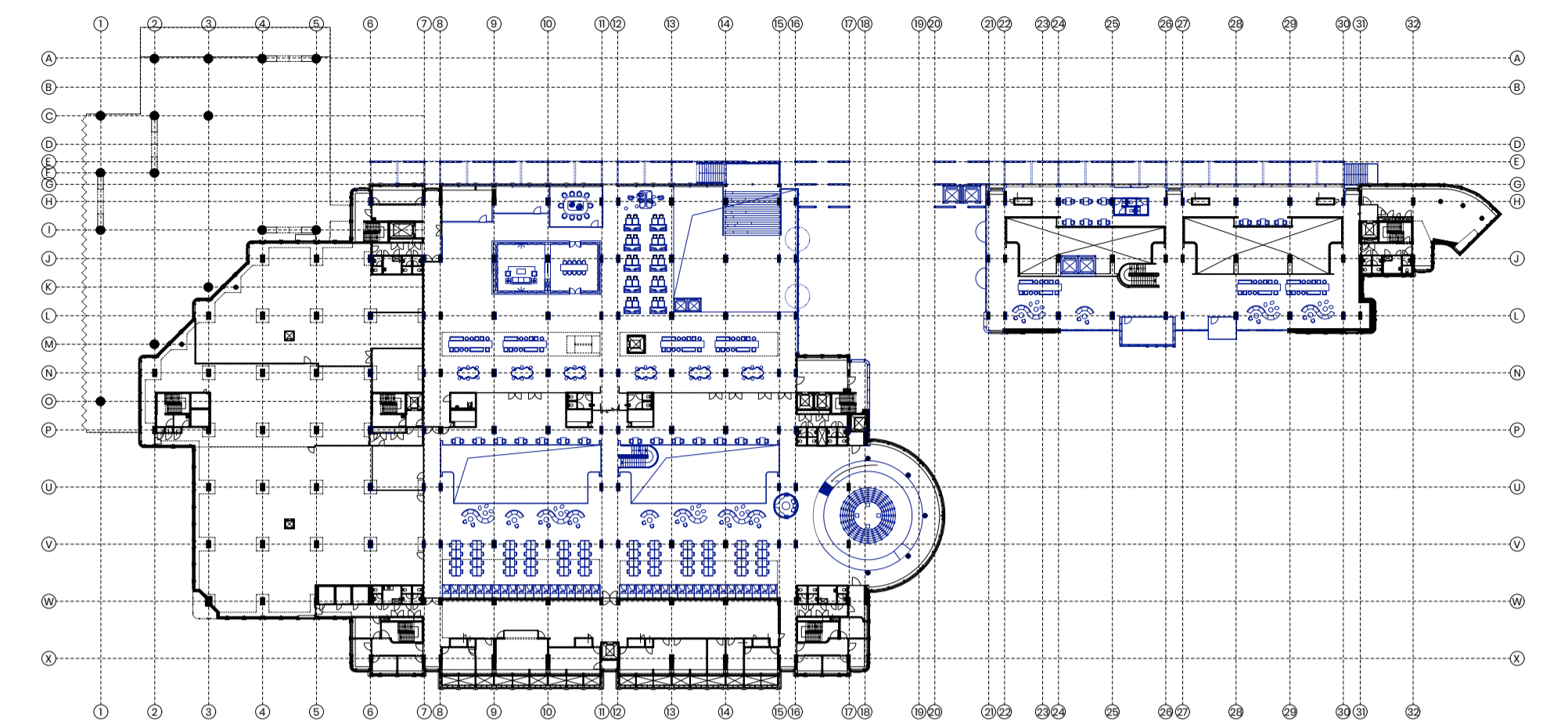
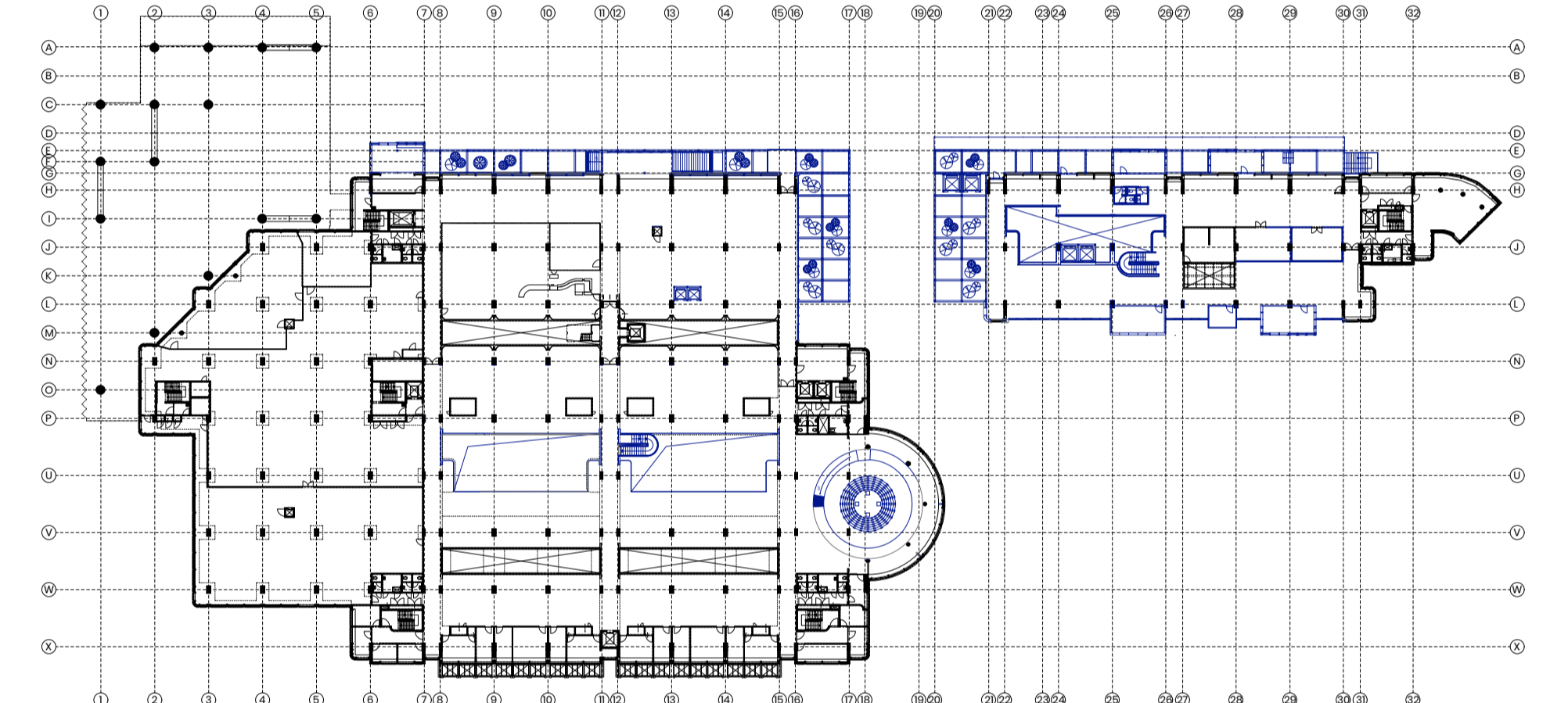


