

**BOSE® PROFESSIONAL SYSTEMS DIVISION
SUCCESS STORY - THE HALLENSTADION, ZURICH**

The venue

The Hallenstadion is an internationally famous sports arena in the Swiss municipality of Oerlikon, near Zurich. First opened in 1939, it has undergone a radical redevelopment as Switzerland's largest multi-purpose arena and conference complex.

The challenge

Design and install a complete audio solution with the highest standards of quality, versatility, ease-of-use, safety and reliability.

The solution

Use BOSE® MODELER® audio planning software and BOSE® AUDITIONER® simulation technology to determine the optimum choice of BOSE loudspeakers and to influence the finish and acoustical efficiency of the arena. Provide flexible, user-friendly control from a single command centre.

The result

Together with the Authorised Pro Partner, BOSE implemented a solution so effective it prompted the Hallenstadion's Director, Gérard Jenni, to comment: "...we have in our stadium a sound system at our disposal that deserves its name."

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

BOSE®



THE HALLENSTADION: SWITZERLAND'S PREMIER MULTI-FUNCTION ARENA

The venue

The challenge

The solution

The result

What have Bob Dylan, Pink Floyd, The Who and U2 in common with magician David Copperfield and the Men's European Handball Championships? The answer is that, over the years, they have all been star attractions at the Hallenstadion in Oerlikon, near Zurich.

The Hallenstadion is Switzerland's largest multi-function indoor arena,

with a capacity of almost 13,000 and a total of about one million visitors a year. Designed by Karl Egender and first opened in July 1939, it was hailed as a triumph of functional elegance and quickly became the country's leading venue for a wide range of attractions.

Besides being the regular home of the ZSC Lions ice hockey team, the facility has a proud history of hosting

important sporting and cultural events, including the 1998 Ice Hockey World Championships and the annual WTA Zurich Open tennis tournament.

However, through the 1990s, as the Hallenstadion approached its 60th anniversary, the realisation grew that age was taking its toll.

The old stadium was beginning to look tired and was falling well

short of 21st century standards of comfort, convenience and safety.

Drastic measures needed to be taken to secure the famous site's future as a major venue.



CLEAR AND UNDISTORTED MUSIC AND VOICE DELIVERY TO EVERY SEAT IN THE MAIN ARENA

The venue

The challenge

The solution

The result

In 1999, a major redevelopment project – “Hallenstadion 2000 plus” – was launched by the stadium managers to transform the much-loved but crumbling old edifice into a state-of-the-art showpiece.

The project encompassed rebuilding the 13,000 seat multi-purpose arena to offer improved comfort, sight-lines and acoustics, and adding

