

UNVENTED PITCHED ROOF
Pitch 22-45°
To achieve U-value 0.18 W/m²K
Timber roof structures as designed by Engineer in accordance with NHBC Technical Requirement RS 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 breathable sarking felt to relevant BBA Certificate. Supported on 47 x 150mm grade C24 rafters at max 400mm centres span to engineer's details. Rafters supported on 100 x 50mm treated sw wall plate and 100 x 50mm sawn timber plate bolted to ridge beam. Allow min 20mm air space to allow for drupe of breathable felt. Insulation to be 100mm celotex between rafters and 50mm below rafters with 12.5mm foil backed plaster board 5mm skim coat of finishing plaster to the underside of all ceilings.
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 BS EN 845-1, at 2m centres.
NOTE: New extension will be subject to an air test. All insulation joints to be taped with silver foil tape.

PARTIAL FILL CAVITY WALL
To achieve minimum U Value of 0.28 W/m²K
Provide 103mm facing brick to match existing construction. Ensure a 75mm clear residual cavity and provide 50mm Celotex CIW4000 insulation fixed to 100mm lightweight blockwork, K value 0.11 (Celcon solar, Thermate turbo, Toplite GT1, Supablock) Internal finish to be 13mm lightweight plaster. Walls to be built with 1:1.6 cement mortar
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 S268-6:1: 1996 and BS EN 845-1: 2003
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.

DPC
Provide horizontal strip polymer (hlyoad) 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.

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 2004 Building Regulations A1/2 and BS 8004:1986 Code of Practice for Foundations. Ensure foundations are constructed below level of any adjacent drains. 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.

SHRINKABLE CLAY
Due to oak, Evergreen and Ash trees within 30 meters of the extension it may be necessary to increase the depth of foundations. The contractor may wish to excavate a trial hole for inspection by the Building Control Officer prior to excavation of entire foundation. A structural engineer may have to be consulted if necessary.

RIIDGE BEAM
178 x 102 x 19 UB supported on pad stone 2x class A engineering bricks in class 1 mortar. Beam to be supported on front by postwind post(see front elevation drawing)

NEW OPENING
New opening to be supported by 2 x 65mm x 102mm pre stressed concrete lintels with min 150mm bearing.

BEAM
2x 178 x 102 x 19 ub's bolted together at 500mm centres on pad stone. 2x courses of class A engineering bricks in class 1 mortar and 225 mm class A engineering brick pillar in class 1 mortar. Beam to have 3.6 kN light weight blockwork over to support ridge beam. New steel beams to be encased in 12.5mm Gyproc FireLine board with staggered joints to provide 1/2 hour fire resistance.

POCKET/SLIDING DOOR
Builder to advise on installation of sliding door, false panel etc.

