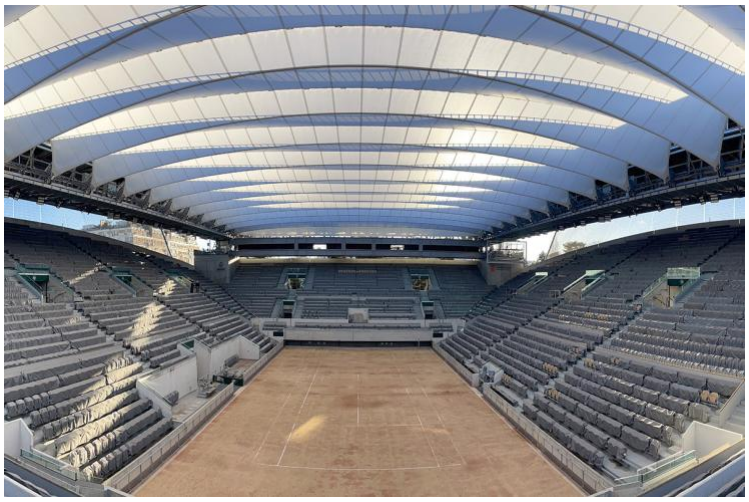






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The Suzanne Lenglen Court

Location : Stade de Roland Garros, Paris XVI

Architect : DPA - Dominique Perrault Architecture

Client : Fédération Française de Tennis (FFT) & Société de Livraison des Ouvrages Olympiques (Solideo)

Package : Structure et enveloppe

Scope : Conception de la structure, de la toile et des façades.

Date : Concours : Décembre 2019 (phase 1), Avril 2020 (phase 2). Livraison : 2023

The French Tennis Federation launched a competition in 2019 for a roof for the Suzanne Lenglen Court to enable play to continue in the rain and at night, and to host boxing matches for the Paris Olympic Games and Paralympics in 2024.

The conception of this project lies primarily in a range of technical solutions in response to specific requirements. The main function of the new roof is to protect the court and all its spectator seats from rain. It must also provide protection from the wind, and manage shadows cast on the court so as to avoid disrupting play.

The proposed roof sits above the existing seating, with sufficient overhang, and comprises a mobile section in canvas, which is supported by a fixed section that also houses the equipment required for the use and storage of the mobile section. The project aims for maximum simplicity, its form dictated by the structural loads.

This clean, minimalist structure, fully visible, consists of a meticulous assembly of steel elements on a concrete structure. This new horizontal plane set against the existing curves of the surrounding seating highlights the geometry of the court.

The simplicity and repetition of the components used create a new balance that absorbs the addition of the new element, where nothing is superfluous. The new roof appears to float above the court, preserving the integrity of the existing volume.

The fixed section of the roof forms a U over the seating on three sides of the court (west, east and south), clearing open views to the north and the Bois de Boulogne when the roof is folded away. The east and west sides of the U, spanning 87 metres, house the rails and locking mechanisms for the mobile roof, while the south side forms the storage case for folding the roof away, and incorporates the winch and motor for manipulation.

In haute couture, pleated fabric for clothing allows for great freedom of movement with style and elegance. Approached like a piece of pleated fabric, the mobile roof of the Suzanne Lenglen Court unfolds, graceful and light-footed, above a solid frame. The relationship between the rigid steel structure and the flexibility of the mobile canvas contributes to the identity of the project, marrying mechanical precision with finesse of design.

Like a membrane, the lightweight roof is made up of a succession of 21 V-shaped modules of tensile canvas, continuously held between cables, to make up an overall surface area of 4800m2. Each module is about 5m wide and 44m long. When the roof is in use, the cables are tensioned and span in catenary with a permanent tension to take up rain and wind loads. A mobile beam is positioned along the north edge of the mobile cover for manoeuvrability when opening and closing. It is moved horizontally, unpleated along the rails, from south to north. As soon as it begins to open, the show begins.

Works reached an important milestone in mid-December 2022 with the installation of the steel structure (see video below in /FOCUS). This highly complex and unusual procedure involved sliding two lateral beams – each one 400 tonnes, 100m long and 18m wide – a distance of 25 metres onto their ultimate supports.

Begun in July 2021, construction of the roof will continue until March 2023 with the installation of the various mechanisms. The canvas mobile cover will be installed later, after the 2023 Roland Garros championships.

Design/ construction team:
Architect: Dominique Perrault Architecture /DPA Paris.
Co-consultants: T/E/S/S atelier d'ingénierie (structure), Choulet

(MEP/electrical and telecommunications), MECA (mechanisms), Lamoureux (acoustics, lighting), Eléments ingénierie (environmental).
Sub-contracted consultants: Mozaïc (infrastructure), Axio (quantity surveyor), Aur Blanc (BIM), Calq (site architect).
Contractors: Renaudat Centre Constructions (team leader, steelwork), Ramery (primary structure), Taiyo (canvas).

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