

Foundations: To be traditional trench fill concrete foundations, size and depth to suit site conditions with base of footing to be a min 150 mm below drain invert level where drains pass under building or within 1 metre of footings. Foundations to be constructed in accordance with N.H.B.C technical note 4.2 (formerly practice note 3) where trees, shrubs or shrinkable soil are present.

Walls below D.P.C: Clay brick or concrete block to BS 3981 & BS 6073 with a minimum compressive strength of 7N/mm<sup>2</sup>. Mortar should be 1:3 or 4 using ordinary portland cement or if sulphates are present use sulphate resisting cement to BS 4027.

Underground Pipes: Lintel over all pipes that pass through walls with 150 x 100 x 600 mm pre-stressed concrete lintels to each skin with a min 100 mm bearing either end, allow 100mm all around pipe, pack cavity around pipe with crushable material to stop ingress of backfill and vermin. Fill roof pipes either side of any pipe that passes through proposed footing.

Suspended Ground Floor Construction: To be constructed in accordance with N.H.B.C technical note 4.2 (formerly practice note 3) where trees, shrubs or shrinkable soil are present. Construction to be: 220mm T & G chipboard grade C4 to BS 6869 on 500g polythene vapour barrier on 100mm flooring grade jaffle insulation on proprietary block and beam flooring fitted to manufacturers specification (such as Tarmac 2 series Fastfloor Beams BBA No.0411317) with 7N/mm<sup>2</sup> concrete infill blocks to BS 6073 with a min 150 mm air gap between the soffit of the floor beams and subsoil over which is to be treated with weed killer. NB oversite to be above external ground level or graded towards lower ground level if on a slope. Provide proprietary plastic air brigs equivalent to 1500 mm<sup>2</sup> per metre run of wall (use 25 x 75mm plastic air bricks at max 1800 mm centres). (U value 0.20W/m<sup>2</sup>K) Cavity Walls: Lintel over toilet & utility room to be moisture resisting in accordance with regulation C2. D.P.C. provide horizontal D.P.C. to all walls min 150 mm above ground level all D.P.C. to be lapped and bonded and run continuous.

Cavity Walls: 102.5 mm face brickwork outer skin with 75 mm cavity completely filled with 75 mm Dritherm insulation with 100 mm standard celcon block inner leaf, both skins tied together with stainless steel wall ties spaced generally 450mm (300 mm at openings) vertically & 750mm horizontally. Finished internally with 12.5mm gypsum plasterboard on dabs spaced as per manufacturers instructions. (U value 0.20W/m<sup>2</sup>K) Cavity Walls: (ile hung first floor elevators) plain lites fixed to manufacturers instructions on 25 x 38mm laminated soft wood battens fixed to 100 mm standard celcon block outer skin with 75 mm cavity completely filled with 75 mm Dritherm insulat on with 100 mm standard celcon block inner leaf, both skins tied together with stainless steel wall ties spaced generally 450mm (300 mm at openings) vertically & 750mm horizontally. Finished internally with 12.5mm standard celcon block on dabs spaced as per manufacturers instructions. (U value 0.20W/m<sup>2</sup>K) Cavity Closets: All cavity walls to be closed at eaves and roof junctions with non combustible material, provide vertical and horizontal D.P.C 25mm width than closures to sides and bottoms of openings in cavity walls. Cavity closures at reveals and lintels to achieve a U value not exceeding 0.20W/m<sup>2</sup>K. Cavity trays above lintels or combined lintel cavity trays to have a minimum 150mm supported upstand and to extend a minimum 150mm beyond the inner face of the cavity closure. Fit stop ends to all cavity trays and provide proprietary plastic weep holes at max 450mm centres with a min of two weep holes per opening. NB fit cavity trays as above to any pipes, meter boxes etc. crossing or intruding into the cavity.

