

# FOUNDATION PLAN 1:50

#### GENERAL/EXCAVATIONS:

The appointed contractor is responsible for correct dimensional layout and setting out. All sizes to be checked confirmed prior to manufacturing/construction process begins. **DO NOT SCALE OFF DRAWINGS, IF IN DOUBT ASK**.

# PREPARATION OF SITE

Unsuitable material including turf, vegetable matter, wood, roots and topsoil to be removed from the ground to be covered by the building, and the ground immediately adjoining the building, to a depth of at least that which will prevent later growth that could damage the building.

# UNDERBUILDING (trench blocks)

Underbuilding to be 300x350x200mm trench blocks. The outer leaf is to be kept two courses down to allow for fixing of galvanised anchor straps. Straps to be 30x3x1000mm long galvanised mild steel fixed to studs with a minimum of 6No 64x4mm RPH nails. face nailed Blockwork compressive strength: 7N/mm2, Density: 2050kg/m3 in accordance with BS 6073. All blockwork to be constructed in accordance with BS 5628 Part 3, BS 8000 Part 3 and BS EN 771-3.

FOUNDATIONS:

Foundations to comprise of 200 thick x 600mm wide C25 concrete strip foundations to external walls minimum 450mm below finished ground level to foundation (or to load bearing strata). Foundations have been designed on the basis of a safe capacity bearing 125kN/sqm. Foundation concrete to be in accordance with BS 8110 and BS EN 1992-2, Eurocode 2:Design of Concrete structures. Allow at least 7 days curing time after foundations have been poured before building work commences. **STRUCTURAL TIMBER:** 

All structural timber to be grade C16 unless noted otherwise. All roof trusses to be in timber grade TR26. All timber to be preservative treated with double vacumm process with organic solvent in accordance with the requirements of the British Wood Preservative Association. Timber frame construction materials and workmanship to be in accordance with BS 5268 and current TRADA recomendations. Studs should as far as possible line through with floor joist and roof trusses above

**CONCRETE GROUND FLOOR CONSTRUCTION (underfloor heating):** Floor finish throughout to be to clients choice on 65mm C25 self levelling screed incorporating 16mm underfloor heating tubing tied to A142mesh on 50mm Kingspan TF70 rigid insulation on 100mm insitu concrete slab on 50mm Kingspan TF70 rigid insulation board on Visqueen 1200 (300mu) DPM. 50mm minimum sand blinding on minimum 150mm consolidated hardcore. 25mm Kingspan TF70 rigid insulation to perimeter of screed, vertically placed against the inner depth of the 65mm self levelling screed. All concrete laid in accordance with BS 8110 and BS EN 1992-2, Eurocode 2:Design of Concrete structures

## TIMBER FIRST FLOOR CONSTRUCTION:

22mm V313 tongued and grooved moisture resistant flooring grade chipboard, 45x195mm C16 grade timber joists at 450mm centres, 100mm 'Knauf Insulation Crown Loft Roll 40' mineral wool insulation quilt, to BS EN ISO 13501-1, thermal insulation laid between joists. Solid blocking dwangs to all joist ends. Full depth timber dwangs at mid-point centres as indicated on the floor carcassing plan. 12.5mm plasterboard ceiling to underside, all joints to be taped and filled for decoration. Seal floor around perimeter between skirting board and floor with a continious bead of sealant.

# ROOF CONSTRUCTION, INSULATED COOMB (slate):

Roof finish to be slate. Grade A Slate (to NF EN 12326) to be fixed to Daltex Roofsheild Breathable roofing underlay, to BS 5250 Code of practice for the control of condensation in buildings, over 150x22mm ww treated sarking boards fixed to proprietary timber gangnailed roof trusses at 600mm centres. The installation of Daltex Roofsheild must be strictly in accordance with the relevant requirements of BS 5534, the suppliers instructions and requirements of BRE Certificate 072/00. Trusses to be fixed to timber frame with proprietary truss clips. Lateral restraint straps to be incorporated at high and low level spanning at least 3No. truss members and securely fixed into blockwork. Straps to comply with BS 5268 Part 3 1988 Appendix B. Fix straps to rafters with not less than 4 no.50x8 gauge sherardised

