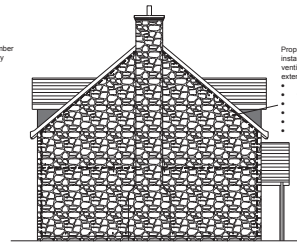


Side Elevation 1:100



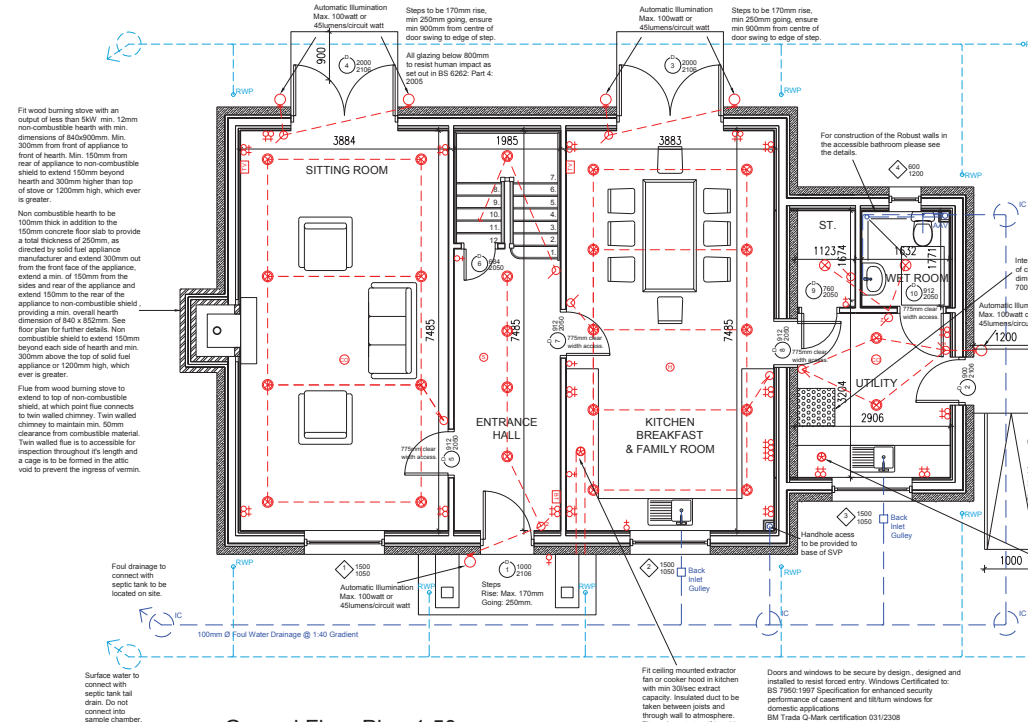
Rear Elevation 1:100



Side Elevation 1:100

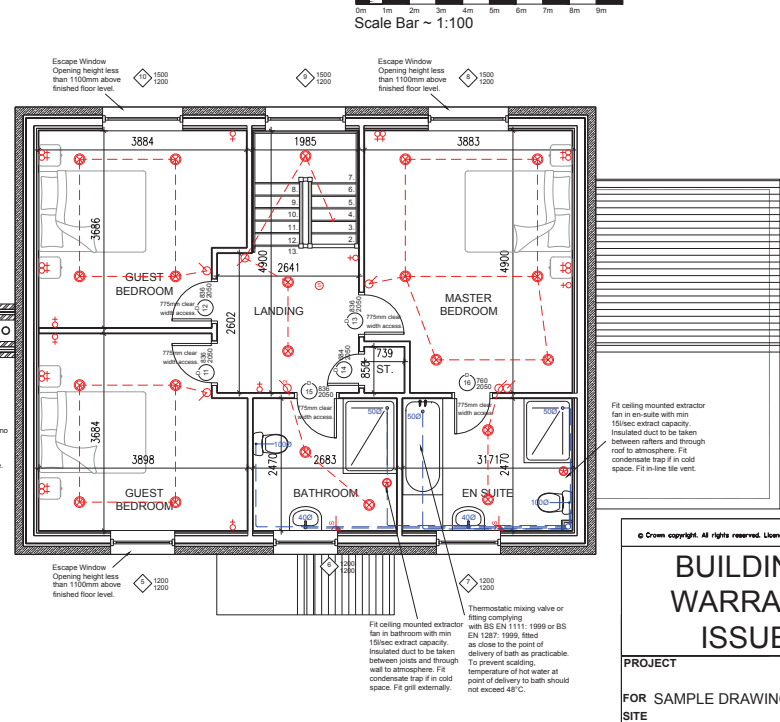


Front Elevation 1:100



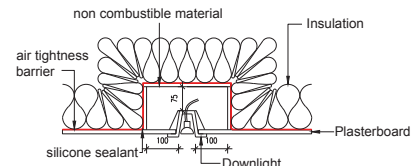
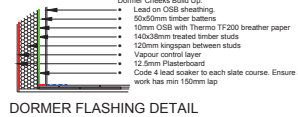
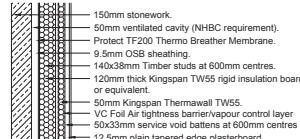
Ground Floor Plan 1:50

Floor Area = 91.2m<sup>2</sup>  
Scale Bar ~ 1:50

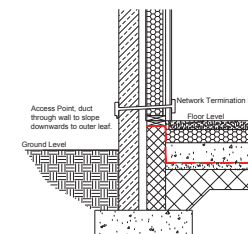


First Floor Plan 1:50

Floor Area = 74.72m<sup>2</sup>

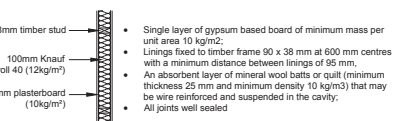


TYPICAL HORIZONTAL SECTION THROUGH SUPERIOR FIT STONEWORK EXTERNAL WALL

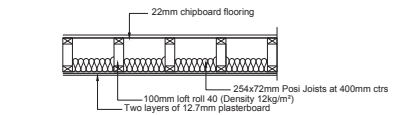


In-building Physical Infrastructure-Stonework. 1:20 Detail

Noise Separation based on "EXAMPLE CONSTRUCTIONS AND GENERIC INTERNAL CONSTRUCTIONS" detail 4.b Type 2.



Noise Separation based on "EXAMPLE CONSTRUCTIONS AND GENERIC INTERNAL CONSTRUCTIONS" detail 4.c Type 3.



- Floor surface of timber - or wood-based board, minimum mass per unit area 15kg/m<sup>2</sup>
- 254x72mm posil joists at 400mm centres
- Ceiling treatment of two layers of gypsum based board, minimum mass per unit area 10kg/m<sup>2</sup> and fixed using any accepted fixing method;
- An absorbent layer of mineral wool, minimum thickness 100mm, minimum density 10kg/m<sup>3</sup> and laid in between the joists.