Internal Load bearing walls above D.P.C: To be 100mm standard celcon blocks (unless otherwise specified by Engineer). Internal Gables: Internal load bearing walls above D.P.C. To be 100mm standard celcon blocks on Tarmac Fastfloor Beams to manufacturer specification and supporting calculations. Internal First Floor Non Load bearing Stud Partitions: New stud partitions to be constructed of 100 x 50 mm scaffold studs at max 400 mm centres with 100 x 50 mm head and sole plates with 100 x 50 mm noggins staggered at 1.2m centres, insulate with 50 mm thick acoustic insulation between studs insulation to have a density not less than 10kg per cubic metre and clad both sides with 12.5mm gyproc wallboard 10 Note: Double up floor joist where non load bearing stud walls run parallel and over joists.

External & Internal Wall Lintels: Provide CATINIC Pre Insulated Lintels for all openings in cavity walling. Insulated lintels to give a U value of 1.2W/m<sup>2</sup>K. (Internal lintels do not require insulation) all lintels to have a min 150mm bearing either end (Use only the appropriate lintel specified by the manufacturer for the span and type of loading conditions if in doubt check with Engineer). Fireproofing: Provide half hour fireproofing by fixing 2 layers of 12.5mm gyproc plasterboard to all exposed surfaces of structural lintels.

New First Floor Construction Fix 22 mm tongue & groove chipboard grade C4 to BS 5669 on proposed new grade BS3 50 x 225 mm floor joists at 400 mm centres with a max. clear span not exceeding 4.5 metres new roof joists to be hung from cantilev joint hangers built into wall either end, every third joist hanger to be through wall restraint type hangers. (see floor plans for direction of span.) Provide lateral restraint to roof joists running parallel to walls with 5 x 30 mm galvanised mild steel air sps at max. 2m centres over 3 No. floor joists with 175 x 50 mm noggins under and packers between last joist and wall, end of strap should be turned over at right angles and built into inner skin of wall. Straps should be securely fixed to joists. Provide lateral restraint to floor joists at max 2m centres, with 175 x 50 mm noggins between joists and packers between last joist and wall.(Note: Use cantilev galvanised timber to timber joist hangers for any trimming.) also double up noggins between joists under any baths or under any non load bearing stud partition walls running parallel with the floor joists. Insulate with 100 mm thick acoustic insulation between joists. Insulation to have a density not less than 10kg. per cubic metre and clad underside of first floor joists with 12.5mm gyproc wallboard 10. Note floors to bathrooms and ensuite to be moisture resisting in accordance with regulation C2 Proposed Staircases: Max. pitch of staircase not to exceed 42 degrees. Max. rise not to exceed 220 mm. Min going not less than 220 mm.

All risers to be the same size and upright. All goings to be the same size and level. Maintain a min. 2m clear headroom over the entire length and width of the stairwell. Staircase to have a min unobstructed clear width of 800 mm. Width of window to be equal to width of staircase, min going at lowest post abutment to be 50 mm, min going at centre point of window to be 235 mm, window reveal post to continue down to floor level. Min depth of landing at top and bottom of staircase to be 800 mm, min headroom over to be 2m. Clad underside of staircase with one layer of 12.5mm gyproc plasterboard. Provide handrail set at a height of 900 mm measured vertically above the pitch line.

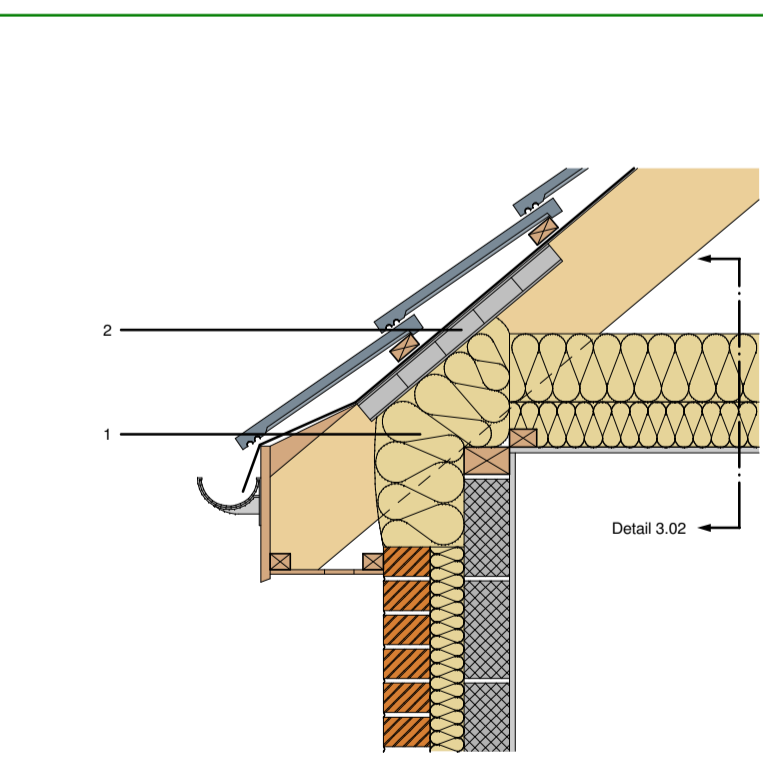
Provide balusters at equal centres with a clear space between spindles not exceeding 100 mm. At top of stairs provide handrail set at a height of 900 mm measured vertically above the new floor level. Provide balusters at equal centres with a clear space between spindles not exceeding 100 mm. New Roof Trusses: New roof trusses are to be supplied by specialist roof truss manufacturers who will supply full details and calculations for roof construction and truss layout. New roof trusses to be designed as to comply with BS 5268 Part 3: Bracing for new trussed roof to be in accordance with appendix A of BS 5268 Part 3: 1985.

