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Press release

Pau, 7 May 2021

Major project to renovate Le Foirail

**The city of Pau opts for the innovative
Ap'Structure solution from Apave,
A unique solution for the real-time monitoring
and predictive maintenance of structures**

Le Foirail lies in the heart of Pau's historic trade hub and is the centrepiece of a major urban renovation project that will transform the former market into a dynamic culture and performing arts venue. As a link with the city's past, the new building will retain the 1,000 m² concrete dome, typical of 20th century architecture and a distinctive feature familiar to everyone in Pau. After full refurbishment, it will house a concert hall and the "*hall des pas perdus*" a public lobby area.

To meet the technical challenge of renovating the structure, the city of Pau called on the expertise of the Apave Group, a leading international risk management operator. For this extraordinary project, the group deployed its innovative AP'Structure solution, the first operational modal analysis system designed for buildings and infrastructure. It was used to monitor the integrity, health and support structure of the dome in real time for the duration of the consolidation and alteration works.

How it works.

Ap'Structure : state-of-the-art Structural Health Monitoring (SHM) technology for use in renovation projects

AP'Structure offers advanced SHM technology unlike any other on the European market. It is an innovative solution that uses the world's most sensitive smart

sensors requiring no outside energy source, no wired connection and which can be controlled remotely.

Installed directly on the structures, these sensors provided extremely accurate measurements showing how the structure responds to ambient vibrations or those **caused by the works**.

After processing using algorithms, the monitoring data was analysed to find out more about the structural condition of the building and to interpret its behaviour during the demolition and consolidation phases and, importantly, when modifying the support structure holding up the dome. **In fact, the project entails the removal of the concrete posts supporting the dome to open up the auditorium stage frame to a width of 18 metres.**

Three stages when the dome was monitored

1

Initial audit

5 sensors were fitted during the initial audit phase. During this first stage, the building's structural signature was defined and a clear picture of its behaviour emerged.