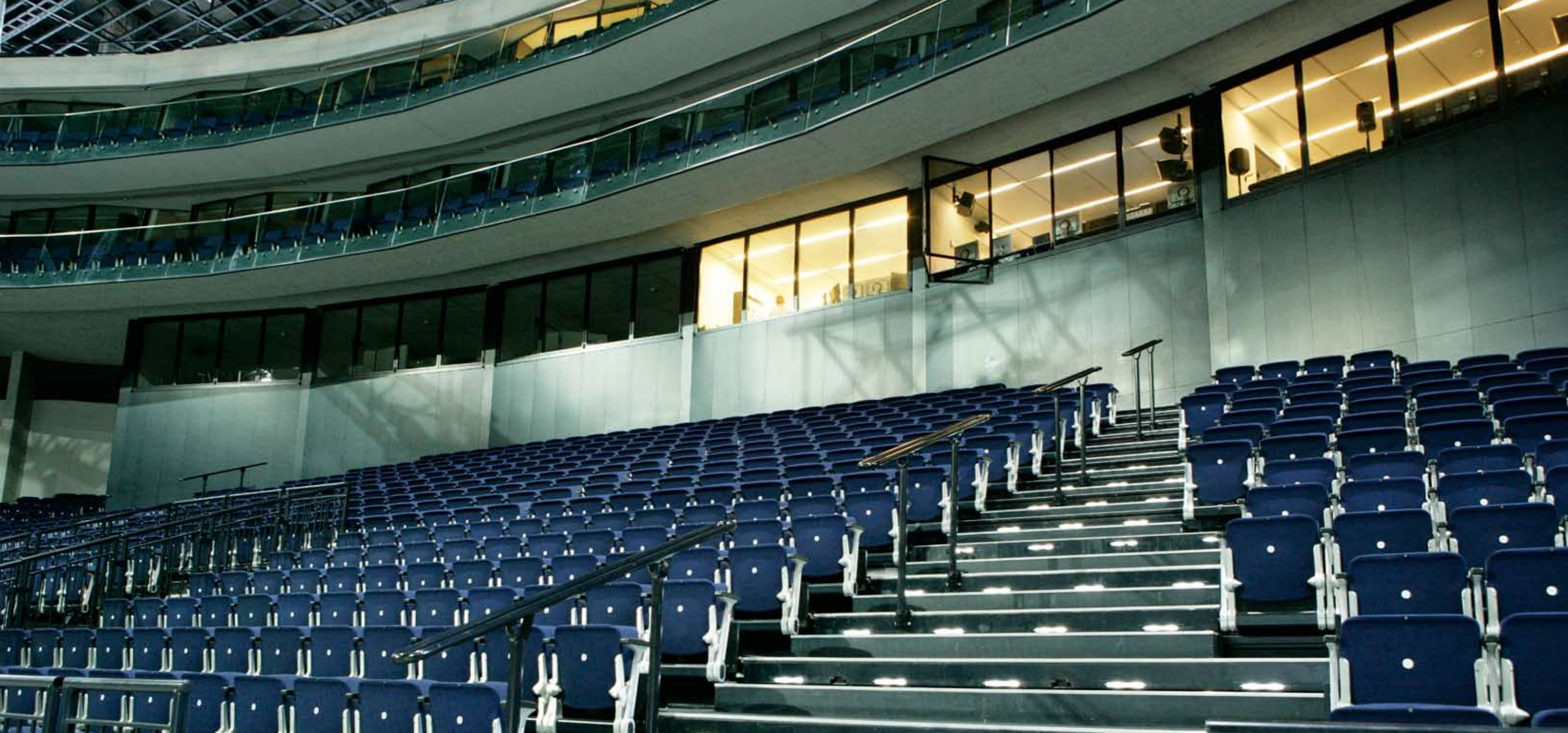
corporate entertainment suites, restaurants and extensive conference facilities.

Sound quality was to be a key priority. In inviting Bose Switzerland to design a complete new sound system for the complex, the Hallenstadion management emphasised the need for the highest standards of quality, versatility, ease-of-use, safety and reliability.

Their requirements included clear and undistorted music and voice delivery to every seat in the arena. Clear voice and music output in the foyer, halls and lounge areas. High quality music and speech in the restaurants, even at low background volumes. Effective, user-friendly amplification systems in the conference rooms. And compliance with stringent voice evacuation requirements throughout

the entire building plus outside entry area.

A tough challenge, yet one which Bose Switzerland was uniquely equipped to meet.



IN THE INTEREST OF ACHIEVING SUPERIOR ACOUSTICS BOSE HAD A DIRECT INFLUENCE ON THE INTERIOR DESIGN OF THE ARENA

The venue

The challenge

The solution

The result

Using proprietary BOSE® MODELER® audio planning software, the Bose Switzerland team constructed a computer model of the yet-to-be-completed arena, and studied the behaviour of different virtual loudspeaker configurations within it.

Award-winning BOSE® AUDITIONER® audio simulation technology then enabled the Hallenstadion management to hear a realistic