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**PROJECT**

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**FLEMINGHOMES**

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Dimensioned wallplate layout plan will be provided.  
Dimensions given are structural unless otherwise stated.  
It is the entire responsibility of the customer to have ground conditions checked prior to start of work and have foundations designed accordingly.

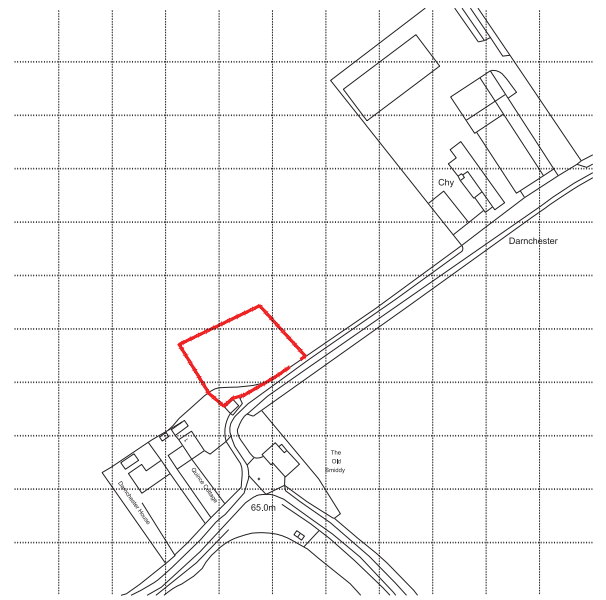
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**DRAWING Ref.** **CONTRACT No.**

**BW1 2017**



Scale Bar ~ 1:200  
0m 5m 10m 15m 20m



Scale Bar ~ 1:1250  
0m 20m 40m 60m 80m 100m

The Old Smiddy

Quince Cottage

65.0m

chester House

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# BUILDING WARRANT ISSUE

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It is the entire responsibility of the customer to have ground conditions checked prior to start of work and have foundations designed accordingly.

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<b>BW2</b>	<b>2017</b>

**Flat Ceiling construction comprises:**

- Natural Slate
- Breathable Roof Membrane
- 22 x 150mm Sarking with 2-3mm gaps between boards.
- Raised tie type roof trusses at 600mm centres.
- 2 layers of 140mm Framatherm 40.
- 1 layer between top chord. 2nd layer laid at right angles over top chord.
- VC Ultra foil air-tightness barrier.
- 50 x 33mm service void battens at 400mm centres.
- 12.5mm plain tapered edge plasterboard.

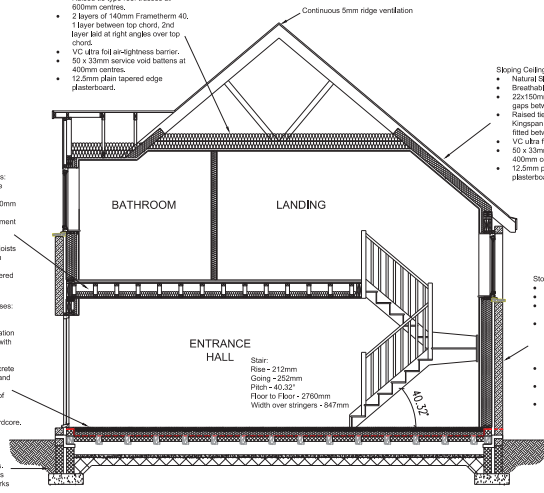
**Upper floor construction comprises:**

- 25mm eggcr protect moisture resistant chipboard.
- 50x300mm floor battens at 400mm centres. R6 UHPI pipes and HFI between with 30mm sand/cement biscuit screed.
- 15mm OSB sub-decking.
- 70x254mm engineered steel joists at 400mm centres. R1 100mm sound deadening insulation.
- 2 layers of 12.5mm plain tapered edge plasterboard.

**Ground Floor construction comprises:**

- 65mm sand/cement screed.
- 100mm thick Kingspan Thermafloor TFF70 rigid insulation board (or similar approved), with 25mm edge strip.
- 1200 gauge visqueen D.P.M.
- 150mm medium density concrete blockwork on 150mm beam and block.
- 200mm gap between under of beam and top of 50mm thick concrete solum.
- 150mm well consolidated hardcore.

Foundations to be constructed in accordance with engineers detail. Ensure all topsoil and vegetation is removed from site prior to any works commencing.



**Section A-A 1:50**

Scale Bar ~ 1:50

**Sloping Ceiling construction comprises:**

- Natural Slate
- Breathable Roof Membrane
- 22x150mm Sarking with 2-3mm gaps between boards.
- Raised tie type trusses with 140mm Kingspan TFF05 rigid insulation fitted between rafters.
- VC Ultra foil air-tightness barrier
- 50 x 33mm service void battens at 400mm centres.
- 12.5mm plain tapered edge plasterboard.

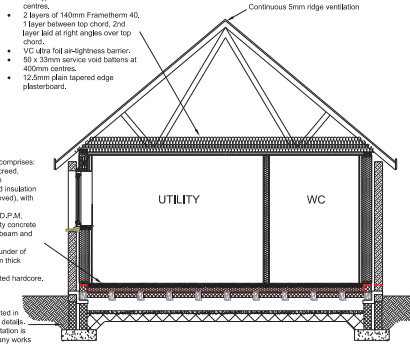
**Stone Wall construction comprises:**

- 150mm stonework
- Nominal 25mm cavity.
- Protect TFCO Thermo on 9.5mm OSB.
- 140 x 38mm treated timber stud filled with 120mm thick Kingspan TW 35 rigid insulation. Lined internally with 50mm Kingspan TW 35.
- Protect VC reflective foil vapour control / air tightness barrier.
- 50x20mm service void battens at 600mm centres.
- 12.5mm plain tapered edge plasterboard.

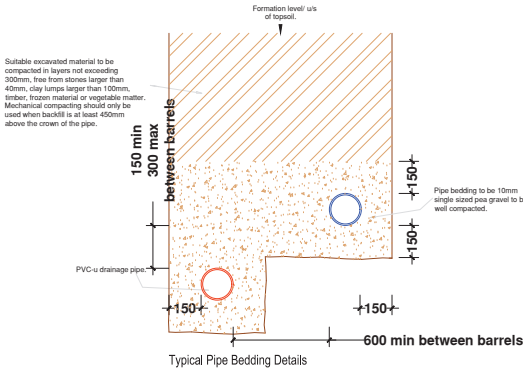
**Ground Floor construction comprises:**

- 65mm sand/cement screed.
- 100mm thick Kingspan Thermafloor TFF70 rigid insulation board (or similar approved), with 25mm edge strip.
- 1200 gauge visqueen D.P.M.
- 150mm medium density concrete blockwork on 150mm beam and block.
- 200mm gap between under of beam and top of 50mm thick concrete solum.
- 150mm well consolidated hardcore.

