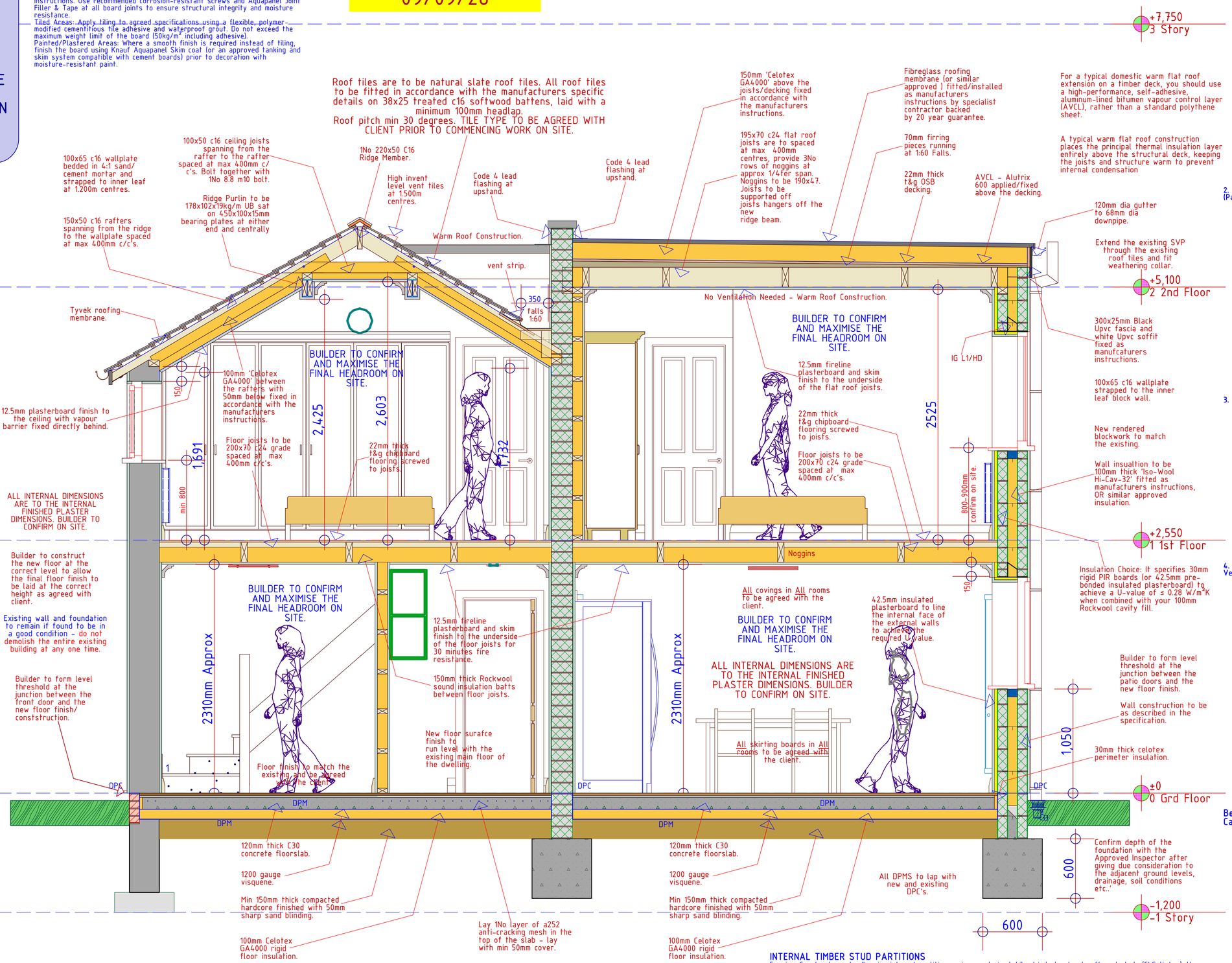
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THE CONSTRUCTION OF A TWO STOREY EXTENSION AT THE REAR OF THE EXISTING DWELLING HOUSE + EXTERNAL & INTERNAL ALTERATIONS + DEMOLITON OF FRONT PORCH AND EXISTING SINGLE STOREY REAR EXTENSION.