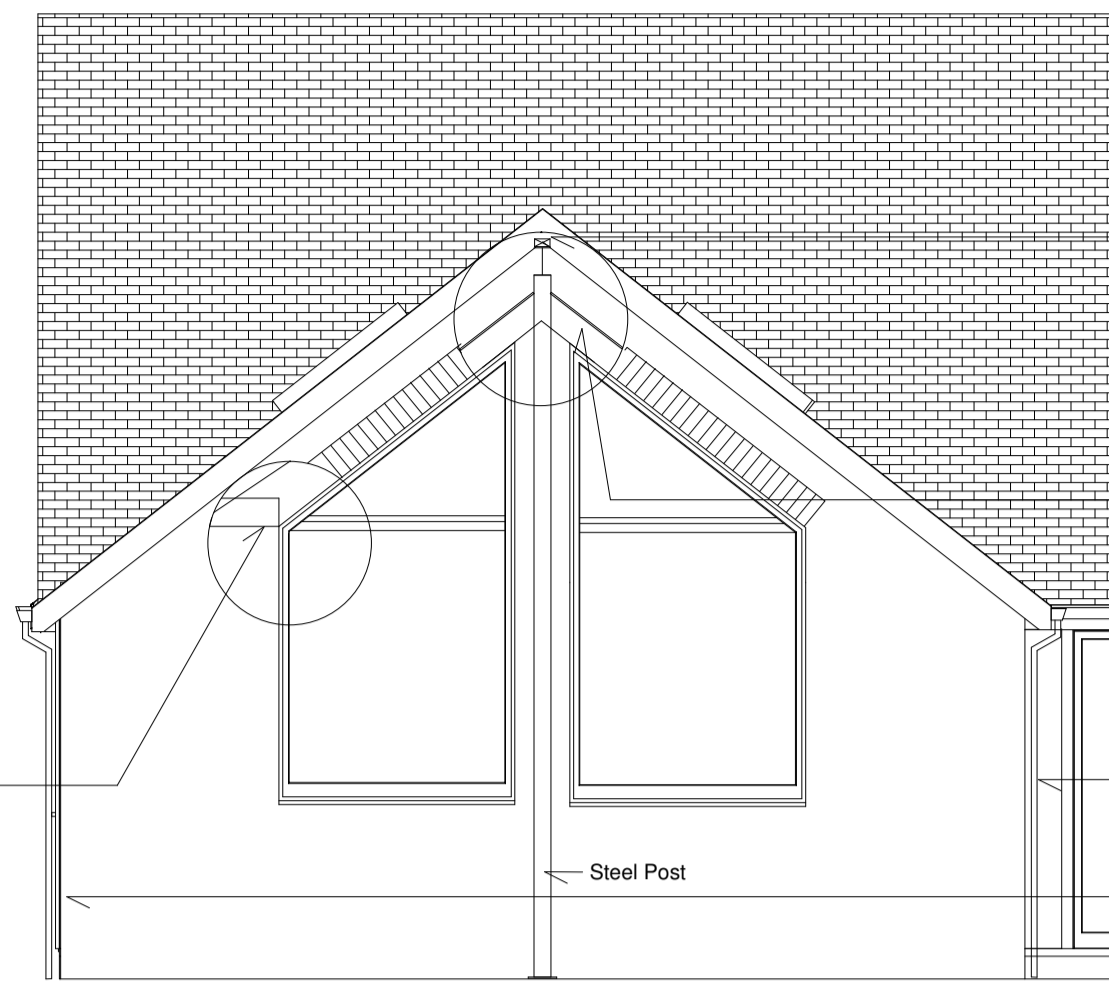
LIGHTING VOID
100x50mm c16 timber with underside minimum 150mm below steel beam. Underside finished with 2 x layers of 12mm plasterboard and 3 mplaster skim to give half hour fire resistance.

SECTION AA

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. 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.

ROOF LIGHTS
Min U-value of 1.6 W/m²K. Roof-lights to be double glazed with 16mm argon gap and soft low-E glass. Window Energy Rating to be Band G or better. Roof lights to be fitted in accordance with manufacturer's instructions with rafters doubled up to sides and suitable flashings etc. Roof lights to be remote controlled.

CAVITY TRAY
Pre fabricated catchment tray at lowest point of apex with weep holes in brickwork with continuous tray formed with 300mm dpc up to apex.



