# Port & marine

## Innovative fabric buildings

BMT GROUP

Official Representative Of

RUBB Building Systems

# Rubb's innovative port and marine buildings are custom-designed to suit your businesses needs.

Port and marine structures can be custom-designed to meet a variety of bulk handling methods. Relocating and extending these modular fabric buildings is easy and cost effective in a busy ever changing environment.

Rubb harbour structures provide large, clearspan internal spaces that are illuminated by natural light through Rubb's translucent roofing systems. This allows a brighter, safer, more efficient working environment than conventional port structures.

As well as making ship and offshore manufacturing shelters on land, Rubb also makes custom cover structures for vessels at sea. Dehumidified onboard ship cargo storage structures provide protection and safe transport for sensitive goods.

Rubb buildings are ideal for warehousing a variety of goods including sensitive materials. Rubb climate-controlled buildings facilitate dehumidification systems and protect your valuable materials from strenuous marine environment conditions.

# Advantages

**Low maintenance and 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. Thermohall® insulation can minimise heat transfer, prevents condensation and virtually eliminates thermal bridging and air infiltration.

**Structure quality**

All structures are code complaint, designed to meet wind and snow loadings of its geographical location. Rubb PVC fabric cladding has a manufacturer's warranty of 10 years. Steelwork is hot dip galvanized in post production to eliminate any chance of corrosion, and comes with a 25-year warranty.

**Multiple door options**

Rubb offers a variety of different 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.

**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.

**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.

**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.

**Customisable features**

Buildings can accommodate all types of door, ventilation and other systems. They can 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 and quotation, to installation and beyond. Rubb's commitment to customer service continues after project completion and forms the basis for long-term customer satisfaction.

# Belfast Harbour

Belfast, Northern Ireland

**Type**
BVE

**Span**
32.5m

**Long**
76.5m

**Eaves**
6.75m

**Apex**
13.5m

**Door**
6 x6m

This bulk storage facility creates a safe haven for materials at Belfast Harbour.

This is the fourth steel framed fabric clad building the company has delivered to the harbour, which is Northern Ireland's principal maritime gateway and logistics hub.

Rubb worked with main contractor McMillan Construction to install the 32.5m wide x 76.5m long port structure at Belfast Harbour. The building features 6.75m high sidewalls, with outside tapered column legs, which ensure all internal walls have a straight vertical face. This helps to maximize the internal space.

The facility sits on a 1m high concrete wall and has an internal apex height of 13.5m from internal floor level. It provides 25,340m³ of clear storage space.

# Port of Tilbury

Tilbury, Essex, UK

**Type**
BVE

**Span**
30m

**Long**
138m

**Eaves**
6m

**Apex**
11m

**Door**
Open

This Rubb warehouse was brought back to life to support relocation goals of Tilbury Port planners and a long-term customer.

The original warehouse, a 30m twin span x 102m long structure, was constructed in 1990 and located at Berth 42, Port of Tilbury. Ten years later the structure was relocated and extended to 138m long. It was then dismantled and put into storage by a third party in 2015.

Port officials then contacted Rubb to assess, organise, and re-construct the stored warehouse, working alongside the main contractor Dyer and Butler. The Rubb team was on site for 10 weeks and the warehouse, now adapted to a 30m twin span x 78m long, is located at Lakeside 2.

Rubb's building systems can be quickly extended or relocated based on future trade patterns, which allows ports to quickly react to customer requirements.

**The major benefit is the modular design which assists with changing the structure size. They can also be dismantled and erected in new locations. The Rubb team were very helpful and I would highly recommend Rubb adaptable warehouse solutions.**

Project Engineer, Port of Tilbury
**Jenis Mistry**

# Harland & Wolff

Belfast, Northern Ireland

**Type**
BVE

**Span**
30m

**Long**
35m

**Eaves**
12.5m

**Apex**
20.1m

**Door**
Access

Rubb Buildings Ltd was tasked with designing, manufacturing and erecting two crane liftable buildings to cover offshore pile clusters.

The two marine manufacturing covers feature spans of 30m and each measure 35m in length. To increase the overall internal apex height of the manufacturing bays to 20.2m, H&W asked Rubb to use a 7.3m high wall constructed out of 40ft containers as the building's foundation. A custom designed supporting frame was created to hold the containers together and act as the fixing base for the Rubb BLE structures.

The buildings are designed with reinforced base beams and anchor brackets so they can be easily lifted from their container foundations and moved to one side.

**The quality of the workmanship from the design drawings and loading calculations was impeccable and visits to site from design engineers and directors assisted in a smooth program of works.**

Harland & Wolff
**Chris McNally**

# Swan Hunter

Newcastle, UK

**Type**
NV

**Span**
27m

**Long**
45m

**Eaves**
11.5m

**Apex**
21m

**Door**
Open

Originally manufactured by Rubb back in 1982, the two rail mounted liftable structures measuring 27m span x 24m long and 11.5m high sidewalls, were often moved from shipyard to shipyard along the river by barge, and were used to house the ships and frigates being built by Swan Hunter during manufacture.

The structures have since been dismantled and shipped to India where they will continue to be used by the shipbuilding industry.

The hot dipped galvanized steel framework of Rubb structures has proved to be long-lasting and durable — already 26 years old, the structures are still able to preform in the harshest of climates.