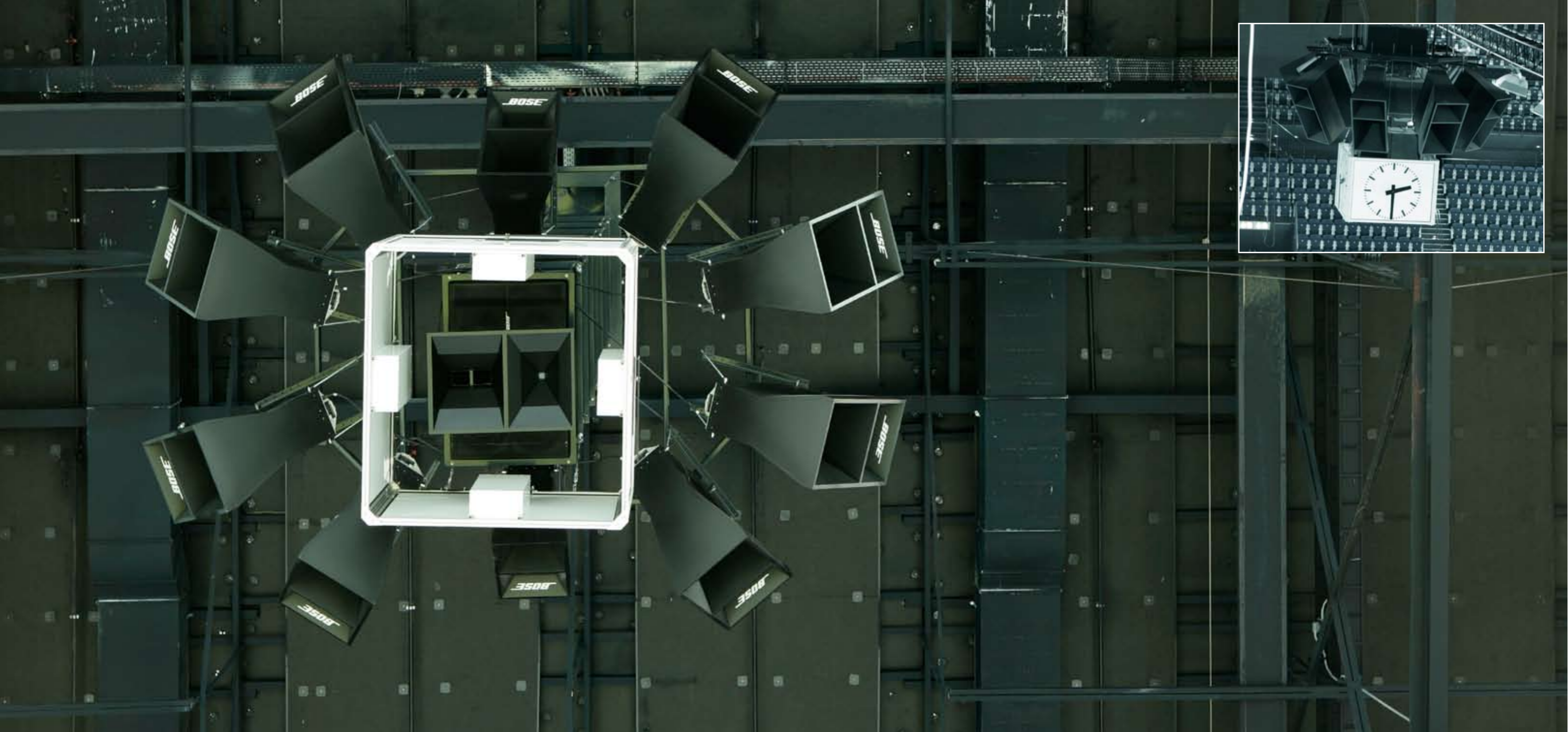
demonstration of the proposed sound system in action.

By simulating the effect of using alternative ceiling constructions, wall surface treatments, seating arrangements and seat materials, Bose had a direct influence on the interior design of the arena. Following the AUDITIONER demonstration, the managing architects agreed to put many of the Bose planners' recommendations into

practice in the interests of achieving superior acoustics. The changes included sound-absorbent panels for the rear walls, and softer material rather than hard plastic for the majority of seats.

Encouraged by the AUDITIONER demonstration, the Hallenstadion management duly placed an order for the new sound system with Bose Switzerland. As Stephan Gerber, Manager, Professional Systems,

confirms: "The availability of our MODELER software and AUDITIONER playback system was a major factor in their decision. These tools enabled the decision makers to hear the sound system before the first cut of the shovel."



THE PRINCIPAL CLUSTER POSITIONED IN THE CENTER OF THE ARENA

The venue

The challenge

The solution

The result

For the vast and lofty open spaces of the main event arena, a long-throw loudspeaker system of the highest quality and reliability was required.

The solution was based upon the BOSE® PANARAY® LT family of speakers, with installation entrusted to a locally based BOSE Authorised Pro Partner.

In all, the arena's loudspeaker system comprises 50 PANARAY LT mid/high frequency cabinets and 16 PANARAY LT MB24 bass modules, arranged in one principal cluster and four peripheral clusters.

