Specification Notes

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.
Solum to be treated to prevent vegetable growth and reduce the evaporation of moisture from the ground to the inner surface of any part of a dwelling that it could damage.
Solum to be brought to an even surface and any up filling should be of hard, inert material.
Solum not to be lower than the highest level of the adjoining ground. At sloping ground where this is not possible the solum should be laid to fall to an outlet in the under building above the lowest level of the adjoining ground to prevent any water build up below the building. Any part of the under building that is in contact with the ground, such as on sloping ground, should be tanked.

GENERAL:
Client/Main Contractor to ensure all conditions attached to the Planning approval are met.

All surface soil & vegetable matter to be removed from the area of all buildings in full compliance with 3.1.1. of the Building Standards Domestic Technical Handbook.

After demolition, the existing remaining building must be left in a safe and watertight condition in full compliance with Regulation 10 of the Building Standards.

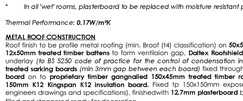
All buildings and the entire site shall be securely fenced off to protect the general public in full compliance with Regulation 13 of the Building Standards and in accordance with the Planning Supervisors' Safety Plan.

All building shall be kept free of mud and dust in full compliance with Regulation 14 of the Building Standards and in accordance with the Planning Supervisors' Safety Plan.

A building site where there are unfinished or partially completed works must be kept safe and secure in full compliance with Regulation 15 of the Building Standards and in accordance with the Planning Supervisors' Safety Plan.

If significant unsuspected contamination is found then all works shall cease until appropriate investigation to determine the nature, extent and potential impacts of the contamination has been undertaken and a Remediation Method Statement (agreed with the Local Authority Contamination Section) has been produced.

DEMOLITION:
Care to be taken during demolition works to ensure no structural damage occurs to surrounding buildings. Should any damage occur, all works on site to cease until a Structural Engineer has inspected the site and appropriate remediation works are carried out to his satisfaction
Contractor to ensure that during demolitions, the pavement and public are to be protected by appropriate hoardings as indicated by appropriate footpath and road closures
Perimeter of all site with red chain dotted line to be fenced off with temporary steel 'Heras' fencing, 2400mm high Fencing to remain until construction of site is completed
Where hoarding extends to, a minimum of 1No Bulkhead light to be fitted. Min 1No to each lane
Existing electric, water & gas supplies on site to be disconnected and removed from site prior to demolition working starting
Chain dotted line denotes line of 2400mm high x1200mm 22mm thick safety hoarding boards extending around existing site.
Existing building shown with red dashed line to be demolished on site
(1) Every building to be demolished must be demolished in such a way that all service connections to the building are properly closed off and any neighbouring building is left stable and watertight.
(2) When demolition work has been completed and, where no further work is to commence immediately, the person who carried out that work shall ensure that the site is
(a) immediately cleared of rubble and debris; or
(b) provided with such fences, protective barriers or hoardings as will prevent access thereto.



Construction Specification:

FOUNDATIONS
Refer to structural engineers drawings for size of strip foundations with A393 bottom & top mesh reinforcement having 50mm minimum cover. Where trenches are to be excavated for any length of time prior to pouring, 50mm GEN 1 blinding is to be provided. Foundations to be a minimum depth of 450mm to top of foundations below ground level. Take foundations below any buried services, with underside of new foundations at least as deep as underside of adjacent existing foundations. Where existing foundations are exposed they must be temporarily protected until work is complete. All soft spots found must be filled with Gen 1 (CB/10) concrete with no section greater than 0.7m×0.7m² to be dug out at any one time.

