

Aviation hangars



# Rubb's innovative aircraft hangars are custom designed to suit our clients' storage and maintenance needs.

Rubb Buildings Ltd is a leading provider of tailor-made aircraft maintenance, repair and overhaul hangars. We work closely with end users to ensure our building designs incorporate the most efficient use of available space.

Rubb has delivered many high quality solutions to local authorities, airlines, airports and MRO contractors. Our large scale hangars cover all types of aviation maintenance, repair and overhaul operations.

Rubb's tensioned fabric structures are strong, durable, reliable and cost effective. Our products feature the highest quality materials. Hot dip galvanized steel frames and premium quality PVC ensure that our fabric hangars are built to last.

Our MRO fabric buildings are virtually maintenance free. They are highly energy efficient, allowing translucent natural light to permeate the fabric, saving on energy costs. Rubb provides trusted building solutions to protect your aircraft maintenance, repair and overhaul activities.





# Advantage Points



## Low Maintenance / Low Costs

Our high-quality membrane materials and post-production galvanized welded frames deliver durability over time, making the cost of maintaining Rubb buildings more economical compared to conventional structures.



## Energy-Efficient Roof Membranes

Translucent membranes allow natural daylight to illuminate the workspace while the white roof surface reflects heat. Optional Thermohall™ insulation minimises heat transfer, prevents condensation and virtually eliminates thermal bridging and air infiltration.



## Multiple Door Options

Rubb offers a variety of different hangar door solutions. They can be selected and designed to suit many size and opening requirements. This flexibility ensures that our clients get the best option for their selected Rubb building type, depending on their operational needs.



## Rapid Construction, Installation and Relocation

Rubb buildings can be quickly erected, dismantled and relocated due to module pre-fabrication. Rubb can provide site supervisors or fully dedicated construction teams to complete any custom project. Structures are transportable by land, sea and air.



## Flexible and Cost-Efficient Foundation Systems

Rubb buildings can accommodate many foundation options such as concrete up-stand, ballast weights, and ground anchors into an existing surface. Rubb co-ordination with the groundwork contractor is key for the client to reach the most cost effective solution.



## Reduced Time On-Site

Our established supply chain streamlines coordination of delivery and installation. Pre-fabricated elements and the ability to construct our buildings in a variety of weather conditions speeds up the construction process.



## Customisable Features

Buildings can accommodate all types of door, ventilation and other systems and safely support high loads imposed by overhead cranes, ceiling-mounted HVAC and fire-suppression systems, fall-protection equipment and other superimposed loads.



## Comprehensive Long-Term Service

Rubb personnel are on hand to provide help and support, from initial contact to quotation, installation and beyond. Rubb's commitment to customer service continues after project completion and forms the basis for long-term customer satisfaction.



# Technical Specifications



The Rubb Group designs and manufactures quality relocatable and permanent engineered fabric tensioned buildings. Highlights include our ground-breaking military hangars, sunshades, shelters, warehouses and workshops, custom designed specialist sport buildings and storage buildings for a variety of sectors including aviation, ports, emergency relief, energy, construction, bulk storage and environmental (waste and recycling). Projects range from basic buildings to full turnkey solutions.



## Efficient Use of Space

Rubb's steel frame system allows for cost-effective clear-span space and high vertical walls to suit customer needs. We offer a variety of span profile shapes and door system options.



## Unique Fire Safety Features

PVC-coated polyester membrane will not propagate flame or sustain combustion when exposed to a fire. The structure is self-venting, allowing heat and smoke to escape.



## High-Quality Membrane

Rubb uses high-strength, heavy-weight coated architectural membranes from proven suppliers. Many structures are still in use 30 years after installation.



## Code-compliance

Rubb buildings are designed for site specific, full code-compliance with respect to wind and snow loads.



## Suitable for Difficult Sites

The flexible membrane and steel frame design of a Rubb building allows installation on uneven or sloping sites. The buildings will also accept moderate differential settlement of the foundations.



## Complete Environmental Control

The membrane cladding of a Rubb building is continuously sealed to provide a weather-tight shell. The buildings can be insulated, heated or air-conditioned as required. Rubb structures are uniquely suited for use as dehumidified facilities.