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09/09/26

BATHROOM & EN-SUITE WALL FINISHES

Substrate: Line all bathroom and en-suite walls with 12.5mm Knauf Aquapanel Indoor (or approved cement-based tile backer board equivalent).
Installation: Fix boards in strict accordance with the manufacturer's instructions. Use recommended corrosion-resistant screws and Aquapanel Joint Filler & Tape at all board joints to ensure structural integrity and moisture resistance.
Tiled Areas: Apply tiling to agreed specifications using a flexible, polymer-modified cementitious tile adhesive and waterproof grout. Do not exceed the maximum weight limit of the board (50kg/m² including adhesive).
Painted/Plastered Areas: Where a smooth finish is required instead of tiling, finish the board using Knauf Aquapanel Skim coat (or an approved tanking and skim system compatible with cement boards) prior to decoration with moisture-resistant paint.



Proposed Section 1

1 — 1:20

All dims are to be checked on site by builder.

Traditional Strip Foundation

1. Excavation & Ground Conditions

- **Dimensions:** Excavate foundation trenches to a typical baseline depth of 900mm and a minimum width of 600mm. The actual depth must be extended on-site where dictated by local subsoil conditions, frost lines, or the presence of shrinkable clay.
- **Building Control Liaison:** All foundation excavations must be inspected and approved by the **Registered Building Control Approver (RBCA)** or Local Authority Building Control officer prior to pouring any concrete. All dimensions are provisional until verified on-site.
- **Adverse Conditions:** If soft ground, peat, un-compacted made ground, or significant tree roots are discovered during excavation, work must stop immediately. The building control officer must be informed, and a qualified structural engineer must be consulted to alter the foundation design.

2. Concrete Specification & Compliance

- **Compliance Standards:** All foundation design and works must strictly comply with **Approved Document A (Structure)** of the current Building Regulations and **BS 8004:2015+A1:2020** (Code of Practice for Foundations).
- **Concrete Mix Design:** Foundation concrete must conform to BS EN 206-1 and BS 8500-2. Provide a minimum **GEN3 mix (C20 strength class)** for unreinforced foundations, or **RC25/30** if reinforcement is introduced.
- **Sulphate Resistance:** Test the subsoil for chemical aggression if required. If aggressive ground conditions or high sulphate levels are present, the concrete mix must utilize sulphate-resisting cement (Design Chemical Class FND compliant).

3. Depths, Levels & Service Protection

- **Minimum Depths:** The base of all external foundations must be a minimum of **900mm below finished ground level** to ensure structural stability against frost action and seasonal drying. Internal load-bearing wall foundations must be excavated to a minimum depth of 600mm below ground level.
- **Adjacent Drains:** Foundations running adjacent to or near subterranean pipework must be excavated below the invert (lowest internal) level of the drain to prevent transferring structural loads onto the drainage run.
- **Steps and Levels:** Where steps in the foundation are required due to sloping ground, they must be constructed in strict accordance with the detailing rules set out in Approved Document A.

INTERMEDIATE TIMBER FLOOR CONSTRUCTION SPECIFICATION (COMPLIANT TO PART A, B & E)

1. Structural Timber Framing & Bridging

- **Joist Layout:** Install **70mm x 200mm C24 grade structural softwood joists** spaced at maximum **400mm centres**.
- **Structural Strutting (Part A):** For clear joist spans exceeding **2.5 metres**, provide a continuous row of **solid timber strutting at the precise mid-span line**. Solid strutting pieces must comprise treated timber with a minimum thickness of 38mm, extending to a minimum of **three-quarters (75%) of the total joist depth**. (If clear spans exceed 4.5m, expand this to two rows of strutting fixed at the one-third span positions).
- **Floor Level Integration:** The main contractor must double-check vertical datums on-site to ensure the finished deck level of the new extension floor seamlessly aligns with the existing historic property floor lines.