UNDERBUILDING
The mortar used below ground level is to be a 1/3 mix to BS 5628-3 : 2005. Timber kit to sit on 150mm dense concrete blockwork. Dwarf wall (brenchwork construction) to be 100mm dense concrete blockwork. The outer leaf is to be kept two courses down to allow for fixing of anchor straps. Straps to be 30x3x1000mm long stainless steel fixed to studs with a minimum of 4No 4x44mm RPH nails. Face nailed Blockwork compressive strength: 7N/mm² (10N/m² below ground level). Density: 2050kg/m3 in accordance with BS 6073. All blockwork joints to be constructed in accordance with BS 5628 Part 3. BS 8000 Part 3 and BS EN 771-3. Blockwork cavity ties to be vertical twist stainless steel to BS 1243 at 900mm horizontal centres and 450mm vertical centres.

CONCRETE GROUND FLOOR CONSTRUCTION
Floor finish to client specification. **22mm Norbord Caberdek P5 Chipboard** (min 15Kg/m²) on floor. **150x50mm timber joists. 100mm Kingspan TF70 rigid insulation** fitted between joists, on **500 gauge membrane** *(not less than 125 microns/ 500 gauge, to prevent the wet concrete penetrating the joints between the boards, and to act as a vapour control layer. Ensure the polythene sheet has a min.150mm overlaps, taped at the joints, and is turned up at 100mm at the walls)*, on **125mm insitu concrete slab C30**, on **50mm Kingspan TF70 rigid insulation**, on **1200 gauge membrane**, on 50mm minimum sand blinding, on minimum **150mm consolidated hardcore. 50mm 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).*

Thermal Performance: ***0.11W/m²K***

THERMAL WALL LINING CONSTRUCTION - *Type A*
Existing wall linings to be removed and walls brushed clean. Existing walls (providing 1hr fire resistance externally) to be inspected and made good if required and lined with DPM (min. 1m high). **25x38mm Treated softwood timber battens** to form **25mm void**. Internal leaf to be **Protect TF200 Thermo membrane** stapled to **9mm OSB sheeting** fixed to **140x45mm C16 reg and treated studs at 600mm centres** incorporating double top and bottom rails. Inner leaf to incorporate **75mm Kingspan K12** between studs *(to BS EN ISO 13501-1). 25mm void partially filled with SuperQuilt Insulation.* SuperQuilt to be stapled to the face of the timber studs. **25x38 battens** fixed to the timber frame behind the insulation to create a 25mm service void finished with **1 layer 15mm GTEC Fireline plasterboard** (or equal and approved)to provide a min. 1hr fire resistance internally) with all joints taped, filled and staggered ready for decoration. **Protect FCM750 intermediate floor junction membrane** to be installed at all floor junctions and to be taped to Protect VC foil (at hanger or wall above, to maintain a continuous membrane around the dwelling. **50x50mm ww treated fire stops/cavity barriers**, within cavity between cladding and OSB, are to be incorporated vertically around all openings, wallheads, first floor level, corners and gable at maximum 8000mm centers vertically.

- All services penetrating the fire rated plasterboard to have 1hr fire resistant intumescent putty pads installed. All penetrations through the fire rated plasterboard to be sealed with 1hr fire resistant intumscent sealant.
- *In all 'wet' rooms, plasterboard to be replaced with moisture resistant plasterboard.*

