

GENERAL CONSTRUCTION
BUILDING
SPECIFICATION

HOUGHTON MAIN MINERS WELFARE CLUB
HOUGHTON
BARNSELY

SEPTEMBER 2011

GENERAL

This specification is for general guidance only and construction methods may vary. In all cases, work and methods are to be agreed with the Site Building Inspector beforehand.

All work, materials and methods of construction to comply in all respects with current Building Regulations and all latest amendments to approved documents applicable.

This specification is to be read in conjunction with the working drawings.

Standard Dwelling Construction Specification

ALL WORK TO BE IN ACCORDANCE WITH CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE AND ALL MATERIALS TO COMPLY WITH RELEVANT BRITISH STANDARDS AND ALL MATERIALS TO BE APPROVED BY LOCAL AUTHORITY.

Target U Values for Individual Building Elements are to be:

Walls	:	0.28 w/m ² K
Floors	:	0.22 w/m ² K
Roofs	:	0.16 w/m ² K
Openings	:	1.80 w/m ² K

These target values are used to demonstrate compliance with Approved Document L 2010 edition.

FOUNDATIONS

Generally 600 x 225mm concrete strip foundations taken down to firm ground (min 600mm below finished ground level or min 1000mm below finished ground level in clay) to satisfaction of Building Inspector.

Note.

Specialist designed foundations may be used to suit ground conditions and/or proximity to trees.

Check with specialist Engineers Geotechnical report for the site and confirmation of foundation details prior to carrying out any work on site.

Internal loadbearing walls at same depth as external walls, but 450 x 225mm foundations – check Engineers Geotechnical report as above.

EXTERNAL WALLS (See Also U-Value Calculations)

302.5mm Cavity wall construction comprising of 102.5mm outer leaf in clay brick facings. 100mm cavity. 100mm inner leaf in low density load bearing blockwork or other equal and approved by Engineer. 12.5mm plasterboard on dabs.

External wall cavity to be insulated with 100mm Crown Cavity Batts or other approved.

Below ground work to be 2no leaves class 'B' engineering brickwork or class 'A' blockwork or type B7 blockwork, to be confirmed by Engineer.

Below ground cavity to be filled with weak mix concrete up to 225mm below dpc level.

DAMP PROOF COURSE (External Walls)

Generally min 150mm above ground level in external walls and internal walls. 2000 gauge polythene (Visqueen or similar).

DAMP PROOF COURSE (Openings)

Dpc to all heads and reveals. Insulated dpc to all windows and door reveals all in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

Weep holes above all windows and door heads.

DAMP PROOF COURSE (Abutments)

Provide cavity tray or stepped dpc as appropriate to all abutments to building. Min 150mm upstand across cavity. Provide weep-holes and outlets as required by manufacturers instructions.

GROUND FLOOR CONSTRUCTION

SOLID CONCRETE FLOOR

65mm sand/cement screed on rigid expanded polystyrene thermal insulation board on 2000g polythene Dpm, on min 150mm thick concrete slab reinforced with 2no layers A142 mesh fabric on min 150mm thick well consolidated limestone hardcore. Dpm linked to wall Dpc.

Floor to have 25mm thick perimeter edge insulation and adjacent to all internal load bearing walls.

Insulation to be 120mm Kingspan Kooltherm K3 Floor Board.

All gaps to floor and ceiling at perimeters and junctions with walls etc to be fully sealed with suitable flexible sealant – see current Building Regulations Part E for further advice and information.

RADON PROTECTION & GROUND GASSES

Ground floor construction may be subject to Radon and Ground Gasses protection measures. If required, a specialist floor membrane with all joists fully taped and sealed and linked to house inner leaf wall Dpc (and internal wall dpc) and laid across

cavity to connect to outside leaf Dpc is required to prevent the ingress of ground gasses from entering the building. All service entry pipes, ducts and drainage pipes passing through membrane and floor construction require to be fully taped and sealed to prevent ingress of gasses into the building. A specialist collector sump with dispersal pipes and ducting may be required. See specialist Engineers Geotechnical ground report for each site for further information, confirmation of use and construction details of installation of Radon/Ground gasses measures.

WALL TIES

To be fixed at 900mm horizontal and 450mm vertically in staggered format on general walls. To all openings provide additional ties at 225mm vertical centres.

HRT4 Stainless steel wall ties (Ancon Clark Staifix) or other equal and approved.

LINTELS

To be "Catnic" , or other approved galvanised MS combined lintels. Min bearing 150mm either side onto a full block, all fixed to manufacturers instructions. All lintels to be fully insulated in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

Note! Manufacturers to provide details & loading calculations for checking and approving by Building Control min 28 days prior to installation.

Lintol schedule to be carried out by a specialist in accordance with house type working drawings.

INSULATED OPENING REVEALS

All jambs to window (refer WINDOWS) and door openings to be insulated to avoid cold bridging in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

CEILINGS

Ceiling to be lined with 15mm Knauf Wallboard, or similar approved, fixed in accordance with manufacturers recommendations.

HERRINGBONE STRUTTING

Provide in accordance with joist manufacturers details.

GENERAL ROOF CONSTRUCTION

Insulated steel profiled plastic coated sheet finish roof to match existing. All abutments to be fitted in strict accordance with specialist manufacturers details.

Where valley to be formed an insulated valley piece is to be installed in strict accordance with manufacturers details.

Builder to ensure roof covering suitable for pitch, in accordance with manufacturers recommendations.

All bracing to roof as shown on roofing manufacturers plans and to be in accordance with BS5268 (1985) pt.3.

5mm x 30mm galvanised ms straps at max 2m centres at ceiling level and up each verge and to extend over minimum 3 no rafters. Straps and anchors to be supported with 50 x 50 mm noggins between ties.

Trussed rafters supported on s.w. wallplate (see individual housetype drawing for size) positively fixed and each rafter end fixed min 2no times (skew nailed) to wallplate.

Calculations for trussed rafters to be submitted by roofing manufacturer to Local Authority for approval min 28 days prior to erection.