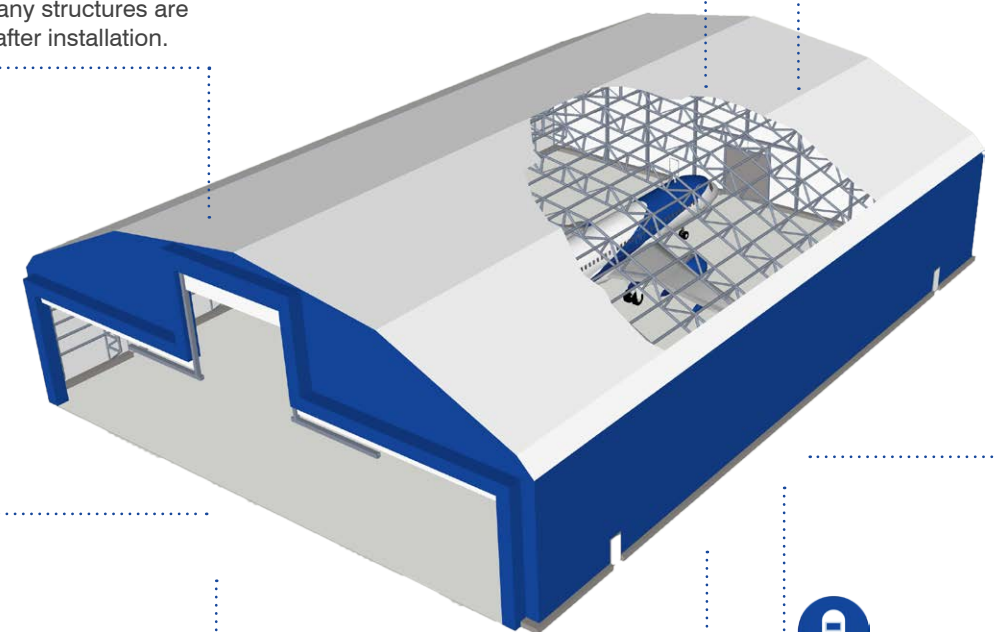
## Insulation Options

Rubb's patented Thermohall™ features a flexible insulated fabric system which offers major advantages over other insulating systems.



## Superior Structural Frame

The backbone of a Rubb building is a well-engineered structural framing system, with the best corrosion protection system in the industry.





# easyJet

Gatwick Airport, West Sussex, UK  
45.75m twin span x 60m long BVL

Airline easyJet asked Rubb Buildings Ltd to provide a twin span hangar measuring 91.5m wide x 60m long. The structure measures 9.2m to the eaves and 16.8m to the apex of each span. Each front gable measures 45.75m wide and features a 41m wide x 13.5m vertical lifting fabric door.

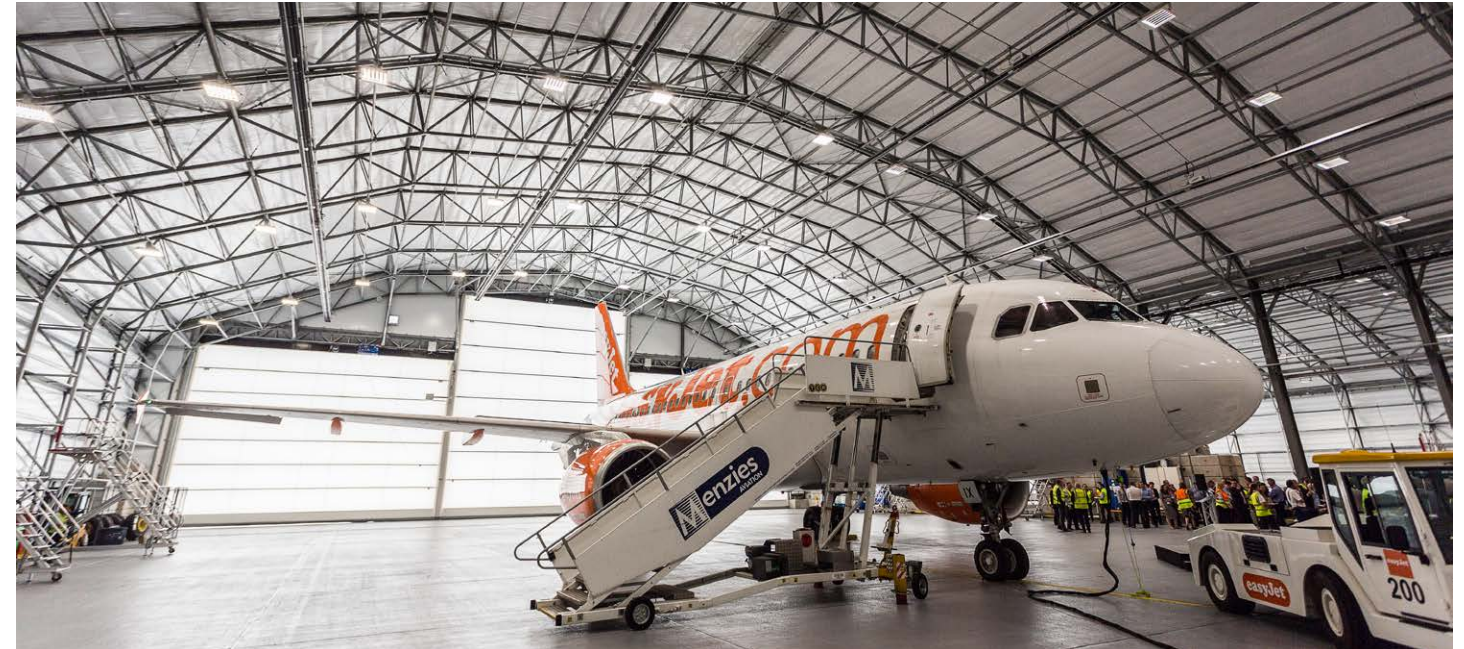
The hot dip galvanized steel frame is clad with 150mm thick Thermohall™ insulated fabric and the facility provides 5200sq m of usable working floorspace. A full LED lighting system, ventilation system and LPG heating system has been installed.

