

**BUILDING CONTROL
APPROVED
WITH CONDITIONS**

General Building Specification & Construction Notes

(To be read in conjunction with Building Regulation drawings, Structural Engineers details, drawings and calculations.)

Client

Golowji Ltd

Proposed 4 dwellings

Address:

**Land Off Leat Road
Pendeen
Penzance**

Job number

14097 Rev B



Amendments REV A BC/29335

In accordance with BBS Building Control' Approved Plan Check report, dated 10th July 2015, the following amendments were carried out:

1. A1/A2 – From a perusal of the mining report and details, it appears that the foundations & floor slab will require designing by a structural engineer. Provide details and amend plans/details/specification.

Request to be conditioned and to be dealt with by a structural engineer, drawings amended and specification amended to omit standard slab and strip foundations, to avoid any confusion and details of suitable foundations and slab to be provided by structural engineer prior to commencement of foundations
2. A1 – Advise may be required from engineer with regards the stair trimming.

Request to be conditioned, note added to plans to ensure its addressed prior to commencement of foundations, and to be dealt with by a structural engineer or frame supplier
3. A1 – Clarify the construction of the chimneys shown along with their support and weather proofing.

Chimneys to be false chimneys and suitable to take a class 1 flue from the wood burner, drawings amended to include detail and spec note 15.2.2 added
4. A2 - A satisfactory mining report is required following the mining engineers inspection of the foundation trenches.

Request to be conditioned and to be done prior to pouring of concrete foundations/ slab
5. B3/E1 – The end of the party wall/cavity between plot 2 & 3 should have suitable fire/sound stopping.

Drawings amended to include fire sock for sound and fire stopping
6. C1 – As per the Contamination Land Study provided, further assessment is required to confirm satisfactory, or suitable remediation scheme to be provided.

Request to be conditioned, and to be addressed prior to commencement of foundations
7. E1/L1 – The robust details and the spec notes appear to conflict with regard the cavity (one shows clear cavity, other has cavity fill to comply with the SAP calculation).

Drawings, notes and spec note 5.4.13 amended to include insulation in party wall cavity, in accordance with Robust details specifications
8. H4 - South West Water consultation carried out and awaiting SWW response.

Await response
9. J – Indicate boiler flue terminations.

Drawings and spec note 15.1.7 added to indicate that flues from boilers are to pass through roof and terminate to GAS SAFE Regulations
10. M4 – Identify the width of the WC compartments.

laurence associates
planning/architecture/landscape

Widths added to plans for clarity

Amendments REV B BC/29335

Design change of heating system, so new SAP, specification and drawings amended to suit new Air source heating system and adjusted thermal elements:

1 GENERAL WORKS

- 1 All Works to be in accordance with the 2010 Building regulations, and all amendments, and are to be to the satisfaction of the agent. All works to be in accordance with the Building Regulations 2010, and subsequent amendments
- 2 All materials and workmanship to be in accordance with the current British Standards and Codes of Practice.
- 3 The Construction (Design & Management) Regulations 2015 (C.D.M) apply to this project.
- 4 Works which are notifiable are those that last more than 30 working days and have more than 20 workers working simultaneously at any point in the project; or exceed 500 person days. Where the project is notifiable, the **client** must give notice in writing to the HSE as soon as is practicable before the construction phase begins
- 5 Clients are organisations or individuals for whom a construction project is carried out and should make suitable arrangements for managing the project, this includes; other duty holders are appointed, sufficient time and resources are allocated, relevant information is prepared and provided to their duty holders; the principal designer and principal contractor carry out their duties; welfare facilities are provide.
- 6 Domestic clients are people who have construction work carried out on their own home, or the home of a family member that is **not** done as part of a business whether for profit or not are in the scope of CDM 2015, but their duties as a client are normally transferred to: the contractor, on a single contract project; or; the principal contractor, on a project involving more than one contractor. However, the domestic client can choose to have a written agreement with the principal designer to carry out the client duties.
- 7 Designers are those who as part of a business, prepare or modify designs for a building, product or system relating to construction work. When preparing or modifying designs, to eliminate, reduce or control foreseeable risks that may arise during construction; and the maintenance and use of a building once it is built. Furthermore, provide information to other members of the project team to help them fulfil their duties.
- 8 Principal Designers are designers appointed by the client in projects involving more than one contractor. They can be an organisation or an individual with sufficient knowledge, experience and ability to carry out the role. Plan manage monitor and coordinate health and safety in the preconstruction phase of a project. This includes: identifying, eliminating or controlling foreseeable risks; ensuring designers carry out their duties. Prepare and

provide relevant information to other duty holders. Provide relevant information to the principal contractor to help them plan, manage, monitor and coordinate health and safety in the construction phase.

- 9 Principal Contractors are appointed by the client to coordinate the construction phase of a project where it involves more than contractor. The duties are to plan, manage, monitor and coordinate health and safety in the construction phase of a project. This includes: liaising with the client and principal designer; preparing the construction phase plan; organising cooperation between contractors and coordinating their work. Ensuring suitable site inductions are provided; reasonable steps are taken to prevent unauthorised access, workers are consulted and engaged in securing their health and safety; and welfare facilities are provided.
- 10 Contractors are those who do the actual work and can be either an individual or a company. Their duties are to plan, manage, monitor, construction work under their control so that it is carried out without risks to health and safety. For projects involving more than one contractor, coordinate their activities with others in the project team in particular; comply with directions given to them by the principal designer or principal contractor. For single-contract projects, prepare a construction phase plan.
- 11 Workers are the people who undertake the control of contractors on a construction site. They must, be consulted about matters which affect their health, safety and welfare; take care of their own health and safety and others who may be affected by their actions; report anything they see which is likely to and danger either their own health and safety; cooperate with their employers, fellow workers, contractors and other duty holders.
- 12 Key elements managing the risks by applying the general principles of prevention; appointing the right people and organisations at the right time; making sure everyone has the information, instruction, training and supervision they need carry out their jobs in a way that secures health and safety; duty holders cooperating and communicating with each other and coordinating their work; and consulting workers and engaging with them to promote and develop effective measures to secure health, safety and welfare.
- 13 The Contractor is to comply with all the relevant Health and Safety legislation which governs the provision of his duties, including the construction (Design & Management) Regulation 2015, the offices, shops and railway premises Act, the control of substances Hazardous to Health 2002, the health and safety at work act 1974, the management of Health and Safety at Work Regulations 1992, the Work Place regulations 1992, the Personal Protective

Equipment Regulations, Scaffold Regulations, and all other controlling legislation relating to the handling, use and storage of materials and plant on site. All persons on site are to receive proper instruction and training with regard to the tasks allocated to them, and, where appropriate, must hold relevant qualifications

- 14 **SAP 2012: The Approved document L1A 2013 edition deals with the energy efficiency requirements in new dwellings. A S.A.P 2012 calculation to be provided and approved prior to commencement of work. Should any changes occur during the construction process to any specified thermal producing elements you will need to notify the appropriate bodies concerned.**
- 15 **NOTE: SAP's based on an AIR PREASURE TESTS of:**
Plot 1 – 4 on Completion
Plot 2 – 4.5 on Completion
Plot 3 – 4.5 on Completion
Plot 4 – 4.5 on Completion
- 16 The person who is responsible for carrying out the building works needs to demonstrate that an appropriate system of site inspection is in place to ensure that all construction work is being built in accordance with the Robust details, by way of producing a report demonstrating that the construction checklists included in the 'Limiting thermal bridging and air leakage: Robust construction details for dwellings and similar buildings.' Has been completed and show satisfactory results.
- 17 Positions and depths of all existing foul and surface water drains affecting the proposal to be determined before work commences
- 18 Routes of all existing underground services within the vicinity or proposal to be determined before work commences
- 19 The contractor is to ensure that all buried conduits; cables and pipe runs are accurately traced prior to commencement of the work and is to ensure that those services affected by the proposed works are disconnected and safely isolated.
- 20 All dimensions and drawings are as accurate as possible but contractors are advised to check all dimensions, levels, angles, roof pitches etc. before commencement of work. The agent will accept no responsibility for the contractor's failure to do this. All forms of construction and materials specified throughout the detailed drawings and construction notes should meet with the requirements of the current Building Regulations. Similar or alternative materials may only be used if they meet with the Local Authority approval.
- 21 These drawings and the designs shown there on are the exclusive property of the Agent and without their express

written authority any communication of their content or use by a third party is a copyright infringement.

- 22 These drawings and the forms of construction indicated do not constitute the approved documents until Building Regulation approval and/or Planning Permission has been granted. If any construction work is commenced prior these approvals being granted it is undertaken at the client's/contractor's own risk.
- 23 For acting on behalf of the client, the agent accepts no responsibility for any work carried out prior to the receipt of Building Regulation approval and/or Planning Permission and approved detailed drawings or for any work not carried out in strict compliance with the Building Regulations.
- 24 Contractors tendering for these works are advised to ensure that their costs are corrected as necessary to comply the Building Regulation approved detailed drawings once granted, ensuring that any amendments that may have been included since application stage are also taken into consideration.
- 25 Contractors are to refer and work to Structural Engineer's calculations and details where they form part of the Building Regulation approved drawings and documents and ensure that they have copies of all relevant drawings, details and documents.
- 26 The contractor shall be responsible for all insurances against all risks on site throughout the duration of the contract including public liability, fire, theft, and any damage caused by the contractor throughout the duration of the contract.
- 27 The contractor shall make arrangements for the safe, secure and proper storage of all materials on site. The contractor is to avoid damage to public and private property and is to make good or pay for re-instatement of any damage caused.
- 28 The site is to be kept cleared of all waste materials and debris at all times and is to be left in a clean and tidy state.
- 29 All statutory undertakers and services must be notified of any proposed works required. The contractor must ensure that all notices (e.g. Demolition, Building Regulation inspection) are given as required and that all relevant licenses obtained and relevant notices given (EG scaffolding, skips on the highway etc) and that all safety barriers etc are provided.
- 30 If any construction work is commenced prior to the relevant approvals being granted it is undertaken at the client/contractor's own risk.
- 31 Do not scale these drawings. If in doubt – ask!