Thermal Performance: ***0.17W/m²K***

RENDER WALL CONSTRUCTION - *Bin Store Walls*
External wall finish to be **19mm render** (to match existing) on outer leaf of **100mm dense concrete blockwork** with a **50mm cavity** between both leafs. *(Rytan' slimline vents to be incorporated at maximum 1200mm centres. Vents to ventilate 50mm clear cavity below DPC, ceiling level, above and below floor level, eaves and verge level. Inner leaf to be of timber frame construction).* **Protect TF200 Thermo membrane** on **9mm OSB Board.** OSB sheeting fixed to **140x45mm C16 reg and treated studs at 600mm centers** incorporating double top and bottom rails. Inner leaf to incorporate **140mm Knauf FrameTherm Roll 35** between studs *(to BS EN ISO 13501-1).* **40mm Kingspan K12 Insulation Board** installed over the internal face of the timber kit, lined with **Protect VC foil** (all joints to be taped), and then **25x38 battens** fixed to the timber frame to create a 25mm service void finished with **1 layer 15mm GTEC Fireline plasterboard** (or equal and approved)to provide a min. 1hr fire resistance internally) with all joints taped, filled and staggered ready for decoration. **Protect FCM750 intermediate floor junction membrane** to be installed at all floor junctions and to be taped to Protect VC foil at hanger or wall above, to maintain a continuous membrane around the dwelling.
Outer leaf to be tied to inner leaf with 'Bat's' timber frame wall ties at maximum 450mm centres vertically and maximum 600mm centres horizontally and a minimum embedment of 75mm. All openings wall ties should be incorporated at a maximum of 225mm from the edge of opening, and a maximum of 225mm vertically. Timber frame to be held down with 1000x30x0mm galvanised mild steel anchor straps securely 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.

- All services penetrating the fire rated plasterboard to have 1hr fire resistant intumescent putty pads installed. All penetrations through the fire rated plasterboard to be sealed with 1hr fire resistant intumscent sealant.
- *In all 'wet' rooms, plasterboard to be replaced with moisture resistant plasterboard.*

Thermal Performance: ***0.17W/m²K***

RENDER WALL CONSTRUCTION - *21.5mm Blockwork Wall*
External wall finish to be **19mm render** (to match existing) on outer leaf of **215mm dense concrete blockwork providing a medium fire resistance** with a **25mm cavity** between both leafs. Internal leaf to be **100x45mm C16 reg and treated studs at 600mm centers** incorporating double top and bottom rails. Inner leaf to incorporate **100mm Kingspan K12 Insulation Board** between studs *(to BS EN ISO 13501-1)*, and then **1 layers 15mm Fireline board** (or equal & approved) to provide a min. medium fire resistance, with all joints taped, filled and staggered. **40mm Kingspan K12 Insulation Board** installed over plasterboard. **25x38 battens** fixed to the timber frame behind the insulation to create a 25mm service void finished with **1 layer 12.7mm plasterboard** with all joints taped, filled and staggered ready for decoration. **Protect FCM750 intermediate floor junction membrane** to be installed at all floor junctions and to be taped to Protect VC foil at hanger or wall above, to maintain a continuous membrane around the dwelling.

- *In all 'wet' rooms, plasterboard to be replaced with moisture resistant plasterboard.*

Thermal Performance: ***0.17W/m²K***

METAL ROOF CONSTRUCTION
Roof finish to be profile metal roofing (min. Broof (t4) classification) on **50x50mm treated timber battens** on **12x50mm treated timber battens** to form ventilation gap. **Dektex Roofshield breathable roofing membrane** underlay *(to BS 5250 code of practice for the control of condensation in buildings)* over **150x22mm ww treated sarking boards** *(min 3mm gap between each board)* fixed through **50mm K12 Kingspan insulation board** on to **proprietary timber gangnailed 150x45mm treated timber roof purlins at 1200mm centres. 150mm K12 Kingspan K12 insulation board**. Fixed to 150x150mm exposed timber trusses (to structural engineers drawings and specifications), finished with **12.7mm plasterboard** between trusses. All joints taped, filled and staggered ready for decoration.

Thermal Performance: ***0.12W/m²K***

NON-LOAD BEARING INTERNAL PARTITION CONSTRUCTION - *Type A*
75x50mm treated softwood timber studs at 400c/c, min. **60mm acoustic insulation** (min. 10kg/m³ density) to be installed between studs, both sides to be finished with finished with **1 layer 12.7mm plasterboard** (min. 10kg/m² density) with all joints taped, filled and staggered ready for decoration.

- In all 'wet' rooms, plasterboard to be replaced with moisture resistant plasterboard.

