CASE STUDY:

BROADWAY STUDIOS, GLASGOW

ENTERPRISE® 25/14 BRICK TIE CHANNEL SYSTEM

432 bed, 17-storey purpose-built student accommodation
Renfield Street, Glasgow
McAleer & Rushe Contracts UK Ltd
Completion estimated August 2026
£58m development value

16	432	60 YEARS	TYPE 1
STOREYS	STUDIOS	WARRANTY	SYSTEM TYPE

1.0 PROJECT OVERVIEW

Broadway Studios represents the second and final phase of MRP's Broadway Central development at Renfield Street in Glasgow, completing the regeneration of a prominent city-centre block adjacent to the Maldron Hotel. The scheme delivers 432 studio apartments across 16 storeys of purpose-built student accommodation (PBSA), designed by Cooper Cromar Architects with Consarc Design Group serving as executive architect responsible for the façade specification and detailed design coordination. McAleer & Rushe Contracts UK Ltd were appointed as design-and-build contractor for this £58m development, which is scheduled for completion in August 2026 ahead of the 2026/27 academic year.

Situated at 200 Renfield Street (G2 3AX) on the northern fringe of Glasgow's central business district, the building occupies a relatively sheltered urban location, although its height renders the upper storeys susceptible to wind gusting. The development has been classified as a High-Risk Building (HRB) under Scottish Building Regulations and, while the Building Safety Act 2022 has been mostly transposed into Scots Law through the Building (Scotland) Amendment Regulations 2023, MRP proactively elected to align the project with the Act's principles to future-proof the asset against evolving regulatory expectations. The building targets BREEAM Excellent certification and an EPC A rating, exceeding Glasgow City Council's energy efficiency requirements by 20 per cent.

The façade comprises four external wall types. EW01 and EW02 feature 102.5 mm brick outer leaves restrained to 150 mm SFS studwork inner leaves via the Enterprise 25/14 channel system, while EW03 and EW04 utilise conventional ties for masonry-to-masonry construction on the Maldron gable. The choice of the 25/14 channel system for the dominant SFS-backed elevations was driven by the need for a warranted, Type 1 performance solution capable of resisting a design wind pressure of 1.53 kN/m² (unfactored) whilst accommodating cavity depths of up to 232 mm incorporating 180 mm of A1 non-combustible Rockwool Duoslab insulation.

2.0 TECHNICAL CHALLENGE

Several interrelated technical challenges shaped the wall-tie specification for Broadway Studios. First, the building's height and residential classification demanded Type 1 non-combustible wall ties throughout, in accordance with BS EN 845-1 and PD 6697:2019. The 16-storey form factor, combined with the building's High-Risk Building (HRB) classification under Scottish regulations, left no latitude for concessions on tie performance or installation quality.

Second, the façade specification called for the Enterprise® 25/14 channels to be screwed to SFS studs at 225 mm vertical centres with stainless steel compression sleeves, with TTCH ties placed at 300 mm vertical centres to achieve the required Type 1 performance. Determining the appropriate tie spacings, however, required careful analysis of site-specific wind loading data. The geographical location offered some protection from prevailing winds, but wind gusting at upper levels remained a concern. Evolution's technical team requested the structural engineer's wind analysis to establish whether spacings could be relaxed from the conservative 225 mm baseline to 337.5 mm or 450 mm on favourable façade orientations, thereby reducing material costs without compromising structural adequacy.

Third, at Level 14 the brickwork transitions from masonry support angles on the main façade to construction built directly off the external roof terrace concrete slab. Consarc's design intent (Drawing SK01, dated 3 June 2025) identified three corner locations where this transition occurs, each requiring a carefully positioned vertical movement joint with debonding sleeves to accommodate differential structural movement. The wall-tie arrangement either side of these movement joints - combining 25/14 channel ties at 300 mm vertical centres on the main façade with frame cramps at 225 mm vertical centres on angle brackets fixed to SFS/columns, and movement ties with debonding sleeves across the joint itself - demanded close coordination between Evolution, Consarc, and the structural engineer.

Fourth, the specification of the fixing to the structural steel element at Level 14 raised concerns about coating integrity. The structural engineer designed a 100 × 200 × 12 mm galvanised rolled steel angle (RSA) fixed to the RC frame to receive the brick ties, with the architect expressing a preference for the 25/14 channel system rather than individual frame cramps. The concern, articulated by Consarc, was that self-drilling fasteners might compromise the galvanised zinc coating during installation. Evolution's engineering team confirmed that the BMBW5.5-50-5 bi-metal fastener was suitable for this application, and that its installation would not cause greater coating disturbance than conventional pre-drilling and manual tapping.

