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BUILDING REGULATION NOTES

SITE ADDRESS: ACORN HOUSE 115 SPOTLAND ROAD, ROCHDALE, OL12 6PJ
PLANNING REF. TBC
DATE: April 2023
REVISION:

CONSULTATIONS WITH OTHER AUTHORITIES

The applicant is reminded of the need to consult with other departments such as Planning, Conservation, Environmental Health, Water Authorities, Private Sector Housing etc. Issues which may arise include:

- Parking and cycling facilities
- Conversion of listed buildings
- Conversion in conservation areas
- Crime prevention and security
- Disabled access provision
- Conversion to HMO and private sector housing requirement
- Flat layout requirements
- Room size requirements
- Design statements
- Other issues may also apply.

PARTY WALL ACT

The owner should they need to do so under the requirements of the Party Wall Act 1996 has a duty to serve a Party Structure Notice on any adjoining owner if the building work involves works on or to an existing Party Wall including:

- Support of beam
- Insertion of DPC through wall
- Raising of wall or cutting of projections
- Demolition and rebuilding

- Underpinning
- Insertion of lead flashings
- Excavations within 3 metres of an existing structure where the new foundations will go deeper than adjoining foundations, or within 6 metres of an existing structure where the new foundations are within a 45 degree line of the adjoining foundations.

A Party wall agreement is to be in place prior to start of works on site.

THERMAL BRIDGING

Care shall be taken to limit the occurrence of thermal bridging in the insulation layers caused by gaps within the thermal element, (i.e. around windows and door openings).

HEALTH AND SAFETY

The contractor is reminded of their liability to ensure due care, attention and consideration is given in regard to safe practice in compliance with the Health and Safety at Work Act 1974.

MATERIALS AND WORKMANSHIP

All works are to be carried out in a workmanlike manner. All materials and workmanship must comply with Regulation 7 of the Building Regulations, all relevant British Standards, European Standards, Agreement Certificates, Product Certification of Schemes (Kite Marks) etc. Products conforming to a European technical standard or harmonised European product should have a CE marking.

CDM REGULATIONS 2015

The client must abide by the Construction Design and Management Regulations 2015. The client must appoint a contractor, if more than one contractor is to be involved, the client will need to appoint (in writing) a principal designer (to plan, manage and coordinate the planning and design work) and a principal contractor (to plan, manage and coordinate the construction and ensure there are arrangements in place for managing and organising the project).

Domestic clients

The domestic client is to appoint a principal designer and a principal contractor when there is more than one contractor, if not your duties will automatically transferred to the contractor or principal contractor.

The designer can take on the duties, provided there is a written agreement between you and the designer to do so.

The Health and Safety Executive is to be notified as soon as possible before construction work starts if the works:

(a) Last longer than 30 working days and has more than 20 workers working simultaneously at any point in the project.

Or:

(b) Exceeds 500 person days.

EXISTING STRUCTURE

Existing structure including foundations, floor, beams, walls, roof and lintels are to be exposed and checked for adequacy prior to commencement of work and as required by the Building Control Officer.

BEAMS AND STRUCTURE

Engineer's Structural calculations and details are to be provided for all beams, roof, lintels, joists, bearings, padstones and any other load bearing elements before works commence on site. New steel beams to be encased in 12.5mm Gyproc FireLine board with staggered joints, Gyproc FireCase or painted in Nullifire S or similar intumescent paint to provide 1/2 hour fire resistance as agreed with Building Control. All fire protection to be installed as detailed by specialist manufacturer.

UPGRADE OF EXISTING FLOOR WITH AN INDEPENDENT CEILING

(As detailed in Approved Document E1)

The existing floor should be assessed to ensure any additional loads imposed on it can be carried safely or be strengthened where necessary. Any required remedial works to be undertaken before the floor treatment is provided. If the floor boards are considered unsuitable for upgrade the floor boards are to be replaced with boarding of a minimum thickness of 12mm. Gaps in the timber boarding should be sealed by overlaying with hardboard or filled with sealant.

Upgrade existing ceiling by providing 2 layers of plasterboard under existing ceiling with a total mass per unit area 20kg/m² with staggered joints.

New independent ceiling

Construct a new independent ceiling under existing ceiling using C24 timber joists (sizes to structural engineer's details) fixed to the surrounding wall only; ensure a minimum clearance of 25mm is provided between the top of the independent ceiling joists and the underside of the existing floor (additional support can be provided using resilient hangers attached directly to the existing floor base if required).

Lay 100mm mineral wool with a minimum density 10kg/m³ between the joists and provide 2 layers of plasterboard minimum total mass per unit area 20kg/m² under new ceiling with staggered joints. The top of the independent ceiling to be at least 125mm from the underside of the existing floor. Seal the perimeter of the independent ceiling with tape or sealant.

Where the window head is near to the existing ceiling the new independent ceiling may be raised to form a pelmet recess.

Pre completion sound testing to be carried out to new floor by a suitably qualified person with appropriate third party accreditation (either UKAS accreditation or be a member of the Association of Noise Consultants Registration Scheme).

IT IS THE DESIGNERS RESPONSIBILITY IS TO CONSULT WITH AN ACOUSTIC ENGINEER TO ENSURE THE COMPLIANCE ALL ASPECTS OF APPROVED DOCUMENT E

THIS CONSTRUCTION HAS THE POTENTIAL TO COMPLY WITH THE REQUIREMENTS OF THE BUILDING REGULATIONS WHEN FORMING A SEPARATING FLOOR FROM AN EXISTING FLOOR BY MATERIAL CHANGE OF USE. COMPLIANCE CAN ONLY BE DEMONSTRATED BY A PACKAGE OF SOUND TESTING AGREED WITH BUILDING CONTROL.