ROOF INSULATION (COLD ROOF)

1no layer 150mm base layer glass quilt or mineral wool quilt insulation laid between ceiling joists, 150mm glassquilt or mineral wool quilt insulation cross laid at 90 degrees over top of ceiling joists and base layer insulation. 300mm thick overall. Quilt finished at eaves with stop board or proprietary stop board type fitting to ensure continuous ventilation at roof void. Roof and wall insulation to be connected and continuous to each other.

ELECTRICAL EQUIPMENT – HEIGHTS

Switches/sockets etc set to between 450mm and 1200mm above floor level to all rooms on all floors as follows in accordance with part M Building Regulations. All electrical work required to meet the Regulations of Part P (Electrical Safety) must be designed, installed, inspected and tested by a person competent to do so. Prior to completion the Council must be satisfied that an appropriate BS7671 Electrical Installation Certificate has been issued for the work, and that it has been signed by a person competent to do so.

Light switches	1200mm above floor level
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Plug Sockets, TV points, Telephone points etc	450mm above floor level
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FIRE – UNPROTECTED AREAS

All dwellings to be positioned with a minimum 1.0 metre clear distance to any plot curtilage boundary to comply with unprotected areas rules in Part B1 – Building Regulations.

WINDOW GLAZING

All windows and patio doors etc to be double glazed. Glazing to be Low E thermal insulation glass. Glass grade type and cavity spacing size to be determined by manufacturer/supplier. All in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

Note!

Toughened or laminated safety glazing to be used where required under GGF requirements.

Glazing in critical locations to part N of the Building Regulations. Toughened or laminated safety glass to all windows below 800mm above floor level. Toughened or laminated safety glass to all doors and door sidelights below 1500mm above floor level.

EXTERNAL WINDOWS & DOORS – THERMAL INSULATION

All windows, rooflights, external doors, patio doors, patio windows and French style doors in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

PASSIVE WINDOW VENTILATION

Ventilation.

All new windows to allow purge ventilation.

Trickle Ventilation, or equivalent, rates are as follows:

Kitchen - 2500mm²

Sanitary - 2500mm² / WC & Urinal

Occupiable Rooms - 250mm² / m².

RAINWATER GOODS

Generally 112mm half round section gutters. 64mm diameter downpipes. Or other approved type – see 'Materials Specification' for each site. Type-Hunter or other similar and approved pvc. Colour-brown, black or white (see Materials Specification).

SKIRTINGS AND ARCHITRAVES

MDF skirting to all plastered walls. 95 x 16mm or 120 x 19mm. MDF architraves to door casings 45 x 16mm or 63 x 19mm.

PLUMBING

All sanitary ware, fixtures and fittings, pipework and including pipework connections to external branch drainage to be in accordance with Part H, 'Drainage and Waste Disposal'.

Storm and foul drainage to be two separate systems in accordance with B.S..742. .Where existing system is combined consult local Building Control Inspector.

The system shall have as few changes in direction and gradient as practical and access points shall be provided at such changes. Suitable access points include Rodding eye, access fitting, (BIGT), inspection chamber or manhole. Drainage trenches to be excavated in straight lines and to even gradients, being not less than 1:80 for foul drainage and 1:60 for storm drainage. Trench width to be sufficient to allow for pipes to be properly laid and jointed but not less than 400mm. Trenches to be no lower than the foundation level without the written approval from the Architect. All pipes, branches and connections and fittings to be unplasticised p.v.c. conforming to BS 4660 incorporating push fit elastomeric seal joints with 10mm

expansion gaps. Pipes to be laid, on 100mm thick bed of selected granular material to BS. 8301: 1985 Appendix D, true to line and to regular, even and proper falls.

Pipes to be back filled with 100 mm selected fill or granular material and not less than 300 mm thick layer of selected fill, free from stones larger than 40 mm, lumps of clay over 100 mm, timber, frozen material and vegetable matter. Side cover shall be 150 mm or the diameter of the pipe, whichever is greater. Where pipes pass within 1m of foundations trench to be filled with weak mix concrete to underside of foundation. Back filling shall not displace the drain from its line & level and shall be compacted in layers. Mechanical compaction equipment shall not be used until there is 450mm min. compacted material above the top of the drain. Depth of cover for flexible pipes to be min. 600 mm under vehicle areas and min. 300 mm under other areas up to a max. 10m under all areas. Where a rigid pipe of less than 150 mm dia. has less than 300 mm cover; or 150 mm or more diameter has less than 600 mm cover it shall be surrounded with concrete either 100 mm or the diameter of the pipe, whichever is greater, with movement joints at not more than 5 m centres.

Where pipes pass under building they are to be wrapped in 1 layer of polythene & encased in 150mm Min. concrete. Pipes passing through a wall or foundation, shall have 2 no. 150mm deep RC lintels and 50mm Flexicell packing to pipe, with 50 mm clearance all round.

All UPVC drainage pipes to be laid on and surrounded in min. 100mm pea gravel. Minimum cover to pipes to be 400mm. If cover cannot be achieved pipes to be encased in 150mm concrete.

Internal waste

Internal waste pipes to be 32mm grey plastic to basins, and 40mm grey plastic to sinks, showers and baths with deep seal traps to suit fittings. Deep seal rod-able traps to shower units and all 1st floor appliances. Shower trays to be constructed on platform with lead tray connected to deep seal traps with access panel for maintenance of waste.

Sanitary pipe work to comply with B.S. 5572. Sanitary appliances to comply with B.S. 6465 part 1. Soil and vent pipe to be 100mm with pipe flashing at roof where required and balloon grating. Ventilation pipes to be at least 900mm above any opening into a building within 3m of an opening. Bend at bottom of the stack to be min. 200mm. All internal soil stacks enclosed in 12mm plasterboard on softwood frame, packed with mineral fibre insulation, and 600mm deep plywood access panel at floor level.

