

ROOF WORKS & THERMAL UPGRADE

EXISTING ROOF TO BE STRIPPED AND RE-ROOFED:

Strip existing clay pantiles (350x450mm double-roll pattern). Salvage minimum 95% for re-use. Remove existing bitumen felt underlay. Survey and repair/replace sarking boards where defective.

- NEW ROOF BUILD-UP (outside to inside):**
- Salvaged clay pantiles re-laid on lime mortar (NHL 3.5)
 - 38x25mm tiling battens at 350-370mm gauge
 - 38x25mm counter-battens (25mm ventilation cavity)
 - Breathable roofing membrane (sd value max 0.30m, e.g. Pro Clima Solitex Fronta WA)
 - Existing/repared sarking boards (19-25mm T&G boarding)
 - Existing 100mm rafters
 - 80mm Kingspan K7/Celotex GA4000 PIR insulation between rafters
 - Intelligent vapour control layer (Pro Clima Intello Plus), lapped at all joints
 - 25x50mm service battens perpendicular to rafters @ 400mm centres
 - 25mm Kingspan K18 insulated plasterboard OR 12.5mm plasterboard + 3mm skim

Achieved U-value: 0.20-0.22 W/m²K

RIDGE VENTILATORS:

Existing timber louvre ventilators (1m x 450mm) to be carefully removed, repaired (treat timber, replace decayed sections, repaint), and reinstated to original positions with weatherproof lead flashings. Ventilators to remain fully functional.

FIXINGS:

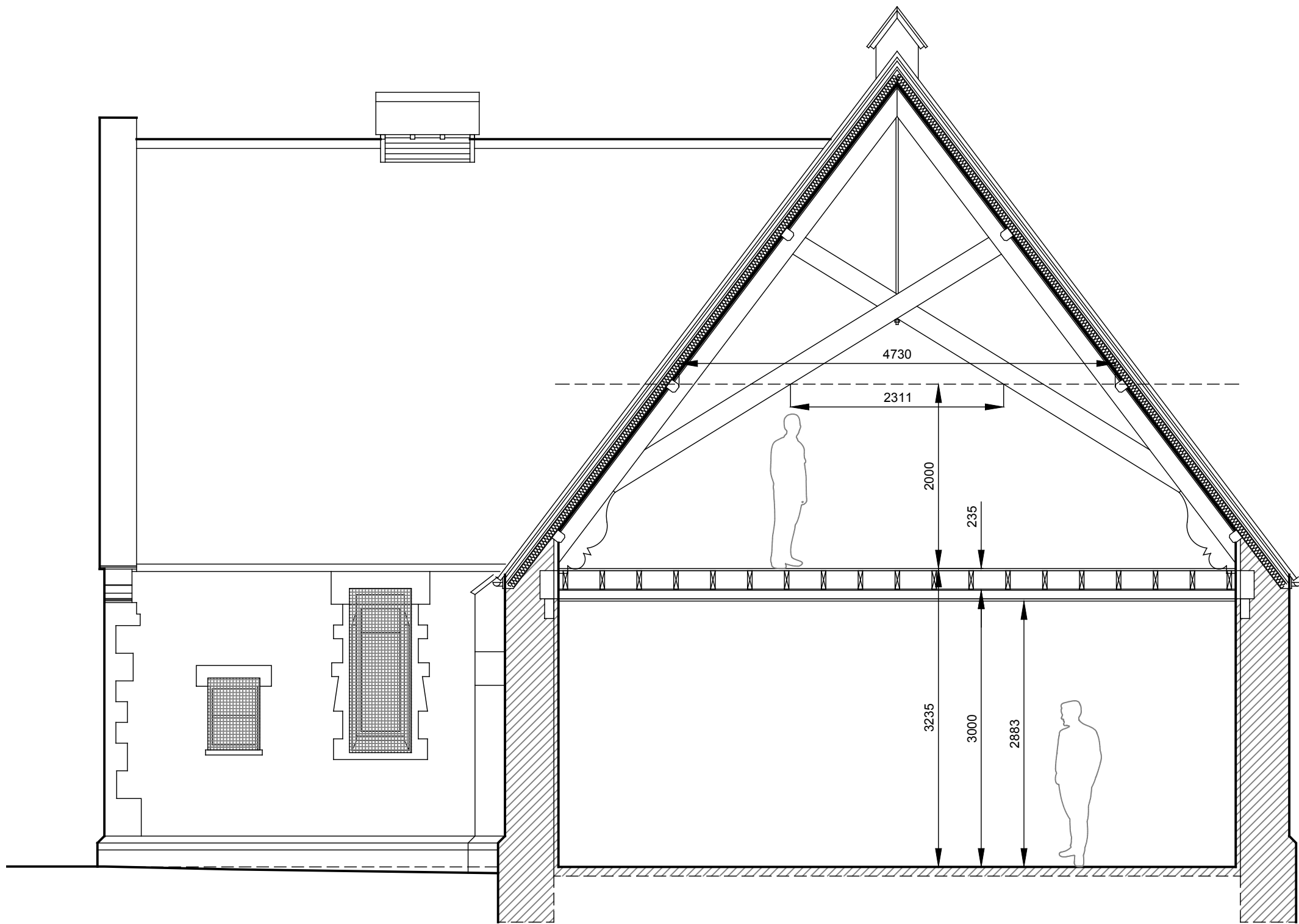
All pantiles double-nailed with copper or stainless steel nails. Ridge tiles mechanically fixed with stainless steel clips/screws. NO cement mortar - lime mortar (NHL 3.5) only.

