

A.1 GENERAL NOTES

All to be as good building practice and to Building Control approval.
Materials to conform to an appropriate British Standard prefaced either BS or BSCEN (European Standard). British Board of Agrément (BBA) or European Technical Approval (EOTA).
Workmanship on building sites to accord with BS 8000 all to comply with Approved Document, Regulation 7, 1999 Edition.
In timber roof construction, ensure all timbers are spiked together in two directions and all roofs are adequately cross braced and triangulated (use coach bolts and loathed connectors where required). Truss slips at plate connection.
Timber Degrading: All timber and external joinery should be either naturally durable or treated with preservative. The treatment, as from 1st July 2004 is not to include CCA pressure treated timber. Acceptable treatment to accord with EC Directive, (eg. Tanalith E). Any timber cut after treatment to receive 2no. liberal coats of tinted preservative.
The exposure rating of the site will affect detailing elements, as well as bricks and windows, etc. It is essential that this is known before construction starts. Assume moderate/exposed at front and sheltered/moderate at rear.
In steel construction ensure all steelwork is fabricated with welded joints in accordance with NS 5950 and formed in a manner that will not weaken the material. Securely fasten steelwork during erection to withstand all loadings and provide necessary bracing until structure is self supporting. As Structural Engineers details
Cement To comply with BS and have BBA Certificate. Quality assured to BS 5750.
Sustainability All materials used to be as sustainable and energy efficient as possible.

A.2 SITE PREPARATION

Site to be cleared of any rubbish.
Any remediation measures identified in the site investigation to be completed prior to commencement of the development.
Remove all debris, rubbish etc., and leave tidy. Make safe or divert all services. Liaise with all relevant statutory bodies and service suppliers. Remove all non-recyclable waste to Local Authority approved tips.

B.1 FOUNDATIONS

concrete strip foundations designed to suit the bearing and recommendations contained within the site investigation report.
B.1.1 Depth and design of foundations to be subject to Structural Engineers details and Building Control approval dependant on site investigation. All to BS 8110 and BS 8004 with concrete mixes to BS 5328 and BS 5573. All foundation work shall be carried out in accordance with "CP2004". Foundations".
B.1.3 Retaining Walls. As engineers specifications.
B.1.4 Oversite shall be excavated to remove vegetable soil and if suitable, deposited in spoil heaps for later spreading and levelling as required. Reduced levels shall be excavated as required. The sides of all excavations shall be properly upheld and maintained as required by the soil conditions. All excavation bottoms shall be trimmed, levelled and compacted. Earth backfilling shall be well rammed in 225mm layers to a maximum depth of 600mm. Earth fillings shall be selected excavated material or suitable imported material free from organic or other deleterious matter, well consolidated in 225mm layers. Suitable surplus excavated material shall be spread and levelled as required by the site layout.
Make levels under ground floors with earth fillings as described or hardcore fillings as required, to the satisfaction of the Building Control Inspector. Backfill foundation trenches internally with earth fillings or hardcore as appropriate. All unusable and surplus excavated material shall be removed from the site to suitable approved tips.

B.2 CONCRETE WORK

Cement shall comply in all respects to BS 12. Sulphate resisting cement shall comply in all respects with BS 4027. High alumina cement shall not be used. Aggregate shall comply in all respects with BS 882. All concrete construction shall be carried out in accordance with the relevant British Standard Codes of Practice. Particular attention shall be paid to compaction and the formation of construction joints. Concrete exposed to sulphate attack shall be designed in accordance with the recommendations of Building Research Establishment Digest 363. Steel reinforcing rods and fabric reinforcement shall comply with BS 4449 and 4483 respectively, and shall be free from paint, mill scale, rust, dirt and grease.

B.3 STEELWORK

See Structural Engineers details and specification for steelwork. All in accordance with BS 5950 using grade 43 steel. Steelwork to comply with BS 4: Part 1 & BS 4449. Surfaces to be given a protective coating system before assembly. All to be kept clean and free from loose rust, dirt, scale, grease and oil. Steelwork to be supported on padstones (to Structural Engineers detail) to spread load evenly. Where used in cavity wall, precautions are to be taken to prevent cold bridging.