FLOOR PENETRATIONS

Pipe services and ducts which pass through separating floors should be surrounded with 25mm sound absorbent mineral wool and enclosed in a duct of two layers of Gyproc FireLine board having a mass per unit area of at least 15kg/m² for their full height. Seal the joint between the casing and ceiling with tape.

Gas services may require ventilation and should be installed in accordance with The Gas Safety (Installation and Use) Regulations 1998.

UPGRADE OF SOLID EXTERNAL WALL

To achieve min U-value 0.30W/m²K

Existing wall to be exposed and checked for its suitability. Upgrade existing solid block wall by providing 77.5mm Celotex PL4000 insulated plasterboard internally.

Provide 25mm x 50mm battens at 600mm centres to give a nominal 25mm cavity between the masonry and insulation (50mm cavity to be provided if required by building control). Fix a vapour control layer under the insulation. All work in accordance with BS 8212 (Code of practice for dry lining).

UPGRADE OF EXISTING SOLID BLOCK WALL

(Assess suitability of existing wall for external insulation application and structural stability)

U value 0.30W/m²K

Mechanically fix 80mm Celotex GA4000 insulation board to existing blockwork. Fix boards with thermally broken proprietary telescopic tube fasteners at max 1m centres driven into pre-drilled holes, ensure a minimum of 5 fixings per insulation board.

Apply 20mm of suitable reinforced render with waterproof additive with a scraped or textured finish. Render to be applied directly to the insulation incorporating eml or glass fibre mesh. Movement joints to be provided compatible with the render system. All work to be in accordance with render manufacturer's details and BS EN 13914-1. Where surface is uneven it is recommended that a bedding compound be applied prior to fixing the insulation boards. Line wall internally with 12.5mm plasterboard and 3mm skim where required.

UPGRADING PARTY CAVITY WALL

The existing walls must be checked for stability and be free from defects as required by the Building Control Officer. Provide scratch coat render to existing wall. Apply plasterboard with mass of 10kg/m² (e.g. Gyproc Soundbloc) or greater to the both faces of the wall to ensure adequate sound insulation in accordance with Approved Document E.

Pre completion sound testing to be carried out by a suitably qualified person with appropriate third party accreditation (either UKAS accreditation or be a member of the Association of Noise Consultants Registration Scheme).

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UPGRADING EXISTING SINGLE SKIN SEPERATING WALL

The existing walls must be checked for stability and be free from defects as required by the Building Control Officer. Provide a scratch coat render to existing wall. Construct an independent studwork lining using 100mm x 50mm treated timbers with head & sole plates and noggins at 400mm centres, leaving a gap of 15mm between the wall and the inner face of the studwork to ensure that airborne sound transmission is reduced. Seal the perimeter with tape or sealant. Wall to be lined with 30mm total thickness of 10kg/m² plasterboard with staggered joints and with at least 35mm of mineral wool quilt density 10kg/m³ in the cavity between studs. Finish with 3mm plaster skim. The independent panel and its supporting frame must not be in contact with the existing wall.

Pre completion sound testing to be carried out by a suitably qualified person with appropriate third party accreditation (either UKAS accreditation or be a member of the Association of Noise Consultants Registration Scheme).

Separating walls to provide at least half hours fire resistance from both sides in compliance with Approved Document B Volume 2.

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TIMBER FRAMED SEPARATING WALL

Approved Document E Wall Type 4.1

Construct two parallel timber frames using 100mm x 50mm head & sole plates and vertical studs (with noggins) at 400mm centres or to structural engineer's details & calculations, ensuring a minimum distance of 200mm is provided between inside faces of the two frames. Provide two layers of plasterboard with staggered joints each side of frame, each sheet to have a minimum mass per unit area 10kg/m² (for example Gyproc Soundbloc). Provide 50mm of mineral wool batts, Crown Acoustic Partition Roll or Isowool APR 1200, with a minimum density 10kg/m³ between the studs of the frames.

Stagger all sockets on opposite sides of the separating wall by a min of 150mm.

Care to be taken at junctions to block air paths using timber blocking or joists as detailed in Approved Document E.

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JUNCTIONS WITH EXTERNAL OR LOAD BEARING WALLS

Flanking transmission to be controlled along adjoining walls by lining all adjoining masonry walls with either an independent layer of plasterboard and mineral wool or a laminate of plasterboard and mineral wool where necessary.

INTERNAL STUD PARTITIONS (within flat)

100mm x 50mm softwood treated timbers studs at 400mm ctrs with 50 x 100mm head and sole plates and solid intermediate horizontal noggins at 1/3 height or 450mm ctrs. Provide min10kg/m³ density acoustic soundproof quilt tightly packed (e.g. 100mm Rockwool or Isowool mineral fibre sound insulation) in all voids the full depth of the stud. Partitions built off doubled up joists where partitions run parallel or provide noggins where at right angles. Walls faced throughout with 12.5mm Gyproc FireLine board with skim plaster finish. Taped and jointed complete with beads and stops.

PIPES PASSING THROUGH SEPARATING WALLS

Provide adequate fire stopping where pipes pass through walls using proprietary systems including acoustic intumescent sealant, intumescent collars and fire sleeves to ensure the appropriate level of fire and sound resistance is maintained.

INSULATION AT CEILING LEVEL

To achieve U value of 0.16 W/m²K

Insulation at ceiling level to be 150mm XR4000 Celotex between ceiling joists with a further 25mm over joists. 18mm chipboard to be provided over insulation.

