

# **LVL in Spain ; From Metropol Parasol to daily projects**

Konstruktive Lösungen mit Furnierschichtholz

Solutions constructives en lami-bois

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# LVL in Spain ; From Metropol Parasol to daily projects

## 1. General

The objective of this presentation is to present the Spanish LVL market.

In Spain we have the world biggest project built with LVL ; Metropol Parasol in Sevilla, we will present this project.

And after move to the daily projects. We will present the most common applications with current projects.

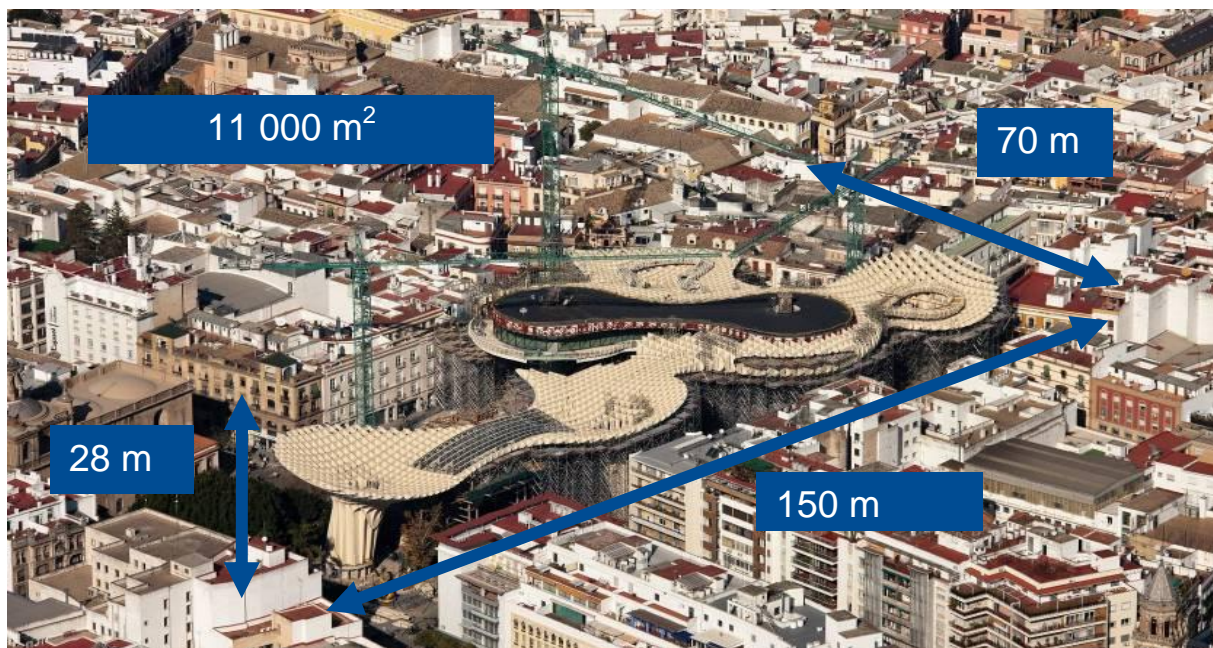
## 2. Metropol Parasol

Project located in "Plaza de la Encarnación", promoted by the city hall of Sevilla, with the objective of promote this area of the old city.

Project of the architect J. Mayer H, win on a international competition, the structural conception has been done by ARUP, and Finnforest has developed the joint system, and produce and built the wood structure.

Project of 6 towers, the towers 3 and 4 , ahs they trunk with concrete, recovered with Kerto panels, the other towers completely built with Kerto-Q,

The dimensions of the project are enormous ;  
(see image)



Length of 150 m, width of 70 m total surface of 11.000m<sup>2</sup> with a max height of 28 m.  
For built this project was needed more than 2.500 m<sup>3</sup> of Kerto for built 3.400 different elements.