COMPLIANCE:

Works to comply with Building Regulations Approved Document L2B (thermal performance for listed buildings), Part C (weather resistance), and BS 5534 (slating and tiling). Listed Building Consent required.

CONTRACTOR NOTE:

Phased working essential - maximum 1/3 roof area open at any time. Emergency weather protection required. Scaffold with weatherproof sheeling. Works to be undertaken during dry weather period (April-September recommended).



PROPOSED SOUTH EAST ELEVATION & SECTION

EXISTING ROOF TRUSSES - RETENTION AND REFURBISHMENT

Existing structure: Mid-Victorian king rod scissor trusses (1868) at 3m centres. Wrought iron king rods (25mm+ diameter) with threaded ends and adjustable nuts. Diagonal timber scissor bracing (130mm wide, X-formation) with stop-chamfered detailing. Retain all trusses, king rods, bracing, and purlins in situ. No alterations or fixings to historic structure.

Ceiling hanger removal: Remove existing softwood hangers and cross beams supporting false ceiling. Remove all fixings without damage to trusses.

Making good: Repair damage from hanger removal, fixing holes, splits, and deterioration using traditional materials matching existing. Consolidate loose joints, piece in missing timber sections. Repair splits at king rod penetrations with epoxy if required. Clean king rods (wire brush), apply rust converter, check nut tightness (minor adjustment only). Stabilize rust patina or protective coating per conservation officer.

Refurbishment: Clean timber (gentle methods), apply breathable preservative where necessary, clear wax finish to enhance stop-chamfered details (or per conservation officer). Trusses visible from first floor as character features. All works subject to conservation officer approval.

NEW FIRST FLOOR CONSTRUCTION - MAIN HALL

Ceiling height on ground floor lowered by 170mm to gain height under the roof trusses on first floor.

Floor joists: 200x50mm C24 timber @ 400mm centres spanning 2.97m between steel beams. Joists span parallel to 14.95m length of hall.

Steel beams: 4 No. 305x165x40 UB in S275 steel spanning 7.345m across width of hall at approximately 3.0m centres. Beams positioned to align between existing roof trusses where possible. All beam ends bear on loadbearing external walls with 440x215x100mm minimum concrete/engineering brick padstones.

Floor deck: 22mm P5 moisture-resistant T&G chipboard glued and screwed at 300mm centres.

Acoustic/thermal insulation: 100mm mineral wool (Rockwool RW3 or equivalent) between joists.

Fire protection/ceiling below: 2x12.5mm fire-rated plasterboard (Type F) staggered joints + 3mm skim plaster. Achieves 60-minute fire resistance.

Steel beam fire protection: Beams encased in fire-rated boarding or intumescent paint system to achieve 60-minute fire resistance. Specification by fire engineer.

Total floor area: 14.95m x 7.345m = 109.8m². Usable floor area with 2m headroom: 60m² (due to sloping roof at 52.3° pitch and stair/lift enclosure). Maximum occupancy: 60 persons.

Ground floor ceiling height: Approximately 2.7-2.8m.

First floor clear height: Approximately 2.4m minimum under roof truss chors.

All structural calculations, fire protection specifications, and connection details to be verified by structural engineer and fire engineer.

MAIN STAIRCASE - GROUND FLOOR TO FIRST FLOOR

HALL

Total rise: 3.235m (18 risers @ 180mm, adjust final rise to exact height). Footprint: 4.17m x 2.85m.

Configuration: Three-flight U-shaped staircase with two quarter-turns.