	DRAINAGE REQUIREMENTS
Flow Rates	The capacity of sanitary pipe work system shall be adequate to carry the expected flow: WC (9l litre cistern) 2.3 litres/sec WHB 0.6 litres/sec sink 0.9 litres/sec

	bath 1.1 litres/sec shower 0.1 litres/sec 100mm Dia pipe will allow 7.2 litres/sec.
Water Seals	Min depth of trap seal as follows: WHB Dia of trap 32mm Depth of seal 75mm Bidet Dia of trap 32mm Depth of seal 75mm Sink Dia of trap 40mm Depth of seal 75mm Bath Dia of trap 40mm Depth of seal 75mm Shower Dia of trap 40mm Depth of seal 75mm Waste unit Dia of trap 40mm Depth of seal 75mm Urinal Dia of trap 40mm Depth of seal 75mm WC Dia of trap 75mm Depth of seal 50mm Macerator Dia of trap 40mm Depth of seal 75mm Urinal Dia of trap 65mm Depth of seal 50mm
Overflow pipes	If discharged to a stack through a trap. In other cases to discharge to a visible location.
Branch pipe	A WC shall discharge directly to a drain only if the drop is less than 1.5m and max 6.0 length to the ventilated drain.
Ventilated Pipes	Ventilation soil pipes to be at least 900mm above any opening into a building within 3m of an opening terminated with a cage cover. Bend at the bottom of the stack to be min 200mm. A discharge stack for a building over 3 storeys shall be located internally.
Branch Connections	For 35mm pipe max 1.7m. For 40mm pipe max 3m For 50mm pipe max 4m For a WC 6.0m max branch
Unvented Stub Stacks	A stack may be unvented if connected to a drain within 6m from the discharge stack. Highest WC connection to stub stack 1.5m Any other appliance highest connection point 2.0m Rodding points shall be provided to give access to a length of stack which cannot be reached from another part of the system.
	<u>UNDERGROUND FOUL DRAINAGE</u>

Capacity of pipes	Pipes to carry the expected flow rate at any point provided that the pipe diameter is not less than 100mm. Peak flow rate of 7 litres /sec requires a minimum gradient of 1:70 using a 100mm pipe Peak flow rate of 9 litres /sec requires a minimum gradient of 1:40 using a 100mm pipe Peak flow rate of 15 litres /sec requires a minimum gradient of 1:25 using a 100mm pipe
Access fillings and chambers	Internal sizes Depth to Invert 600mm Rodding eye min size 100mm Access Fitting Small 150 x 100mm circular 150mm large 225 x 100mm
Inspection Chambers	Inspection chamber Internal sizes Depth to Invert 600mm to 1m Circular 450mm diameter cover 450mm Rectangle 450 x 450mm Cover 450 x 450mm
Manholes for up to 1.5m	Manhole Internal sizes Depth to Invert 1.5m or less. Circular 1050mm diameter cover 600mm Rectangle 1200 x 750mm Cover 600 x 600mm
Manholes over 1.5m	Manhole Internal sizes Depth to Invert over 1.5m Circular 1200mm diameter cover 600mm Rectangle 1200 x 750mm Cover 600 x 600mm
Manholes over 2.7m	Manhole Internal sizes Depth to Invert over 1.5m Should have a chamber 2m deep accessed by a shaft 900 x 840mm or 900mm diameter.

Last foul connection to be not less than 12.5m from main connection to public sewer. All pipes passing under driveways to be surrounded in Min. 150mm concrete. Manholes to be pre-cast concrete by Hepworth, or equal and approved, to B.S. 5911 pt. 2:1982 B.S. 5911: pt 200:1989. Or constructed using concrete engineering bricks laid in English bond on 150mm thick concrete base. Inspection Chambers to be 450 x 450 internally fitted with medium duty galvanised steel cover and frame. Inspection chamber covers to be to Class A, B.S. 497 double triangular, reference MA-60 in roads and Class B, B.S. 497, reference MB-12-80 in grassed areas. All foul gully traps to be back inlet type.

Siting of access points	At or near the head of each length of drain. At a bend. At a change of gradient. At a change of pipe size. At a junction. On long lengths of drains at not greater than : For rodding eyes between access fittings 22m or between inspection or Manholes 45m. On long lengths of drains for Access fittings between Manholes 45m. On long lengths of drains between Inspection Chambers and Manholes 45m. Within 12m of a connection to a sewer, unless access is provided at the connection.
Construction of access points	Access and manholes shall have a have round channel with any branch discharging into the channel at or above the level of its diameter and not more than 90 degrees to the direction of flow. An angle more than 45 degrees a three-quarter section branch shall be used. The channel and any branches shall be benched up at least to the top of the outgoing drain, at a slop of 1:12 and benching rounded with a radius of min 25mm.
Step-irons	A manhole deeper than 1.0m shall have step irons or a fixed ladder.
External Covers	Every access point to have removable non-ventilating cover of durable strength and material.
Internal Covers	Every access point within a building shall have a mechanically fixed airtight cover unless the drain itself has a watertight access cover.

Water tightness		A drain of diameter less than 300mm shall be capable of withstanding a test either: (a) by water to a pressure equal to 1.5m head of water above the invert of the top drain for 2 hours. After this time leakage shall not exceed 0.5 litres per minute per meter diameter of pipe per meter run. (b) by air by loss of air on a manometer for 5 minutes 25mm for a 100mm gauge or 12mm for a 50mm gauge.
Area to be drained		<u>RAINWATER DRAINAGE</u> <u>Roof</u> 11 degs up to 30 degs plan area x 1.15 31 degs up to 45 degs plan area x 1.40 46 degs up to 70 degs plan area x 2.00 <u>Walls</u> Elevation Area x 0.5
Gutter Outlets	and	Gutters laid to a slight fall towards the outlet. Gutters shall be sized to suit the largest of the areas draining into it. Overflow in gutters should discharge away from the building. The flow capacity is dependant upon the cross section area, length, bends and shape. Size of 1/2 round eaves gutters with sharp edged outlets. Max effective roof area 37m² Gutter size 100 Outlet 63 Flow cap. 0.78 53m² Gutter size 115 Outlet 75 Flow cap. 1.11 103m² Gutter size 150 Outlet 90 Flow cap. 2.16
Rain-water pipes		Discharge capacities: Min diameter of pipes assumed at 75mm.
Rain-water drains		Flow capacities for 100mm pipes 100mm pipe at 1:20 yields 15 lit / sec 100mm pipe at 1:40 yields 10 lit / sec 100mm pipe at 1:60 yields 8 lit / sec 100mm pipe at 1:80 yields 7 lit / sec 100mm pipe at 1:100 yields 6 lit / sec

Flow capacities for 150mm pipes

150mm pipe at 1:20 yields 40 lit / sec

150mm pipe at 1:40 yields 28 lit / sec

150mm pipe at 1:60 yields 22 lit / sec

150mm pipe at 1:80 yields 20 lit / sec

150mm pipe at 1:100 yields 18 lit / sec

Notes for foul drainage systems dealing with backfilling, special protection, and access are also relevant.

