



RUBB RELOCATABLE

# aviation structures

the most versatile aviation buildings in the world



*we will never stop innovating*

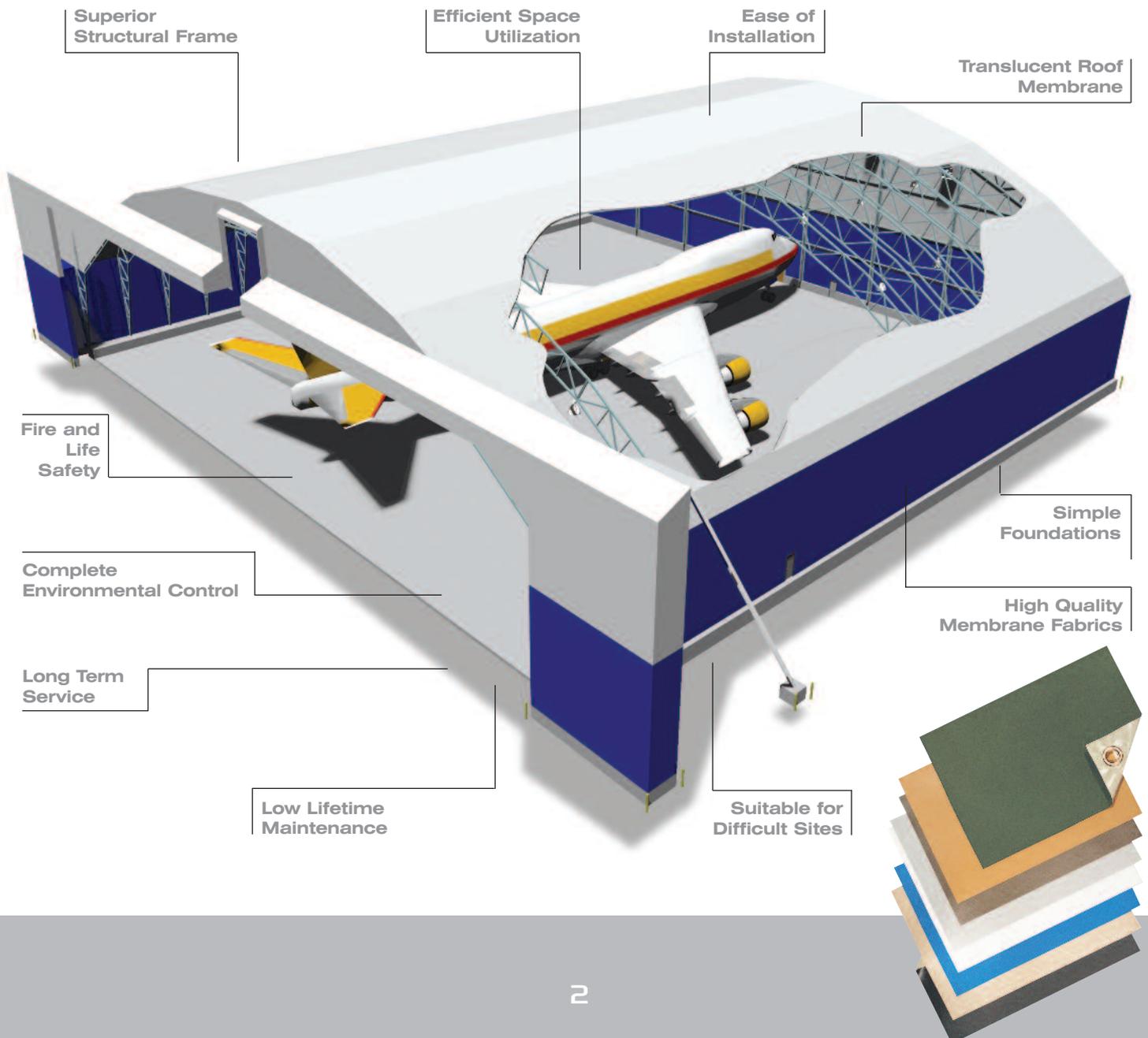
# what's in a Rubb Aviation Building?

## ...total quality

The design and planning flexibility, speed of construction and durable, cost effective operation of Rubb aviation facilities provide airlines and air forces worldwide with a major competitive edge.