Lower flight: 7 risers @ 180mm = 1260mm rise, 6 goings @ 280mm = 1680mm going. Width: 1000mm measured between strings. Pitch: 40.0°.

First quarter landing: 1000x1000mm at 1260mm height. 200x50mm C24 joists @ 400mm centres, 22mm T&G chipboard deck.

Mid flight: 4 risers @ 180mm = 720mm rise, 3 goings @ 280mm = 840mm going. Width: 1000mm. At 90° to lower flight. Pitch: 43.8°.

Second quarter landing: 1000x1000mm at 1980mm height (1260mm + 720mm). Construction as first landing.

Upper flight: 7 risers @ 180mm = 1260mm rise, 6 goings @ 280mm = 1680mm going. Width: 1000mm. At 90° to mid flight. Pitch: 40.0°.

Top landing: Rectangular landing at first floor level (3235mm height) leading to door into first floor hall. Size and construction to be coordinated with door swing and hall layout.

Construction: 250x50mm C24 stringers. 38mm hardwood treads with 25mm bullnose nosing. 18mm plywood risers.

Non-slip finish.

Handrails: 50mm diameter hardwood BOTH SIDES. 900-1000mm height. Continuous with 300mm extensions.

Wall-mounted on low-profile brackets maximum 50mm projection. Total handrail projection maximum 100mm from string/wall (Part K allowance). 100x100mm newel posts at all landing corners and flight ends.

Balustrade: 1100mm height on all open edges. Timber spindles @ 100mm centres maximum (preventing 100mm sphere passing through). Spindles fixed between string/floor and handrail.

Stairwell enclosure: New partition walls define stairwell. Partition positioned 20mm from existing historic diagonal truss chord (31.7° angle, 130mm thick, stop-chamfered Victorian detail) which remains exposed in first floor hall. Partition independent structure, NO fixings to truss. 20mm gap filled with flexible sealant.

Fire protection: 60-minute fire-resistant stairwell enclosure. Self-closing FD60S fire doors at ground floor and first floor.

Emergency lighting throughout stairwell. Stair capacity 200 persons (1000mm width + 5mm per person) exceeds first floor occupancy 60 persons maximum (4.1 safety margin).

Corridor: 1200mm wide passage at ground level through/alongside stairwell to external fire exit doors. Minimum 2.0m headroom.

Accessibility: Contrasting nosings 50mm wide on all treads (minimum 30-point luminance contrast). Contrasting floor finish 400mm wide at all landings and flight ends. Platform lift (1125x1425mm) adjacent to stairwell provides compliant accessible route (Part M).

Complies with Part K (institutional/assembly stairs: 180mm rise, 250mm going, 1000mm width). Part B (fire safety - adequate capacity, protected enclosure, emergency lighting). Part M (accessibility via platform lift). Serves first floor hall 60m² usable area, 60 persons maximum occupancy.

INTERNAL STEPS WITH QUARTER LANDING - HALL TO OFFICE

Level change: 710mm (hall higher than office).

Configuration: Quarter landing 1000x1000mm at hall floor level. Door opens outward into hall. Steps turn 90° from landing and descend to office.

Partition wall: New partition between hall/office positioned immediately adjacent to existing historic diagonal truss chord. Truss exposed on office side. Partition independent structure, NO fixings into truss. 10-20mm gap filled with flexible sealant.

Landing: 150x47mm C24 joists @ 400mm centres, 22mm T&G chipboard deck. Supported on three sides plus 100x100mm post at free corner. Guarding 900mm height, 100x100mm posts. 4 risers. Rise: 177.5mm. Going: 270mm. Total going: 810mm. Width: (800/900/1000mm). 220x47mm C24 stringers, 38mm treads with bullnose nosing. 18mm ply risers. Non-slip finish.

Handrails: 50mm diameter hardwood BOTH SIDES. 900-1000mm height. 75x75mm newel posts.

Headroom: >2.0m throughout (truss at boundary, not overhead). Part K compliant.

Accessibility: Contrasting nosing strips 50mm wide. Contrasting floor finish 400mm wide at top/bottom. Office capacity: 4 persons maximum.

NEW FIRST FLOOR CONSTRUCTION - OFFICE OVER TOILET AREA

Floor joists: 200x50mm C24 timber @ 400mm centres spanning parallel to 5.745m width. Joists bear on external walls at outer edges and hang from steel beam using galvanized joist hangers.

Steel beam: 152x89x16 UB in S275 steel positioned at 2.15m from wall (to avoid external door opening). Beam spans 4.155m parallel to room length. Beam to be flush-mounted with top flange level with top of joists. Both beam ends bear on loadbearing walls with 225x225x100mm minimum concrete padstones.