To complete the build two sets of vertical lifting hangar doors were fitted to allow access to the two-bay facility. The hangar is complimented by a 550sqm external logistics and office building.

*"The Rubb team who worked on site were absolutely first class. The first steel went in the ground on December 14 and by May 19 we were able to introduce the first aircraft into the hangar."*

*"The successful delivery of this project, which has been challenging both in terms of scale and its timeline, is another example of what can be achieved through easyJet's innovative and lean approach, not only meeting a tight timeline, but also creating strong sustainable partnerships to deliver market leading operational performance."*

**Brendan McConnellogue | Head of Maintenance, easyJet**





# Aerohub

Newquay Airport, Cornwall, UK  
47m span x 50m long BVL

A Rubb aviation building was selected for Aerohub, a UK aerospace focused Enterprise Zone, based in Newquay, Cornwall.

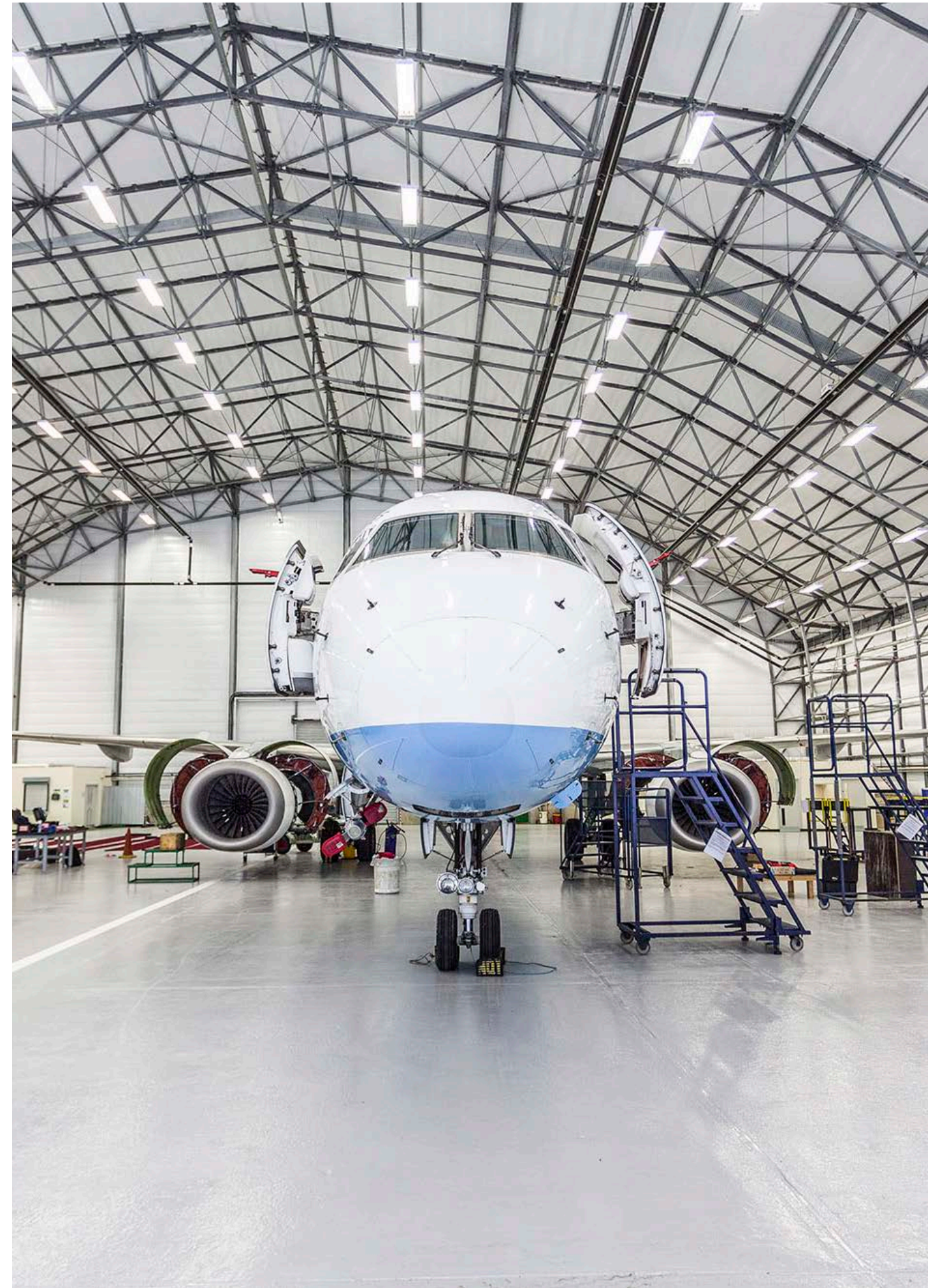
The project provides a large, custom designed space for Apple Aviation Group's increased maintenance, repair and overhaul (MRO) operations. Apple Aviation selected Aerohub at Newquay Cornwall Airport as the location for its growing aerospace maintenance facility headquarters.

