



Components
WJ Group



Timber Chassis

The Sustainable Chassis

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Engineered Timber Chassis For Holiday Homes & Lodges

An Award Winning Solution

At WJ Components, we are proud to unveil our innovative timber chassis for static caravans and holiday homes. This innovative product combines the robustness of I-beams with the natural strength and sustainability of timber. After rigorous testing over the past few years, our multi-patented chassis is now available to caravan manufacturers across the UK, setting a new standard in eco-friendly construction.

Tailored To Specification

We recognise that in the world of caravan and holiday home manufacturing, a one-size-fits-all approach simply doesn't suffice. Each manufacturer brings unique visions, specifications, and challenges to their designs, all contributing factors that demand bespoke solutions rather than generic products. That's why our timber chassis are not standard 'off-the-shelf' items but are carefully engineered and tailored to meet the distinct needs of each client.

Drawing from our extensive experience in crafting customised roof trusses for the caravan industry, we apply the same level of precision, innovation, and attention to detail to our chassis production. Just as every truss is individually tested and engineered to suit specific load and structural requirements, each of our chassis is designed with your unique unit in mind. We collaborate closely with your design and engineering teams to understand the exact parameters, load distributions, and performance criteria your caravans or holiday homes require.

By choosing our timber chassis, it means investing in a partnership of early adoption that values your individuality as a manufacturer. We don't just supply a product; we offer a collaborative solution that aligns with your goals, supports your design aspirations, and contributes to the success of your business. Our dedication to creating chassis that are as unique as your caravans and holiday homes ensures that you can deliver exceptional quality to your customers, reinforcing your position as a leader in the industry.





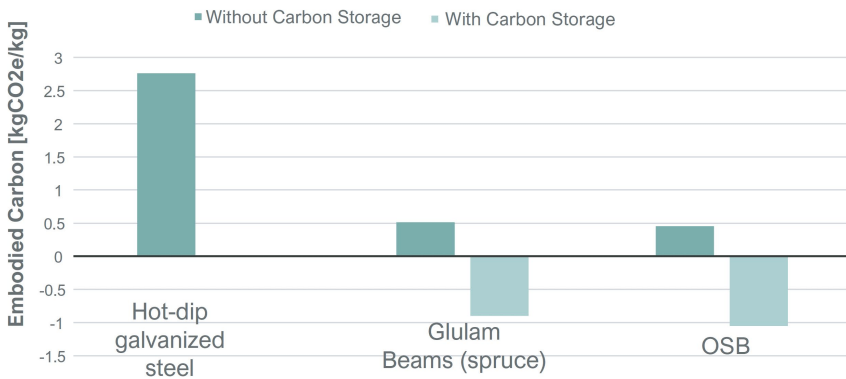
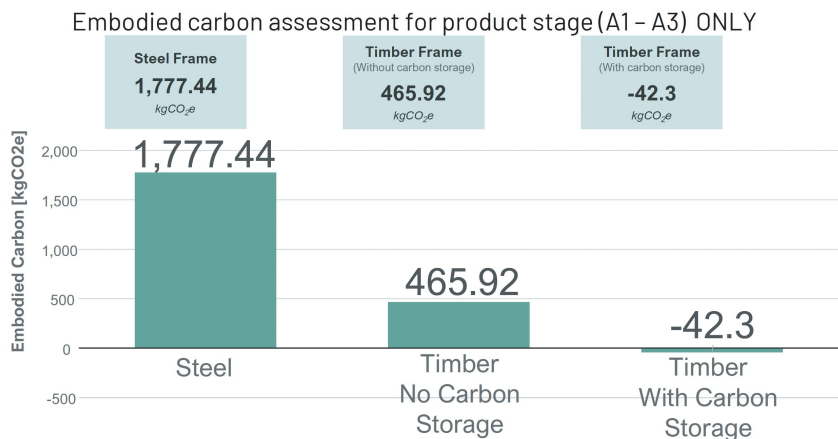
Reducing Carbon Emissions

We're timber engineering specialists with decades of experience. Our goal is to help the caravan and leisure home industry reduce costs and continuously improve the use of engineered timber within production for the benefit of the environment.

The table to the right shows the equivalent CO2 emissions related to the manufacture and carbon storage for both a steel framed and timber framed chassis.

A timber frame chassis reduces the carbon emissions by 1,322.52kgCO2e compared with a steel chassis. When factoring in the carbon storage of the timber, the timber chassis is carbon negative.