2. Localized Structural Reinforcement

- **Double Joist Trimming:** Provide double-joist or triple-joist configurations directly beneath heavy concentrated structural loads, including baths, parallel stud partitions, and all perimeter margins of the stairwell trim opening.
- **Bolted Interconnection:** Double-joist groupings must be mechanically bolted together at maximum **600mm centres** along their length. Fastening assembly must comprise **10mm diameter high-tensile steel bolts fitted with double-sided tooth/dog-grip timber connectors** and heavy-duty steel plate washers clamped tight on both external timber flanks.

3. Structural Decking & Moisture Controls

- **Standard Dry Fields:** Floor decking to comprise minimum 22mm thick high-density tongue-and-groove softwood boards or moisture-resistant structural particle/ chipboard panels.
- **Wet Area Mandate (Kitchens/Bathrooms/ Utilities):** Flooring in designated wet or high-humidity zones must strictly comprise high-performance **P5 moisture-resistant grade structural chipboard panels** complying with **BS EN 312**. All panel joints must be laid across the joists with glued, staggered seams and secured down using countersunk twin-thread structural wood screws.

GROUND-BEARING CONCRETE FLOOR SLAB SPECIFICATION (COMPLIANT TO PART L & C)

1. Sub-Base Preparation & Moisture Barriers

- **Hardcore Foundation:** Provide a minimum **150mm thick layer of consolidated, well-rammed hardcore** (Type 1 clean crushed stone or approved equivalent), free from sharp projections and organic matter.
- **Blinding:** Blind the core surface with a continuous **50mm thick layer of clean sand blinding** to provide a smooth, puncture-free bedding plane.
- **Damp Proof Membrane (DPM):** Lay a heavy-duty, minimum **1200-gauge (300-micron) polythene DPM** directly over the sand blinding.
  - All membrane joints must be overlapped by a minimum of 150mm and hermetically sealed using proprietary gas-proof double-sided jointing tape.
  - The floor DPM must be dressed up and seamlessly **lapped in with the matching Damp Proof Course (DPC)** embedded within all new and existing perimeter walls to ensure complete water-tight continuity.

2. Thermal Performance & Core Insulation (Part L Target)

- **Target U-Value:** Floor construction profile must achieve a maximum **U-value of 0.18 W/m²K** in strict accordance with Approved Document L (Volume 1).
- **Core Insulation:** Lay a minimum **100mm to 125mm thick high-performance rigid PIR insulation board** (e.g., Kingspan Thermafloor TF70 or Celotex GA4000/ XR4000) tightly butt-jointed over the DPM layer.
- **Perimeter Cold-Bridge Prevention:** Install a continuous **30mm thick vertical strip of rigid PIR insulation** around all external and structural floor perimeters. This barrier must match the full height of the concrete slab and internal screed/finishing envelope to eliminate linear thermal bridging at the wall-to-floor junction.
- **Separation Layer (VCL):** Overlay the rigid insulation boards with a **500-gauge polythene vapour control layer (VCL)** / slip-sheet. Turn the VCL up 100mm at all room perimeters (to sit behind the skirting line) and lap all joints by 150mm to prevent wet concrete from bleeding into the insulation joints during the pour.

3. Structural Concrete Slab & Reinforcement

- **Concrete Specification:** Pour a minimum **125mm thick ground-bearing concrete slab** utilizing an **ST2 or GEN2 (C35 grade minimum structural performance equivalent)** concrete mix, formulated in strict compliance with **BS 8500-2**.
- **Level Accuracy:** The main contractor must cast the slab to the exact finished structural levels required, factoring in underfloor heating loops or specific manufacturer tolerances for the client's chosen final floor finish.
- **Sub-Slab Drainage Protection:** Where sub-site drainage or foul pipes pass directly beneath the new slab footprint, provide A142 **structural steel mesh reinforcement** (1.0m wide array) embedded within the bottom third of the concrete slab, ensuring a minimum continuous concrete protective cover of 50mm over the entire length of the pipe run.