Provide lateral restraint to roof trusses running parallel to walls with 5 x 30 mm galvanised mild steel straps at max. 1.8m centres over 3 No. rafters and ceiling joists with 50 x 100 mm noggins under and packers between last joist or rafter and wall. (straps should be securely fixed to rafters and ceiling joists at roof truss node points) end of strap should be turned over at right angles and built into wall. (the straps over whole blocks only) Trusses to have a min 90mm bearing either end or on 50 x 100mm wall plate which is to be bedded on, mortar and run continuous over inner skin of cavity wall, fix wall plate to wall with 1.2mtr long x 5mm thick x 30mm wide galvanised mild steel straps secured to wall at max 1.8mtr centres and either side of any opening. Insulate between and over ceiling joists in roof void with 1 x 100 mm layer between joist and 1 x 150mm layer over of fibre glass quilt insulation with each layer set at right angles to the other, overall thickness 250 mm. Fix one layer of 12.5 mm gyproc foil backed vapour cladd. plasterboard to underside of joists. (U value 0.10W/m<sup>2</sup>K)

Roof Ventilation: Provide ventilation to entire pitched roof void with continuous unobstructed proprietary 10 mm wide ventilating strip at roof fascia junction. Provide proprietary insulation restrainers at eaves abutment to prevent roof insulation from blocking cross ventilation of the roof void. Roof Coverings: Fit tiles manufacturers instructions on 38 x 25 mm tannalised battens on 1 layer of unbreakable roofing felt to BS747. Weathering cavity wall and mono pitched roof abutment: Fit code '4' lead capping over roof and cavity wall abutments. Mono pitched roof abutment: Provide ventilation to entire roof void with continuous unobstructed proprietary 10 mm wide ventilating strip at roof fascia junction. Provide ventilating lites located at high level at sufficient centres as to provide 1 the equivalent of a continuous 5 mm strip at mono ridge level. Ventilation: Habitable rooms to have ventilation openings of at least 5% of the floor area, with some part at least 1.75m above the floor, together with 8000gpm of controllable, secure and draught free background ventilation (min opening size 8 mm). Ventilation: Bathroom to have ventilation openings, together with mechanical extractor with a min capacity of 15 litres per second wired independently from lighting circuit with built in timer set for a 15 minute over run together with 4000gpm of contr. offlable, secure and draught free background ventilation (min opening size 8 mm). Ventilation: Kitchen to have ventilation openings, with some part at least 1.75m above the floor, together with 8000gpm of controllable, secure and draught free background ventilation (min opening size 8 mm) together with mechanical extractor with a min capacity of 30 litres per second. Ventilation: utility to have ventilation openings, with some part at least 1.75m above the floor, together with 8000gpm of controllable, secure and draught free background ventilation (min opening size 8 mm) together with mechanical extractor with a min capacity of 30 litres per second. Ventilation : Ground floor WC to have mechanical extractor with a min capacity of 8 litres per second interlocked wired from lighting circuit with built in timer set for a 15 minute over run together with 4000gpm of controllable, secure and draught free background ventilation (min opening size 8 mm).