LOAD BEARING INTERNAL PARTITION CONSTRUCTION - *Type A*
140x50mm treated softwood timber studs at 400c/c, min. **60mm acoustic insulation** (min. 10kg/m³ density) to be installed between studs, one side lined with 9mm OSB racking, both sides to be finished with finished with **1 layer 12.7mm plasterboard** (min. 10kg/m² density) with all joints taped, filled and staggered ready for decoration.

- In all 'wet' rooms, plasterboard to be replaced with moisture resistant plasterboard.

INTERMEDIATE FLOOR CONSTRUCTION - *Feature Douglas Fir Structural Joists*
20mm Nominal floor finish to client specification, on **18mm Norbord Caberdek P5 Chipboard** (min 15Kg/m²) on non-structural 100x50mm timber joists at 600c/c. Ceiling to be finished with **150x22mm sarking boards** ready for decoration. 150x150mm exposed finished douglas fir structural joists, centers as per engineers specification on floor carcassing plan. Minimum **100mm Knauf SK Acoustic Roll** (density between 10-60Kg/m³) between joists.

ROBUST WALL CONSTRUCTION:
All wall constructions within accessible sanitary facilities to be be lined with min. 18mm OSB behind moisture plasterboard, installed in accordance with technical standard 3.12.3.

ON SITE NAILING
Wall Framing- 100mm x 4mm ring shank
Ground floor sole plate to header joist- 3No to each joist and
Panel to panel- 300mm staggered cts
Panel to corner post- 300mm staggered cts
Head binder to wall panel- 300mm staggered cts face nailed
Gable restraint strap to dwange- 6No 64 4m @ 200mm cts
Stud to stud (internal sheathed wall to external wall)- 200mm cts

STRUCTURAL TIMBER:
All structural timber to be grade C16 unless noted otherwise. All timber to be preservative treated with double vacuum 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 recommendations. Studs should as far as possible line through with floor joist and roof trusses above

THERMAL BRIDGING:
Construction to be in such a way that there are no substantial thermal bridges or gaps where the layers of insulation occur within building elements, at the junction between building elements and at the edges of building elements where openings in the structure are formed.

All exposed timbers (exposed douglas fir timber and sarking to be varnished/painted with Envorgrat Intumescent paint/varnish (or equal and approved) to provide a minimum fire resistance of 30 minutes (short fire resistance. Paint/varnish to be applied in accordance with manufacturers details and specifications.

CAVITY BARRIERS:
Cavity barrier formed within roof voids at max 10m centres. Barrier formed with 1 layer of 12.5mm plasterboard either side of rafter and cut / fitted tightly to underside of roof sarking, plasterboard coambs, plasterboard ceiling. All joints to be sealed with intumescent sealant to form airtight seal.

LEADWORK:
All leadwork used to be Code '5' lead to BS EN 12588 Leadwork ragged into walls with a minimum 150mm upstand and fixed in place with proprietary 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 weft.

NEW WALLS TIED TO EXISTING:
New concrete block tied to existing masonry with Simpson Strong-Tie C2K3 Crocodile galvanised wall starter kit. 6no M6x50mm stainless steel coach screws to secure kit to existing. Timber kit bolted to wall using Rawlok m10 loose bolts @ 600mm centers, with vertical DPC.

EXISTING & NEW STRUCTURE FIRE PROTECTION:
2No. layers of 12.5mm plasterboard to be staggered to 25x38 treated softwood battens around existing and new structure to provide 30min fire resistance.

INSULATION TO PIPES & WARM AIR DUCTS:
All new/affected pipes and warm air ducts to be suitably insulated in accordance technical standard 6.4.1 & 'Domestic Building Compliance Guide for Scotland'.

LATERAL RESTRAINTS:
Lateral restraint straps to be incorporated at high and low level spanning at least 3No. truss members and securely fixed to timber frame. Straps to comply with BS 5268 Part 3 2006 Appendix B. Fix straps to rafters with not less than 4 no.50x8 gauge sheardblized screws evenly spaced, locate at least one screw 150mm off bottom end of strap. 100mm×25mm longitudual roof bracing where indicated on sections.