4. Bridging Existing Suspended Floor Ventilation

- **Telescopic Air Ducting:** Where the new solid extension floor covers existing external air bricks, sub-floor cross-ventilation to the retained historic structure must be permanently maintained.
- **Ducting Assembly:** Connect existing openings to proprietary **65mm x 215mm uPVC rectangular cranked/telescopic ventilation ducts** routed beneath the new slab envelope.
- **Termination:** Terminate ducts at new 65mm x 215mm high-airflow vermin-proof air bricks built flush into the new external cavity wall face.
- **Protection:** All under-slab ducting tracks must be encased in a minimum **100mm thick concrete protective surround**. Where the duct penetrates the new external cavity wall, it must be sleeved cleanly with a proprietary **stepped cavity tray installed directly above** to redirect descending cavity moisture safely to the outside.
- **Workmanship Compliance:** All site excavation, blinding, membrane taping, insulation cutting, and concrete casting must be executed strictly to **BS 8000 Part 3** (Masonry), **Part 4** (Waterproofing/Vapour seals) and **Part 8** (Concrete).

Below-Ground Specification (150mm Cavity)

- **Masonry Leaves: 100/140mm solid dense concrete blocks** (minimum compressive strength **7.3 N/mm²**, Class A / BS EN 771-3) used for both the inner and outer leaves below ground level. Alternatively, Class B semi-engineering bricks are acceptable.
- **Cavity Width:** Maintained at **50-100mm** to match the above-ground footprint perfectly and ensure structural alignment.
- **Mortar Mix:** Laid in a highly durable **1:3 cement to sand mix** (Class M12 / Designation i) or a **1:4 masonry cement mix** to withstand continuous moisture saturation in sub-base soil.
- **Cavity Filling:** The 50-100mm cavity must be completely filled with a solid, lean-mix concrete (Grade **GEN 1 / consistence class S3** or better).
- **Fill Height:** Concrete fill must terminate exactly **225mm below the lowest Damp Proof Course (DPC)**.
- **Thermal Bridge Prevention:** The remaining 225mm gap between the top of the concrete fill and the main DPC must be packed with **150mm Knauf Dritherm 32 insulation**. This must step down at least 150mm below the floor insulation to prevent a cold bridge at the floor-to-wall junction.

INTERNAL TIMBER STUD PARTITIONS

Framing: Construct non-loadbearing internal partitions using regularised, kiln-dried structural softwood studs (CLS timber). Use minimum 38mm x 89mm (or 38mm x 63mm) studs at maximum 400mm vertical centers, fixed securely to matching 50mm thick head and sole plates. Install solid horizontal mid-height noggins at a maximum of 1200mm vertical centers.
Acoustic Insulation: Densely pack all voids with an approved mineral wool acoustic roll/slab (e.g., Knauf Acoustic Roll or Rockwool APR) with a minimum density of 10kg/m³ to satisfy Building Regulations Approved Document E. Insulation thickness must exactly match the depth of the chosen stud cavity (e.g., 75mm insulation for 75mm cavities).
Structural Support: Ensure walls running parallel to floor joists are built off doubled-up joists. For walls running at right angles, provide solid timber noggins between joists at partition junctions. Ground floor partitions must sit on a continuous Damp Proof Course (DPC) over a thickened concrete slab footprint.
Linings & Finish: Face both sides of the framework with 12.5mm plasterboard. All joints must be staggered. Finish walls with a 2mm to 5mm multi-finish plaster skim coat over scrim-taped joints, complete with matching slim-line metal angle beads and plaster stops to all exposed corners and terminations.