Joist spans: 2.15m one side of beam, 3.595m other side of beam.

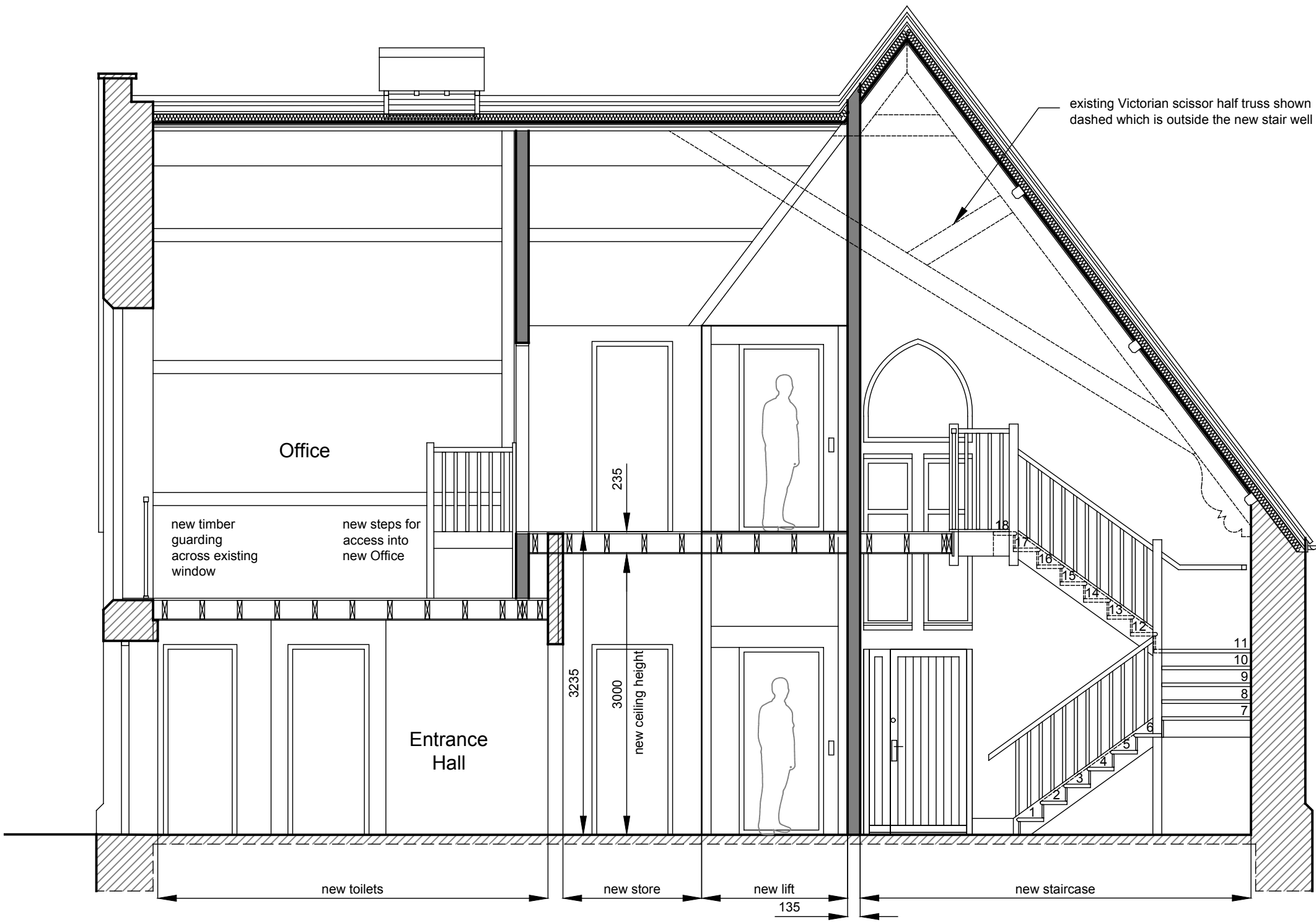
Floor deck: 22mm P5 moisture-resistant T&G chipboard glued and screwed at 300mm centres.

Ceiling below: 12.5mm plasterboard + 3mm skim plaster fixed to underside of joists.