Construct ceiling using sw joists at 400mm centres, finished internally with 12.5mm plasterboard and min 3mm thistle multi-finish plaster. Provide polythene vapour barrier between insulation and plasterboard. Provide opening at eaves level at least equal to continuous strip 25mm wide in two opposite sides to promote cross ventilation. Allow for all structure as designed by a Structural Engineer.

Loft hatches should be suitable designed and installed to ensure optimum air tightness

UPGRADE OF EXISTING FLOORS WITHIN FLAT (Please refer to Approved Document B Volume 2 Section 2.1 - multi-storey flats)

Joists to be 50mm minimum from chimney breasts (joist size to structural engineer's details and calculations). Provide min 20mm t and g chipboard or timber board flooring (in areas such as kitchens, utility rooms and bathrooms flooring to be moisture resistant grade in accordance with BS EN 312). Identification marking must be laid upper most to allow easy identification. To upgrade to half hour fire resistance and provide adequate sound insulation lay minimum 150mm Rockwool insulating material or equivalent on chicken wire between joists. Chicken wire to be fixed to the joists with nails or staples these should penetrate the joists side to a minimum depth of 20mm, in accordance with BRE-Digest 208 1988. Joists spans over 2.5m to be strutted at mid span use 38 x 38mm herringbone strutting or 38mm solid strutting (at least 2/3 of joist depth). Provide lateral restraint where joists run parallel to walls. Floors are to be strapped to walls with 1000mm x 30mm x 5mm galvanised mild steel straps or other approved in compliance with BS EN 845-1 at max 2.0m centres, straps to be taken across minimum 3 no. joists. Provide 38mm wide x ¾ depth solid noggins between joists at strap positions.

INTERNAL STUD PARTITIONS (within flat)

100mm x 50mm softwood treated timbers studs at 400mm ctrs with 50 x 100mm head and sole plates and solid intermediate horizontal noggins at 1/3 height or 450mm ctrs. Provide min 10kg/m³ density acoustic soundproof quilt tightly packed (e.g. 100mm Rockwool or Isowool mineral fibre sound insulation) in all voids the full depth of the stud. Partitions built off doubled up joists where partitions run parallel or provide noggins where at right angles. Walls faced throughout with 12.5mm Gyproc FireLine board with skim plaster finish. Taped and jointed complete with beads and stops.

FLAT ENTRANCE DOORS

Flat entrance doors to be a FD30 hung with 3 steel hinges with a melting point of at least 800°C and fitted with a self-closing device and intumescent strips. All fire doors to be tested in accordance with BS 476.

DOORS WITHIN FLAT (Protected lobby)

Form a protected lobby within the flat entrance by providing half hour fire resistance to all partitions. All doors on to lobby must be FD20 rated fire doors to BS 476 (fitted with intumescent strips rebated around sides and top of door or frame if required by BCO). Where applicable, any glazing in fire doors to be half hour fire resisting and glazing in the walls forming the escape route enclosure to have 30 minutes fire resistance and be at least 1.1m above the floor level.

SOUND INSULATION UNDER STAIRS WHICH FORM A SEPARATING FUNCTION

Stair treatment 1 as detailed in Approved Document E

Lay a soft covering over stair treads of at least 6mm thickness and glue securely so the covering does not become a safety hazard. Construct a new independent ceiling under stairs ensuring a minimum clearance of 25mm (additional support can be provided by resilient hangers attached directly to the existing soffit if required). Provide 2 layers of plasterboard, minimum total mass per unit area 20kg/m², under new ceiling with staggered joints. Fill void with 100mm mineral wool (e.g. Rockwool Flexi slab) with a minimum density 10kg/m³. Seal the perimeter of the independent ceiling with tape or sealant.

ELECTRICAL WORKS

All electrical work required to meet the requirements of Part P (electrical safety) must be designed, installed, inspected and tested by a competent person registered under a competent person self-certification scheme such as BRE certification Ltd, BSI, NICEIC Certification Services or Zurich Ltd. An appropriate BS7671 Electrical Installation Certificate is to be issued for the work by a person competent to do so. A copy of the certificate to be given to Building Control on completion of the work.

INTERNAL LIGHTING

Internal energy efficient light to be fitted as calculated within the dwelling primary energy rate and dwelling emissions rate for account for the efficacy of lamps.

Provide low energy light fittings lamps with a luminous efficacy better than 80 lamp lumens per watt. All fixed lighting to have lighting capacity (lm) 185 x total floor area.

ELECTRIC SPACE HEATING SYSTEMS

Each room to be provided with thermostatic room controls capable of being used to separately to adapt the heating output in each room served by the heating appliance.

Electrical heating system to be installed and commissioned by a member of one of the approved Competent Person schemes. A copy of the commissioning certificate to be given to building control and the owner on completion of the works.

Any electric storage heaters to be provided with automatic control of input charge. The rate of heat release from the appliance to be adjustable, using an adjustable damper or other thermostatically controlled method.

Any electric panel heaters to be provided with time and temperature control to allow separate control for either of the following:

Each room or

Each appliance, where this meets the guidance for thermostatic room controls in Approved Document L para 5.20

Any electric warm air system to be provided with:

A programmable room thermostat or a time switch and room thermostat and

Separately controllable heating zones that meet the guidance for thermostatic room control in Approved Document L para 5.20 to 5.22.

MEANS OF ESCAPE – (Internal planning of flat)

All flats to be provided with a protected entrance hall (lobby) with half hour partitions between the hall and all room. Entrance hall to lead directly to a protected common hallway or lobby. The travel distance from the flat entrance door to the door to any habitable room not to be greater than 9m. Inner rooms are not acceptable.

