SUBSTRUCTURES

- New concrete foundations as Structural Engineers design and specification.
- Substructure to be built in class 4 selected common brick or 7n/mm² block work (1500kg/m²). Formation level to be inspected and approved by the Structural Engineer prior to any concrete being poured. Mortar to under building to be designated (ii) i.e: 1:3 masonry cement: sand, to BS 3921.
- Cavity fill to be GEN 3 designated concrete mix and finished 50mm below finished ground level. Weep holes to be provided at 900mm centres around perimeter of new build.

EXTERNAL WALLS CONSTRUCTION

- New External Wall comprising of 102.5mm facing brick (TBS Mystique), 50mm ventilated air cavity with Glidevale Protect TF200 breather membrane or equal approved on 9mm OSB3 sheathing fixed to 45x140mm CLS grade C16 timber studs at centres to structural engineer's specification. Stainless steel wall ties at 450mm centres vertically and 600mm horizontally. 1 no. layer 110mm Kingspan K12 rigid insulation between timber studs, vapour control layer with 15mm plasterboard to internal finish with all joints taped and filled for decoration. Note MR plasterboard to kitchen, utility, en-suite and bathroom. U-Value of 0.15W/m2K.

<u>General Information</u>

- Walls finished internally with 12.5mm moisture resistant plasterboard to bathrooms, kitchen and utility, all joints taped and filled.
- External breather membrane to be taken 50mm below d.p.c level and lapped 150mm at vertical joints.
- Cavity wall to be vented every 4th perpend.
- Cavity vents providing 300mm² of free opening area to be provided at 1200mm centres and positioned immediately above and below the horizontal cavity barriers.
- Treated timber fire stops to be installed within cavity horizontally at junctions with existing. Head of all cavities to be closed with treated timber fire stops.
- Outer skin of external walls to be tied to inner timber frame wall with Catnic BT-2 stainless steel wall ties (or equal and approved) spaced 900mm centres horizontally and 450 centres vertically. Frame ties to be positioned at stud uprights only.

EXPANSION JOINTS

- Expansion joints to be constructed at locations as located on the Engineer's drawings and formed with 10mm thick Hydrocell XL by Expandite Ltd, or equal and approved, and sealed with mastic, coloured to match wall.

DAMP – PROOFING

- DPC's to be provided at all cavity closures in accordance with CP 121 Part 1: 1973.
- Horizontal DPC's to be polymer type (generally) on top of all foundation walls at structural ground floor level (minimum height of 150mm above finished ground level).
- Vertical DPC's to be insulated polymer type around window openings, or un-insulated polymer in all other cases unless specified otherwise.
- Proprietary cavity trays to be installed over new window openings, and at wall / roof junctions, with stepped flashings minimum 150mm above the roof.
- Weep holes to be provided over all openings at 1000mm centres (minimum 2 No.)
- Flashings to be Code 5 lead generally.

GROUND FLOOR CONSTRUCTION

- Ground level extension suspended timber floor construction to comprise of 22mm P5 T&G (V313) moisture resistant chipboard flooring on joists to Engineer's specification with 1 layer 100mm Kingspan Kooltherm K3 rigid insulation between joists supported off timber battens between joists.
- Solum to comprise a minimum ventilated airspace of 150mm, with a solum finish of 50mm site concrete on Damp Proof Membrane, 50mm
  Sand blinding on Type 1 compacted hardcore (min 150mm).

GUTTERS AND RWP'S

- New Marley, or equal approved, 89mm diameter rainwater pipes fitted to hoppers. All brackets plugged and screwed directly onto masonry. Rainwater goods installed in compliance with BS EN12056-3: 2000.
- For rear extension, gutters formed by contractor behind parapet around perimeters and roof membrane dressed into the channels. Outflows thru parapet wall to connect to hoppers.
- RWPs to canopy to be 60mm aluminium downpipes situated behind columns.

ROOF CONSTRUCTION

<u>Roof Type – New Flat Roof over Extension</u>

- Flat roof construction to comprise: Firestone Single Ply Membrane roof finish, 140mm Kingspan Thermaroof TR27 Roofboard, Loosely laid vapour control layer on 19mm WBP marine ply mechanically fixed to treated timber roof joists (size tbc by structural engineer) at 400mm centres. Roof laid at 3° pitch. New composite timber decking laid on top of new flat roof, using proprietary adjustable decking pedestals.
- Proprietary roof trusses to be designed in accordance with the requirements of BS 5268: Part 2, 1996 and Part 3, 1985 and where appropriate BS 8103: Part 1, 1986. Roof truss supplier to provide truss design certificate prior to start of works.
- All roof flashings to be Code 5 lead. Code 5 lead valleys at all roof intersections and secret gutters / upstands. All flashings to be dressed down onto roof tiles. All lead work installed in accordance with the Lead Development Association's, guidelines.

