

Hot Melt Inverted Flat Roofing System to Main Roof generally, comprising the following build-up (NBS Ss_20_40_20_40):

- In-situ concrete deck as part of concrete frame to Struct.Eng design.
- Screed system (TBC) to accommodate any falls & leveling requirements.
- Primer to substrate.
- Hot melt waterproofing layer, min. 6mm thick, colour Black (24mm inc. reinforcement layer below).
- Surface protection membrane layer.
- Rigid insulation to meet 0.13 W/m²K U-value, loose laid.
- Water control/drainage retention layer / coping sheet.
- Concrete paving (min 50mm thick) on proprietary paving pedestal support system.
- Perimeter insulated aggregate / gravel ballast finish (with protection boards as required).
- Parapets provided to min. 1200mm high with continuation of insulation full height & waterproofing to min. 150mm above finished roof level.
- Pressed PVC aluminium parapet coping flashing system, secret fixed & jointed with integral weather tight bolt heads to external walls.
- Any wall type upstands or studs required generally (e.g. Flare Enclosure construction) to be formed min. 120mm above finished roof level with continuation of hot melt system returning up / over faces or with suitable crest / weathering detail as applicable.

Notes:

- Fire performance classification of roofs generally to meet BR001(4) as a minimum standard.
- The roof design is proposed based on being zero falls, & in accordance with BS6229:2018. A level survey or public foot way need to be considered prior to installing the waterproofing membrane to ensure no negative falls, with any remediation required to be agreed with roof specialist.
- Insulated surface / parapets to be suitable for use at required locations & formation levels to enable drainage to occur as intended design.
- Gravitational drainage system proposed to specialist design inc. rainwater calculations to determine size, number & locations of any outlets, hoppers, downpipes & any other associated accessories.

Proprietary High performance, Aluminium PFC Finished, Stick Curtain Walling System (NBS Ss_25_20_85)

- The system shall include all required frames, cappings, fasteners, fixings, windows, glazing accessories, spigot panels, thermal acoustic insulation, gaskets, weather, air-tightness and acoustic seals, perimeter finishes, custom made upstands, custom made opening lights, custom made louvers, aluminium fixings, window remote systems and construction joint sealant.
- Curtain wall back box depths to be confirmed based on system type, spans & wind loadings etc.
- Mullions & transoms to include bespoke capping profiles to an increased depth that meets proposed visual requirements of the architectural design intent.
- Mullions & transoms to be capless locally with silicone joints to meet proposed visual requirements of the architectural design intent.
- Coloured / opaque glazed in IGU spigot panels where identified on elevations with foil backed insulation.
- Glazed in louvre panels where identified on elevations providing required face areas to meet Mech.Eng ventilation strategy, louvres blank off elsewhere & suitably insulated.
- Bespoke, feature, perforated PVC aluminium panels installed as part of curtain wall system across floor edges & parapet level etc, where identified on sections & elevations to meet proposed visual requirements of the architectural design intent.
- Proprietary freestop barrier system suitable for installation at slab edges & openings required. Also acoustic treatment requirement to be factored into specified product.
- Proprietary acoustic break mullion & transom inserts to be included where spanning areas / between floors & adjacent spaces to limit flanking sound transmission, included as part of overall proprietary system which may also include horizontal acoustic mass barriers & acoustic membranes to slab edges which are also to meet any fire stopping requirements.
- Fire & Acoustic Engineers to advise based on project analysis reports.
- Glazed in EPDM to all external curtain walls suitably bonded to maintain air tight line & meet target value.
- Mid-span restraint brackets back to associated slab edges/beams.
- Mullion spigot fixings / brackets back to structure, cranked locally where required with consideration to access & insulation to suit programme of works.
- Curtain wall base support comprising concrete upstands (with pocket recesses) or secondary steel angles / cleats from upstand or slab edges for fixing mullions.
- Exposed brackets to be PFC finished with flush / countersunk fixings.
- Cil / Base section of curtain wall frame to allow for pre-fixed PFC angle to allow internal floor finishes to terminate against / conceal where required.
- Nom. 25mm thick Rockwool batt insulation around all curtain wall frame reveals.
- Recessed pockets to be formed in slab or upstands locally to mullion / spigot fixing locations to allow concealment of fixing bolt depths, to be suitably required into programme of works.
- MEP services to be suitably placed / routed following installation.
- All associated masonry by specialist to require finish that matches design intent and required robustness based on use & application.
- Internal wall linings returning into all reveals on packs if required & Driwall adhesive.