The PVC fabric membrane was rolled up and reused once the structures arrived at their new destination.

# Offshore Repairs

Kent, UK

**Type**
BVI

**Span**
22.5m

**Long**
20m

**Eaves**
5.5m

**Apex**
8m

**Door**
3x AFT

This company was investigating a wind turbine blade improvement and upgrade solution which would utilise its offshore jack up vessels.

To make the operation cost effective and efficient, the wind turbine blades had to be modified out at sea and under cover. Doing this would save the time and money usually taken to transport the blades back to shore, and it would resolve the high risk of personnel doing the modifications up at height.

After working closely with the Rubb design team, a viable concept was created. Rubb provided a solution by designing and constructing a bespoke structure on board the specially designed vessel. The new blade improvement facility was fully constructed on the dockside, then lifted with the a 1000-tonne crane into position onto a specially designed platform.

ThermoHALL®

# Rubb's insulated cladding system

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

- Non-combustible glass wool is encapsulated in air and water tight pockets
- Insulation thickness from 50mm to 150mm
- No air gaps in the cladding, which reduces heat loss and helps eliminate condensation
- Buildings are fully relocatable

Development of Thermohall® started several years ago, with the goal of a new and eco-friendly insulation system. Thermohall® is now fully developed and patented. Thermohall® offers great energy savings and is environmentally friendly—both in fabrication and operation.

- Rubb uses a heavy-duty PVC fabric with a long, useful life and high density, non-combustible glass wool insulation
- All the materials are recyclable. Steel can be recycled through various means and PVC can be recycled through initiatives which are part our operational supply chain and environmental partnerships. The insulation material that Rubb uses is processed from recycled glass
- Rubb Thermohall® structures combine the best properties of both conventional buildings and fabric buildings, high thermal insulation and full relocatablity. All Thermohall® buildings can be delivered to suit our customers' insulation requirements

## Thermohall® technical specification

| Thickness | U Value (SI) W/m2K | R Value (US) ft-F-hr/BTU |
|---|---|---|
| 50mm (2in) | 0.67 W/m2K | R11 |
| 100mm (4in) | 0.36 W/m2K | R19 |
| 150mm (6in) | 0.25 W/m2K | R27 |

**Outer layer**

Flame retardant heavy-duty fabric

**Inner layer**

Self-cleaning PVC fabric

**Core**

High-density glass wool insulation

# Rubb structures

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**

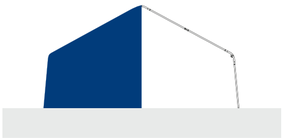
Using proven engineering software, we can tailor the project to the specific requirements of the site, type of cargo and logistical needs.

**Production**

Our steel and membrane components are fabricated with proper equipment and quality control.

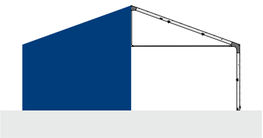
**Installation**

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



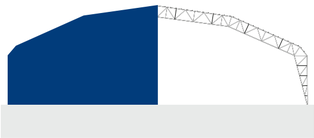
## THA

The Rubb THA fabric shelter range features robust industrial tents and portable temporary shelters to suit your construction, manufacturing, and storage requirements.



## Rubb Hall

Our standard prefabricated Rubb Halls have been optimised for a variety of applications. Rubb Halls are flexible, durable, portable, and designed for fast delivery.

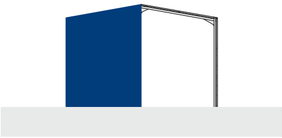


## BVE

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

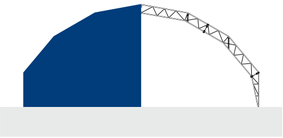
## BVC

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.



## BVR

The BVR structure type features rectangular leg and roof box sections. This design is a popular choice for bulk storage buildings.

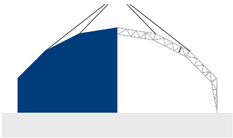


## NV

The Rubb NV structure type originated in Norway and is designed with a high apex height in mind for maximum storage space.

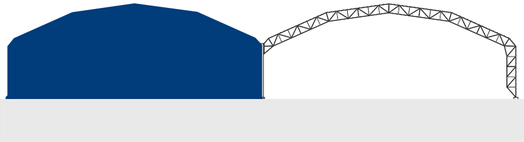
## BVL

The BVL features lattice frame sidewalls and single or multiple roof pitches. This design can clear spans over 100m.



## BLE

BLE structures are equipped with lifting points, providing easy crane liftable connections and allowing the structure to be lifted into position.



## Twin link

More affordable than single roofs, due to the reduced amount of steel work.

# Door options

Rubb offers a variety of different 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.

Rubb can also supply a wide range of access and industrial roller shutter doors.

**Access door**

These types of doors are suitable for public and non-public areas. EN 1125 and EN 179 standards apply to push bars and touch bars respectively. All doors and emergency exit doors supplied by Rubb adhere to European product standards. To meet customer requirements, all doors come with CE marking and are ISO 9001 approved.

**Roller shutter doors**

Commercial off-the-shelf doors, measure up to 10m x 10m, but Rubb can also offer custom door sizes. All doors incorporate a motor driven system, with built in safety mechanisms. Doors can be electrically operated and can be combined with safety devices and traffic lights. All doors can be customised to suit business operations.

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