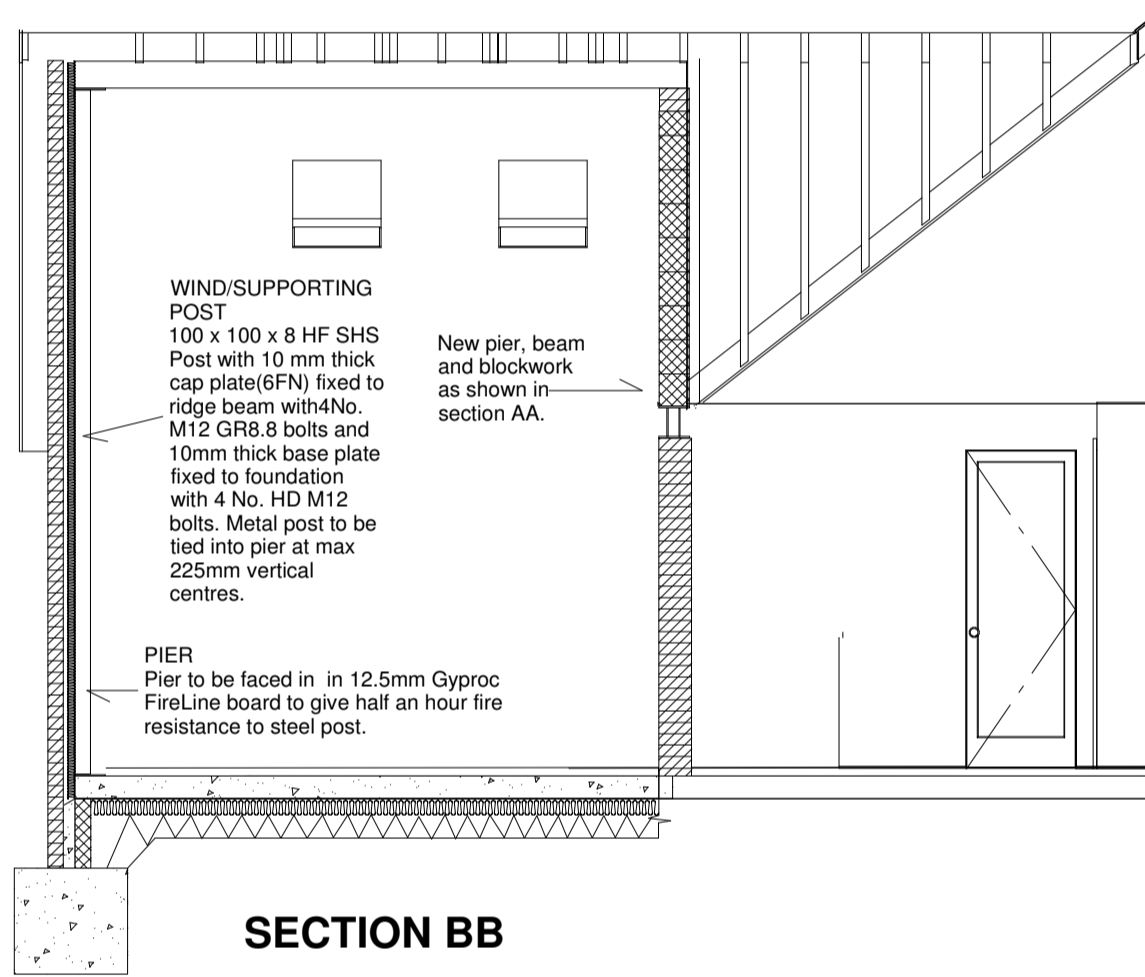
FRONT ELEVATION

Rafters birdsmouthed over plate fixed to ridge purlin/beam
SUPPORT OVER WINDOW
Support for brick and block work over window to be 2 x 178 x 102 x 19 ub with 10mm flange plate (8W) for soldier course cranked and supported on cental pier.

RAINWATER DRAINAGE
New rainwater goods to be new 110mm UPVC half round gutters taken and connected into 68mm dia UPVC downpipes. Rainwater taken to new soakaway, sited a min distance of 5.0m away from any building, via 110mm dia UPVC pipes surrounded in 150mm granular fill. Soakaway to be min of 1 cubic metre capacity (or to depth to Local Authorities approval) with suitable granular fill and with geotextile surround to prevent migration of fines. If necessary carry out a porosity test to determine design and depth of soakaway.

SOLID FLOOR INSULATION UNDER SLAB
To meet min U value required of 0.22 W/m²K
Solid ground floor to consist of 150mm consolidated well-ramped hardcore. Blinded with 50mm sand blinding. Provide a Gas Membrane 'barrier/DPM to be lapped in with DPC in walls. Floor to be insulated over DPM with 100mm Knauf Polyfoam Floorboard Standard. 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, provide 150mm ST2 or Gen2 suspended slab, slab to be reinforced with B785 structural mesh and bear on inner wall of new cavity walling and outer wall of existing cavity walling, concrete mix to conform to BS 8500-2 over VCL. Finish with 65mm sand/cement finishing screed with light mesh reinforcement.

*Radon Membrane Barrier(Site is Potentially Contaminated Land) Radon & Co2 Gas Membrane is an unreinforced polyethylene membrane, suitable for use in the protectio of buildings from the ingress of Radon & Co2 gas. Also acts as a standard Damp Proof Membrane.



SECTION BB

WIND/SUPPORTING POST
100 x 100 x 8 HF SHS
Post with 10mm thick cap plate(GFN) fixed to ridge beam with No. M12 GR8.8 bolts and 10mm thick base plate fixed to foundation with 4 No. HD M12 bolts. Metal post to be tied into pier at max 225mm vertical centres.

New pier, beam and blockwork as shown in section AA.

PIER
Pier to be faced in 12.5mm Gyproc FireLine board to give half an hour fire resistance to steel post.