3.0 THE ENTERPRISE® 25/14 SOLUTION

3.1 SYSTEM DESCRIPTION

The Enterprise® 25/14 brick tie channel system is a stainless-steel restraint assembly designed to tie an outer masonry leaf to light steel, concrete, or timber framing through insulation. The system comprises three principal components: the 25/14 channel rail (available in 2,700 mm and 3,000 mm lengths), TTCH wall ties in various lengths to suit cavity widths from 35 mm to 259 mm, and self-drilling high-thread (BMHT) or A4 stainless-steel masonry (A4HH) screws with optional stainless steel compression sleeves (SSCS).

The channel features pre-punched fixing holes at 112.5 mm centres, alternating between 5.3 mm diameter holes for BMHT screws (steel/timber substrates) and 9.5 mm holes for A4HH concrete fixings. A 16 mm slot opening accommodates a drive socket and washer during installation. This close hole spacing ensures that a fixing position always falls near the cut end of any site-trimmed length, maintaining structural continuity.

TTCH ties are positioned at any point along the channel length by rotating through 90° and sliding into the desired location before being built into the masonry bed joint. This adjustability is a significant practical advantage on site, as it decouples the tie position from the fixed channel-hole locations and allows the bricklayer to align ties with mortar courses without constraint.

3.2 DESIGN PARAMETERS FOR BROADWAY STUDIOS

Parameter	Specification
Wall-tie classification	Type 1
Design wind pressure (unfactored)	1.53 kN/m^2
Channel fixing centres (vertical)	225 mm
Tie centres (vertical)	300 mm
Tie centres (openings)	225 mm (vertical) & 225 mm (edge)
Channel centres (horizontal)	450 mm
Max. channel cantilever	112.5 mm (from first fixing)
Cavity depth (EW01)	232 mm
Cavity depth (EW02)	200 mm
Design life	120 years
Warranted life	60 years
Material	A2 (EN 1.4301) stainless-steel
Compression sleeves	Required due to insulation thickness

3.3 FREE-END CANTILEVER ANALYSIS

A critical design parameter confirmed during the project was the maximum permissible offset from the first brick tie to the nearest channel rail fixing. The governing criterion is deflection control: the free-end dimension must not exceed half the distance between consecutive channel fixings. For the Type 1 configuration at Broadway Studios with fixings at 225 mm vertical centres, this translates to a maximum free-end cantilever of 112.5 mm from the support point.

This constraint ensures that the channel rail maintains sufficient bending stiffness at its extremities to restrain the outer leaf against wind suction loads without excessive deflection. The dimensional limit was communicated to Consarc and McAleer & Rushe to inform the architectural detailing for the Stage 5 building warrant submission, particularly at locations where channel lengths terminate near openings or movement joints.

3.4 WIND LOAD DEPENDENT SPACING OPTIMISATION

Evolution's approach to tie spacing was not a blanket prescription but a site-specific optimisation informed by the structural engineer's wind analysis. Where Zone A wind loads were adverse, the system defaulted to 225 mm vertical tie centres - the most conservative configuration. Where loads were favourable, centres could be relaxed to 337.5 mm or 450 mm, depending on the calculated pressures and the limitations imposed by pre-formed hole positions in the channel.

This approach delivered a tangible cost benefit to the contractor. By demonstrating that certain façade orientations could accommodate wider spacings without compromising the Type 1 performance requirement, Evolution enabled McAleer & Rushe to reduce material quantities on favourable elevations whilst maintaining full compliance with BS EN 845-1, PD 6697, and the project-specific wind loading criteria.

4.0 REGULATORY COMPLIANCE

4.1 SCOTTISH BUILDING REGULATIONS

All works were specified to comply with the current Scottish Building Regulations - Non-Domestic Technical Handbook (April 2024). The building's High-Risk Building (HRB) classification under Scottish Building Regulations reflects its height (16 storeys) and

predominantly residential occupancy (15 of 16 occupied floors contain student accommodation). This classification carries stringent requirements for fire performance, structural integrity, and external wall construction.

4.2 BUILDING SAFETY ACT 2022 CONSIDERATIONS

Although the Building Safety Act 2022 has been mostly incorporated into Scots Law through the Building (Scotland) Amendment Regulations 2023, the project team elected to align with its principles. Evolution's technical team provided guidance on the Act's Section 65 classifications - requesting confirmation of maximum building height, total storeys, and residential storey count - to ensure the wall-tie specification met both current Scottish requirements and the prospective standards that may follow full transposition.

4.3 FIRE PERFORMANCE

The façade specification mandated that all wall ties achieve Type 1 non-combustible performance, in line with BS EN 845-1. The Enterprise® 25/14 channel and TTCH ties, manufactured from grade 304 stainless steel, satisfy this requirement. All insulation within the cavity (Rockwool Duoslab and NyRock Rainscreen Slab) is A1 non-combustible when tested to EN 13501-1, and the complete wall build-up was required to demonstrate compliance with BS 8414-1, BS 8414-2, and BR 135.

