

## Glue laminated timber structures

Selection of first-class references

# Retail and Industrial Storage



Photo credits: B&K Structures

Retail and Industrial buildings are the most challenging projects in the building industry. They need to be very economic and competitive and just in time with a very short lead in time. The beauty on timber structures for industrial buildings is that they are also ecological and carbon saving. To deliver on time and to be competitive against steel and concrete is our daily challenge.

## **ASDA Store Liverpool / Bootle**

**Owner**  
ASDA

**Client**  
B&K Structures  
High Edge Court  
Heage, Belper  
Derbyshire DE56 2BW

**Glulam**  
460 m<sup>3</sup>

**Derix service**  
glulam production and  
machining

**Max. span**  
18,00 m

**System**  
single-span



# Taking responsibility for our planet



Photo credits: B&K Structures

## Tesco Store Cheetham Hill / Manchester

### Owner

Tesco

### Client

B&K Structures  
High Edge Court  
Heage, Belper  
Derbyshire DE56 2BW

### Glulam

377 m<sup>3</sup>

### Derix service

glulam production and  
machining

### Max. span

18,00 m

### System

bow string main beams

Cheetham Hill is Tesco's first store built using Tesco's new, low-carbon blueprint – the result of bringing together everything that has worked well in Tesco's existing environmental stores. The store has a carbon footprint 70% smaller than an equivalent store built in 2006 and this will be Tesco's model for stores built in the UK from now on.

The carbon savings come from an innovative mix of environmentally friendly design, materials and technologies. These include a frame made from timber instead of steel, 12 roof lights each measuring six metres across to cut down on artificial lighting, and a refrigeration system which uses CO<sub>2</sub> as a coolant rather than more potent greenhouse gases.

*"Tesco's climate commitments are proving that it is possible to combine new technology and good business sense to make dramatic reductions in their carbon footprint. This new blueprint store design is an example that we hope other businesses will follow."*

Steve Howard, CEO, The Climate Group



# Smart structures, just in time



Photo credits: Barr Construction

The selection of structural materials and methods for construction are based on a variety of processes executed during the early stages of building procurement. The key drivers for design are invariably determined by the building owners or patrons as part of their project brief. The interpretation and development of this brief is paramount by the building design team for the successful execution of the project. Early in the process, unless specifically requested as part of the brief, the structural solution must be developed.

## Tesco Express Store Hinckley

**Owner**  
Tesco

**Client**  
Barr Construction  
Heathfield House  
Fairways Business Park  
Livingston EH54 8AF

**Glulam**  
87 m<sup>3</sup>

**Derix service**  
glulam production and  
machining, design, roof panels

**Max. span**  
12,40 m

**System**  
hinged columns with  
curved beams



# Shopping underneath a natural roof structure



Photo credits: Barr Construction

## Tesco Store Dumfries

### Owner

Tesco

### Client

Barr Construction  
Heathfield House  
Fairways Business Park  
Livingston EH54 8AF

### Glulam

346 m<sup>3</sup>

### Derix service

glulam production and  
machining, design, installation

### Max. span

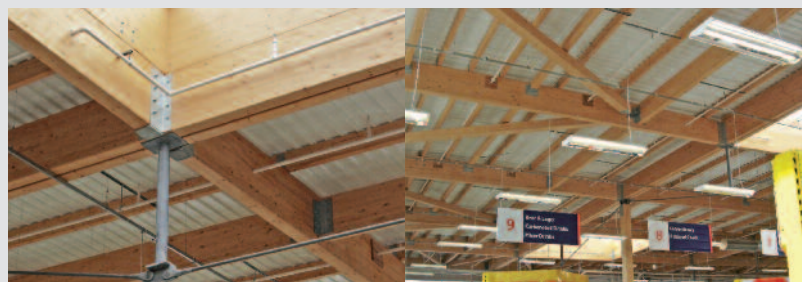
18,00 m

### System

bow string main beams

The Tesco Store in Dumfries is detracting 211 tons of carbon dioxide from the atmosphere.

Continuous beams are an effective and economic solution for large span structures that may be applicable in large production halls or warehouses. For this construction continuous beams are used as the principal load-bearing elements in order to cover large parallel sections of roof. As the moment distribution of continuous beams is excellent, the bending under load and the stress concentration can be optimised. In the case of extremely large spans, joints in the glulam are factory engineered and executed on site in order to facilitate the transport of the individual structural members.