Typical External Wall Buildup back to SFS thru-wall construction, comprising:

- "Stick-on" Natural Stone Facing Cladding Panels system.
- 30mm thick Natural stone "hang on" system panels.
- Proposed stone type samples (to match existing) to be provided for Planning & Heritage Authorities, Architect & Client approval.
- Stone bonding, coursing, pointing & mortar type / requirements to be agreed.
- Pre-fixed hanger brackets with adjustment bolts secured with undercut anchors / horizontal caps.
- Vertical "T" profile sections.
- Primary support brackets fixed through / supported at SFS stud locations.
- Thermal isolator pads.
- Reveal detail gaskets as identified on details with system brackets & flashings to achieve intended design intent.
- Spigot profiled stone feature bands & corners following design intent with support from proposed system to manufacturers recommendations.
- Refer to elevations for locations & extents of each type requires.
- Stone depth units at base of walls to min. 120mm above associated ground level. Stone type to match that as agreed as part of associated stone cladding system.
- Ventilated residual cavity, Minimum 50mm.
- Proprietary Cavity Closer & Fire Break Cavity Barriers.
- Horizontally between compartment floors & vertically at compartment walls, & then intermediately to maximum permitted cavity extents (D0M TRC).
- Openings types as required with heat expandable instrumented seal.
- Galv. pressed metal brackets for suitable fixing / support back.
- Non-combustible Class A1, partial fill stone wool insulation to external cavity, product self finished (Radisson Red) minimum 100mm, 200mm thick as part of meeting overall target U-value calculation.
- Breather Membrane - non-combustible Class A1.
- Non-loadbearing SFS thru-wall system build-up to meet all requirements including Fire Resistance to BS EN 1364-1.
- Exposed to fire: 60 Minutes TBC by Fire Engineer.
- Outside to fire: 60 Minutes TBC by Fire Engineer.
- Sound Insulation (Acoustic performance - including facade finishes) TBC by Acoustic Engineer.
- Thermal performance - as identified in proposed insulation types to meet target U-values, factoring in facade finishes.
- Air-tightness: 4m³/hour/m² at 50Pa.
- Sheathing Board - 12mm thick calcium silicate based fibre cement board.
- All joints suitably fire rated silicone sealant jointed to manufacturers recommendations to provide all required fire, weather-tightness, sound insulation & air-tight performance requirements.
- Non-loadbearing SFS SFS system as part of overall thru-wall system to specialist design, comprising:
- Nom. 120mm SFS zone (200mm SFS zone to double height spaces).
- SFS stud centre TBC by stone cladding specialist to suit required primary support bracket centre generally, & additionally to suit corner & reveal detailing etc.
- SFS stud gage TBC by stone cladding specialist to suit required back & fixing types.
- Allow for min. double studs adjacent all window, door & curtain wall openings providing adequate fixing of stone cladding panel primary support brackets, fixings reveal & corner brackets etc.
- Allow for double studs to provide support each side of vertical cavity barriers within SFS zone.
- SFS studs to be provided each side of acoustic partitions abutting external walls which are to extend to back of sheathing board for both fire & acoustic separation where required.
- Two stud arrangement provided locally to cross bracing (flat) SFS walls to be provided between any SFS stud bracing studs & star landing supports.
- Non-combustible Class A1, partial fill stone wool insulation, for installation between SFS studs, product of Radisson Red (RWS) data:
- Stone Cladding - nom. 140mm thick as part of meeting overall target U-value calculation.
- Natural Stone (the built JW Street Facade) - nom. 50mm thick as part of meeting overall target U-value calculation.
- VCL / Fire / Flame retardant Vapour Control Layer including all associated joining accessories to manufacturers recommendations.
- Plasterboard Linings to internal face of external walls.
- 2No. layers 15mm plasterboard, type to be agreed to meet overall performance requirements criteria of thru-wall construction & additionally reduction (S0verh) and continuing into any opening reveals.
- Moisture resistant boards to be included in any unheated locations or areas subject to increased humidity (e.g. Showers).
- Plasterboard linings (if associated VCL) to continue full height above ceilings & to be sealed to underside of associated soffits.
- 2mm skim coat plaster & beads generally.
- Fixed seamless finish to board joints to agreed locations only.
- Concrete column and sheer wall locations to include plaster fix & dab or cuppler system to provide tolerance for alignment of finished face of boards aesthetically.