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, lintels, and all openings to be pitch free Xtra Lead or similar.

JOINERY/FINISHINGS:
Facings/skirting are to be in good quality softwood, free from knots, shakes and other defects suitable for a paint finish. Facings 16x75 beaded on both edges. Skirtings 16x145 beaded on top edge. Skirting blocks 175x95. Painted finishes to be one undercoat and two gloss, to clients choice. All plasterboard finishes to be finished with two coats of emulsion to clients choice. Floor finish to clients choice. Doors to be paint grade/self finished to clients choice. Cupboard/shelving to be clear varnished MDF unless otherwise specified. Internal window cills and apron lining to be painted MDF unless otherwise specified. Fascias, soffits and bargeboards to be painted with one undercoat and two gloss or two coast of external quality stain as per clients choice.

WINDOWS & DOORS:
To be high performance timber windows & doors with U-Value no greater than 1.4W/m2K. 12.000mm² trickle ventilation to be provided through the combination of the new doors and windows.

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 ventilation.

LAMINATED GLAZING (Secure by Design):
Any door with glazing and every pane of glass within 850mm of any door handle, and all keyless lock windows to have one pane of glass (of the double glazing) to be laminated as per BS EN 356:2000 class P1A.

LOW LEVEL GLAZING:
Glazing should be designed to resist human impact as set out in BS 6262: Part 4: 2005, BS EN 1991-1 and the associated PD 6688-1-1, where any part of a pane is within 800 mm of floor level or any part of a door leaf within 300 mm of a door leaf and within 1.5 m of floor level.

AIR INFILTRATION
The details shown contain measures designed to reduce air infiltration. Ways of preventing air infiltration should be considered at every penetration of this barrier. Particular care on site should be paid to:
• joints between structural components e.g. wall to floors
• joints around components and opening within walls
• service penetrations :plumbing, electrical and ventilation.
Insulated and sealed loft hatches to be fitted
GENERAL
• close any vertical ducts at the top and bottom where they meet the air barrier (e.g. boxing round soil vent pipe's)
• seal any service penetrations through the air barrier
• select the appropriate sealant or gap filler for the size of gap and degree of movement anticipated.

MASONRY CONSTRUCTION
• ensure continuous ribbons of adhesive are used to fix to dry lining at perimeters of external walls, openings, and service entries on external walls. The importance of correct sealing of dry lining on dabs needs to be stressed, as this is a key area of infiltration and can seriously affect the overall ventilation rate
• use joist hangers to support floor joists
• seal under skirting boards where dry lining is used, or on suspended floors.

TIMBER FRAME
• ensure DPC's are turned up behind sole plates and lap with vapour control layers; alternatively seal with mastic or a gasket between the DPC and sole plate
• place bead of mastic on timber floor deck before positioning wall panels (timber ground floors and intermediate floors)
• ensure sheet vapour control layers are properly lapped at junctions, and/or.
• ensure any vapour control plasterboard is jointed in accordance with the manufacturer's instructions
• always return vapour control layers into door and window reveals, head and sills
• cut vapour control layers tight to electrical outlets and seal at piped service penetrations. (with tape or sealant as appropriate)
• ensure all breather control membranes overlap each other and are stapled in place.

EMERGENCY ESCAPE WINDOWS:
Window to have a clear opening of at least 0.33m2, with no dimension less than 450mm. Bottom of the opening should be not more than 1100mm and not less than 800mm above the finished floor level and to provide unobstructed egress.

EXTERNAL DOORS:
Doors to be high performance **timber** with mortice latch/lock (Siever) and Yale Lock. Main entrance door to have a minimum 800mm clear opening. All glazing to be as the window specification. Doors to be fitted with weather bars. Max door size to achieve U-Value of 1.4W/m2K.