The main steel framework for the hangar was installed and then Thermohall™ insulated PVC cladding was fixed to the structure to create its roof and walls. The Rubb hangar has the capacity to accommodate the maintenance, repair and overhaul of large fixed wing aircraft, such as a Boeing 737 and an Airbus A320. It will also be used for aircraft storage and recycling.

A wide vertical lifting fabric door provides access to the hangar.

*"The speed and flexibility of the Rubb hangar construction has enabled the airport to develop new hangarage and respond quickly to a key customer's requirements. This has been critical in order for business to be undertaken in a competitive marketplace and puts NQY firmly on the MRO map with the capability to attract airlines to the facility."*

**Al Titterington | Managing Director, Newquay Cornwall Airport**





# Rockford Airport

Chicago, Illinois, USA  
91.4m span x 91.4m long BVL

The Rockford facility's two insulated membrane-clad hangars each measure 91.5m long with a 91.5m clear span and 12m sidewalls, culminating in a centre height of 30.5m. Each structure features five-panel, vertical-lifting doors, with pivoting mullions, allowing for comfortable housing of aircraft as large as the Airbus A380. The hot-dip galvanized steel frame is clad with 50mm Thermohall™ insulated fabric. Maintenance requirements are very low.

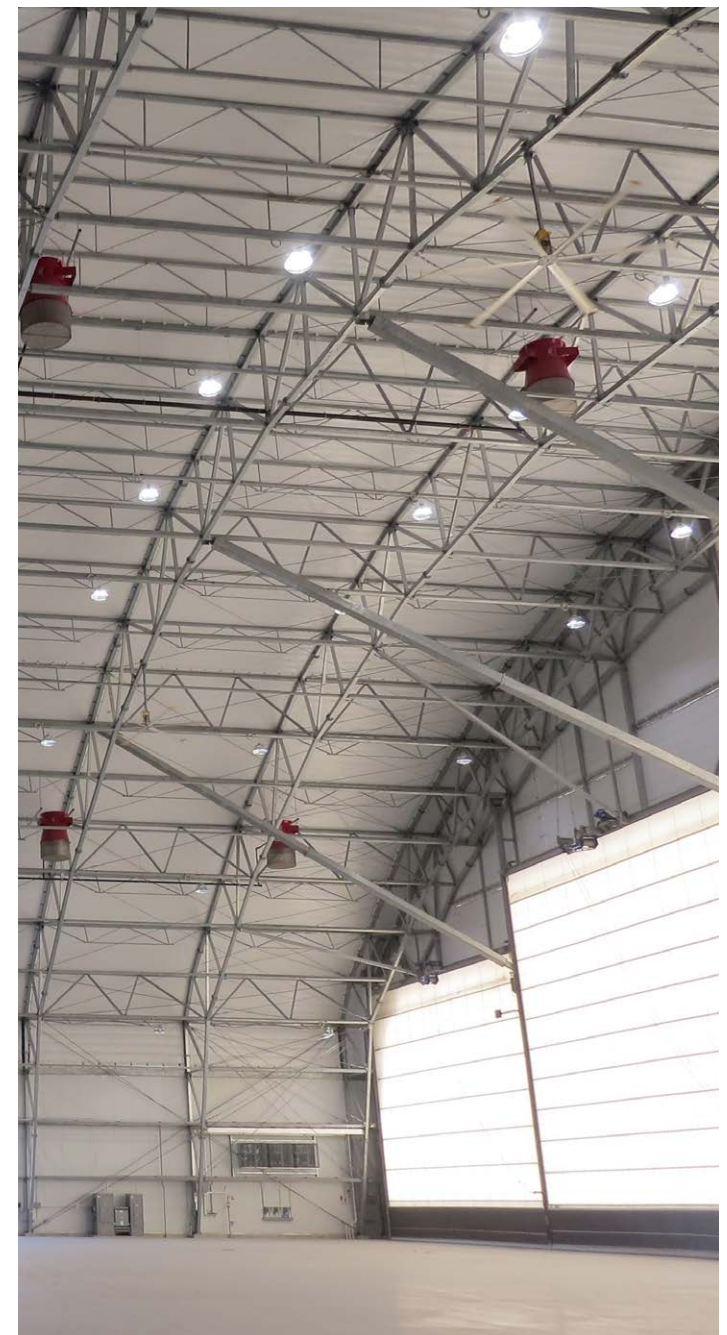
The vertical lifting doors, with their exceptional seals, allow the facilities to be climate controlled cost effectively all year round. Complimenting the curved membrane structures, the doors' translucent fabric also allows natural light in, creating a great work environment for the technicians, while minimising lighting costs.

