

**BOSE® PROFESSIONAL SYSTEMS DIVISION**  
**SUCCESS STORY - LÖFBERGS LILA ARENA, KARLSTAD**

**The venue**

A hockey arena in the city of Karlstad, home to one of Sweden's most successful ice hockey teams, Färjestad BK.

**The challenge**

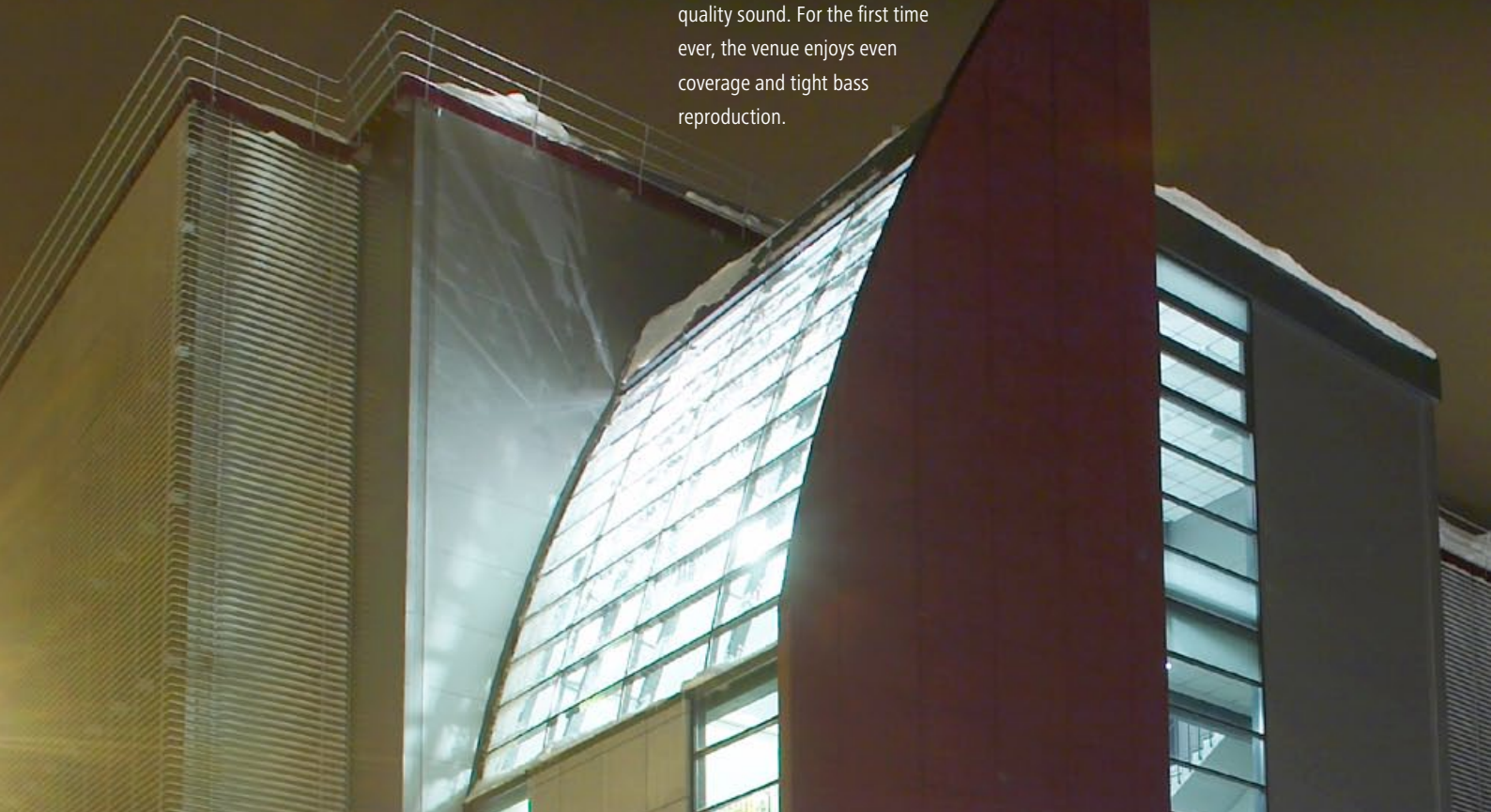
Design a sound system that overcomes a very difficult acoustic environment - with a cathedral-like reverberation of five seconds - and delivers controlled performance over the entire frequency range.

