

PROJECT 8773 SNAPSHOT

Award Winning Dual Cantilever Aircraft Hangar & Hangar Doors, Biggin Hill, UK



FULLY UKCA COMPLIANT FOR EXECUTION CLASSES 1 TO 4 • ISO 9001:2015 • ISO 14001:2015 • BS EN ISO 45001:2018 • BS EN ISO 3834-2:2005
JOHN REID & SONS (STRUCSTEEL) LTD trading as REIDsteel & REIDglazing • Company Registration No: 617773

REIDsteel

JOHN REID & SONS (STRUCSTEEL) LTD

Aircraft Hangar & Hangar Doors

Completed in early 2022, this dual cantilever hangar at Biggin Hill Airport, UK was built in conjunction with the main contractor Civils Contracting Ltd (Civils).

It is the largest cantilever roofed hangar to be built in the UK for more than 50 years.

The complex cantilever design allows the roofs to safely span the hangar without support from any internal columns, creating a vast floor space capable of housing up to 14 business jets at any one time.

REIDsteel Elements	
Conceptual Design	✓
Structural Design / Detailing	✓
Erection	✓
Structural Steelwork	✓
Roof & Wall Cladding	✓
Glazing	✓
Hangar Doors	✓
Personnel / Entrance Doors	✓





Structurally robust & cost effective - The UK's second longest cantilever hangar roof



John Harrison, senior technical manager at REIDsteel, said: "This is the most technically challenging yet. With a 165m long central core supporting two 45m cantilever roofs, it is the UK's second largest after a 46.5m cantilever hangar built at RAF Brize Norton in 1967.





As a modern hangar, the Bombardier building is designed to be incredibly robust against unforeseen events and has been thoroughly checked against our own full-scale testing.

Wind loads were checked with codes of practise, against our own full-scale testing and computational fluid dynamics to ensure that even with the doors fully open the hangar will remain within tight deflection tolerances.

The roof features an underslung crane, requiring even tighter deflection tolerances than those needed for the 165m long rolling hangar doors each side. We worked closely with Civils and

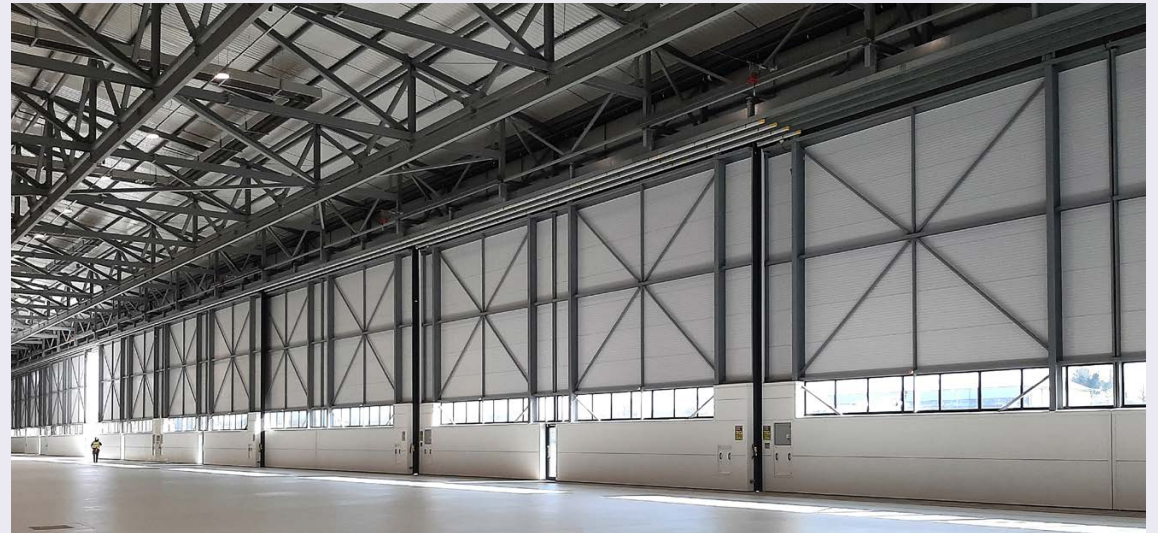
the client to keep costs down and shape the structure to be as efficient as possible for manufacturing and design.