Foundations to be constructed in accordance with engineers detail. Ensure all topsoil and vegetation is removed from site prior to any works commencing.



**Section B-B 1:50**



**Bedding Notes:**

- Pipe bedding material to be Type A (A) granular material complying with BS EN 12424, minimum 100mm depth
- Pipelaying, jointing, testing and cleaning of sewers to be to manufacturers recommendation.
- The type of bedding to be used is to be agreed with Local Authority
- Trenches should be as narrow as possible within working limits, allowing at least 150mm working space on each side of the pipe.

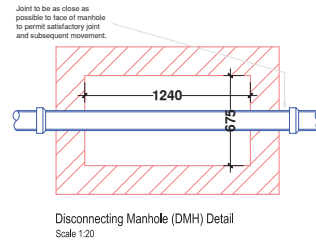
**Protection:**

- Where drains pass under roads and drives, the final compaction should be sufficient to prevent later settlement.
- Flexible pipes less than 0.9m below road surface should be protected by concrete bridging slabs or should be surrounded with concrete reinforcement as appropriate.
- Flexible pipes in garden ground with less than 0.6m cover should where necessary have concrete paving slabs laid as bridging above the pipes, with at least 75mm of granular material between the top of the pipe and the underside of the slabs.

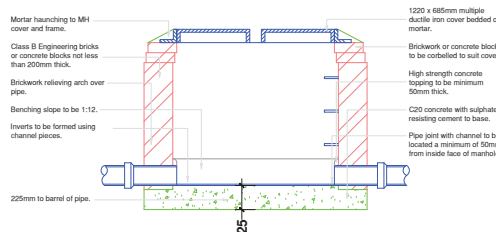
**Proximity to foundations:**

- Foundation bottoms should be lower than adjacent drainage trenches.
- Where the bottom a trench is below foundation level, the trench should be filled with concrete to a suitable level, is where within 1m horizontally, top of excavation level to bottom of foundation.

- Manhole diameter to be as follows:
  - 100mm Ø (pipe Ø up to 300mm)
  - 150mm Ø (pipe Ø - 300mm up to 450mm)
  - 150mm Ø (pipe Ø - 450mm up to 500mm)
  - 180mm Ø (pipe Ø - 525mm up to 750mm)
  - 210mm Ø (pipe Ø - 750mm up to 900mm)
- 150mm Ø concrete rings may be used where the manhole is a straight through or terminal pipe, where the depth to invert does not exceed 1.5m and the pipe Ø is not greater than 150mm.
- Where the depth to the top of the manhole exceeds 3.0m, a 'N' manhole shall be used.
- Manhole construction to be in accordance with 'Standard Specifications for Water and Sewerage Schemes - 3rd Edition' and also servicing supplementary specification clause 601.5 and 604.5.
- Top and bottom precast concrete manhole rings to be plain ended.
- Chamels to be formed using pre-formed half channel pipes up to 400mm Ø, chamels over 400mm may be formed in a granolithic screed at the discretion of Local Authority.
- Where pipes are 400mm Ø or greater, handrail, safety chain and toe holes are required, as per detail EWS / SS: STD 04 and specification clause 601.5 (1) & (2).
- Connection to be made soffit to soffit where upstream pipe is smaller than outlet pipe and invert to invert where upstream pipe is equal or larger than outlet.
- A flexible joint shall be provided within 500mm of the outside face of the manhole wall, sufficient clearance to be left from manhole base to adjacent socket / collar. The next pipe away will be a rocker pipe of length as specified in clause 601.5 (13).
- Plastic coated ladder rings (double steps) may be used as an alternative to step rings, they are to be fixed centrally below the opening and spaced at 250mm vertical centres.

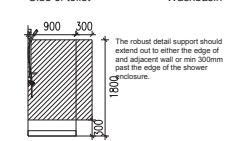
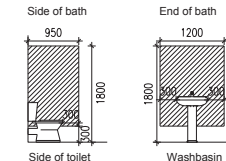
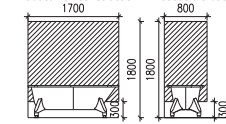


**Disconnecting Manhole (DMH) Detail Scale 1:20**



**Typical Section thro' Disconnecting Manhole (DMH) Scale 1:20**

**Robust wall construction in Accessible bathroom.**



**Walls adjacent to shower**

**Flat Ceiling construction comprises:**

- Natural Slate
- Breathable Roof Membrane
- 22 x 150mm Sarking with 2-3mm gaps between boards.
- Fink type roof trusses at 600mm centres.
- 2 layers of 140mm Framatherm 40.
- 1 layer between top chord. 2nd layer laid at right angles over top chord.
- VC Ultra foil air-tightness barrier.
- 50 x 33mm service void battens at 400mm centres.
- 12.5mm plain tapered edge plasterboard.

**Ground Floor construction comprises:**

- 65mm sand/cement screed.
- 100mm thick Kingspan Thermafloor TFF70 rigid insulation board (or similar approved), with 25mm edge strip.
- 1200 gauge visqueen D.P.M.
- 150mm medium density concrete blockwork on 150mm beam and block.
- 200mm gap between under of beam and top of 50mm thick concrete solum.
- 150mm well consolidated hardcore.

Foundations to be constructed in accordance with engineers detail. Ensure all topsoil and vegetation is removed from site prior to any works commencing.

**Section B-B 1:50**

**IMPORTANT SAFETY INFORMATION**

This label must not be removed or covered.  
 The fireplace opening located in the is at the base of a chimney with a designation string \_\_\_\_\_ and, for example, is suitable for a Chimney liner \_\_\_\_\_  
 Installed on \_\_\_\_\_  
 Any other information (optional): \_\_\_\_\_

A label, similar to the one above, should be located in a position that will not easily be obscured such as adjacent to:  
 • the gas or electricity meter;  
 • the water supply stopcock; or  
 • the chimney or hearth structure.

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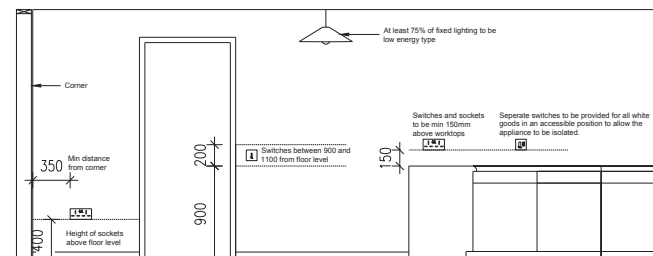
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**Heights for electrical fixtures**

**GENERAL NOTES AND SPECIFICATION**

No part of these drawings is to be scaled.