screws evenly spaced, locate at least one screw 150m off bottom end of strap. 100mmx25mm longitudual roof bracing whre indicated on sections. Roof trusses to be desinged and manufactured in accordance with BS 5268 Part 3 by specialist manufacturer. Bracing to be in accordance with BS 5268 and manufacturers requirements. Insulation to coombs to be 140mm Kingspan TP10 rigid insulation board (min 50mm maintained between insulation and underside of sarking) between trusses and with 32.5mm Kooltherm K18 rigid insulation board (incorporating 12.5mm plasterboard) to internal face of trusses. All joints to plasterboard to be taped and filled for decoration

## FLAT ROOF CONSTRUCTION :

GRP roofing build up on 126mm Kingspan TR31 structural 6mm plywood composite insulation to BS EN ISO 9001 & 9002 on 18mm exterior grade ply on ex 45x45mm C16 reg and treated taper pieces on 195x45mm C16 reg and treated rafters at 600mm centres. 12.7mm foil backed plasterboard ceiling

### WALL CONSTRUCTIONS:

External wall finish to be 19mm render on outer leaf of 100mm dense concrete blockwork. 'Ryton' slimline vents to be incorporated at maximum 1200mm centres. Vents to ventilate cavity below DPC ceiling level, above and below floor level, eaves and verge level. Inner leaf to be of timber frame construction. Tyvek Reflex insulating breather membrane stapled to 9mm OSB sheeting on 145x45mm C16 reg and treated studs at 600mm centres incorporating double top and bottom rails. Inner leaf to incorporate 125mm Kingspan TW55 rigid insulation board, to BS EN ISO 13501-1 between studs and to be finished on internal face with 12.7mm tapered edge vapour check foil backed plasterboard having all joints taped and filled ready for decoration. Outer leaf to be tied to inner leaf with 'BatV' timber frame wall ties at maximum 450mm centres vertically and maximum 600mm centres horizontally and a minium embedment of 75mm. Timber frame to be held down with 1000x30x3mm galvanised mild steel anchor straps securley nailed to both sides of every opening in timber frame, corner studs and intermediate studs at maximum 1200mm centres and built into outer leaf 2 courses down from finished floor level. 47x50mm ww treated Fire stop/Cavity barriers with DPC cover are to be incorporated around all openings, wallhead, first floor level, corners and gables at maximum 8000mm centres vertically.

# MOVEMENT JOINTS:

12mm movement joints (with 12mm Bitumen Impregnated Fibreboard between ens of blockwork) must be provided in the outer leaf of the external masonry walls at intervals not exceeding 6m to be formed at the positions shown and continue 2 courses below DPC level. To comprise 6mm mastic sealed joint formed with render stop beads. Wall to be tied back every course with stainless steel wall ties to 38x50mm ww treated vertical cavity barriers fixed to timber frame. DPC to be wrapped around cavity barriers **D.P.C's**:

To be 'Visqueen 2000' or similar to be incorporated under wallplates and outer walls minimum 150mm above finished ground level. DPCs around inside faces of cills, lintols, and all openings to be pitch free Xtra Load Elite or similar.

### MASONRY LINTELS:

All concrete lintels to be precast concrete construction, Robeslee or equal approved with a minimum end bearing of each end of 150mm Lintels up to and including 1500mm clear span to be Robeslee Type C (100x145mm).

Lintels above 1500mm clear span to be Robeslee Type K9 (100x215mm) Masonry to receive 2 courses of Bricktor or similar mesh reinforcement above lintels, extending 600mm to each side beyond window / door opening line. **TIMBER LINTELS:** 

Lintels up to and including 1500mm clear span to be 3no 45x195mm C16 reg and treated timbers, spiked together, ends of lintols to be supported on single cripple stud (min 45mm width)

Lintels between 1500mm and 2400mm clear span to be 3no 45x220mm C16 reg and treated timbers, spiked together, ends of lintols to be supported on double cripple studs (min 90mm width)

# PARTITIONS :

45x95mm C16 reg treated studs at 600mm centres with 2no 45x95mm C16 reg and treated top and bottom rails. One row of dwangs incorporated at mid-height, screw fix 12.7mm taper-edge plain plasterboard finish both sides with all joints taped and filled. Partitions at Utility Rooms, Toilets, Bathrooms + En-suites to be insulated with 100mm glasswool insulation and lined internally with green moisture resistant plasterboard situated locally adjacent to Baths + Showers.