C.1 WALLS

Strength of brickwork and blockwork to be to Structural Engineer's drawings and calculations. All bricks and blocks to be laid on a full bed of mortar and all prebends to be solidly filled.

C.2 WALLS BELOW DPC

To be constructed in concrete blockwork and/or similar quality brickwork to Engineer's specification. NB: Fletton bricks not to be used. Cavities filled with lean mix concrete with played top falling to outside face at least 225mm below lowest dpc.

Provide PVC dpc's throughout. Mortar to be to Engineer's specification. Bricks below dpc but above ground to be facing to match above unless specifically required otherwise, and to be FL quality.

C.3 EXTERNAL WALLS FLATS

C3.1 All to comply with BS 5628 Code of Practice for use of masonry & BS EN 998 specification of mortar.
375mm thick cavity walls. Inner skin 100mm Celcon Standard / High Strength Grade concrete block (as specified by engineer) or similar equal, to conform BS 6073; Parts 1 & 2. Finished with 12.5mm plasterboard on bonding compound dabs in accordance with manufacturers instructions. 175mm min. wide cavity filled 175mm Rockwool Cavity insulation, to at least 150mm below top of perimeter ground floor insulation, Ancon ST1 300mm stainless steel cavity wall ties to accord with BS DD10 140; Part 2 inclined downwards towards outer leaf. The bottom row of ties to be at 450mm centres, elsewhere ties at 750mm horizontal joints, ties to be at 300mm max. vertically, not more than 225mm from the edge. Type 4 ties not to be used. Ties to be bedded at least 50mm into each leaf. Cavity wall insulation to meet roof insulation at the top of the wall. Brick outer skin to be in 102mm Class FL stock facing brickwork to BS 3291. Weather struck or bucket handle finish to joint. Total U' value = 0.18 W/m²k.

C.3.2 All expansion joints, if required, by Structural Engineer are to be filled with a compressible backing strip with low modulus silicone or 2 part polysulphide pointing externally. Internally use proprietary plaster, expanded metal expansion joint trim. Where possible position at inside corner or mask with RWP.

C.3.3 Manufacturers proprietary uPVC insulated horizontal and vertical cavity closers to all windows and door openings in cavity walls. Close cavity at roof eaves level with cavity insulation meeting roof insulation. Provide horizontal cavity trays with preformed stop ends or turned up ends over any position where cavity is bridged, eg. Flues/ducts etc. Weep holes to be proprietary plastic vents @ 450mm c/c's in the brick course immediately above lintels over all openings, with a minimum of 2 holes per opening. All cavities to be kept clear of mortar droppings. No recessed pointing to be used. Back face of window and door jamb to be set back behind vertical d.p.c. to avoid cold bridging.

C.4 EXTERNAL WALLS HOUSES

300mm thick cavity walls. Inner skin 100mm Celcon Standard / High Strength Grade concrete block (as specified by engineer) or similar equal, to conform BS 6073; Parts 1 & 2. Finished with 12.5mm plasterboard on bonding compound dabs in accordance with manufacturers instructions. 100mm cavity with 90mm Celotex Thermadass Cavity Wall 21 insulation with 10mm residual cavity to brickwork. Brick outer skin to be in 102mm Class FL stock facing brickwork to BS 3291. Weather struck or bucket handle finish to joint.

Total U' value = 0.18 W/m²k.

C.5 SEPERATING WALLS

Constructed and registered as Robust Detail E-WM-1
2 x 100mm wide concrete block leaves with 100mm cavity filled with rockwool and 13mm wet plaster each side.

C.6 INTERNAL PARTITION WALLS

Single layer of 12.5mm WallBoard TEN or Sound Bloc (min. 10kg/m²) on each side of 75 x 50 s.w. studs (or 70mm width metal studs) @ 600 max centres with min. distance between linings of 75mm. Insulated mineral wool batts or quilt, 25mm min. thick and 10kg/m² min. density (eg. Isofund APR1200) suspended within cavity to comply with Approved Document E/5.18 type B. Moisture resistant plasterboard on ply sheets fixed to both sides of studs to be used in bathrooms. All junctions of wall and ceiling plasterboard to be sealed with tape or caulked with sealant plus coving to all rooms.

