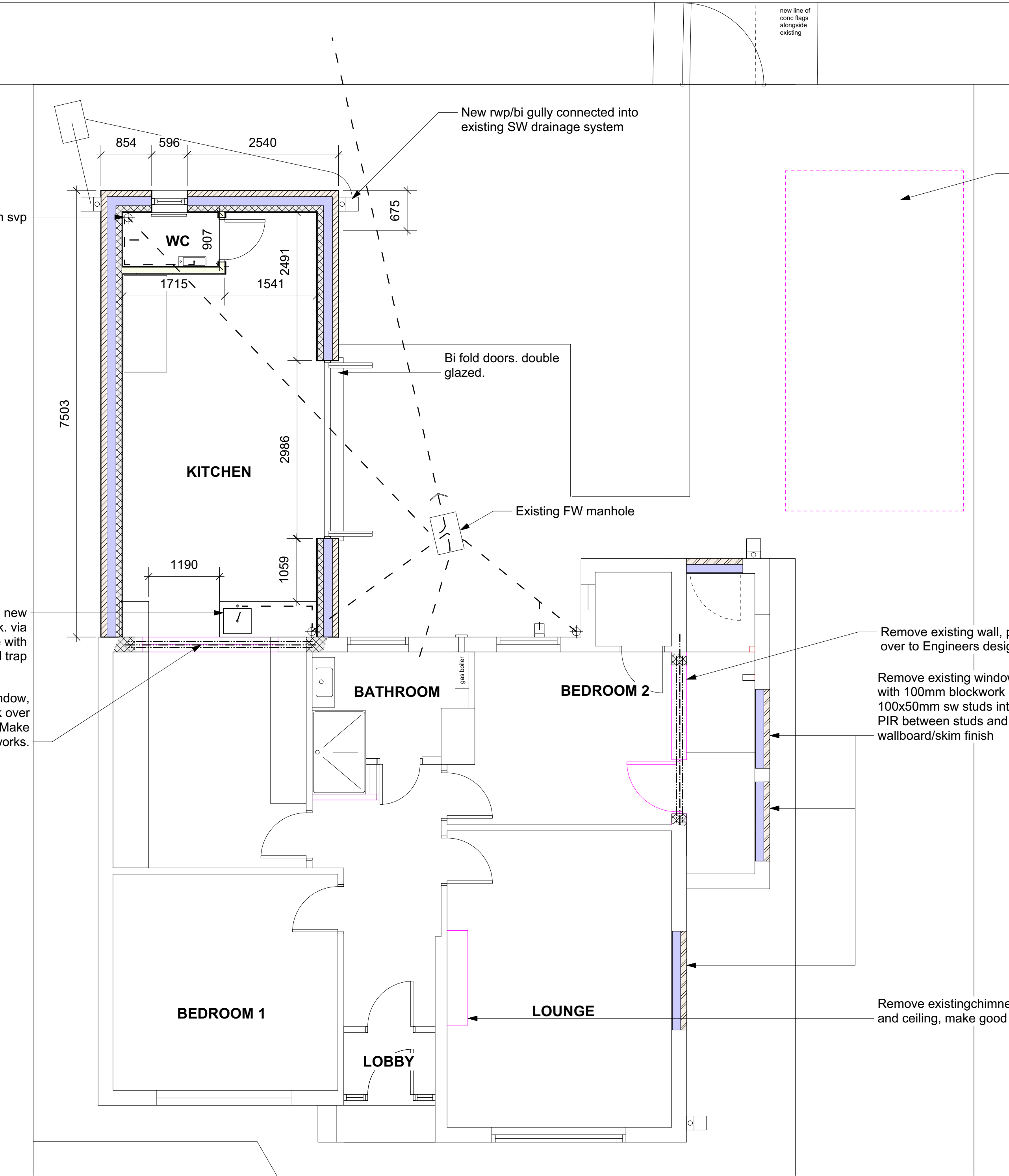


Full Building Specification
Regulatory Framework UK Building Regulations (Current Approved Documents A, B, C, F, H, K, L, P, Q, and T)
1. Roof Construction (Sloping Ceilings)
Roof Coverings: Supply and fix plain concrete or clay roof tiles to match the existing house. Fix tiles with aluminium or alloy nails in accordance with the manufacturer's specification and BS 5534.