ELECTRICAL SERVICE

All wiring system installed to be latest IEE Regulations in force at time of building dwelling.

All Electric to be in accordance with Part P – competent persons scheme.

BARGEBOARDS AND FASCIA BOARDS

All bargeboards and fascia are to match existing, sizes to be set to existing site constraints.

EXTERNAL DOOR THRESHOLDS

“Storm guard” or other approved brass type complete with weatherboard. Cill fully draught stripped.

ENERGY EFFICIENT LIGHTING AND OUTDOOR LIGHTING

All to be in accordance with Parts L1A and L1B ‘Conservation of Fuel and Power.

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Note.

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EXTERNAL WALLS (See Also U-Value Calculations)

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External wall cavity to be insulated with 100mm Crown Cavity Batts or other approved.

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Below ground cavity to be filled with weak mix concrete up to 225mm below dpc level.

DAMP PROOF COURSE (External Walls)

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DAMP PROOF COURSE (Openings)

Dpc to all heads and reveals. Insulated dpc to all windows and door reveals all in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

Weep holes above all windows and door heads.

DAMP PROOF COURSE (Abutments)

Provide cavity tray or stepped dpc as appropriate to all abutments to building. Min 150mm upstand across cavity. Provide weep-holes and outlets as required by manufacturers instructions.

GROUND FLOOR CONSTRUCTION

SOLID CONCRETE FLOOR

65mm sand/cement screed on rigid expanded polystyrene thermal insulation board on 2000g polythene Dpm, on min 150mm thick concrete slab reinforced with 2no layers A142 mesh fabric on min 150mm thick well consolidated limestone hardcore. Dpm linked to wall Dpc.

Floor to have 25mm thick perimeter edge insulation and adjacent to all internal load bearing walls.

Insulation to be 120mm Kingspan Kooltherm K3 Floor Board.

All gaps to floor and ceiling at perimeters and junctions with walls etc to be fully sealed with suitable flexible sealant – see current Building Regulations Part E for further advice and information.

RADON PROTECTION & GROUND GASSES

Ground floor construction may be subject to Radon and Ground Gasses protection measures. If required, a specialist floor membrane with all joists fully taped and sealed and linked to house inner leaf wall Dpc (and internal wall dpc) and laid across

cavity to connect to outside leaf Dpc is required to prevent the ingress of ground gasses from entering the building. All service entry pipes, ducts and drainage pipes passing through membrane and floor construction require to be fully taped and sealed to prevent ingress of gasses into the building. A specialist collector sump with dispersal pipes and ducting may be required. See specialist Engineers Geotechnical ground report for each site for further information, confirmation of use and construction details of installation of Radon/Ground gasses measures.

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To be fixed at 900mm horizontal and 450mm vertically in staggered format on general walls. To all openings provide additional ties at 225mm vertical centres.

HRT4 Stainless steel wall ties (Ancon Clark Staifix) or other equal and approved.

LINTELS

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Note! Manufacturers to provide details & loading calculations for checking and approving by Building Control min 28 days prior to installation.

Lintol schedule to be carried out by a specialist in accordance with house type working drawings.

INSULATED OPENING REVEALS

All jambs to window (refer WINDOWS) and door openings to be insulated to avoid cold bridging in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

CEILINGS

Ceiling to be lined with 15mm Knauf Wallboard, or similar approved, fixed in accordance with manufacturers recommendations.

HERRINGBONE STRUTTING

Provide in accordance with joist manufacturers details.

GENERAL ROOF CONSTRUCTION

Insulated steel profiled plastic coated sheet finish roof to match existing. All abutments to be fitted in strict accordance with specialist manufacturers details.

Where valley to be formed an insulated valley piece is to be installed in strict accordance with manufacturers details.

Builder to ensure roof covering suitable for pitch, in accordance with manufacturers recommendations.

All bracing to roof as shown on roofing manufacturers plans and to be in accordance with BS5268 (1985) pt.3.

5mm x 30mm galvanised ms straps at max 2m centres at ceiling level and up each verge and to extend over minimum 3 no rafters. Straps and anchors to be supported with 50 x 50 mm noggins between ties.

Trussed rafters supported on s.w. wallplate (see individual housetype drawing for size) positively fixed and each rafter end fixed min 2no times (skew nailed) to wallplate.

Calculations for trussed rafters to be submitted by roofing manufacturer to Local Authority for approval min 28 days prior to erection.

ROOF INSULATION (COLD ROOF)

1no layer 150mm base layer glass quilt or mineral wool quilt insulation laid between ceiling joists, 150mm glassquilt or mineral wool quilt insulation cross laid at 90 degrees over top of ceiling joists and base layer insulation. 300mm thick overall. Quilt finished at eaves with stop board or proprietary stop board type fitting to ensure continuous ventilation at roof void. Roof and wall insulation to be connected and continuous to each other.

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Plug Sockets, TV points, Telephone points etc	450mm above floor level
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FIRE – UNPROTECTED AREAS

All dwellings to be positioned with a minimum 1.0 metre clear distance to any plot curtilage boundary to comply with unprotected areas rules in Part B1 – Building Regulations.

WINDOW GLAZING

All windows and patio doors etc to be double glazed. Glazing to be Low E thermal insulation glass. Glass grade type and cavity spacing size to be determined by manufacturer/supplier. All in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

Note!

Toughened or laminated safety glazing to be used where required under GGF requirements.

Glazing in critical locations to part N of the Building Regulations. Toughened or laminated safety glass to all windows below 800mm above floor level. Toughened or laminated safety glass to all doors and door sidelights below 1500mm above floor level.

EXTERNAL WINDOWS & DOORS – THERMAL INSULATION

All windows, rooflights, external doors, patio doors, patio windows and French style doors in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

PASSIVE WINDOW VENTILATION

Ventilation.

All new windows to allow purge ventilation.