<u>Roof Type – Canopy Roof</u>

- Canopy formed with tanalised timber firring pieces laid on top of timber joists, to S.E's design and specification, to create 2 degree fall. Zinc / aluminium profiled standing seam cladding to canopy roof - Refer to architect's detail for full specification

WINDOWS U-VALUE 1.4 w/m-k

- Windows to be timber / aluminium framed windows, with 24mm thick hermetically sealed double glazed units. See manufacturer's details on design and specification.
- All first floor windows are to be cleanable from the inside in compliance with clauses 10.2, 10.3 and 10.4 of BS8213: Part 1:2004.
- Glazing should be designed to resist human impact in accordance with BS 6262: Part 4:2005 and kite marked.
- Safety and reverse catches to all windows to be positioned out of children's reach.
- Each room to have an aggregate glazed area equal to at least 1/15th of the floor area of the room that it serves.
- Each room and toilet to have an openable window area of at least 1/30th of the floor area that it serves.
- Trickle ventilators to be fitted to windows as required providing 12000sq.mm of ventilation to each area.
- Windows to comply with the following standards:
  - BS ISO 9002. BBA approved.
  - BBA Resistance to intrusion.
  - BS 7950, BS 7412, BS7413, BS 5713
  - BS 6206 as applicable.

DOORS U-Value 1.4 w/m-k

- Ground floor door thresholds to enable wheelchair access in accordance with Section 4.18 of the Technical Standards.
- Minimum clear width between face of door in fully open position and face of opposite door stop to be 750mm.
- Proposed doors and windows to be designed and tested to achieve compliance with BS PAS 24: 2007 or BS 7950: 1997 for security
- External rear sliding doors to be aluminium framed doors with low profile threshold in compliance with Section 4.18 of the Technical Standards.

LINTELS

- Lintels to outer leaf to be precast concrete or catnic to Structural Engineers design and specification
- Lintels to internal load bearing walls and window openings to be in accordance with Engineer's drawings and integral to timber kit.

INTERNAL DOORS

- Internal doors to be hardwood door with low profile threshold in compliance with Section 4.2.5 of the Building (Scotland) Regulations. Minimum clear width from face of door to opposite stop to be 800mm min.

INTERNAL TIMBER STUD WALLS

- Nominally 75x38mm timber stud framing at 600mm centres max with 1 row of 75x38mm dwangs at mid height, with 75mm Crown Frametherm 35 insulation between studs to a density of 10kg/m³ and 125 micron Visqueen vapour barrier stapled to internal face of studs. 12.5mm plasterboard to both sides with joints taped and filled ready to receive emulsion paint finish.
- Insulation between studs to provide a minimum airborne sound insulation level of 40Rw.
- Plasterboard to be screw fixed to timber studs.
- 12.5mm moisture resistant plasterboard to kitchen, bathroom, utility and en-suite walls and ceiling areas.

INTERNAL PLUMBING/DRAINAGE

- Installation of hot and cold water services to comply with the by-laws and the requirements of the appropriate water authority and carried out by a licensed plumber/contractor. All water supply pipe work to be copper throughout and have UK
  and/or EU approval.
- All appliances within kitchens and bathrooms to be mains fed, all to the satisfaction of the local water authority.
- Mains pipe work to be MDPE with isolation valves located in cupboard where supply enters house. Valves fitted with non-return valves.
- All cold water mains supply fitted with cellular foam type insulation, the thickness being equal to the diameter of pipe.
- Hot and cold water supplies to washing machine positions.
- 100mm diameter uPVC soil vent pipes with screwed rodding points throughout.
- 100mm diameter outlets and 75mm water traps fitted to WC's. Baths, showers and sinks fitted with 40mm diameter outlets and 75mm deep seal traps.
- All drainage connections into SVP are to be separate and above floors. Drainage connections for automatic washing machines to be located under kitchen sink drainage.
- All sanitary pipe work installation to be in accordance with BS EN 12056-2:2000. Soil vent pipes to be connected to flush tile vent terminals.
- 150mm Modular Profile access panels type MPA 127 to be fitted to all SVP stacks.

HEATING

- Proposed water-fed underfloor heating system to ground floor extension areas to consist of a spreader plate system fixed between suspended timber floor joists. Aluminium spreader plate fixed to the joists using screws, with preformed groves set at 200mm centres to accommodate ProWarm European Standard Pex-Al-HDPE pipes. Timber battens to be fixed to inside of existing joists, with a 100mm Kingspan Kooltherm K3 rigid insulation board between joists, resting on battens.
- New radiators, to client specification, and sized by contractor, to existing rooms on ground floor and first floor, with locations noted on plans.
- All pipework to be in copper. Pipework and Installation to be to BS EN 1057 & 1254 and BS 6700 & 6891
- The central heating system to be designed in accordance with the parameters given in BS 5449 1990. The central heating system to be installed in accordance with BS6798:1987 and comply with all relevant codes of practices and the manufacturers instructions.
- Flue pipes to be protected in accordance with BS 5440 part 1 2000.