D.1 DPC

Provide BBA Certified co-polymer thermoplastic or similar and approved DPC. Cavity trays, Visqueen Zedex CPT or equal to BS 743 bedded in mortar to all external walls where applicable, internal support walls. Trays to extend min. 150mm each side of openings and conform with stopped end requirements to BS 6676: part II with minimum 2no. weepholes per opening.
Proprietary stepped cavity tray at all external wall abutments. (Type X Cavitytray or equal)All DP's to be min. 150mm above external ground level. Ensure edges do not penetrate into the cavity. Lap min. 150mm; avoid excessive number of laps. Leave edges of DPC projecting 5mm from front face of external walls. Lay on even bed of mortar for DPC and complete the bed to normal thickness and finish smooth; immediately lay one course well bedded in the dpc. DPC's to be lapped and bonded if applicable (see C3) and project 25mm beyond jamb closer.
Where applicable, the horizontal damp proof membrane to be linked, bonded and well lapped with this horizontal dpc's.

E.1 GROUND FLOOR CONSTRUCTION

75mm thick min. (1:3) cement:sand screed to BS 8204 (as dry mix as possible) reinforced with galvanised chicken mesh with 150mm lapped joints on separating layer on waterproof building paper (grade B1F) or 500 gauge polythene sheet over 120mm Kingspan Kooltherm K103 with taped joints. A 30mm wide upstand at the perimeter laid vertically against the abutting wall so that it connects with the insulation over the beam and block floor and protects the edge of the screed.

Flats - P/A = 77/271 = 0.28, U' value = 0.12 W/m²k. Houses - P/A = 56/180 = 0.31, U' value = 0.12 W/m²k.

Suspended concrete beam and Celcon standard block floor (beams by specialist manufacturer and details to be submitted prior to start of works). Overlay with d.p.m., ventilated void under suspended beams, min. 150mm above ground (soil to be free of vegetable matter and treated with weed killer to L.A. approval) overlaid with 50mm sand or polythene sheet or similar.

Screeding to BS and Code of Practice is not to be carried out under weather conditions which could adversely affect the result, should be thoroughly compacted and to be protected and kept continuously moist until sufficient strength has been attained to resist shrinkage stresses. Screeds to incorporate a dust proofing additive. Proprietary service ducts (not timber) to pipe runs in floor as necessary.

The ventilation to under floor void to be provided by purpose made stepped ventilators such as Glide Vale "Maxi-vent" or similar spaced at mix. 2m centres on opposite sides of the house to provide in excess of 150mm² openings per metre run of floor. Provide cavity trays over all ventilators. Air bricks to be clay terracotta subject to approval facing brick and are not to be located under entrance doors.

E.2 FIRST & SECOND FLOOR CONSTRUCTION

to accord with Robust Detail E-FC-1
75mm thick min. (1:3) cement:sand screed to BS 8204 (as dry mix as possible) reinforced with galvanised chicken mesh with 150mm lapped joints on prestressed concrete planks (design by specialist manufacturer). Floating floor to accord with Robust Detail FFT5.

E.3 Steel beams to Structural Engineers details, on mass concrete padstone or engineering brickwork. Floor finishes to clients requirements. Steel beams clad with Gyproc FireLine (or similar equal) on clip fixed channels to accord with manufacturers details to provide 60 minutes fire protection. (Thickness dependant on AV' section factors).
E.4 Ceilings suspended on MF type hanging system to accord with Robust Detail CT1

F.1 ROOF COVERING

Roof covering to be Eternit type fibre cement slate, installed in accordance with BS 5534 and BS 8000-6 and as specified by supplier.

F.2 ROOF STRUCTURE

Roof pitch over gables & sides to flats is 45 degrees, over roofs between gables is 30 degrees, over the houses is 37 degrees. Timber structure to SE's specification.

