

01 / 31 / 2017



Hurlingham Racquet Centre's light green roof features Kerto® LVL elements

The Hurlingham project in London involved the construction of a sports complex including four indoor tennis courts and four squash courts. The racquet hall, designed by David Morley Architects, is 35 metres wide and 55 metres long. The main span consists of suspended steel beams. To give the courts space and reduce the costs, the beams are spaced with large gaps of 12.9 metres. To fill these gaps, the architect wanted to see wood.

Wooden Kerto LVL elements support the long spans of a steel bowstring truss

The architect and principal engineering office **Price & Myers** were seeking an effective, lightweight solution for the wide span. Traditional laminated timber combined with a solid wooden panel on top wouldn't work due to its excessive thickness.

The joint design work between the structural engineers and Metsä Wood resulted in a shallower roof construction with Kerto LVL elements, still accommodating the large span and heavy green roof. With any other material, trusses would have had to be more densely spaced.

The Kerto LVL elements constitute the vaulted roof construction are 12.9 metres long and have a total height of 645 mm and a maximum width of 1,200 mm. To accommodate the curve of the structure, four different widths were determined, totalling 140 prefabricated Kerto LVL elements. The roof elements fit flush with the vaulted, spaced, steel bowstring truss.

01 / 31 / 2017

Smooth cooperation and BIM technology resulted in a perfect match

In order to guarantee an easy installation of the roof, the supports and the installation process were considered at the design stage.

The depth of the Kerto LVL elements determined the depth of the curved steel member, as the steel had to be flush with the elements to accommodate the green roof structure above. The connection detail between the wood and the steel element therefore were very accurately designed. The project team used BIM technology to ensure the steel and the wood elements fitted together “like a hand in a glove”.

The Hurlingham Racquet Centre project in a nutshell:

- The 35-by-55-metre Racquet Centre includes four tennis courts and four squash courts.
- The roof accommodated 140 Kerto® LVL (Laminated Veneer Lumber) elements in four widths (from 550 mm to 1,200 mm).
- Kerto LVL SONANS acoustic panels were built permanently into the Kerto LVL elements.
- The smooth installation resulted from the carefully designed connections using BIM technology.

The Hurlingham Club is a green oasis of tradition, renowned throughout the world as one of the largest private clubs. The Racquet Centre, designed by David Morley Architects, has a sunken, low-profile shape and a curved green sedum roof to minimise the environmental impact of the building.

Explore the construction of the Hurlingham racquet centre at www.metsawood.com/references

Images: http://databank.metsagroup.com/l/wvSdncKTw_Cs

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