WINDOWS:

To be high performance UPVC windows with U-Value no greater than 1.6W/m2K. 4mm glazing, 16mm airspace, 4mm glazing all to be low 'E' glass (En-0.05). *Glazing* should be designed to resist human impact as set out in BS 6262: Part 4: 2005, where all, or part, of a pane is within 800 mm of floor level or part of a door leaf within 300 mm of a door leaf and within 1.5 m of floor level. 12000mm2 trickle ventialtion to apartments and 10000mm2 trickle ventilation to bathrooms, ensuites and Kitchens. An openable window or rooflight, that provides natural ventilation to meet standard 3.14, should have controls for opening, positioned at least 350 mm from any internal corner, projecting wall or similar obstruction and at a height of:

not more than 1.7 m above floor level, where access to controls is unobstructed; or
not more than 1.5 m above floor level, where access to controls is limited by a fixed obstruction of not more than 900 mm high which projects not more than 600 mm in front of the position of the controls, such as a kitchen base unit. Where obstruction is greater, a remote means of opening, in an unobstructed location, should be provided; or
not more than 1.2 m above floor level, in an unobstructed location, within an enhanced apartment (see clause 3.11.2) or within accessible sanitary accommodation (see clause

3.12.3) not provided with mechanical ventilation. kitchen window should have controls for opening, positioned at least 350 mm from any internal corner, projecting wall or similar obstruction and at a height of not more than 1.5 m above floor level, where access to controls is limited by a fixed obstruction of not more than 900 mm high which projects not more than 600 mm in front of the position of the controls, such as a kitchen base unit

#### **ELECTRICAL:** Final positions of all

Final positions of all lights and plug socket outlets to be agreed on site with client. Electrical installation to be designed, constructed, installed and rested as such to comply with recomendations of BS 7671:2008, current IEE regs and Building Standards 'Scotland'. Smoke detectors to dwellings where no storey is greater than 200m2 should be provided with one or more smoke alarms located on each storey with a standby supply to BS5446-1:2000, inter connected and installed in accordance with current Building Standards'Scotland'. Electrical work to be certified by a member of SELECT or NEIC only.

A smoke alarm should be ceiling mounted and located in a circulation space not more than 7m from a door to lounge or kitchen and 3m from a door to a bedroom. The alarm should also be mounted at least 300mm away from any wall or light fitting. A minimum of 75% of the fixed light fittings and lamps installed in a dwelling should be low energy type. The fittings may be either:

 dedicated fittings which will have a separate control gear and will only take fluorescent lamps (pin based lamps); or

• fittings including lamps with integrated control gear (bayonet or Edison screw base lamps). e.g. tubular fluorescent and compact fluorescent fittings (CFL's) with luminous efficacy at least 40 lumens/circuit watt. In this guidance:

• a minimum of 75% of fixed light fittings means at least 7 in a dwelling which has 10 fittings, 8 where there are 11, 9 of 12, 10 of 13 etc;

fixed light fittings include only the main light sources to a room; not display or feature lighting such as picture lights, kitchen wall cupboard lights, over mirror lights. A light fitting may contain one or more lamps and a group of lamps operated by the same switch could be counted as one fitting, e.g. a pair of wall lights;
low energy light fittings include the provision of lamps/bulbs.

Outlets and controls of electrical fixtures and systems should be positioned at least 350 mm from any internal corner, projecting wall or similar obstruction and, unless the need for a higher location can be demonstrated, not more than 1.2 m above floor level. This would include fixtures such as sockets,

switches, fire alarm call points and timer controls or programmers. Within this height range:

• light switches should be positioned at a height of between 900 mm and 1.1 m above floor level.