**The solution**

Configure BOSE® PANARAY® LT speakers in distributed clusters to cover the entire seating area. For mid/high frequencies, deploy an engineered array that provides constant directivity from the clusters. Use a compound bass array to steer low frequency sound to the seats.

**The result**

A flexible sound system that delivers good speech intelligibility and high quality sound. For the first time ever, the venue enjoys even coverage and tight bass reproduction.



**BOSE® PROFESSIONAL SYSTEMS DIVISION - COMPLETE COMMERCIAL SOLUTIONS**

Customer focus

Acoustic design

Listen before you buy

Project management

Products and accessories

Installation services

After sales services

**Löfbergs  
Lila  
ARENA**

**BOSE®**





## A GREAT ARENA NEEDS GREAT SOUND

The venue

The challenge

The solution

The result

Located close to the centre of Karlstad, Löfbergs Lila Arena is the home of Färjestad BK, one of Sweden's most celebrated ice hockey clubs. In addition, the 8.250 seat arena is used for a variety of concerts, fairs and corporate events.

Originally constructed in 1957, the facility has been the subject of various refurbishment programmes over the years, and a complete renovation

was undertaken in 2001. However, although the rebuilding programme propelled Löfbergs Lila Arena smartly into the twenty-first century in most respects, there was disappointment at the performance of the sound system installed at that time. The criticisms included uneven coverage, poor speech intelligibility and muffled low frequency sound. At the root of the problem was the disadvantageous

acoustical environment. The arena's walls and roof are metal, the shield around the ice is made of plexi glass, and there is a reverberation of five seconds – much like you would find in a cathedral.

Conventional audio technology was proving unequal to the challenge.





## A SOLUTION WITH GUARANTEED PERFORMANCE

The venue

The challenge

The solution

The result

**In 2003 the arena's management contacted a local Bose Pro Partner, and invited proposals for a replacement sound system.**

The new system must overcome the arena's unhelpful structure, and the noise of thousands of screaming hockey supporters, to deliver clearly intelligible PA announcements and play music to stimulate spectator excitement.

Using BOSE® MODELER® audio planning software, the

design team developed a solution deploying BOSE® PANARAY® LT loudspeakers in distributed clusters to give audience-wide coverage.

For mid/high frequencies, PANARAY® LT4402-II speakers are used in an engineered array to provide constant directivity from the clusters. For low

frequencies, a compound bass array with PANARAY® MB4 enclosures aims sound to the seats.

Lennart Åhs, chief executive of the arena, was able to hear a realistic demonstration of this proposed sound system in action, thanks to patented BOSE® AUDITIONER® simulation technology. Bose guaranteed that the installed system would perform to the same high level.





**"WE HAVE A MOST OUTSTANDING SOUND SYSTEM."**

The venue

The challenge

The solution

The result

Löfbergs Lila Arena's new sound system has proven a great success. Lennart Åhs reports: "Even today, two years after the installation, people say 'What a crisp and intelligible sound' and 'We hear the music very well, yet at the same time it's not too loud', and their comments give us a good feeling."

Lennart admits that the brief had been a tough one. "We were

looking for a sound system that would be a world-beater," he says "and the combination between quality and price was very crucial to us too." Reassurance came via the BOSE® AUDITIONER® simulation: "To be able to listen to the sound, and to have that performance guaranteed after the

installation, was something very positive." He further points out: "The system is very user friendly and easy to understand. This is important to us when we have events that don't include the use of DJs." Lennart's final verdict: "I cannot even today find anything we would have done differently concerning our high demands. In other words, we have a most outstanding sound system."



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audio requirements – fully supported by the unique BOSE®  
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