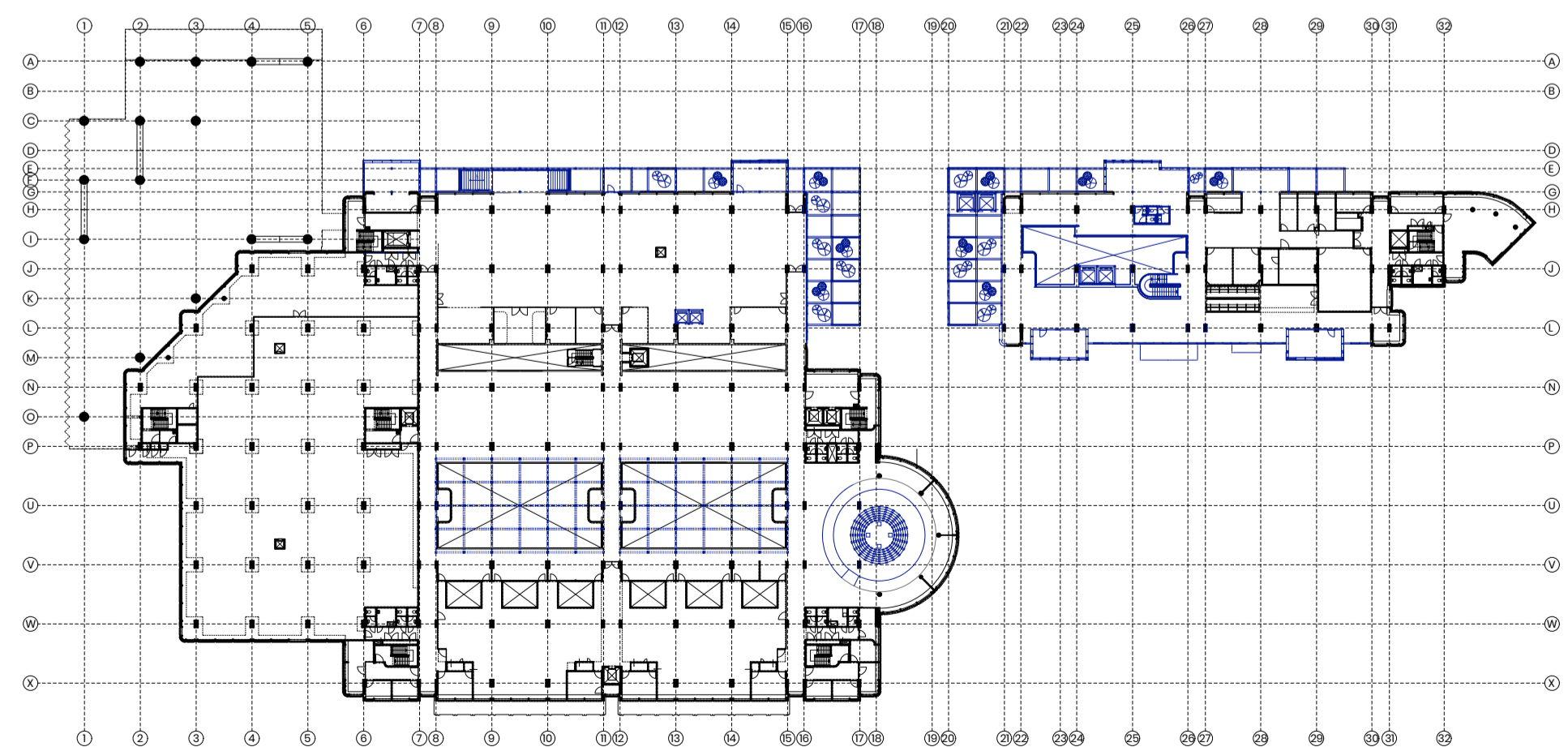
GROUND FLOOR



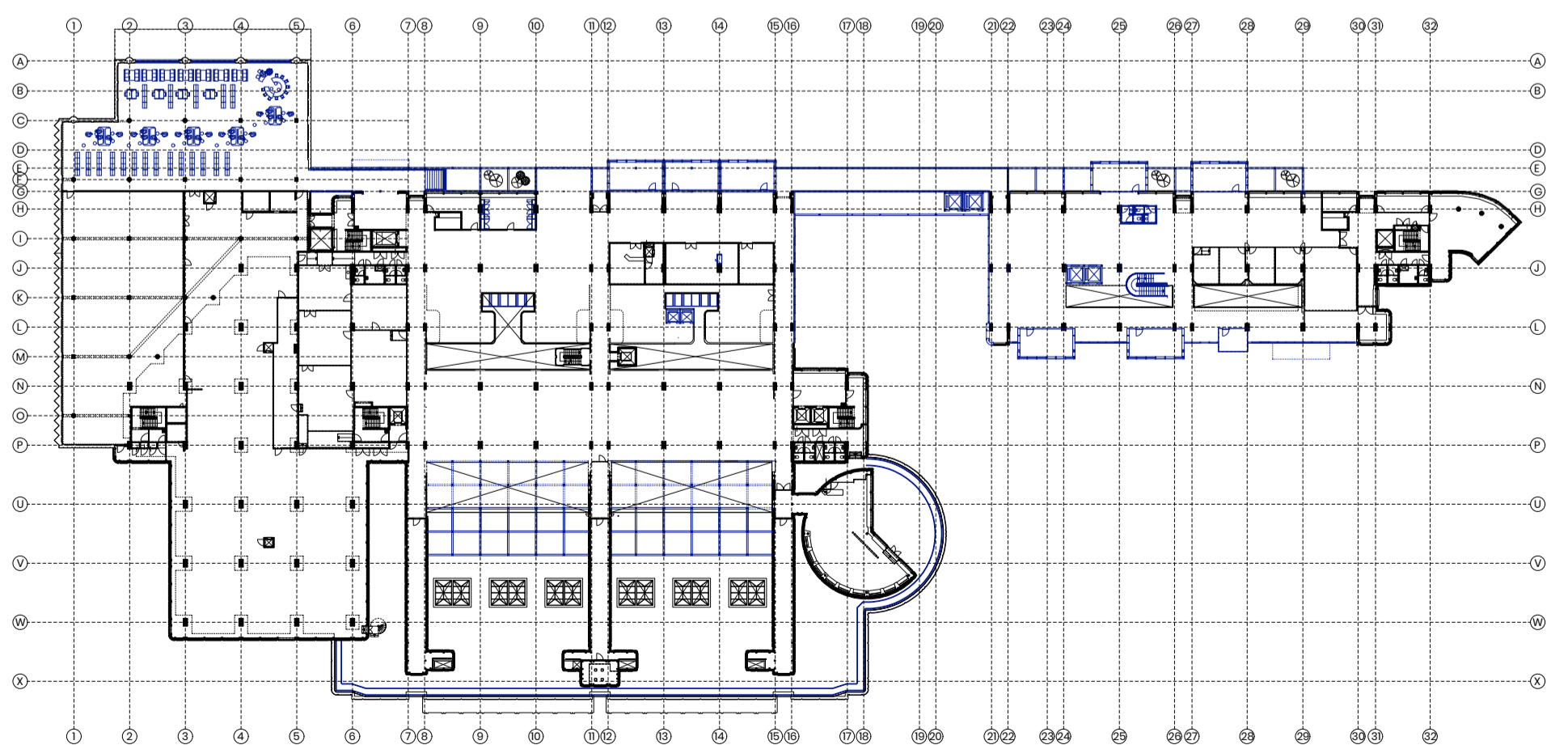
F1



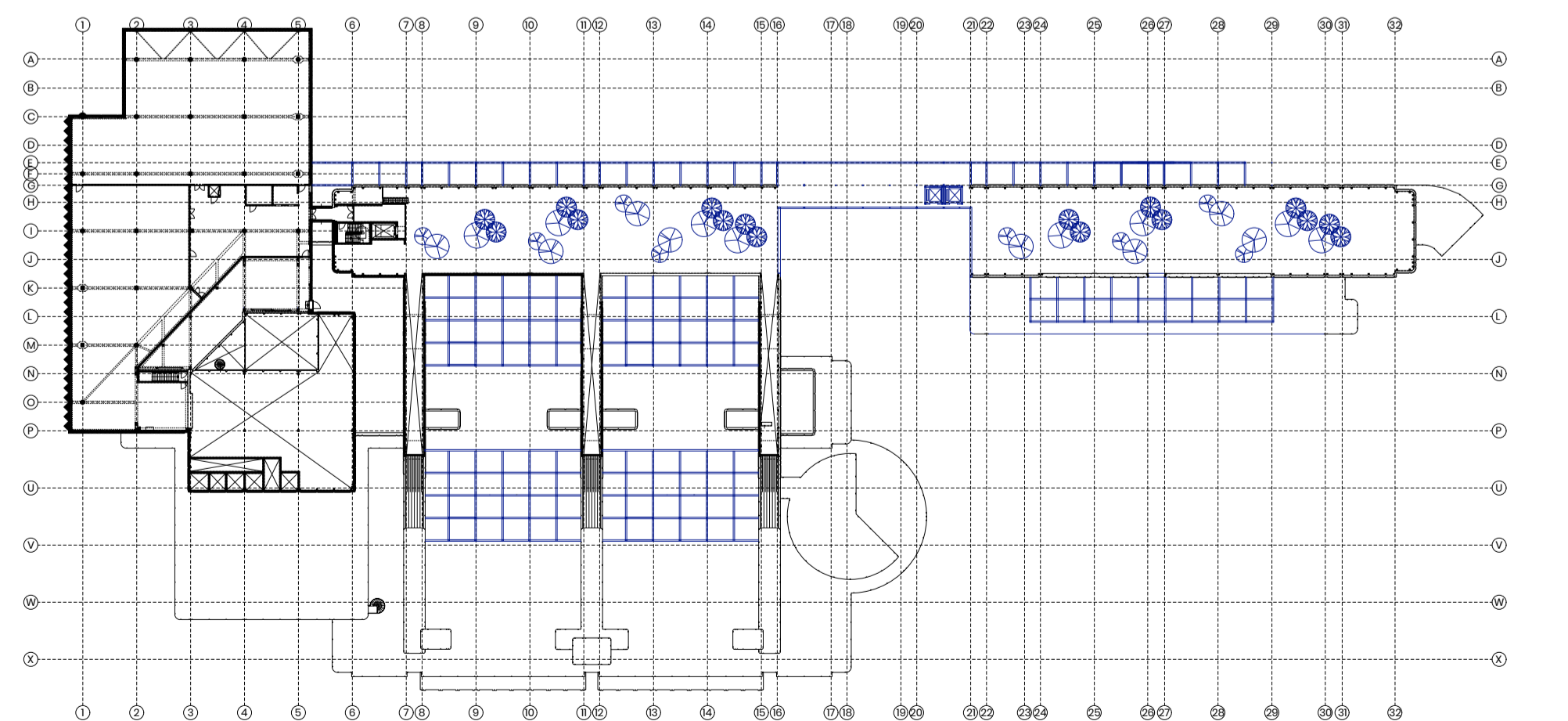