F.3 ROOF INSULATION

Rafter at 45/37° or 30° pitch and 400mm centres (or as SE design). Where ceilings are immediately below the rafters they are to be 150mm (min.) depth with 100mm Eurothane GP insulation between to leave 50mm to outer side. Breather membrane, treated 50 x 25mm counterbattens & battens and fibre cement 'slates' as finish. 50mm Eurothane GP inside rafters, VCL and 15mm plaster/plasterboard internal finish U = 0.16 W/m²k.
Insulation over flat ceilings where ventilated attic over to be 300mm mineral wool (150 between joists, 150 across joists). Ensure where down lighters are fitted, insulation is removed from around fittings and any transformer in accordance with Manufacturers recommendations. Tops of down lights to be protected/covered with proprietary fire resistant hats'.

F.3 ROOF VENTILATION

Underlay of breather membrane (Tyvek or Spirtech 250 or equal) layed parallel to eaves and lapped 150mm at sides and ends. Nail sufficiently to secure until battens fixed; lay over tilting filets/support tray which includes UV resistant drip and into gutters; lay 600mm wide strips at ridge to overlap min. 150mm; extend at abutments to suit cover flashing. Rytons "Eaves Guard" support dressed into gutter below and under eaves tiles, continuous tilting fillet, 25mm over fascia strip ventilator. Slatte ventilation units by tile supplier to be used for roof space ventilation and soil pipe ventilation.

F.4 ROOF PV PANELS

32 m² Photovoltaic panels on southwest facing roof slope of flats. To be installed by specialist using system to ensure weathering of slate roof is not damaged.

F.5 ROOF DORMER WINDOWS TO HOUSES

Roof - 18mm external grade plywood on slw firrings to achieve 1:80 falls to verge. Joists as engineers specification. Vapour control layer and 120mm Rectisol Eurothane Eurodeck PIR over sheathing with code 5 lead or single ply uPVC membrane externally. U = 0.18 W/m²k.
Chickels - 100mm deep s/w studs with 11mm OSB3 external sheathing. 50mm Rectisol Eurothane GP between placed against outer face of sheathing, breathable membrane, 40 x 40mm vertical battens, 18mm Class 3 ply with code 5 lead or single ply membrane external finish. 75mm Rectisol Eurothane GP between studs to outer face 40mm unvented cavity, inside face of 500g polythene VCL beneath 12.5mm p/board and skum, U = 0.18W/m²k.

G. WINDOWS AND DOORS & FRAMES

G.1 Grey uPVC framed windows and doors to be "high performance" type to comply with BS 6375, Part 1, Level 5 and of a design shown by test to meet security requirements to BS publication PAS 24:2012, to give "U' value of 1.2 W/m²k".

Windows to be double glazed using sealed unit thermal double glazing 24mm Low E to comply with Approved Document L. Frames to be mechanically fixed to the structure in accordance with manufacturers instructions. All to comply with Approved Document Q. No external beads. Window head

ventilators hidden by drip bars. Opening window area to equal or exceed 20% of floor area of rooms.
All opening lights to be fitted with key operated lockable fasteners, except those specified as escape' windows. Those on ground floor to be capable of being locked into two positions, partially open or totally closed.

Window frames to be set back 190mm and to overlap Thermabate closer by min. 30mm. Installation of laminated and safety glass should be in accordance with Approved Document N1 of the Building Regulations. Window cills to be 25mm MDF bull nosed oil boards.

G.2 External Aluminium Doors, to be fitted with 20mm Low E Argon filled insulating glass units to give "U' value of 1.2 W/m²k". No external beads. Door to be weather stripped plus "Sealmaster" or similar flush roll over type threshold for mobility.

Paving at entrance to be laid level or to fall no steeper than 1 in 20 and not less than 1500mm wide. All to accord to Approved Document M2. Proprietary drainage channel with grating immediately outside threshold.

G.3 Internal doors on all floors to be 838 x 1981 x 40mm (750 min. clear opening) to ensure minimum clear opening width to accord with Approved Document M2. All to be hung on 1½ pairs butts, with mortice latch and lever handles, SAA door spec. Style of doors as clients requirements.