2 SITE WORKS & DEMOLITION

- 1 Clear site to area of proposed new dwelling ready for the excavation of the new foundations.
- 2 Excavate site as necessary to give correct levels etc. in accordance with the proposed finished floor levels.
- 3 Care must be exercised during the course of excavation for any disturbance to any existing drainage system or any other services that may be assumed to be in the area.
- 4 Unless specified as being retained, clear all rubbish, debris and spoil from site
- 5 Any damage to be made good by the contractor

3.0 PROPOSED FOUNDATION & SUBSTRUCTURE – to be in accordance with Structural Engineers recommendations due to site conditions and previous mining activity

3.1 GENERAL

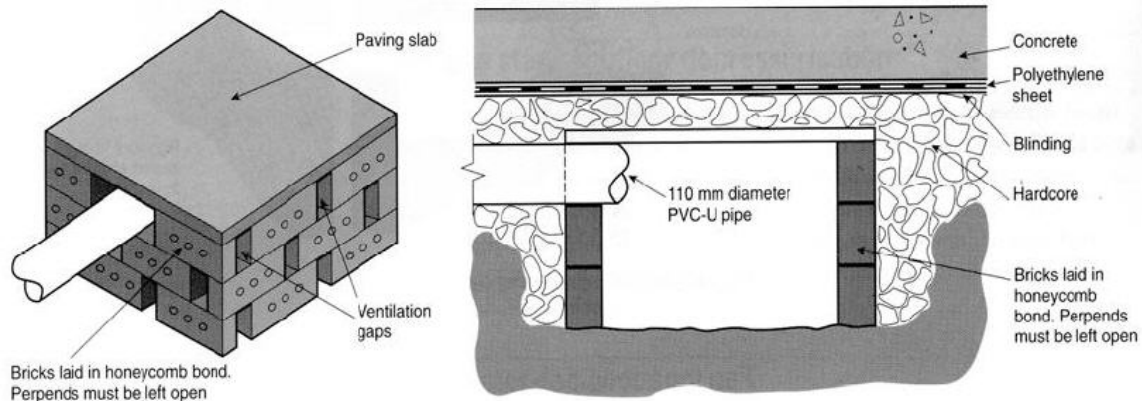
- 1 Remove all vegetable soil from site of the extension to a depth sufficient to prevent later growth
- 2 Before work commences on site, trial holes to be excavated to a suitable depth to give minimum 100 KNm³ bearing pressure
- 3 Refer to Mining survey Consultants report, contaminated land Report or Structural Engineers report if applicable and report back to agent before works proceed should there be any adverse conditions.
- 4 Prior to commencement of work ensure that all load bearing walls necessary are identified and confirmed prior to commencement of work to this item.
- 5 All structural details to be approved by Building Control prior to commencement of works to this item.
- 6 All foundations to be inspected and approved by Building Control and constructed in accordance with structural engineers drawings, calculations and details where applicable.
- 7 Actual depths and type of foundations to be determined by ground conditions on site and as designed by structural engineer. It is advised that site investigations (SI's) are undertaken to determine existing ground conditions before works commence. Doubt or concern regarding existing ground conditions, should be discussed with building control and or structural engineer. . Adverse ground conditions during excavation to be reported back to agent before work proceeds

3.2 FOUNDATIONS – to be designed by structural engineer due to previous mining activity

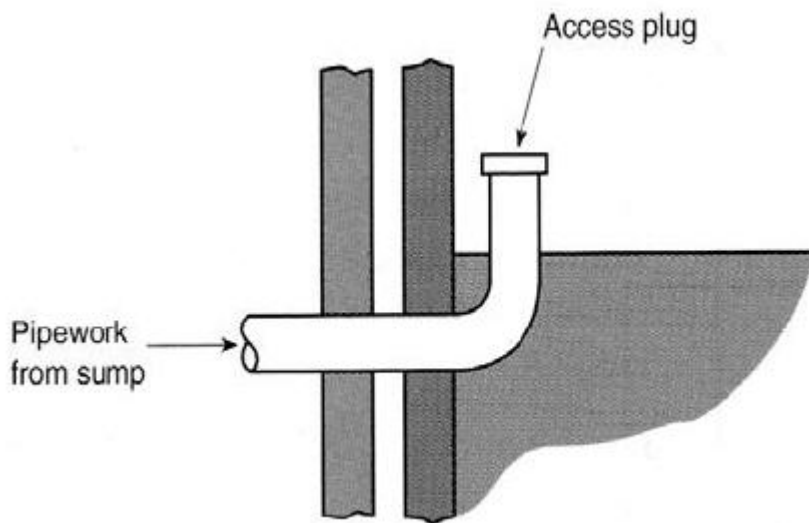
3.3 CONCRETE SLAB – to be designed by structural engineer due to previous mining activity

3.4 RADON SUMP

- 1 Construct a radon sump using bricks laid in a honeycomb bond so as to form a box with external dimensions of 600 x 600mm around the edge of the pipe.
- 2 Sump can be covered with a 600 x 600mm paving slab to provide permanent formwork to support the floor slab
- 3 Fill around the sump with mortar. Mortar to be used for horizontal joints
- 4 All perpends (vertical joints) to be left open



- 6 110mm diameter PVC-U pipe work from the sump with standard coupling joints sealed and airtight.
- 7 Pipe to terminate from the external wall, and be located to the rear of the dwelling or at a re-entrant corner.
- 8 This requirement is necessary should a fan or passive stack ventilation be required at a later date. Until such time that a radon test has been undertaken, the pipe should be capped off just above ground level with an access plug to prevent vermin and rain penetration.
- 9 Note: The sump and pipe work are only installed as a fallback measure and does not provide any radon removal until such a time a fan is installed or until the pump is connected to a passive stack system



4 DPC'S, STEPPED CAVITY TRAY, D.P.M'S/RADON BARRIERS

- 1 Ensure D.P.C's, D.P.M's/Radon barriers are fully protected during construction.
- 2 Install a 1200 gauge D.P.M under concrete floor slab to prevent radon gas entering the structure, laid on 25mm sand blinding on consolidated hardcore minimum 100mm thick and compacted in layers not exceeding 225mm thick
- 3 Install a further 1200 gauge DPM above the concrete slab that continues up over inner dolly course and then drops down the cavity to the outside like a cavity tray, install a cavity tray over to protect
- 4 D.P.M lapped over and taped to D.P.C to prevent radon ingress. D.P.C 450mm wide out to external leaf, where the Slab and D.P.M bears on the blockwork linking with stepped cavity tray out to external
- 5 Provide proprietary Pitch Polymer high performance stepped cavity trays under the inner leaf stepping down to the outer leaf linking with the D.P.C out to external. Cavity trays to rise at least 140mm from the outer to the inner leaf, to be self supporting or fully supported and have joints and sealed with water tight stop ends. The rise and the cavity should be at least 100mm.
- 6 Lay high performance horizontal D.P.C. in external leaf of cavity wall to be a minimum of 150mm above ground level.
- 7 Lay high performance horizontal D.P.C. under internal partitions

5 EXTERNAL WALLS

5.1 GENERAL INSULATION NOTES

- 1 All insulation materials to have the relevant third party certification.
- 2 Insulation material to be protected from moisture and damage during the construction
- 3 Site in exposure zone 4 in accordance with B.S 8104

5.2 PROPOSED EXTERNAL WALL TYPE 1: TIMBER CAVITY WALL - STONEWORK

- 1 To BS 5268-2 the structural use of timber. Permissible stress design, materials and workmanship and BS 5268-6 Code of Practice for timber framed walls or DD ENV 1995-1-1 Eurocode 5 Design of timber frame structures Part 1.1 General rules and rules for buildings and DD ENV 1995-1-2 General rules.
- 2 450mm timber cavity walling to consist of CLS 140 x 38mm sw framing studs at maximum 600ctr, clad with 9.5mm WBP sheathing ply, with Glidevale Protect TF200 Thermo breather membrane. 50mm clear unvented cavity, fitted with Surecav cavity spacer system. Outer leaf to be 250mm natural stonework in line with approved planning drawings and to conform to BS B390 (1991).
- 3 Panels insulated with 140mm ISOVER Frame Batt 032 (Thermal Conductivity - 0.032) between studs No other insulation material acceptable unless it has the same or better thermal performance than specified. All changes need to be provided to the SAP assessor.
- 4 Wall construction giving U-VALUE OF 0.23W/M2K
- 5 Stonework tied to timber frame using stainless steel timber frame wall ties which fully permits differential movement at 600c/s horizontally, 450 c/s vertically. Wall ties spaced at jambs of openings at a max. 300mm vertically within 300mm of the masonry reveal to B.S 5268-6.2
- 6 Internally, frame to be finished with vapour control membrane, then fix 38 x 38mm treated timber battens to the timber uprights to form a service void. Finish with 1 layer of 12.5mm plasterboard or alternatively 'Duplex' plaster board if vapour control membrane is not used, joints and abutments filled, 3-5mm hard skim finish. Plasterboard fixed with 3.9 x 30mm countersunk screws.
- 7 Build in proprietary perpend vents in external leaf of the stonework to bottom of outer leaf, at 1.8m centres.

5.3 PROPOSED EXTERNAL WALL TYPE 2: TIMBER CAVITY WALL – RENDER

- 1 To BS 5268-2 the structural use of timber. Permissible stress design, materials and workmanship and BS 5268-6 Code of Practice for timber framed walls or DD ENV 1995-1-1 Eurocode 5 Design of timber frame structures Part 1.1 General rules and rules for buildings and DD ENV 1995-1-2 General rules.
- 2 Ensure blockwork has fully dried out before plastering, and provide shrinkage control joints as recommended by the block manufacturer and in accordance with B.S.5628 part 3.
- 3 Wall finished externally with smooth sand cement render in accordance with the approved planning drawings. Provide stainless steel render mesh stop and corner beads to all perimeters, breaks and abutments, fixed using stainless steel screws and washers.
- 4 300mm timber cavity walling to consist of CLS 140 x 38mm sw framing studs at maximum 600ctrs, clad with 9.5mm WBP sheathing ply, with Glidevale Protect TF200 Thermo breather membrane. 50mm clear unvented cavity. Outer leaf to be 100mm dense block.
- 5 Panels insulated if required by client, albeit being a garage it's not required, with 140mm ISOVER Frame Batt 032 (Thermal Conductivity - 0.032) between studs No other insulation material acceptable without unless it has the same or better thermal performance than specified. All changes need to be provided to the SAP assessor.
- 6 Wall construction giving U-VALUE OF 0.23W/M2K
- 7 Block tied to timber frame using stainless steel timber frame wall ties which fully permits differential movement at 600c/s horizontally, 450 c/s vertically. Wall ties spaced at jambs of openings at a max. 300mm vertically within 300mm of the masonry reveal to B.S 5268-6.2
- 8 Internally finish with 1 layer of 12.5 'Duplex' plasterboard, joints and abutments filled, finished with 3-5mm hard skim finish. Plasterboard fixed with 3.9 x 30mm countersunk screws.
- 9 Build in proprietary perpend vents in external leaf of the block work to bottom of outer leaf, at 1.8m centres.