Trickle Ventilation, or equivalent, rates are as follows:

Kitchen - 2500mm²

Sanitary - 2500mm² / WC & Urinal

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Pipes to be back filled with 100 mm selected fill or granular material and not less than 300 mm thick layer of selected fill, free from stones larger than 40 mm, lumps of clay over 100 mm, timber, frozen material and vegetable matter. Side cover shall be 150 mm or the diameter of the pipe, whichever is greater. Where pipes pass within 1m of foundations trench to be filled with weak mix concrete to underside of foundation. Back filling shall not displace the drain from its line & level and shall be compacted in layers. Mechanical compaction equipment shall not be used until there is 450mm min. compacted material above the top of the drain. Depth of cover for flexible pipes to be min. 600 mm under vehicle areas and min. 300 mm under other areas up to a max. 10m under all areas. Where a rigid pipe of less than 150 mm dia. has less than 300 mm cover; or 150 mm or more diameter has less than 600 mm cover it shall be surrounded with concrete either 100 mm or the diameter of the pipe, whichever is greater, with movement joints at not more than 5 m centres.

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Internal waste

Internal waste pipes to be 32mm grey plastic to basins, and 40mm grey plastic to sinks, showers and baths with deep seal traps to suit fittings. Deep seal rod-able traps to shower units and all 1st floor appliances. Shower trays to be constructed on platform with lead tray connected to deep seal traps with access panel for maintenance of waste.

Sanitary pipe work to comply with B.S. 5572. Sanitary appliances to comply with B.S. 6465 part 1. Soil and vent pipe to be 100mm with pipe flashing at roof where required and balloon grating. Ventilation pipes to be at least 900mm above any opening into a building within 3m of an opening. Bend at bottom of the stack to be min. 200mm. All internal soil stacks enclosed in 12mm plasterboard on softwood frame, packed with mineral fibre insulation, and 600mm deep plywood access panel at floor level.

	DRAINAGE REQUIREMENTS
Flow Rates	The capacity of sanitary pipe work system shall be adequate to carry the expected flow: WC (9l litre cistern) 2.3 litres/sec WHB 0.6 litres/sec sink 0.9 litres/sec

	bath 1.1 litres/sec shower 0.1 litres/sec 100mm Dia pipe will allow 7.2 litres/sec.
Water Seals	Min depth of trap seal as follows: WHB Dia of trap 32mm Depth of seal 75mm Bidet Dia of trap 32mm Depth of seal 75mm Sink Dia of trap 40mm Depth of seal 75mm Bath Dia of trap 40mm Depth of seal 75mm Shower Dia of trap 40mm Depth of seal 75mm Waste unit Dia of trap 40mm Depth of seal 75mm Urinal Dia of trap 40mm Depth of seal 75mm WC Dia of trap 75mm Depth of seal 50mm Macerator Dia of trap 40mm Depth of seal 75mm Urinal Dia of trap 65mm Depth of seal 50mm
Overflow pipes	If discharged to a stack through a trap. In other cases to discharge to a visible location.
Branch pipe	A WC shall discharge directly to a drain only if the drop is less than 1.5m and max 6.0 length to the ventilated drain.
Ventilated Pipes	Ventilation soil pipes to be at least 900mm above any opening into a building within 3m of an opening terminated with a cage cover. Bend at the bottom of the stack to be min 200mm. A discharge stack for a building over 3 storeys shall be located internally.
Branch Connections	For 35mm pipe max 1.7m. For 40mm pipe max 3m For 50mm pipe max 4m For a WC 6.0m max branch
Unvented Stub Stacks	A stack may be unvented if connected to a drain within 6m from the discharge stack. Highest WC connection to stub stack 1.5m Any other appliance highest connection point 2.0m Rodding points shall be provided to give access to a length of stack which cannot be reached from another part of the system.
	<u>UNDERGROUND FOUL DRAINAGE</u>

Capacity of pipes	Pipes to carry the expected flow rate at any point provided that the pipe diameter is not less than 100mm. Peak flow rate of 7 litres /sec requires a minimum gradient of 1:70 using a 100mm pipe Peak flow rate of 9 litres /sec requires a minimum gradient of 1:40 using a 100mm pipe Peak flow rate of 15 litres /sec requires a minimum gradient of 1:25 using a 100mm pipe
Access fillings and chambers	Internal sizes Depth to Invert 600mm Rodding eye min size 100mm Access Fitting Small 150 x 100mm circular 150mm large 225 x 100mm
Inspection Chambers	Inspection chamber Internal sizes Depth to Invert 600mm to 1m Circular 450mm diameter cover 450mm Rectangle 450 x 450mm Cover 450 x 450mm
Manholes for up to 1.5m	Manhole Internal sizes Depth to Invert 1.5m or less. Circular 1050mm diameter cover 600mm Rectangle 1200 x 750mm Cover 600 x 600mm
Manholes over 1.5m	Manhole Internal sizes Depth to Invert over 1.5m Circular 1200mm diameter cover 600mm Rectangle 1200 x 750mm Cover 600 x 600mm
Manholes over 2.7m	Manhole Internal sizes Depth to Invert over 1.5m Should have a chamber 2m deep accessed by a shaft 900 x 840mm or 900mm diameter.

Last foul connection to be not less than 12.5m from main connection to public sewer. All pipes passing under driveways to be surrounded in Min. 150mm concrete. Manholes to be pre-cast concrete by Hepworth, or equal and approved, to B.S. 5911 pt. 2:1982 B.S. 5911: pt 200:1989. Or constructed using concrete engineering bricks laid in English bond on 150mm thick concrete base. Inspection Chambers to be 450 x 450 internally fitted with medium duty galvanised steel cover and frame. Inspection chamber covers to be to Class A, B.S. 497 double triangular, reference MA-60 in roads and Class B, B.S. 497, reference MB-12-80 in grassed areas. All foul gully traps to be back inlet type.

