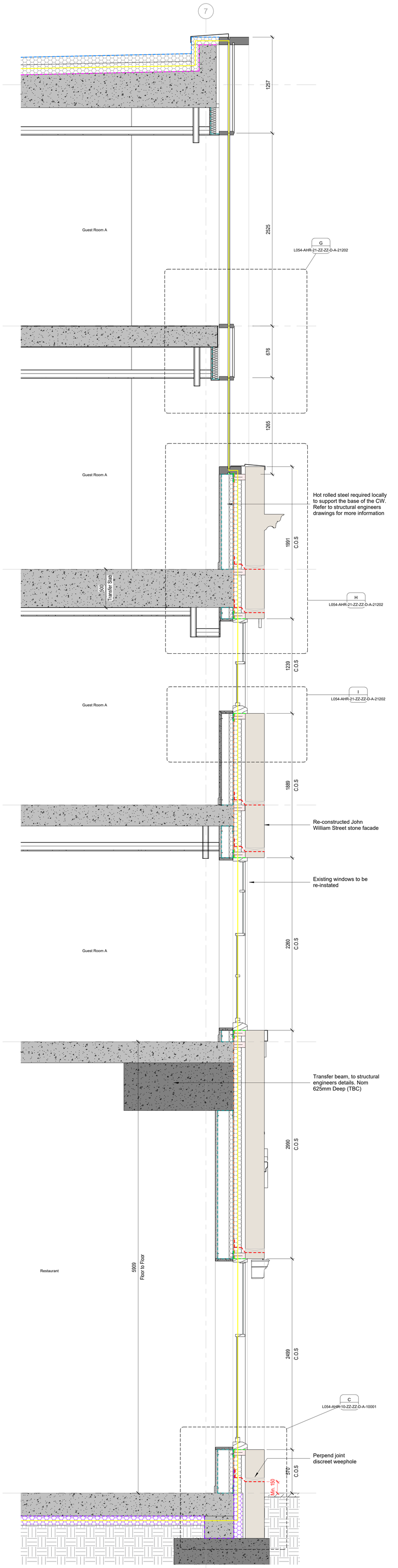

6-6 External Wall Section 6-6
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Hot Melt Inverted Flat Roofing System to Main Roof generally, comprising the following build-up (NBS Ss_30_40_30_42) :

- In-situ concrete deck as part of concrete frame to Struct.Eng design.
- Screed system (TBC) to accommodate any falls & levelling requirements.
- Primer to substrate.
- Hot Melt waterproofing layer, min. 6mm thick, colour Black (2x3mm inc. reinforcement layer between).
- Surface protection membrane layer
- Rigid insulation to meet 0.13 W/(m²K) U-value, loose laid.
- Water control infiltration reduction layer / capping sheet
- Concrete paving (min.50mm thick) on proprietary paving pedestal support system
- Perimeter rounded aggregate / gravel ballast finish (with protection boards as required)
- Parapets provided to min.1100mm high with continuation of insulation full height & waterproofing to min.150mm above finished roof level.
- Pressed PPC aluminium parapet capping flashing system, secret fixed & jointed with integral weather-tight butyl seals & return units.
- Any kerb type upstands or stubs required generally (e.g.Plant Enclosure construction) to be formed min.150mm above finished roof level with continuation of hot melt system returning up / over faces or with suitable cravat / weathering detail as applicable.

Notes:
- Fire performance classification of roofs generally to meet BROOF(t4) as a minimum standard
- The roof design is proposed based on being zero falls & in accordance with BS6229:2018. A level survey or puddle test may 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 outlets / sump positions to be suitably set out at required locations & formation levels to enable drainage to occur as intended design
- Gravity drainage system proposed to specialist design inc. rainwater calculations to determine size, number & locations of any outlets, hoppers, downpipes & any other associated accessories.

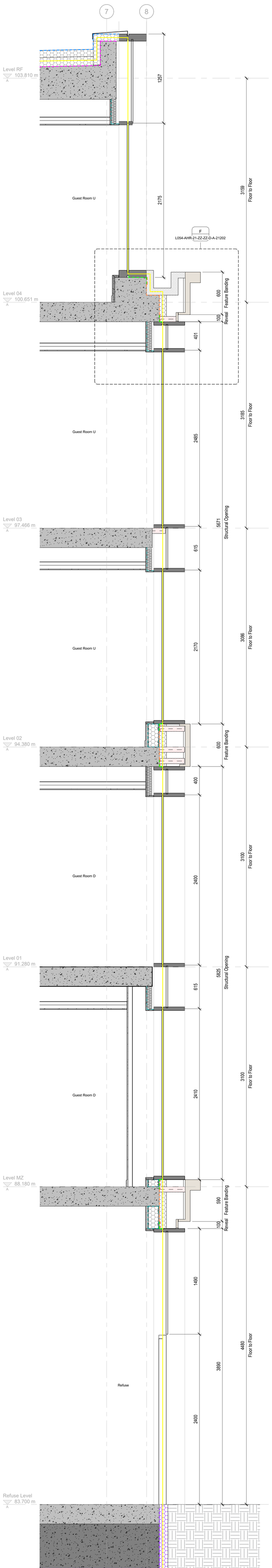
Proprietary High performance, Aluminium PPC Finished, Stick Curtain Walling System (NBS Ss_25_10_20_85)