5.3 PROPOSED EXTERNAL WALL TYPE 3: TIMBER CAVITY WALL – SLATE HANGING

- 1 To BS 5268-2 the structural use of timber. Permissible stress design, materials and workmanship and BS 5268-6 Code of Practice for timber framed walls or DD ENV 1995-1-1 Eurocode 5 Design of timber frame structures Part 1.1

General rules and rules for buildings and DD ENV 1995-1-2 General rules.

- 2 Wall finished externally with natural slate in accordance with the approved planning drawings.
- 3 Fix 25 x 50mm vertical treated softwood battens at maximum of 600 centres and any additional packing out battens as necessary depending on wall construction method chosen, e.g. 100/215mm blockwork, then fix 25x50mm horizontal counter battens at ctrs specified by slate manufacturer.
- 4 Provide stainless steel rodent stop beads to be fixed at the bottom of openings to allow airflow.
- 5 415mm timber cavity walling to consist of CLS 140 x 38mm sw framing studs at maximum 600ctrs, clad with 9.5mm WBP sheathing ply, with Glidevale Protect TF200 Thermo breather membrane. 50mm clear unvented cavity. Outer leaf to be 215/100mm dense block.
- 6 Panels insulated if required by client, albeit being a garage it's not required, with 140mm ISOVER Frame Batt 032 (Thermal Conductivity - 0.032) between studs No other insulation material acceptable without unless it has the same or better thermal performance than specified. All changes need to be provided to the SAP assessor.
- 7 Wall construction giving U-VALUE OF 0.23W/M2K
- 8 Block tied to timber frame using stainless steel timber frame wall ties which fully permits differential movement at 600c/s horizontally, 450 c/s vertically. Wall ties spaced at jambs of openings at a max. 300mm vertically within 300mm of the masonry reveal to B.S 5268-6.2
- 9 Internally finish with 1 layer of 12.5 'Duplex' plasterboard, joints and abutments filled, finished with 3-5mm hard skim finish. Plasterboard fixed with 3.9 x 30mm countersunk screws.
- 10 Build in proprietary perpend vents in external leaf of the block work to bottom of outer leaf, at 1.8m centres.

5.4 PROPOSED EXTERNAL WALL TYPE 4: PARTY WALL - TIMBER CAVITY WALL (in accordance with Robust Detail E-WT-2) See Appendix for Purchase statements

- 11 To BS 5268-2 the structural use of timber. Permissible stress design, materials and workmanship and BS 5268-6 Code of Practice for timber framed walls or DD ENV 1995-1-1 Eurocode 5 Design of timber frame structures Part 1.1 General rules and rules for buildings and DD ENV 1995-1-2 General rules.
- 12 250mm timber cavity walling to consist of twin stud walling of CLS 90 x 38mm sw framing studs at maximum 600ctrs, clad with 9.5mm WBP sheathing ply, filled with min 90mm ISOVER frame Batt 032 between studs, (60mm min

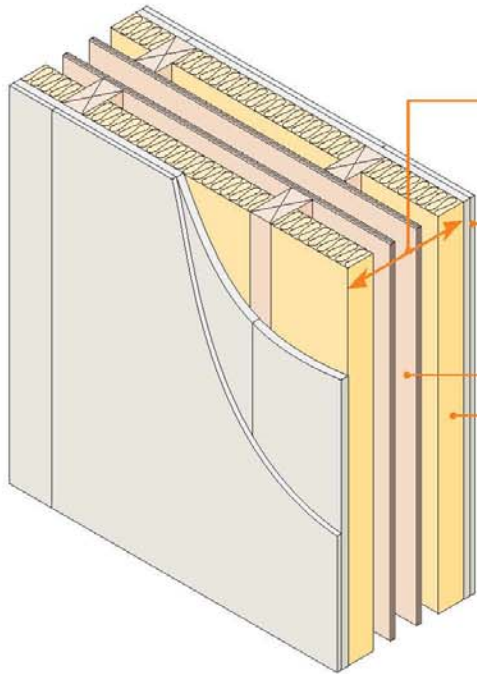
mineral wool batts or quilt, density 10-60kg/m³ to both sides, material may be unfaced, paper faced or wire reinforced. Ties between frames not more than 40 x 3mm, at 1200 min centres horizontally, one row of ties per storey height vertically. Minimum 240mm between inner faces of wall linings, 50mm min Gap between studs, (must not be bridged by any bracing).

- 13 Cavity filled with 50mm mineral wool insulation rolls or batts with a density of 18 – 40 kg/m³. Ensure insulation thickness is no greater than 10mm wider than cavity width to avoid excessive compression of the insulation.
- 14 Wall construction giving U-VALUE OF 0.0W/M²K
- 15 Internally finish with 1 layer of 19mm Gypsum Plank and then fix a further layer of 12.5mm plaster board with staggered joints (total nominal mass per unit area 22kg/m³) both sides, fixed with 3.9 x 30/45mm countersunk screws, finished with 3-5mm hard skim finish.

Separating Wall – Timber Frame

E-WT-2™

- With sheathing board ■
- Twin timber frames ■



Wall width	240mm (min) between inner faces of wall linings. 50mm (min) gap between wall panels
Wall lining	- 2 or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m ²), both sides - all joints staggered
Sheathing	9mm (min) thick board
Absorbent material	60mm (min) mineral wool batts or quilt (density 10 – 60 kg/m ³) both sides. Material may be unfaced, paper faced or wire-reinforced
Ties	Ties between frames not more than 40mm x 3mm, at 1200mm (min) centres horizontally, one row of ties per storey height vertically
External (flanking) wall	Outer leaf masonry with minimum 50mm cavity

E-WT-2™
Separating Wall – Timber Frame

Note: This specification is intended for use where the extent of sheathing required to the cavity face of the separating wall is greater than that permitted for E-WT-1™

Structural framing details may vary slightly between different manufacturers and this is permitted, however, all dimension specifications within this robust retail™ must be adhered to.

Separating wall cavity insulation (optional)

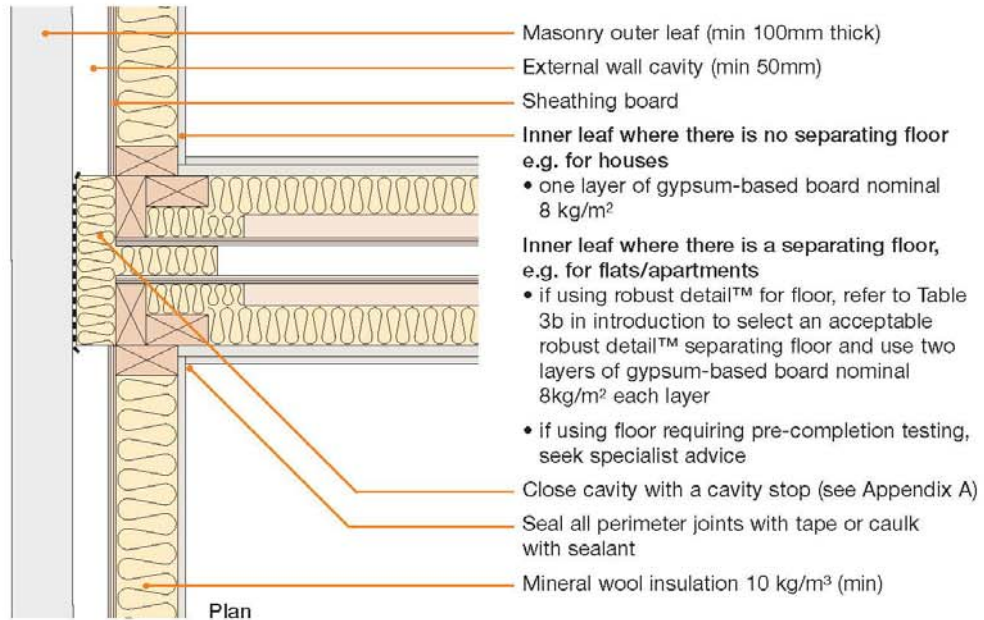
The cavity may be insulated with mineral wool rolls or batts with a density of 18 – 40 kg/m³. Ensure insulation thickness is no greater than 10mm wider than cavity width to avoid excessive compression of the insulation.

- DO**
- Keep wall linings at least 240mm apart
 - Ensure that the 50mm (min) gap between the wall panels is maintained
 - Ensure quilt or batts cover whole lining area, fitting tight between studs without sagging
 - Ensure that all cavity stops/closers are flexible or are fixed to one frame only
 - Make sure there is no connection between the two leaves except where ties are necessary for structural reasons (see above)
 - Stagger joints in wall linings to avoid air paths
 - Seal all joints in outer layer with tape or caulk with sealant
 - Refer to Appendix A