# Freedom of shape and design



One of the largest temperate glasshouses to be built in the UK during the last hundred years has created a stunning green world in the heart of the city. Adjacent to the Peace Gardens and the Millennium Galleries the Winter Garden provides visitors with a unique pedestrian link through the city centre.

There are more than 2,500 plants from around the world creating a superb display. The building itself is 70 metres long and 22 metres high (large enough to house 5000 domestic greenhouses!)

## Sheffield Winter Garden

### Owner

Sheffield town council

### Architect

Pringle Richards Sharratt London

### Client

Merk Holzbau GmbH  
Industriestraße 10  
86551 Aichach/Germany

### Glulam

280 m<sup>3</sup>

### Derix service

glulam production and  
machining

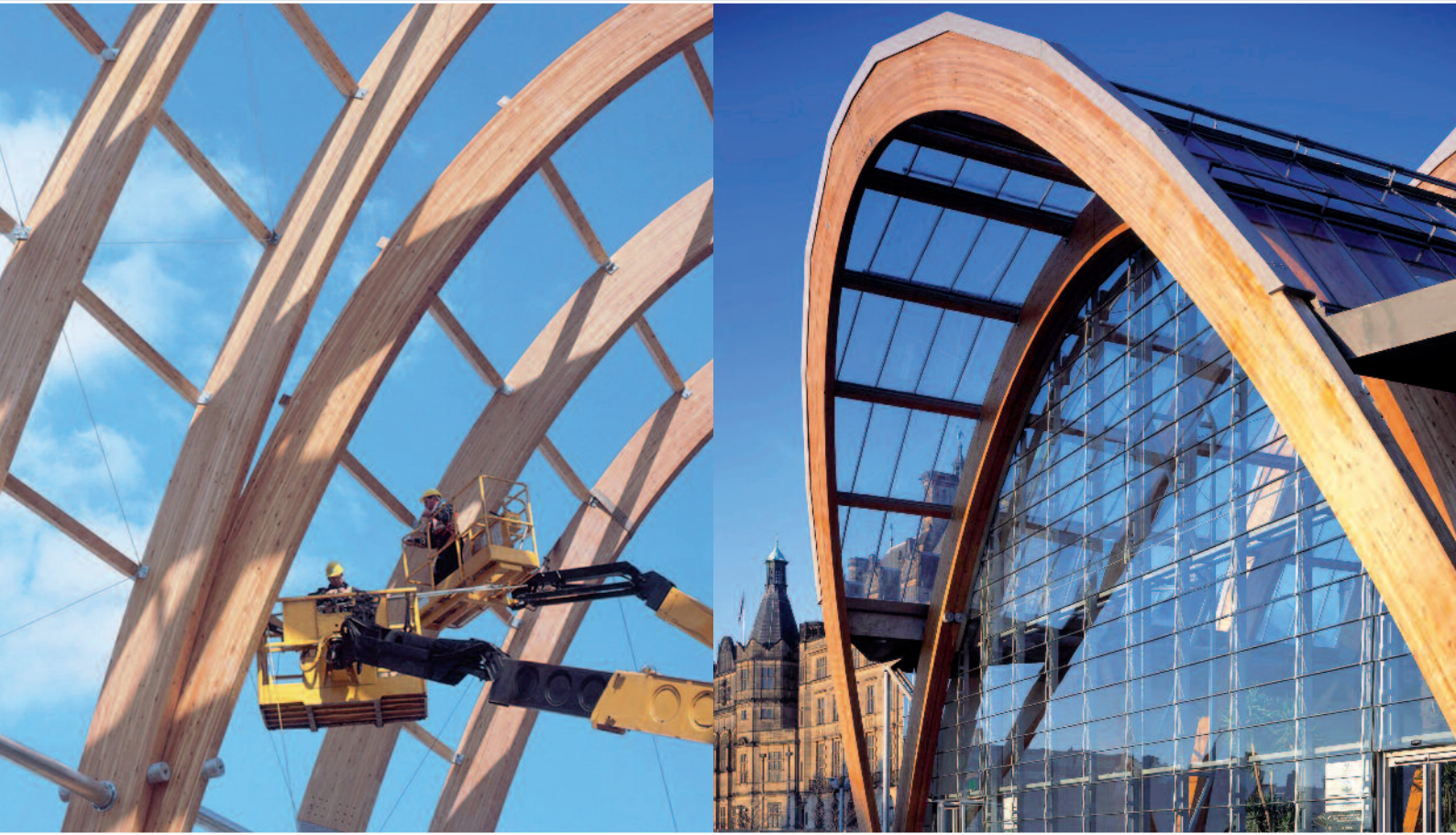
### Max. span

22,00 m

### System

glulam arches (larch)





It's one of the largest Glue Laminated or 'Glulam' buildings in the UK (Glulam is made by forming and gluing strips of timber into specific shapes).

