

ROOF TRUSSES

General; Roof structure to comprise prefabricated timber roof trusses designed strictly in accordance with the Structural Engineer's drawings, design intent and loading assumptions. Truss types, spans, profiles and bearing positions to match those indicated on the Structural Engineer's roof plans and truss diagrams. No alternative truss arrangement or modification is permitted without prior written approval of the Structural Engineer.

Truss Types and Geometry; Provide roof trusses generally in accordance with the truss layouts and typical truss forms shown on the Structural Engineer's drawings, including multiple truss configurations where indicated to suit roof geometry and load paths. Truss spacing, pitch and overall depth to be as shown on the Structural Engineer's drawings and coordinated with architectural roof build-up and finishes.

Materials and Design Standard; All trusses to be manufactured from strength graded softwood to strength class C24 to BS EN 338, designed to BS EN 1995-1-1 (Eurocode 5) and PD 6693. Metal connector plates to be factory pressed and sized to suit design forces. Timber moisture content at manufacture to be suitable for internal protected conditions.

Bearings and Supports; Trusses to bear onto timber wall plates and structural supports at locations shown on the Structural Engineer's drawings. Minimum bearing lengths to be as detailed by the Structural Engineer. Bearings to be level and fully supported prior to erection.

Restraint and Bracing; Permanent bracing, binders, chevron bracing, longitudinal restraint and stability elements to be provided strictly in accordance with the Structural Engineer's drawings and the truss manufacturer's design. No bracing may be omitted, repositioned or altered without written approval of the Structural Engineer.

Fixings; Truss to wall plate fixings, restraint straps and all connections to be provided as detailed by the Structural Engineer. Proprietary truss clips, straps or fixings to be installed in full accordance with manufacturer instructions and structural details.

Handling and Erection; Trusses to be handled, stored and erected in accordance with Trussed Rafter Association guidance and the truss manufacturer's recommendations. Trusses to be adequately propped and restrained during erection to prevent distortion or instability.

Alterations and Services; Cutting, notching or drilling of trusses is not permitted. Any requirement for services, penetrations or trimming to be coordinated at design stage and agreed in writing by the Structural Engineer and truss manufacturer.

Design Responsibility; Truss design is a Contractor Designed Portion. The truss manufacturer shall prepare full truss design calculations, layout drawings and bracing plans for review and acceptance by the Structural Engineer prior to manufacture.

NBS References; G20 (Carpentry timber components), F50 (Timber framing), A31 (Contractor Designed Work) as applicable.

Structural Engineer References; Refer to HOP drawings 12337-HOP-45-ZZ-DR-S-0003 and associated roof plans and truss diagrams for truss arrangement, geometry, bearings and restraint requirements (no revision).

WALLS

External Wall Build-Up and Structure; Softwood painted featheredge cladding ex 32x175 mm fixed to preservative-treated vertical battens 25x38 mm forming a drained and ventilated cavity, with insect mesh at top and bottom of cavity, over breather membrane having a vapour resistance not exceeding 0.6 MN_s/g and structural sheathing; corner pinch battens 100x50 mm and window and door cheeks 100x25 mm included for detailing and junction trims; complete with all necessary fixings, sealants and trims to provide a durable and weatherproof external finish. Timber frame wall panels to be softwood strength class C24 to BS EN 338 unless otherwise stated and constructed to Structural Engineer's details and calculations. Studwork to be nominal 47x97 mm C24 with studs at maximum 600 mm centres throughout. Studs to be doubled up at every opening reveal and where indicated by the timber frame design. Wall panel rails: 47x97 mm C24 bottom panel rail fixed to sole plate with 3.1x75 mm ring shank nails at 100 mm centres. Sole plate: 38x97 mm C24 fixed to slab with shot fired fixings 3.8x70 mm at 150 mm centres or as Structural Engineer's details. Structural sheathing: 9 mm OSB/3 to the external face as minimum; where OSB/3 is required to both faces, provide 9 mm OSB/3 to both faces fixed with 3.1x50 mm smooth round nails at 150 mm centres. Breather membrane to external face over sheathing.

Lintels and Openings; All lintels to be supported on 44x97 mm C24 cripple studs. Opening dimensions and trimming to be coordinated with architectural drawings and the timber frame manufacturer's drawings.

Wall Restraint and Ties; Provide 30x5.0x1200 mm long galvanised mild steel vertical restraint straps at maximum 1800 mm centres, fixed to wall plate and down face of wall, or as detailed by the Structural Engineer.