Siting of access points	At or near the head of each length of drain. At a bend. At a change of gradient. At a change of pipe size. At a junction. On long lengths of drains at not greater than : For rodding eyes between access fittings 22m or between inspection or Manholes 45m. On long lengths of drains for Access fittings between Manholes 45m. On long lengths of drains between Inspection Chambers and Manholes 45m. Within 12m of a connection to a sewer, unless access is provided at the connection.
Construction of access points	Access and manholes shall have a have round channel with any branch discharging into the channel at or above the level of its diameter and not more than 90 degrees to the direction of flow. An angle more than 45 degrees a three-quarter section branch shall be used. The channel and any branches shall be benched up at least to the top of the outgoing drain, at a slop of 1:12 and benching rounded with a radius of min 25mm.
Step-irons	A manhole deeper than 1.0m shall have step irons or a fixed ladder.
External Covers	Every access point to have removable non-ventilating cover of durable strength and material.
Internal Covers	Every access point within a building shall have a mechanically fixed airtight cover unless the drain itself has a watertight access cover.

Water tightness		A drain of diameter less than 300mm shall be capable of withstanding a test either: (a) by water to a pressure equal to 1.5m head of water above the invert of the top drain for 2 hours. After this time leakage shall not exceed 0.5 litres per minute per meter diameter of pipe per meter run. (b) by air by loss of air on a manometer for 5 minutes 25mm for a 100mm gauge or 12mm for a 50mm gauge.
Area to be drained		<u>RAINWATER DRAINAGE</u> <u>Roof</u> 11 degs up to 30 degs plan area x 1.15 31 degs up to 45 degs plan area x 1.40 46 degs up to 70 degs plan area x 2.00 <u>Walls</u> Elevation Area x 0.5
Gutter Outlets	and	Gutters laid to a slight fall towards the outlet. Gutters shall be sized to suit the largest of the areas draining into it. Overflow in gutters should discharge away from the building. The flow capacity is dependant upon the cross section area, length, bends and shape. Size of 1/2 round eaves gutters with sharp edged outlets. Max effective roof area 37m² Gutter size 100 Outlet 63 Flow cap. 0.78 53m² Gutter size 115 Outlet 75 Flow cap. 1.11 103m² Gutter size 150 Outlet 90 Flow cap. 2.16
Rain-water pipes		Discharge capacities: Min diameter of pipes assumed at 75mm.
Rain-water drains		Flow capacities for 100mm pipes 100mm pipe at 1:20 yields 15 lit / sec 100mm pipe at 1:40 yields 10 lit / sec 100mm pipe at 1:60 yields 8 lit / sec 100mm pipe at 1:80 yields 7 lit / sec 100mm pipe at 1:100 yields 6 lit / sec

Flow capacities for 150mm pipes

150mm pipe at 1:20 yields 40 lit / sec

150mm pipe at 1:40 yields 28 lit / sec

150mm pipe at 1:60 yields 22 lit / sec

150mm pipe at 1:80 yields 20 lit / sec

150mm pipe at 1:100 yields 18 lit / sec

Notes for foul drainage systems dealing with backfilling, special protection, and access are also relevant.

ELECTRICAL SERVICE

All wiring system installed to be latest IEE Regulations in force at time of building dwelling.

All Electric to be in accordance with Part P – competent persons scheme.

BARGEBOARDS AND FASCIA BOARDS

All bargeboards and fascia are to match existing, sizes to be set to existing site constraints.

EXTERNAL DOOR THRESHOLDS

“Storm guard” or other approved brass type complete with weatherboard. Cill fully draught stripped.

ENERGY EFFICIENT LIGHTING AND OUTDOOR LIGHTING

All to be in accordance with Parts L1A and L1B ‘Conservation of Fuel and Power.

GENERAL CONSTRUCTION
BUILDING
SPECIFICATION

HOUGHTON MAIN MINERS WELFARE CLUB
HOUGHTON
BARNSELY

SEPTEMBER 2011

GENERAL

This specification is for general guidance only and construction methods may vary. In all cases, work and methods are to be agreed with the Site Building Inspector beforehand.

All work, materials and methods of construction to comply in all respects with current Building Regulations and all latest amendments to approved documents applicable.

This specification is to be read in conjunction with the working drawings.

Standard Dwelling Construction Specification

ALL WORK TO BE IN ACCORDANCE WITH CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE AND ALL MATERIALS TO COMPLY WITH RELEVANT BRITISH STANDARDS AND ALL MATERIALS TO BE APPROVED BY LOCAL AUTHORITY.

Target U Values for Individual Building Elements are to be:

Walls	:	0.28 w/m ² K
Floors	:	0.22 w/m ² K
Roofs	:	0.16 w/m ² K
Openings	:	1.80 w/m ² K

These target values are used to demonstrate compliance with Approved Document L 2010 edition.

FOUNDATIONS

Generally 600 x 225mm concrete strip foundations taken down to firm ground (min 600mm below finished ground level or min 1000mm below finished ground level in clay) to satisfaction of Building Inspector.

Note.

Specialist designed foundations may be used to suit ground conditions and/or proximity to trees.

Check with specialist Engineers Geotechnical report for the site and confirmation of foundation details prior to carrying out any work on site.

Internal loadbearing walls at same depth as external walls, but 450 x 225mm foundations – check Engineers Geotechnical report as above.

EXTERNAL WALLS (See Also U-Value Calculations)

302.5mm Cavity wall construction comprising of 102.5mm outer leaf in clay brick facings. 100mm cavity. 100mm inner leaf in low density load bearing blockwork or other equal and approved by Engineer. 12.5mm plasterboard on dabs.

External wall cavity to be insulated with 100mm Crown Cavity Batts or other approved.

Below ground work to be 2no leaves class 'B' engineering brickwork or class 'A' blockwork or type B7 blockwork, to be confirmed by Engineer.

Below ground cavity to be filled with weak mix concrete up to 225mm below dpc level.

DAMP PROOF COURSE (External Walls)

Generally min 150mm above ground level in external walls and internal walls. 2000 gauge polythene (Visqueen or similar).

DAMP PROOF COURSE (Openings)

Dpc to all heads and reveals. Insulated dpc to all windows and door reveals all in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

Weep holes above all windows and door heads.

DAMP PROOF COURSE (Abutments)

Provide cavity tray or stepped dpc as appropriate to all abutments to building. Min 150mm upstand across cavity. Provide weep-holes and outlets as required by manufacturers instructions.