Battens: Install 25 x 38 mm pressure-treated softwood (SW) batten battens. Securely nail battens at centres required by the tile manufacturer.
Underlay: Lay a BBA-approved vapour-permeable (breathable) roofing membrane horizontally over rafters. Provide a minimum 100 mm horizontal lap and ensure the membrane slightly overlaps rafters to allow water runoff.
Trimmer Structure: Install 175 x 50 mm graded softwood rafters (minimum C24 grade) fixed at maximum 600 mm centres. All structural timbers must be treated with a chemical preservative.
Insulation: Fit rigid polystyrene (EPS) insulation boards (such as Celotex or Kingspan) tightly between the rafters. To prevent thermal bridging and achieve required U-values, install a continuous layer of insulated plasterboard under the rafters. Leave a minimum 50 mm ventilated airspace above the insulation if required by the membrane manufacturer, or install full-fill using a fully certified non-ventilated system.
Ceiling Finish: Fix 12.5 mm tapered-edge foil-backed plasterboard to the underside of the rafters/counter-insulated layer. Seal all joints with scrim tape and finish with a 3 mm multi-finish plaster skim coat.
2. External Cavity Walls
External Render: Apply a 3 mm proprietary polymer-modified thin-coat silicone or acrylic render system over a reinforcing fibreglass mesh basecoat. The system must be applied strictly in accordance with the manufacturer's guidelines for external wall insulation (EWI).
External Insulation: Install 50 mm Expanded Polystyrene (EPS) insulation boards. Mechanically fix and bond the boards using a premium adhesive compound directly to the outer face of the external blockwork leaf.
External Leaf: Construct a 100 mm solid concrete blockwork outer leaf (minimum 7.3 N/mm² compressive strength). Lay blocks in a 1:1:6 cement:sand mortar mix (Designation II).
Cavity Insulation: Provide a 150 mm wide cavity completely filled with 100 mm PIR full-fill cavity insulation boards (e.g. Kingspan Thermafl TW50 or equivalent BSA-approved cavity boards). Ensure boards are tightly butted with staggered vertical joints.
Internal Leaf: Construct a 100 mm lightweight concrete blockwork inner leaf (minimum 3.6 N/mm² compressive strength, thermal conductivity λ ≤ 0.18 W/mK).
Wall Ties: Install stainless steel structural cavity wall ties spaced at maximum 750 mm horizontal and 450 mm vertical centres. Provide additional ties at a maximum 300 mm vertical spacing around window and door openings.
Internal Finish: Apply a two-coat plaster system consisting of a backing coat (e.g., British Gypsum Thistle Bonding Coat) followed by a 2 mm high-quality multi-finish plaster skim.
3. Ancillary Wall Works
Damp-Proof Course (DPC): Install a continuous polypropylene or high-performance polyethylene DPC. The DPC must be positioned at least 150 mm above the finished external ground level. Lap it at least 150 mm at joints and seal with the internal damp-proof membrane (DPM).
Cavity Trays and Closers: Install insulated cavity closers at all window and door reveals to arrest thermal bridging. Fit flexible vertical DPCs behind all openings and provide proprietary stepped cavity trays with weep holes above structural lintels.
4. Strip Foundations & Groundworks
Excavation: Excavate trenches to a minimum depth of 1000 mm below finished ground level, or until a load-bearing strata is reached. Increase depth as required by the Local Authority Building Control (LABC) or if trees are nearby to counter clay shrinkage (see BS 5834:2015).
Trench Dimensions: Standard trench width must be a minimum of 600 mm to accommodate the 400 mm total wall width, leaving a minimum 100 mm concrete projection on either side of the blockwork.
Concrete Specification: Pour a minimum 225 mm thick mass concrete strip foundation using C20 structural concrete. Ensure the concrete is level, fully compacted, and allowed to cure before laying any masonry.