The new MRO facility, operated by AAR, is capable of servicing an Airbus 380 and Boeing 747 at the same time. The 18,580 square-metre facility is expected to operate 24 hours a day.

The Rockford structure represents a high point in Rubb Buildings Systems' history in providing highly efficient membrane clad commercial aviation hangars.

*"Even an extreme blizzard won't slow the efficiency of Rockford MRO. Five hundred skilled workers will soon enjoy natural light in ideal working conditions at the 24-hour-per-day facility, delivered by Rubb Building Systems, operated by AAR."*

**Jeff Polsean | Economic Development Manager, Chicago  
Rockford International Airport**





# National Police Air Service

Bournemouth, Dorset, UK  
26m span x 17m long BVE

Rubb provided NPAS with a custom designed helicopter hangar measuring 26m span x 17m long, with 7.5m high sidewalls. A Rubb Heli-Door in the front gable provides a clear opening of 21.5m wide x 5.5m high. The rear gable end includes a 4m x 4m roller shutter door and one personnel door. Each sidewall includes an additional personnel door for access and egress.

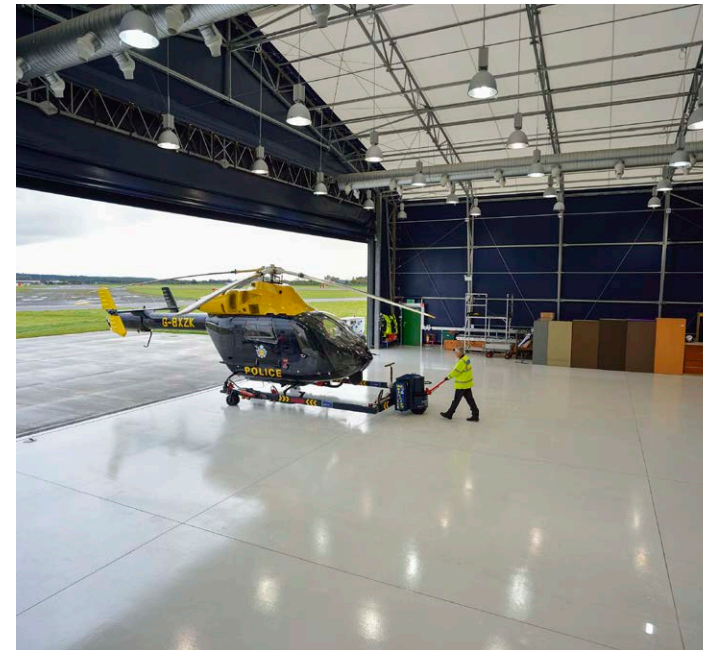
The Rubb 'BVE' aviation structure features Rubb's traditional galvanized internal steel frame and a tapered lattice leg design. The building is clad with durable PVC fabric, providing blue walls and roof.

Rubb worked with Wates and Mott McDonald to complete the project. Mott McDonald was selected by NPAS to provide the project design service in liaison with the MAG Property Team at Bournemouth Airport, Christchurch, Dorset. They were supported by Wates and Rubb throughout the process.

Rubb Managing Director Ian Hindmoor said: "Rubb was able to provide a very rapid response to this building requirement. We secured the order in March and the aircraft hangar was manufactured and delivered to site for construction to begin in May. The project was completed by the end of the month. We are delighted to have delivered this project and have proved again the benefits of a Rubb building in these circumstances."

*"The facilities at the new hangar and base are excellent. It is an ideal location to operate from in order to service Dorset, Hampshire and the Isle of Wight."*

**Sergeant Neil Cartwright | Base Manager, NPAS Bournemouth**





# Bristow Group

Norwich Airport, Surrey, UK  
35m span x 40m long BVE

Bristow Helicopter Group approached Rubb to design and manufacture a fabric engineered helicopter hangar, tailor-made for the company's needs. This required a high level of lighting specification, insulation and inner skin features and a custom-made insulated 20m x 6m manual sliding hangar door.

During the process the structure grew from a 35m span x 35m long BVE into a 35m span x 40m long specialist helicopter hangar facility.

The high specification electrical system includes 230v and 415v power sockets; a 500 Lux lighting system; an independently monitored emergency lighting system; lightning protection and ventilation.

The helicopter hangar is used to service, maintain and store Bristow Helicopter Group's fleet of commercial helicopters.

*"It was a real pleasure working with Rubb, and I cannot thank you enough for the excellent work that you have all put together for Bristow. The safety awareness, commitment, dedication and professionalism of the team have become the benchmark for other contractors we have engaged with on the base and for the airport as a whole and I thank you most sincerely for making this happen."*  
**Dapo Oyeleke | Area Manager Southern North Sea, Bristow Group**





# AirTran Airways

Atlanta, Georgia, USA  
82m span x 64m long BVL

This aviation building at Hartsfield International Airport in Atlanta, Georgia, USA, is able to accommodate two Boeing 717s side by side and allows for full maintenance to be carried out on the aircraft.