GROUND FLOOR CONSTRUCTION

SOLID CONCRETE FLOOR

65mm sand/cement screed on rigid expanded polystyrene thermal insulation board on 2000g polythene Dpm, on min 150mm thick concrete slab reinforced with 2no layers A142 mesh fabric on min 150mm thick well consolidated limestone hardcore. Dpm linked to wall Dpc.

Floor to have 25mm thick perimeter edge insulation and adjacent to all internal load bearing walls.

Insulation to be 120mm Kingspan Kooltherm K3 Floor Board.

All gaps to floor and ceiling at perimeters and junctions with walls etc to be fully sealed with suitable flexible sealant – see current Building Regulations Part E for further advice and information.

RADON PROTECTION & GROUND GASSES

Ground floor construction may be subject to Radon and Ground Gasses protection measures. If required, a specialist floor membrane with all joists fully taped and sealed and linked to house inner leaf wall Dpc (and internal wall dpc) and laid across

cavity to connect to outside leaf Dpc is required to prevent the ingress of ground gasses from entering the building. All service entry pipes, ducts and drainage pipes passing through membrane and floor construction require to be fully taped and sealed to prevent ingress of gasses into the building. A specialist collector sump with dispersal pipes and ducting may be required. See specialist Engineers Geotechnical ground report for each site for further information, confirmation of use and construction details of installation of Radon/Ground gasses measures.

WALL TIES

To be fixed at 900mm horizontal and 450mm vertically in staggered format on general walls. To all openings provide additional ties at 225mm vertical centres.

HRT4 Stainless steel wall ties (Ancon Clark Staifix) or other equal and approved.

LINTELS

To be "Catnic" , or other approved galvanised MS combined lintels. Min bearing 150mm either side onto a full block, all fixed to manufacturers instructions. All lintels to be fully insulated in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

Note! Manufacturers to provide details & loading calculations for checking and approving by Building Control min 28 days prior to installation.

Lintol schedule to be carried out by a specialist in accordance with house type working drawings.

INSULATED OPENING REVEALS

All jambs to window (refer WINDOWS) and door openings to be insulated to avoid cold bridging in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

CEILINGS

Ceiling to be lined with 15mm Knauf Wallboard, or similar approved, fixed in accordance with manufacturers recommendations.

HERRINGBONE STRUTTING

Provide in accordance with joist manufacturers details.

GENERAL ROOF CONSTRUCTION

Insulated steel profiled plastic coated sheet finish roof to match existing. All abutments to be fitted in strict accordance with specialist manufacturers details.

Where valley to be formed an insulated valley piece is to be installed in strict accordance with manufacturers details.

Builder to ensure roof covering suitable for pitch, in accordance with manufacturers recommendations.

All bracing to roof as shown on roofing manufacturers plans and to be in accordance with BS5268 (1985) pt.3.

5mm x 30mm galvanised ms straps at max 2m centres at ceiling level and up each verge and to extend over minimum 3 no rafters. Straps and anchors to be supported with 50 x 50 mm noggins between ties.

Trussed rafters supported on s.w. wallplate (see individual housetype drawing for size) positively fixed and each rafter end fixed min 2no times (skew nailed) to wallplate.

Calculations for trussed rafters to be submitted by roofing manufacturer to Local Authority for approval min 28 days prior to erection.

ROOF INSULATION (COLD ROOF)

1no layer 150mm base layer glass quilt or mineral wool quilt insulation laid between ceiling joists, 150mm glassquilt or mineral wool quilt insulation cross laid at 90 degrees over top of ceiling joists and base layer insulation. 300mm thick overall. Quilt finished at eaves with stop board or proprietary stop board type fitting to ensure continuous ventilation at roof void. Roof and wall insulation to be connected and continuous to each other.

ELECTRICAL EQUIPMENT – HEIGHTS

Switches/sockets etc set to between 450mm and 1200mm above floor level to all rooms on all floors as follows in accordance with part M Building Regulations. All electrical work required to meet the Regulations of Part P (Electrical Safety) must be designed, installed, inspected and tested by a person competent to do so. Prior to completion the Council must be satisfied that an appropriate BS7671 Electrical Installation Certificate has been issued for the work, and that it has been signed by a person competent to do so.

Light switches	1200mm above floor level
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Plug Sockets, TV points, Telephone points etc	450mm above floor level
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FIRE – UNPROTECTED AREAS

All dwellings to be positioned with a minimum 1.0 metre clear distance to any plot curtilage boundary to comply with unprotected areas rules in Part B1 – Building Regulations.

WINDOW GLAZING

All windows and patio doors etc to be double glazed. Glazing to be Low E thermal insulation glass. Glass grade type and cavity spacing size to be determined by manufacturer/supplier. All in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

Note!

Toughened or laminated safety glazing to be used where required under GGF requirements.

Glazing in critical locations to part N of the Building Regulations. Toughened or laminated safety glass to all windows below 800mm above floor level. Toughened or laminated safety glass to all doors and door sidelights below 1500mm above floor level.

EXTERNAL WINDOWS & DOORS – THERMAL INSULATION

All windows, rooflights, external doors, patio doors, patio windows and French style doors in accordance with Parts L1A & L1B 'Conservation of Fuel and Power'.

PASSIVE WINDOW VENTILATION

Ventilation.

All new windows to allow purge ventilation.

Trickle Ventilation, or equivalent, rates are as follows:

Kitchen - 2500mm²

Sanitary - 2500mm² / WC & Urinal

Occupiable Rooms - 250mm² / m².

RAINWATER GOODS

Generally 112mm half round section gutters. 64mm diameter downpipes. Or other approved type – see 'Materials Specification' for each site. Type-Hunter or other similar and approved pvc. Colour-brown, black or white (see Materials Specification).

SKIRTINGS AND ARCHITRAVES

MDF skirting to all plastered walls. 95 x 16mm or 120 x 19mm. MDF architraves to door casings 45 x 16mm or 63 x 19mm.

PLUMBING

All sanitary ware, fixtures and fittings, pipework and including pipework connections to external branch drainage to be in accordance with Part H, 'Drainage and Waste Disposal'.

Storm and foul drainage to be two separate systems in accordance with B.S..742. .Where existing system is combined consult local Building Control Inspector.

