SPECIFICATION FOR SMARTBRIC

Brick Rainscreen Façade System

1.0 SCOPE

The summary of the work included in this section of the specification comprises the supply and fixing of the SMARTBRIC™ rainscreen masonry façade system, including all necessary framing members, fixings and associated trimming, together with all consequential and/or incidental work which may be or may become necessary though not specified or shown in detail.

2.0 MATERIALS

SMARTBRIC RAINSCREEN FACINGS (LISTELS):

- Design and Manufacturer: Fairview Architectural with masonry units and components sourced from various Australian and overseas suppliers.
- Material: Clay and Concrete brick.
- Thickness: 25mm (standard). Also available in other sizes up to 55mm on request.
- Panel Size: Standard brick height of 76mm in 25mm thick.
  - Standard module lengths 230mm (Classic) and 240mm (Rapid – 230mm + 10mm recessed perpend).
  - Finish: Smooth, other textures on request.
- Colours:
  - Classic – Clay Brick (Dry pressed and cut / local Australian brick)
    Federation Blue, Federation, Black, Federation Red, Sea Haze, Cajun Red, Shale Grey, Mountain Ash, Saddle Tan, Stone, Golden Sand.
  - Classic – Clay Brick* (Extruded / imported)
    Peppercorn, Iron Ore, Mushroom, Sienna, Henna, Walnut, Caviar, Talc.
  - Classic – Concrete Brick* (Pressed and cut / local Australian brick)
    Moody Grey, Salt, Limestone, Hazelnut, Peppercorn, Storm.
  - Rapid – Clay Brick* (Extruded / imported)
    Red Earth, Buff, Pebble, Terrain, Cherrywood, Copper, Blush, Nougat, Dune, Pewter, Clay, Shoreline, Wrought Iron, Paper Bark, Sand, Spice, Canyon Clay, Outback, Rust.

    *Special colours/ finishes made to order to match sample provided by client's representatives.

- Fixing:
  - Aluminium horizontal rails, in accordance with the Smartbric installation Guide.
  - Galvanised horizontal track, in accordance with Smartbric installation Guide.

- Joints:
  - Horizontal joint: Interlocking. Width 10mm (nominal).
    - Smartbric Classic - Closed with M4 (or M3) mortar with ADD-MIX powdered plasticiser or proprietary REDI-MIX polymer modified synthetic mortar, which also acts as a medium preventing subsequent rattle of installed brick facings.

    - Smartbric Rapid – Mortarless. Shadow-line provided by ship-lapped tongue and groove watershed profile. Width 10mm (nominal) based on track or rail gauge setting.
  - Vertical Joint: Butt. Width 10mm (nominal)
    - Smartbric Classic - Closed with M4 (or M3) mortar with ADD-MIX powdered plasticiser or proprietary REDI-MIX polymer modified synthetic mortar, which also acts as a medium preventing subsequent rattle of installed brick facings. Spacer used to maintain joint width and backing for mortar (as required). Width: 10mm.
    - Smartbric Rapid – Mortarless. Shadow-line provided by recessed perpend joint. Width: 10mm (pre-formed into brick profile). Joiner can be fitted to rear groove of units to provide supplementary interlock.

- Cladding cavity: 35mm using standard 35mm S-batten. Minimum 25mm using alternative top-hat batten.
- Primary support/framing system: Cold formed G2 Z275 galvanised steel track with a base metal thickness (BMT) of 0.55mm, and a total coated thickness (TCT) of 0.59mm fixed with 1 x 10Gx16mm hex head self-drilling metal screw per joint. Aluminium rail system if <100m from breaking salt water.
- Secondary support/framing system: Vertically spanning 35mm S-section batten (1.2 mm BMT G500) or steel top-hats minimum 25mm in height. 1.1BMT, G300 Z250 or equivalent with 1 x No.10-16x16 screw per joint. Aluminium rail system if <100m from breaking salt water.
- Moisture control layer: Flexible membrane compliant to AS4200 for performance, NCC 2019 Vol. 1 Amendment 1, clauses C1.9e(vi) and F6.1 for fire and condensation compliance. Alternatively, a rigid air barrier for higher wind loads.
- Accessories: Creeper track, aluminium starter rail, aluminium top rail, Aluminium J-mould, aluminium corner profiles, perpend joint spacers, joiners, Add-mix powder plasticiser, Redi-Mix polymer modified synthetic mortar.
- Primary wall structure by others including connection of secondary frame.

3.0 PERFORMANCE

3.1 GENERAL

- Design wind pressure: To AS/NZS 1170.2 or AS 4055.Smartbric rail and track systems have been designed and are acceptable up to and including a maximum ultimate wind load of 8.0 kPa, with maximum span of 600 mm for commercial applications. Secondary and primary structures may govern over this specification.
- Maximum frame or subframe deflection: L/500 of the clear span under serviceability wind pressure (taken as $W_s = 0.67 \cdot W_u$ for commercial applications to AS/NZS 1170.2).
- Average system weight: 55 kg /m^2 (approximately)
- Irregularities: Brick facings shall appear flush and even when viewed at any position but not less than at an angle of 15 degrees to the true plane of the panel, with natural lighting of incident of not less than the same angle.
- Expansion and Contraction: The cladding shall be so fabricated and erected as to provide for all expansion and contraction of the components. Any temperature change due to climatic conditions shall not cause harmful buckling, opening of joints, undue stress on fastening and anchors, noise of any kind or other defects. The magnitude of the deflection must be verified by the building design professional. To maintain the systems 'brick look', control joints should be a minimum of 15mm thick and be located where mortar

joint would normally occur. Joint sealants shall have sufficient movement capacity to accommodate these movements.