BACKGROUND AND PURGE VENTILATION
Background ventilation - Controllable background ventilation via trickle vents to BS EN 13141-3 within the window frame to be provided to new Kitchen at a rate of min 2500mm²
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.

NEW WINDOWS
New windows to be double glazed with 16mm argon gap and soft coat low-E glass. Window Energy Rating to be Band C or better and to achieve U-value of 1.6 W/m²K. Contractor to check angle and measurements of windows and support (shown in front elevation).

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.

SAFETY GLAZING
All glazing in critical locations to be toughened or laminated safety glass to BS 6206, BS EN 14179 or BS EN ISO 12543-1:2011 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.

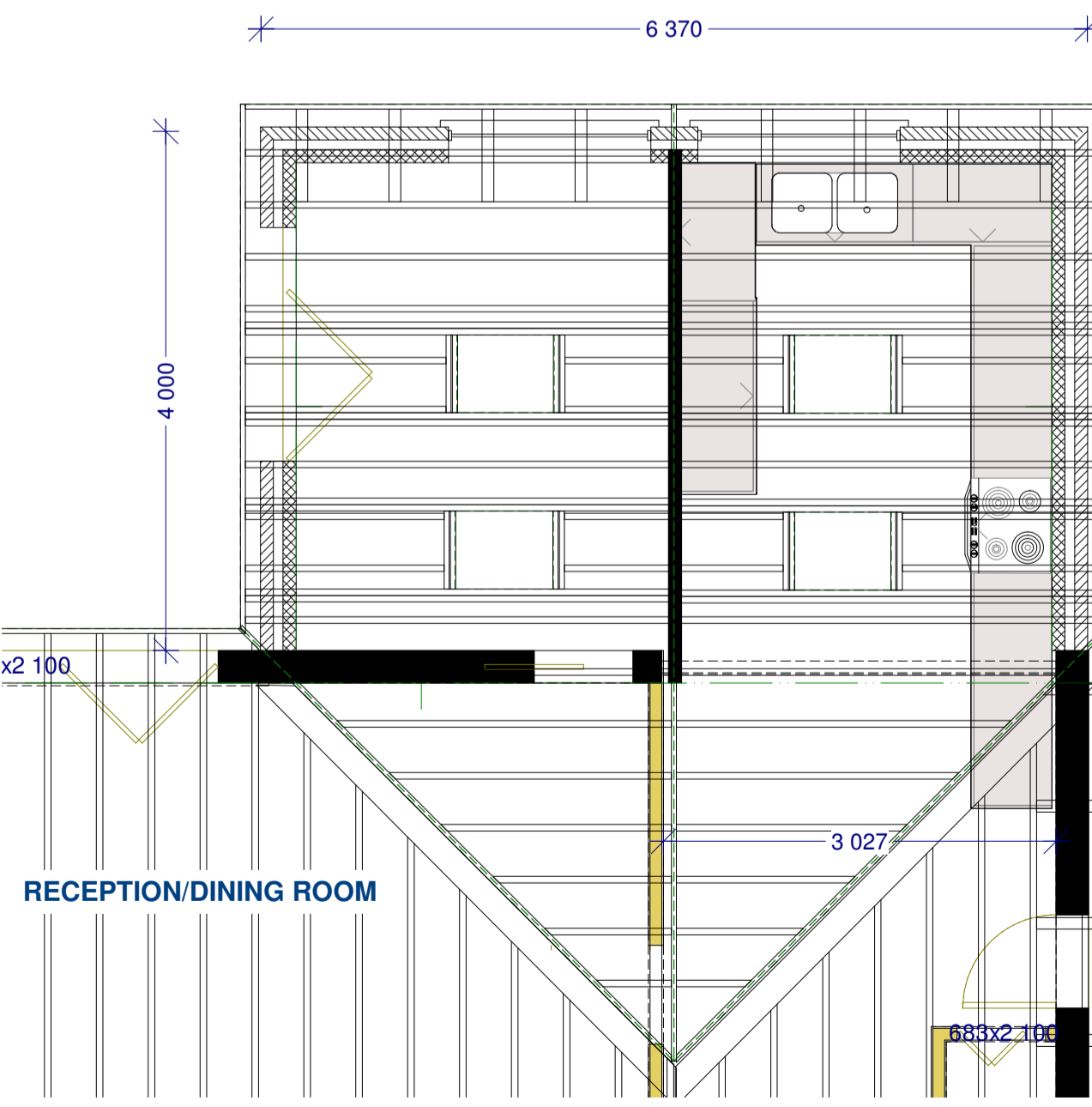
METAL POST
(See section BB for full spec) Metal post/wind post supporting ridge beam tied into blockwork at max 225mm vertical centres.
SUPPORT OVER OPENING
Use IG/s75 Or equivalent lintel.