CLEANING OF HIGH LEVEL WINDOWS:
Windows at high level require to be cleaned safely in compliance with Clause 4.8.3. Ladder hooks to be provided at high and low level (1m above ground level) at glazed gables for cleaning of high level glazing. Level surface to be provided at ground level for safe access. Water feed pole window cleaning system also to be provided by the property owner for safe cleaning of the high level glazing.

Gable to be cleaned by use of water fed pole system by competent well trained individual.

Risk Analysis:
No overhead cables or obstructions present on site.
Hazard: Fall from height - Pole fed system to be used at ground level - ***Risk is low.***
Hazard: Adverse weather conditions - System not to be used in high wind or adverse conditions - ***Risk is low.***

A full assessment has been carried out for the pole cleaning system and deemed ***low risk*** for persons suitability trained.

ROOFLIGHTS:
Rooflight window U-values to be adjusted in accordance with guidance given in BRE 443. Adjustment as follows:
70° = No adjustment to U-value
60° to 70° - +0.2 W/m²K for double glazing, +0.1 W/m²K for triple glazing
40° to 60° - +0.3 W/m²K for double glazing, +0.2 W/m²K for triple glazing
20° to 40° - +0.4 W/m²K for double glazing, +0.2 W/m²K for triple glazing
0° to 20° - +0.5 W/m²K for double glazing, +0.3 W/m²K for triple glazing
Taking into consideration BRE 443 all rooflight windows are to have an adjusted U-value of 1.4W/m²K.

DOOR & WINDOW SECURITY:
En Bloc door/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 befitted 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. All new windows and external doors to have egress window hinges and DPC on vertical jambs
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).
Sliding Doors
A sliding door should have a multi-point deadlocking system with 3 or more hook or similar bolts. To prevent removal of the door, an anti-lift device should be fitted. Shoot bolts, if used, should locate into the head of the frame.
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.

PROTECTIVE BARRIERS:
Protected barrier at top of staircase to be timber, minimum 900mm above floor level with max 99mm between spindles. Barrier to be securely fixed and capable of resisting loads calculated in accordance with BS 6399: Part 1: 1996 & in accordance with BS EN 1991-1-1 and associated PD 6688-1-1.

NEW TIMBER INTERNAL STAIRS - *constructed to requirements of BS5585*
Stairs to have an effective width of 900mm between handrails with going of 250mm and a rise of 203.8mm. 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. Agreement Certificate / details to be submitted to engineer for approval.

AIR LEAKAGE
All Protect VC Foil (to walls, hangers & coombs), Protect BarrIAir (to ceiling) & Protect FCM750 (to intermediate floor junction) membranes to be taped at all joints and together with Protect Tape. Membranes to provide a continuous sealed membrane around the entire house to minimise air leakage. No services to penetrate this layer, unless unavoidable (i.e. mechanical extract vent, drainage etc). All windows and doors are to be sealed with Pro Clima Contega SL sealing tape (tape installed onto unit prior to installation), once unit is installed within frame sealing tape is to be joined to Protect VF Foil to minimise air leakage. All openings to have 25mm Kingspan (or Quintherm equivalent) to reveals and lagges to minimise thermal bridging.

HEATING:
Every dwelling should have some form of fixed heating system, or alternative that is capable of maintaining a temperature of 21° C in at least 1 apartment and 18° C elsewhere, when the outside temperature is minus 1°.C.
All heating pipes are to be insulated with 'Tubolit' polythene pipe insulation (or similar equal)(in accordance with **BS5422:2009**) including those which are concealed out of view or in unheated spaces.
Radiators all fitted with thermostatic valves. Heated towel rails (600mm wide x 900mm high) fed from heating system and with immersion back-up. System to be designed by appointed heating engineer. Boiler to have a suitably positioned label of durable material, indelibly marked to indicate its limitations of use.

