



IRISH STEEL
AWARDS 2025

in association with

RFL
STEELS LIMITED

Shortlisted Finalist | Voting ID: #6574

Finished Projects

Architectural Metalwork – Balconies

Arc Engineering

Residential Apartment Development, *Station Rd., Raheny*





Voting ID: #6574 | Architectural Metalwork – Balconies



Residential Apartment Development

Station Road, Raheny

Project Story:

Design Considerations and Balcony Typologies

A key design challenge was the variation in façade depths due to mixed cladding materials including brick, render, and zinc. This required careful structural adaptation for each balcony. Balcony types included cantilevered and supported units (both single and double-width), corner balconies, concrete balustrading, privacy-screened balconies, terrace railings, and metal and glass canopies.

A standout feature was the use of saw tooth balconies on the north elevation, designed to accommodate four vertical solar shading stacks. These enhanced privacy and mitigated glare while contributing to the architectural rhythm. Balconies also required varied alignment strategies, some based on façade geometry and others aligned with internal mullions, demanding precision 3D BIM modelling.

Scope of Works

Arc delivered: 37 supported balconies, 45 cantilevered balconies, 10 double balconies, 20 corner balconies, 2 concrete balustrade sets, 4 saw tooth solar shading stacks, and a series of canopies.

Engineering and Fabrication

All balcony structures were mild steel, fully welded, hot-dip galvanised, and powder coated in slate grey. Aluminium decking was A2 fire-rated, slip-resistant, and colour-matched. Frameless-look balustrades used toughened glass with concealed fixings.

Installation and Logistics

All units were preassembled and delivered using a just-in-time strategy to reduce crane time and site work. Installation was completed with crane lifts and no external scaffolding. In tight courtyard areas, Arc developed a bespoke fall arrest system secured internally. Operatives used two-way radios to guide balconies into position with high accuracy.



Conclusion

Arc Engineering's work on Station Road, Raheny reflects the successful integration of architectural metalwork with modern construction.

Through offsite fabrication, precise detailing, and coordinated delivery, Arc provided over 100 custom balcony units that combine visual impact with safety, durability, and build efficiency.

Project Team:

Client: Earlsfort Group

Construction Management: Earlsfort Homes

Main Contractor: M&P Construction

Architect: PMCA

Structural Engineer: CS Consulting Group

Quantity Surveyor: Thaddeus Jessup & Associates



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Residential Apartment Development, Station Road, Raheny

The Nominee thinks this deserves to win an award because:

This project represents a technically sophisticated application of architectural metalwork, demonstrating how structural steel can solve complex design and engineering challenges in a dense urban residential context. Arc Engineering delivered over 100 balcony units—across seven typologies including cantilevered, supported, and corner configurations—all offsite fabricated with millimetre precision and pre-finished for rapid installation.

The project addressed significant coordination challenges, including aligning balcony placements with mixed façade depths (brick, render, and zinc cladding) and internal window mullions. The incorporation of bespoke saw tooth balcony geometries with integrated solar shading on the north elevation further elevated the engineering demands, requiring custom support detailing, drainage strategy variation, and purpose-built transport racking. Through advanced BIM coordination, iterative prototyping, and modular design techniques, Arc delivered a system that achieved architectural intent, structural performance, and installation efficiency. The project is a leading example of how technical steel solutions can seamlessly integrate with complex façade systems while enhancing buildability and design expression.

Here's what Jason McLoughlin, Project Manager – Earlsfort Homes had to say:

"Arc Engineering worked closely with our design team and project engineers from an early stage demonstrating a highly collaborative and solutions-driven approach. Their in-house design team brought a strong blend of technical knowledge and practical foresight, particularly evident in their handling of the project's varied façade interfaces and complex geometries.

Given the site's logistical constraints – including limited storage and tight access – precise planning and just-in-time delivery were essential. Arc's proactive co-ordination ensured a smooth installation process with minimal disruption to the overall programme. We found Arc Engineering to be professional, reliable and fully engaged throughout the delivery of this challenging scope and we would be happy to recommend them for similarly demanding architectural metalwork projects."

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