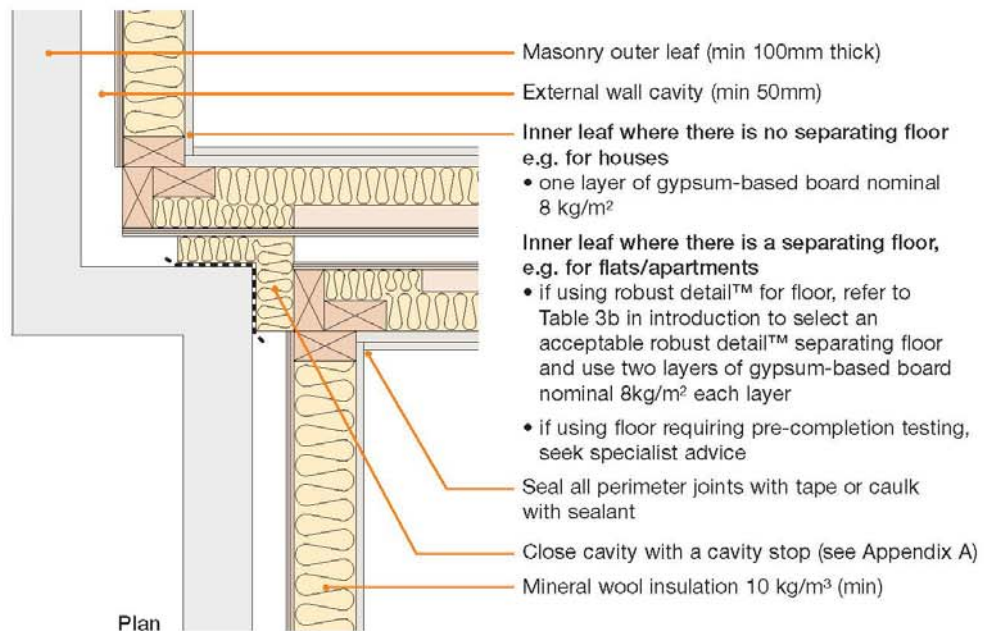
Separating Wall – Timber Frame

E-WT-2™

1. External (flanking) wall junction



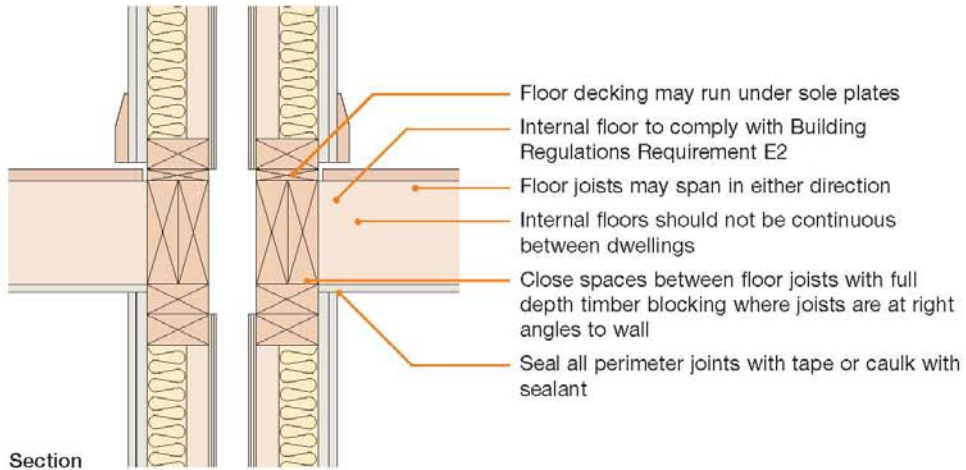
2. Staggered external (flanking) wall junction



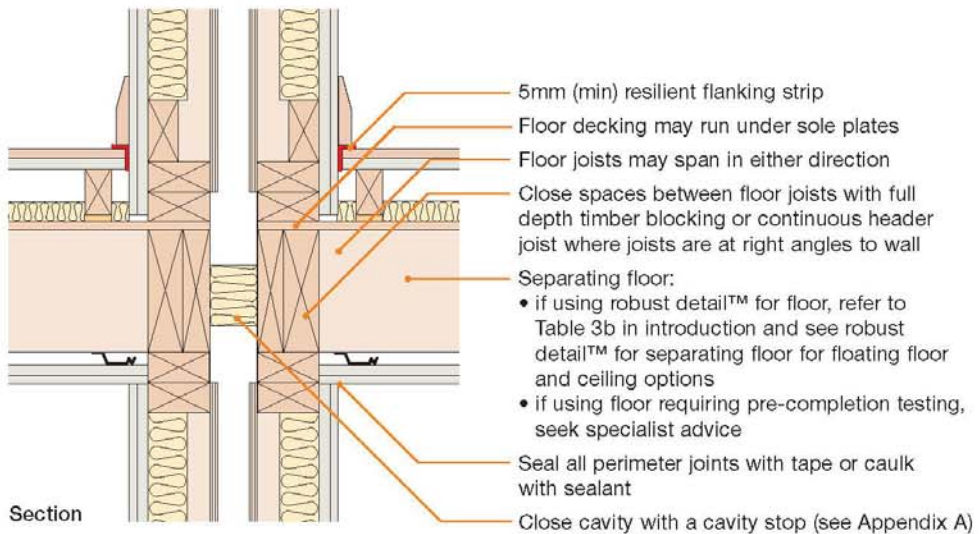
Separating Wall – Timber Frame

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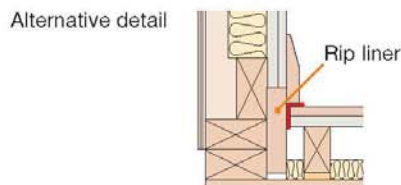
3. Internal floor junction



4. Separating floor junction



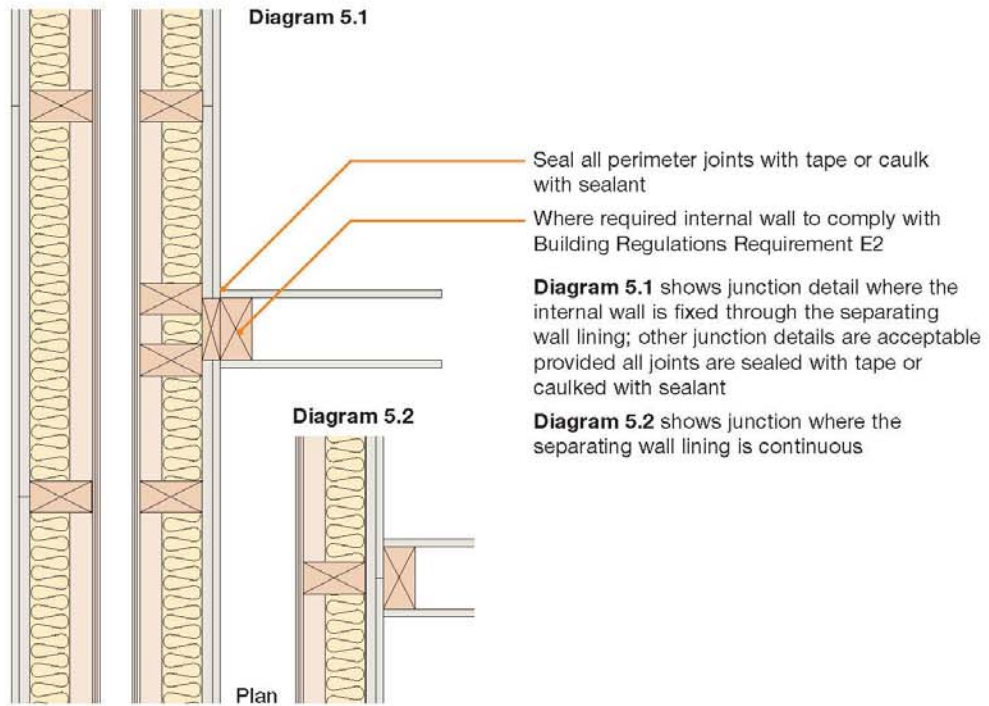
Sketch shows E-FT-1™ type separating floor



Separating Wall – Timber Frame

E-WT-2™

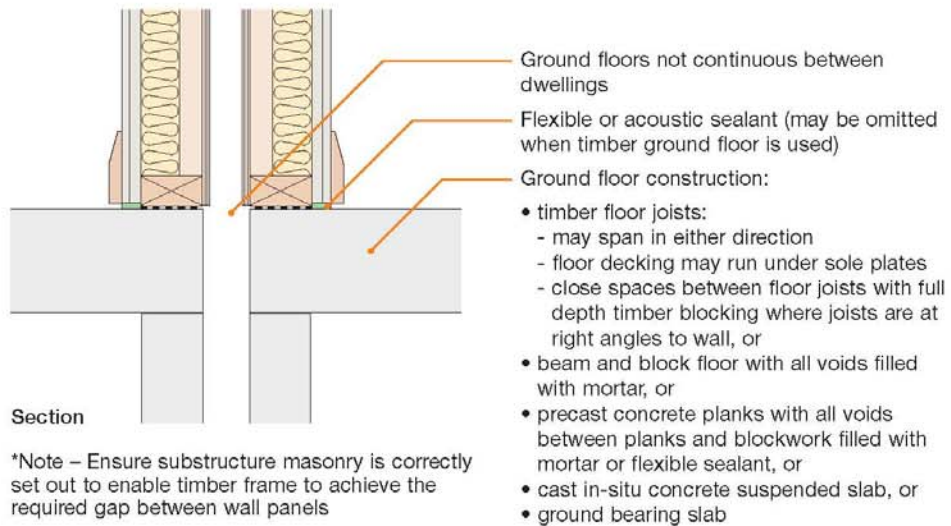
5. Internal wall junction



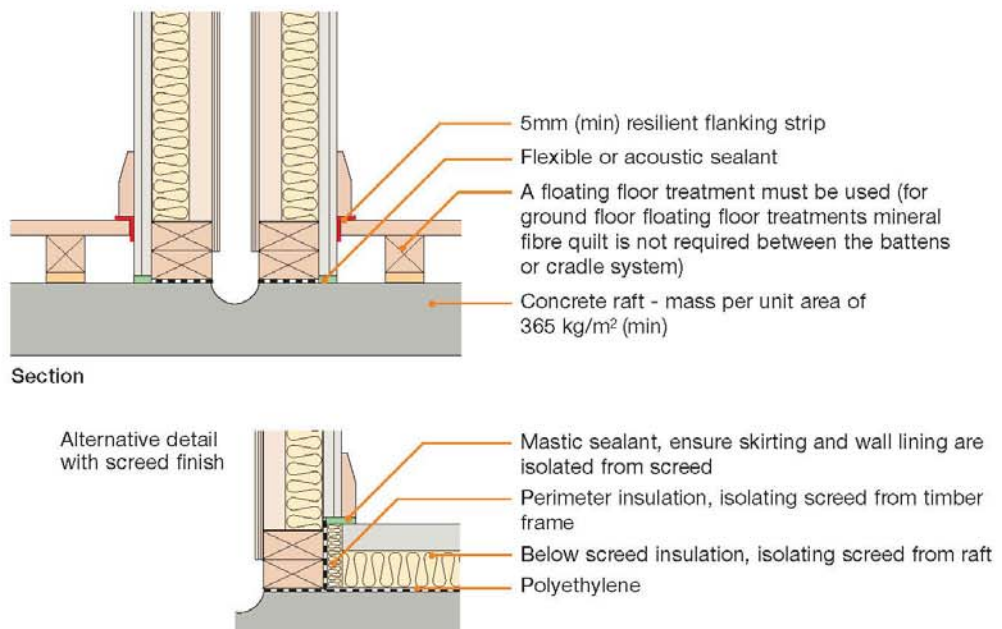
Separating Wall – Timber Frame

E-WT-2™

6. Ground floor junction: timber floor, beam and block, precast concrete plank, cast in-situ concrete suspended slab or ground bearing slab