The structure measures 82m wide x 64m long, with sidewalls that consist of concrete tilt up panels more than 9m high. The hangar door measures 76m wide x 15m high.

The hot dip galvanized steel frame is covered with 28oz/yd<sup>2</sup> PVC coated fabric with DuPont Tedlar top finish, providing additional protection for the fabric.

The integration of the Rubb hangar with a well designed conventional structure shows another example of Rubb's strong design capabilities.





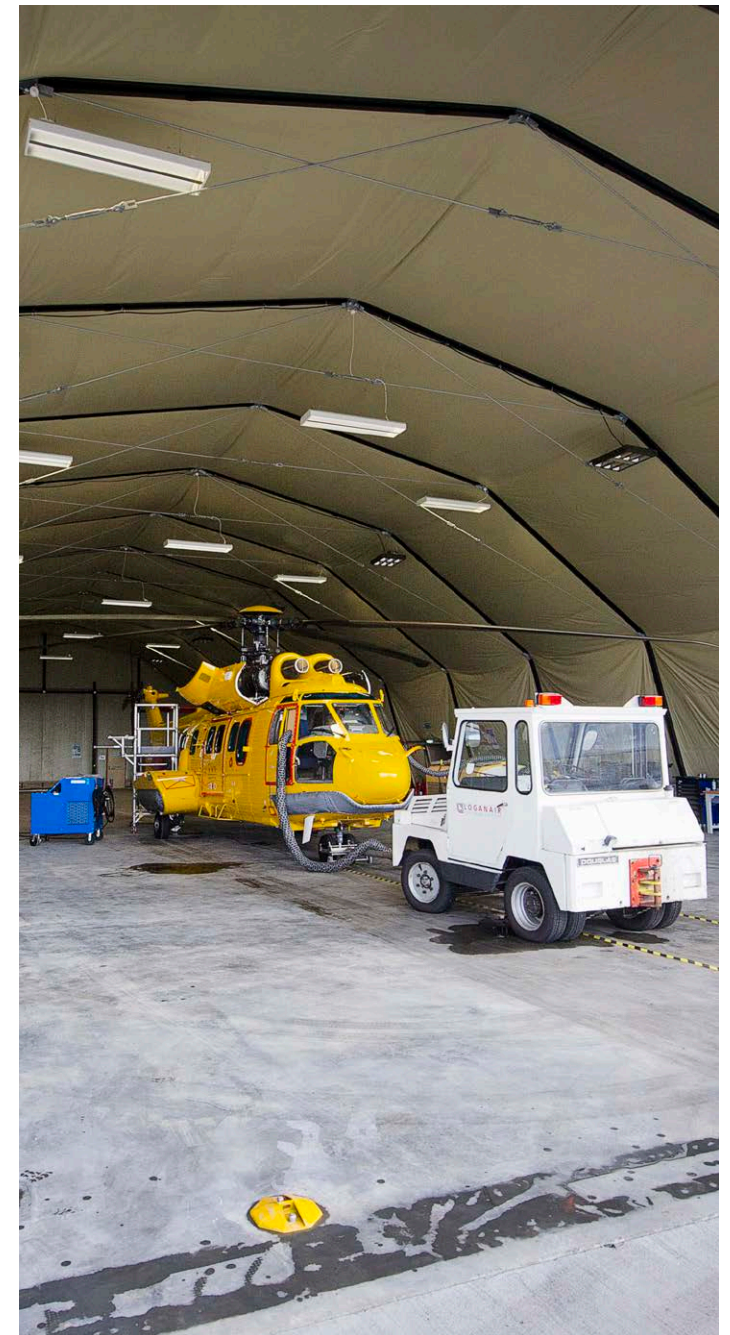
NHV's aircraft storage facility from Rubb's Expeditionary Forces Aircraft Shelter System (EFASS) range features a span width of 20m x 44m long with a closed rear gable end. Access is via a 17.7m wide x 5.5m high Heli-Door. The door is electrically operated via two helical geared motors, with emergency hand operation capability.

The EFASS hangar's aluminium framework has been designed to maximise strength, minimise weight and still be robust enough to withstand the most challenging environments. The high quality 6082 T6 structural aluminium is anodised black and steel components are hot dip galvanized to protect from corrosion.

The tough PVC covering membrane forms the protective barrier between the environment and the aircraft and equipment inside. This hangar is clad with double skin insulated fabric panels to accommodate and facilitate HVAC procedures.