• standard switched or unswitched socket outlets and outlets for other services such as telephone or television should be positioned at least 400mm above floor level. Above an obstruction, such as a worktop, fixtures should be at least 150 mm above the projecting surface. Where socket outlets are concealed, such as to the rear of white goods in a kitchen , separate switching should be provided in an accessible position, to allow appliances to be isolated. **VENTILATION:** 

Mechanical extract fan in Kitchen and to be capable of 60ltr/sec, 216m3/hr extraction rate. Mechanical Extract fans in Utility and bathrooms to be capable of 30ltr/sec, 92m3/hr. All windows to be fitted with trickle ventilators providing 8000mm2 ventilation to Bathrooms,Kitchens,Uitiltys and 8000mm2 to all other rooms. Marley ventilated dry ridge system providing continious 5,000mm2/lin.m metre free area ventilation Glidevale 250 over fascia ventilators to be installed to continuously provide ventilation opening of 25,000mm2/m **PLUMBING:** 

All supply pipes to be in copper piping with proprietary protected preformed insulation to BS5422:2001 Thermostactic Mixing Valve (anti scald valve) fitted at point of delivery to bath, bidets and shower heads and should not allow water temperature to exceed 48 degrees celsius in order to prevent scalding



# **ROOF CARCASSING PLAN 1:50**

## RAINWATER GOODS:

Marley deepflow UPVC gutters with brackets at 600mm centres. 68mm diameter UPVC downpipes with holderbats at 1800mm centres. All rainwater pipework to be constructed and installed to BS EN 12056-3: 2000

# LEADWORK:

All leadwork used to be Code '5' lead to BS EN 12588 Leadwork raggled into walls with a minimum 150mm upstand and fixed in place with proprietory fixing clips to BS6915 at max 450mm centres. Lead sealant to be applied to raggles. Lead valleys to be minimum 125mm wide. Code '5' secret gutters dressed under tiles forming a welt. **DRAINAGE:** 

All new drains to be laid and tested to the satisfaction of the local authority. All drains to be a minimum of 450mm below finished ground level. Drains below driveway to be

min 600mm below finished ground level. all drains to have a min fall of 1:80. All pipes to be 110mm underground quality UPVC pipes and encased in pea-gravel before infilling. Any pipes passing under walls are to be haunched over. Access in drainage to be provided where any changes of direction occurs and at head of runs. Access to be provided on internal drainage where directional changes occur at head of drain and where waste pipe enters stack. Ensure shower traps are accessiable. Bend at foot of vertical stack must have a radius of not less than 200mm or should consist of two of at least 45 degrees.

All drainage below concrete floor to be 110mm UPVC pipes. Connect to sanitaryware with appropriate reducers in order to comply with the following: All sanitary pipework to be installed in accordance with BS EN 12056-2:2000 SVP: 110mm diameter UPVC vent pipe, Toilet: 110mm diameter UPVC waste

pipe,Sinks & Baths: 40mm diameter waste pipe, WHB's & Showers: 30mm diameter waste pipes Drains which pass below foundations are to be protected by the provision of

reinforcing within the strip foundation which pass over drains extending minimum 900mm beyond each side of drain track. Where a drain passes through a wall the wall will require to be privided with a lintel over the drain opening. All drainage should be constructed and installed in accordance with the

recommendations in BS EN 12056-1:2000, BS EN 752-3:1997 (amendment 2), BS EN 752-4:1998 and BS EN 1610:1998

**EMERGENCY ESCAPE WINDOWS:** Window to have a clear opening of at least 850mm high and 500mm width. Bottom of the opening to be not more than 1100mm and not less than 800mm above the finished floor level and to provide unobstructed egress

**NEW TIMBER INTERNAL STAIRS:** (constructed to requirements of BS585) 900mm wide timber stairs with going of 225mm and a rise of approx 200mm. Handrail to be 900mm above the flight line of stairs. Openings in balustrade to be such as will not allow the passage of a 100mm dia sphere. All treads are to have a 25mm projecting rounded nosing. The headroom above stairs to be no less than 2000mm above the flight line. 900mm high protective barrier at landings to be formed so as to have no openings which will permit the passage of a 100mm dia sphere. Stair balustrades including newel posts, spindles and handrails and all fixing of same including those fixing the balustrades to the stringer to be contractor designed to the loading requirements of Table 4 BS6399 Pt1 1996 and constructed in accordance to BS585 Pt 1 - wood stair construction use of timber & BS5268 Pt 2 - structural use of timber. Agrement Certificate / details to be submitted to engineer for approval