Embodied Carbon of Static Carbon
Frame Design Comparison Chart

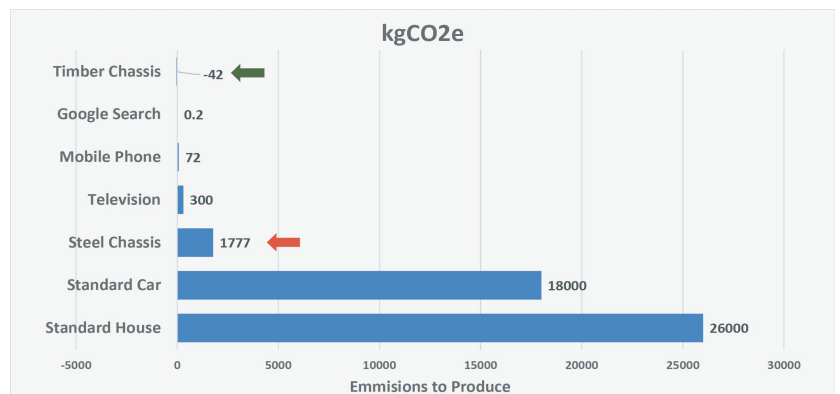


The table to the left shows embodied carbon with and without storage for galvanised steel against components of our chassis.

This data is from an independent, third party study conducted by Arete, which is readily available by request.

This table shows common objects and their emissions in KgCO2^e

Highlighted in green is our timber frame chassis vs a steel chassis marked in red currently used in the market.





Load Capability & Design

Throughout 3 years of design and testing we have been able to bring a solution to market in 2024 that offers stability for manufacturers backed by both theoretical testing and physical testing. Our technical team are able to provide further details, drawings, Finite Element Analysis (FEA), materials testing data and more upon request.

There's no recommended one-size-fits-all solution with our chassis. We design our chassis for the unit on which it will support giving our customers the benefit of data backed assurance when choosing our product. Our designs come at a maximum of 13 metres in length. Our chassis has also been successfully tested with a weight of just over 8 tonnes.



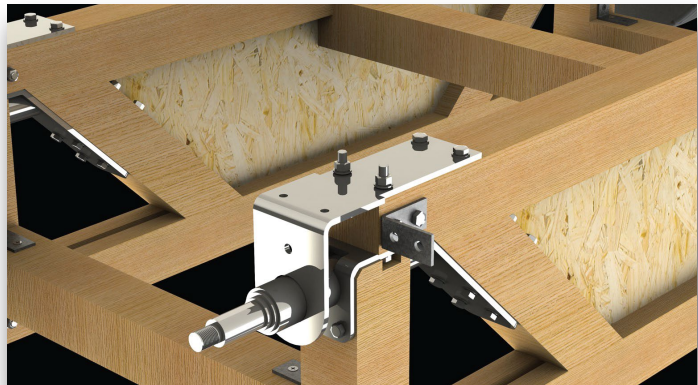
Load Distributing Axle

To further complement the timber frame chassis, we've developed a load distributing timber axle. The benefits of the timber axle are three-fold. The first being the further reductions in carbon emissions against a steel frame axle, the second being a cost reduction through the removal of expensive steel components and the third is a reduction of weight.