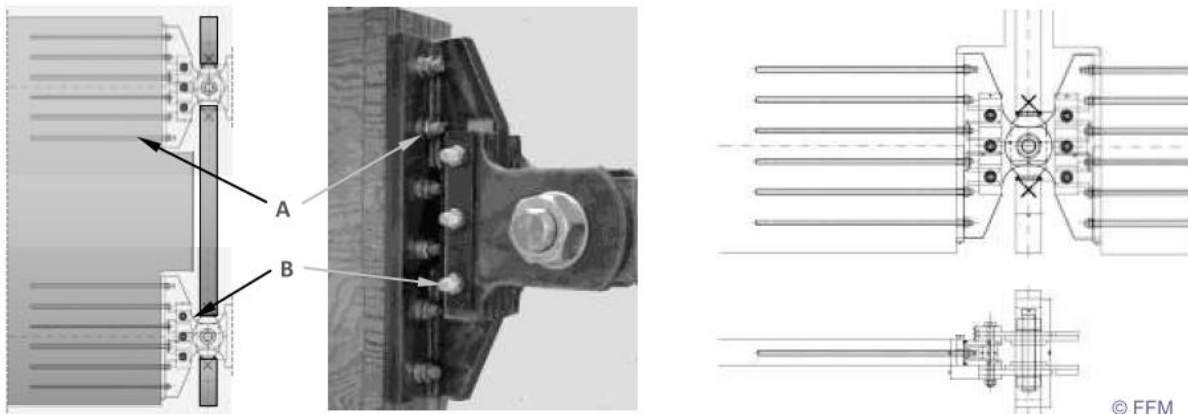
In addition of the size of the project, all the pieces were different, and should be calculated and produced specifically, those facts create a project with a enormous complexity

The structure form a gird system

The Kerto-Q was treated and covered with a PU Coating



On the wood construction, the connections are one the most complex points, in this project don't was different. Found the right solution was a big challenge, the joints was done with glued rots, special resin was necessary due the high temperatures of Sevilla.



Assembly, was quite complex a special and enormous scaffolding covering the area between the trucks was needed.

Also a very accurate geometer survey was necessary

### 3. Most Common applications

#### 3.1. Kerto-Q panels for roofs and floors.

Kerto-Q is utilised as a structural panel for floors and roofs.

the main advantage is the high strength of Kerto-Q allows to cover big spans.

#### References

Roofs ; Cupole "Las Arenas" Barcelona

Interesting Project on the center of Barcelona, cupote with a diameter of 78 m span, built with glulam beams and covered with Kerto-Q panels.





Floors ; Museo del Papel



### 3.2. Panels Kerto-Ripa.

Ribbed panels formed gluing together Kerto-Q panels and Kerto-S ribs

We have a Spanish producer (Fupicsa) with the CE certification for produce this kind of materials.

The main advantage is the possibility to cover big spans with reduced deep, using a pre-fabricated system.

#### References

Centro Médico Mendaza

Renovation of a Medical Center, spans of 6 m, with Panels of total length of 8 m



House in La Floresta

Interesting Project, where we combine the Leno CLT Panels as a walls and the Kerto-Ripa for the floors, roofs



### 3.3. Reinforcement of ancient wood structures

In Spain we have a lot of historical buildings built with wood structure. The reinforcement with LVL elements, allows to maintain the old structure giving additional strength with the LVL elements.

Escuela de música en Pamplona

In this case a Kerto-Q plate has been screwed on the top of the old beams, for work together as a "T" section





Moja

Ancient wood trusses, has been reinforced with Kerto elements, and add one opening in one lateral.



Floors with Kerto beams on renovation market

### 3.4. Pinned Frames

Gimnas el Bosc

Small and interesting Project for a school gymnasium , Frames of 10/12 m span, distance axis to axis of 1.2 m, without purlins, and covered o the top and bottom with Kerto-Q panels, between the panels insulation, low energy building.



Lomeña

Agricultural building, span of 23 m



### 3.5. Trusses

Fupicsa

In this cases we have developed a system of Kerto trusses, that has the same shape that the traditional Spanish trusses "Cerchas Latinas"