The wood used is Larch, a durable timber which will, over time, turn a light silvery grey colour. The larch, derived from sustainable forests, requires no preservatives or coatings. This reduces the use of solvents and also avoids the use of chemicals that could kill the plants.

Photo credits: Büro Happold,  
Martine Hamilton Knight



# Wood remains young



Photo credits: Peter leenders

Wood is one of the oldest building materials of the world. Because of its sustainability in combination with modern technologies and engineering wood becomes the building material of the future.

The Youghal Leisure centre is an exceptional example how slender and stylish a curved roof structure can be realised. The suspended curved roof beams are very cost effective and create a lightweight roof structure.

## Aura Youghal Leisure Centre

### Owner

Aura Youghal Leisure Centre  
Claycastle, Youghal,  
Co. Cork

### Client

Rohcon Ltd.

### Glulam

44 m<sup>3</sup>

### Derix service

glulam production and  
machining

### Max. span

25,00 m

### System

suspended arched beams





# Glue laminated timber at the peak



Photo credits: Barr Construction

## The Peak Stirling

### Owner

Active Stirling

### Client

Solway Structural Steel  
Killoch, Ochiltree,  
Ayrshire KA18 2RL

### Glulam

120 m<sup>3</sup>

### Derix service

glulam production and  
machining

### Max. span

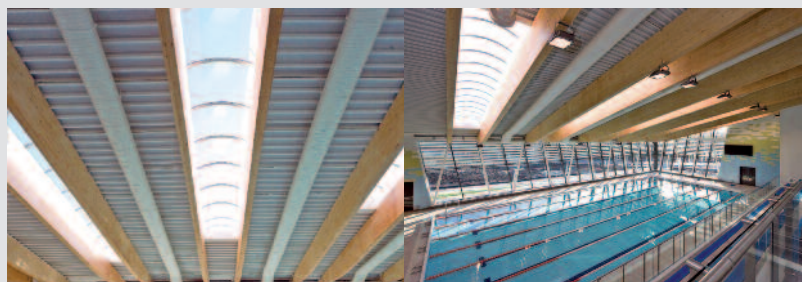
24,80 m

### System

single span glulam beams

Stirling Sports Village at Forthside, is the biggest single development for sport and leisure in Stirling for over 30 years with an investment of £27.3 million funded by Stirling Council and sportscotland. The Peak is the brand new indoor complex at the heart of the Stirling Sports Village, which already boasts third generation (3G) outdoor football, rugby and hockey pitches.

The swimming pool is set out with 6 dedicated lanes for serious swimming with plenty of space around for a more relaxing dip and fun for all the family. Swimmers have the choice of enjoying 3 separate pools from a 25m pool with 6 lanes, an 80m<sup>2</sup> teaching pool and a 100m<sup>2</sup> confidence water pool. The latter is specially designed for babies and toddlers with shallow water, a slide and water spouts.



## Wide span wing structure



Historically timber has been always the appraised material of choice for wing structures in the aircraft industry. The idea of using a wing shape for the new terminal building in combination with a free span glued laminated beam structure makes the building a landmark in the European Airport scene.





## Cork Airport

### Owner

Aer Rianta International

### Client

Rohcon Ltd.  
Building Contractors  
Euro Business Park  
Little Island

### Glulam

768 m<sup>3</sup>

### Derix service

design, glulam production  
and machining, installation

### Max. span

40,00 m

### System

continuous beams

The new terminal opened on 15 August 2006. Designed by HOK and Jacobs Engineering Group, the new terminal is Ireland's first 21st century airport terminal. In terms of further expansion, the terminal can be extended in the form of additional piers which can be constructed to the north and south.



# How you can benefit from our know-how



Please don't hesitate to contact us by mail, fax or phone. We are looking forward to offer advice and assistance or provide a quotation.

Photo credits:  
Frontpage: Martine Hamilton Knight  
Backpage: Barr Construction



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