The system shall have as few changes in direction and gradient as practical and access points shall be provided at such changes. Suitable access points include Rodding eye, access fitting, (BIGT), inspection chamber or manhole. Drainage trenches to be excavated in straight lines and to even gradients, being not less than 1:80 for foul drainage and 1:60 for storm drainage. Trench width to be sufficient to allow for pipes to be properly laid and jointed but not less than 400mm. Trenches to be no lower than the foundation level without the written approval from the Architect. All pipes, branches and connections and fittings to be unplasticised p.v.c. conforming to BS 4660 incorporating push fit elastomeric seal joints with 10mm

expansion gaps. Pipes to be laid, on 100mm thick bed of selected granular material to BS. 8301: 1985 Appendix D, true to line and to regular, even and proper falls.

Pipes to be back filled with 100 mm selected fill or granular material and not less than 300 mm thick layer of selected fill, free from stones larger than 40 mm, lumps of clay over 100 mm, timber, frozen material and vegetable matter. Side cover shall be 150 mm or the diameter of the pipe, whichever is greater. Where pipes pass within 1m of foundations trench to be filled with weak mix concrete to underside of foundation. Back filling shall not displace the drain from its line & level and shall be compacted in layers. Mechanical compaction equipment shall not be used until there is 450mm min. compacted material above the top of the drain. Depth of cover for flexible pipes to be min. 600 mm under vehicle areas and min. 300 mm under other areas up to a max. 10m under all areas. Where a rigid pipe of less than 150 mm dia. has less than 300 mm cover; or 150 mm or more diameter has less than 600 mm cover it shall be surrounded with concrete either 100 mm or the diameter of the pipe, whichever is greater, with movement joints at not more than 5 m centres.

Where pipes pass under building they are to be wrapped in 1 layer of polythene & encased in 150mm Min. concrete. Pipes passing through a wall or foundation, shall have 2 no. 150mm deep RC lintels and 50mm Flexicell packing to pipe, with 50 mm clearance all round.

All UPVC drainage pipes to be laid on and surrounded in min. 100mm pea gravel. Minimum cover to pipes to be 400mm. If cover cannot be achieved pipes to be encased in 150mm concrete.

Internal waste

Internal waste pipes to be 32mm grey plastic to basins, and 40mm grey plastic to sinks, showers and baths with deep seal traps to suit fittings. Deep seal rod-able traps to shower units and all 1st floor appliances. Shower trays to be constructed on platform with lead tray connected to deep seal traps with access panel for maintenance of waste.

Sanitary pipe work to comply with B.S. 5572. Sanitary appliances to comply with B.S. 6465 part 1. Soil and vent pipe to be 100mm with pipe flashing at roof where required and balloon grating. Ventilation pipes to be at least 900mm above any opening into a building within 3m of an opening. Bend at bottom of the stack to be min. 200mm. All internal soil stacks enclosed in 12mm plasterboard on softwood frame, packed with mineral fibre insulation, and 600mm deep plywood access panel at floor level.

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	bath 1.1 litres/sec shower 0.1 litres/sec 100mm Dia pipe will allow 7.2 litres/sec.
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Overflow pipes	If discharged to a stack through a trap. In other cases to discharge to a visible location.
Branch pipe	A WC shall discharge directly to a drain only if the drop is less than 1.5m and max 6.0 length to the ventilated drain.
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Branch Connections	For 35mm pipe max 1.7m. For 40mm pipe max 3m For 50mm pipe max 4m For a WC 6.0m max branch
Unvented Stub Stacks	A stack may be unvented if connected to a drain within 6m from the discharge stack. Highest WC connection to stub stack 1.5m Any other appliance highest connection point 2.0m Rodding points shall be provided to give access to a length of stack which cannot be reached from another part of the system.
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Access fillings and chambers	Internal sizes Depth to Invert 600mm Rodding eye min size 100mm Access Fitting Small 150 x 100mm circular 150mm large 225 x 100mm
Inspection Chambers	Inspection chamber Internal sizes Depth to Invert 600mm to 1m Circular 450mm diameter cover 450mm Rectangle 450 x 450mm Cover 450 x 450mm
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Manholes over 2.7m	Manhole Internal sizes Depth to Invert over 1.5m Should have a chamber 2m deep accessed by a shaft 900 x 840mm or 900mm diameter.

Last foul connection to be not less than 12.5m from main connection to public sewer. All pipes passing under driveways to be surrounded in Min. 150mm concrete. Manholes to be pre-cast concrete by Hepworth, or equal and approved, to B.S. 5911 pt. 2:1982 B.S. 5911: pt 200:1989. Or constructed using concrete engineering bricks laid in English bond on 150mm thick concrete base. Inspection Chambers to be 450 x 450 internally fitted with medium duty galvanised steel cover and frame. Inspection chamber covers to be to Class A, B.S. 497 double triangular, reference MA-60 in roads and Class B, B.S. 497, reference MB-12-80 in grassed areas. All foul gully traps to be back inlet type.

Siting of access points	At or near the head of each length of drain. At a bend. At a change of gradient. At a change of pipe size. At a junction. On long lengths of drains at not greater than : For rodding eyes between access fittings 22m or between inspection or Manholes 45m. On long lengths of drains for Access fittings between Manholes 45m. On long lengths of drains between Inspection Chambers and Manholes 45m. Within 12m of a connection to a sewer, unless access is provided at the connection.
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Step-irons	A manhole deeper than 1.0m shall have step irons or a fixed ladder.
External Covers	Every access point to have removable non-ventilating cover of durable strength and material.
Internal Covers	Every access point within a building shall have a mechanically fixed airtight cover unless the drain itself has a watertight access cover.

Water tightness		A drain of diameter less than 300mm shall be capable of withstanding a test either: (a) by water to a pressure equal to 1.5m head of water above the invert of the top drain for 2 hours. After this time leakage shall not exceed 0.5 litres per minute per meter diameter of pipe per meter run. (b) by air by loss of air on a manometer for 5 minutes 25mm for a 100mm gauge or 12mm for a 50mm gauge.
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“Storm guard” or other approved brass type complete with weatherboard. Cill fully draught stripped.

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All to be in accordance with Parts L1A and L1B ‘Conservation of Fuel and Power.