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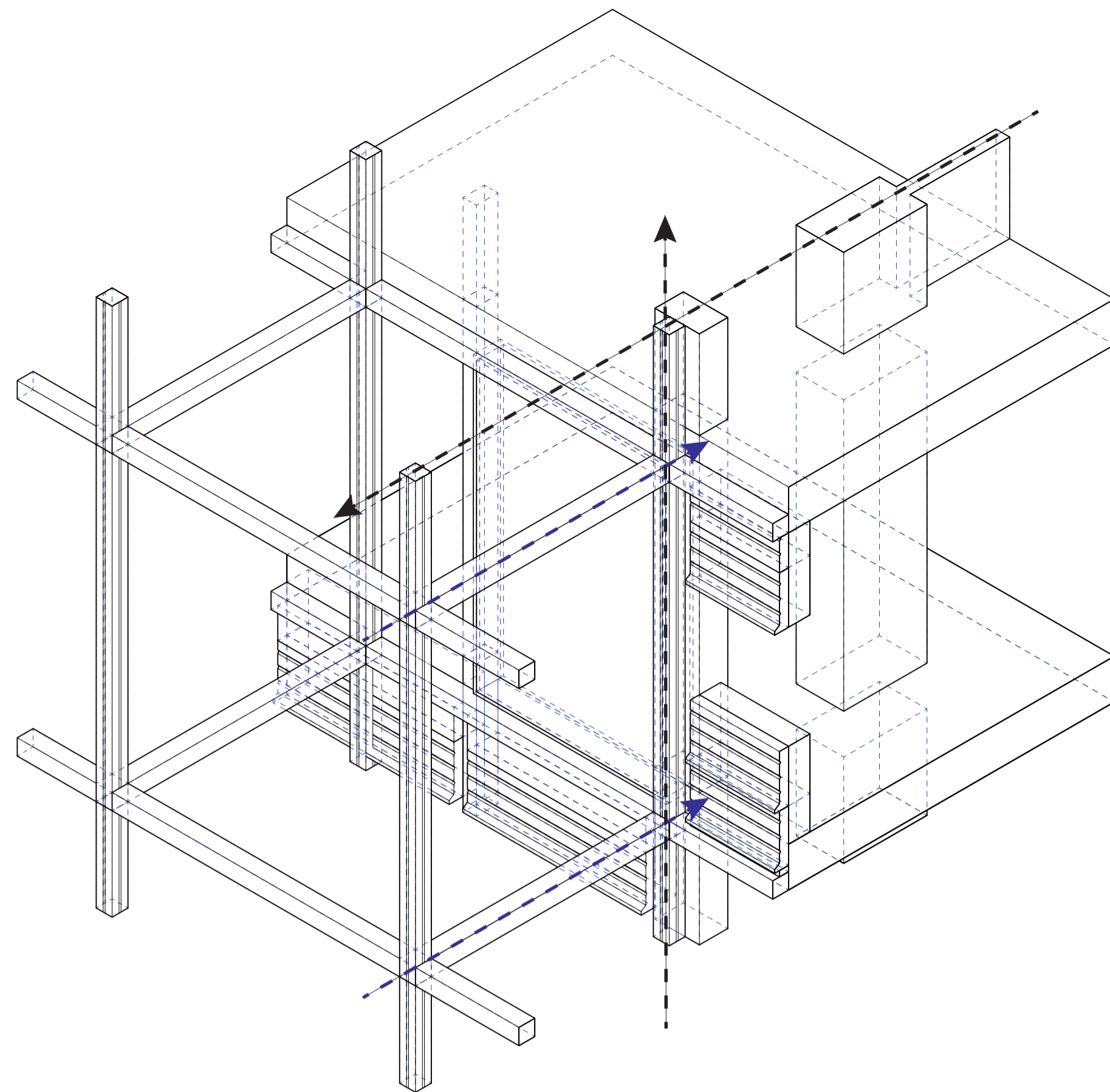
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F4