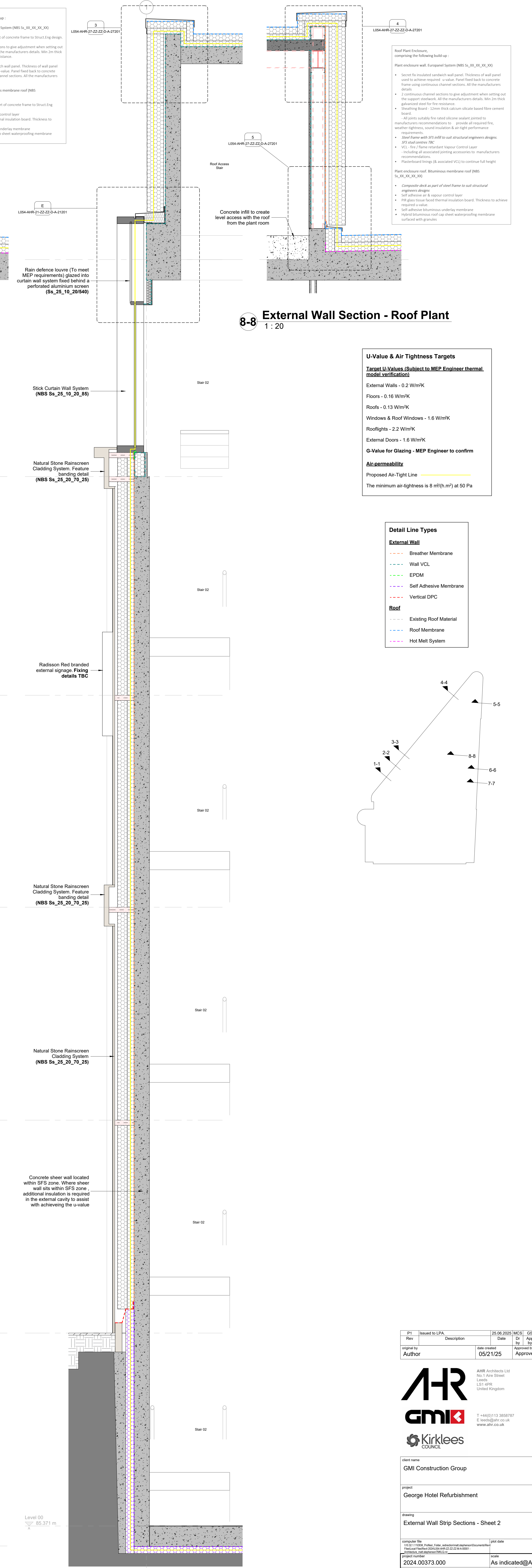
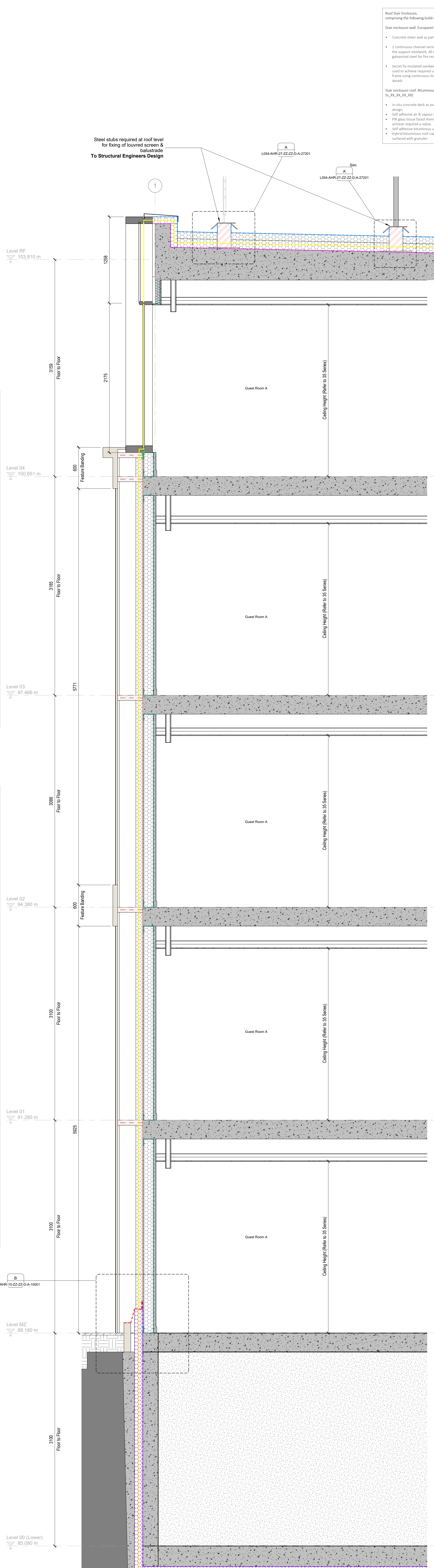
Proposed Concrete Shear Wall Retaining Structure Construction:

- Proprietary plasterboard lining system internally with VCL.
- Cast in situ concrete shear wall retaining structure including water stop bars to Struct.Eng design, detail & specification. Wall face to be suitably finished & smooth to accept tanking membrane system against.
- Proprietary tanking system fixing in with below slab tanking arrangement to specialist details, comprising Self Adhesive Membrane on tanking primer solution to retaining structure. Waterproofing arrangement to continue & tie in with any DPC / cavity fix arrangement above ground level as required.
- ** Please note that curing for cement surfaces to membranes (e.g. Self Adhesive Membrane) are variable & subject to temperature, weather & site conditions etc., and this must be taken into consideration & factored into the Contractors programme of works accordingly**
- Closed cell below ground insulation achieve target U-value.
- Concrete backfill to Struct.Eng design.
- Existing wall below ground level.
- Any requirement of protect & drain membrane system / land drain to be confirmed.

Lower Ground Floor Slab Construction:

- Screed system between FE1 & SLL (TBC) to accommodate any finishes build-up (drains, falls or leveling requirements).
- Ground bearing (assumed) floor slab (DS) & bases to Struct.Eng design.
- Closed cell below ground insulation to achieve target U-value based on F18 calculation. Struct.Eng to confirm compressive strength of specified insulation is adequate for proposed application.
- Proprietary tanking / waterproofing system e.g. Self Adhesive Membrane (with protection boards) on tanking primer solution to specialist details.
- Unfinished concrete blinding to accept tanking membrane system against & slab base to Struct.Eng design.
- Any damp requirements to Struct.Eng design.

3-3 External Wall Section 3-3
1 : 20



4-4 External Wall Section 4-4
1 : 20

Roof Slab Enclosure, comprising the following build-up:

Star enclosure wall: Europanel System (NBS Ss_XC_XC_XC)

- Concrete sheer wall as part of concrete frame to Struct.Eng design.
- 2 continuous channel sections to give adjustment when setting out the support structure. All the manufacturers details. Min. 20mm thick galvanized steel for fire resistance.
- Secret fix insulated sandwich wall panel. Thickness of wall panel used to achieve required u-value. Panel fixed back to concrete frame using continuous channel sections. All the manufacturers details.

Star enclosure roof: Bituminous membrane roof (NBS Ss_XC_XC_XC)

- In-situ concrete deck as part of concrete frame to Struct.Eng design.
- Self-adhesive air & vapour control layer.
- P18 glass tissue faced thermal insulation board. Thickness to achieve required u-value.
- Self-adhesive bituminous underlay membrane.
- Hybrid bituminous roof cap sheet waterproofing membrane surfaced with granules.

Roof Plant Enclosure, comprising the following build-up:

Plant enclosure wall: Europanel System (NBS Ss_XC_XC_XC)

- Secret fix insulated sandwich wall panel. Thickness of wall panel used to achieve required u-value. Panel fixed back to concrete frame using continuous channel sections. All the manufacturers details.
- 2 continuous channel sections to give adjustment when setting out the support structure. All the manufacturers details. Min. 20mm thick galvanized steel for fire resistance.
- Sheathing Board - 12mm thick calcium silicate based fibre cement board.
- All joints suitably fire rated silicone sealant jointed to manufacturers recommendations to provide all required fire, weather-tightness, sound insulation & air-tight performance requirements.
- Steel frame with SFS wall to suit structural engineers design.
- SFS stud centres TBC.
- VCL / Fire / Flame retardant Vapour Control Layer including all associated joining accessories to manufacturers recommendations.
- Plasterboard linings (if associated VCL) to continue full height above ceilings & to be sealed to underside of associated soffits.