H. CAVITY TRAYS AND FLASHINGS

Stepped cavity trays to be installed to roofwall abutments. The lowest cavity trays shall have a stop-end and 2no. weep holes to ensure discharge of cavity water. Weepholes to have plastic vents incorporating an insect screen.

All cavity trays are to have stop-ends, weep holes and glue bonded joints, etc. Lead flashings to have a minimum 150mm vertical upstand. All external wall penetration above DPC level, in moderate or exposed location shall have cavity trays over with stop ends (eg. meter boxes).

I. LINTELS

Galvanised steel lintels to BS 5877 and BS 2989 with zinc coating type G600 (H3) with a minimum coating of 600g/m² both sides "IG steel or Catnic" or similar suitable for use in cavity and existing walls.
Ensure minimum 150 end bearings. Lintel voids to be pre-insulated by manufacturer. Lintel size to Engineers specification. A flexible DPC should be overlaid with stop ends, and projecting beyond the front toes, with a minimum of 2no. weepholes per opening using proprietary weephole duct. Use precast concrete plank lintels with min. 150 end bearings below ground where services/drains pass through walls. Boumcorte or similar approved lintels to BS 5877, Part 2 and Table 4.8 of BS 8110, Part 1, minimum cement content of 325kg/m³. All as indicated on Structural Engineer's schedule.

J. LATERAL RESTRAINT

Lateral restraint to be provided in accordance with BS 5268 specification and to Structural Engineers detail.

K. STAIRCASES

To be timber construction. All private stairs. Flats F3-F6; F9: 2850mm total rise, 15 x 190mm risers, 14 x 225mm width treads with tapered treads as AD Part K (225mm measured at the centre, 50mm min.) Houses 2600mm total rise, 13 x 200mm risers, 12 x 225mm treads. All to comply with Building Regulations K1 and NS 585 and 5395, Part 1. Landings at top and bottom of flight 900mm width and length. No door swings ti impinge within 400mm of top or bottom of flights.

Minimum of 2m head clearance to be maintained over full width of stairs. Handrail to be securely fixed 900mm above pitch line. Balustrade rail to be securely fixed 900mm above finished floor level. Balustrading not to have any gaps that would permit the passing of a 100mm diameter sphere.

L.1 VENTILATION

Natural ventilation with background ventilators.
Each flat to have purge ventilation provided by fully opening doors/windows no less than 1/20th of the room floor area.
Each bedroom to have 1 x 10,000mm² and living/kitchen areas to have 3 x 10,000mm² background ventilators (total 50,000mm² for each 2 bed flat and 60,000mm² for each 3 bed house).