Our structures feature a high strength PVC coated polyester membrane cladding that is tensioned over a well engineered structural steel frame system. This design provides many benefits to the aviation user including the ability to cost effectively relocate the structure as operational needs change. Relocatability means that these structures can often times be classified as equipment.

Rubb's unrivaled skills and experience in the aviation market enable us to design, fabricate, deliver and install responsibly engineered structures which fully meet the needs of our aviation clients. Most importantly, Rubb takes care of its customers both before and after the sale.



## Superior Structural Frame

The backbone of a Rubb building is a well engineered structural framing system. Rubb gets the details right and then provides the best corrosion protection system in the industry.

## Efficient Space Utilization

Rubb's truss frame system allows for cost effective clear span space and high vertical walls to suit customer needs. Rubb can supply a variety of span profile shapes and door system options to best accommodate specific aircraft and logistics requirements.

## Ease of Installation

Rubb's prefabricated modular design means less on site installation time. The Rubb building frame and cladding for a 100,000 ft<sup>2</sup> (9,300m<sup>2</sup>) air cargo warehouse would require approximately three months for a typical crew to complete.

## Translucent Roof Membrane

The use of white translucent roof fabrics provides a bright, efficient and safer interior work environment. Energy costs are reduced because artificial lighting is usually not required in daytime hours. In addition, the heat reflectivity of the white roof surface helps keep the building cooler.

## High Quality Membrane Fabrics

Rubb uses high strength, heavy weight coated architectural fabrics from proven suppliers. Many Rubb structures are still in use with original membranes after a quarter century of use.

## Simple Foundations

Smaller span Rubb hangars can typically be installed with relocatable foundations. Where

concrete is required, the structural capability of the Rubb system typically allows for lower foundation costs than with other building types.

## Suitable for Difficult Sites

The flexible membrane and steel frame design of a Rubb building allows installation on uneven or sloping sites. The buildings also accept moderate differential settlement common on airports with filled land without the need for pilings.

## Complete Environmental Control

The membrane cladding of a Rubb building is continuously sealed to provide a weather-tight shell and the buildings can be effectively insulated, heated or air conditioned as required. For longer term storage of aircraft or sensitive parts or cargo, Rubb structures are uniquely suited for use as dehumidified facilities.

## Fire and Life Safety

Rubb buildings offer proven fire performance advantages over other building types.

## Low Lifetime Maintenance

The use of higher quality membrane materials and the rugged, post production galvanized welded frame of a Rubb building ensure a long, low maintenance service life. Rubb buildings are noted for their reliability and durability over time.

## Long Term Service

Rubb's commitment to customer service continues after project completion and forms the basis for long term customer satisfaction.



Above: Fire system test at Logan Airport, Boston, USA. In addition to supplying lighting, HVAC and other systems, Rubb can also coordinate supply and installation of fire suppression and related sensor equipment to meet the requirements of most aviation and fire officials.

Main Photo: **Hartsfield Intl. Airport, Atlanta, Georgia, USA.** Measuring 270' (82.3m) wide x 210' (64m) long this hangar for AirTran Airways allows full line maintenance operations on two Boeing 717 or Boeing 737- 900 aircraft in a side by side configuration.