*"NHV UK are very impressed with Rubb's professionalism, service and quality product, and would have no hesitation in using them for similar projects in the future. Rubb provided various options for consideration - cost, build options, sizes etc - and managed to use locally based companies where they could, which was very important to the community due to the remoteness of the location. NHV, the airport and the community fully supported the project and are very impressed with the hangar built by Rubb, which will hopefully attract more business to operate from Wick Airport and provide more work for the area too."*

**Colin Hancy | Commercial Manager, NHV UK**





# Horizon Academy

Al Ain International Airport , UAE  
23.4m span x 36m long EFASS-SV

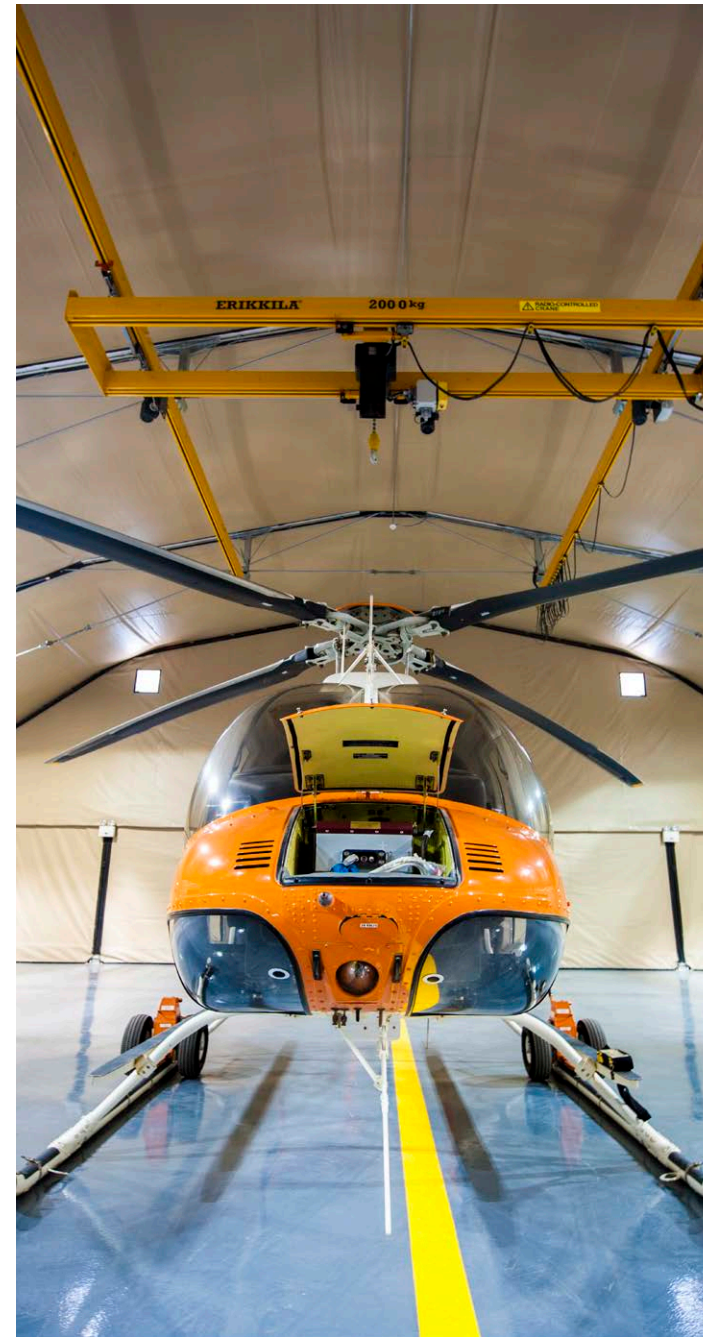
Rubb won an order to provide three steel and aluminium hybrid EFASS helicopter maintenance hangars for Horizon Flight Academy. The helicopter hangars are used for the storage and maintenance of the fleet helicopters.

Horizon Flight Academy first viewed Rubb's EFASS hangar systems at IDEX, in Abu Dhabi, and the relationship grew from there. The Horizon team visited Rubb's manufacturing plant in Gateshead, UK, to discuss the project. Then personnel from Rubb travelled to Al Ain to assist with site assessments and oversee the installation of the structures.

These UAE aircraft hangars were the first Rubb EFASS structures to feature an internal PVC membrane to provide additional thermal insulation – protecting valuable aircraft and personnel from the soaring temperatures outside. Rubb adapted the EFASS design to include mostly steel framework instead of aluminium to meet with stringent fire regulation codes in the UAE.

*"We chose Rubb for their reputation in design, development and deployment of temporary hangars. The installation of our hangars was speedy and efficient, the project was completed on time and as promised."*

**Hareb Thani Hareb Al Dhaheeri | Chief Executive Officer,  
Horizon Flight Academy**





# Structure types

Rubb has the capability and experience to design, manufacture, deliver and install custom structures.

With Rubb, you can be sure everything is under control from concept to completion – including cost, quality and delivery.

While we generally have the right standard structure available to meet project needs, Rubb can also design custom solutions to meet special requirements. We have the in-house resources to provide a cost effective solution customised to our clients' needs.

