by a suitable qualified person, with a certificate of compliance produced by that person to Building Control on completion of the works.
Lighting (internal and external) is to include a minimum proportion of energy efficient fittings in accordance with Approved Document L1B.
A commissioning certificate, showing compliance, should be issued to Building Control on completion of works.
Operating and maintenance instructions, demonstrating controls/adjustments and service/maintenance schedules, to be provided to the building occupier as part of the installation.

NEW PLUMBING FITTINGS
PVC-u fittings to BS EN 1565 and fitted to CP304.
Provide rodding eyes to all changes of direction in new pipe work. All appliances to be fitted with 75mm deep seal traps and non ferrous fixings.

WC systems to be fitted with 100mm diameter outlet, cold water supply and cistern warning overflows.
Wash hand basins to be fitted with hot & cold water supply, 75mm anti-eyphon deep seal traps.
Baths & showers to be fitted with hot & cold water supply and 50mm anti-eyphon deep seal traps.

Sanitary appliances to discharge via PVC-u waste pipes to new 100mm diameter PVC-u soil & vent pipe (SVP), as shown on drawings. Connections to discharge pipes must be offset to avoid crossflow.
Stub stacks to be fitted with air admittance valves.
SVP's to terminate with a basket a minimum of 900mm above head of any windows within 3000mm.
Soil and vent pipes fitted internally to wrapped in 25mm insulation and boxed in with 25mm plasterboard covered timber framing with access panel serving rodding access at base.

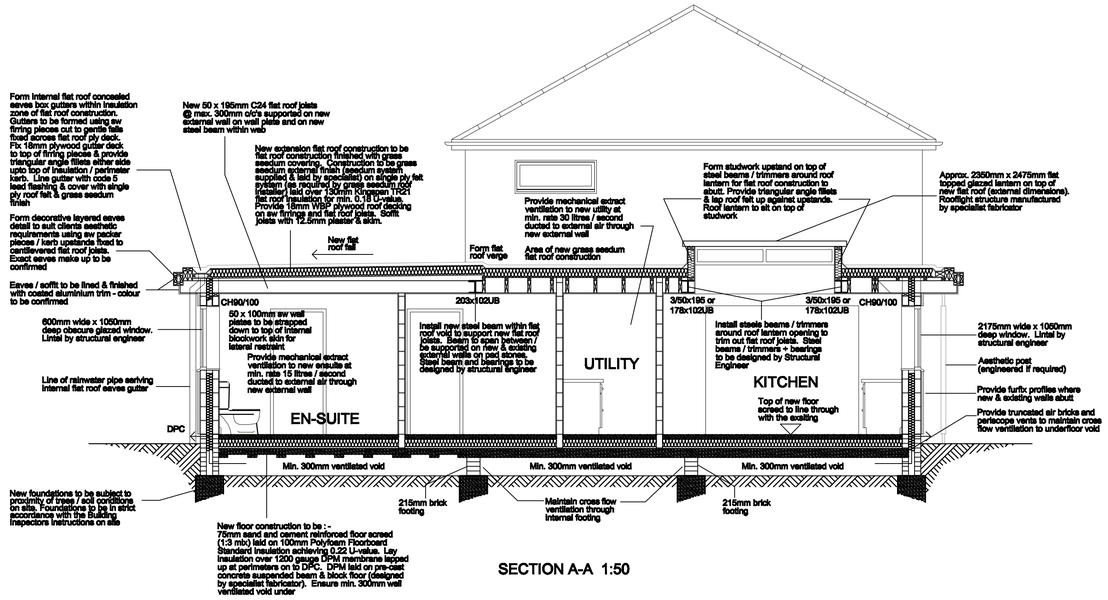
HEATING
Existing gas boiler serving wet system is to be retained in existing position to serve new radiators in new extension. Boiler to be checked for capacity.

All work carried out to boiler / heating system is to be done by a CORGI registered engineer / installer who shall provide signed test certificate to Building Control.

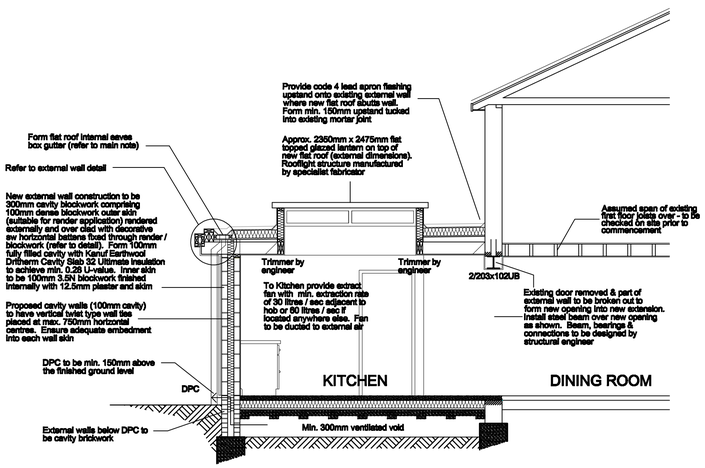
All new radiators are to be fitted with Thermostatic Radiator Valves (TRV's).

LIGHTING
25% of internal lights fittings must only accept compact fluorescent lamps (CFL), or similar energy efficient fittings of greater than 40 lumens per circuit-watt.

All external lighting to be fitted with photo-cell and movement sensors and/or energy efficient fittings of greater than 40 lumens per circuit-watt.



SECTION A-A 1:50



SECTION B-B 1:50

Revision		Date
A	Engineers details added	03.10.12

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Project
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Description
DEMOLISH EXISTING GARAGE/STORAGE EXTENSION AND ERECT SINGLE STOREY FRONT/SIDE EXTENSION WITH INTERNAL ALTERATIONS

PROPOSED SECTIONS A-A, B-B & SPEC

Status
CONSTRUCTION

Scale	Drawn	Date
A1@1:50	PDE	AUG 2012
Job number	Drawing no.	Revision
ADP145BRG	04	A