EXTERNAL DRAINAGE

- All drainage to be agreed with the local authority building control department and the relevant drainage authority.
- All drainage to be laid and tested to the complete satisfaction of the local authority. All drainage to be uPVC underground drainage pipes. Rodding access points to be provided at the base of all soil and waste pipes.
- All rainwater pipes to be trapped.

MECHANICAL VENTILATION

- Decentralised mechanical extraction as follows:
  - Kitchens – Minimum 60 litres per second extraction, continuous running at low speed.
  - Utility – Minimum 30 litres per second extraction, continuous running at low speed.
  - Bathrooms/En-Suites – Minimum 15 litres per second extraction, continuous running at low speed.
- All fans fitted over and within 1250mm of bath or shower to be low voltage type with isolating remote main safety transformer.
- Extract fans to be positioned 1750mm minimum above floor level.

ELECTRICAL SUPPLY

- Installation to be carried out in PVC insulated and sheathed cables with protective conduit where necessary
- Installations to comply with the 18th edition of the I.E.E regulations.
- Fittings to En-Suite and Bathroom should be shrouded. All fittings to be white plastic.
- Electrical meter to be mounted in cupboard within Utility with consumer unit: MCB 8/12 way with MCB spare circuits (2No).
- All lighting cables to have conduit protection at all switch points, consumer units and other areas of potential hazard. Lighting circuits to be wired using 1.5mm PVC twin and earth cabling.
- All rooms to be wired for alarm system and wiring taken to agreed location for siting of alarm system.
- All electrical installation to comply with BS 7671:2018. Electrician to provide 'as built' drawings. Electrical Certificate to be forwarded on completion.

ELECTRICAL FIXTURES

- Outlets and controls of electrical fixtures and systems should be positioned at least 350mm from any internal corner, projecting wall or similar obstruction and, unless the need for a higher location can be demonstrated, not more than 1.2m 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 900mm and 1.1m above floor level.
- Standard switched or un-switched 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 150mm above the projecting surface.

SMOKE ALARMS

- One Grade D mains operated ceiling mounted smoke alarm located within circulation areas. 3 metres max from bedrooms and 7 metres max from kitchen doors.
- One Grade D mains operated ceiling mounted smoke alarm located in all main rooms and bedrooms.
- Mains supply to alarm via independent circuit at the distribution board to which no other equipment is attached.
- Alarms to have a standby supply capable of providing power for 72 hours while giving an audible warning of mains power failure and be capable of providing an audible warning of smoke for a further 4 minutes.
- Alarm installation to comply with BS 5446 Part 1:2000
- Alarm system to be interconnected and wired to the mains.

LIMITING THE EFFECT OF THERMAL BRIDGING AT JUNCTIONS AND AROUND OPENINGS

- The insulation envelope of the dwelling should be constructed in such a way that there are no substantial thermal bridges or gaps where the layers of insulation occur. Significant in-use energy consumption can occur, through poor construction on site. The key areas of concern are: within building b. at the junction between building elements; c. at the edges of building elements where openings in the structure are formed. One approach to addressing these issues would be to follow the advice given in the Building Research Establishment (BRE) Report 262 – 'Thermal insulation, avoiding risks' 2002 edition. All Junctions where insulation meets to be lapped and checked by site agent.

INSPECTION AND COMMISSIONING

- Heating and hot water service system should be inspected and commissioned in accordance with manufacturers' instructions to ensure optimum energy efficiency.

LIMITING AIR INFILTRATION

- Sealing the gaps at roof space openings, between dry lining and masonry walls at the edge of doors and windows and door openings and at the junctions between walls, floors and ceilings.
- Sealing vapour control membranes in the timber frame and other framed panels.
- Sealing at service penetration of the fabric or around boxing/ducting for services.
- Fitting draught seals to the open-able part of the window, doors, access hatches and roof lights.
- Sealing around joist ends built into the inner leaf of external cavity walls.

INSULATION OF PIPES AND DUCTS

- Pipes that are used to supply hot water to appliances within the building will be insulated against heat loss in accordance with the guidance for 'Environmental Thickness' given in BS 5422:2001 Methods for specifying thermal insulating materials for pipes, tanks, vessels, ductwork and equipment operating within the temperature range of -40°C to +700°C

ACCESS TO MANUAL CONTROLS

- All open-able windows that provide natural ventilation to have controls for opening, positioned at least 350mm from any internal corner, projecting wall or similar obstruction and at a height of not more than 1.7m above floor level, where access to controls is unobstructed; or not more than 1.5m above floor level where access to controls is limited by a fixed obstruction of not more than 900mm high which projects no more than 600mm in front of the position of the controls, such as a kitchen base unit in accordance with Section 4.8.5 of the Technical Standards.

ARTIFICIAL LIGHTING

- 100% of the fixed light fittings and lamps installed in the 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).

GENERAL

- Energy supply systems for power, lighting, heating and ventilation will be energy efficient and capable of being controlled to achieve optimum energy efficiency.