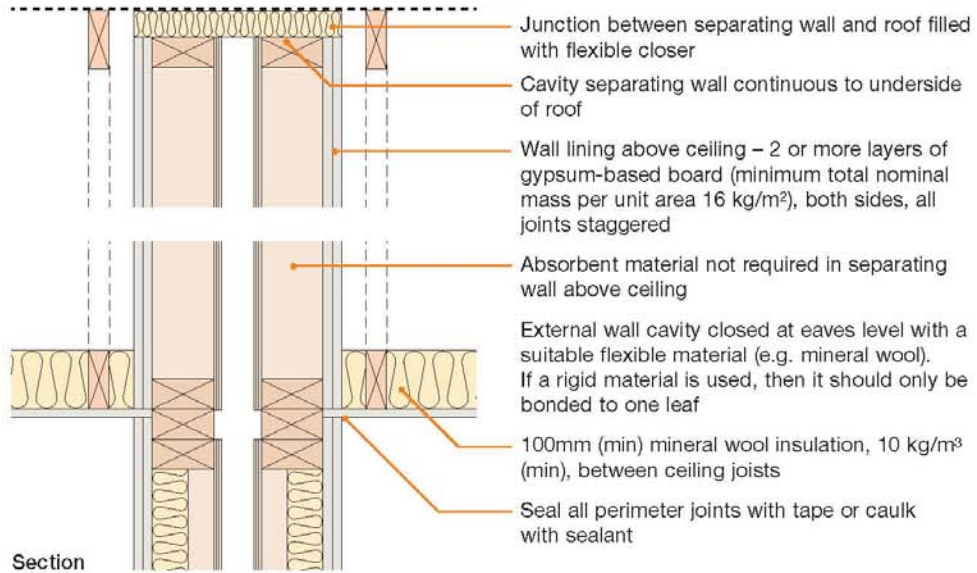
7. Raft foundation



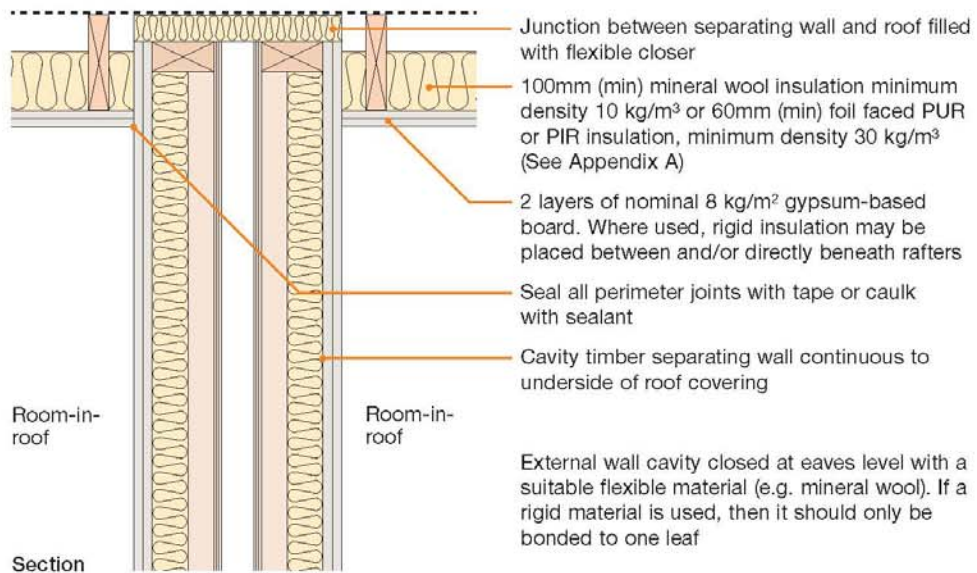
Separating Wall – Timber Frame

E-WT-2™

8. Roof junction - pitched roof with no room-in-roof



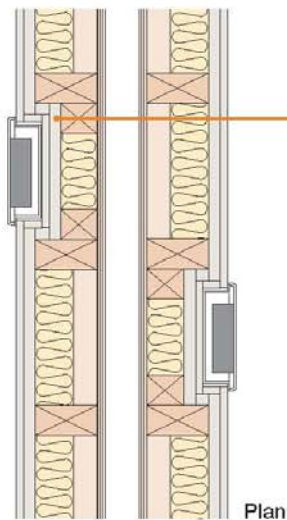
9. Roof junction - pitched roof with room-in-roof



Separating Wall – Timber Frame

E-WT-2™

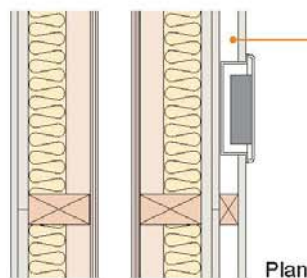
10. Services and sockets in the separating wall



9.1 – electrical sockets, switches, etc.

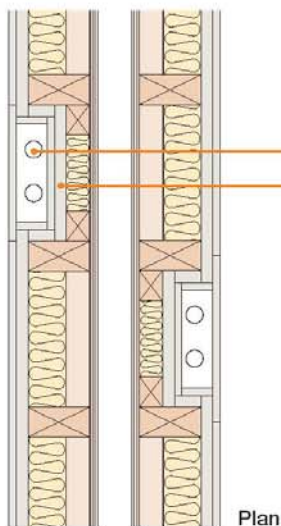
Provide two or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m²) to enclose electrical boxes

Stagger sockets, switches, etc. on each side of the wall such that they are not positioned in opposite bays



Alternatively provide a service void on surface of separating wall. This is the preferred method where more than one socket, switch, etc. are close together, e.g. in a kitchen.

Studs or battens used to create the service zone should be securely fixed back to the separating wall structure



9.2 – piped services

Service duct within separating wall

Provide two or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m²) to enclose pipes

Stagger services on each side of wall such that they are not positioned in opposite bays

Note: this detail is not applicable for SVPs or gas pipes.

Separating Wall – Timber Frame

E-WT-2™

CHECKLIST (to be completed by site manager/supervisor)

Company: _____

Site: _____

Plot: _____ Site manager/supervisor: _____

Ref.	Item	Yes (✓)	No (✓)	Inspected (initials & date)
1.	Are wall linings at least 240mm apart?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
2.	Are sheathing boards at least 50mm apart?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
3.	Is absorbent material at least 60mm thick?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
4.	Does absorbent material cover whole lining area except above ceiling line in roof void zone?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
5.	Are all joints in wall lining staggered?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
6.	Is separating wall lining correct mass per unit area on both sides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
7.	Are all joints sealed with tape or caulked with sealant?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
8.	Are services installed in accordance with sketches 9.1 and 9.2?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
9.	If there is a separating floor (e.g. in flats/apartments) has the resilient flanking strip been provided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
10.	Is separating wall satisfactorily complete?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

Notes (include details of any corrective action)

Site manager/supervisor signature

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6 INTERNAL WALLS

6.1 INTERNAL WALLS TYPE 1 -TIMBER - PLASTERBOARD - Uninsulated

- 1 To BS 5268-2 the structural use of timber. Permissible stress design, materials and workmanship and BS 5268-6 Code of Practice for timber framed walls or DD ENV 1995-1-1 Eurocode 5 Design of timber frame structures Part 1.1 General rules and rules for buildings and DD ENV 1995-1-2 General rules.
- 2 Timber walling of CLS 90 x 38mm sw framing studs at maximum 600ctrs finished to both sides with 1 layer of 12.5 Gypsum plasterboard, joints and abutments filled, 3-5mm hard skim finish.

6.2 INTERNAL WALLS TYPE 2 -TIMBER - PLASTERBOARD - Insulated

- 1 To BS 5268-2 the structural use of timber. Permissible stress design, materials and workmanship and BS 5268-6 Code of Practice for timber framed walls or DD ENV 1995-1-1 Eurocode 5 Design of timber frame structures Part 1.1 General rules and rules for buildings and DD ENV 1995-1-2 General rules.
- 2 Internal walls between bedrooms, or between rooms containing a water closet and between these rooms and other habitable rooms within a dwelling i.e. lounge to be constructed from timber walling of CLS 90 x 38mm sw framing studs at maximum 600ctrs insulated with a minimum 25mm absorbent layer of unfaced mineral wool batts to a minimum density of 10kg/m³. Finished to both sides with 1 layer of 12.5mm Gyproc wallboard ten plasterboard, joints and abutments filled, 3-5mm hard skim finish. Plasterboard fixed with 3.9 x 30mm countersunk screws.

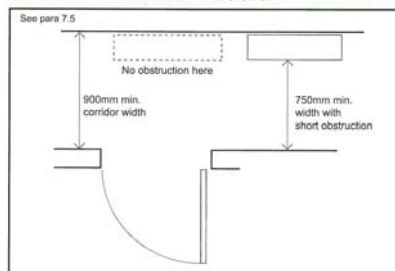
7 OPENINGS AND PASSAGEWAYS

- 1 All internal ground floor door openings 910mm structural openings, unless otherwise specified.
- 2 All internal first floor door openings 834mm structural openings, unless otherwise specified.
- 3 Entrance door to principle storey to have a clear opening of minimum 775mm and to be fitted with an accessible threshold in accordance with Part M: Access to and Use of Buildings
- 4 Minimum clear opening/passage widths to be in accordance with Table 4 and Diagram 28: Part M: Access to and Use of Buildings

Table 4 **Minimum widths of corridors and passageways for a range of doorway widths**

Doorway clear opening width (mm)	Corridor/passageway width (mm)
750 or wider	900 (when approach head-on)
750	1200 (when approach not head-on)
775	1050 (when approach not head-on)
800	900 (when approach not head-on)

Diagram 28 **Corridors, passages and internal doors**



5

8 CAVITY TRAYS, WEEPHOLES, STOP ENDS AND VENTS

- 1 In areas of the country in driving rain exposure zone 4 checked, (Approved Document C2-Site Preparation and resistance to Contaminants and Moisture-Diagram 12 and Table 4) rebates should be used in all window and door reveals. The frame should be set back behind the outer leaf of masonry and overlap it by 25mm as shown in Diagram 13 (Approved Document C2-Site Preparation and resistance to Contaminants and Moisture). Alternatively an insulated finned cavity closer can be used
- 2 Pitch Polymer high performance stepped cavity tray D.P.C. over concrete/timber lintels in new openings in external walls. Cavity trays to rise at least 150mm from the outer to the inner leaf, to be self supporting or fully supported and have joints and sealed with water tight stop ends.
- 3 Where Catnic cougar open back lintels are provided. Lintels have built-in D.P.C but due to site location an additional dpc is required.
- 4 Ensure stop ends are provided to cavity trays.
- 5 Where short lengths of stepped cavity trays are installed for example over lean to roofs or above an opening, provide at least two perpend weepholes in the external leaf of block work.
- 6 Build in proprietary perpend vents in external leaf of the blockwork to bottom of outer leaf, at 1.8m centres.
- 7 Timber batten cavity closers at each reveal of external openings with vertical D.P.C

- 8 Window and door reveals to be finished with 1 coat of scratch render followed by a final coat of smooth sand cement render. Ensure 25mm of masonry cover to the window and door frames to prevent moisture penetration.