# Rubb Hangar Buildings From Around The World

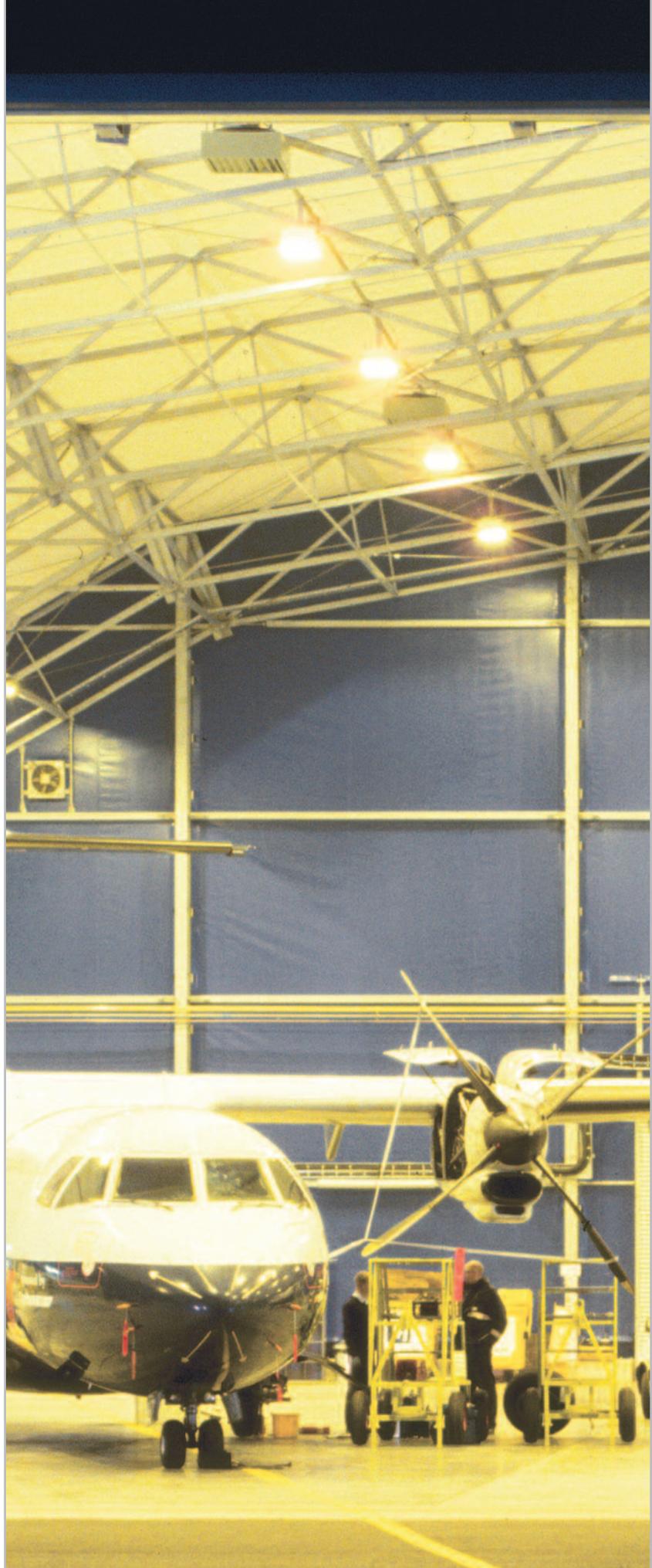
## Major user benefits

In the competitive world of commercial and military aviation, Rubb hangars provide major advantages over other structures. Rubb buildings can be cost effectively extended or reduced in size or even relocated to another site to respond to changing logistical considerations. For military aviation, rapid installation in almost any environment or terrain can be of vital importance.

Rubb's largest hangar to date measures 270' (82.3m) wide by 210' (64m) long with an interior peak height of over 66' - large enough to cover two Boeing 717 aircraft side by side. Its hybrid construction with tilt-up concrete panel walls conveys the traditional appearance of a permanent hangar at ground level and is complemented with the dramatic translucent roof system. In contrast to this more permanent installation, Rubb hangars are also a functional solution for smaller aircraft and helicopters in demanding terrain and climates where space is limited or relocation anticipated.

- Bright, efficient and safe working environment.
- Extremely low lifetime maintenance cost.
- Space and resource efficient.
- Quickly erected or dismantled and relocated.
- Dependably engineered and manufactured.
- All welded fabrications post production hot dip galvanized.
- Many hangars are air transportable for quick deployment.
- Proven in use with major airlines including British Airways, United and American.

**Gatwick Airport, UK.** When City Flyer based at Gatwick Airport urgently needed a service hangar when a fire destroyed their existing hangar, they turned to Rubb. Due to building development at Gatwick, City Flyer needed a hangar which could be relocated elsewhere if necessary. The 157' (48m) x 148' (45m) long hangar was erected by five skilled installers and included all mechanical and engineering services to meet the demands of the local and British Airport authorities.





Hangar for servicing, maintenance and storage of fleet of helicopters.

**CLIENT:**  
Bristow Helicopter Group  
**LOCATION:**  
Norwich Airport  
**BUILDING TYPE:**  
BVE single span  
**SIZE:**  
Span 115' (35m)  
Length 131' (40m)



For housing two SA227 Merlin IIIC aircraft for anti-piracy missions in the Somali basin.