All doors from rooms on to the entrance hall must be FD20 rated fire doors to BS 476 (fitted with intumescent strips rebated around sides & top of door or frame if required by BCO). Where applicable, any glazing in fire doors to be half hour fire resisting and glazing in the walls forming the escape route enclosure to have 30 minutes fire resistance and be at least 1.1m above the floor level.

STUDIO FLAT (Internal planning of studio flat)

New studio flat to be planned so that the travel distance to any point in any of the habitable rooms does not exceed 9m and the cooking facilities are sited so that they are remote from the entrance door and do not prejudice the escape route from any point in the flat.

SMOKE DETECTION

Mains operated linked smoke alarm detection system to BS EN 14604 and BS 5839-6:2019 to at least a Grade D category LD3 standard to be mains powered with battery back up to be placed in the hall way of each flat with an additional interlinked heat detector at ceiling level in kitchens if required by BCO. Smoke alarms should be sited so that there is a smoke alarm in the circulation space on all levels/ storeys and within 7.5m of the door to every habitable room. If ceiling mounted they should be 300mm from the walls and light fittings.

Interlinked smoke detection to be provided in the common ways if required by Building Control in accordance with Approved Document B and the Regulatory Reform (Fire Safety) Order 2005.

Grade D2, LD2 standard alarms to be provided if required by BCO.

SMOKE VENTILATION IN COMMON WAYS

Provide an automatic opening smoke vent with a geometric free area of at least 1.0m² located on an external wall at the top of the stair as high as practicable and so the top edge is at least as high as the top of the door. Vent to be opened on detection of smoke on any storey in the stair (vents to be placed on every level if required by bco).

COMMON STAIRS AND CORRIDORS

Common corridors and stairs should be protected, i.e. within a 30 minute fire resisting enclosure, and should lead directly to outside. Wall and ceiling surfaces are to have the appropriate linings to inhibit surface spread of flame in accordance with BS476.

Meters located within the stairway should be enclosed with a secure cupboard which is separated from the escape route with fire resisting construction. All gas services within a protected stairway must be installed in accordance with The Gas Safety (Installation and Use) Regulations 1998.

EMERGENCY LIGHTING

Emergency Lighting to BS 5266 Pt 1 will be required in common escape routes, including stairways,

Some buildings will, in addition, require emergency escape lighting in the escape route. These will include:

large buildings with long escape routes;

buildings with a complex layout;

buildings with no natural or borrowed lighting along the escape route; and buildings with vulnerable occupiers or those posing a specific risk.

It is recommended that the Emergency Lighting system is tested on a monthly basis with a record of the test maintained.

ACCESS AND FACILITIES FOR THE FIRE BRIGADE

Consultation with the local Fire Authority is required to ensure the provision is made within the site of the building to enable fire appliances to gain access to the building. This provision shall include:

Vehicle access for fire appliances

Access for fire fighting personnel

The provision of fire mains within the building

Venting for heat and smoke from basement areas

The provision of adequate water supplies

REGULATION 38: FIRE SAFETY INFORMATION

On completion or occupation of the building fire safety information to be provided to the building owners which will include.

An as-built plan of the building showing all of the following.

- a. Escape routes – this should include exit capacity (i.e. the maximum allowable number of people for each storey and for the building).
- b. Location of fire-separating elements (including cavity barriers in walk-in spaces).
- c. Fire doorsets, fire doorsets fitted with a self-closing device and other doors equipped with relevant hardware.
- d. Locations of fire and/or smoke detector heads, alarm call points, detection/alarm control boxes, alarm sounders, fire safety signage, emergency lighting, fire extinguishers, dry or wet fire mains and other firefighting equipment, and hydrants outside the building.
- e. Any sprinkler systems, including isolating valves and control equipment. F

Any smoke control systems, or ventilation systems with a smoke control function, including mode of operation and control systems.

g. Any high risk areas (e.g. heating machinery). 17.4

Details to be provided of all of the following.

- a. Specifications of fire safety equipment provided, including routine maintenance schedules.
- b. Any assumptions regarding the management of the building in the design of the fire safety arrangements.

EXTRACT FOR SHOWER ROOM

Provide mechanical extract ventilation to shower room ducted to external air capable of extracting at a rate of not less than 15 litres per second. Vent to be connected to light switch and to have 15 minute over run if no window in the room. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic ventilation compliance guide. Intermittent extract fans to BS EN 13141-4. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.

EXTRACT TO BATHROOM

Bathroom to have mechanical vent ducted to external air to provide min 15 litres / sec extraction. Vent to be connected to light switch and to have 15 minute over run if no window in room. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic ventilation compliance guide. Intermittent extract fans to BS EN 13141-4. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.

EXTRACT TO WC

W/C to have mechanical ventilation ducted to external air with an extract rating of 15l/s operated via the light switch. Extract to have a 15min overrun if no window in room. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic ventilation compliance guide. Intermittent extract fans to BS EN 13141-4. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.

EXTRACT TO UTILITY ROOM

To utility room provide mechanical ventilation ducted to external air capable of extracting at a rate of 30 litres per second. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic ventilation compliance guide. Intermittent extract fans to BS EN 13141-4. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.

