

Case study New home for Concorde at Manchester Airport

The Concept



De Boer's reputation in the commercial sector is flying sky high after the company overcame a series of logistical challenges to create a new home for the most iconic figure in Britain's aviation history – Concorde.

The supersonic project came about after Manchester Airport decided to bring the historic aircraft in from the cold as part of a £1 million upgrade to its highly popular Aviation Viewing Park tourist attraction.

It meant that following five years of being exposed to the elements, the famous jet – the one-time pride of the British Airways fleet – was able to move to its final resting place inside a specially constructed weather-proof hangar with impressive 10 metre by 20 metre glass facade.



The Requirement

Manchester Airport was seeking a solution that would both protect the aircraft and boost visitor numbers to what is already one of the North-West's must-see attractions. The airport's Concorde is billed as the only one in the world with a fully accessible flight-deck.

Despite being the second Concorde off the production line, the aircraft being housed at the Aviation Viewing Park was always considered to be the flagship of the British Airways fleet. It carried the registration plate BOAC (British Overseas Airways Corporation) – the forerunner to BA – and was affectionately known as "Alpha Charlie".

The aircraft also received the royal seal of approval, with the Queen being among its many passengers. A special seat was created in the cockpit for her specific use.

The aircraft originally went on display in the open air after arriving at Manchester on October 31, 2003. Its final flight – from Heathrow – had followed nearly three decades of service transporting passengers around the world. The plane had even earned its place in the record books when it flew at 1,488 mph, the highest recorded ground speed for a commercial airliner.

The Concorde is one of many popular attractions at the Aviation Viewing Park, with visitors able to choose from a selection of tours of the supersonic jet. These range from VIP Champagne Specials to technical tours, which allow visitors an in-depth look at the aircraft, including extended time on its flight deck. The airport even allows couples the chance to get married on board.



Our Approach

Business Continuity Director Mical de Boer explained: “We created the impressive hangar for Concorde using a highly versatile All Weather Hall, but De Boer faced a broad range of challenges during the design and build process. These included combining insulated areas with non-insulated areas within the building, severe winter weather, restricted access and the complexity of working at a location adjoining a busy international airport and site of special scientific interest.”

As well as the Concorde, the park’s attractions include a specially converted Monarch Airlines DC-10 and an AVRO RJX, the last civil airliner to be built in the UK – ensuring high visitor numbers throughout the year.

De Boer provided its client with a hangar measuring 33 metres by 66 metres – and reaching 15 metres at its highest point. The structure, which allowed space not only for Concorde but for a specially created on-site restaurant, also featured a glass gable end to allow visitors stunning views across the adjoining airport.

De Boer was also responsible for erecting a second All Weather Hall – physically joined to the first – for use as a visitor centre. The facility, measuring 12 metres by 36 metres, now houses a hospitality suite, an aviation exhibition and an education centre for school tours.

A team of around 15 personnel from De Boer were involved in the project, which was completed over a six-week period. The assignment was tackled on schedule despite nine days being lost to bad weather.

There were additional unusual factors faced by the team, as De Boer Contract Manager Paul Scott explained. “Our structures were erected just eight metres from the perimeter fence of the adjoining airport and just 50 metres from the runway itself.

This meant greater-than-normal constraints on craning equipment, particularly when there were potential issues with low cloud or limited visibility,” he said. “On a number of days we needed to suspend lifting work for reasons that just wouldn’t have been a factor at any location other than a busy airport.”

The 60 tonnes of steel, together with the All Weather Halls’ extremely durable polyester-woven fabric and PVC coating, composite panels and glass were delivered to the site by a succession of 38-tonne articulated lorries. But with Concorde and other attractions standing just a short distance from the construction site, the delivery and build needed to be timed to allow public access to continue – including a number of pre-booked tours of the supersonic aircraft that coincided with the build process.

Once the main shell of the All Weather Hall had been completed, Concorde was moved carefully within the structure, allowing De Boer’s team to complete their work around the aircraft. The project represented the culmination of planning, manufacturing and on-site delivery processes that stretched back nearly a year.

Robert Alvarez, De Boer’s Sales Director – Commercial, said: “More than five years after being withdrawn from service, Concorde retains its iconic status in the aviation world and remains a firm favourite in the hearts of the public.”

He added: “As a company that has produced semi-permanent structures for a succession of high-profile assignments, De Boer was immensely proud to have been asked to create a hangar for such a famous and enduringly popular aircraft. There was a great spirit within the team as Concorde’s new home took shape.”



The Benefits

De Boer's structures offer the strength of traditional builds but with much greater versatility. For the All Weather Hall, the steel components will last for 60-plus years and the PVC for upwards of 25 years. However, the finish of the building can be modified, depending on each client's specific wishes – for example through the use of a single light-weight skin or composite panels consisting of the very highest-value insulated panels for use as cold storage units or retail facilities.

"One of the most popular appeals to clients is the speed of the build process together with the ability to be taken down and relocated to other sites," Mical de Boer explained.

He added: "De Boer's assignment in Manchester marked the latest in a long line of successful contracts for the All Weather Hall. Originally developed to meet exacting Scandinavian regulations for resisting strong winds and heavy snow, the structure has been used across the world within a variety of commercial sectors."

Over the past 20 years the free-span product has demonstrated its durability, popularity – and tremendous flexibility. Its modular design allows customers to choose from a variety of widths, from 20 metres, while side heights vary from three metres upwards. The length of the All Weather Hall can be extended in standard sections of three, four or five metres.

The contract at Manchester Airport has built on De Boer's considerable experience within the airport and aviation industry. Previous contracts have included the supply of restaurant, storage and check-in facilities at London's Heathrow, the creation of a baggage-handling hall at Amsterdam's Schiphol and the erection of a production unit at Cardiff International for LSG Sky Chefs, the world's largest airline caterer.

Statistics:

Total equipment delivered: 60 tonnes of steel (plus polyester-woven fabric and PVC coating, composite panels and glass)

Total De Boer team: 15 personnel

Deliveries: seven 38-tonne articulated lorries

Total time taken: Six weeks – but delivered on time despite losing nine days to bad weather



Concorde Facts:

- More than 2.5 million people travelled on Concorde following the fleet's commercial debut in 1976
- The aircraft could reach a top cruising height of 60,000ft – more than 11 miles above the Earth's surface
- Concorde could accelerate from zero to 225 mph in 30 seconds
- The Concorde now housed at Manchester holds the record for the highest recorded ground speed for any commercial airliner – 1,488 mph
- In September 1975 Manchester's Concorde "Alpha Charlie" became the first aircraft to make four Atlantic crossings in a single day.