Any errors or omissions must be immediately brought to the attention of the architect.

These drawings are subject to copyright laws.

to T Fleming Homes Ltd.

**Proposed building classification - FC (2 Storey Dwelling House)**

**General:**  
All new works are to be in accordance with the Building (Scotland) Regulations 2014 and all current amendments.

All new works, products and processes are to be in accordance with the relevant British Standards and manufacturers guidance and shall be carried out to the highest standard of craftsmanship by skilled and qualified persons of the appropriate trades and in accordance with good building practice.

The contractor shall be responsible for making contact with the respective statutory authorities and establishing the location of all existing services. The contractor shall ensure compliance with the local authority requirements.

- 2014/ for constructions to comply with Section 1 of the Building Standards (Scotland) Regulations 2014 and to have area weighted average of:
  - For external walls - 0.22W/m<sup>2</sup>
  - For roofs - 0.15W/m<sup>2</sup> (Insulation between joists)
  - For suspended floors - 0.18W/m<sup>2</sup>
  - For windows, doors & rooflights - 1.0W/m<sup>2</sup>

- Individual elements are not to exceed -
  - For external walls - 0.20W/m<sup>2</sup>
  - For roofs - 0.25W/m<sup>2</sup>
  - For suspended floors - 0.20W/m<sup>2</sup>
  - For windows, doors & rooflights - 1.0W/m<sup>2</sup>

No high alumina cement to be used on site.

All scaffolding to comply with BS 11391 with all tubes and fittings to comply with BS 1139 1990.

All junctions between walls, ceiling, windows and doors, and all service penetrations to be sealed with "Proseal" VCI RTU tape or similar approved equivalent to prevent, as far as reasonably practicable, any infiltration into the building(s).

An e-test will be required upon completion of the dwelling.

**Foundations:**  
**General Notes:**  
Area of new works to be cleared of topsoil and vegetable matter.

Any made ground to be removed over the plan area of the dwellings/phase. Should any localized soft spots be revealed on the proposed formation level these shall be excavated and filled using Type 1 granular sub-base material to Clause 803 of the Specification for Highway Works. Any new drains and/or subsurface drains to be grubbed out and any voids left below the proposed formation level shall be filled using Type 1 granular sub-base material to Clause 803 of the Specification for Highway Works. Any existing subsurface drains encountered during the construction to be investigated and diverted. Any existing sub-base, if encountered at formation level, to be excavated and backfilled with Type 1 granular sub-base material to Clause 803 of the Specification for Highway Works. All granular sub-base material to be laid and compacted in layers not exceeding 110mm to Clause 802 of this Specification, without drying or segregation.

**Top of foundations to be a minimum of 500mm above ground level.** Competent person to check formation level prior to concrete being poured.

**Foundations to be a engineers design.** Concrete grade to be C28/30 concrete to Tables A.1.3, A.3.4 and A.15 of BS 8500:1-2015 with a nominal maximum size of aggregate of 20mm and a nominal mass of 75mm. Concrete to be compacted thoroughly and cured to the requirements of BS 8110-1. No. Layer >=252 meets to BS 4883 placed with 50mm cover from bottom of stirrings.

Any steps in foundations to be formed in accordance with Clause 7.3.5 "Stepped Foundations" of BS 8104-2:2011. On sloping sites, each length of step foundation between steps should be horizontal. The top of each step in the soil should be as near vertical as possible. At all changes in level, step foundations to be stepped at the slope for a distance equal to the thickness of the step foundation or twice the height of the step or 300mm, whichever is greater.

**External walls above DPC level:**  
**General Notes:**  
Block to inner and external leaf to be dense 140mm thick to BS EN 774-2:2011 with a minimum crushing strength of 7.3 N/mm<sup>2</sup>.

Mortar for underslating to be 2% to 3% 1:1 sand/cement mortar.

DPC to be fitted at a minimum of 150mm above finished ground level and fully around all wall openings.

DPMs to fully overlap with DPCs on walls and be sealed with proprietary adhesive tape.

**External walls above DPC level:**  
**General Notes:**  
All structural work to comply with structural engineer's details and to comply with Section 1 of the Building Standards (Scotland) Regulations 2014.

All vapour control membranes within timber frame constructions to be overlapped and sealed to prevent, as far as reasonably practicable, any air infiltration into the building.

Filling cavities to be closed as:  
• Vertically within cavity at all external corners  
• At 10m horizontal centres around building  
• Horizontally within cavity at ceiling levels  
At head of construction, with 50mm Rockwool TCB cavity batten (or similar and approved) outside for 1 hour fire protection.

**External wall construction of house:**  
• 150mm natural stone/brick  
• Nominal 20mm cavity  
• "Proseal" TFC2000 thermal or similar approved breather membrane, vapour resistance of no greater than 0.2 M/m<sup>2</sup>g  
• 50mm thick OSB sheathing board  
• 140 x 38mm SVF timber framing @ 600mm c/s, with 120mm Kingspan TW65 insulation board between joists (to be applied & approved)  
• 50mm thick Kingspan TW65 insulation board to internal face of wall.  
• 120mm VCI vapour control membrane & rainings barrier, fully lapped and sealed  
• 50 x 30mm corner wall battens at 600mm centres  
• Protect PVC floor tapered edge plasterboard, joints taped and filled, and 3mm skin coat finish.

Firestops, consisting of 45 x 45mm treated SWF timber battens with DPC wrapped around, to be fitted 1 fully around all new window and external door openings.

**U-value of 0.13 W/m<sup>2</sup>K**  
**Internal Partitions:**  
Sik 2000 SVF dry studs @500mm centres, to non-bearing and loadbearing partitions with 120mm Kingspan Twofortwo 120 insulation board to both sides with minimum mass per unit area of 10kg/m<sup>2</sup>, joints taped and filled, and 3mm skin coat plaster.  
100mm sound deadening insulation to be fitted to all partitions with minimum density of 10kg/m<sup>3</sup> to provide a minimum airborne sound insulation level of 43RW.

No layer of 12mm Moisture resistant plasterboard to be used to internal face of partitions to all EnSuites and WC.

Plasterboard to be constructed under new SVFPs or AA's, comprising 12.5mm plain tapered edge plasterboard on 38 x 38mm SVF timber framing and with a screw fixing plywood access panel at hand/elevations.

