Preliminary draft Contest for Bridge Pavilion. World Exhibition 2008, Zaragoza

The structural functioning of the chosen solution is that of a latticed multi-span vault. It is well known that the behavior of vaults is highly adequate to solve the problem of large spans when faced with distributed loads.

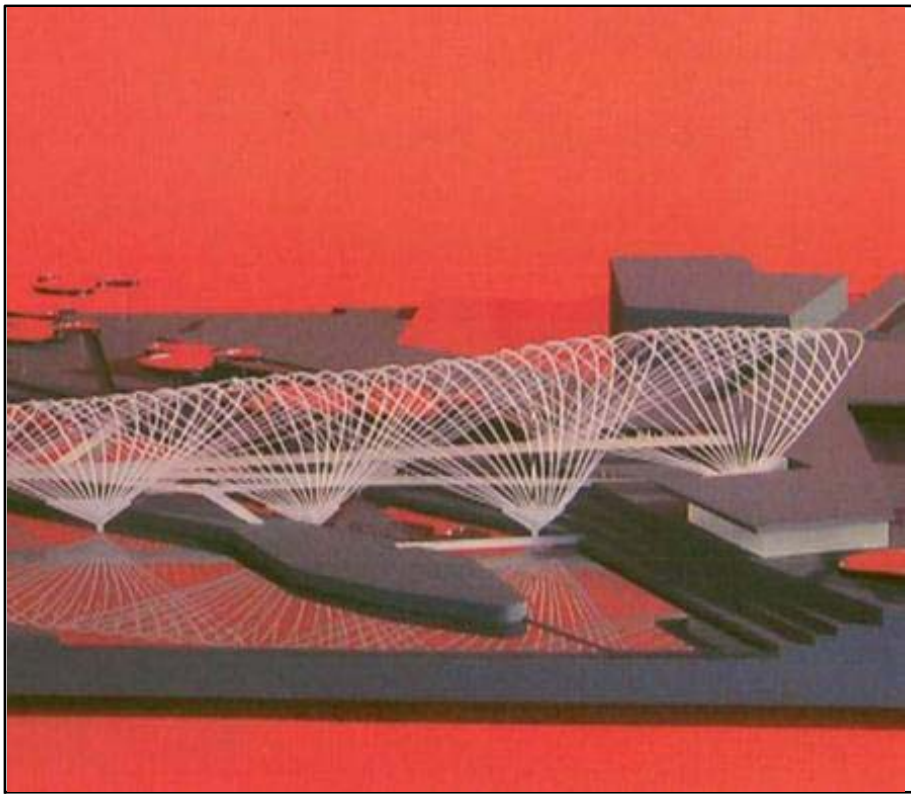
Consequently, the structural proposal for this bridge is to hang it from a multi-span vault, consisting of a structure with a single latticed layer. The vault is composed of a first level of tubular elements of variable trapezoidal shapes joined at the nodes. Although imperceptible, there is another level immediately below which is composed of pre-tensioned cables placed in the diagonals of the trapezoids of the first level.

On both sides, the vault rests on piers set on the riverbed parallel to its flow. The proposed solution includes arches of moderate spans of approximately 50.00m and in any case, a lesser number of piers than the old bridges of the city may have.

The entrance footbridge is placed below this huge vault and runs in harmony with the river, on plan. The pedestrian footbridge is suspended from the vault, hanging from many different nodes. In order to distribute the load of the bridge, the hangers are inclined differently which allows horizontal bracing.

The material selected for the structure is a composite made of epoxy resin and glass fiber. These materials are characterized by their outstanding structural efficiency due to their low weight, great load-bearing capacity and durability which will certainly convert them into the most adequate structural materials of the future.

This is a pioneering solution offering futuristic tendencies which have arisen from a perspective subordinated to an impeccable structural order.



Spain /2008

Project data

Structural type:
Latticed Multi-span vault
Location:
Zaragoza (Spain)
Opening Date:
2008
Architect:
Richard Rogers Partnership and Vida y Asociados Arquitectos
Scope of works:
Preliminary draft Contest