F6



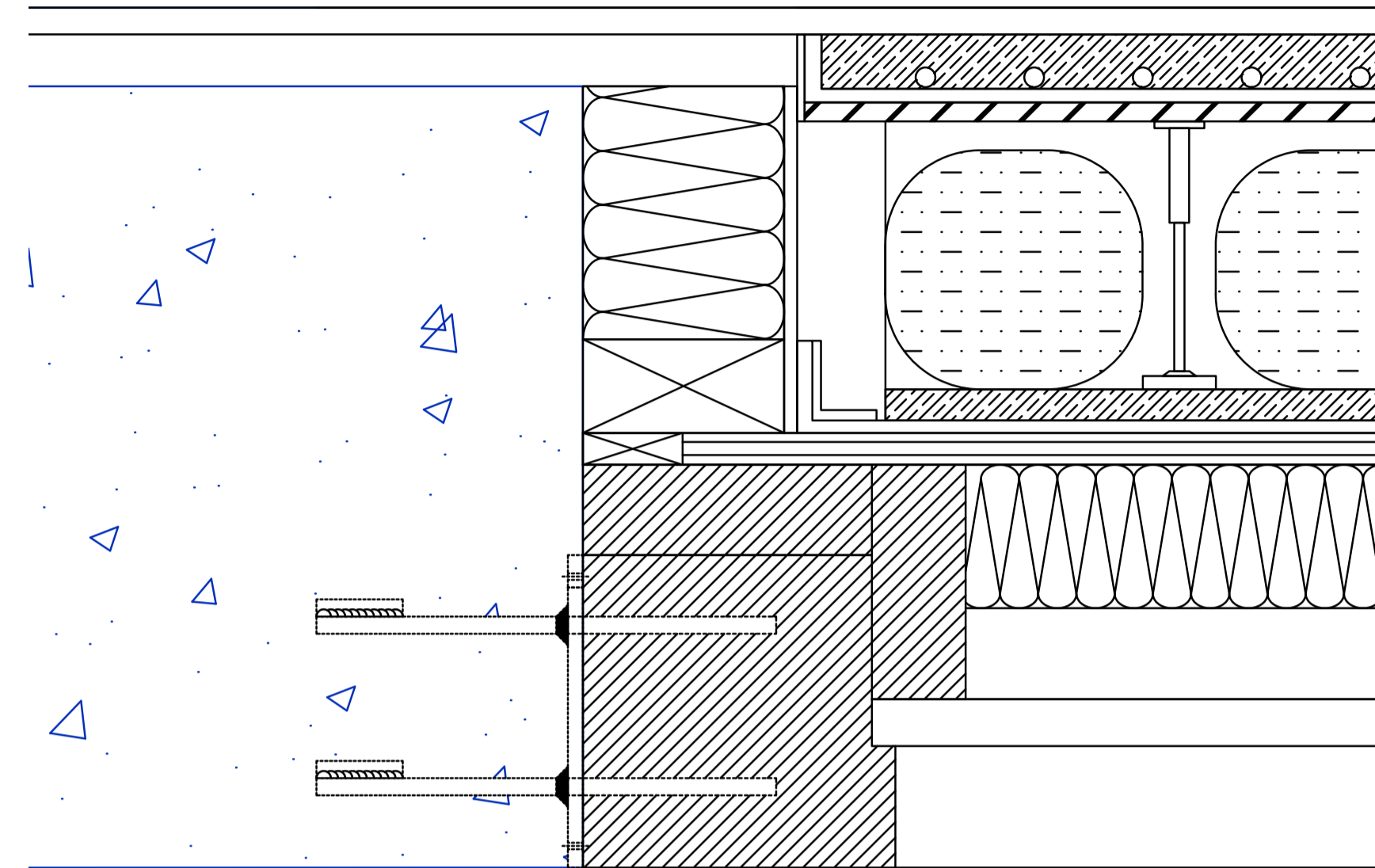
The axonometric diagram illustrates the interface between the existing concrete frame and the new modular façade structure. The new timber / steel grid is dimensioned to coincide with the original structural rhythm, so that each façade module can be mechanically fixed back to the existing columns and floor slabs without any invasive interventions to the primary structure.

Existing metal cassette panels are selectively removed, retained or reconfigured. Where interior spaces are extruded outward, entire panel bays are taken out and replaced by deep modular frames that project beyond the original façade line. In other bays, the metal panels are substituted by glazed units within the same

structural bay, providing visual connection to the city while preserving the underlying grid. Panels that remain in place are mounted onto the new substructure, allowing the historic façade texture to be partially reused as a secondary, ventilated skin.

In this way the new façade system operates as a reversible, demountable layer that "clips" onto the existing frame. It can accommodate solid, glazed or occupied modules within the same structural sequence, demonstrating how the KB envelope can be progressively opened, thickened or made transparent over time without compromising the integrity of the original building.

DETAIL4_MODULAR FLOOR-EXISTING SLAB CONNECTION



1. Structural elements

- Existing RC slab / edge beam: in-situ reinforced concrete, #250-300 mm, retained as primary support.
- Existing RC wall / plinth: in-situ concrete wall receiving new fixings.
- Demountable angle bracket: recycled-steel angle 8-10 mm, bolted to existing concrete as support for the modular cassette.
- Through-bolts / anchors: galvanised or stainless-steel threaded rods (e.g. M16-M20) with resin anchors, washers and nuts.
- Primary modular beams: glulam beams 200-240 mm deep forming the chassis of the extruded box.
- Secondary stiffeners / posts: timber posts or glulam members inside the module, stabilising the frame.
- Timber column: solid or glulam 200 x 200 mm, supporting the modular beams.
- Timber ledger beam: glulam / laminated timber beam bolted to column and/or bracket, carrying the cassette edge.
- Structural floor deck: 200 mm CLT panel forming the structural floor of the modular cassette.

2. Envelope, insulation & airtightness

- Vertical cavity insulation: mineral wool or wood-fibre batts 150-200 mm between old concrete and new modular structure.
- Horizontal insulation under modular floor: wood-fibre or mineral wool layer 150-200 mm under the floor cassette for thermal and acoustic performance.
- RCA insulation layer: geotextile-encased recycled concrete aggregate (RCA) bags 250-300 mm deep below the modular floor.
- Geotextile for RCA bags: recycled-PE or bio-based geotextile encasing the aggregate.
- Vapour control / airtight membrane: continuous membrane behind internal lining of the module, sealed at junctions.
- Compressible gaskets / sealing tape: used at contact line between modular cassette, steel bracket and existing concrete.
- Elastic sealant: applied at interfaces of steel, timber and concrete for air- and water-tightness.

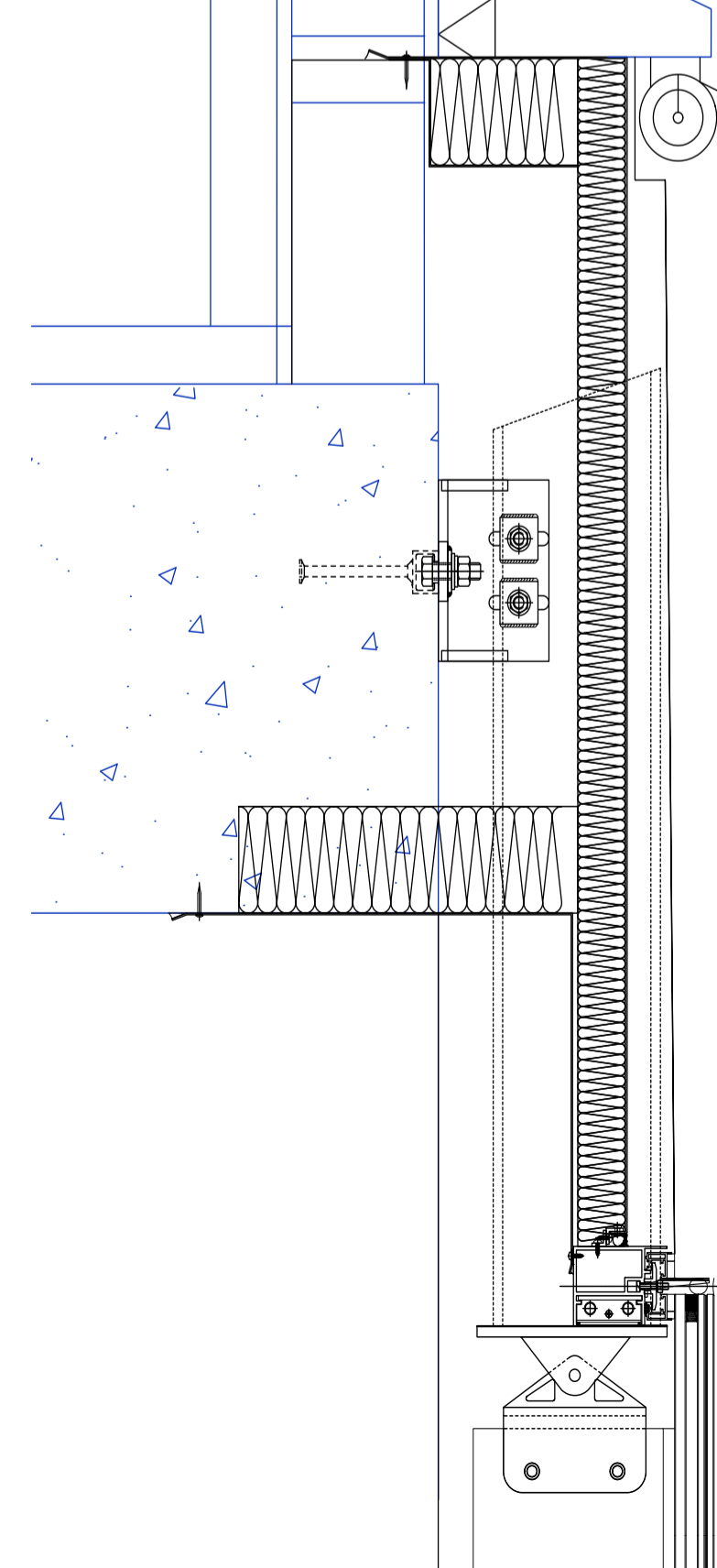
3. Floor and wall finishes

- Existing floor finish: linoleum, timber or carpet 10-20 mm on resilient acoustic underlay 5-10 mm.
- Leveling screed (existing): 40-60 mm screed on existing slab.
- Modular floor finish: timber boards or raised floor panels 20-30 mm on service void.
- Service void: 20-40 mm zone within modular floor for cables and sockets.
- Internal wall lining (module): 2 x 12.5 mm gypsum(-fibre) board on timber studs.
- Transition / threshold strip: aluminium or timber strip at junction between old and new floor finishes, forming a flush connection.