EXTRACT TO KITCHEN

Kitchen to have mechanical ventilation with an extract rating of 60l/sec or 30l/sec if adjacent to hob to external air, sealed to prevent entry of moisture. Internal doors should be provided with a 10mm gap below the door to aid air circulation. Ventilation provision in accordance with the Domestic ventilation compliance guide. Intermittent extract fans to BS EN 13141-4. Cooker hoods to BS EN 13141-3. All fixed mechanical ventilation systems, where they can be tested and adjusted, shall be commissioned and a commissioning notice given to the Building Control Body.

PURGE VENTILATION

Minimum total area of opening in accordance with Table 1.4 Approved Document F1.

Hinged pivot windows with an opening angle of 15 to 30 degrees to have an openable area in excess 1/10 of the floor area of the room.

Sash windows, external doors or hinged pivot windows with an opening angle of equal to or greater than 30 degrees to have an openable area in excess of 1/20 of the floor area of the room.

Purge ventilation should be capable of extracting at least 4 air changes per hour per room directly to the outside.

Internal doors should be provided with a 10mm gap below the door to aid air circulation.

BACKGROUND VENTILATION

Controllable background ventilation at least 1700mm above floor level to be provided to habitable rooms and kitchens at a rate of min 8,000mm², and to bathrooms at a rate of min 4000mm²,

Total number of ventilators installed in a dwellings habitable rooms to be at least 4 ventilators for one bedroom dwellings and 5 ventilators for dwellings with more than one bedroom.

Background ventilators to be tested to BS EN 13141-1

Background ventilator equivalent area and operation to be measured and recorded.

Noise attenuating background ventilators should be fitted to facades with sustained loud noise.

WHOLE BUILDING VENTILATION - CONTINUOUS MECHANICAL EXTRACT

Continuous mechanical system to be installed in accordance with manufacturer's details. Details of system to be given to BCB.

Minimum extract ventilation extract rates to be:

Kitchen – 13 l/s

Utility room - 8 l/s

Bathroom – 8 l/s

Sanitary accommodation – 6 l/s

The sum of all extract ventilation in the dwelling, on its continuous rate, to be at least the whole dwelling ventilation rate given in Table 1.3 Approved Document F.

The minimum whole dwelling ventilation rate for the supply of air to the habitable rooms to be 0.3 litres per second per m² of internal floor area.

System to include either manual or automatic controls (i.e. humidity sensors) to operate between trickle and boost modes.

Mechanical extract system to be performance tested to BS EN 13141 -6.

Background ventilators with a minimum equivalent area of 4000mm² to be provided to each habitable room, excluding wet rooms. Total number of ventilators to equal the number of bedrooms plus two ventilators.

To ensure good transfer of air through the dwelling there should be an undercut of minimum area 760mm in all internal doors above the floor finish. This is equivalent to an undercut of 10mm for a standard door.

Mechanical ventilation system to be designed and installed to minimise noise.

Access to be provided for maintaining and cleaning ventilation systems.

Rigid ducts to be used wherever possible. Flexible ductwork only to be used for final connections, in lengths no more than 1.5m. Ductwork to meet BSRIA's BG 43/2013

Any ducting passing through a fire resisting wall/floor or fire compartment to be adequately fire stopped, provided with suitable dampers and/or fire collars or in fire resisting trucking in compliance with Approved Document B.

Mechanical ventilation systems to be commissioned in accordance with Approved Document F. Appendix C, completion checklist, commissioning sheet and air flow rate test results to be given to the Local Authority on completion.

The owner to be provided with information as listed in Approved Document F including:

- information about the building's ventilation system and maintenance requirements
- the operating and maintenance instructions
- the design flow rates
- the completed commissioning sheet

The information should be provided in a non-technical and clear manner.

A Home User Guide to be provided for the dwelling containing a section on 'Ventilation' that provides nontechnical advice on the ventilation systems provided.

Systems to ensure that they use no more fuel and power than is reasonable in the circumstances in accordance with Approved Document L.

COMMISSIONING OF MECHANICAL VENTILATION SYSTEMS

All fixed mechanical ventilation system to be commissioned in accordance with F1(2)

The person carrying out the work to give to building control, no later than 5 days after the final test, the Appendix C completion checklist and commissioning sheet, along with the commissioning results to show mechanical ventilation flow rates are as specified and that the controls are operating as required.

A copy of the completed commissioning sheet in Appendix C to be given to the owner along with clear and simple written guidance on how to operate and maintain the ventilation system.

A section on ventilation that provides non-technical advice on the ventilation system to be provided in the Home User Guide.

RAINWATER DRAINAGE

New rainwater goods to be new 110mm upvc half round gutters taken to and connected into 68mm dia upvc downpipes.

FOUL DRAINAGE

All existing foul water drainage to be tested for leakage, exposed for inspection (as required by BCO) and repaired or replaced where necessary.

All new above ground drainage and plumbing to comply with BS EN 12056-2 for sanitary pipework. All drainage to be in accordance with part H of the Building Regulations. Wastes to have 75mm deep anti vac bottle traps and rodding eyes to be provided at changes of direction.

Size of wastes pipes and max length of branch connections (if max length is exceeded then anti vacuum traps to be used)

Wash basin - 1.7m for 32mm pipe 4m for 40mm pipe

Bath/shower - 3m for 40mm pipe 4m for 50mm pipe

W/c - 6m for 100mm pipe for single WC

All branch pipes to connect to 110mm soil and vent pipe terminating min 900mm above any openings within 3m.

Or to 110mm upvc soil pipe with accessible internal air admittance valve complying with prEN 12380, placed at a height so that the outlet is above the trap of the highest fitting.

Waste pipes not to connect within 200mm of the WC connection. Supply hot and cold water to all fittings as appropriate.

