Case study

Non-combustible ROCKWOOL® provides solution to multi-storey development

83 Barchester Street, London

ROCKWOOL®

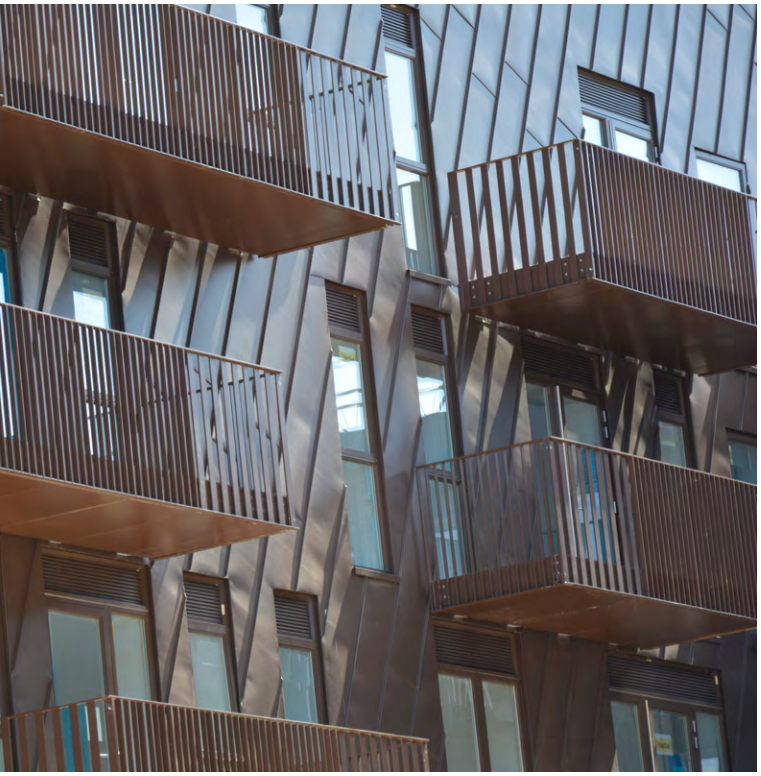
The project

83 Barchester Street is a 10,700m² development of 115 affordable homes in the Limehouse Cut Conservation Area of East London that redefines social housing.

Inspired by the site's former use as a 1930's factory and mid-century warehouse, architects Metropolitan Workshop have created a development that is iconic in appearance. Its stand-out feature is a saw-tooth roof profile in a series of spines that gradually increase in height, created to reflect the site's industrial heritage.

Further adding to the development's striking appearance is an equally distinctive choice of façade. The saw-tooth elements of the design, along with courtyard elevations, are clad in bronze-coloured zinc, whilst street-facing elevations are composed primarily of brickwork with recessed stretchers and cross motifs to reference Festival-inspired architecture of the adjacent Lansbury Estate.

The choice of façade, along with increasingly stringent fire safety requirements and ambitious client aspirations for energy performance, saw the architect engage with ROCKWOOL® for advice and support in creating a robust thermal and non-combustible insulation specification for the project.



The challenge

Long-term aesthetic appearance was a key driver for the design team on 83 Barchester Street.

As such, they opted for elZinc Rainbow Brown zinc cladding, supplied by SIG Zinc & Copper, to be laid vertically and diagonally creating a striking, industrial finish, while also providing excellent durability and weathering for years to come.

However, the multi-storey, multi-occupancy development was also being designed against a backdrop of legislative changes. Building (Amendment) Regulations SI 2018/1230, which came into force in December 2018 as the specification for the project was being drawn up, placed a ban on the use of combustible materials in the walls of relevant buildings over 18 metres. This policy change, alongside the client's desire to provide a higher standard of fire performance for future occupants, drove the need for a non-combustible façade build-up.

Simultaneously, with the objective of providing high quality homes that are as affordable to run as they are to rent or buy, the client wanted to achieve a u-value of 0.15 W/mK, which at the time of planning, was an ambitious target.

Building (Amendment) Regulations SI 2018/1230, which came into force in December 2018 as the specification for the project was being drawn up, placed a ban on the use of combustible materials in the walls of relevant buildings over 18 metres.

The solution

The unique façade construction at 83 Barchester Street presented a set of complex requirements.

As such, Metropolitan Workshop consulted ROCKWOOL and SIG Zinc & Copper for expert guidance and advice. During the tender stage of the project, the team supported the architects with the development of initial drawings, before working closely with successful specialist contractor All Metal Roofing to refine and gain approval for cladding details.

The resulting façade build-up comprises a steel framing system and cement particle board substrate, with 225mm of ROCKWOOL RainScreen Duo Slab® stone wool insulation, aluminium rails supporting trapezoidal steel sheeting, followed by a breather membrane and 0.8mm El Zinc Rainbow Brown angled standing seam cladding.

RainScreen Duo Slab is a dual-density stone wool insulation that provides an all-in-one solution for acoustic, thermal, and fire performance. These combined capabilities, and in particular its non-combustible Euroclass A1 rating for fire safety – the highest available – make it the ideal option for 83 Barchester Street.

For between the façade's steel framing system, ROCKWOOL provided thicknesses of its insulation slab, providing between 100 – 140mm sizes.

The resulting façade build-up comprises a steel framing system and cement particle board substrate, with 225mm of ROCKWOOL RainScreen Duo Slab® stone wool insulation.

"83 Barchester Street was a challenging site and a challenging brief, but it has resulted in a piece of residential architecture that defies the norm for socially rented housing."

Luke Dewey
Senior Associate

The result

Despite a multifaceted brief for the external façade, by working closely with the manufacturer and distributor, Metropolitan Workshop and All Metal Roofing have helped deliver a visually iconic building for the East London landscape and new breed of social housing for Tower Hamlets.

Elaborating on the complexities of the project, Tim Coakley, Contracts Director at All Metal Roofing, said: "The diagonal standing seam zinc cladding created quite a lot of technical challenges and required a number of bespoke details to ensure both adequate performance and onsite buildability. Owing to the intricacies of the job, All Metal Roofing employed a full time manager, as well as an inspection test plan (ITP) and a quality assurance document to ensure that the project was delivered to the highest standard."

Concluding, Luke Dewey, Senior Associate at Metropolitan Workshop, said: "83 Barchester Street was a challenging site and a challenging brief, but it has resulted in a piece of residential architecture that defies the norm for socially rented housing. It's a project we're immensely proud of."