Tolerances, Setting Out, and Moisture Content; Wall panel manufacturing tolerances: length ±3 mm, height +2/-2 mm, diagonals to be equal, deviation ±5 mm, opening dimensions ±5 mm. Wall panel erection tolerances: ±10 mm from plumb per storey height, ±10 mm from plumb over full height from foundations, ±5 mm from line of sole plate with maximum ±5 mm deviation from drawing, ±5 mm from line at mid height of panel, inside faces of adjacent wall panels to be flush, adjacent wall panels to be tightly butted. Panels to be adequately braced during erection to maintain tolerances. Structural timber components to be at a moisture content of 20% or less at time of manufacture.

Fixings and Connections; Where double or triple members are indicated, provide M10 bolts at 450 mm centres with double sided toothed plate connections. All joints and fastenings to be formed in accordance with BS EN 1995 and appropriate manufacturer recommendations.

Notching and Holes; Notches and holes in structural timberwork are not permitted without prior written agreement of the Structural Engineer.

Preservative Treatment; Structural and exposed timber to be treated with preservative against rot and infestation, treat cut ends liberally with tinted preservative.

Insulation and Airtightness; Wall construction to achieve a minimum U-value of 0.18 W/m²K. Insulation to comprise 90 mm rigid PIR insulation between timber studs with an additional 50 mm rigid PIR insulation layer fixed internally over the stud face to reduce cold bridging, all insulation installed tightly and in accordance with manufacturer's instructions. The insulation type, product and build-up may be varied to suit the timber frame supplier's standard system provided the overall thermal performance is maintained or improved and subject to prior written approval by the Contract Administrator. Provide vapour control layer to the warm side of insulation, fully lapped and sealed. Internal lining to be 12.5 mm plasterboard finished with 3 mm skim coat. All junctions to be watertight; seal perimeter joints internally with airtightness tape and externally with sealant to maintain continuity of weathering and airtightness, all to architectural drawings and NBS specification.

Design Responsibility and Approval; The wall structure and panel build-up may vary by timber frame supplier. Any variation from the coordinated architectural and structural design, including stud sizes, centres, sheathing arrangement, straps and fixings, is subject to prior written approval of the Structural Engineer.

NBS References; F30 (Damp proof courses and membranes), F50 (Timber framing), G20 (Carpentry timber components) as applicable.

Structural Engineer References; Refer to HOP drawings 12337-HOP-45-00-DR-S-0002, 12337-HOP-45-ZZ-DR-S-0003 and 12337-HOP-45-00-DR-S-0052/0053/0054 for wall interface details, sole plate/wall construction and restraint requirements (no revision).

FOUNDATIONS

Foundations comprise an in-situ reinforced concrete ground beam system with ground-bearing reinforced concrete slab, including thickened edges and upstands, all formed to lines, levels and details shown on the Structural Engineer's drawings. Excavation, formation preparation, inspection and blinding to be carried out strictly in accordance with NBS sections D20 (Excavating and filling) and E10 (In-situ concrete). Blinding concrete: GEN0, minimum 50 mm thick, laid within 4 hours of formation inspection, to NBS E10. Structural concrete: Designated mixes to BS EN 206 and BS 8500, typically FM02 for foundations and GEN3 for ground slab unless noted otherwise by the Structural Engineer, to NBS E10. Reinforcement: high yield steel to BS 4449, fixed and supported to maintain specified cover, to NBS E20 (Reinforcement). Construction joints, pour sequence and any movement joints to be agreed with the Structural Engineer prior to works commencing, to NBS E10. Do not vary foundation depth, width, reinforcement or concrete specification without written approval of the Structural Engineer. Finished floor levels, slab edges and foundation set-out to be coordinated with architectural drawings and agreed datum. Top of structural slab to be set to achieve required DPC clearances - minimum 150mm for foundations and level thresholds and external falls as shown on the architectural GA drawings. DPM to ground slab to be fully continuous with wall DPCs and lapped and sealed in accordance with NBS F30 (Damp proof courses and membranes). Builder's work for service penetrations, sleeves and openings through foundations and slabs to be pre-coordinated and formed during construction, not drilled post-pour, unless approved by the Structural Engineer. The site is not located within a radon affected area. No radon protective measures are required. Damp proof membrane to the ground slab to be provided in accordance with NBS F30 and detailed to ensure continuity and airtightness at all joints, penetrations and perimeters. Reinforcement to be lapped, supported and detailed in accordance with the Structural Engineer's drawings and calculations, with minimum concrete cover as specified, to NBS E20. Formation to be taken down to firm, load-bearing strata, free from contamination, and prepared to receive foundations in accordance with NBS D20. Where hardcore or sub-base is required, provide well-compacted granular fill to thickness and specification shown on the Structural Engineer's drawings. All new foundations to be taken below the invert level of adjacent or crossing drainage runs unless otherwise agreed with the Structural Engineer. Refer to Structural Engineer's drawings for all foundation details, levels, build-ups and reinforcement details: HOP drawings 12337-HOP-17-00-DR-S-0100 series.