As well as a state-of-the-art hangar, the development also comprises of a workshop, and office space and 650,000 sq. ft of apron area and surrounds. It used 1600 tonnes of steel and 300,000 sq ft of cladding.

REIDsteel provided conceptual and detailed design, fabrication and erection of both the steel frame and the full building envelope including cladding, windows, doors, decking and vents.

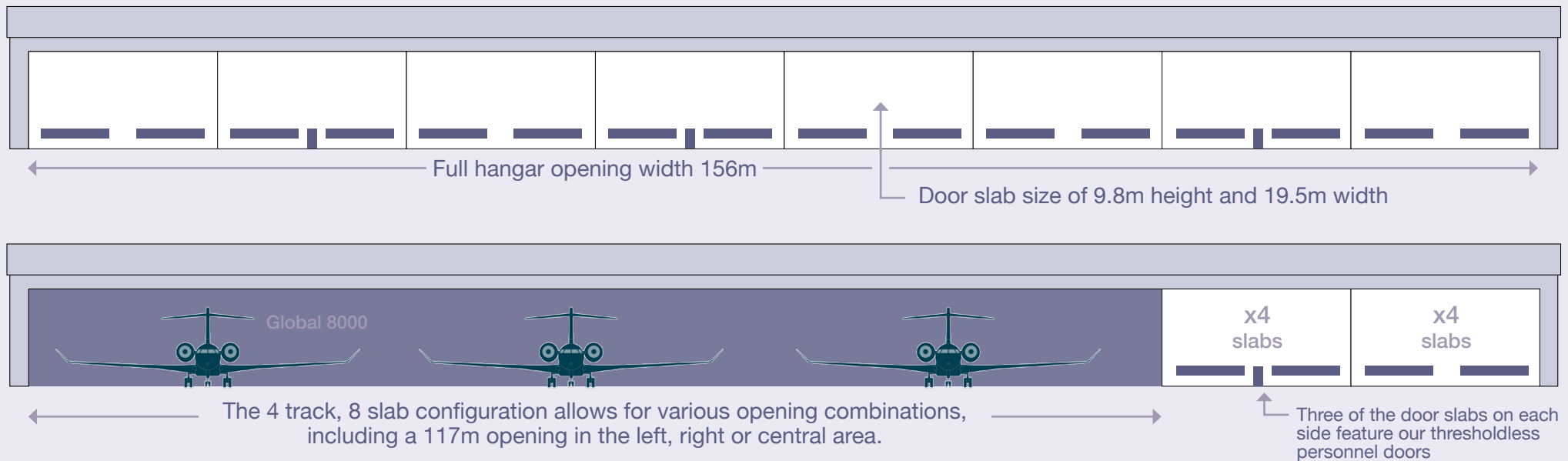






Hangar door and door track configuration for this project

This hangar features identical hangar door configurations on both sides



In 2022 we entered the hangar in the **Structural Steel Design Awards** and were delighted to win the top award in our section.

Simon Boyd, managing director of REIDsteel, said: “All at REIDsteel are absolutely thrilled to win this prestigious award.

“The SSDAs are a hallmark of excellence as the foremost awards in our industry and act as a real showcase for the exceptional capabilities of British design, engineering, manufacturing and construction.

Our success is down to the whole team at REIDsteel and is a testament to the talent and commitment of every single person in the business without whom this award would not have been possible.”

Simon added: “Our ‘one team’ ethos also extended to Civils Contracting, London Biggin Hill Airport and Bombardier.

We are proud to have worked so closely together and to see this landmark project win the recognition it so richly deserves.”



Judges' comment

Bombardier's new headquarters at Biggin Hill Airport is the UK's largest dual cantilever hangar providing two clear spaces of 7,200m², including 160m clear span openings and full lifting coverage from underslung cranes. The central spine of the building anchors the cantilevers as well as housing the building functional spaces. The structure achieves remarkably good embodied carbon figures, in line with the LETI 2030 aspirational values.



LEFT: Members of the team from REIDsteel, Civils Contracting and London Biggin Hill Airport at the awards ceremony





REIDsteel are experts in the design, fabrication and erection of the following:

Aircraft hangars & hangar doors

Industrial and warehouse buildings

Commercial and office buildings

Retail superstores

Waste processing
and recycling buildings

Steel bridges

Car parks

Grandstands & stadia

Reservoir covers

HVM security gates and barriers

Commercial glazing and solar shading

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Reference	Revision
G61	a