**CLIENT:**  
CAE Aviation  
**LOCATION:**  
Seychelles, Indian Ocean  
**BUILDING TYPE:**  
EFASS single span  
**SIZE:**  
Span 66.9' (20.4m)  
Length 91.8' (28m)



**CLIENT:**  
City Flyer Airways  
**LOCATION:**  
Gatwick Airport, London, UK  
**BUILDING TYPE:**  
BVE single span  
**SIZE:**  
Span 157' (48m)  
Length 148' (45m)



A 177' (54m) wide Rubb Hangar was originally on this site. It was later relocated to Florida.

**CLIENT:**  
United Airlines  
**LOCATION:**  
Logan Int. Airport, Boston, Massachusetts, USA  
**BUILDING TYPE:**  
BVL single span  
**SIZE:**  
Span 255' (78m)  
Length 270' (82m)



Largest span hangar to date. Will accommodate two Boeing 717s side by side.

**CLIENT:**  
AirTran Airways  
**LOCATION:**  
Atlanta, Georgia, USA  
**BUILDING TYPE:**  
BVL single span  
**SIZE:**  
Span 270' (82m)  
Length 210' (64m)



Erected in sub-zero temperatures.

**CLIENT:**  
Major Oil Company  
**LOCATION:**  
Sakhalin, Russia  
**BUILDING TYPE:**  
NV single span  
**SIZE:**  
Span 65.6' (20m)  
Length 68.9' (21m)



**CLIENT:**  
Irish Coast Guard  
**LOCATION:**  
Dublin Airport, Ireland  
**BUILDING TYPE:**  
NV single span  
**SIZE:**  
Span 82' (25m)  
Length 197' (60m)



**CLIENT:**  
Scot Airways  
**LOCATION:**  
Dundee, Scotland, UK  
**BUILDING TYPE:**  
BVE single span  
**SIZE:**  
Span 90' (27m)  
Length 100' (30m)



This hangar was later sold to Champion Air and relocated.

**CLIENT:**  
Sun Country Airlines  
**LOCATION:**  
Minneapolis, Minnesota, USA  
**BUILDING TYPE:**  
BVL single span  
**SIZE:**  
Span 210' (64m)  
Length 227' (69m)



**CLIENT:**  
American Airlines  
**LOCATION:**  
Tulsa, Oklahoma, USA  
**BUILDING TYPE:**  
BVE single span  
**SIZE:**  
Span 130' (40m)  
Length 100' (30m)

# Rubb air cargo facilities

- Quality working environment for safely identifying, coding and handling cargoes.
- Voluminous open bay space for freedom of movement.
- Excellent natural lighting conditions.
- Easily extendible to meet changing demand.



**CLIENT:**  
United Airlines

**LOCATION:**  
Honolulu, Hawaii, USA

**BUILDING TYPE:**  
BVL Twinlink span

**SIZE:**  
Span 2x 125' (38m)  
Length 280' (85m)



**CLIENT:**  
United Airlines

**LOCATION:**  
JFK Intl. Airport Jamaica, New York, USA

**BUILDING TYPE:**  
BVL Twinlink span

**SIZE:**  
Span 2x 116' (35.3m)  
Length 288' (88m)



**CLIENT:**  
United Airlines

**LOCATION:**  
Miami Intl. Airport, Miami, Florida, USA

**BUILDING TYPE:**  
BVL Twinlink span

**SIZE:**  
Span 2x 103' (31.3m)  
Length 400' (122m)



**CLIENT:**  
United Airlines

**LOCATION:**  
Los Angeles Intl. Airport, Los Angeles, California, USA

**BUILDING TYPE:**  
BVL Twinlink span

**SIZE:**  
Span 2x 110' (33.5m)  
Length 617' (188m)



**CLIENT:**  
United Airlines

**LOCATION:**  
Newark Intl. Airport, Newark, New Jersey, USA

**BUILDING TYPE:**  
BVL single span

**SIZE:**  
Span 130' (39.6m)  
Length 250' (76.2m)

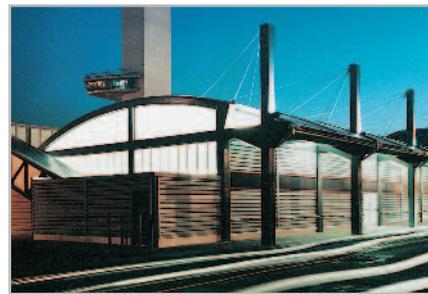
# Terminals, canopies & walkways

As well as supplying hangars, buildings for cargo handling and terminal facilities for the airline industry, Rubb can manufacture all-weather protection structures such as overhead canopies and pedestrian walkways to link separate buildings.