**STAIR FLIGHTS CONSISTING OF BOTH STRAIGHT AND TAPERED TREADS** On that part of a flight consisting of tapered treads, the going of the tapered treads should be uniform and should not be less than the going of the straight treads. At the inner end of the tread, the going should be at least 50 mm. Tapered treads on a stair should be constructed in accordance with BS 585: Part 1: 1989, Appendices B1 and B3, irrespective of material or whether it contains

open rises. However, guarding should be in accordance with the guidance in clause 4.4.2. In a flight less than 1 m wide the going should be measured at the centre line of the *flight* as described in clause 4.3.1.

WALL STARTER KIT

new concrete block tied to existing masonry with Simpson Strong-Tie C2KS Crocodile galvanised wall starter kit, 6no M6x50mm stainless steel coach screws to secure kit to existing

### LABELLING FOR FIREPLACES / HEARTHS / CHIMNEYS:

Where a hearth, fireplace (including a flue box), or system chimney is provided, extended or altered, information essential to the correct application and use of these facilities should be permanently posted in the dwelling to alert future workmen to the specification of the installed system. This also applies to cases where a flue liner is provided as part of refurbishment work.

The labels should be indelibly marked and contain the following information: a. the location of the hearth, fireplace (or flue box) or the location of the beginning of the fluor

b. a chimney designation string in accordance with BS EN 1443: 2003 (see clause 3.18.2) for products whose performance characteristics have been assessed in accordance with a European Standard and that has been supplied and marked with a designation as described in the relevant European Standard;

c. the category of the flue and generic types of appliance that can safely be

accommodated; domestic | environment | combustion appliances safe operation | 2005 3.17.5 3.17.7 d. the type and size of the flue (or its liner);

e. the installation date.Labels should be located in a position that will not easily be obscured such as adjacent to:the gas or electricity meter; or

# the water supply stopcock; or the chimney or hearth described.

A label, should be provided similar to the example below:

IMPORTANT SAFETY INFORMATION

This label must not be removed or	covered
Property address	20 Mein Street New Town
The fireplace opening located in the Is at the base of a chimney with a designation string	name of room designation string
and, for example, is suitable for a Chimney liner	die gas fire xx mm diameter
installed on	date
Any other information (optional)	

# FIRE DETECTION ALARM SYSTEM INSTALLATION

In order to provide a fire detection and fire alarm system that should alert occupants to the outbreak of fire a Grade D system should be installed in all *dwellings*, comprising of:
at least 1 *smoke alarm* installed in every principal habitable *room*;
at least 1 *smoke alarm* in every circulation space such as hallways and

landings; and • at least one heat alarm installed in every *kitchen*.

Optical and Ionisation Smoke alarms to be to BS EN 14604:2005 Multi Sensor alarms to be to BS 5839:part 6 : 2004 Heat alarms to be to BS 5446:Part 2:2003

Smoke alarms should be located in circulation spaces:

• not more than 7 m from the door to a living *room* or *kitchen*;

not more than 3 m from every bedroom door; and
 in circulation spaces more than 7.5 m long, no point within the circulation

• in circulation spaces more than 7.5 m long, no point within the circulation space should be more than 7.5 m from the nearest *smoke alarm* 

A *smoke alarm* should be sited such that no point in the *room* is more than 7.5 m from the nearest *smoke alarm* and in the case of a heat alarm, no point in the *kitchen* should be more than 5.3 m from the nearest heat detector.

All dimensions should be measured horizontally. Smoke might not reach a *smoke alarm* where it is located on or close to awall or other obstruction. Therefore, *smoke alarms* should be ceiling mounted and positioned away from any wall or light fitting. In order to reduce unwanted false alarms, *smoke alarms* should not be sited directly above heaters, air conditioning *ventilators* or other *ventilators* that might draw

dust and fine particles into the *smoke alarm*.