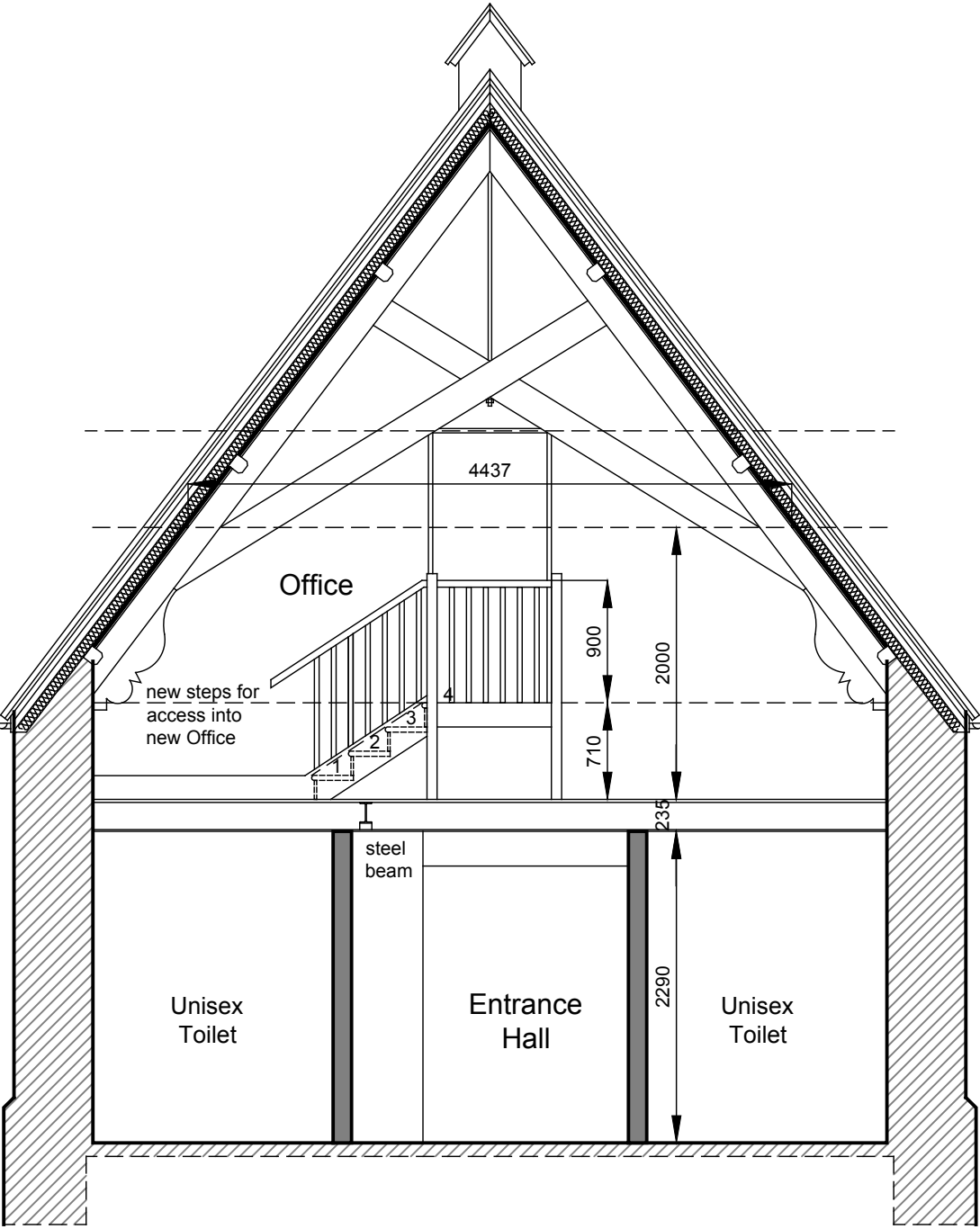
Total floor depth: 222mm (200mm joists + 22mm deck). Provides 33mm clearance above 255mm door opening height restriction.

Floor area: 5.745m x 4.155m = 23.87m² office use, Category B loading).

All structural calculations and beam/joist sizing to be verified by structural engineer.



PROPOSED SECTION THROUGH STAIRCASE



PROPOSED SECTION THROUGH TOILETS & OFFICE

No.	Revisions	Date
Client		
CALNE FREE CHURCH		
Project		
PROPOSED ALTERATIONS TO CHURCH HALL CALNE FREE CHURCH CHURCH STREET CALNE SN11 0HS		
Drawing Title		
PROPOSED SECTIONS		
	The Studio 22 Brickley Lane Devizes Wiltshire SN10 3BQ	Scale 1:50@A1
	T 01380 819900 E info@drdesigns.co.uk W www.drdesigns.co.uk	Date MAY 26
	Drawn DR	Checked
	Drawing No. 25005 / P115	