Veyrins Thuellin, 05.11.08

PRESS RELEASE

A Project by Mermet:
Pau chapel is converted into an auditorium thanks to the properties of Acoustis® 50

In view of the resonance characteristics and strong echo, how can a chapel be converted into an auditorium? This was the challenge taken up by acoustician Alain Tisseyre, who called in the firm Mermet, specialists in technical materials for solar protection, space fitting, signage and acoustics, to help him within this development project at Pau chapel.

It is an unusual development for a historical monument, calling for skilful design and use of the most highly specialized acoustics research. 14 panels of Acoustis® 50 by Mermet, installed within a high tension structure, will from now on allow the chapel to hold concerts for religious and orchestral music.

The problem of sound in large spaces is not a new one. It is an even bigger issue in religious buildings such as this particular 19th century construction, where the total volume of 4,200 m3 is very high in proportion to the floor area.

In partnership with the architecture department at Pau Regional Council, the acoustician and sound expert Alain Tisseyre came up with this unique installation. Refusing to reduce the volume, as the very essence of acoustic quality in such places is directly linked to the size of the acoustic area, he decided to add a number of reflecting surfaces.
To begin with, the installation at different angles and slopes of:

- 4 Acoustis® 50 panels on the aisle ceiling,
- 2 smaller panels in the transept,
  designed to provide perfect acoustic correction and which:
- preserves the chapel's architectural appearance for the audience. The installation of the panels does not alter or hide the structure of the nave from the perspective of the audience,
- provides complete coverage of the upper reaches of the aisle stage-side, thereby increasing the precision and spatialization of the sound image. Sound is no longer concentrated in the chancel and reverberation is reduced.

And finally, on top of these 6 high tension panels, 8 others were installed laterally, fitting onto the alcoves in the side walls of the aisle.

In such settings, this new innovative material by Mermet offers a number of advantages:

- **clear improvement in acoustic quality**:
  - the patented weave of Acoustis® 50 is the only one which enables the material to function on its own, i.e. without adding any foam,
  - and the material's absorbent properties reduce the effect of delayed acoustic reflections from the vaults without causing distortion, thereby creating acoustic balance.
- **high mechanical resistance**. All Mermet® materials are researched and tested (for breaking, tear and fold resistance) to ensure they are effective in a high tension application, in this case the panel tension is relatively high (several hundred kilos),
- **aesthetic qualities**. Its mechanical properties enable it to be shaped like a sail which gives a much more subtle appearance.
  Additionally, the choice of white material allows an indirect lighting effect to be created (by adding spotlights around the stretched panels).
- **safety guarantee**. With a non-flammable fire classification and certification to Greenguard® and Oeko-tex standard 100, Mermet® fabrics meet all the requirements for use in public areas.

It is a completely new environment for finding a project using Acoustis® 50 fabrics and yet... thanks to the experience of the Mermet company and Alain Tisseyre, the chapel is now able to hold concerts which are normally held in a proper auditorium. It is an original idea which might provoke a little envy!

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MERMET

Photos / Fotos : Shading Systems - DT Structures - Resstende - Architen Landrell Ltd

Product data sheet

References

- **Acoustis® 50**, colour 0202 White

Acoustic absorption coefficient α_w: 0.35 to 0.8
Fire classification: M1 (France), Euroclass B,s3,d0 (EU)
Eco label: Oeko-tex standard 100, GREENGUARD®
Weight per m²: 410 g **Thickness:** 0.70 mm

Breaking strength:
Warp > 150 daN/5cm
Weft > 150 daN/5cm
Tear resistance:
Warp ≥ 5 daN
Weft ≥ 4 daN
Resistance to fold:
Warp and weft > 20 daN/5cm

Colour fastness to light: 7/8 (reference scale of 8 colours) white not rated
Width: 250 cm

Construction: Welding (thermal, high frequency, ultrasound) or stitching
Marking: Digital printing/Silkscreen printing/Paint
Standard packaging: Rolls of 33 ml
Guaranteed 5 years

Quantity of fabric: 14 panels of 257 m² in total:
- 225 m² in sail-form: 4 panels on aisle ceiling, 2 on transept ceilings
- 32 m² on walls: 8 panels in transept side areas

The main advantages of Acoustis® 50:
- Excellent acoustic absorption: enhanced conversational understandability
- No thermal resistance giving a healthy atmosphere even in humid environments
- Non-fibrous, no risk of inhalation
- Thin and light, easy to install, transport and store
- Very good mechanical resistance when stretched
- Large dimension solutions, the Acoustis® 50 fabric system can be welded
- Appearance: 12 colour schemes available, printable
- Very hygienic, can be washed and vacuumed, the surface absorption agent avoids all risk of hidden damage and guarantees long durability

Participants

Design: PRAT

Manufacturer: Voilerie du Sud-Ouest SAS

Installed by: PRAT / Régis Alain

Acoustician: Alain Tisseyre