SAFETY GLAZING

All glazing in critical locations to be toughened or laminated safety glass to BS 6206, BS EN 14179 or BS EN ISO 12543-1 and Part K (Part N in Wales) of the current building regulation, i.e. within 1500mm above floor level in doors and side panels within 300mm of door opening and within 800mm above floor level in windows.

NEW AND REPLACEMENT WINDOWS

New and replacement windows to be double glazed with 16-20mm argon gap and soft coat low-E glass. Window Energy Rating to be Band B or better and to achieve U-value of 1.4 W/m²K. The door and window openings should be limited to 25% of the extension floor area plus the area of any existing openings covered by the extension.

Insulated plasterboard to be used in reveals to abut jambs and to be considered within reveal soffits. Fully insulated and continuous cavity closers to be used around reveals.

Windows and door frames to be taped to surrounding openings using air sealing tape.

NEW AND REPLACEMENT DOORS

New and replacement doors to achieve a U-Value of 1.4W/m²K. Glazed areas to be double glazed with 16-20mm argon gap and soft low-E glass. Glass to be toughened or laminated safety glass to BS 6206, BS EN 14179 or BS EN ISO 12543-1 and Part K (Part N in Wales) of the current Building Regulations.

Insulated plasterboard to be used in reveals to abut jambs and to be considered within reveal soffits. Fully insulated and continuous cavity closers to be used around reveals.

Windows and door frames to be taped to surrounding openings using air sealin

PART C

1 - Site Preparation and Resistance to Contaminants

Reasonable precautions must be taken to ensure protection from contaminants and ground gases e.g. landfill gases, radon, vapours etc. in accordance with Approved Document C.

2 - Resistance to Moisture

Assess all moisture risks including precipitation, wind driven spray, moisture emanating from the ground, as well as interstitial and surface condensation. Make appropriate provision to reduce all risks in accordance with the requirements of Approved Document C2.

Ventilation to roof voids to be provided and any new roof insulation should be kept sufficiently clear of the eaves to maintain adequate ventilation.

The ability of the walls, floors and roof to resist the passage of moisture to the inside of the building to be assessed and damp proof courses and membranes to be provided where necessary.

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BASIC RADON PROTECTION

Provide a 1200g (300 um) radon membrane over existing floor slab, lapped 300mm, double weltd and taped with gas proof tape at joints and service entry points. Carry membrane over cavity and provide suitable cavity tray and weep holes.

C2. CONDENSATION

Walls, floors and roof of the building to be designed and constructed so that their structural and thermal performance will not be adversely affected by interstitial condensation, surface condensation or mould growth. Account to be taken of the building's form and orientation in relation to topography, prevailing winds, sunlight and over-shadowing, and the rate at which humidity is generated.

Materials with the highest vapour resistance should be located on the warm side of a thermal element. VCLs to be provided where necessary.

The junctions between elements are designed to Accredited Construction Details or guidance of BRE IP17/01] and BS 5250:2011+A1:2016 Code of practice for control of condensation in buildings to be followed.

SOUND PROTECTION AND TESTING

Separating walls, floors, stairs and party walls to achieve a performance standard of 43 dB (minimum values for airborne sound insulation) and 64 dB to floors and stairs (maximum values for impact sound insulation) to demonstrate compliance with Approved Document E1.

Pre completion sound testing to be carried out by a suitably qualified person with appropriate third party accreditation (either UKAS accreditation or be a member of the Association of Noise Consultants Registration Scheme). Test to be carried out once the dwelling is complete but before carpeting and a copy of the test results given to Building Control.

If any elements were to fail the sound test, remedial works must be undertaken before retesting to the satisfaction of the Building Control Surveyor.

Where flanking walls or floors are continuous across separating walls specialist advice is to be sought to ensure additional treatments are provided to control flanking transmission.

IT IS THE DESIGNERS RESPONSIBILITY IS TO CONSULT WITH AN ACOUSTIC ENGINEER TO ENSURE THE COMPLIANCE ALL ASPECTS OF APPROVED DOCUMENT E.

WATER EFFICIENCY

The estimated water consumption not to exceed 125 litres per person per day in accordance with Approved Document G2. Water Efficiency to be calculated using the 'Water Efficiency Calculator for New Dwellings' and results submitted to building control before works commence on site.

Water calculation to be in compliance with Code for Sustainable Home Level 3/4 as stipulated by the local Planning Authority. Example calculation below;

WC 5/3 (dual flush)

Taps (excluding kitchen taps) 4

Baths 180

Shower 8

Kitchen sink taps 6

Washing machine 8.17 (not supplied)

Dishwasher 1.25 (not supplied)

Water recycling 0 (not supplied)

Predicted per capita consumption (Code) 103.28

COLD WATER SUPPLY

There must be a suitable installation for the provision of a wholesome water supply in accordance with Approved Document G. Cold water supply to be provided to washbasins, bidets, baths, WCs, showers, any place when drinking water is drawn off and to any sink provided in areas where food is prepared.

Supply of cold water to comply with section 67 of the Water Industry act 1991 and the Water Supply Regulations 2000.

HOT WATER SUPPLY

All bathrooms, washbasins, bidet, baths and showers to be provided with adequate hot and cold water supply in accordance with Approved Document G3. A washbasin with hot and cold water supply to be provided in or adjacent to all rooms containing a WC. A sink with hot and cold water also to be provided to any area where food is being prepared.

CONTROL OF WATER TEMPERATURE

The installation of the hot water supply to comply with Approved Document G3. All baths and showers are to be fitted with an in-line thermostatic mixing valve to ensure that the temperature of the water delivered to the bath is limited to 48°C.