4. Circular / reuse-oriented components

- RCA bags: reuse of crushed demolition concrete as removable thermal / acoustic ballast under the modular floor.
- Removable bag system: geotextile-encased aggregate designed to be emptied and reused when the modular structure is demounted.
- Demountable brackets and bolted joints: steel angle, ledgers and beams connected with bolts/screws so the cassette and support frame can be dismantled without damaging the existing concrete.

DETAIL 1_GROUND-FLOOR GLASS FAÇADE CONNECTION TO EXISTING CONCRETE STRUCTURE



1. Structural elements

- Existing RC slab: in-situ reinforced concrete ground-floor slab, main structural floor retained.
- Existing RC façade plinth / wall: in-situ RC element carrying old superstructure and receiving new fixings.
- Existing concrete edge beam / upstand: thickened slab edge at façade line for anchoring new system.
- Base plate for new façade: recycled-steel plate on plinth, supporting glass façade profiles.
- Glass façade shoe / channel: demountable steel or recycled-aluminium profile clamping bottom of glass or timber-alu mullion.
- Anchor bolts / chemical anchors: galvanised or stainless-steel threaded rods with resin, fixing shoe and base plate to existing concrete.
- Vertical support mullion: laminated timber or timber-aluminium hybrid mullion transferring loads to base and head fixings.
- Adjustable cleats / brackets: small steel brackets connecting mullion to base plate and upper structure for fine alignment.
- Existing upper-floor RC beam / slab edge: retained structural member providing top fixing line for the transparent ground floor.
- Support frame for reused metal panels: lightweight steel or timber secondary frame carrying original metal cassettes above the glazed plinth.

2. Envelope, insulation & airtightness

- Vertical insulation at façade line: mineral wool or wood-fibre insulation forming a continuous layer between concrete structure and inner face of façade.
- Floor-edge insulation: rigid mineral wool or wood-fibre board at junction between interior floor and façade to minimise thermal bridging.
- Thermal break pads under base plate: high-density insulation pads (e.g. recycled rubber / FRP) separating steel base plate from cold concrete.
- EPDM sill membrane: flexible waterproof membrane turned up behind façade to protect slab edge.
- Vapour control layer: continuous membrane above slab and under screed finish, lapped to façade line.
- Perimeter airtight tape: adhesive airtight tape connecting vapour control layer to façade frame.
- Backlog rod and elastic sealant: compressible foam rod and low-VOC sealant at glass-to-frame and frame-to-concrete joints.

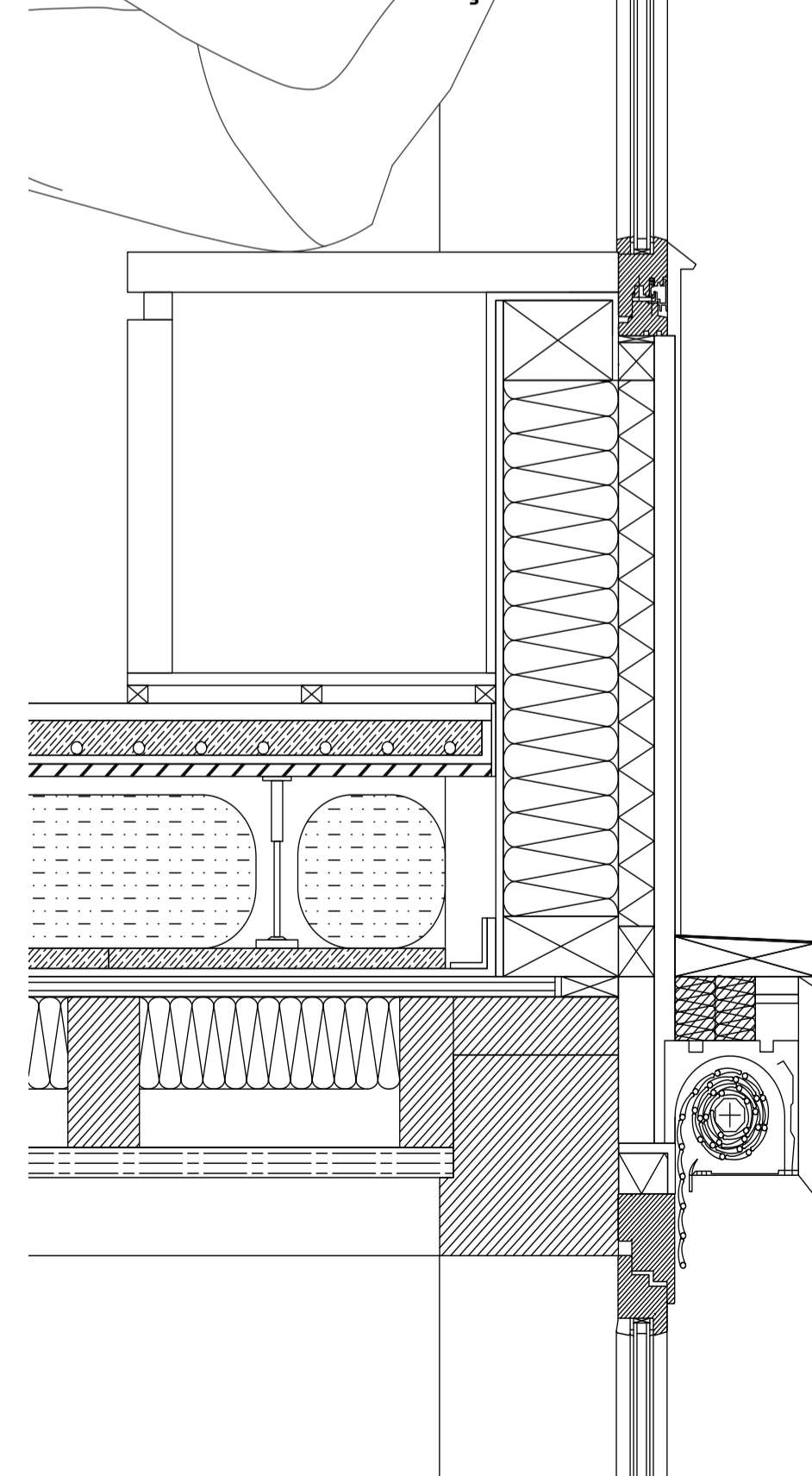
3. Floor and wall finishes

- Insulated glass unit (IGU): triple glazing with low-E coatings forming transparent ground-floor façade.
- Laminated safety glass: inner or outer pane laminated for fall and impact protection at street level.
- Glazing profiles / caps: recycled-aluminium pressure plates and caps, with continuous gaskets at head and base.
- Interior floor finish: terrazzo, polished concrete or timber flooring over screed.
- Leveling screed: 40-60 mm cementitious screed on existing slab for level surface.
- Acoustic underlay: resilient mat beneath interior finish to improve footfall sound insulation.
- External paving / plinth: stone or concrete pavers aligned with new glass line.
- Reused metal façade cassettes: original KB metal panels re-mounted on secondary frame above transparent ground floor.

4. Circular / reuse-oriented components

- Reuse of existing RC frame: original slab, plinth and beam retained as primary structure and fixing substrate.
- Reused metal façade panels: existing cladding re-integrated as a material and memory layer.
- Demountable façade system: glass, mullions, base shoes and caps fixed with bolts and screws for disassembly, repair or upgrade.
- Replaceable thermal breaks and gaskets: dry, non-bonded components designed for removal and recycling when the façade is adapted.