9 LINTELS

- 1 All lintels to be fitted in strict accordance with manufacturer's details and specifications.
- 2 Reinforced concrete lintels over opening below ground
- 3 Prefabricated Steel Catnic timber frame lintels designed and specified by Catnic or similar approved, using proprietary restraining clips at mid span and not more than 500mm either side of mid span.
- 4 Square dressed granite/concrete lintels to conform with the appropriate requirements described in BS 5390 1991, tied to framework with wall ties which fully permits differential movement between the inner and outer leaf

10 STEEL BEAMS AND COLUMNS

- 1 All steel works to be designed and read in conjunction with the structural engineer.
- 2 All calculations and details to be approved by Building Control prior to commencement of works to this item.
- 3 Internal steel beams/columns: 30 minutes fire resistance - encase in 1 layer of 12.5mm 'Gyproc fireline' plasterboard, joints and abutments filled, 3-5mm hard skim finish.
- 4 External Steel columns/beams
- 5 Option 1: 30 minutes fire resistance – columns/beams to be treated with intumescent steel paint. Casing as specified by client.
- 6 Option 2: 30 minutes fire resistance - columns/beams to be encased with superlux board. Casing as specified by client. Where external columns support an exposed floor, fix a moisture resistant master board or similar to the underside of the joist.

11 FLOORING

11.1 GROUND FLOOR (SCREED)

- 1 Floor finished to clients specification
- 2 Apply a flo-screed over the VCL and celotex insulation boards to a minimum of 60mm
- 3 Lay a 500 gauge VCL under screed to prevent moisture forming at the insulation/slab interface. VCL to be turned up the inner face of the insulation upstands at room perimeters. All joints to be lapped 150mm and sealed.

- 4 Use the insulation saw to cut and fit Celotex TB4000 insulation board upstands to floor perimeter, to meet a minimum R-Value of 0.75m²K/W. The upstand depth to be equal to the sum of the slab insulation and screed thickness. The upstand thickness should not exceed the combined thickness of the wall plaster and the skirting.
- 5 Provide and fix 90mm Celotex GA4000 insulation boards. P/A ratio = 0.46 (units 1 & 4) 0.32 (units 2 & 3). U-Value 0.17W/m²k
- 6 If required, use a thin layer of sand blinding on a rough, tamped slab to ensure the insulation boards are continuously supported
- 7 Lay the insulation boards directly onto the prepared slab with all joints tightly butted.

11.2 FIRST FLOOR (TIMBER SOLID JOISTS)

- 1 Floor finished to clients specification
- 2 22mm T&G V313 flooring grade type C4 to BS 5669 Chipboard laid with staggered joints, glued with a woodworking adhesive and 65mm ringshanked nails to comply with Tradas specification.
- 3 Provide a 10-12mm gap at all perimeters and abutments to allow for expansion by using temporary wedges.
- 4 Suspended timber solid joists at centers and depth specified by the Structural engineer/timber frame manufacturer.
- 5 Refer to Timber Frame Manufacturer for joist layout details. All calculations to be submitted to building control for approval prior to commencement of work to this item.
- 6 Strutting at mid span if exceeding 2.4m.
- 7 Provide double joists under stud work partitions where parallel to joist direction or solid double joists noggins between joists under stud work where transverse to joist direction. Provide double joist trimmers to stairwell with 9mm diameter bolted connectors at 600mm c/s.
- 8 Notches in floor joists should be no deeper than 0.125 times depth of joist and should not be cut closer to the support than 0.07 of the span nor further away than 0.25 times span.
- 9 Holes in floor joists should be no greater diameter than 0.25 times the depth of the joist, should be drilled on the neutral axis and should not be less than three diameters (centre to centre) apart and should be located between 0.25 and 0.4 times the span from the support.
- 10 Provide and fix 100mm mineral wool to a density of 10g/m³ between joists in accordance with the approved document Part E: Resistance to the passage of sound.

12 CEILINGS

- 1 GROUND FLOOR-Unless otherwise specified for the purposes of fire resistance, ceilings to ground floor to be finished with 1 layer of 15mm 'Gypsum' plasterboard, joints and abutments filled, 3-5mm hard skim finish. Plasterboard fixed with 3.9 x 30mm countersunk screws.
- 2 FIRST FLOOR-Ceilings to be 1 layer of 12.5 'Duplex' plasterboard, joints and abutments filled, 3-5mm hard skim finish. Plasterboard fixed with 3.9 x 30mm countersunk screws.

13 STAIRS AND GUARDING

13.1 STAIRS

- 1 Unless otherwise specified by client, staircase to be selected quality softwood for painting/staining with equal number of risers and treads with softwood newels, 32mm stringers housed in newels, closed tread construction with 20mm projecting nosing's. All joints glued and screwed.
- 2 Max pitch 42 deg. 220mm minimum going and 220mm maximum risers.
- 3 Minimum headroom to be 2m above the pitch line.
- 4 50mm minimum going to winders and ensure continuous handrail
- 5 800mm clear unobstructed width between handrails.

13.2 GUARDING TO STAIR AND LANDINGS

- 6 Handrails to stairs and landings set at minimum 900mm and maximum 1000mm above pitch line of stair and landing.
- 7 Handrails and balustrades to have no gaps in the construction that will allow the free passage of a 95mm diameter sphere and it is not readily climbable by children.
- 8 Provide artificial lighting with two-way switching to stairs
- 9 Check height of staircase rise on-site prior to commencement of construction

13.3 EXTERNAL GUARDING

- 10 External guarding material to clients specification
- 11 Where there is a drop of more than 600mm to flights, landings and balconies, guarding should be provided.
- 12 Handrails and balustrades to have no gaps in the construction that will allow the free passage of a 95mm diameter sphere and it is not readily climbable by children.
- 13 The height to be a minimum of 1100mm from finished floor level

14 ROOFS

14.1 GENERAL

- 1 Roof finish to be natural slate in accordance with the approved planning drawings.
- 2 If any other material is used, client/contractor to contact agent prior to commencement of work.
- 3 Fix slates using copper slating nails to 25 x 50mm tanalised softwood battens fixed to rafters using galvanised nails at centres specified by tile manufacturer.
- 4 Lay one layer of Tyvek or Corovin breathable membrane over rafters ensuring 150mm headlaps and 150mm sidelaps.
- 5 Ensure the breather membrane has a minimum 25mm drape between rafters
- 6 Provide and fix code 4 lead valley flashings on 25 x 225mm plywood layboards. Layboards to finish flush with top of rafters & supported on 50 x 38mm softwood noggins adequately fixed to truss rafter roof construction.
- 7 All fascias, soffits and bargeboards to be timber in accordance with approved planning drawings
- 8 Stainless steel screws to be used on all external fixings including soffits, fascias and bargeboards.
- 9 Provide high level ventilation to be equivalent to 5mm continuous strip.

14.2 RAFTERS

- 1 All rafter positions, sizes and centres to be designed by a reputable roof truss manufacturer.
- 2 100mm x 25mm softwood wind bracing to comply with BS5268, Part 3 1985 and truss manufacturers specification. Butt joints in bracing to be carried across two rafters.
- 3 Calculations and details to prove the roof structure to be supplied by the structural engineer, submitted to and approved by an Approved Building Control Inspector before construction work to the roof area is commenced.

14.3 INSULATION

- 1 To areas of flat ceiling Lay 300mm minimum of Earthwool loft roll 44 insulation to the ceiling area construction with 100mm Earthwool loft roll 44 laid between the truss centres and 1 further layer of 200mm Earthwool loft roll 44 laid perpendicular - ACHIEVING A U-VALUE OF 0.14W/M2K
- 2 To canopy areas Fit 1 layer of 120mm Thick Celotex XR4000 between rafters (based on 400c/s), ensuring a

minimum of 25mm void is maintained above, fix a further 37.5mm Celotex GD5000 insulated plasterboard (25mm insulation, 12.5mm Board) to the underside of the rafters, finish with a 3-5mm hard skim plaster. ACHIEVING A U-VALUE OF 0.17W/M2K

15 HEATING

15.1 FUELLED BY ELECTRIC

- 1 Air Source Heat Pump with programmer and 2 thermostats

15.2 WATER HEATING

- 1 Indirect 170 litre hot water cylinder with a 1.45kWh/day heat loss connected to the air source heat pump with back-up electric immersion heater
- 2 Hot and cold water pipes in unheated areas should have increased insulation thickness for protection against freezing. Insulation to be Armaflex or similar.
- 3 The first 1m of pipework from the hot water storage tank to be insulated.