**CLIENT:**  
United Airlines

**LOCATION:**  
Los Angeles Intl. Airport, Los Angeles, California USA



*This roof system was custom made by Rubb to architects specifications.*

**CLIENT:**  
Port Authority of N.Y. & N.J.

**LOCATION:**  
JFK Intl. Airport Jamaica, New York USA



*Link Tunnels between buildings can protect service staff and cargo from the elements of the weather.*

# Military applications

- High quality, heavy duty membrane is available in camouflage, Nato green, UN white or infra-red reflective material.
- Light weight for easier transportation and rapid installation.
- Choice of buildings from large hangars to RES shelters for rapid deployment.



**CLIENT:**  
RAF  
**LOCATION:**  
Military Base, Italy  
**BUILDING TYPE:**  
Sunshade  
**SIZE:**  
Span 60' (18m)  
Length 60' (18m)



**CLIENT:**  
RAF  
**LOCATION:**  
RAF Marham, UK  
**BUILDING TYPE:**  
RES single span  
**SIZE:**  
Span 67' (20.5m)  
Length 105' (32m)



**CLIENT:**  
RAF  
**LOCATION:**  
South Wales (RAF Trials)  
**BUILDING TYPE:**  
REH Rapid Erect Hangar  
**SIZE:**  
Span 75' (23m)  
Length 118' (36m)



**CLIENT:**  
RAF  
**LOCATION:**  
Military Base, Saudi Arabia  
**BUILDING TYPE:**  
NV single span  
**SIZE:**  
Span 65.6' (20m)  
Length 78.7' (24m)



**CLIENT:**  
RAF  
**LOCATION:**  
Kinloss, Scotland, UK  
**BUILDING TYPE:**  
BVE single span  
**SIZE:**  
Span 131' (40m)  
Length 197' (60m)



*This NV building has metal clad sidewalls and a bi-fold hangar door.*

**CLIENT:**  
United States Air Force  
**LOCATION:**  
Eglin AFB, Florida, USA  
**BUILDING TYPE:**  
NV single span  
**SIZE:**  
Span 60' (18m)  
Length 90' (27.4m)



*Dehumidified storage for 20 folded wing planes ready for deployment.*

**CLIENT:**  
United States Navy  
**LOCATION:**  
Jacksonville, Florida, USA  
**BUILDING TYPE:**  
BVE single span  
**SIZE:**  
Span 140' (42.7m)  
Length 250' (76m)



*Hangar for a Hercules C130 Transport Plane*

**CLIENT:**  
Nevada Air National Guard  
**LOCATION:**  
Reno, Nevada, USA  
**BUILDING TYPE:**  
AVS single span  
**SIZE:**  
Span 164' (50m)  
Length 130' (39.6m)



*During the Falklands crisis back in 1984, Rubb earned its 'military stripes' by working flat out to supply aircraft hangars which were air freighted within weeks.*

*Since then Rubb has been a major supplier to the British MOD.*

# Dependability...

## 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. And 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 customized to our clients' needs.

- Design - Using proven engineering software we can tailor the project to the specific requirements of site, type of cargo and logistics needs.
- Production - Steel and membrane components are fabricated with 'first class' 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.

## Peace of mind when you choose a Rubb Structure...

Rubb structures are designed, manufactured, installed, serviced and warranted by the companies of the Rubb Group. Rubb's expertly engineered product design and the highest quality materials are backed by over forty years' experience worldwide. More importantly, Rubb has a reputation for accountability and for providing practical solutions to weather protection problems of all kinds.

Our buildings are designed, manufactured and erected to ISO 9001/2000 standards and meet international building code standards for wind, snow and seismic loads.

After-sales service includes repairs and any further adaptation, relocation or refurbishment work. So your peace of mind extends well into the future.



USA - CERTIFICATE  
No. US97/0897



UK - CERTIFICATE  
No. 95/6243



Norway - CERTIFICATE  
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*we will never stop innovating*



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