Shaped Foundations: If the site slopes, foundations must be stepped. Steps must not exceed the thickness of the foundation concrete and must overlap by a minimum of twice the height of the step, or 300 mm (whichever is greater).
Below-Ground Masonry: Construct foundation walls up to the damp-proof course (DPC) using dense aggregate concrete blocks (minimum 7.3 N/mm² compressive strength) laid in a 1:4 cement:sand mortar (Designation II).
5. Windows and External Doors
Thermal Performance (Part L): All new windows and external doors must achieve high-efficiency thermal performance. Windows must achieve a maximum U-value of 1.4 W/m²K (or a Window Energy Rating of Band B). External doors must achieve a maximum U-value of 1.4 W/m²K (including the frame).
Chazing Specification: Supply and install factory-glazed, argon-filled double or triple-glazed units. Units must feature low-emissivity (Low-E) glass and warm-edge spacer bars.
Safety Glazing (Part G): Provide toughened or laminated safety glass complying with BS EN 12150 in 'critical locations'. This includes all glazing within 800 mm of the finished floor level, and any glazing within 300 mm of a door leaf up to 1500 mm above floor level.
Security (Part Q): All ground-floor windows and accessible external doors must be manufactured and tested to meet secure design standards. They must achieve PAS 24 certification (or equivalent) and feature multi-point locking systems.
Ventilation (Part F): Provide background ventilation via controllable trickle vents built into the window frames. Provide a minimum of 8,000 mm² equivalent area (EA) of ventilation for habitable rooms, and 4,000 mm² for wet rooms or kitchens.
Installation and Seals: Fix frames securely using galvanneal steel long strips or direct frame screws at maximum 600 mm centres. Seal the perimeter using low-modulus silicone sealant over a backing coat to ensure an airtight, weathertight finish.
6. Concrete Floor Slab & Insulation Connection
Sub-Base & Membrane: Lay a minimum 150 mm well-compacted, clean, inert hardcore sub-base, blended with fine sand. Install a 1200-gauge heavy-duty polythene Damp-Proof Membrane (DPM) across the entire floor area. Overlap the DPM by a minimum of 150 mm at any seams, seal with structural tape, and lap it up the internal walls to link continuously with the wall damp-proof course (DPC).
Concrete Slab: Pour a minimum 100 mm thick solid concrete floor slab over the blinded sub-base using a C20 structural concrete mix, fully compacted and finished level.
Floor Insulation: Install rigid polystyrene (EPS) floor insulation boards (e.g., Celotex or Kingspan) over the concrete slab. The insulation must achieve a maximum U-value of 0.13 W/m²K to comply with Approved Document L standards. Ensure all insulation boards are tightly butted together with staggered vertical joints.
Perimeter/Edge Insulation: Provide a continuous 25 mm strip of vertical rigid PIR insulation around the entire perimeter of the floor slab. The edge insulation must extend from the top of the main floor insulation down to the concrete slab, sitting flush between the wall's lightweight blockwork inner leaf and the floor finishes to eliminate cold bridging.
Screed Finish: Lay a 65 mm traditional sand and cement finishing screed over a polythene separating layer placed on top of the PIR boards. Increase screed depth to 75 mm if integrating underfloor heating pipes.
7. Structural Lintels
Lintel Specification: Install insulated, high-performance, galvanneal steel cavity lintels (such as Celnic or Birtley) over all new window and door openings. Select lintel profiles configured explicitly for a 150 mm cavity width.
End Bearings: All lintels must have a minimum end bearing of 150 mm onto the masonry on both sides of the opening.
Thermal Bridging & Cavity Closers: Use lintels with built-in rigid EPS thermal insulation cores to eliminate cold bridges across the cavity. Install continuous insulated cavity closers at all window and door reveals.
Damp Proofing: Install a flexible, high-performance polyethylene cavity tray directly above each lintel. The tray must extend 150 mm beyond the ends of the lintel and feature a forward-facing lip to direct moisture outwards. Provide a minimum of two proprietary weep holes per opening to drain the cavity tray.