DETAIL 2_WINDOW SEAT, INSULATED WALL & ROLLING SHUTTER AT MODULAR TIMBER FAÇADE



1. Structural elements

- CLT floor panel: 200 mm CLT, primary horizontal structure of the modular box (floor build-up sits on this 200 mm structural layer).
- Timber joists / cassette framing (if used locally): C24 softwood joists 80 x 200 mm at 400 mm c/c, integrated within the 200 mm structural zone where additional framing is required.
- Timber stud wall: C24 studs 80 x 200 mm at 400 mm c/c, matching the 200 mm modular frame depth.
- Timber wall plate / parapet: solid timber 60 x 200 mm, receiving window frame and seat.
- Built-in timber window seat: glulam / CLT plank 60-80 mm thick, cantilevering 300-400 mm into the interior.
- Primary modular beams: glulam beams 200-240 mm deep, supporting the floor cassette and capsule structure.
- Secondary noggins under RCA bags: solid timber 60 x 100 mm, carrying the recycled concrete aggregate bags beneath the floor.
- Rolling shutter box and guides: recycled-aluminium box (2-3 mm sheet) with aluminium guide rails 50-70 mm wide, bolted to the timber wall.

2. Envelope, insulation & airtightness

- RCA insulation layer: geotextile-encased recycled concrete aggregate bags, 250-300 mm deep under the modular floor.
- Wall insulation: wood-fibre batts 200 mm between 60 x 200 mm studs (full fill of the modular frame depth).
- Additional floor insulation: wood-fibre boards 60-80 mm above or below the 200 mm structural layer, depending on acoustic and thermal requirements.
- Insulation around seat / sill zone: wood-fibre infill 60-100 mm around structural elements at the window seat.
- External breather membrane: vapour-open, wind-tight membrane over wall sheathing on the cold side.
- Internal vapour control layer: smart vapour-variable foil behind interior lining, continuous over wall and floor junctions.

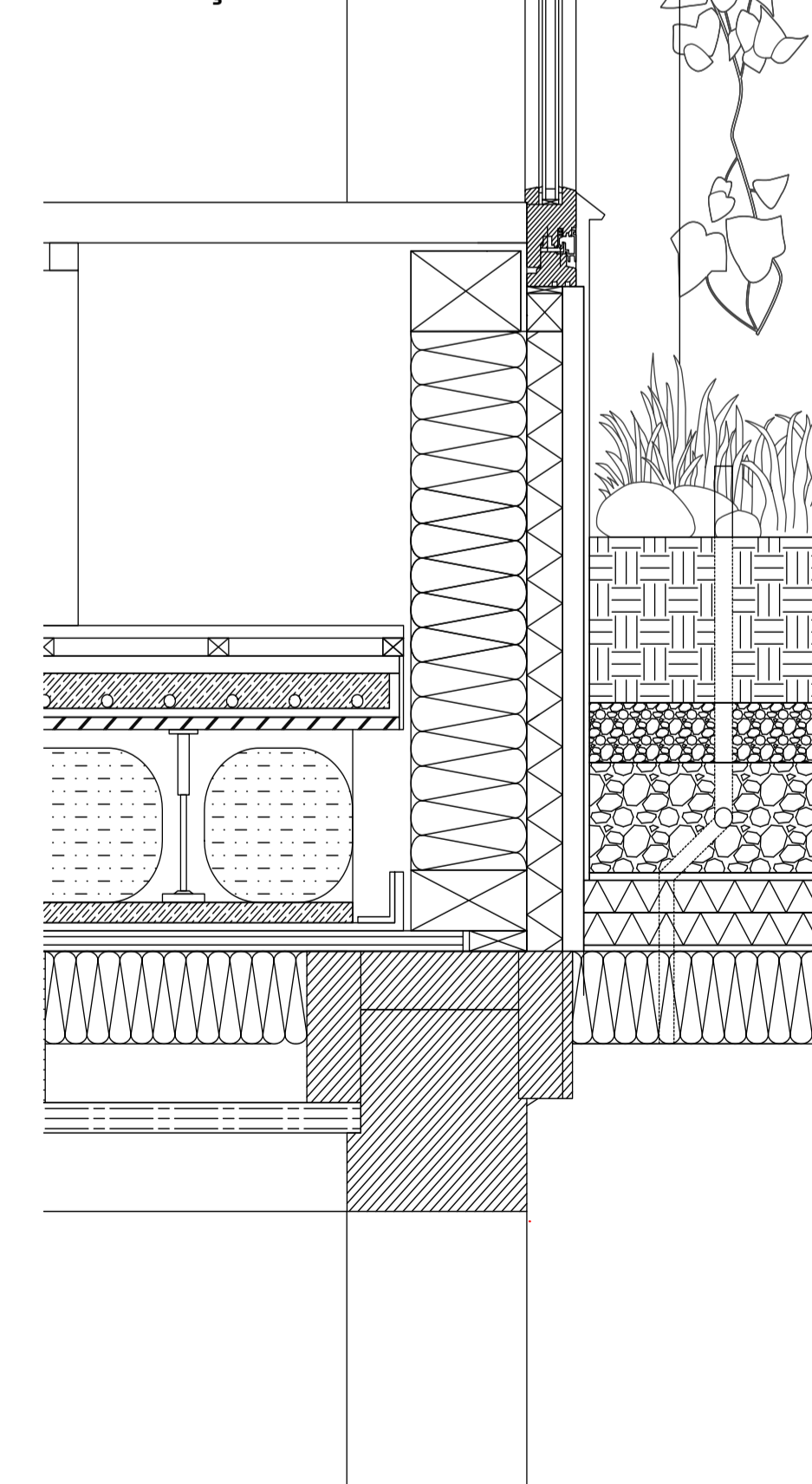
3. Glazing, façade & interior finishes

- Vacuum glass unit: high-performance vacuum glazing, total thickness approx. 8-12 mm with low-E coating.
- Timber window frame: FSC-certified laminated timber profiles, frame depth 80-100 mm, designed for repair and replacement.
- Internal reveals and lining: 2 x 12.5 mm gypsum(-fibre) board on timber battens.
- External sill flashing: recycled-aluminium flashing 1.5-2.0 mm thick, with 40-60 mm drip projection.
- Timber rain-screen cladding: vertical boards 20-28 mm (e.g. larch / modified softwood) on 45 x 45 mm timber battens.
- Interior floor finish: at seats: solid or engineered timber boards 20 mm over acoustic underlay.
- Rolling shutter curtain: interlocking aluminium slats approx. 8-12 mm, high recycled content, fully demountable.

4. Circular / reuse-oriented components

- Geotextile RCA bags: removable, reusable ballast / insulation layer under the floor.
- Dry-assembled timber structure: CLT glulam and stud walls connected with screws/bolts, without glued main joints, allowing disassembly.
- Demountable shutter system: box, axle, guides and curtain designed for disassembly and material separation at end of life.
- Repairable envelope components: timber cladding, window frames and linings detailed for local repair and future replacement.

DETAIL 3_PLANTER & RAINWATER COLLECTION AT MODULAR TIMBER FAÇADE



1. Structural elements

- CLT floor panel: 200 mm CLT, primary horizontal structure of the modular box.
- Primary modular beams: glulam beams 200-240 mm deep, supporting the floor cassette and planter zone.
- Secondary joists / noggins: solid timber 60 x 100 mm, carrying RCA bags and planter support.
- Timber stud wall: C24 studs 80 x 200 mm at 400 mm c/c, modular façade wall behind planter.
- Timber wall plate / parapet: solid timber 60 x 200 mm, receiving window frame and planter fixings.
- Planter support tray: CLT or glulam base 60-80 mm thick, spanning between beams and studs, carrying full planter build-up.
- Planter retaining side wall: prefabricated CLT / glulam upstand 60-100 mm thick, forming outer face of planter, lined with waterproofing.
- Brackets / cantilevers: timber cleats with stainless-steel screws where needed, linking planter tray back to main frame.
- Vertical rainwater downpipe: recycled-PVC or PE pipe Ø 75-100 mm in front of façade, connected to planter overflow.
- Downpipe outlet / inspection point: detachable fitting at base within gravel strip for inspection and cleaning.