HOT WATER STORAGE SYSTEMS

Hot water storage systems should be designed and installed in accordance with BS 12897 2006. Hot water vessels, cisterns etc and must be adequately supported.

Any hot water storage system including any cistern or other vessel shall incorporate precautions to ensure suitable pressure relief and that any discharge from safety devices is safely conveyed to where it is visible but will not cause harm to persons in or about the building. Precautions to be in place to prevent stored water exceeding 100°C. Hot water vessels to be fitted with a non self resetting energy cut out to instantly disconnect the power supply.

Outlets from domestic hot water storage vessels to be fitted with an in-line valve to prevent water temperatures exceeding 60°C. All pipes carrying hot water to be insulated where they pass through unheated spaces. Hot water storage system to be provided with suitable warning labels. Relevant certificates for the heating system i.e. Benchmark certificate, and commissioning certificates for fixed building services are to be given to the building owner and a copy provided to Building Control on completion.

ENERGY PERFORMANCE CERTIFICATE AND DWELLINGS EMISSIONS RATES

A registered Energy Performance Certificate (EPC) accompanied by a recommendation report in compliance with SAP 2009 and Regulation 29 is to be given to the owner of the building and submitted to Building Control no later than 5 days after the work has been completed.

The annual CO2 emission rate of the completed dwelling calculated using The Standard Assessment Procedure (SAP) to be submitted to Building Control in compliance with SAP10 and Approved Document L before works commence on site.

AREA OF WINDOWS AND DOORS

Where new windows are to be provided; if the area of openings is more than 25 per cent of the total floor area either the area of opening should be reduced to be not greater than 25 per cent or some compensation feature should be provided as described in paragraph 4.15 Approved Document L1b and as agreed with Building Control.

PROVIDING INFORMATION

Information about the fixed building services and their maintenance, including timing and temperature control settings, shall be provided to the owner of the dwelling on completion in compliance with Approved Document L1b.

THERMAL BRIDGING

Care shall be taken to limit the occurrence of thermal bridging in the insulation layers caused by gaps within the thermal element, (i.e. around windows and door openings). Reasonable provision shall also be made to ensure the dwelling is constructed to minimise unwanted air leakage through the new building fabric.

REG 44 AND 44ZA – COMMISSIONING OF FIXED BUILDING SERVICES

All fixed building services to be commissioned and a commissioning plan to be produced identifying:

- systems that need to be tested.
- how these systems will be tested.

Commissioning plan to be given to the building control body with the design stage dwelling primary energy rate, dwelling emissions rate and dwelling fabric energy rate calculation.

At completion commissioning certificate to be given to the building control body confirming that the commissioning plan has been followed and that all systems have been inspected and conform with the design requirements.

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SYSTEM CONTROLS AND ZONING

Domestic hot water circuits to have:

- time control that is independent of space heating circuits.
- electronic temperature control.

Each room or agreed zone should be provided with thermostatic room controls.

Dwellings with a floor area of 150m² or greater to have a minimum of two independently controlled heating circuits.

LIMITING HEAT LOSSES AND GAINS

In accordance with Table 4.4 Approved Document L

Insulation to be provided to:

- Primary circulation pipes for domestic hot water.
- Primary circulation pipes for heating circuits where they pass outside the heated living space and voids to be insulated.
- Pipes connected to hot water storage vessels for at least 1m from the point at which they connect to the vessel.

Secondary circulation pipework.

OVERHEATING MITIGATION

Adequate means of removing excess heat and limiting solar gains to be provided.

Compliance to be demonstrated by using either:

- The simplified method for limiting solar gains and providing a means of removing excess heat as set out in Section 1 of Approved Document O. Compliance check list (AD O Appendix B) to be provided to demonstrate compliance, or
- The dynamic thermal modelling method as set out in section 2 of Approved Document O, using the guidance set out in - CIBSE TM59 methodology for predicting overheating risk.

Report to be provided that demonstrates that the building passes CIBSE's TM59 assessment of overheating. Consideration given to provision of adequate daylight as detailed in BS 8206 -2 Code of Maintaining Adequate Level of Daylight, noise pollution and security.

Solar gains in summer to be limited by any of the following means:

- a. Fixed shading devices, comprising any of the following.
 - i. Shutters.
 - ii. External blinds.
 - iii. Overhangs.
 - iv. Awnings.

PROTECTION FROM FALLING AND ENTRAPMENT

Window handles on windows that open outwards are not to be more than 650mm from the inside face of the wall when the window is at its maximum openable angle.

Any guarding to be sized to prevent the passage of a 100mm sphere, to be 1.1m high from floor level and not to be easily climbable.

Any louvered shutters, window railing and ventilation grilles to comply with the following:

- not allow the passage of a 100mm diameter sphere.
- All holes which allow the passage of an 8mm diameter rod should also allow the passage of a 25mm diameter rod. Such holes should not taper in a way that allows finger entrapment.
- All looped cords must be fitted with child safety devices.

PART Q - SECURITY

Confirmation required that all doors and windows are to be installed in accordance with the advice stated in PAS24:2016 or alternatively comply with the requirements set out in Approved Document Q – Appendix B,

Doors to be manufactured to a design that has been shown by test to meet the requirements of British Standard publication PAS24:2016 or designed and manufactured in accordance with Appendix B or Approved Document Q

PART S – CHARGING OF ELECTRIC VEHICLES

Electrical vehicle charge point to be provided to any associated car parking spaces. If the connection cost is greater than £3600 two formal quotes to be given to building control, as detailed in Approved Document S, in which case, cable routes for electrical vehicle charge points to be agreed.