3.2 MECHANICAL PROPERTIES

- Breaking Load: >1.0 MPa (typical)
- Water Absorption: < 10% (typically ~ 4-5%)
- Salt attack resistance grade: Exposure

3.3 FIRE COMPLIANCE

Vitrified clay and concrete masonry façades installed using a metal framing system are deemed non-combustible.

3.4 WEATHERPROOFING

The Smartbric System forms the outer rainscreen of a ventilated façade system and has been tested and assessed as meeting the performance requirements will need to be assessed to the weatherproofing performance requirement of NCC Volume 1 FP1.4 and volume 2 P2.2.2 for weatherproofing.

3.5 CONDENSATION & MOISTURE MANAGEMENT

Based on testing to NCC volume and FV1.1 and volume 2 V2.2.2.1, a weatherproof system can be achieved with Smartbric using a fully sealed air/water vapour barrier sufficiently robust to resist the design wind loads and movements and a 35mm (minimum 25mm) draining of the cavity.

4.0 INSTALLATION

4.1 DESIGN

Rainscreen cladding system and associated features: Complete detailed design in accordance with this specification and the preliminary design drawings and submit before commencement of fabrication. Related works: Coordinate in detailed design.

Submission of alternative proposals: Preliminary design drawings indicate intent. Other reasonable proposals will be considered but must be approved by all relevant project team members.

4.2 INSTALLATION

- Install brick cladding system as follows:
- Plumb, level, straight and true within acceptable building tolerances.
- Fixed or anchored to the building structure in conformance with the wind action loading recommendations.
- Isolated from any building loads, including loads caused by structural deflection or shortening.
- Allow for thermal movement.

4.3 ACCESSORIES & TRIM

Requirement: Provide accessories and trim necessary to complete the installation including matching capping and flashings and install in conformance with the manufacturer's recommendations.

4.4 SUBSTRATES OR FRAMING

Preparation: Before fixing cladding, check and, if necessary, adjust the alignment of substrates or framing.

4.5 METAL SEPARATION

Requirement: Prevent direct contact between incompatible metals, by either of the following materials:

- Applying an anti-corrosion, low moisture transmission coating to contact surfaces.
- Inserting a separation layer such as tape.

4.6 CLADDING METHODS

Install and fix the brick facings using the latest Smartbric installation guides to secure the facings (and corner units) in accordance with the manufacturer's instructions. Brick listels bottom edge to sit flat with rail or track with brick grooves engaging tongue of rail or track; and with even, straight, and aligned joints. Brick facings are to be brought on the site fully protected against damage.

4.7 HANDLING & STORAGE

Do not deliver to site any rainscreen cladding products and units which cannot be installed immediately or unloaded into a suitable well protected storage area. Store products and units on level bearers clear of the ground and separate with resilient spacers.

5.0 COMPLETION

5.1 ON COMPLETION

Clean down all wall cladding and remove all surplus materials and waste and scrap from the site.

Allow mortar to harden (allowing 3 days) prior to cleaning. Residual surface mortar should be removed with hand tools or mechanical means before pre-wetting of brickwork and controlled high pressure fan jet water spray. Working from top to bottom of wall using a water jeet spray anhgle at 15 degrees concentrate the pressure on the brick facings and not on the joint and scrub off any remaining mortar using a thick bristled brush.

Cleaning to be done with non-acid based cleaners. Where mild acid solutions are required, openings and voids in the brick work are to be masked and blocked to prevent ingress of chemical solution behind the masonry façade that may come into contact the metal sub-frame. Rinse surface (and any potentially exposed metal framing) thoroughly with clean potable water to remove all chemical residue from the surface(s).

Any efflorescence from the cementitious mortar material is normal and should be allowed to naturally dissipate or can be scrubbed off with a thick bristled brush.

5.2 FINAL INSPECTION

On completion of the wall cladding work and before any subsequent work, or as may be otherwise arranged, arrange for the work to be inspected by the Architect and/or Engineer.

5.3 MAINTENANCE

Inspect condition of the cladding to ensure the integrity and adequacy of the weather resistance for visible signs of problems such as cracking of brick facings and mortar joints, or rust staining at regular yearly intervals.

Cracked bricks and cracks in the mortar are to be repaired to maintain the weather resistance.

External systems are to be maintained and cleaned with potable water at regular q2-month intervals in corrosivity categories C1. C2 and C3. More corrosive environments will require more frequent inspections and cleaning.

5.4 WARRANTIES

Form: Product warranty covering manufacturing defects and systems performance when installed in accordance with the Smartbric Installation Guide and by a suitably trained and approved installer.
Period: 10 years from completion of installation.

END OF DOCUMENT