Smoke Detection: Install self contained interconnecting smoke detectors wired from dedicated mains circuit at maximum distance of 3 metres from all bedroom doors and 7 metres from any other room. Note: Smoke alarms to be installed to manufacturer's inst ructions at least 300 mm from fire, light fitting or heat source and to conform to BS 5446: Part 1. Surface Water: Surface water to discharge from pitched roofs via min 100 mm diameter gutters set at min 150 fall and fixed to fascia at max. 1m centres via new 65 mm dia u.p.v.c. down pipes located as indicated on drawing via new 100mm dia underg. round u.P.V.C. soil pipe run set at min 1:40 fall and surrounded in 100mm of fine pea beach to new soakaway with overflow to existing storm drain. Note: Soakaways to be located a min 5 metres from nearest building. Actual size of soakaways to be in accordance with conducting soil percolation test (provide inspection chambers at all changes in direction of pipe runs as indicated on plan). Invert Levels: Final invert levels to be determined on site to new inspection chamber but to be calculated to give a min fall of 1:40 to existing manhole that discharges to existing storm water sewer. Kitchen Sink: to discharge via 75 mm deep self sealing air trap via 42 mm diameter waste pipe at 1:40 fall via 76 mm dia drip trap 100 mm dia bottle gully with built in rodding eye via 100 mm dia underground u.p.v.c. pipe run set at 1:40 fall and surrounded in 100 mm of fine pea beach via new 250 mm dia underground u.p.v.c. inspection chamber with an invert level not exceeding 600 mm below existing ground level via 100 mm dia underground u.p.v.c. pipe run set at 1:40 fall and surrounded in 100 mm of fine pea beach via existing manhole and on to main sewer. Bath & Basin in bathroom and basin in ground floor w.c. and utility room sink: to discharge via 75 mm deep air trap via 42 mm diameter waste pipe set at 1:40 fall via 100 mm dia u.p.v.c soil stack via 100 mm dia underground u.p.v.c. pipe run set at 1:40 fall and surrounded in 100 mm of fine pea beach via new 250 mm dia underground u.p.v.c. inspection chamber with an invert level not exceeding 600 mm below existing ground level via 100 mm dia underground u.p.v.c. pipe run set at 1:40 fall and surrounded in 100 mm of fine pea beach via existing manhole and on to main sewer. W.C.s: to discharge via 76 mm deep trap via 100 diameter waste pipe set at 1:40 fall via 100 mm dia u.p.v.c soil stack via 100 mm dia underground u.p.v.c. pipe run set at 1:40 fall and surrounded in 100 mm of fine pea beach via new 250 mm dia underground u.p.v.c. inspection chamber with an invert level not exceeding 600 mm below existing ground level via 100 mm dia underground u.p.v.c. pipe run set at 1:40 fall and surrounded in 100 mm of fine pea beach via existing manhole and on to main sewer. Note: Final invert levels to be determined on site to new inspection chamber but to be calculated to give a min fall of 1:40 to existing manhole that discharges to existing manhole. Inspection Chambers: Invert levels at new 250mm diameter circular u.P.V.C. inspection chambers not to exceed 900mm below ground level. Invert levels at new 450mm dia circular u.P.V.C. inspection chambers not to exceed 900mm below ground level. Underground Pipe Runs: All foul & storm water pipe runs less than 600mm below ground level are to be protected by a 75mm thick grade ST1 concrete capping with a min 100mm layer of fine pea beach between top of pipe and underside of concrete capping. Note: All Underground pipes to be in a P.V.C. to BS4514. Soil Stack: (Provide rodding eyes at all changes in direction) to terminate a min 900mm above the head of any opening window that is within 3000mm of the head of the stack, stack to terminate via proprietary ridge tile vent Note S.V.P.s Serving first floor bedrooms to have low level rodding eye access. Heating System:- Warmworld LK Ltd Natural gas fired balanced fu condensing boiler. Model: Warmworld HE 70/90 Power: 30.6kW. SAP seasonal efficiency: 87%. Efficiency category SEDBUK. Balanced flue to be provided with a metal gull at within 2000 mm of external ground level with outlet located a min 1000 mm away from any opening window or door and a min 600 mm below any soffit. Low pressure hot radiators to all rooms with thermostatic zone control valves to all radiators for control of temperature diff. erential between bedrooms and living rooms. Programmable timer to be fitted for control of entire system. Fit pre rigged hot water cylinder of a min. 112 litre capacity complete with suitable thermostat linked to programmer and immersion heater standby with on off programmer. All hot and cold water supplies and pipes and water storage facilities in unheated areas, i.e. within loft space and within 1 metre of the hot water cylinder to be insulated with appropriate diameter insulation to suit pipe diameter re. water storage and expansion tanks in loft space to be encapsulated with 250 mm thick fibre glass quilt (do not insulate directly under the water tank otherwise this will prevent heat from rising and the pipes will freeze). Meter positions and gas and water pipe installations to comply with Gas and Water Board regulations and standards. Double Glazing: All windows are to be u.p.v.c. frames with double glazed sealed units having a min. 16 mm air gap. (with Low 'E' glass on all inside panes) all opening sashes and door frames to be fitted with tight right rubber seals, new frames to be timber. Total glazed area not to exceed 25% of proposed floor area. proposed new windows to have an indicative 'U' value not exceeding 2.0W/m<sup>2</sup>K. Note: Fit toughened safety glass to requirements of BS6206 to all glazed critical areas such as windows with a floor to sill dimension of less than 800mm. Loft Hatch: Loft hatch to be insulated as roof space with air tight draft excluder fitted around perimeter of min. 35 mm rebate to enable hatch to be fitted in order to prevent wind lift.