WRITTEN INFORMATION FOR HEATING CONTROLS:
Written information to be provided to occupier of the dwelling confirming the operation and maintenance of the heating, ventilation, cooling and hot water service system, any additional low carbon equipment installations and any decentralised equipment for power generation to encourage optimum energy efficiency. If an air conditioning system is installed in a dwelling the guidance to regulation 17 should be followed.

CONTROLS FOR WET SPACE HEATING AND HOT WATER SYSTEMS:
Independent time and temperature control of heating and hot water circuits should be provided along with a boiler interlock (refer to table below) to ensure that the boiler and pump only operate when there is a demand for heat.

Small dwellings: Zone controls are not considered necessary for single apartment or other small dwellings.
Large dwellings: For large dwellings with a floor area over 150 m2 independent time and temperature control of multiple space heating zones is recommended. Each zone (not exceeding 150 m2) should have a room thermostat, and a single multi-channel programmer or multiple heating zone programmers. For hot water systems in large dwellings, more than one hot water system should be considered e.g. a separately controlled second hot water cylinder or heat source or a separate distribution system from the same cylinder.
Hot water systems: A hot water system (other than for combi boilers with storage capacity 15 litres or less) should have controls that will switch off the heat source when the water temperature required by the occupants has been achieved and during periods when there is no demand for hot water. For hot water central heating systems this thermostat should be interconnected with the other controls which are needed to form a boiler interlock.

NEW DOWNLIGHTS:
All downlighters to be low energy LED (max 50 watt) recessed downlighters located at a maximum of 1 per 2m². Fire rated downlighters (providing min 30mins fire resistance to BS 476: Part 21 (Fire Rating)) to be installed within any ceiling with a supporting floor above, within any roof where the downlighter will be in close proximity to a PIR insulation and within the ceiling of an attic truss (or any ceiling void where the roof structure provides support to the floor below).
Astro DL cover intumescent hood to maintain fire resistance and allow for a continuous covering of roof insulation. Gaps on and around recessed downlighters to first floor ceiling to be sealed with caulk or fire proof expanding foam to limit air infiltration in accordance with BS 9250:2007.

EXTERNAL LIGHTS
Wall mounted external light fitting with PIR sensor and photocell to turn off during daylight. Fitting to be rated not more than 100 lamp-watts per light fitting or have an efficacy of at least 45 lumens per circuit-watt. A manual switch to be provided to override operation of automatic controls, in accordance with Domestic Building Services Compliance Guide for Scotland.

ENERGY EFFICIENCY:
Energy efficient light fitting. Luminous efficacy to be at least 45 lumens/circuit watt and a total output greater than 400 lamp lumens. in accordance with Domestic Building Services Compliance Guide for Scotland.

ELECTRICAL:
Final positions of all lights and plug socket outlets to be agreed on site with client. Electrical installation to be designed, constructed, installed and tested as such to comply with recommendations of BS 7671:2018, 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 BS EN 14604:2005, inter connected and installed in accordance with current Building Standards 'Scotland'. Electrical work to be certified by a member of SELECT or NIEIC only. A minimum of 100% 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 (such as compact fluorescent lamps 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.

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 1.7 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.

ELECTRIC POSITIONS:
Final positions of electrics to be confirmed on site by client **and installed in accordance with CM DESIGN ACCESS TO MANUAL CONTROL DRAWING.**

MD BOARD:
MDB with RCD breakers & EPC Certificate and Sustainability Statement above.