*Smoke alarms* and heat alarms should be ceiling mounted and located such that their sensitive elements are:

• in the case of a *smoke alarm*, between 25 mm and 600 mm below the

ceiling, and at least 300 mm away from any wall or light fittings; and • in the case of a heat alarm, between 25 mm and 150 mm below the

ceiling.

*smoke alarms* and heat alarms should be mains operated and permanently wired to a circuit which should take the form of either:

an independent circuit at the main distribution board, in which case no other electrical equipment should be connected to this circuit (other than a dedicated monitoring device installed to indicate failure of the mains supply to the alarms); or
a separately electrically protected regularly used local lighting circuit.

The standby supply for *smoke alarms* and heat alarms may take the form of a

primary battery, a secondary battery or a capacitor. The capacity of the standby supply should be sufficient to power the *smoke* 

*alarms* and heat alarms in the quiescent mode for at least 72 hours whilst giving an audible or visual warning of power supply failure, after which there

should remain sufficient capacity to provide a warning for a further 4 minutes or, in the absence of a fire, a fault warning for at least 24 hours.

All *smoke alarms* and heat alarms in a *dwelling* should be interconnected so that detection of a fire in any alarm, operates the alarm signal in all of them. *Smoke alarms* and heat alarms should be interconnected in accordance with BS 5839: Part 6: 2004.

The system should be installed in accordance with the manufacturers written instructions. This should include a limitation on the number of *smoke alarms* and be interested.

and heat alarms which may be interconnected **Door & Window Security Specifications** 

*External doors/doors between dwellings and conservatories/doors between dwellings and garages/doors to flats or maisonettes* should be designed and installed to resist forced entry by 1) by meeting the recommendations for physical security in Section 2 of

Secured by Design' (ACPO, 2009); or

2) by use of doorsets and windows which are tested and certified by a

notified body as meeting a recognised standard for security such as BS PAS 24: 2007 for doorsets or BS 7950: 1997 for windows
3) by use of doorsets and windows manufactured to meet recognized product standards and defined

component performance as follows

• BS 7412: 2007, for PVCu units;

- BS 644: 2009, for timber window units;BS 4873: 2009, for aluminium alloy units;
- BS 6510: 2005, for steel-framed units

Any glazing in or adjacent to a door leaf which could be accessed by the breaking of glass should be laminated or of similarly robust material

Vulnerable windows should be constructed to resist attempts to force frames and, if openable, ironmongery. Windows which can be opened should be

fitted with either: • a keyed locking system that uses a removable key; or

• a keyless locking system, together with glazing which incorporates laminated glass or a similarly robust glazing material.

Hinges

If single swing the doorset should be fitted with at least one and a half pairs of hinges meeting the recommendations of BS EN 1935: 2002 for hinge grade 11 or above. Hinges fitted to an outward-opening door should be of a type that does not permit the hinge pin to be removed unless the door is open. Otherwise, hinge bolts should be fitted to ensure the door leaf will remain secure when closed.

### Locking

A doorset should include a single-point locking device to BS 3621: 2007 (for keyed egress) or to BS 8621: 2007 (for keyless egress) or a multipoint locking system. A deadlocking facility should be provided. Any lock cylinder should be in accordance with BS EN 1303: 2005, grade 5 key security and grade 2 attack resistance as a minimum.

To limit unauthorised access, a communal entrance door fitted with an access control system (see clause 4.63) should be self-closing and self-locking, with keyless operation of any lock from within the common area. To accommodate access control systems, a doorset may incorporate electronic or magnetic remote release and a means of access which includes keyless electronic solutions (keypad, proximity swipe, etc).

# Double Doors

A doorset with more than one door leaf should include a means of securing any secondary leaf at head and foot to allow the primary leaf to be securely locked.

Installation and fixing of doors and windows

To ensure a robust installation, fixing of a doorset or window should be in accordance with:

the recommendations given in section 8 of BS 8213-4: 2007; or
manufacturer's written instructions where these meet or exceed the recommendation within this British Standard.