Dwelling - area	Room / Area	ref	w x h (mm)	glazed area	opening area
F1 ground - 85 sqm	Bed 1 - 12.1 m ² (next dressing)	W1	1135 x 1500	1.25 m ²	0.7 m ²
	Bed 2 - 10.6 m ²	W2	1135 x 1500	1.25 m ²	0.7 m ²
	liv/kit. - 37 m ²	D2	3600 x 2100	5.54 m ²	7.2 m ²
F4 ground - 90 sqm	Bed 1 - 12.1 m ² (next dressing)	W1	1135 x 1500	1.25 m ²	0.7 m ²
	Bed 2 - 11.0m ²	W2	1135 x 1500	1.25 m ²	0.7 m ²
	liv/kit. - 37 m ²	D2	3600 x 2100	5.54 m ²	7.2 m ²
F7 ground - 90 sqm	Bed 1 - 12.1 m ² (next dressing)	W1	1135 x 1500	1.25 m ²	0.7 m ²
	Bed 2 - 11.0m ²	W2	1135 x 1500	1.25 m ²	0.7 m ²
	liv/kit. - 37 m ²	D2	3600 x 2100	5.54 m ²	7.2 m ²
F2 first - 76 sqm	Bed 1 - 12.1 m ² (next dressing)	W1	1135 x 1500	1.25 m ²	0.7 m ²
	Bed 2 - 10.4m ²	W2	1135 x 1500	1.25 m ²	0.7 m ²
	liv/kit. - 37 m ²	D2	3600 x 2100	5.54 m ²	7.2 m ²
F5 first - 76 sqm	Bed 1 - 12.1 m ² (next dressing)	W1	1135 x 1500	1.25 m ²	0.7 m ²
	Bed 2 - 10.4m ²	W2	1135 x 1500	1.25 m ²	0.7 m ²
	liv/kit. - 37 m ²	D2	3600 x 2100	5.54 m ²	7.2 m ²
F8 first - 76 sqm	Bed 1 - 12.1 m ² (next dressing)	W1	1135 x 1500	1.25 m ²	0.7 m ²
	Bed 2 - 10.4m ²	W2	1135 x 1500	1.25 m ²	0.7 m ²
	liv/kit. - 37 m ²	D2	3600 x 2100	5.54 m ²	7.2 m ²
F3 second - 83 sqm	Bed 1 - 12.1 m ² (next dressing)	W1	1135 x 1500	1.25 m ²	0.7 m ²
	Bed 2 - 10.4m ²	W2	1135 x 1500	1.25 m ²	0.7 m ²
	liv/kit. - 37 m ²	D2	3600 x 2100	5.54 m ²	7.2 m ²
F6 second - 90 sqm	Bed 1 - 12.1 m ² (next dressing)	W1	1135 x 1500	1.25 m ²	0.7 m ²
	Bed 2 - 15.7m ²	W2	1135 x 1500	1.25 m ²	0.7 m ²
	liv/kit. - 37 m ²	D2	3600 x 2100	5.54 m ²	7.2 m ²
F9 second - 90 sqm	Bed 1 - 12.1 m ² (next dressing)	W1	1135 x 1500	1.25 m ²	0.7 m ²
	Bed 2 - 15.7m ²	W2	1135 x 1500	1.25 m ²	0.7 m ²
	liv/kit. - 37 m ²	D2	3600 x 2100	5.54 m ²	7.2 m ²
H1-H4	Bed 1 - 11.0 m ² (next dressing)	W1h	1135 x 1500	1.25 m ²	0.7 m ²
	Bed 2 - 13.3m ²	W2h	1135 x 1500	1.25 m ²	0.7 m ²
	Bed 3 - 11.8m ²	W2h	1135 x 1500	1.25 m ²	0.7 m ²
	liv/kit. - 34.4 m ²	D2h	3600 x 2100	5.54 m ²	7.2 m ²

L.2 INTERMITTENT EXTRACT FANS

Bathrooms to have mechanical extract fan rated at 15 litres/second operated manually or automatically by occupancy sensor.

WC's to have extract fan rated at 6 litres/second operated by light switch with 15 minute overrun. Manual override to be fitted to vent fans to allow occupant to turn the extract on / off. Kitchens to have 30 litres per second extract adjacent to the hob with humidistat control (and 650-750mm above any hot surface) or 60 litres per second extract when located elsewhere. Position of kitchen extract and flue outlet to be min. 300mm horizontally from window openings so as not to prejudice lintel bearing and no more than 400mm below the ceiling.

M. WATER INSTALLATION

Internal water services to be copper tubing. Cold and hot water services to be provided for sanitary fittings as required.
In line stop cock and drain cock to be in an accessible position close to where supply enters building.
All water supply pipes within dwelling to be fully accessible. All sanitary fittings to be fitted with servicing valves.
An external hose 'Union' tap, insulated and with internal stop valve (position to be agreed). All requirements to BS 6700.
A water efficiency standard of 110 litres per person per day of wholesome water to comply with Approved Doc. G2. Calculation based on appliances and systems as installed to be provided at completion to Building Inspector.
Installed appliances etc., - manufacturers details that will be provided (at completion), viz: washing machine (capacity); dishwasher (no. of place settings); kitchen sinks (tap flow rate); baths (capacity of overflow), w.c. (dual flush volume in litres); shower (flow rate).

N.1 ELECTRICAL INSTALLATION

Electrical Safety All to comply with Approved Document Part P' requirements.
The installation work is to be undertaken by a firm (or person) who is competent and registered with an electrical self-certification scheme authorised by the Secretary of State.

