

Light Modular Building (LMB®)



LMB® Key Features:

Exceedingly low
embodied carbon

Assured Life Expectancy

Surpasses Fire
Resistance Standards

Security rated to SR2,
SR3 and SR4

rsewater.com



- 05 1. Design & Production
- 06 2. Benefits
- 09 3. Technology
- 10 4. Size Specifications
- 11 5. Finishes
- 13 6. Environmental Impact

The LMB® is a low carbon direct replacement for industry-standard enclosures.

Image below:
Fabrication of LMB® at RSE's Muir of Ord facility.



Light Modular Build (LMB®)

1.0

Design & Production

The LMB® is part of RSE's m-EcoBuilding product line, characterised by industry-leading and modular offsite build capabilities, enabling plug-and-play options whilst contributing to significant carbon savings.

The Light Modular Building (LMB®) has been devolved due to our clients' high dependency on GRP and the global need to reduce carbon emissions. This product is sustainable, contains lower contents of carbon and offers the use of materials that are fully recyclable/ reuseable at end of life. By using an international recognised manufacturing technology, we can create the LMB® which delivers efficiently designed solutions with limited wastage and faster construction periods.

Precision Design & Engineering

The system utilises world-leading sophisticated design and engineering CAD/CAM software that is incredibly accurate, reducing the need for engineer involvement during the detail design, as this process generates CNC files which are uploaded to the roll forming machine. Detailed design speeds up compliance, reduces engineering cost and minimises errors on-site.

Production & Assembly

The FrameCAD TF550H unit is a heavy-duty, high-volume, cold-formed, steel roll-forming system, utilised for producing LMB frameworks from 1.2mm gauge steel.

Once framing components are cut and punched by the machine, our operatives manually assemble them into wall panels, trusses, or joists. The structure is then assembled from the various substructures, prior to cladding and fixtures/finishings installed.

Transportation

The LMB® can be delivered fully kitted out and ready for use. Alternatively, if required due to transportation or access issues, LMBs® can be delivered in flatpack form and erected in-situ on site.

Light Modular Build (LMB®)

Benefits

The LMB® combines innovative engineering solutions and fabrication, with an emphasis on modular and offsite construction to reduce lead times.

Modular

- Supports off-site modular build and modern methods of construction.
- Modular construction minimises on-site activity and reduces lead times.

Large CO2 Reduction

- Reduces carbon emissions by up to 80% (kgCO₂ equiv vs GRP)
- 100% recyclable at end of life.
- Material sourced by sustainable supplier Meridian Steel Ltd with Positive Planet to actively reduce our carbon emissions.

Flexible Designs

- Exceeds 25-year design life of plastic alternatives.
- Doors and windows can be designed and installed in any location if required.
- Single lift solutions with integrated lifting base frames are available on request.
- Robust, durable designs conforming to UKCA
- IP ratings up to IP56 if required – Standard Product – IP44

Short Lead Times

- Significant reduction in lead-time for delivery of standard products compared to GRP alternatives.
- Improvement over competitor lead times by over 60%.
- Option for the LMB® to be fully fitted out prior to delivery to site.
- Typical lead time for an LMB® delivery to site is 4 weeks for standard non-security rated enclosures.

High Levels of Accuracy

- 3D CAD/CAM software creates models for use with precision.
- CNC machinery used to form the structure.
- Speeds up the production process and reduces fabrication costs.

Multiple Finishes

External Finishes

- Box Profile Steel Sheeting (Standard Product)
- Brick
- Stone
- Wood

Internal Finishes

- Marine Plywood (Standard Product)
- Hygienic Board (Standard Product)
- Various insulated panels for external finishes.
- Chemical-resistant and washdown linings available.
- Security Rating Approved
 - LPS1175 certification requirements approved.
 - Certified to SR2, SR3 and SR4 security ratings:
 - LMB® – Essential – B3 (SR2)
 - LMB® – Elevated – C5 (SR3)
 - LMB® – Advanced – D10 (SR4)

Converting design information into detailed framing plans, with 3D model viewing capabilities.

Image below:

The Frame-CAD TF550H unit is a heavy-duty, high-volume, cold-formed, steel roll-forming system.



Light Modular Build (LMB®)

3.0

Technology

Using structural frame design software, real-time engineering calculations are made as the designs are created – analysing loads, deflections, and other forces. This makes it an easy process to optimise design code compliance, whilst delivering the best value engineering practices.

The software used is a powerful CAD-based structural detailing software, that saves time and money in wall, truss and joist design for cold-formed steel construction. This turns your proposal into reality, providing unbeatable accuracy in the construction process.

Converting design information into detailed framing plans, with 3D model viewing capabilities that can supply detailed construction drawings.

The required frames and components are produced from high tensile structural-grade and hot-dipped galvanized slit steel coils and are shaped at ambient temperatures by roll-forming machines. They can be produced in large quantities and at high speed with consistent quality and precision. The wide range of advanced tooling functions provided by systems allow high productivity and versatile output to produce roof trusses, wall frames, and floor joists all to exact measurements, saving time and costly wastage in the construction process. Once the structure is complete, client specific requirements are added, including; internal and external linings installed to the manufacturer's guidelines, building accessories like doors, windows and louvres, and if needed, building services are installed and certified to the British Standards.

