

In Association
with **RENOLIT**



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The University of Manchester
Project Case Studies



MODERN SURFACE FINISHES FOR GREATER DESIGN SCOPE

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HISTORY



University of Manchester **The Science Quadrangle**

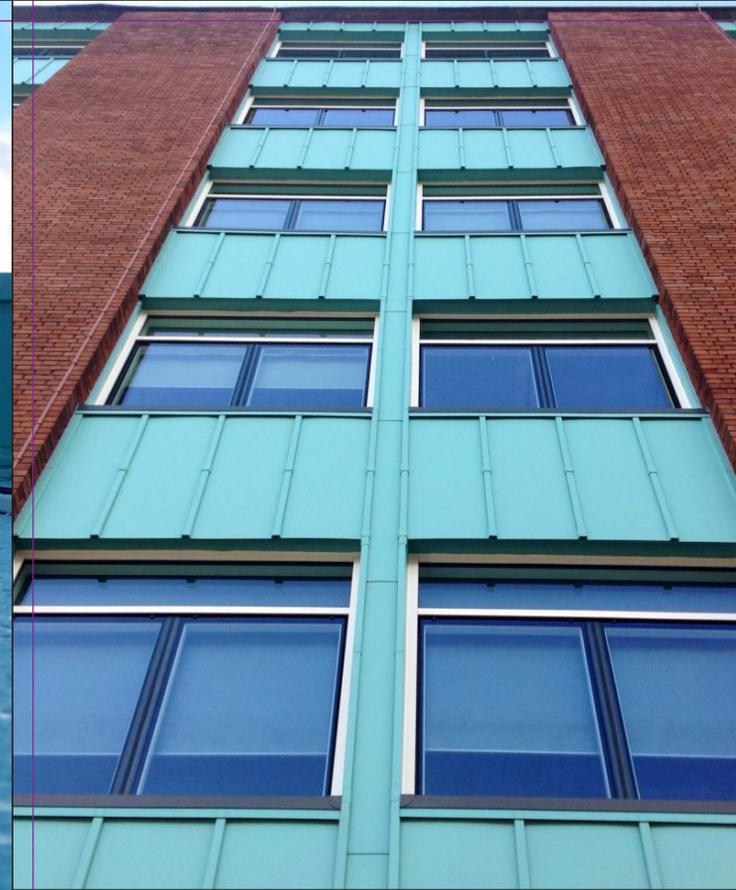
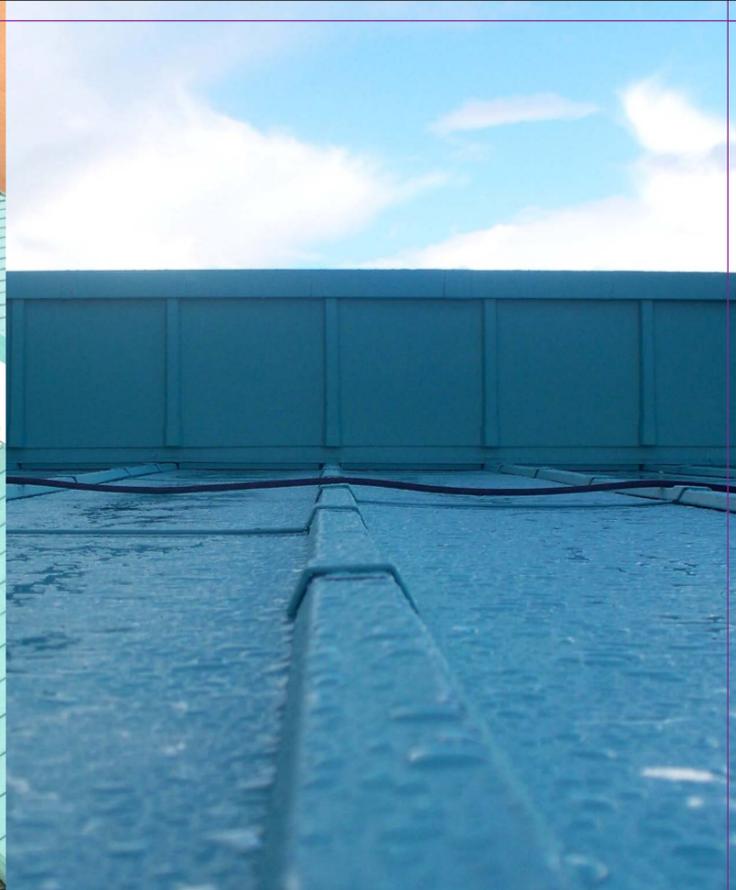
The Science Quadrangle refers to a number of purpose built university buildings dating from the era of comprehensive redevelopment of the University of Manchester campus in the 1960's.

The Williamson Building, The Schuster Building, The Chemistry Building and the Simon Building together form a set piece of large scale urban design unique to the University with all four buildings sharing a common palette of materials (including extensive use of copper cladding and roofing), built features and sense of scale and massing.

While not listed or within a conservation area, these buildings exhibit a strong sense of individual design and design quality.

Collectively they are referred to as the Science Quadrangle and the buildings were designed by H.M Fairhurst of the renowned and historical Manchester practice Harry S Fairhurst & Sons.

As well as this collection of buildings, Fairhursts were responsible for a large number of University buildings including The Morton Laboratory, The Stopford Building, The Faraday Building and in common with the pallet of materials utilised in the Science Quadrangle, the Pariser Building.