15.3 SECONDARY SPACE HEATING

- 1 Solid fuel wood burner situated in the lounge area fitted with a factory made metal chimney flue through the ceiling and roof structure.
- 2 Flue to discharge through roof via False chimney suitable to serve a Class 1 flue from the wood burners
- 3 HETAS Certificated required at completion
- 4 Where a flue passes through the ceiling, sleeved should be provided to prevent damage to the flue or building through thermal expansion.
- 5 Factory made metal chimneys to be kept a suitable distance from combustible material as defined in BS 4543-1:1990 (1996) and to comply with BS 4543-2: 1990 (1996) or BS 4543-3: 1990 (1996)
- 6 Where a flue is positioned at or within 600mm of the ridge, flue to terminate at least 600mm above ridge level.
- 7 Where a flue is positioned elsewhere, flue to be at least 2300mm horizontally from the nearest point on the weather surface and: a) at least 1000mm above the highest point of the intersection of the chimney and the weather surface; or b) at least as high as the ridge.
- 8 Where a flue is positioned below or within 2300mm horizontally to an openable roof light, dormer window or other opening, flue to terminate at least 1000mm above the top of the opening

- 9 Where a flue is positioned within 2300mm of an adjoining or adjacent building, flue to terminate at least 600mm above the adjacent building

15.4 AIR SUPPLY TO WOOD BURNING APPLIANCES

- 1 Provide permanent air supply or openings to wood burning stove using 2no 75 x 150mm air bricks in the external wall minimum 150mm above ground level and piped below floor in 2no 100mm minimum clay pipes, providing a total free area of at least 550mm²/KW of rated outlet above 5KW.
- 2 Where a flue draught stabilizer is used the total free area should be increased by 300mm² for each KW of rated output.

15.5 CARBON MONOXIDE ALARMS

- 1 Carbon monoxide alarm should be provided within room containing solid fuel appliance.
- 2 Carbon Monoxide alarms should comply with BS5029:2001 and be powered by a battery designed to operate for the working life of the alarm. The alarm should incorporate a warning device to alert users when the working life of the alarm is due to pass. Mains-powered BS EN 50291 Type A carbon monoxide alarms with fixed wiring (not plug-in types) may be used as alternative applications provided they are fitted with a sensor failure warning device.
- 3 The carbon monoxide alarm should be fitted :
 1. On the ceiling at least 300mm from any wall or, if it is located on a wall, as high up as possible (above any doors and windows) but not within 150mm of the ceiling: and
 2. Between 1m and 3 m horizontally from the appliance.

16 HEARTHES AND NOTICE PLATES

16.1 HEARTHES

- 1 Hearth details for solid fuel appliances to be provided of non-combustible material at least 125mm thick (Which may include the thickness of any solid, non-combustible floor under a hearth) Size of hearth to be a minimum of 500mm projection in front of the fireplace, and at least 150mm projection either side.

16.2 NOTICE PLATES

- 1 Where a hearth, fireplace (including a flue box), flue or chimney is provided or extended (including cases where a flue is provided as part of the refurbishment work), information essential to the correct application and use of these facilities should be permanently posted in the building conveying the following information:
 - The location of the hearth, fireplace (or flue box) or the location of the beginning of the flue.
 - The category of the flue and the generic types of appliances that can be safely accommodated.
 - The type and size of the flue (or its liner if it has been relined) and the manufacturers name.
 - The installation date.
- 2 Notice plates should be robust, indelibly marked and securely fixed in an unobtrusive but obvious position within the building, such as:
 - Next to the electricity consumer unit: or
 - Next to the chimney or hearth described; or
 - Next to the water supply stop-cock.
- 3 All commissioning certificates for the appliances will be issued to Building Control for approval.
- 4 For chimney products whose performance characteristics have been assessed in accordance with a European Standard (EN) and which are supplied or marked with a designation of compliance, the installer may include this designation on the label as described above.

17 SERVICES

17.1 SURFACE WATER DRAINAGE

- 1 All work to comply with BS8302:1985
- 2 All pipework in proprietary upvc system 'Osma' or similar.
- 3 Underground drains 110mm diameter bedded and surrounded in 100mm thick granular material in accordance with pipe manufacturer's specification.
- 4 Minimum gradient 1:60
- 5 Inspection chambers discharging into a soakaway situated minimum 5m from any building or boundary

17.2 PERCOLATION TEST METHOD

- 1 Rainwater soakaway percolation test to be carried out in accordance with the BRE Digest 365 (soakaway design).

- 2 A hole 300mm square should be excavated to a depth 300mm below the proposed invert level of the effluent distribution pipe. Where deep drains are necessary the hole should conform to this shape at the bottom, but may be enlarged above the 300mm level to enable safe excavation to be carried out.
- 3 Where deep excavations are necessary a modified test procedure may be adopted using a 300mm earth auger. Bore the test hole vertically to the appropriate depth taking care to remove all loose debris.
- 4 Fill the 300mm square section of the hole to a depth of at least 300mm with water and allow it to seep away overnight.
- 5 Next day, refill the test section with water to a depth of at least 300mm and observe the time, in seconds, for the water to seep away from 75% full to 25% full level (i.e. a depth of 150mm). Divide this time by 150mm. The answer gives the average time in seconds (V_p) required for the water to drop 1mm.
- 6 The test should be carried out at least three times with at least two trial holes. The average figure from the tests should be taken. The test should not be carried out during abnormal weather conditions such as heavy rain, severe frost or drought.

17.3 FOUL WATER DRAINAGE

- 4 100mm diameter Osma, or equal approved P.V.C.u underground drainage system laid to an average fall of 1:40
- 5 New foul water drainage to discharge via saddle into existing mains foul public sewer
- 6 Osma vent relieve valve/anti siphon units to be installed
- 7 Drains to be constructed so as to prevent vermin entry to building or drainage system with plywood baffle each side of pipe entry to building

17.4 MANHOLES AND GULLIES

- 1 PVC-U back inlet trapped gullies to be installed with access panels
- 2 Pressed metal covers where pedestrian traffic occurs
- 3 Access chamber, inspection chamber and manhole sizes in accordance with Table H1 1991: Building Regulations, or table no8 B.S 8301:1985
- 4 Manholes and gullies gratings to be bedded securely to prevent vermin entry
- 5 Access covers to septic tanks/cesspools to be fitted with lockable covers

17.5 PROTECTION OF DRAINS

- 1 Relieving lintels to be provided where drains pass through walls to give 50mm space all around the pipe
- 2 Drains passing under and within 1m of a building to be encased in minimum 150mm granular materials with 50mm protective concrete slab over (1:2:6 mix)
- 3 Drains more than 1m from buildings to be encased in minimum 150mm concrete (1:3:6 mix) to manufacturers recommendations
- 4 Drains under driveway with less than 90mm cover to have 150mm minimum granular surround and 50mm concrete paving slabs over

17.6 ROOF DRAINAGE

- 1 Black Osma round line or similar P.V.C rainwater gutters, or equal approved, and 68mm diameter rainwater pipes and shoes
- 2 Rainwater gullies where indicated, to have roddable access

17.7 PLUMBING

- 1 All work above ground to comply with BS5572:1978
- 2 All pipework in upvc system, 'Osma or similar.
- 3 Provide rodding eyes at changes in direction of waste branches.
- 4 110mm diameter soil stacks to be fitted with an air admittance valve situated above the flood level of the highest discharging appliance.
- 5 Laid to a minimum gradient 1:40.
- 6 Soil waste vent pipe encased in ducts of 12.5mm plasterboard and skim on softwood battens with insulation quilt surround to s.v.p
- 7 Ensure boxing for concealed services is sealed at floor and ceiling levels, and pipes are sealed around where they penetrate or project into hollow constructions or voids to limit outside air infiltration
- 8 Vent pipe to be carried to approved height above roof and fitted with a balloon cage terminal, minimum 900mm above any opening in building where within 3m
- 9 Baths to be fitted with 40mm diameter PVC pipes at 3m maximum lengths. 50mm diameter at 4m maximum length and laid to a gradient between 18mm and 90mm.
- 10 Sinks to be fitted with 40mm diameter PVC pipes at 3m maximum lengths. 50mm diameter at 4m maximum length and laid to a gradient between 18mm and 90mm.

- 11 Showers to be fitted with 40mm diameter PVC pipes. Shower trays on raised plinths with access panels to maintain traps
- 12 Wash hand basins to be fitted with 32mm diameter PVC pipes at 1.7m maximum lengths. 40mm diameter at 3m maximum length
- 13 No branch discharge pipe to connect to stack less than 450mm above drain invert
- 14 75mm deep seal anti-vac bottle traps throughout, cleaning eyes at bends
- 15 All wastes to be well clipped polypropylene
- 16 Vent pipe fitted with accessible rodding eye at lowest point
- 17 W.C connection direct to drain if drop less than 1.5m
- 18 Cold water supply pipe to enter building minimum 750mm below ground level and to be insulated through wall and under floor, if it rises less than 750mm from the outside wall. Foamed plastic insulant, 25mm thick for 15mm diameter pipes, 19mm wall thickness for 22 to 28mm diameter pipes. All in accordance with BS 6700 (revised)

17.8 SANITATION, HOT WATER SAFETY AND WATER EFFICIENCY.

- 1 The hot water supply to any fixed bath must be so designed and installed as to incorporate measures to ensure that the temperature of the water that can be delivered to that bath does not exceed 48 oC
- 2 Compliance with Part G2 and regulation 17k is to be provided to and approved by building control not later than five days after the work has been completed
- 3 The Approved document which takes effect on 6th April 2010 deals with the water efficiency requirements in the Building Regulations 2000.
- 4 Reasonable provisions must be made by the installation of fittings and fixed appliances that use water efficiently for the prevention of undue consumption of water.
- 5 The potential consumption of wholesome water by persons occupying a dwelling to which this regulation applies must not exceed 125 litres per person per day, calculated in accordance with the methodology set out in the document 'The Water Efficiency Calculator for New Dwellings'
- 6 Where regulation 17K applies, the person carrying out the work must give the local authority a notice which specifies the potential consumption of wholesome water per person per day calculated in accordance with the methodology referred to in that regulation in relation to the completed dwelling.
- 7 Once a calculation has been provided for potential consumption of wholesome water per person per day,

prior to commencement of work, Should any changes occur during the construction process to any specified thermal producing elements you will need to notify the appropriate bodies concerned.