8. Breakthrough Junction (Extension to Existing House)
Structural Openings: Prior to knocking through, install temporary adjustable steel props (Acrow props) and strongboys to fully support the existing house floors, masonry walls, and roof loads.
Structural Beams: Install structural steel beams (Universal Beams (UBs) designed and sized by a qualified structural engineer to safely bridge the new openings. Secure beams on engineering brick padstones (minimum 7.3 N/mm²) bedded on high-strength mortar.
Movement/Expansion Joint: Tie the new 400 mm extension walls to the existing house using stainless steel wall starter profiles (e.g., Arcon or Celnic wall connectors). Do not bond the masonry. Incorporate a continuous, weather-tight 10 mm vertical expansion joint packed with compressible joint filler and sealed externally with a high-modulus, flexible silicone sealant to accommodate natural differential settlement.
DPC/DPM Continuity: Cut a vertical chase into the existing house wall at the junction. Slot a continuous vertical DPC into the chase to isolate the new extension walls from the existing masonry, ensuring this vertical barrier overlaps the horizontal floor DPM and wall DPC lines.
Weathering and Flashing: Where the new single-storey extension roof meets the existing vertical brick wall, install a continuous Code 4 lead slip-and-cover flashing. Rake out mortar joints to a depth of 25 mm, insert the lead flashing, secure with lead wedges, and point with high-performance lead sealant.
9. Drainage Requirements
Rainwater System: Install half-round uPVC gutters (minimum 100 mm diameter) along the new eaves. Connect these to a 68 mm diameter uPVC downpipes. Rainwater must discharge into a new or existing surface water soakaway or a dedicated surface water sewer. Do not connect rainwater systems to a foul water sewer unless specifically approved by the local water authority.
Soakaway Design: Position any new surface water soakaway a minimum of 5.0 metres away from the foundations of the extension and any neighbouring structures. Construct the soakaway using proprietary geocellular crates wrapped in a permeable geotextile membrane, sized to suit local soil infiltration rates.
Foul Drainage: Lay all new below-ground foul drainage pipes using 110 mm diameter terracotta uPVC pipes. Pipes must be laid to a minimum gradient of 1:80 (1 in 80) if serving at least one WC or a 100 mm bed of gas gullies.
Inspection Chambers: Install a new proprietary plastic inspection chamber (manhole) at any change of direction, gradient, or at the junction where the new extension foul line connects to the existing private drainage system. Ensure the cover is airtight and load-rated for its specific location (e.g., pedestrian or driveway loading).
Building Regulations (Part H): All drainage works must comply with Approved Document H. Provide access for rodding and testing on all new pipe runs.
10. Structural Steelwork Notes
Engineer Calculations: The exact structural steel beam profiles, column sizes, splice details, and padstone dimensions are subject to final design and verification by a qualified Structural Engineer. Their site-specific calculations and drawings must be submitted to and approved by Building Control prior to the commencement of any breakthrough works.
General Steel Specification: All structural steel sections must be minimum Grade S275 to BS EN 10025. Steelwork must be thoroughly cleaned of rust and scale, then coated with one coat of zinc-phosphate red oxide primer before delivery to the site.
Padstones: Support all structural steel beams on pre-cast concrete padstones (minimum compressive strength 40 N/mm²) or high-density engineering bricks (minimum 7.3 N/mm²) bedded in a 1:3 cement mortar mix.
Fire Protection (Part A & B): To achieve a minimum of 30 minutes of fire resistance, encase all structural steel beams and columns within the extension or breakthrough opening with two layers of 12.5 mm fire-resistant plasterboard (e.g., British Gypsum Gyproc FireLine). Stagger all board joints, secure them with mechanical drywall screws, and finish with a 3 mm multi-finish plaster skim. Alternatively, apply an approved intumescent paint system strictly to the manufacturer's specified dry film thickness (DFT).