The Williamson Building

The Williamson Building is located on Oxford Road at the corner with Brunswick Street. The building is now occupied by a number of University departments including: Earth Sciences, Geology, the Institute of Health Sciences, and Law but it was originally built as The Electrical Engineering Laboratory and completed in 1964.

The building is named in honour of William Crawford Williamson who was appointed as Professor of Natural History at Manchester.

The building was originally composed of steel and timber windows set in brickwork facades and capped predominantly with copper roofs. There are elements of vertical copper cladding to the external columns whilst the square annexe building is predominantly copper clad.

The Simon Building

The Simon Building sits opposite the Williamson Building and can be regarded as a sibling building. Now home to the Centre for the History of Science, Technology and Medicine it was originally conceived as a laboratory building and named after Ernest Simon who was an industrialist and later a politician. It was completed after the Williamson Building in mid 1966.

The building shares the same pallet of materials as the Williamson Building but in a slightly larger footprint.

The Schuster Building

The Schuster Building was one of the later buildings constructed on this Quadrangle and was completed by 1967. It houses the School of Physics and Astronomy. The copper clad octagonal annexe building, which houses the Rutherford Lecture Theatre, is crowned by a golden sculpture by Michael Piper.

The building is named after Sir Franz Arthur Friedrich Schuster, a physicist who contributed to making the University of Manchester a centre for the study of physics.

Like the Chemistry Building its use of copper is used extensively for the vertical cladding of the spandrel panels and columns.

The Chemistry Building

The Chemistry Building on the southeast part of the quadrant was completed in October 1964 so followed on not long after The Simon Building. It continues the tradition of combining brickwork and copper but with the copper used more predominantly as a cladding material rather than as a roof covering.

Original Design

The architects of these buildings; Harry M Fairhurst and Ian Fairhurst (the third generation of Fairhurst) joined the practice following their father Harry S Fairhurst. The practice developed its expertise in the design of medical buildings for practice and research including the design of the Manchester Medical School, part of Manchester University. Other buildings followed including those in the Science Quadrangle gaining Harry an honorary degree by the University of Manchester and UMIST for his work over 25 years.

PRESENT DAY



Replica Copper

Fairhursts continues to practice and still carries out a lot of work for The University of Manchester. This has now gone full circle and we are now involved in the refurbishment of many of the buildings we originally designed on the campus.

Our work on the Williamson Building came about further to The University of Manchester's brief to improve the thermal efficiency of the building, whilst reducing ongoing maintenance. The proposal was to replace all existing windows and doors and replace the existing copper clad roofing and vertical cladding and asphalt roofing with similar materials.

The client brief acknowledged that the existing window arrangement and roofing offered poor thermal qualities to the building together with an increasing requirement to maintain, repair and replace damaged glazing sections and sections of roofing. The objective of the refurbishment was therefore to provide a thermally efficient glazing system together with a leak free roof, compliant to today's regulative requirements and which will provide a maintenance free installation

with a life expectancy in excess of 35 years.

The existing copper roof had been in-situ now since completion of the building. Whilst copper is acknowledged as a robust and long-lasting material, a close inspection of the roof coverings themselves, revealed it was time to replace the existing roofing.

- Modern alternative to traditional lead and copper cladding
- Recently approved by English Heritage for use on listed and conservation area projects.
- Suitable for new-builds and refurbishment projects
- Existing Copper cladding was recycled and the value returned to the client.
- 20 year guarantee for the MCM system.



Following further investigations to the existing roof structures, the architects recommendation to the University advised that whilst it would have been possible to provide patch repairs to the existing copper roof, they felt that this would result in a patchwork effect with numerous and multiple repairs being evident in any repair proposal.

Furthermore, in order to upgrade the roof to modern thermal standards the client would have to apply any new insulation to the underside of the existing roof. There existed a number of attachments to the purlins that supported the existing roof deck and these include light fittings, cable trays, pipework fixings etc. In order to provide a continuous thermal line of insulation these appendages would have had to be removed and reinstated once any new insulations are fixed and this was considered impractical. Fairhurst Design Group therefore proposed replacement of the existing roof coverings by stripping back to the supporting structure and

re-instating the visual appearance of a traditional copper roof using MCM Replica Copper Cladding System. This would negate the need to remove services appendages fixed to the underside of existing purlins, provide the opportunity to upgrade the thermal performance and air-tightness of the roof and future proof the roof for the foreseeable future and reduce the maintenance requirements for the University. It also provided an opportunity to replicate the adjacent 'twin' Simon Building which had previously received the same MCM built-up roof covering as proposed. These works were undertaken in 1995.

MCM were able to devise a bespoke 'seam' that replicated the original standing seam of the copper roof. Furthermore the colour of the proposed system replicated the colour of the existing patinated copper roof.

FUTURE



Technical Drawing Service

MCM produces various systems for Industrial, commercial, residential and refurbishment projects. suitable for pitched, vertical, barrel vaults, dormers and mansards.

Direct replacement or alternative for Lead, Copper Cladding

For accurate and productive design development we utilise cutting edge technology through the use of innovative computer software and hardware systems. The use of systems like StruCAD ArchiCAD and AutoCAD gives us the ability to produce fast, accurate details and models for our clients.

Fully compatible with alkorPLAN Single ply membrane ensuring seamless detailing and guaranteed interface details with associated flat roof areas.