Light Modular Build (LMB®)

Size Specifications

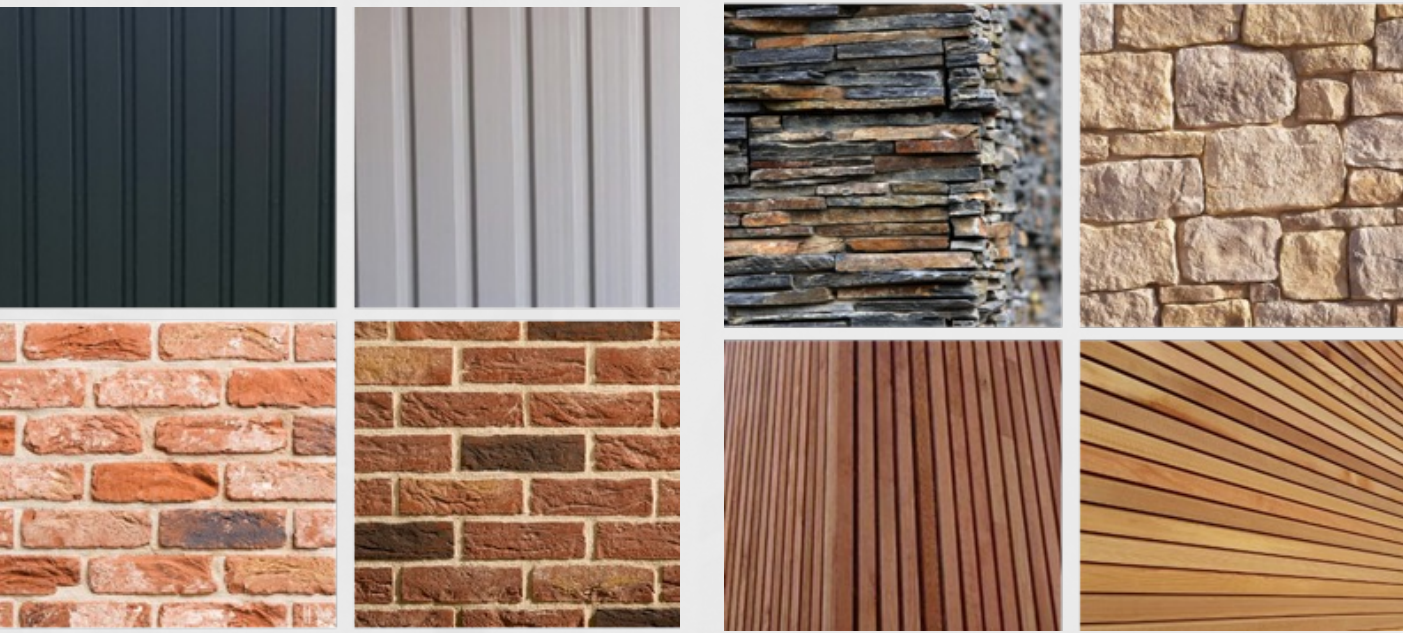
With the deployment of the LMB®, RSE has been able to collate data to allow us to see the most advantageous building sizes that would be required for our clients.

		Security Rating			
Product Name	Length x Width 4 x Height (Metres)	N/A	B3 (SR 2)	C5 (SR 3)	D10 (SR 4)
RSE – LMB® 48	8 x 4 x 2.7 (Internal)	✓	✓	✓	✓
RSE – LMB® 46	6 x 4 x 2.7 (Internal)	✓	✓	✓	✓
Product Name	Length x Width 3 x Height (Metres)	N/A	B3 (SR 2)	C5 (SR 3)	D10 (SR 4)
RSE – LMB® 38	8 x 3 x 2.7 (Internal)	✓	✓	✓	✓
RSE – LMB® 36	6 x 3 x 2.7 (Internal)	✓	✓	✓	✓
RSE – LMB® 34	4 x 3 x 2.7 (Internal)	✓	✓	✓	✓
RSE – LMB® 33	3 x 3 x 2.7 (Internal)	✓	✓	✓	✓

Finishes

Standard units are externally clad in Kingspan's through-fix, trapezoidal profiled, and insulated with panel systems in Juniper Green colouring.

A variety of finishes are available, and external cladding can be aligned to meet unique requirements.



Using alternative and sustainable materials maximises the reduction in embodied carbon, whilst maintaining high-quality standards.



Light Modular Build (LMB®)

6.0

Environmental Impact

The materials have been selected to allow the most efficient recycling/reuse of the LMB®, whilst still meeting the requirements of the structural needs of the product, and maintaining efficiencies needed to reduce energy wastage in heating.

All products can be recycled or reused at Energy from Waste Plants.





Direct enquiries to
LMB@ross-eng.com

rsewater.com