2

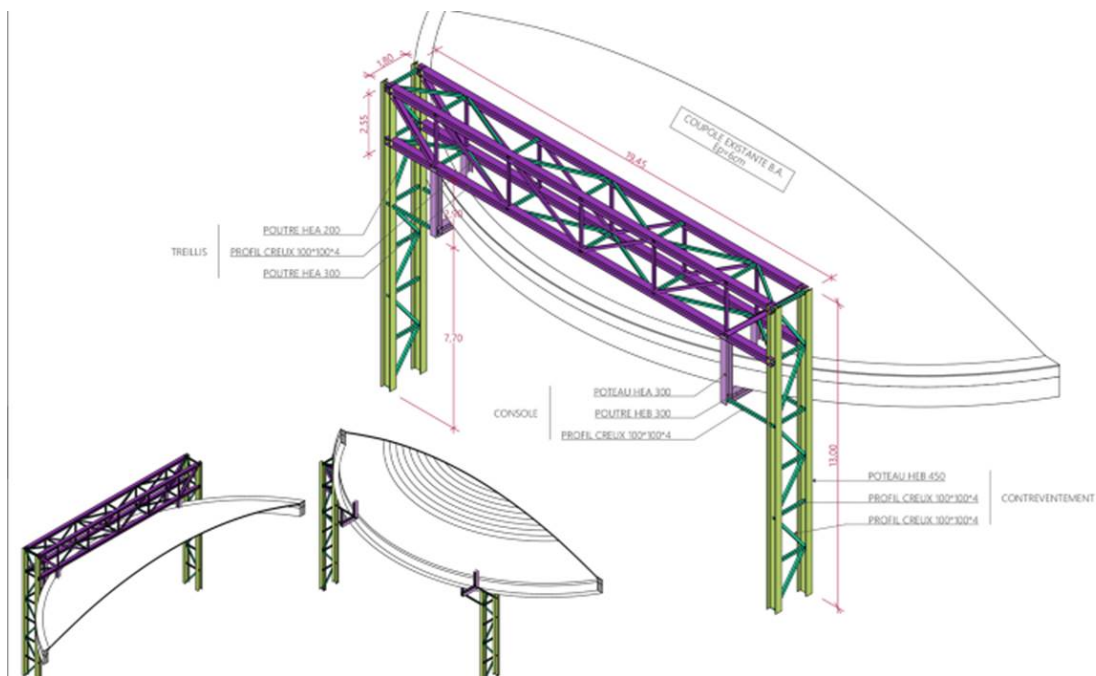
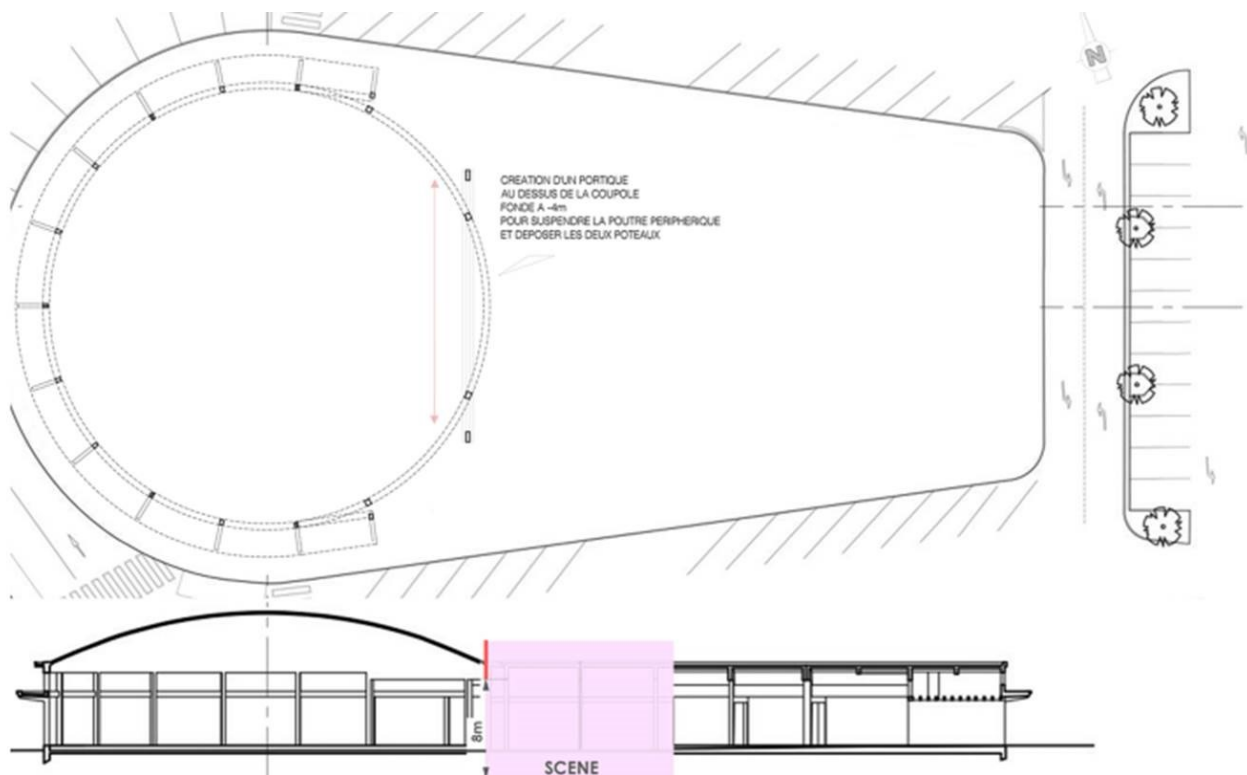
Continuous monitoring

Continuous monitoring of the dome, with real-time observation of the structure's behaviour and health.

3

Corrective measures

Various corrective measures were proposed, in line with the alerts recorded during monitoring.





Le Foirail in Pau before demolition



Le Foirail in Pau before installation of the gantry



Le Foirail in Pau after demolition and removal of two concrete posts (opening of the stage frame)

About Apave

Apave is an international group specialising in risk management with more than 150 years' experience. An independent company that recorded €881 million in turnover in 2019, Apave currently has 12,400 employees, 130 agencies in France, 170 training sites in France and abroad, and 18 test centres. Apave operates internationally in more than 45 countries. Nearly 500,000 customers already place their trust in Apave in France and abroad. www.apave.com

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