11. Electrical and Lighting Specification (Part P)
Competent Person Scheme: All electrical installation, wiring, and testing works must be carried out by a competent person registered with a government-approved Part P scheme (e.g., NICEIC or NAPIT). Upon completion, a BS 7671 Electrical Installation Certificate and a Building Regulations Compliance Notice must be issued to the homeowner and Building Control.
Energy-Efficient Lighting (Part L): All new internal light fittings must be high-efficiency luminaires. Supply and install fixed low-energy light fittings (such as integrated LED downlights or dedicated LED pendants) that achieve a minimum luminous efficacy of 75 light source lumens per circuit watt to comply with Approved Document L standards.
Circuits and Accessories: Extend the existing consumer unit to accommodate new, dedicated ring or radial circuits for the extension's socket outlets and lighting loops. Ensure all new circuits are protected by a 30mA Residual Current Device (RCD) or Residual Current Breaker with Overcurrent protection (RCBO).
Smoke Alarms: If the extension impacts existing escape routes, install a mains-powered, interconnected smoke/heat alarm system with battery backup complying with BS 5839-6.
12. Heating, Ventilation, and Mechanical Extract Fans
Heating System Extension: Extend the existing gas-fired central heating system into the new extension. Install high-efficiency steel panel radiators or a low-profile wet underfloor heating (UFH) system. The heating system must be zoned and controlled independently of the main house using a programmable room thermostat and Thermostatic Radiator Valves (TRVs) to comply with Approved Document L standards.
Underfloor Heating (if applicable): Lay UFH barrier pipes over the floor insulation layer using proprietary tracking or clipping systems. Pipes must be spaced and sized according to the heating engineer's layout and connected to a dedicated UFH manifold with its own mixing valve and pump.
Background Ventilation (Part F): Provide background ventilation to all habitable spaces via controllable trickle vents integrated into the window frames. Habitable rooms must have a minimum total equivalent area (EA) of 8,000 mm² of ventilation, while wet areas (bathrooms/shower) must have a minimum of 4,000 mm².
Purge Ventilation: Ensure all new windows and external doors provide rapid 'purge' ventilation. Operable window sections must have an aggregate area equal to at least 1/20th (5%) of the floor area of the room they serve if they open more than 30 degrees, or 1/10th (10%) if they open between 15 and 30 degrees.
Mechanical Extract Fans (Wet Rooms): If the single-storey extension includes a kitchen, utility room, or bathroom, install mains-powered mechanical extract fans complying with Approved Document F. Minimum extract rates must meet or exceed: Kitchens (adjusted to 30 l/s per second (30) intermittent), or 60 l/s if located elsewhere in the room.
Utility Room: 30 l/s per second (30) intermittent.
Bathroom: 15 l/s per second (15) intermittent.
Fan Controls and Ducting: Intermittent extract fans in bathrooms without operable windows must feature a minimum 15-minute overrun timer linked to the light switch. Rigid uPVC ducting must be routed via the shortest possible path through the roof or external walls to a dedicated external grille or roof terminal featuring a back-drafting shutter.

sink connected into new 100mm stub stack. via 42mm upvc waste with deep seal trap

Remove existing window, provide new steelwork over to Engineers design. Make good all disturbed works.



PLAN

All dimensions to be verified on site, and SBD informed of any discrepancy. All drawings and specifications should be read in conjunction with the Health and Safety Plan; all conflicts should be reported to the Principal Designer. This drawing is the copyright of Sketch Book Design Ltd.		
Date	No.	Revision Notes
sbd Sketch Book Design Ltd architectural & interior designers Lathrop House, Ashford Grove, Milford Morpeth. NE61 3FQ t: 01670 505312 w: www.sbd.co		
Project Title		
Proposed Extension 188 Pogmoor Road Barnsley S75 2LA		
Client		
Mr & Mrs A Jones		
Sheet Title		
PLAN AS PROPOSED		
Sheet Scale	Sheet Size	
1:50	A2	
Date	Drawn By	
June 26	SB	
Project No.	Revision	
J-4010	P1	
Sheet No.		
J-4010 - SBD-00 - GF-DR - A - 02		
Suitability		
D1 SUITABLE FOR TENDER		