The firm (or person) is to ensure compliance with BS 7671 and to IEE Regulations, current Edition, and all relevant Building Regulations. On completion, the Employer is to receive a signed Building Regulations self-certifications certificate and the building control body is to receive a copy. The Employer is also to receive a duly completed Electrical Installation Certificate (as BS 7671) signed by a competent firm (or person) who carried out the design, construction inspection and testing work.

Consumer unit to have RCD protection and miniature circuit breakers labelled to indicate use fixed 1200mm above f.f.l. Ring circuits and water heater to be RCD protected except radial serving fridge/freezer which is to be MCB protected. All other circuits to be MCB protected.

Existing installation to be retained and upgraded as necessary.
All switches and wiring accessories to be while "MK" or similar equal/approved.

Light switches to be positioned at 1200mm above f.f.l., switched socket outlets to be at 450mm above f.f.l. except within kitchens where to be 150mm above worktop and 600mm above f.f.l. for appliances.

Smoke detectors to be on mains, interconnecting and permanently wired to a separate fused circuit at the distribution board, with rechargeable battery back-up system. All to IEE wiring regulations BS 5839, Part 1. Smoke detector/alarm to be fixed to ceilings at least 300mm from any wall or light fitting and sited within 7m of kitchen or living room and within 3m of living room and within 3m of bedroom doors (AICO SA 156 or similar approved). Heat detector/alarm in kitchen (connected as smoke detector spec.).

Carbon Monoxide (CO) detector mains powered, ceiling mounted, interconnected and complies with BS EN 50291 (eg. AICO Ltd E1261 ENCR or similar equal) sited between 1-3m from appliance and at least 300m from any obstruction in every room where there is an appliance that may emit CO gas. Refer to key electrical/mechanical symbols and to layout plans.

Internal lighting to be efficient as required by Approved Document L1B.
Cloakrooms, en-suites and bathrooms to have sealed moisture resistant type. Kitchens and utility to be fitted with downlights and pelmet lighting to underside of wall units. Lighting to landing/staircase to be two way switched. See also "Legend" on drawings and lighting layout on plans.

All lamps are to be fitted in positions where bulbs can be changed safely.
External lighting. Photo-electric operated light by front doors and passive infra-red detector operated light by doors to garden / balcony.

All cables in floor shall be in PVC conduit and sheathed if in contact with polystyrene insulation to prevent chemical reaction.
Door bell to be powered by mains transformer. TV aerial outlet where indicated. BT point where indicated.

N.2 ELECTRICAL SPACE & WATER HEATING

8kW electric combination boiler to hot water cylinder with immersion and low temperature radiators. Roof mounted PV.
All to suppliers design.

O. GAS INSTALLATION

none

P. DRAINAGE

system to accord with NHBC Buildmark standards and BS 8301.
P.1 Foul and surface water drainage to be uPVC laid to fall with inspection chambers and manholes as Engineers or contractors drawings. All new drains to be encased in 100mm pea shingle or 150mm where under building (to BS 5955). All drains passing through wall (or foundation) to be bridged by a lintel (see L1) and to have 50mm min. clearance protected by suitable rigid material to prevent ingress of vermin or fill. Fill void with compressible sealant to prevent entry of gas.
Existing drainage to be extended and adapted to accord with NHBC Buildmark standards and BS 8301.
Drains less than 600mm below ground/soil landscape to be overlaid with concrete paving slabs bridging pipes with 75mm pea shingle between pipe and underside of slabs. Where drains cannot be laid below the level of tree roots they shall be encased in concrete.
Drainage less than 900mm below a wearing course of a road shall be protected using a concrete surround, or a slab over, to Structural Engineer's detail. Where drains are encased in concrete they are to be separated and provided with movement collars formed with compressible board at each socket or max. 5m centres.
P.2 Surface water to existing or if new soakaway required it is to be positioned at least 5m from foundations of any building and where possible on land sloping away or lower than buildings.
If doubt about suitability of ground allow for a percolation test to meet Building Control requirements. Pit to be filled with granular material (broken brick/gravel etc.) of 30-150mm size, topped with soil on geotextile fabric to prevent passage of soil into soakaway material.