**Concrete slab floor construction:**  
• 60mm self levelling screed  
• 120mm Kingspan Thermoflex 120 or (similar and approved) rigid insulation board, 25mm insulation edge strip  
• 1200 gauge polypropylene mesh with 150mm laps, joints to be sealed. DPM to be taken up wall and lapped with DPC, joint to be sealed.  
• 100mm thick blockwork on 50mm mortar block floor.  
• 1200 gauge polypropylene mesh with 150mm laps, joints to be sealed. DPM to be taken up wall and lapped with DPC, joint to be sealed.  
• 50mm solum, 200mm from underside of beam to top of solum.  
• 150mm well compacted hardcore

**U-value of 0.16 W/m<sup>2</sup>K**  
**Roof construction:**  
• 22mm T&G Eggier fitted moisture resistant flooring with minimum mass per unit area of 15kg/m<sup>2</sup> on a batten  
• 50x100mm floor battens at 400mm centres, or UHF joints and fill between with 30mm solid concrete  
• 15mm OSB sub decking  
• 204 x 72mm Raft joists at 400mm centres with minimum 100mm sound deadening insulation, minimum density of 10kg/m<sup>3</sup>  
• 2 layers 12.5mm plain tapered edge plasterboard to ceiling, having a minimum mass per unit area of 10kg/m<sup>2</sup> with a 3mm skin coat finish.

**Roof construction:**  
**General Notes:**  
Structural timber to be to BS 5268:2 2002  
All roof trusses and rafter rafters to be designed and detailed by specialist roof truss manufacturer and based on loadings in accordance with BS EN 1995-1-2:2004 A2.014

**Leadwork:**  
All valleys, gutters and soakers etc, to be code 4 lead and fixed in accordance with the lead development (see specification) when replacements.

**Pitched roof construction:**  
**Roofing:**  
• Natural Slate  
• Gletwade Protect VP420 breathable roofing membrane on 150 x 22mm sarking with 2.3mm gaps between boards.  
• 140mm Frametherm 40 or similar and approved insulation laid between and 140mm thick Frametherm 40 or similar approved insulation laid over ceiling tie & ceiling joist  
• Protect VCI Ultra Foli air tightness barrier fully lapped and taped  
• 50 x 30mm timber ceiling battens at 600mm centres  
• 12.5mm plain tapered edge plasterboard, joints taped and filled, and 3mm skin coat finish.

**U-value of 0.13 W/m<sup>2</sup>K**  
**Stopping Ceiling:**  
• Natural Slate  
• Gletwade Protect VP420 breathable roofing membrane on 150x22mm sarking board with 2.3mm gap between boards  
• 140mm thick Kingspan TW65 to be fixed between rafters  
• 50mm thick Kingspan TW65 to be fitted to face of rafters  
• Protect VCI Ultra Foli air tightness barrier  
• 50 x 30mm service voids battens at 400mm centres  
• 12.5mm plain tapered edge plasterboard.

**U-value of 0.13 W/m<sup>2</sup>K**  
**General Notes:**  
All windows to be Timber Windows (okal). TFC2, Windows to have opening restrictors fitted. Ground floor windows to be fitted with locks. All concealed windows to meet with Section 2 of Secured by Design.

**Tidally-washed windows:**  
• General notes: 12,000mm<sup>2</sup>  
• UMG 900mm<sup>2</sup>  
• E-rate & Bathroom: 10,000mm<sup>2</sup>  
• or an average: 11,000mm<sup>2</sup> per unit with a minimum of 1,000mm<sup>2</sup> in each apartment.

External window cills to be exposed drops.

Double glazed 4164 clear float glass full units with soft coat and argon filled. U-value of 1.4 W/m<sup>2</sup>K. Note: daylight to be provided to each apartment with a minimum glazed area of windows of 1/15th of the respective room area.

All glass below 800mm from FFL to be laminated 6mm safety glass and clearly marked. All glass to be to BS 6262: 2000 and BS 6069: 2008.

All windows to be detachable from within room in accordance with BS 821-3:2014, to be fitted with easy clean hinges and where opening over a rooftop or ramp to be fitted with restrictors.

Frame must be securely fixed. All externally fitted timber glazed heads (solid or glazed) and pre-end, should be constructed with BS 4850: 1997 for timber glazing heads (solid or glazed) or recognized standard for security such as BS 4850: 1997 for timber glazing.

To ensure a robust, standard of security, an easily accessible window should be designed and constructed in accordance with the general recommendations of the product standard appropriate for the material used, such as BS 644: 2008, for timber window units.

Vulnerable windows should be constructed to resist attempts to force frames and, if operable, ironmongery. Windows which can be opened should be fitted with either:  
• A keylock system that uses a removable key or  
• A keyed locking system, together with glazing which incorporates laminated glass or a similarly robust glazing material.

Where a material standard for a doorset is not available, it should be designed and constructed in accordance with the recommendations in Annex A of BS 8204: 2009, together with the following recommendations, to ensure a robust basic standard of security.  
**Doors:**  
**General Notes:**  
U-value of 1.0W/m<sup>2</sup> for solid doors, 1.4W/m<sup>2</sup> for glazed doors.  
All external doors to meet with Section 2 of Secured by Design.  
All easily accessible doors should be tested and certified by a notified body as meeting a recognised standard for security such as PAS 24: 2012 for doors.  
Single swing the doorsets should be fitted with at least one and a half pairs of hinges meeting the recommendations of BS EN 1955: 2002 for hinge grade 11 or above. Hinges fitted to a non-swinging 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.  
**Hanging and installing works:**  
**General Notes:**  
16mm mass supply to be taken to the kitchen sink and all WIR's, bath, showers and toilets. All stopcocks etc, to be to BS 6192.  
Water efficient fittings should be provided to all W/C's and WIR's. Dual flush W/C cisterns should have an average flush volume of not more than 4.5 litres. Single flush W/C cisterns should have a flush volume of not more than 4.5 litres. Taps serving wash or hand basin basins should have a flow rate of not more than 8 litres per minute.  
• Sink: 40mm ABS  
• WC: 100mm UPVC/Ceruby  
• Shower: 16mm ABS  
• WHB: 32mm ABS  
• AV: 50mm 100mm UPVC  
Test for syphonage and fit anti-siphon traps as required. All fittings to have deep seal traps.  
Shower trays to be fully accessible.  
Thermostatic anti-scald mixing valves to be fitted to hot water system or fitting complying with BS EN 1191: 1999 or BS EN 1287: 1999, fitted close to the point of delivery as practicable. To prevent scalding, the temperature of the water at point of delivery to a bath or toilet, should not exceed 49°C.  
Install new Air Source Heat Pump (under manufacturer TBC) or similar and approved safety to manufacturers instructions. For recommended boilers refer to installation instructions supplied by manufacturer and approved to SAQ calculation specification (see specification). An Air Source Heat Pump to be fitted with boiler interlock and separate controls for DHW, to provide adjusted efficiency of 333.70W.  
Air Source Heat Pump to be fixed to concrete slab using M10 anchor bolts and to be on Anti-Vibration Pads, as supplied by manufacturer. Concrete slab to be 150mm thick C25 grade on 150mm well compacted layer type 1 material. Slab to extend 100mm beyond each side of pump unit.