Plant enclosure roof: Bituminous membrane roof (NBS Ss_XC_XC_XC)

- Composite deck as part of steel frame to suit structural engineers design.
- Self-adhesive air & vapour control layer.
- P18 glass tissue faced thermal insulation board. Thickness to achieve required u-value.
- Self-adhesive bituminous underlay membrane.
- Hybrid bituminous roof cap sheet waterproofing membrane surfaced with granules.

U-Value & Air Tightness Targets

Target U-Values (Subject to MEP Engineer thermal model verification)

External Walls - 0.2 W/m²K
Floors - 0.16 W/m²K
Roofs - 0.13 W/m²K
Windows & Roof Windows - 1.6 W/m²K
Rooflights - 2.2 W/m²K
External Doors - 1.6 W/m²K

G-Value for Glazing - MEP Engineer to confirm

Air-permeability

Proposed Air-Tight Line

The minimum air-tightness is 8 m³/h.m² at 50 Pa

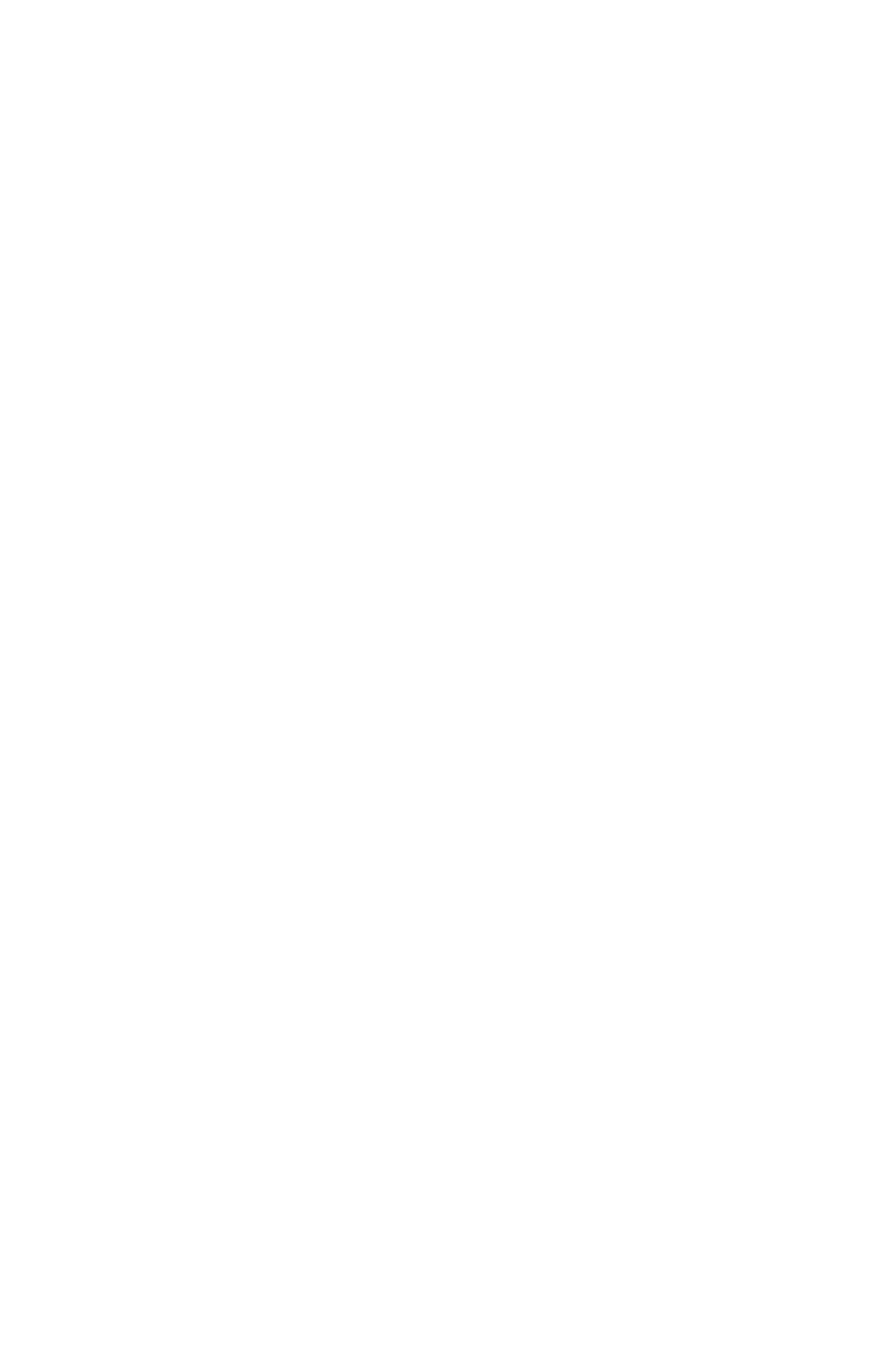
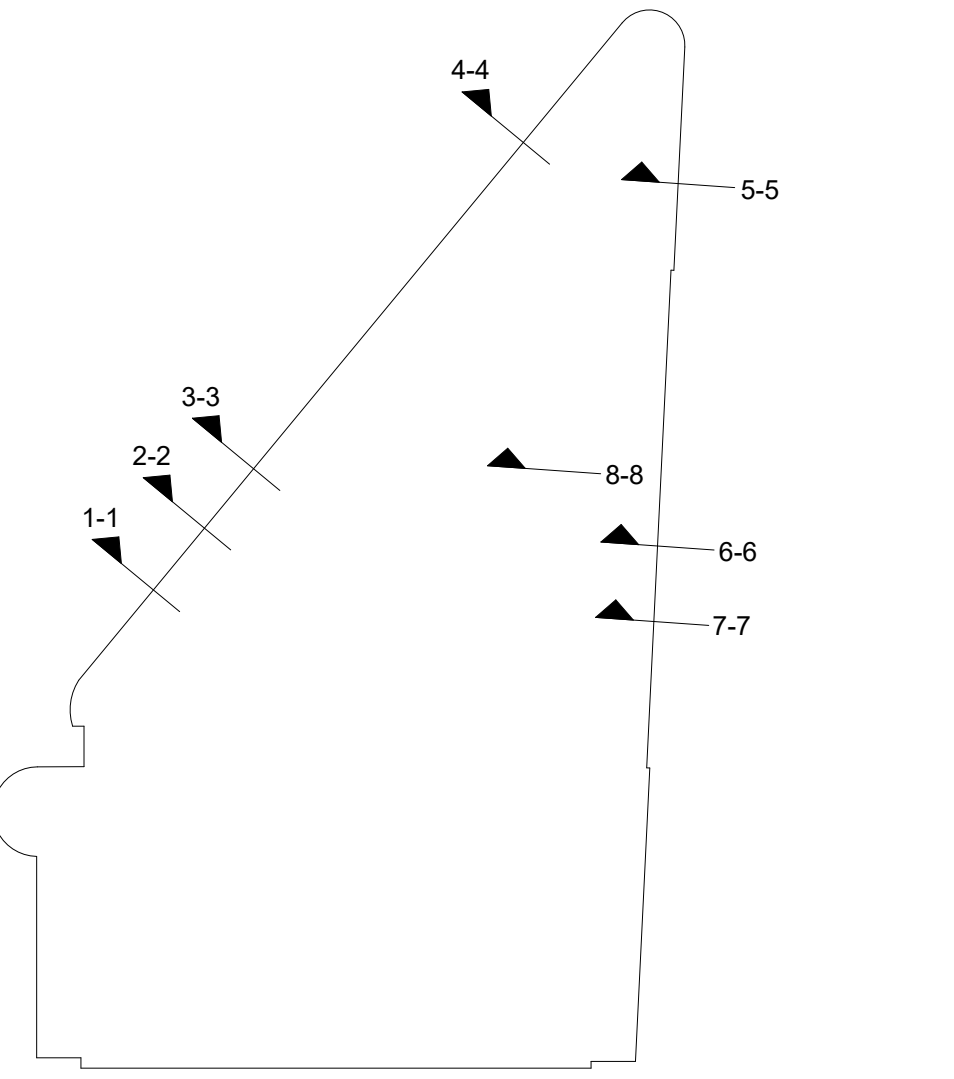
Detail Line Types

External Wall

- Breather Membrane
- Wall VCL
- EPDM
- Self Adhesive Membrane
- Vertical DPC

Roof

- Existing Roof Material
- Roof Membrane
- Hot Melt System



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