- The system shall include all required frames, cappings, fasteners, fixings, wireways, IGUs and glazing accessories, spandrel panels, thermal and acoustic insulation, gaskets, weather, air-tightness and acoustic seals, perimeter firestops, custom-made doorsets, custom-made opening lights, custom-made louvres, aluminium flashings, window remote openers 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 spandrel panels where identified on elevations with foil backed insulation.
- Glazed-in louvre panels where identified on elevations providing required free area to meet Mech.Eng ventilation strategy. Louvres blank off elsewhere & suitably insulated.
- Bespoke, feature, perforated PPC aluminium panels installed as part of curtain wall system across floor edges & at parapet level etc where identifed on sections & elevations to meet proposed visual requirements of the architectural design intent.
- Proprietary firestop barrier system suitable for installation at slab edges & openings required. Any acoustic treatment requirement to be factored into specified product.
- Proprietary acoustic break mullion & transom inserts to be included where spanning across / between floors & adjacent spaces to limit flanking sound transmission, included as part of overall proprietary system which may also include horizontal acoustic mass barriers barriers & acoustic membranes to slab edges which are also to meet any firestopping requirements. Fire & Acoustic Engineers to advise based on project analysis reports.
- Glazed-in EPDM's to all external curtain walls suitably bonded to maintain air-tight line & meet target value.
- Mid-span restraint brackets back to associated slab edge/beams
- Mullion spigot fixings / brackets back to structure, cranked locally where required with consideration to access & installation 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 PPC finished with flush / countersunk fixings.
- Cill /base section of curtain wall frame to allow for pre-fixed PPC angle to allow internal floor finishes to terminate against / conceal where required
- Nom. 25mm thk Rockwool batt insulation around all curtain wall frame reveals
- Recessed pockets to be formed in slabs or upstands locally to mullion / spigot fixing locations to allow concealment of fixing bolt depths, to be suitably sequenced into programme of works.
  - NB*Recesses to be suitably packed / infilled following installation
- All associated ironmongery by specialist to required 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 Buildups back to SFS thru-wall construction, comprising:-

Traditional Natural Stone Masonry (Re-constructed John William Street Facade)

- Reconstructued stone facade to match that of previous existing - refer to defined scope of works & heritage construction specialist proposals.
  - Nom. 250mm thick existing stone with joints to match existing
  - Wall tie & restraint systems back to iner construction TBC
  - Any new lintel & (adjutable) masonry support system to be determined.
  - Any new plinth requirements TBC relative to ground levels.
  - DPC / cavity tray arrangement & weepholes etc - refer to details
  - Capping flashings to top of facade at junction with concealed gutters behind etc
- Ventilated residual cavity between stonework & inner construcion, comprising:
- Proprietary Cavity Closers & fire break Cavity Barriers
  - Horizontally between compartment floors &
  - Vertically at any compartment walls & then intermediately to maximum permitted cavity extents (20M TBC)
  - Galv. pressed metal brackets for suitably fixing / support back.
- Non-combustible Class A1, partial fill stone wool insulation to external cavity, product ref Rockwool NyRock Rainscreen 032, nom.100mm 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**
    - Inside to Out: 60 Minutes TBC by Fire Engineer
    - Outside to In: 60 Minutes TBC by Fire Engineer
  - **Sound insulation / acoustic performance** - (excluding facade finishes):
    - TBC by Acoustic Engineer
  - **Thermal perfomance** as idenfied to proposed insulation types to meet target U-values, factoring in facade finishes.
  - **Air-tightness:** 8m³/Hour/Sq.M 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 infill SFS system as part of overall thru-wall system to specialist design, comprising;
  - nom.150mm SFS zone (200mm SFS zone to double height spaces)
  - SFS stud centres TBC by stone cladding specialist to suit required primary support bracket centres generally & additionally to suit corners & reveals detailing etc.
  - SFS stud gauge TBC by stone cladding specialist to suit required loads & fixing types.
  - Allow for min. double studs adjacent all window, door & curtain wall openings providing adequate fixing of stone cladding panel primary support brackets, feature 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.
  - Twin stud arrangement provided locally to cross bracing (flats)
  - SFS infill to be provided between any SHS/RHS bracing struts & stair landing supports
- Non-combustible Class A1, partial fill stone wool insulation, for installation between SFS studs, product ref Rockwool RWA45 slabs,
  - **Stone Cladding** - nom.140mm thick as part of meeting overall target U- Value calculation.
  - **Natrual Stone (Re-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 jointing accessories to manufacturers recommendations.
- Plasterboard Linings to internal face of externals walls:
  - 2No. layers 15mm plasterboard, type to be agreed to meet overall performance requirement criteria of thru-wall construction & additionally robustness (Severe), 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 (& associated VCL) to continue full height above ceilings & be sealed to underside of assoicated soffits.
  - 2mm skim coat plaster & beads generally
  - Taped seamless finish to board joints to agreed locations only
  - Concrete column and shear wall locations to include plaster dot & dab or GypLyner system to provide tolerance for alignment of finished face of boards aesthetically.



5-5 External Wall Section 5-5
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Detail Line Types

External Wall

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

Roof

- Existing Roof Material
- Roof Membrane
- Hot Melt System

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

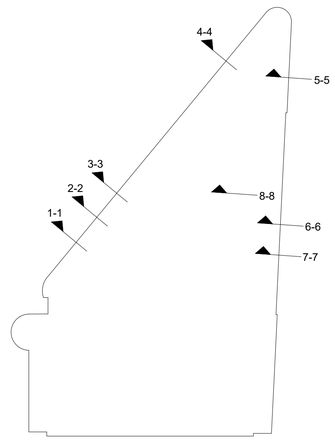
External Doors - 1.6 W/m²K

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



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project: George Hotel Refurbishment

drawing: External Wall Strip Sections - Sheet 3

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