

# Groupama Stadium: the architectural challenge behind the Gones stadium

Groupama Stadium is an iconic sports venue, an ultra-modern stadium that has been a source of pride for the people of Lyon since 2016. The stadium will welcome the world's best footballers in the summer of 2024.

Jaillet-Rouby looks back at this architectural and technical challenge.

## About the «Groupama Stadium» project

Located in Décines, to the west of Lyon, the Groupama Stadium is crowned by a roof that houses the stands and forecourt, providing a shady, comfortable atmosphere while guaranteeing an **optimum view of the pitch** for all spectators.

The metal structure of the stadium is made up of **three complementary rings**: an outer ring, an opaque inner ring and a translucent inner ring. Each of them plays a crucial role in the functional whole.



## « Groupama Stadium » in numbers

- A metal roof of **56 000 sqm**
- **7 000 Tons** of steel
- **8 000 sqm** of available space

The firm Jaillet-Rouby was entrusted with the **design of the steel structure** from the preliminary study phase through to the execution study phase. This study also includes the design of the structure bearing the PVC membrane that gives the stadium its emblematic appearance.

« The complex geometry of the roof meant that we had to move very quickly to the 3D modelling phase in order to validate the feasibility of the architectural project. »



Najah Ayoub  
Director and partner  
at Jaillet-Rouby office

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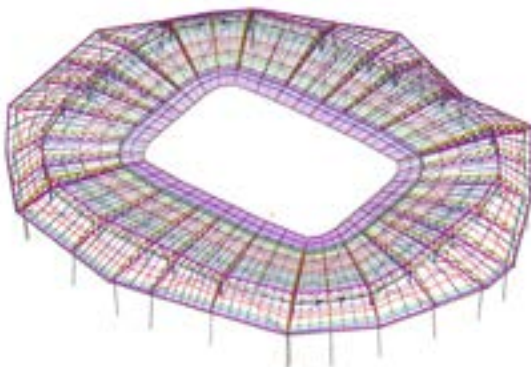
## Identifying BIM requirements

BIM, imposed by the requirements of the project specifications, proved to be an asset in resolving the challenges encountered throughout the project.

- **Schedule** management - tight deadlines that were met.
- Intensive collaboration involving **several architects and engineering offices** (350 companies in all).
- **Compliance with architectural constraints** relating to the shape of the site, in particular the complex geometry of the roof (60 meter overhang).
- Adaptation to **topographical constraints**, in particular the region's seismic risk.

## Project phases

- Opening of the **call for projects**.
- Selection of the **project management team** in which Jaillet-Rouby participated for the design of all the stadium's metal structures.
- Delivery of the **architecturale draft**.
- Predimensioning phase: launch of the first calculations and 3D models of the steel structures under **Tekla Structures**.



- Validation of support points by **civil engineering** on the basis of initial models.
- Transmission of models to MEP and concrete engineering offices via **IFCs** and iterations to adjust the models.
- Transmission of revised models to **launch the industrialisation** of metal structures.

### The software's advantages

The 3D models help manage the **breakdown of the structure** imposed by the location of the site and the lifting system adopted during the construction phase.

- Checking assemblies and **final revision** of 3D models.

# Trimble's advantages for Jaillet-Rouby



## Simplified industrialisation

- Optimises the **time taken to manufacture** parts and assemble them on site.
- **Reduces the risk of error.**



## Better collaboration between teams

- Provides **instant access** to the same data for all stakeholders.
- Facilitates information sharing and iterations via the **IFC**.



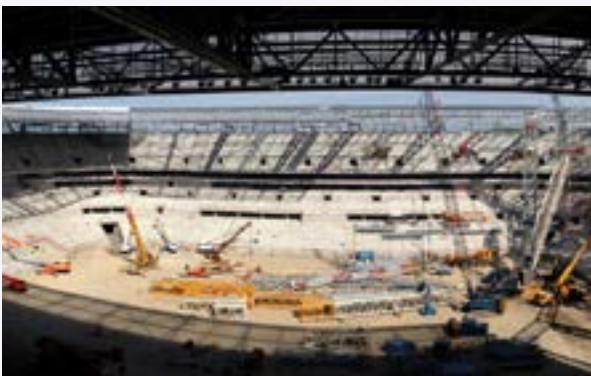
## Maintenance and life monitoring of the building

- Provides **greater precision** on mock-ups, making it easier to understand the design and simplifying the work of **other trades**.
- Particularly useful for **fixing projectors or screens** and replacing them on the metal structure.



## Interoperability with other solutions on the market

- Connects to all the other BIM tools on the market via **simplified data sharing** (IFC) and a host of functional gateways.
- Facilitates **collaboration** with all project stakeholders.



« This was a highly demanding project involving architectural, technical, structural and seismic constraints... BIM helped us to manage this complexity. »



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**Groupama Stadium is ready to write a new page in its history by hosting the biggest sporting events this summer 2024!**

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