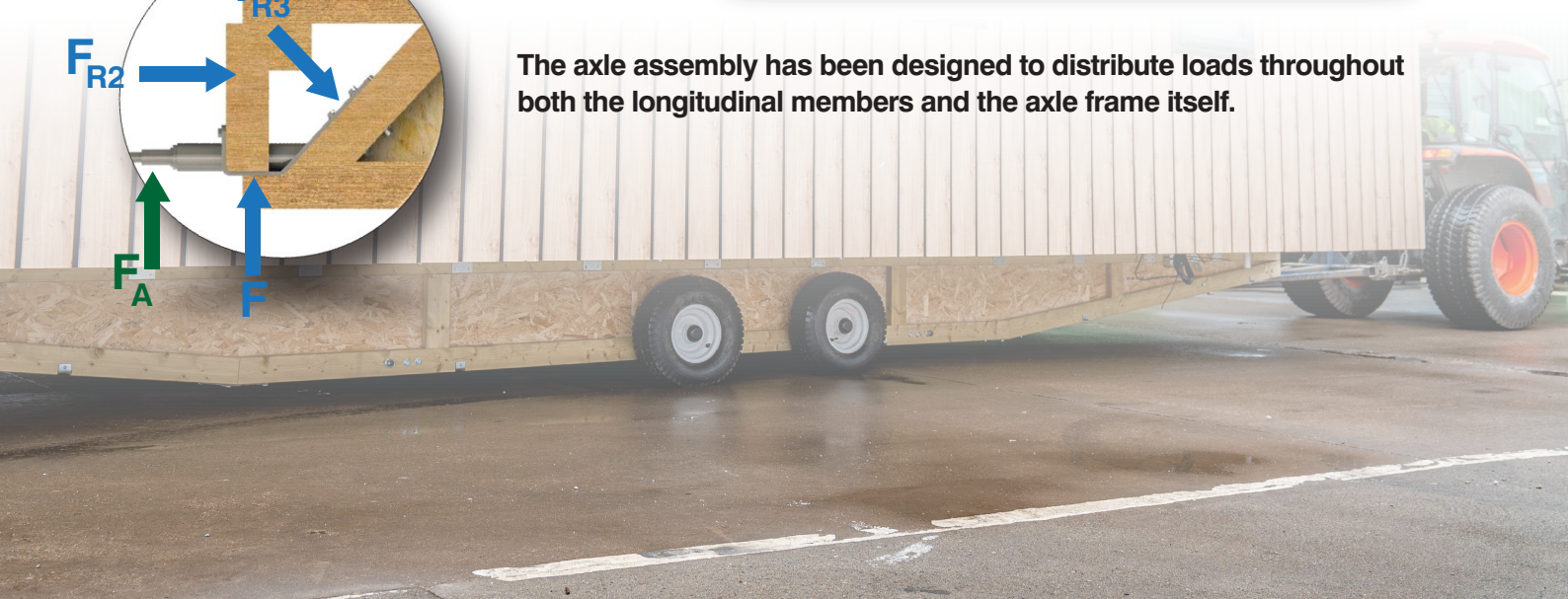
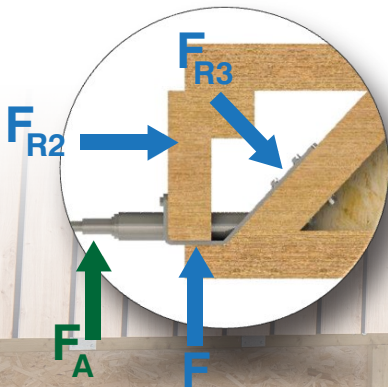
The timber chassis additionally is assembled onto a timber framed axle assembly.

The twin axle construction only as shown the the right has been physically tested to 8.2 Tonnes with no defects.

Our chassis is c.15% lighter than a steel frame chassis.



The axle assembly has been designed to distribute loads throughout both the longitudinal members and the axle frame itself.





Manufacturing

We have supplied timber engineered products like roof trusses and I-Beams to the caravan industry since 2007. We have a dedicated manufacturing factory in Hull where we are capable of manufacturing large volumes daily. We have highly skilled and trained joiners manufacturing our products, lead times vary for our chassis based on order volumes.

We're a sustainably minded business that advocates the use of timber as a building material due to its sustainability properties. To overcome the large amounts of carbon released into the atmosphere by the product of steel chassis, we designed a chassis from sustainable, PEFC & FSC timber.

Award Winning Innovation

After a successful launch into the market at Harrogate Show 2024 in September, the chassis has caught the eye of many. In late September, the chassis won the Timber Trades Journal's Innovation Prize 2024. The award, judged by multiple structural engineers, came just as the chassis had also been short-listed as a finalist for the Hull & East Yorkshire Business Awards Innovation Award 2024.



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Support for Manufacturers

By adopting our timber chassis, manufacturers can lead the industry in sustainability, meet growing consumer demand for eco-friendly products, and benefit from the proven performance and advantages our chassis offers. Early adoption can also position manufacturers ahead of competitors in innovation and market appeal.

As well as our work with technical teams and engineers, we offer support during and even after manufacture to ensure a full service solution. Our chassis can be transported fully assembled or delivered as individual components for assembly on-site, allowing the transportation of more units per delivery. Extra training and support will be issued by WJ in this case.



Transportation

The chassis has been transport tested multiple times during our testing. Initially the chassis was tested by loading the chassis only onto a truck in the conventional way. After this we conducted tests with a unit on the chassis moving around a yard by tractor tow.