8 The figures are based on specifications as listed below:

- Wc to be of a Dual Flush type with a 4/2.6 litre flow rate
- Bathroom Sink Taps to have a flow rate of 5 litres/min
- Wc Sink Tap to have a flow rate of 2 litres/min/spray (cloakroom)
- Kitchen/Utility Taps to have a flow rate of 5 litres/min
- Bath to be of an average size of 190 litres
- Showers to have a flow rate of 9 litres/min

Installation Type	Unit of Measure	Capacity/Flow rate (1)	Use Factor (2)	Fixed use (litres/person/day) (3)	Litres/person/day = [(1)x(2)] + (3) (4)
WC (single flush)	Flush Volume (litres)		4.42	0.00	0
WC (dual flush)	Full flush Volume (litres)	4	1.46	0.00	5.84
	Part flush Volume (litres)	2.6	2.96	0.00	7.70
WC (multiple fittings)	Average effective flushing Volume (litres)		4.42	0.00	0
Taps (excluding kitchen/utility room taps)	Flow rate (litres/min)	5.00	1.58	1.58	9.48
Bath (where shower also present)	Capacity to overflow (litres)	190.00	0.11	0.00	20.90
Shower (where bath also present)	Flow Rate (litres / minute)	9.00	4.37	0.00	39.33
Bath Only	Capacity to overflow (litres)		0.50	0.00	0
Shower Only	Flow Rate (litres/minute)		5.60	0.00	0
Kitchen/Utility room sink taps	Flow rate (litres/minute)	1.00	0.44	10.36	10.80
Washing Machine	(Litres/kg dry load)	8.17	2.1	0.00	17.157
Dishwasher	(Litres/place setting)	1.25	3.6	0.00	4.5
Waste disposal unit	(Litres/use)	<input type="checkbox"/> Present	3.08	0.00	0
Water Softener	(Litres/person/day)		1.00	0.00	0
(5)		Total Calculated use (litres/person/day) = SUM(column 4)			115.71
(6)		Contribution from greywater (litres/person/day)			0
(7)		Contribution from rainwater (litres/person/day)			0
(8)		Normalisation factor			0.91
(9)		Total water consumption (Code for Sustainable Homes) = [(5)-(6)-(7)]x(8) (litres/person/day)			105.29
(10)		External water use			5.0
(11)		Total water consumption (Building Regulation 17.K) = (9)+(10)(litres/person/day)			110.3

18 VENTILATION

18.1 GENERAL

1 Ventilation in accordance with approved Document F: Means of ventilation – F1. System 1: Background ventilators and intermittent extract fans.

- 2 All mechanical ventilation systems to be installed in strict accordance with manufacturers details and specification
- 3 Provide reasonable access for maintenance for the purpose of changing filters, replacing defective components and cleaning ductwork
- 4 Extract ducts passing through un-heated roof spaces to be insulated with fibreglass quilt, or equal approved.
- 5 Horizontal ducts to be laid to fall to outside air, vertical ducts to have condensation trap draining to eaves
- 6 Internal kitchens, utility rooms, bathroom and sanitary accommodation not containing windows to have light switch operated extract ventilation rates as specified below but with 15minutes overrun. Air inlet to be provided to rooms via a 10mm gap under door.
- 7 Where a solid fuel appliance is present in the same room as the kitchen, the kitchen extractor fan to be a re-circulating type.

18.2 INTERMITTANT EXTRACT VENTILATION RATES

- 1 Kitchen extract ventilation to be rated at not less than 30litres/second if within a cooker hood or located near the ceiling and within 300mm of the centre of the hob space and under humidstat control, or 60 litres/second minimum extract capacity if sited elsewhere
- 2 Utility room extract ventilation to be rated not less than 30litres/second
- 3 Bathroom extract ventilation to be rated not less than 15litres/second
- 4 Sanitary accommodation extract ventilation to be rated not less than 6litres/second

18.3 PURGE VENTILATION

- 1 Purge ventilation to habitable rooms provided by openable windows equal to 1/20th of the floor area, otherwise a mechanical extract system to be provided

19 JOINERY

19.1 DOORS AND WINDOWS

- 1 If an alternative is used to that specified and shown on the Planning Approved drawings and details, then approval must be obtained from the Planning Department.
- 2 All window and door units to be Timber double glazed units fitted with Low 'E' Argon filled. **Maximum U-Value of 1.6 W/M2K**
- 3 Stainless steel screws to be used on all external fixings including doors and window frames

- 4 Double glazed units to be tested to BS 5713 and kite marked with dual seals and ensure glazing compound is compatible with seals and seals are protected from sunlight when installed.
- 5 Adequate draught proofing seals to be fitted in the frames of openable elements of windows and doors and roof lights.
- 6 Provide seal at junction between masonry walling and edge of frames to prevent outside air infiltration
- 7 One piece slate sills bedded on mortar at a minimum 15 degree slope with D.P.C under
- 8 Windows to habitable rooms and W.C's to have openable vents equal to 1/20th floor area. Windows to kitchen, utility rooms, bathrooms and shower rooms to have openable vents
- 9 Common spaces to have ventilation openings equal to at least 1/50th of the floor area. Head of ventilation openings to windows to be minimum 1.75m above finished floor level
- 10 Background ventilation to habitable rooms to be provided by trickle vents in window heads giving 8000mm²/vent area per room. Background ventilation to kitchen, utility room, bathroom and W.C to be 4000mm²/per room
- 11 Windows/glazed screens with openable lights less than 800mm above finished floor level to be fitted with restrictors to prevent casement/sash opening beyond (100mm) safe position or protected by a suitable barrier in accordance with Building Regulations Part K: The construction should be such that a 100mm sphere cannot pass through any opening in the guarding, and so that children will not readily climb it. Horizontal rails for such guarding should be avoided.
- 12 All ground and first floor habitable rooms to have egress windows and to have an unobstructed openable area that is at least 0.33m² and at least 450mm in any direction. The route through the window may be at an angle rather than straight through.
- 13 The bottom of the openable area should not be more than 1100mm above the floor.
- 14 Windows used for escape purposes can be fitted with a restrictor device as an alternative to the guarding, not allowing a 100mm sphere to pass through. Restrictors should be able to be released without the use of a key. Refer to window manufacturers details.
- 15 Security locks to all windows

19.2 GLAZING

- 1 All glazing to be in accordance with BS6206:1981

- 2 Where windows have glazing less than 800mm above finished floor level, or within 300mm of the edge of doors up to a level of 1500mm above floor level, glazing to be toughened or laminated. Door glazing to 1500mm above ground to be toughened or laminated as defined in BS 6206

20 FIRE DETECTION AND ALARM SYSTEM

- 1 Mains wired inter-linked, self-contained smoke detectors are required to be fitted to all floor areas located in circulation areas within 7m of likely fire hazard rooms i.e. Kitchens and living areas and within 3m of bedroom doors and at least 300mm away from any wall light fitting
- 2 All detectors to be installed strictly in accordance with manufacturer's specification and details to BS 5446 Part 1.
- 3 Provide a suitable mains interlinked heat detector to inner rooms where the kitchen is open plan to the rest of the property.
- 4 A large dwelling house (excluding basement) which has more than one storey and whos storeys exceed 200m² - Fire alarm and smoke detection system Installed strictly in accordance with manufacturers specification and details to GRADE B, CATEGORY LD3 SYSTEM TO BS5839: PART 6 2004

21 ACCESS TO AND PROVISIONS FOR DISABLED WITHIN DWELLING

21.1 CAR PARKING AND SETTING DOWN

- 1 Reasonable provisions should be made to provide access to the building from a firm level parking space or setting down point within the site in order that people, including disabled people can reach the principle, or suitable alternative entrance to the dwelling, in accordance with Approved Document Part M – Access to and use of buildings.

21.2 LEVEL APPROACH

- 1 Unless the site can be proven to not be able to accommodate a level approach, a level approach is to be provided from the point of access to the level threshold entrance.
- 2 The point of access should be reasonably level and the approach should not have cross-falls greater than 1:40
- 3 The whole, or part, of the approach may be a driveway
- 4 Level approach to a gradient not steeper than 1:20.
- 5 Surface to be a firm and even and not less than 900mm wide.

21.2 LEVEL THRESHOLD

- 1 The entrance door to the principle storey of the dwelling is to be fitted with an accessible threshold.
- 2 The entrance door is to have a clear opening width of not less than 775mm. The clear opening width is taken from the face of the door stop on the latch side to the face of the door when open at 90 degrees

21.3 WC PROVISION IN THE ENTANCE STOREY OF THE DWELLING

- 1 Provide a WC in the entrance storey of a dwelling, located so that there should be no negotiation of a stair from a habitable room. Where there is a bathroom in that storey, the WC may be located within the bathroom.
- 2 The door to the WC compartment opens outwards and is positioned to enable wheelchair users to access the WC. If WC has a side entrance then the door must be positioned 250mm back from the front of the WC Pan.
- 3 The WC compartment provides a clear space of 750mm from the front of the WC pan for wheelchair users to access, and that the wash hand basin is positioned so that it does not impede access and sized to allow 750mm from the front of the basin to any obstacle or wall.

22 ELECTRICAL

22.1 GENERAL

- 1 From January 2005 any fixed electrical installation comes within the scope of the Approved Document P-Electrical Safety. Any persons carrying out the electrical works is to be able to self-certify their work under the 'competent Persons Scheme'. If not, the work will be controlled by the Local Authority, for which an application and additional fee will be required.
- 2 All rooms to be provided with electrical light and adequate number of power points.
- 3 Sockets to be located at 450 – 1200mm height from finished floor level.
- 4 Switches to be located at 450 – 1200mm height from finished floor level.

22.2 ENERGY EFFICIENT LIGHTING IN ACCORDANCE WITH APPROVED DOCUMENT L1A 2010: CONSERVATION OF FUEL AND POWER IN NEW DWELLINGS

- 1 The emission rate should be calculated using a fixed assumption of **100% low energy lighting**. low energy efficiency lighting is non-tradeable.
- 2 a reasonable provision would be to provide fixed energy efficient light fittings that number not less than three in four fixed lighting fittings
- 3 Any fluorescent lamps and compact fluorescent lamps installed shall have high-frequency electronics ballasts.
- 4 Low energy light fittings should have lamps with a luminous efficacy greater than 45 lamp lumens per circuit-watt and a total output greater than 400 lamp lumens
- 5 Light fittings who's supplied power is less than 5 circuit-watts are excluded from the overall count of the total number of light fittings

22.3 EXTERNAL LIGHTING

- 1 Reasonable provision would be to enable efficient control and/or the use of external lamps such that:
EITHER:
- 2 Lamp capacity does not exceed 100W per light fitting and the lighting automatically switches off
- 3 when there is enough daylight; and
- 4 when it is not required at night
OR:
- 5 the lighting fittings have sockets that can only be used with lamps having efficiency greater than 40 lumens per circuit watt.

24 EXTERNAL

- 1 The ground level immediately surrounding the proposed dwellings is to be a min.150mm below D.P.C. Level.
- 2 Perimeter of proposed dwelling to be paved

APPENDIX

Robust details purchase statements