FIXED EXTERNAL LIGHTING

Install low energy light fittings that only take lamps having a luminous efficiency better than 80 lumens per circuit watt.

External light fittings to have both the following:

- Automatic controls which switch luminaires off in response to daylight
- If luminous efficacy is 75 light source lumens or less automatic controls which switch luminaires off after the area lit becomes unoccupied, if luminous efficacy is greater than 75 light source lumens, manual control can be installed.

Dwelling primary energy rate and dwelling emission rate calculations to account for the efficacy of lamps installed in the fixed lighting locations.

SOLID WASTE STORAGE (REFUSE)

Adequate provision shall be made for the collection of waste as required by the Waste Collection Authority.

The new dwelling is to be provided with an area of 1.2m x1.2m for refuse storage containers. Separate containers are to be provided for recycling and non recycling household waste. Waste collections that are less than weekly may require increased capacity as agreed with the Waste Collection Authority. If a communal solid waste storage facility is used, storage to have a combined capacity of 0.25m³ per dwelling or as agreed with the Waste Collection Authority.

Refuse storage areas to be sited within 25m of the waste collection point or as specified by the Waste Collection Authority, and placed so that the householder does not need to carry refuse more than 30m. Refuse storage areas are to be positioned away from any windows and ventilators and are not to impede access into the dwelling.

EXTERNAL SURFACE WATER DRAINAGE

Drainage of newly paved areas to be carried out in accordance with BS EN 12056-3 and Approved Document H.

Any new hard surfaces around the building should be provided with a proprietary non slip permeable surface laid to manufacturer's details and in compliance with BS6717 to allow for adequate drainage, or provided with a non slip surface and cross fall of 1:40 – 1:60 draining away from the building for a minimum of 500mm to a suitable soakaway.

Any new paths, driveways and other narrow areas of paving should be free draining away from any buildings to a pervious area such as grasslands or to a suitable soakaway.

APPROVED DOCUMENT R

Physical infrastructure for high-speed electronic communications networks

Building to be equipped with high-speed-ready in-building physical infrastructure, up to a network termination point for high-speed electronic communications networks.

So that copper or fibre-optic cables or wireless devices capable of delivering broadband speeds greater than 30 Mbps can be installed. A suitable position for at least one network termination point should be provided for dwelling as well as a suitable access point

If more than one dwelling must have a common access point for high-speed electronic communications networks

GREYWATER RECOVERY SYSTEM

Greywater recovery system to be installed and commissioned in accordance with the manufacturer's details.

All pipework carrying greywater to be clearly marked and labelled in accordance with the Water Regulations Advisory Scheme Information Guidance Note 90-02-05 and BS 1710:1984 'Identification of pipelines and services'

Installation to comply with the Water Supply (Water Fittings) Regulations 1999 and suitable materials to be selected from the Water fittings and Materials Directory. Pipes and fittings to be both recognizable and distinguishable from that supplying mains waste.

The reclaimed water system to be designed, operated and maintained so as to deal adequately with the contaminants, solids and organisms in the source waters. A suitable hazard assessment to be undertaken and the necessary safeguards adopted. The chemical, physical and biological properties of proposed water sources to be measured as part of the design and commissioning of the reclaimed water system. Water quality monitoring and reporting arrangements to be put in place.

Suitable fluid Category 5 level (airgap) of backflow prevention to be provided.

Access points for maintenance and clearing of blockages to be provided and filters to be easily accessible for cleaning.

Adequate ventilation to be provided.

Rainwater storage systems to be covered with screens on both inlets and outlets. Insulation to be provided to minimise heat gain and for frost protection. Periods where water is likely to be static for over a week are to be avoided.

Homeowner to be provided with clearly worded operating, maintenance and safety instructions, including instructions for the safe disposal of treatment chemicals or residues.

WASTEWATER HEAT RECOVERY SYSTEM (WWHR)

All showers to connect to instantaneous WWHR with 36% recovery efficiency utilization of 0.98, including showers over baths as detailed in the SAP report.

Recovery system and components to be independently tested and assessed by BRE. All works to be in compliance with Approved Document H and L.

All boxing off to be accordance with NHBC standards and Approved Document E.

Installation and water fittings to be compliant with The Water Supply Regulations 1999 and BS 6920.

Design stage checklist to be completed and system to be installed and commissioned by a qualified plumber. Operational and maintenance instructions to be given to owner on completion.

System to have factory fixed NCM (SAP) Identifier label. An identical second NCM (SAP) identifier label is also required to a nearby service cupboard.

System to be installed vertically so that it is fitted on the floor below the shower.

WWHR units to be installed inside the building

WWHR unit and the drain connector to have min 10mm clearance from the any adjacent structure.

WWHR system not to be installed in an environment where the ambient temperature is naturally above 25oC to minimise the risk of legionella growth.

Supply temperature of at least 60oC to be maintained from the heat source and/or storage vessel.

An Approved single check valve prevention device providing backflow prevention to at least fluid category 2 to be fitted at the point of connection(s) between the water supply and the fitting or appliance.

Length of drainpipe between shower and WWHR system to be less than 3 meters as far as practicable.

Access points to be provided.

Any shut-off valves for inlet and/or outlet to be full flow (non-restricting) shut off-valves.

WWHR pipe to be the same nominal size as the waste pipe to which it is connecting.

Pipework between the WWHRS preheated water outlet and the water heater and the shower cold-water inlet(s) to be insulated in accordance with the specification for DHW primary circulation pipes defined in 'Domestic Building Services Compliance Guide'.