NEW BI FOLD DOORS
New doors to achieve a U-Value of 1.80W/m²K. Glazed areas to be double glazed with 16mm argon gap 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 of the current Building Regulations.

SMOKE DETECTION
Mains operated linked smoke alarm detection system to BS EN 14604 and BS5839-6:2004 to at least a Grade D category LD3 standard and to be mains powered with battery back up. Smoke alarm should be sited so that there is a smoke alarm in the circulation space. 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 spaces by a door, there should be an interlinked heat detector in the kitchen.

PLAN VIEW

BEAM
2x 178 x 102 x 19 ub's bolted together at 500mm centres on pad stone. 2x courses of class A engineering bricks in class 1 mortar and 225 mm class A engineering brick pillar in class 1 mortar. Beam to have 3.6 kN light weight blockwork over to support ridge beam(see section aa and section bb)



ROOF STRUCTURE PLAN

RIIDGE BEAM
178x102x19 UB (see sections and elevations for support details)

RAFTERS
150x50mm c24 timber @ 400mm centres. Rafters doubled to each side of velux windows. 100mm x 50mm wall plate strapped down to walls. 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.

LAY BOARDS
215x50mm c16 timber.

GENERAL NOTES

Drawing to be read in conjunction with drawing ref: LOMAS/02/01

DIMENSIONS
Building contractor to check all dimensions, roof pitch, window angle etc on site prior to manufacture of structural beams, windows etc.

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.

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.

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, BSII, NICEIC Certification Services or Zurich Ltd. An appropriate BS7671 Electrical Installation Certificate is to 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.

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 lamp lumens. Not less than three energy efficient light fittings per four of all the light fittings in the main dwelling spaces to comply with Part L of the current Building Regulations and the Domestic Building Services Compliance Guide.

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.

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 by laws, the Gas Safety (Installation and Use) Regulations 1998 and ICE Regulations.

AIR TIGHTNESS
All insulation joints in ceiling and walls to be taped with silver foil tape. All cavities to be closed with cavity closer's. All windows and doors to be silicone sealed externally and internally prior to plastering, velux windows to be internally silicone sealed prior to plastering. All insulation between floor, walls and ceiling to be continuous where possible.

UNDERGROUND FOUL DRAINAGE
Underground drainage to consist of 100mm diameter UPVC proprietary pipe work to give a 1:40 fall. Surround pipes in 100mm pea shingle. Provide 600mm suitable cover (900mm under drives). Shallow pipes to be covered with 100mm reinforced concrete slab over compressible material. Provide rodding access at all changes of direction and junctions. All below ground drainage to comply with BS EN 1401-1: 2009.

ABOVE GROUND DRAINAGE
All new above ground drainage and plumbing to comply with BS EN 12056-2:2000 for sanitary pipework. All drainage to be in accordance with Part H of the Building Regulations. Wastes to have 75mm deep anti vac bottle traps and rodding eyes to be provided at changes of direction.

Size of wastes pipes and max length of branch connections (if max length is exceeded then anti vacuum traps to be used)
Wash basin - 1.7m for 32mm pipe 4m for 40mm pipe
Bath/shower - 3m for 40mm pipe 4m for 50mm pipe
W/C - 6m for 100mm pipe for single WC
All branch pipes to connect to 110mm soil and vent pipe terminating min 900mm above any openings within 3m.
Or to 110mm upvc soil pipe with accessible internal air admittance valve complying with BS EN 12380, placed at a height so that the outlet is above the trap of the highest fitting.
Waste pipes not to connect on to SVP within 200mm of the WC connection.
Supply hot and cold water to all fittings as appropriate.

PHIDESIGN	PHIDESIGN
PJH DESIGN	PJH DESIGN
General Notes	General Notes
Client Name and Address	Client Name and Address
Proposed Site Address	Proposed Site Address
Drawing Title and Reference	Drawing Title and Reference
Date	06/05/13
Scale	1:50
Sheet	A:1
Proposed Rear Extension	Proposed rear extension to bungalow to create kitchen diner area