FOUNDATIONS - ASSUMPTIONS AND EXCLUSIONS

Foundation design, sizing, bearing capacity, reinforcement content and structural performance are by the Structural Engineer. The Contractor is deemed to have allowed for normal excavation, groundwater management, temporary works and disposal of excavated materials, consistent with the site information provided. No allowance is included for contaminated ground, abnormal ground conditions, piling, ground improvement, dewatering beyond localised measures, or alteration to existing drainage unless specifically shown or instructed. Insulation, screeds, finishes and final floor build-ups are defined on architectural drawings and specifications and are not part of the foundation structure unless noted otherwise.

ROOFING SPECIFICATION

General; Roof construction to be designed and installed in accordance with the roof covering manufacturer's recommendations, BS 5534, BS 5250, Approved Documents B and C, and relevant NBS sections. Site location BN6 9JS is an inland location with elevated exposure and shall be treated as **Exposure Zone 3 (Severe exposure)** for the purposes of BS 5534. All materials, fixings and workmanship to be suitable for the exposure conditions, wind loads and roof pitch.

Pitched Roof Ventilation; Provide cold roof ventilation in accordance with Approved Document C and BS 5250. Maintain a minimum 50 mm clear ventilation void above insulation throughout the roof pitch. Provide ventilation openings at eaves level equivalent to a continuous 25 mm wide strip on two opposite sides to promote cross-ventilation. Ensure ventilation paths remain unobstructed at eaves, ridges, hips, valleys and abutments.

Services Ventilation and Discharges; All soil vent pipes (SVPs) and mechanical extract ducts to discharge through proprietary tile ventilators. Ducts to be formed in rigid, insulated ductwork taken directly through the roof construction. Where possible, locate SVP and extract discharges on the north-facing roof pitch to minimise visual impact and weathering exposure. Coordinate all roof penetrations with the roof covering manufacturer's details to maintain weather tightness, ventilation continuity and compliance with BS 5534 and Approved Document C.

Roof Covering; Roof to be covered with plain clay tiles. Tile samples to be submitted for approval and to satisfy Planning and Building Control discharge requirements. Contractor to submit full roof covering proposal, including tiles, fixings and ventilation components, minimum 6 weeks prior to requirement on site. Tiles to be fixed on 38 x25 mm preservative-treated softwood tiling battens, fixed at centres to suit tile gauge and manufacturer's requirements. Underlay to be Tyvek Supro vapour-permeable roof tile underlay, lapped minimum 100 mm vertically and horizontally, installed in accordance with manufacturer instructions. Underlay to be carried over tilting fillet at eaves and dressed fully into the gutter.

Tile Fixings; Tile fixing to comply fully with BS 5534 and the roof covering manufacturer's fixing specification for Exposure Zone 3 (Severe) conditions. The following fixing regime is to be taken as a minimum baseline only; each tile in every fourth course, together with the end two tiles in every course and the top and bottom two courses, to be twice nailed. Final nail type, size, frequency and fixing pattern to be confirmed by the tile manufacturer's site-specific BS 5534 wind load calculation for exposure, pitch and building height, and to be adapted where more onerous.

Eaves, Verges, Hips and Ridges; Eaves to be laid with an eaves top tile as the undercourse. Verges to be laid in broken bond, using tile-and-a-half in alternate courses, bedded onto a plain tile undercloak, projecting approximately 40 mm over the fascia board. Hips to be covered with bonnet or third-round hip tiles of similar colour, texture and profile to the main roof tiles. Hip tiles to be bedded in mortar, struck off in one operation, and secured with single 65 x2.65 mm aluminium alloy nail. Provide galvanised steel hip iron at base of hips. Ridges to be covered with half-round ridge tiles, edge bedded onto plain tiles below with solid bedding at butt joints.

Lead Work and Flashings; All lead flashings, soakers and valleys to be Code 5 lead. Leadwork to be carried out strictly in accordance with Lead Development Association recommendations. Flashings to be provided to all jamps and below window openings, with welded upstands. Lead joints to be lapped minimum 150 mm. Lead to be dressed minimum 200 mm under tiles. All leadwork to be undertaken by competent operatives.