LOCATION OF ENERGY PERFORMANCE CERTIFICATE:
the energy performance certificate should be indelibly marked and located in a position that is readily accessible, protected from weather and not easily obscured. A suitable location would be a cupboard containing the gas or electricity meter or water supply stopcock.
Information to be provided for dwellings:
The energy performance certificate should display the following information:
• the postal address of the building for which the certificate is issued;
• building type;
• the name of the SBSA protocol organisation issuing the certificate (if applicable) and may include the member's membership number;
• the date of the certificate;
• the conditioned floor area of the dwelling;
• the main type of heating and fuel;
• the calculation tool used for certification;
• a specific indication of current CO2 emissions and an indication of potential emissions;
• a seven band scale in different colours representing the following bands of carbon dioxide emissions: A, B, C, D, E, F and G, where A = excellent and G = very poor;
• the approximate energy use expressed in kWh per m2 of floor area per annum;
• a list of cost-effective improvements (lower cost measures); and
• a statement to the effect of **'N.B. THIS CERTIFICATE MUST BE AFFIXED TO THE BUILDING AND NOT BE REMOVED UNLESS IT IS REPLACED WITH AN UPDATED VERSION'.**
The EPC produced at completion stage should be prepared/produced by a member of an approved body from data lodged on the register. The list of approved organisations can be accessed on the Building Standards Division website.

HIGH-SPEED ELECTRONIC COMMUNICATIONS NETWORK INFRASTRUCTURE:
Every building must be fitted with a BT telephone master socket or Fibre Optic cable point (*i.e. high-speed ready in-built physical infrastructure*) for connection to a high-speed electronic communication network. Additional telephone points or data points (Cat 6 etc) are to the clients discretion.

LABELLING FOR FIREPLACE:
Where a fireplace (including a flue box), 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 flue;
b. a chimney description sheet in accordance with BS EN 1442: 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 Main Street New Town*
The fireplace opening located in the	*name of room*
is at the base of a chimney with a designation string	*designation string*
and, for example, is suitable for a	*dfe gas fire*
Chimney liner	*xx mm diameter*
Installed on	*date*
Any other information (optional)	

SPILLAGE TEST:
NOTE: As this is a large room where there is supply air vents a satisfactory spillage test is to be carried out in accordance with BRE Paper IP 7/94 and the Building Standards Domestic Technical Handbook 3.17.8.

CARBON DIOXIDE MONITORING:
Sense Air Sense Carbon Dioxide sensor and monitor to be installed in the principal bedroom of any dwelling where the infiltration air rate is less than 15m³/hr/m² @ 50Pa. The monitor is to be mains operated. This monitor is to raise occupant awareness of CO2 levels and air quality in their home. Guidance and operation instructions, including options for improving ventilation when indicated as necessary by the monitor, are to be provided to the occupant.
The monitor is to be mounted on any wall at a height of 1.5m within the principal bedroom and should be sited more than 150mm from any ceiling, wall junction or opening, more than 1m from the bed-head and should not be near any air vent or obstruction (curtain, furniture etc).
The monitor is to comply with European Directive 2006/95/EC - Low Voltage Directive and/or the European Directive 1999/5/EC - Radio and Telecommunication Terminal Equipment Directive.

CARBON MONOXIDE MONITORING:
Carbon monoxide detectors should comply with BS EN 50291-1:2018 & BS EN 50292:2013 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 users when its working life is due to expire. Detectors to include an integral sounder.
Carbon monoxide detection system to be positioned as follows:
- 1 carbon monoxide detector in every space containing a fixed combustion appliance (excluding an appliance used solely for cooking
- 1 carbon monoxide detector to provide early warning to high risk accommodation, that is, a bedroom or principal habitable room, where a flue passes through these rooms.

Detectors to be positioned as follows:
- 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
- within the space containing the combustion appliance - sited between 1m and 3m from the appliance.

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 LD1 system will be installed in all dwellings, comprising of:
• at least 1 *smoke alarm (Optical) & 1 sounder* installed in the principal habitable room;
• at least 1 *smoke alarm (Ionisation) & 1 sounder* in every circulation space such as hallways and landings
• at least 1 *smoke alarm (Optical) & 1 sounder* in every access room serving an inner room
• 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 5839-6:2019, 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 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