2. Envelope, insulation & water management

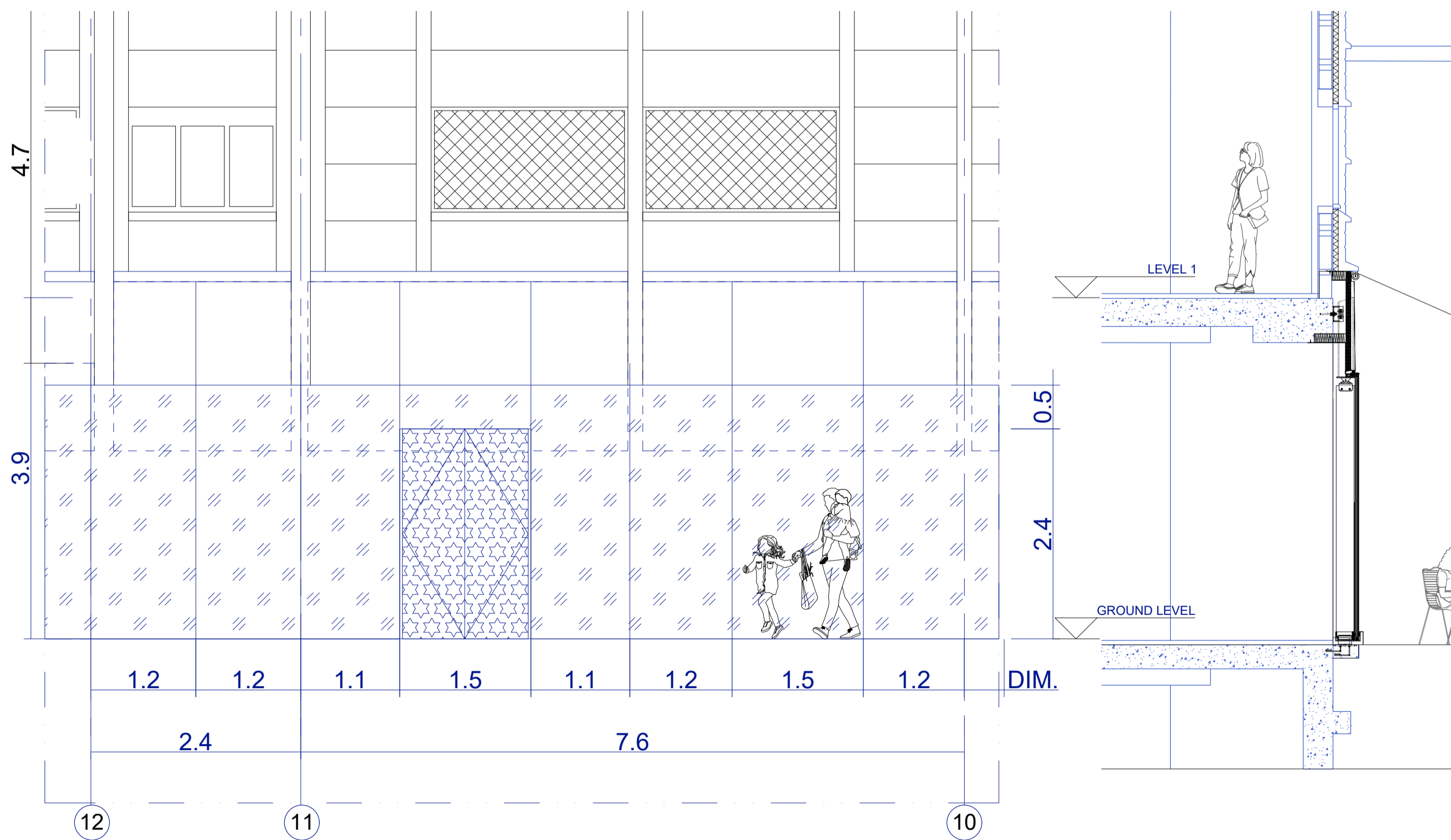
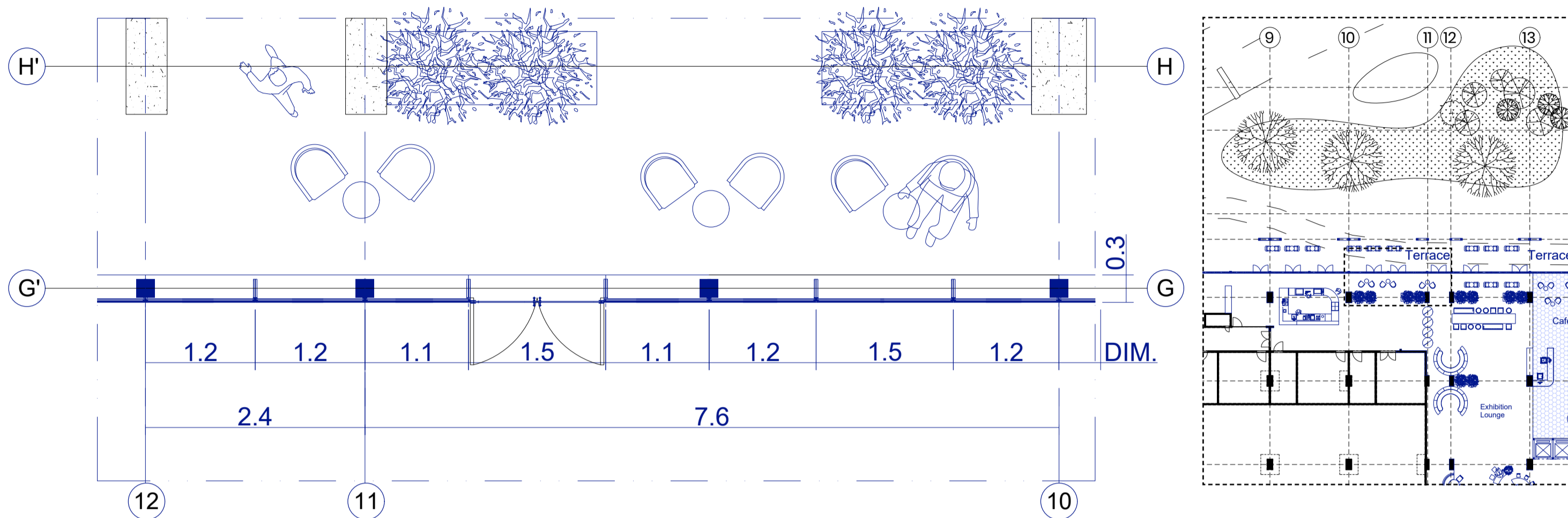
- RCA insulation layer: geotextile-encased recycled concrete aggregate bags, 250-300 mm deep under the modular floor.
- Geotextile for RCA bags: recycled-PE or bio-based geotextile, designed for removal and reuse.
- Floor insulation: wood-fibre boards 80-120 mm beneath the CLT where required.
- Wall insulation: wood-fibre batts 200 mm between 60 x 200 mm studs.
- Breather membrane: vapour-open, wind-tight membrane on cold side of timber wall.
- Vapour control / airtightness layer: smart vapour-variable foil behind interior lining, continuous over wall and floor junctions.
- Planter waterproofing membrane: durable synthetic or mineral-based membrane lining base and sides of timber planter.
- Root barrier layer: heavy-duty root-resistant sheet protecting main waterproofing.
- Filter geotextile: separating soil from drainage layer while allowing water passage.
- Drainage layer: recycled aggregate / coarse gravel 80-100 mm at bottom of planter.
- Growing medium: engineered, lightweight substrate 300-400 mm above drainage layer.
- Overflow / drainage outlet: perforated pipe or weep outlet from planter into downpipe.
- Gaskets and seal tapes: compressible tapes at planter tray-façade-frame junctions.
- Elastic sealant: at external edges and penetrations for water-tightness.