3.01 Pitched roof. Ventilated loft. Eaves



Notes  
1. Apply 50mm (min) layer of compressible mineral wool or similar (R=1.2m<sup>2</sup>K/W) over wall and ensure loft insulation meets wall insulation.  
2. Use proprietary crossflow ventilator or ensure 25mm (min) air gap.  
Fire stopping may be required with some wall insulation materials.  
This detail is also suitable for monophitch roofs subject to suitable ventilation provision.  
This detail should be read in conjunction with detail 3.02.

Masonry: Cavity Wall Insulation: Full-Fill **robustdetails**

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Heating System:- Warmworld LK Ltd Natural gas fired balanced fu condensing boiler. Model: Warmworld HE 70/90 Power: 30.6kW. SAP seasonal efficiency: 87%. Efficiency category SEDBUK. Balanced flue to be provided with a metal gull at within 2000 mm of external ground level with outlet located a min 1000 mm away from any opening window or door and a min 600 mm below any soffit. Low pressure hot radiators to all rooms with thermostatic zone control valves to all radiators for control of temperature diff. erential between bedrooms and living rooms. Programmable timer to be fitted for control of entire system. Fit pre rigged hot water cylinder of a min. 112 litre capacity complete with suitable thermostat linked to programmer and immersion heater standby with on off programmer. All hot and cold water supplies and pipes and water storage facilities in unheated areas, i.e. within loft space and within 1 metre of the hot water cylinder to be insulated with appropriate diameter insulation to suit pipe diameter re. water storage and expansion tanks in loft space to be encapsulated with 250 mm thick fibre glass quilt (do not insulate directly under the water tank otherwise this will prevent heat from rising and the pipes will freeze). Meter positions and gas and water pipe installations to comply with Gas and Water Board regulations and standards. Double Glazing: All windows are to be u.p.v.c. frames with double glazed sealed units having a min. 16 mm air gap. (with Low 'E' glass on all inside panes) all opening sashes and door frames to be fitted with tight right rubber seals, new frames to be timber. Total glazed area not to exceed 25% of proposed floor area. proposed new windows to have an indicative 'U' value not exceeding 2.0W/m<sup>2</sup>K. Note: Fit toughened safety glass to requirements of BS6206 to all glazed critical areas such as windows with a floor to sill dimension of less than 800mm. Loft Hatch: Loft hatch to be insulated as roof space with air tight draft excluder fitted around perimeter of min. 35 mm rebate to enable hatch to be fitted in order to prevent wind lift.

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