Fire detection and alarm system designed and installed in accordance with BS 5839: Part 6, 2013, to be fitted within a dual fire alarm and within 3m of a door to a bedroom. Alarm to be fitted at all circulation spaces that form part of escape routes or areas that present a high fire risk. Heat detectors to be provided at 800 kilowatts air max. 5.2m from any potential source of fire. Detectors should be installed in the kitchen, living area, bedroom, bathroom and any other circulation space and are to be fitted 300mm from any wall or light fitting. System to have battery backup in areas with no mains supply. All cables to be protected against fire and mechanical damage. All cables installed horizontally, be able "smell it" at the apex may prevent smoke reaching the unit.  
Kitchens to have 6m x No. socket outlets.  
Apartments to have 1m x No. socket outlets.  
Essential light fittings to be low wattage/outlets.  
E-nets to have 5mm print. Shower outlet switches to be outside bathroom rooms. In a bathroom or shower rooms, the electric shower power outlet, complying with BS EN 61930-2:2001 may be installed. Other than this, there should be no socket outlets and no means for connecting portable equipment.  
The junctions of all boxes for services and the banking fabric to be sealed to prevent the infiltration of air into the building.  
All recessed downlighter lights spots lighting to ground floor have hooded in order to maintain the fire resistance of the floor.  
A 10% of the fixed light fittings and lamps installed in a dwelling should be low energy type, such as:  
• Dedicated fittings which will have a separate control gear and will only take fluorescent lamps (pin based lamps); or  
• Filings including lamps with integrated control gear (bayonet or Edison screw base lamps).

Outlets and controls of electrical fixtures and systems to be positioned at not more than 1.2 m above floor level. This includes fixtures such as sockets, switches, fire alarm call points and stairs control or programming.  
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 shall be provided at a maximum height above the finished floor level of 1.1m.  
Where a workshop, fixtures should be at least 150 mm above the projecting surface. Where socket outlets are used as an alternative to the main lighting they are fitted with a remote failure warning device to be provided in an accessible position, to allow appliances to be isolated.

Carbon monoxide detectors should comply with BS EN 50291-1:2010 and be powered by a battery designed to operate for the working life of the detector. The detector should incorporate a warning device to alert the user to a dangerous situation. Above an integral equipment area, such as a workshop, fixtures should be at least 150 mm above the projecting surface. Where socket outlets are used as an alternative to the main lighting they are fitted with a remote failure warning device to be provided in an accessible position, to allow appliances to be isolated.  
Where carbon monoxide detectors are within the scope of either a:  
• European Directive 2006/95/EC  
• European Directive 1995/95/EC - Radio and Telecommunication Terminal Equipment Directive they should be constructed to fully comply with all applicable safety aspects of the Directives.  
The guidance in this document is based on the availability levels in adapting rooms and the effect of carbon monoxide moving through the building. Carbon monoxide detectors should include an integral battery.  
A carbon monoxide detection system to alert occupants to the presence of carbon monoxide should include:  
• 1 carbon monoxide detector in every space containing a fixed combustion appliance (excluding an appliance used solely for cooking) and  
• 1 carbon monoxide detector, which provides early warning of high accumulation, that is, a bedroom or principal habitable room, where a fire passes through three rooms.  
Unless otherwise indicated by the manufacturer, carbon monoxide detectors should be either:  
• ceiling mounted and positioned at least 300mm from any wall or  
• wall mounted and positioned at least 150mm below the ceiling and higher than any door or window in the room.  
Carbon monoxide detectors in the space containing the combustion appliance should be sited between 1m and 3m from the appliance.  
Note: Where the combustion appliance is located in a small space it may not be possible to locate the detector within that space. In such circumstances the detector should be located at the appropriate distance outside the space.  
A carbon monoxide detector should not be sited:  
• directly above a sink  
• next to a door or window  
• next to an extract fan  
• next to an air or similar ventilation opening  
• in an area where the temperature may drop below -10°C or exceed 40°C, unless  
• the inlet and duct may block the sensing,  
• in a damp or high humidity area,  
• in immediate vicinity of a cooking appliance.  
Additional guidance on the siting of carbon monoxide detectors, including enhanced coverage, can be found in BS EN 50292:2002.

CO monitoring equipment should be provided to the apartment equipped to be the main or principal bedroom in a dwelling where installing air rates are less than 15m<sup>3</sup>/hm<sup>3</sup> @ 30 Pa. This should raise an alarm in the event of CO levels in excess of the specified limits in their homes and the need for them to take protective measures to increase the ventilation. Guidance on the operation of the monitoring equipment, including options for improving ventilation when indicated as necessary by the monitor, should be provided to the occupant. For more detailed information on the provision of guidance to occupants, reference may be made to "Domestic Ventilation" Scottish Government 2015 <http://www.scotland.gov.uk/topics/energy/ventilation>.

The installed monitoring equipment for COs should be mass operated and may take the form of a self-contained monochrome detector or a separate monitor and detector unit.  
The monitor should have an easily understood visual indicator and be capable of logging data to allow the occupant to gain information on CO levels for at least the preceding 24hour period. If the detector/monitor has an audible alarm this should be capable of being switched off.  
CO monitoring equipment should be capable of recording and displaying readings within a range of at least 0-2,000 parts per million (ppm). The equipment should also be capable of logging data at no more than 15min intervals, over a 24 hour period.  
Where carbon dioxide monitors detectors are within the scope of either a:  
• European Directive 2006/95/EC - Low Voltage Directive, and/or  
• European Directive 1995/95/EC - Radio and Telecommunication Terminal Equipment Directive they should be constructed to fully comply with all applicable safety aspects of the Directives).  
A carbon dioxide detector head requires a flow of air over it to operate correctly, therefore, it should not be located in an area that is likely to restrict the free movement of air. Unless otherwise indicated by the manufacturer, a carbon dioxide detector head should not be sited:  
• in a damp or high humidity area  
• next to a door or window, or  
• next to an air vent or similar ventilation opening.  
Unless otherwise indicated by the manufacturer, a carbon dioxide monitor, with or without an integral detector, should be mounted between 1.4m and 1.6m above floor level. A carbon dioxide detector head should be mounted in a readily accessible position within the room of expected location of a fire.  
Where a separate detector head and monitor is installed, the monitor may be located other than in the room situated in the detector head, for example, the hallway. This may be desirable if more than one detector head is installed.