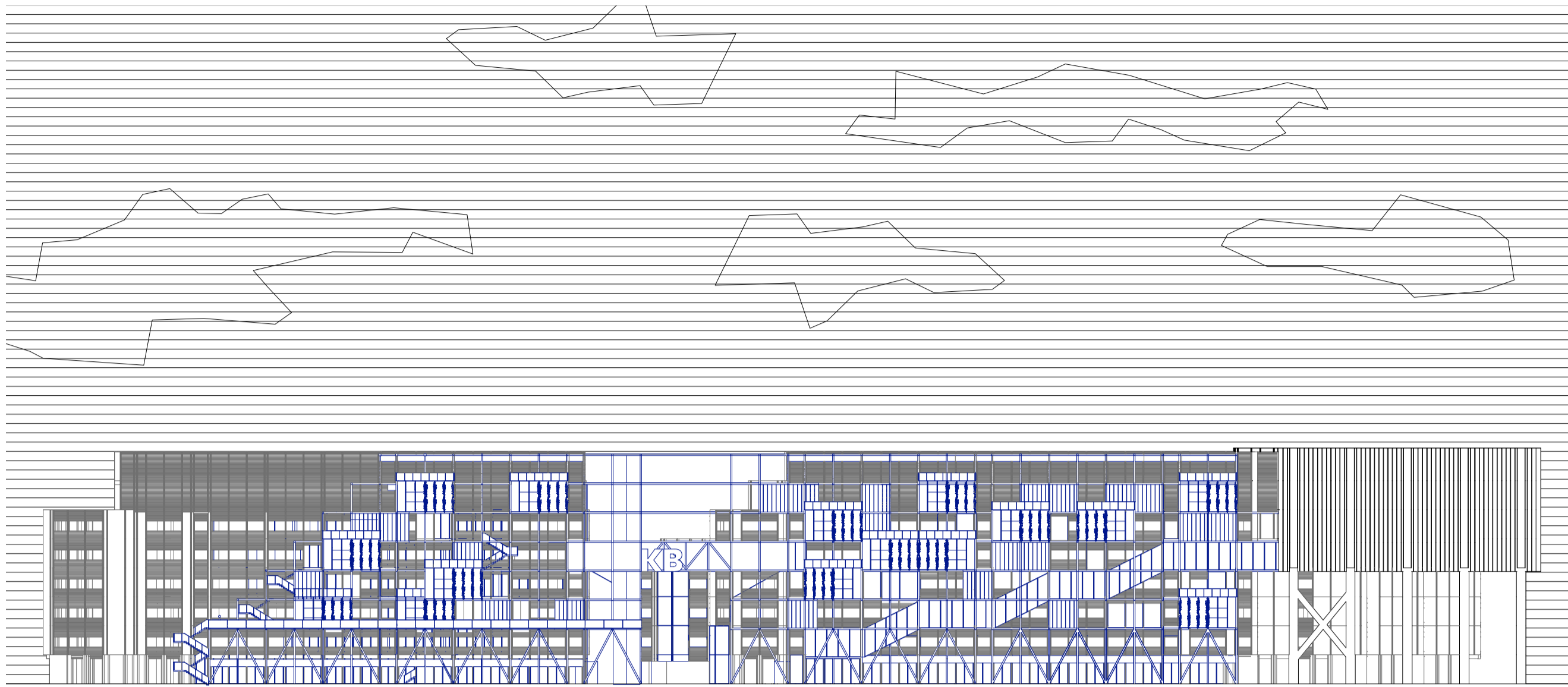
3. Glazing, façade & visible finishes

- Vacuum glass unit: high-performance vacuum glazing, total thickness approx. 8-12 mm with low-E coating.
- Timber window frame: FSC-certified laminated timber frame, depth 80-100 mm, designed for repair.
- Interior wall lining: 2 x 12.5 mm gypsum(-fibre) board on timber studs.
- Interior floor finish: solid or engineered timber boards 20 mm on acoustic underlay.
- Planter edge trim / coping: FSC-certified timber profile 30-40 mm thick, finishing top of planter wall.
- Vegetation: mixed grasses, perennials and trailing plants for shading, cooling and visual softening.
- Plant support cable / trellis: stainless-steel or fibre ropes fixed to timber frame for climbing plants.

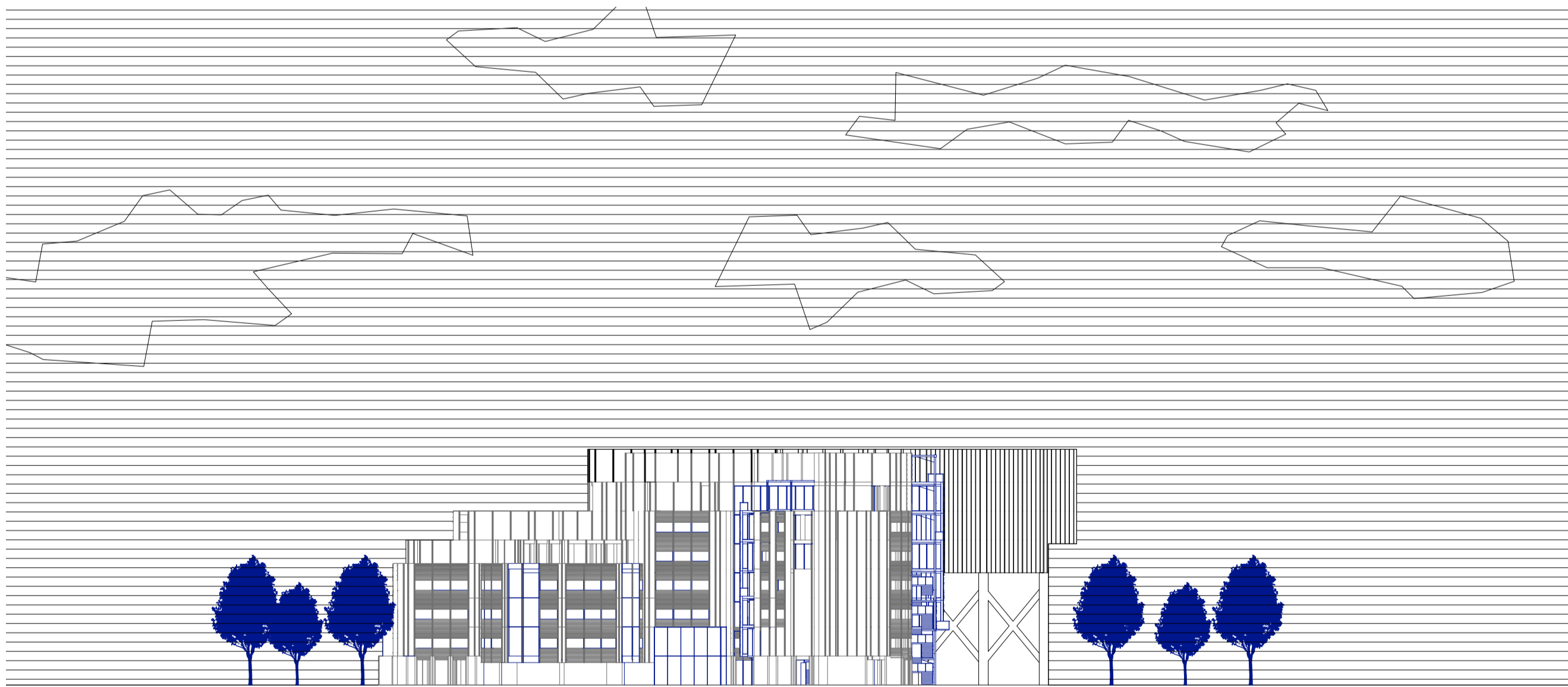
4. Circular / reuse-oriented components

- Geotextile-encased RCA bags: reuse of crushed concrete as removable ballast / insulation under the floor.
- Recycled / local aggregate in drainage: gravel or rubble layer removable and reusable when planter is dismantled.
- Modular planter construction: tray, upstands and brackets bolted to the frame, allowing disassembly, repair or replacement.
- Dry membranes, geotextiles and gaskets: non-bonded layers that can be taken out and renewed when façade or planter systems are upgraded.





SOUTH-WEST ELEVATION



NORTH-WEST ELEVATION





SECTION A-A

SECTION B-B