Lead Valleys; Lead-lined valleys to be formed using Code 5 lead sheet. Valley lead and tiling fillets to be supported on minimum 19 mm thick, 225 mm wide marine plywood valley boards each side of rafters. Lead to be laid in lengths not exceeding 1.5 m, with minimum 150 mm laps, and dressed minimum 200 mm under tiles. Roofing tiles to be bedded in mortar placed on a tile slip to prevent direct contact with lead. All work to comply with roof covering manufacturer's details and Lead Development Association recommendations.

Mortar Bedding; Bedding mortar to consist of 3 parts sharp sand to 1 part Portland cement. Mortar to be struck off to give a smooth face and pointed in one operation.

NBS References; H60 (Clay and concrete tiling and slates), F30 (Damp proof courses, membranes and underlays), R11 (Lead sheet roofing and flashings) as applicable.

CEILING FINISHES AND FIRE PERFORMANCE (30 MINUTES)

Internal Ceiling Build-Up;§1

Thermal Performance; Cold roof insulation to achieve roof U-value not worse than 0.15 W/m²K (Part L 2021 notional target for new non-domestic buildings). 300 mm mineral wool loft roll (typical λ 0.040 W/mK) laid between and over joists will typically achieve approximately 0.13 W/m²K, subject to continuity at eaves, penetrations and loft hatches.

Fire Performance; The ceiling lining system shall achieve a minimum of 30 minutes fire resistance in accordance with Approved Document B and the plasterboard manufacturer's tested system, including fixing centres, edge details, jointing and treatment of penetrations. All service penetrations through the ceiling to be sealed and detailed to maintain the fire performance of the lining.

Access and Hatches; Provide two fire-rated loft access hatches, minimum 30 minutes fire resistance, complete with proprietary frames, seals and ironmongery, installed in accordance with manufacturer instructions and coordinated with the ceiling lining and vapour control layer.

Services and Storage Allowances; Allow for forming and supporting timber stallages and local strengthening within the roof void for water header tanks and associated services where required, coordinated with the Structural Engineer's design and the truss manufacturer's details. Access to the loft space is required for inspection, maintenance and servicing of header tanks and building services.

Loft Access, Walkways and Safety; Deck the top of ceiling joists locally as required with suitable timber boarding or proprietary loft boarding system to provide safe access routes within the roof void for maintenance purposes. Boarding to be securely fixed and coordinated to avoid compression of insulation and to maintain thermal performance. Provide a proprietary barrier or guard to ladder access openings to prevent falls when the loft hatch is open, designed and installed in accordance with current health and safety guidance.

Vapour Control Layer; Provide a proprietary vapour control layer to the warm side of the ceiling construction, located immediately above the plasterboard lining unless detailed otherwise, continuous throughout. VCL to be lapped minimum 100 mm, with all laps, perimeter junctions and penetrations sealed with compatible tapes and sealants to maintain vapour and airtightness continuity. Coordinate VCL with light fittings, access hatches, ductwork and all service penetrations; repair any punctures with compatible patches and tape.

NBS References; K10 (Plasterboard linings and ceilings), F30 (Damp proof courses and membranes, vapour control layers), F50 (Timber framing) as applicable.

Balustrading and Feature posts; Supply and fit treated softwood, handrails and spindles to detail, with reference to the attached drawings, guarding height to be 900 mm above finished deck level (or as noted on drawings) to include decoration above and below (no significant change in level either side). NBS references: F30 (timber framing interfaces and DPC where relevant), G20 (carpentry timber components), P20 (painting and decorating).

Decking Finishes; Softwood anti slip tongue-and-groove boarding over decking areas (approx. 470 lm), complete with all necessary fixings and supports, including trims and falls as detailed. NBS references: G20 (carpentry timber components), P20 (painting and decorating if stained/painted finish is required).

Notes:

Do not scale this drawing.

All levels and dimensions are to be checked on site.

This drawing is to be read in conjunction with all relevant consultants drawings and specifications, together with safety plan requirements.

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PROJECT Manyweathers Pavilion, Hurstlerpoint College

DRAWING Section A-A

STAGE Construction

JOB NO : 693

DATE : 30/01/2026

DWGS NO: AL103

SCALE: 1:20 @A1

REVISION: -

DRAWN : DB

Drawings to be read in conjunction with drawings AL100 to 104, NBS Specifications and Project Particulars, together with the Structural Engineer's drawing ad calculations.

REV.#	DATE	NAME	NOTES

