

Case Study

AIRC, Cranfield University,
Bedfordshire

Education

Shape
your vision

Unique Facility

Novastruct's FSX 100 zone-drained curtain walling and DSX 190 TB Doors were selected for their design and performance capabilities by CPMG architects' multi award-winning Aerospace Integration Research Centre (AIRC) at Cranfield University in Bedfordshire.



“Multi Award-Winning”



Cranfield is the only university in Europe to combine major aerospace research facilities such as the AIRC with an operational airport and runway.

The AIRC won a LABC national award for Best Large Commercial Project and a RICS East award for Design through Innovation.

Building: Aerospace Integration Research Centre (AIRC)
Location: Cranfield University, Bedford
Architect: CPMG architects
Main Contractor: RG Carter
Installer: Drayton Windows

International Significance

The Novastruct curtain walling panes of 3m x 1.3m, and DSX 190 TB heavy-duty commercial entrance doors were installed on the steel-frame structure over eight months by a team of four from approved dealer Drayton Windows for main contractor and their parent company RG Carter.

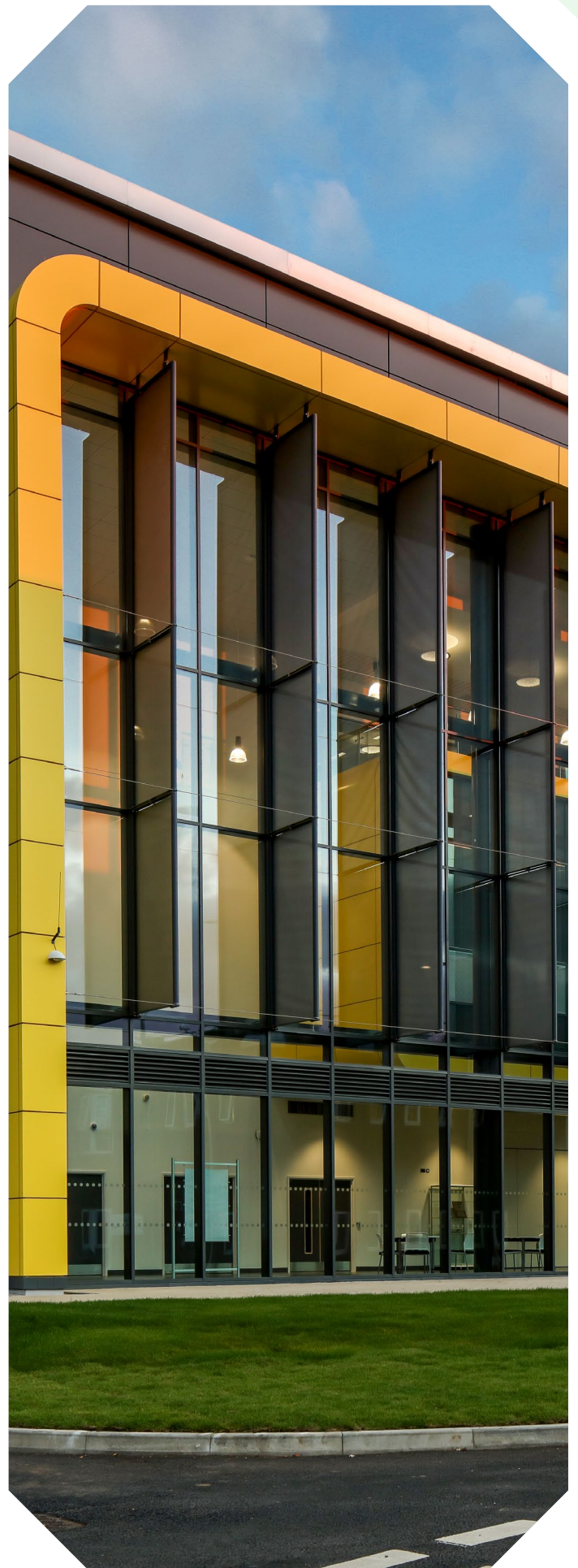
The 3,400m² AIRC is one of Cranfield's newest world-class facilities and is of international significance. Co-funded by Airbus, Rolls-Royce, Government and the university, industry and academia work together under one roof on cutting-edge research.

Facilities include a flight simulator and laboratories for air traffic management, unmanned aerial vehicles, a virtual wind tunnel, a FANUC robot in the intelligent automation centre, and a 1,500m² open laboratory with 18m x 6m sliding doors to give access for demonstrator aircraft such as the university's 19-seater Jetstream 31.

CPMG's brief was for a state-of-the-art research centre that will help to change the design of future aircraft, bringing academic research and the testing of new ideas by the co-funders. Their design is apt – a BREEAM "Excellent" three-storey interpretation of a modern hangar.

The BIM Level 2 designed accommodation comprised a tripleheight entrance atrium and high bay area containing avionics, thermals, mechanical, electrical and structural laboratories ... and the second largest gantry crane in Europe using the only "Mega" lift jacking system available in the UK.

CPMG associate lead Aiden Bell said: "We made sure the designs for the facility not only met the brief to provide the space and functionality that was needed but also reflected the university's strong architectural identity which already has a number of flagship buildings. Our design was selected from a number of competitors as we portrayed the strength of the university's academic research within the architecture of the building. We specified the Novastruct systems as they could achieve the tight u-values and required design criteria for two curtain walling systems that were 38m wide x 13m high. Both east and west elevations have large expanses of the curtain walling to offer visibility to the entrance lightwell and the high bay area at the rear of the building. It allowed the interior aspects of the atrium and high bay area to be showcased."



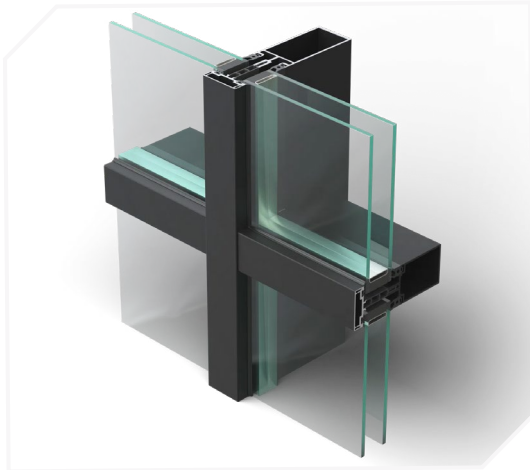
Meeting Expectations

RG Carter, who were on site, on the perimeter of the airport, for two years, said: "Using our in-house capabilities with Carter Design, we provided support and advice from our own structural and civil engineers to redesign the structural frame and change the curtain walling system from a self-supported to a supported glazing system, and also provide additional support to the structural frame.

"Together with advice from our own in-house company Drayton Windows, we provided the architect and engineer with design and construction details, as well as windload and structural calculations, from specialist suppliers to develop a workable solution that met the client's expectations and still followed the design concept that the architect had laid down."



Product Specification Highlights



FSX 100 50mm Curtain Wall System



DSX 190 TB Door

Project Photos: Neil Hoyle Photography

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