Finally the chassis was tested by moving the chassis from Hull to Harrogate supporting a caravan using the same methods of transport as a steel counterpart.





Data Backed Assurance

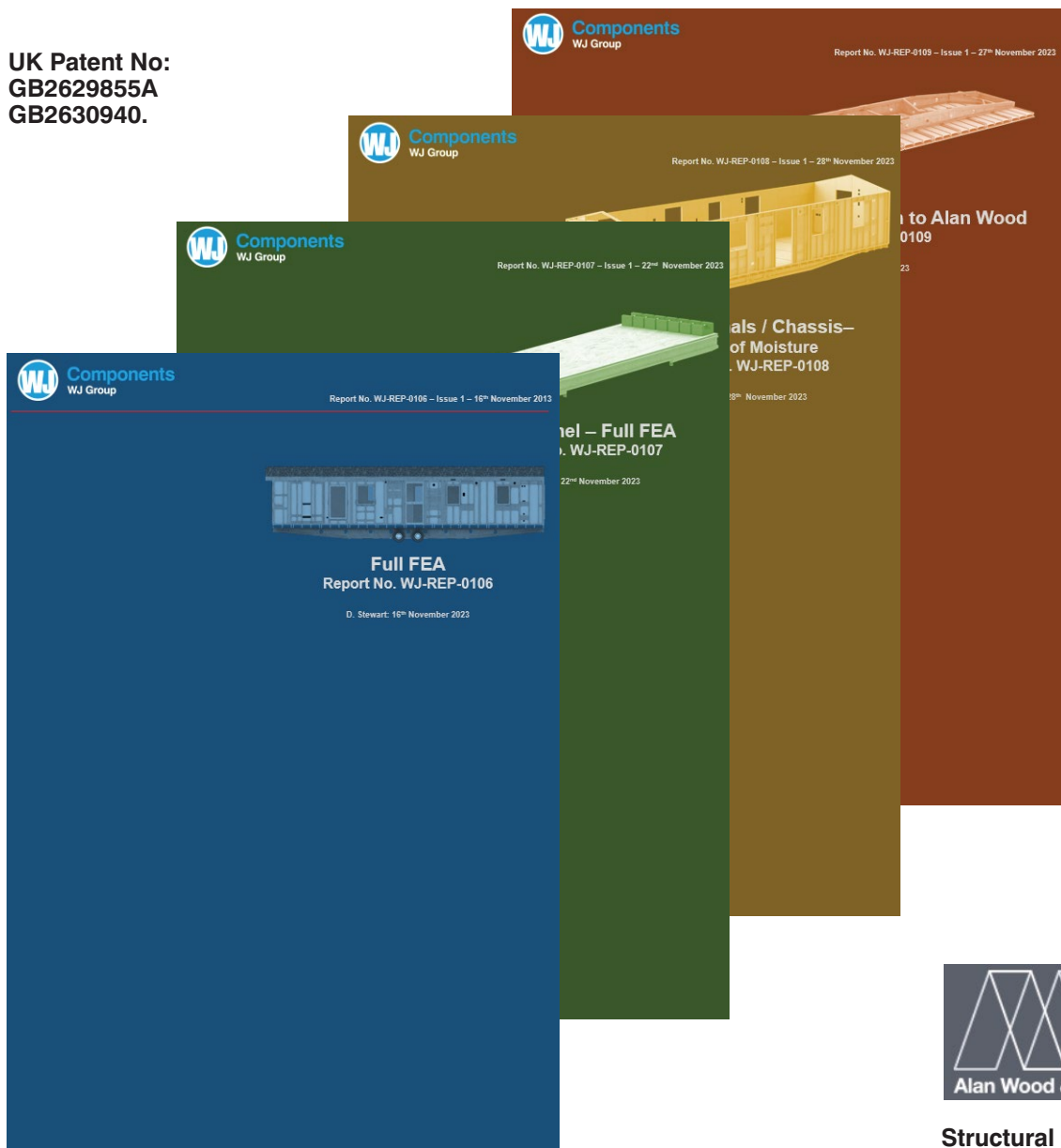
Throughout the development of the chassis, we have had constant on-going testing periods providing us with vital data to move forward with.

In order to fully validate the structural integrity of the chassis under loading conditions, multiple forms of analysis were conducted. These were carried out both internally and externally. Reports are available upon request.



Intellectual
Property
Office

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