## Design

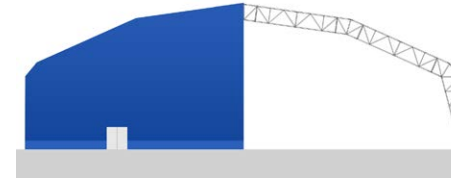
Using proven engineering software, we can tailor the project to the specific requirements of the site, type of cargo and logistical needs.

## Production

Steel and membrane components are fabricated with proper equipment and quality control.

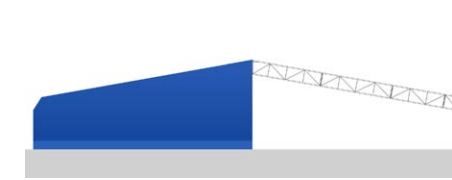
## Installation

Pre-engineered and pre-fabricated to make on-site installation by a Rubb crew, or your crew, go smoothly and efficiently.



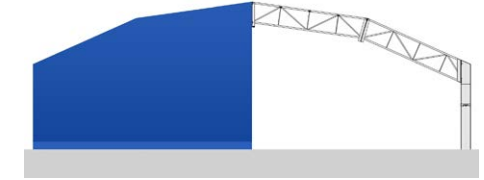
### BVE Structure

BVE structures feature lattice frame sidewalls and can be designed with single or multiple lattice roof pitches. Span widths start from 20m to 40m, by any length.



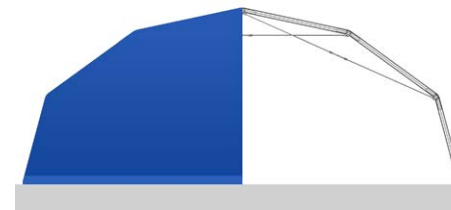
### BVL Structure

The BVL has vertical lattice frame sidewalls and single or multiple lattice roof pitches per span. Large spans start from 40m to 100m in width, by any length.



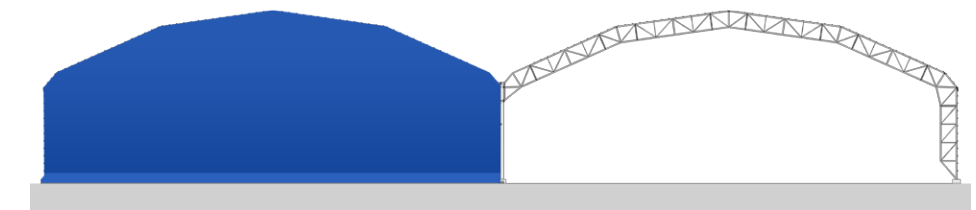
### BVC Structure

The BVC is designed with a vertical column leg and a lattice frame roof. This structure type offers a large clear internal area. 40m to 100m width spans are available.



### EFASS Structure

The EFASS hangar is designed for rapid deployment. Lightweight, robust and relocatable, these hangars are available in three widths (11m, 20.4m and 25m).

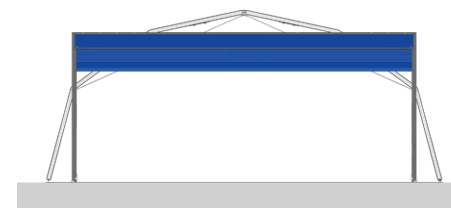


### Twin Span Structure

Twin span linked structures are the ideal solution if clients need extra space for increased aircraft or operations. Twin span buildings are more affordable than those spanned by a single roof, due to the reduced amount of steel work required. Dual and multi bay hangars also provide the opportunity for multiple storage and MRO operations to take place concurrently, side-by-side, within the same building.

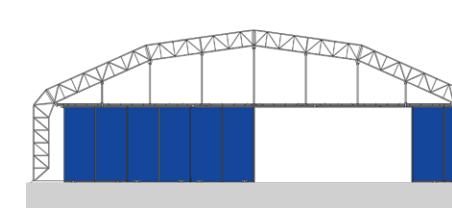
## Door types

Rubb offers a variety of different hangar door solutions. They can be selected and designed to suit many size and opening requirements. This flexibility ensures that our clients get the best option for their selected Rubb building type, depending on their operational needs.



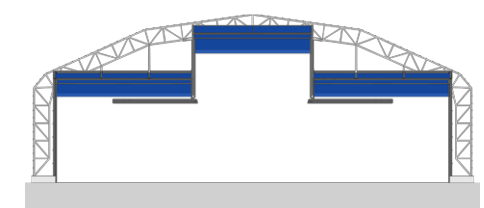
### Heli-Door

Designed to be quickly constructed, this vertically folding door is electrically operated via two helical geared motors, with emergency hand operation capability.



### Sliding Door

This door is available in a variety of sizes to meet project requirements. These bottom rolling doors can be electrically or manually operated and insulated if needed.



### Large Vertical Lifting Door

These doors are cost-effective, reliable and help create a bright working environment. They can withstand high windloads and eliminate draughts when closed.





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