The specification further required Siderise compartment fire barriers (120 minutes integrity and insulation) and cavity fire barriers (30 minutes integrity, 15 minutes insulation) at all horizontal and vertical compartment abutments, installed and certified by a specialist third-party installer.

4.4 STANDARDS COMPLIANCE SUMMARY

Standard	Application
BS EN 845-1/ BS EN 845-2	Wall-tie specification and ancillary components
PD 6697: 2019	Recommendations for the design of masonry structures
BS EN 998-2	Mortar specification
BS 8414-1/ BS 8414-2	Fire performance of external cladding
BR 135	Fire performance of external wall systems
EN 13501-1	Fire classification of construction products
BS EN ISO 9001	Quality certification requirement
BS EN ISO/IEC 17025	UKAS Testing Laboratory accreditation

5.0 TECHNICAL COORDINATION AND PROBLEM SOLVING

The Broadway Studios project illustrates the depth of technical engagement that Evolution Fasteners provides as part of its warranted wall-tie service. Over a period spanning February 2025 to December 2025, the technical team addressed a sequence of interrelated queries from the design team, contractor, and supply chain partners.

5.1 INITIAL SPACING AND SPACING CONFIRMATION

When McAleer & Rushe first approached Evolution in February 2025 seeking confirmation of tie and screw spacings for Type 1 performance, the response was not a generic data sheet but a structured request for project-specific information. By gathering the building's height, storey count, residential classification, geographical location, and exposure conditions, Evolution was able to deliver a bespoke spacing specification that balanced regulatory compliance with cost efficiency.

5.2 LEVEL 14 TRANSITION DETAIL

Consarc's design team identified three corner locations at Level 14 where the façade transitions from masonry support angles to concrete slab construction. Evolution's response addressed the architectural design intent head-on, confirming system compatibility and advising on tie distribution either side of the required movement joints. Notably, while the wall-tie manufacturer Tecties was unable to provide design calculations for the movement-joint detail (correctly identifying this as the structural engineer's responsibility), Evolution provided the technical parameters necessary for integration into the warrant submission package.

5.3 GALVANISED RSA FIXING AT LEVEL 14

When Consarc raised concerns about potential damage to the galvanised coating on the 100 × 200 × 12 mm RSA at Level 14, Evolution's engineering team provided a clear technical rationale. The BMBW5.5-50-5 bi-metal fastener was confirmed as suitable for securing the 25/14 channel to the RSA. Critically, the team demonstrated that the self-drilling installation process does not cause greater coating disruption than conventional pre-drilling and tapping, thereby addressing the architect's concern without requiring a change in the specified fixing method.

5.4 SFS FIXING METHODOLOGY

During the installation phase, a query arose from the brickwork sub-contractor regarding the compatibility of A4IS200 screws with cement particle board sheathing. Evolution's Technical Director clarified that the screws were designed specifically to fix through to the SFS studs (up to 2.5 mm gauge) and were not intended for fixing solely to cement particle board. This intervention prevented a potential installation non-conformance and ensured the system's warranted performance was maintained.

6.0 PROJECT TEAM

Organisation	Role	Key Personnel
MRP	Developer	Shane McBride (Development Director)
McAleer & Rushe	Main Contractor	Shane McCullagh (Director)
Consarc Design Group	Architect	Paul Jackson
Cooper Cromar	Architect	-
Ian Black Consulting	Structural Engineer	-
Evolution Fasteners	Enterprise® System specifier	Ryan Murphy (Technical Director)
Encon Construction Products	Distribution Partner	David Mill
Puma Property Finance	Development funder	Kevin Davidson (Managing Director)
Prestige Student Living	Operator	-

7.0 OUTCOMES AND DELIVERED VALUE

The Enterprise® 25/14 channel system delivered measurable value to the Broadway Studios project across several dimensions.

Regulatory certainty	Evolution's structured approach to specification - gathering building classification, exposure, and wind-loading data before issuing tie spacings - gave the design team and building control confidence that the system met all current Scottish Building Regulations and was aligned with the principles of the Building Safety Act 2022.
Cost optimisation	By analysing site-specific wind loads rather than defaulting to worst-case spacings across all elevations, Evolution identified opportunities to widen centres on favourable façades. This approach reduced material consumption and installation time without compromising structural performance.
Design coordination	Evolution's technical team acted as an active participant in the design process, providing the deflection-controlled free-end cantilever limit, confirming fixing compatibility with galvanised substrates, and coordinating with Tecties, Encon, and Consarc to resolve complex transition details at Level 14.
Installation quality assurance	Proactive intervention on the SFS fixing methodology prevented a potential non-conformance during installation, and the specification required first-panel inspection and sign-off by the wall-tie supplier to ensure ongoing compliance.
60-year warranted performance	The Enterprise 25/14 system is backed by a 60-year warranty, aligning with the façade specification's requirement for external masonry walls. The grade 304 stainless steel construction provides the corrosion resistance necessary for the building's anticipated service environment in central Glasgow.