

The tensioned membrane roof of the Station in Nantes, built in 1991, was demolished in 2019, after 28 years of service.



Figure 1. Station in Nantes, April 2018, ©Marie-Hélène Cingal, <https://www.flickr.com/photos/24271543@N03/>

In 'Le magazine de la construction - N° 57 - Septembre 1993' the newly built tensile roof of the station in Nantes was discussed.

It is mentioned that a tensioned membrane roof can be considered between a steel deck (opaque, less expensive) and a glass roof (transparent but more expensive). The tensioned membrane has the advantage of light transmission and "reasonable" cost - in 1993 - between €215 and €260 per m<sup>2</sup> installed (the coated fabric itself accounts for about 20%). Maintenance is comparable to the cleaning of a glass roof: about 2€/m<sup>2</sup> per cleaning. It is also necessary to regularly check the tension in the membrane.

Engineer Marc Malinowski clarifies: "All our efforts are aimed at reducing the visual weight" and adds: "A canvas weighs less than one kilo per square metre, whereas it resists wind pressure of sixty kilos per square metre."

It was said at the time: “Maybe one day we'll be able to achieve the performance of a spider's web, which is 24 times stronger than polyester” and “Light translucency, lightness, soft and welcoming shapes, and above all speed of assembly, contribute to the significant development of this type of construction.”

Will the development of this type of construction stop?



*Figure 2. Textile roof from the inside, ©Pillet Denis*

From <https://www.bollinger-grohmann.com/en.projects.nantes-station.html>

“The new project involved transforming the two existing passenger buildings of the Nantes railway station (North and South) and creating a relatively transparent ‘mezzanine’ connecting them.

The project's main idea was an open-air station constructed over the tracks and incorporating shops and services. In addition, a multimodal exchange centre improved access to the station for pedestrians, cyclists and public transit users... The façades of the three buildings consist mainly of glass curtain walls, aluminium frames and siding.”



Figure 3. The new project with 'mezzanine', ©B. Collardey



Figure 4. The new 'mezzanine' with a polycarbonate roof, ©Jérôme Fouquet/Ouest-France

Marijke Mollaert

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