**Lighting and installing works:**  
**General Notes:**  
16mm mass supply to be taken to the kitchen sink and all WIR's, bath, showers and toilets. All stopcocks etc, to be to BS 6192.  
Water efficient fittings should be provided to all W/C's and WIR's. Dual flush W/C cisterns should have an average flush volume of not more than 4.5 litres. Single flush W/C cisterns should have a flush volume of not more than 4.5 litres. Taps serving wash or hand basin basins should have a flow rate of not more than 8 litres per minute.  
• Sink: 40mm ABS  
• WC: 100mm UPVC/Ceruby  
• Shower: 16mm ABS  
• WHB: 32mm ABS  
• AV: 50mm 100mm UPVC  
Test for syphonage and fit anti-siphon traps as required. All fittings to have deep seal traps.  
Shower trays to be fully accessible.  
Thermostatic anti-scald mixing valves to be fitted to hot water system or fitting complying with BS EN 1191: 1999 or BS EN 1287: 1999, fitted close to the point of delivery as practicable. To prevent scalding, the temperature of the water at point of delivery to a bath or toilet, should not exceed 49°C.  
Install new Air Source Heat Pump (under manufacturer TBC) or similar and approved safety to manufacturers instructions. For recommended boilers refer to installation instructions supplied by manufacturer and approved to SAQ calculation specification (see specification). An Air Source Heat Pump to be fitted with boiler interlock and separate controls for DHW, to provide adjusted efficiency of 333.70W.  
Air Source Heat Pump to be fixed to concrete slab using M10 anchor bolts and to be on Anti-Vibration Pads, as supplied by manufacturer. Concrete slab to be 150mm thick C25 grade on 150mm well compacted layer type 1 material. Slab to extend 100mm beyond each side of pump unit.

Install new 10 bar over-ventilator mesh thermal stress absorber studs to manufacturers instructions by a competent person who is a member of an approved trade union, or an occupation, a warning label and certification from the installer will be issued on the side of the unit. Cylinder factory fitted with 10mm polyethylene flame insulation providing a fire loss of 1.28 kWh/m<sup>2</sup>. Cylinder to be fitted with 2 safety control valves joined together via 15mm copper and tee. Function to be fitted vertically, and within the same storage space as the solar cylinder, a maximum of 500mm from safety valves. Function to discharge via initial 300mm vertical pipe prior to any elbows or bends and then with continuous fall of 100mm with a minimum of 45mm horizontal run to a drainage point.  
The H&S Approved Code of Practice and Guidance (L8) "The control of Legionella bacteria in water systems" recommends that hot water storage cylinders that will be completely coated be heated to 60°C for one hour each day to prevent growth of legionella bacteria in the cylinder.  
The hot water system must be inspected, commissioned and tested in accordance with manufacturer's instructions to ensure optimum efficiency in the conservation of fuel and power.  
Written information must be provided for the use of the occupier on the operation of the hot water service system to encourage optimum efficiency in the conservation of fuel and power.  
Pipes used for the supply of hot water must be suitably insulated against heat loss. Rockwool Rockpac HXV or similar approved specific to water temperature and pipe diameter to be used in accordance with manufacturers literature and in accordance with BS 8422: 2009.

**Storage:**  
Wood burning stove with an output of less than 5kW, to be installed in accordance with BS 8303: part 1 (unless otherwise specified as confirmed as being ULTRAS approved and having an efficiency of 82%, level 6) in accordance with BS EN 13240.  
The S&K insulated twin wall fire systems is a window, suitably gas tight, free from obstructions and resistant to corrosion from combustion products (at 4 in accordance with BS 8461: Part 1 1984, An access panel should be provided to the ending flange to allow for the inspection and replacement, if required, throughout its length.  
The flue is to have no intermediate openings.  
The flue is to be fitted with firestop grout and attic insulation shield as appropriate where passing through first floor construction and roof. Where the flue passes through the roof space, such as an attic, it should be surrounded by a rigid mass that will prevent vermin from passing outside the warm chimney. Mesh should prevent an Brim diameter sphere from passing.

Suitable access must be provided to inspect and cleaning of the flue and appliance in accordance with clauses 5.4, 5.5 and 10 of BS 8303: Part 1 1994.  
Non combustible thermal to be 100mm thick in addition to the 150mm concrete floor slab to provide a thickness of 200mm, as directed by solid fuel appliance manufacturer and extend 200mm out from the front face of the appliance, extend a min. of 150mm from the sides and rear of the appliance and not less than 100mm from the rear of the appliance (to the non-combustible material, 100mm if combustible) - providing a min. overall headroom of 840 x 850mm. See floor plan for further details.

Every chimney appliance installation must have a label of durable material, indelibly marked to indicate its limitations of use and positioned next to the hearth/masonry/electricity meter/boilers.  
Provide a label for the fire, health & Rx, located in a position that will not be easily obscured. The label shall be clearly marked and contain the following information:  
• The location of the hearth, fireplace (or fire box) or the location of the beginning of the flue, chimney designation siting in accordance with BS EN 1443:2000 (see detail B.12.12) for products whose performance characteristics have been assessed in accordance with a European Standard that has been supplied and marked with a designation as described in the relevant EN standard.  
• The category of the fuel and generic types of appliance that can safely be accommodated.  
• The type and size of the flue (or pipe).  
• E, the installation date.

**Drainage below ground level:**  
If any network of drainage gullies passing through the proposed site, however, any existing field drain or ground water table indicated during operations to be investigated immediately and remedial works to be detailed and submitted to Building Control prior to remedial work commencing.  
All new drainage to comply with Section 3 of the Building Standards (Scotland) Regulations 2014 and secondary pipe work to be installed in accordance with the recommendations in BS EN 12262-2: 2000.  
All new drainage to be fitted in accordance with the manufacturer's instructions.  
Unless otherwise specified, all underground drainage from disconnected manhole(s) and around buildings to be 100mm.

All new manholes to be constructed as access fittings, provided with covers and in accordance with and with the recommendations in BS EN 15220: 2008.  
**Drainage above ground level:**  
All above ground drainage to comply with BS EN 12266-2:2000 and connections to comprise of:  
• Rainwater pipes: 40mm to comply with BS EN 12266-2:2000 and comprise of:  
• Downpipes: 60mm, 80mm UPVC  
• Gutters: Min. 115mm half round UPVC  
No joists or structural timbers to be cut for the passage of drains or waste pipes.

100mm SVF's to be connected to underground system at a gradient of 1:50 and to have 200mm depth level of 34'. If floor to ground level greater than 600mm, provide handrail to each side of stairs, in accordance with Building Standard 4.3.

60mm RW's to be connected to underground system at a gradient of 1:100 and trapped prior to connection to main drain for combined system. Hand rails for access at base of stairs of basins.  
All connections to stacks to be separate.  
SVF stacks to be terminated at the roof slope by means of Gletwade Premium Intra Slab Ventbox (or similar approved) with integral 4mm large mesh screen, and Air ring to BS 476: Part 3, 2004. Size and colour to match roof coverings and to be installed with Gletwade Underlay Opening Protector, Self Venting Adaptors and Huddle Pipes.  
Fix in accordance with manufacturers instructions.  
All joints and connections to be airtight in accordance with Building Regulations Approved Documents, and BS 9000 where appropriate window openings.

Test for syphonage and fit anti-siphon traps as required. Anti-siphon trap to be fitted in all floor with all fittings to have deep seal traps.  
Shower trays to be fully sealed.  
All bath/shower to be fully sealed with anti-lead valves.  
All shower walls to be tiled to a height of 1900mm or so as to be impervious to the passage of moisture. An alternative valve to be 100mm x 50mm required and to be fitted above floor level. Vents to be fitted in accordance with the manufacturer's instructions and fitted in accordance with the recommendations in BS EN 12380: 2002.

**Ventilation works:**  
**General Notes:**  
Tidally ventilation designed for fabric infiltration rates assumed to be 5m<sup>3</sup>/hm<sup>3</sup>.  
All ventilation is comply with Section 3.14 of the Building Standards (Scotland) regulations 2014.  
All naturally ventilated rooms are to have no 1:20th of the respective room area as operable window with a minimum of 150mm<sup>2</sup> per m<sup>2</sup> of room area.  
Mechanical ventilation to En-Suite and WC to provide a minimum of 15litres/sec, with an intermittent extraction.  
Mechanical ventilation to Utility room to provide a minimum of 30 litres/sec, with an intermittent extraction.  
Mechanical ventilation to Kitchen above hood to provide a minimum of 30 litres/sec, with an intermittent extract.

**Limiting Air Infiltration:**  
This dwelling is designed and to be built following the guidance in Approved Construction Details (Scotland) 2015 for Timber Frame. Air permeability designed as 0.01m<sup>3</sup>/m<sup>2</sup>/50 Pa and airtightness testing will be required to ensure that air infiltration rates do not go above the stated design level of 0.01m<sup>3</sup>/m<sup>2</sup> and minimum levels of better weather details in Section 3.2.3 of Building Standards Scotland (2014).

Written information which accedes its content in accordance with BS EN 13829:2001 by a member of a professional organization which accedes its contents as competent to test and confirm the results of testing.

**Stair Construction:**

All stair construction to comply with Section 4.3 of Building Standards (Scotland) Regulations 2014.

Stair construction shall be constructed in accordance with BS5596 Part 1: 1988 and Part 2: 1985.

Protective barriers to handrails to be a minimum of 900mm in height and must not permit the passage of a 100mm diameter sphere. Balustrade comprising 60mm round handrail @ 900mm above with 88x8 vertical supports and 40x40 intermediate timber balusters @ max. 130mm centres.

Protective barriers must be secure and capable of resisting appropriate loads in accordance with BS EN 1991-1-2:2002, BS EN 1991-4:2006  
Minimum headroom above pitch line of stair and landings to be 2000mm

**Timber Stair Construction:**

Stair construction to be white oak or equal approved, comprising light 20mm thick treads and 10mm thick risers supported on 250 x 30mm stringers.

- Tread Rise - 268mm
- No. of treads - 14
- Rise - 151.50mm
- going - 240mm
- pitch - -30.65°
- stairs with a total -230mm over stringers, providing a minimum 900mm clear width from handrail.
- Stringer or nosing must be project a min. 30mm into the pitch line.

Balustrade comprising 60mm round handrail @ 900mm above pitch line with 88x8 vertical supports and 40x40 intermediate timber balusters @ max. 130mm centres. Stair to have 2m headroom over whole flight of stairs and first floor level.

**Site Security:**

Prior to commencement of work, site to be secured with min. 1.8m high dense mesh security fencing, in accordance with Health & Safety Guidance HSG 151 Section 2. This may be reasonably practicable. Site to be properly secured or covered under unauthorised entry at all times when work thereon is in progress.  
All construction materials and related materials to be kept in the possession of the contractor and to be stored in secure, fenced and locked areas, with the presence carrying out of the work and the completion of the local authority.

Where necessary to prevent danger, providing footpaths outside security fences with access to conveniences, showers, handrails, steps or seats, and substantial overhead coverings.  
**Site Maintenance:**  
Where any work is being carried out on a building site or building, any neighbouring footpath (including any local authority provided) is to remain part of the protective works. Will be regularly cleaned and kept free of mud, debris and related materials to the presence carrying out of the work and the completion of the local authority.

**Disabled Access:**  
**General Notes:**  
Disabled access to be provided to whole of ground floor.  
Ground floor entrance and exits to be barrier free with hard landscaping graded to provide ramped access no steeper than 1:12.  
Provisions for the disabled to comply with Section 4.2 of the Building Standards (Scotland) Regulations 2014 and BS EN 3006: 2000, as amended.

**General Notes:**  
Disabled access to be provided to whole of ground floor.  
Ground floor entrance and exits to be barrier free with hard landscaping graded to provide ramped access no steeper than 1:12.  
Provisions for the disabled to comply with Section 4.2 of the Building Standards (Scotland) Regulations 2014 and BS EN 3006: 2000, as amended.

**General Notes:**  
Access to dwelling to comply with Section 4.1 of the Building Standards (Scotland) regulations 2014. An accessible route shall be:  
• level, which for the purpose of this guidance is a gradient of not more than 1 in 50, or  
• gently sloping, which for the purpose of this guidance is a gradient of more than 1 in 50 and not more than 1 in 20; or  
• ramped, with a gradient of more than 1 in 20 and not more than 1 in 12. The cross-slope of any accessible route should not exceed 1 in 50.  
**External Works:**  
**General Notes:**  
Access to dwelling to comply with Section 4.1 of the Building Standards (Scotland) regulations 2014. An accessible route shall be:  
• level, which for the purpose of this guidance is a gradient of not more than 1 in 50, or  
• gently sloping, which for the purpose of this guidance is a gradient of more than 1 in 50 and not more than 1 in 20; or  
• ramped, with a gradient of more than 1 in 20 and not more than 1 in 12. The cross-slope of any accessible route should not exceed 1 in 50.

For safety and convenience in use, the surface of an accessible route should be firm, uniform and of a material and