In line with the outcome of the AUDITIONER® demonstrations using alternative ceiling constructions, wall surface treatments, seating arrangements and seat materials, the performance of this speaker

configuration fulfils the client's demand for clear, undistorted music and voice output, enjoyable from every seat in the arena.

Shortly before the re-opening of the Hallenstadion, Gérard Jenni, Director of Hallenstadion AG, was listening to a sound demo featuring "We Are the Champions" by Queen. Asked if the sound was as good as he had expected,

Mr Jenni exclaimed that the system was beyond good, saying: "the result is fantastic."



CLEAR, SATISFYING SOUND IN THE IMPRESSIVE FOYER

The venue

The challenge

The solution

The result

There is much more to the redeveloped Hallenstadion complex than the main arena alone. The public areas include a magnificent foyer, spacious halls and walkways, and welcoming restaurants and lounges. The styling is contemporary and the ambience is upbeat.

Sound is a major contributor to this buzzing, energy-charged

atmosphere, and the challenge was to deliver pleasing music and clear voice announcements throughout these busy spaces with their varying ambient sound levels.

More than 100 BOSE amplifiers drive the entire sound system, which includes more than 900 speakers. For the halls and restaurant area, the loudspeaker installation consists of BOSE® 302, BOSE® 402*,

BOSE® Free Space® 32SE, BOSE® Free Space® 3, and BOSE® Free Space® 16 speakers - all carefully positioned units.

BOSE® Free Space® 32SE speakers are precisely placed throughout the Hallenstadion as part of the voice evacuation system, and BOSE® 802* speakers serve the outside entry area as part of the same emergency system.

There are also BOSE® MA12 speakers installed in the impressive foyer. These elegant speakers are 'hidden' in the support walls of the first floor.



CONFERENCE ROOMS WHERE EVERY WORD IS HEARD

The venue

The challenge

The solution

The result

Fully equipped, purpose-designed conference rooms are available within the complex for meetings, presentations, receptions and other events. An essential ingredient of any successful conference venue is an effective, easy-to-use sound system for voice and music. Again, Bose technology provides a unique solution.

Each conference room at the Hallenstadion boasts a BOSE® L1 PERSONALIZED AMPLIFICATION SYSTEM™. This presents a radically different approach to the provision of high performance sound. It uses innovative BOSE® L1 CYLINDRICAL RADIATOR™ loudspeakers to overcome the all-too-common problems of uneven sound dispersion, speaker directionality, unintelligible speech and over-loud music.

The L1 CYLINDRICAL RADIATOR loudspeaker creates a very wide sound stage, ensuring that everyone in the room can hear a presentation clearly and comfortably. And the sound is evenly dispersed, so that volume is consistent from the front of the room to the back.

Another advantage of the BOSE® PERSONALIZED AMPLIFICATION

SYSTEM™ is its portability. With its light weight, a BOSE PERSONALIZED AMPLIFICATION SYSTEM can easily be moved to other rooms by Hallenstadion staff. Set up is simple and takes no more than two minutes.



STYLISH 302A SPEAKERS PROVIDE QUALITY SOUND AT ALL VOLUME LEVELS IN THE TOPLINE RESTAURANT

The venue

The challenge

The solution

The result

Two of the core requirements for the Hallenstadion's new sound system were versatility and ease-of-use.

A programmable mixing console allows most important arena events – such as ice hockey, tennis, concerts, operas and exhibitions - to be controlled directly from the command centre. Frequent events may be pre-programmed and accessed via touch-screen.

The command centre and adjacent security room are equipped with dedicated voice units for public announcements, hockey games and emergency evacuation, and the restaurants and corporate boxes are each completely controlled by an AMX Room Control System with touch-screen control.

Reliability for the entire audio system and voice evacuation system

is ensured by continuous automatic monitoring both on-site and remotely from a control room in Zurich.

At the end of the day, what does the client think of the facility's new audio system? The verdict of the Director, Gérard Jenni, is: **"...we have in our stadium a sound system at our disposal that deserves its name."** The name in question

- Bose – will be prominently displayed on screens, video walls and posters throughout the Hallenstadion for the next four years.

Hotel, restaurant, large venue, stadium, shopping centre
– whatever the situation, BOSE® Professional Systems Division
can provide a successful total solution for your business
audio requirements – fully supported by the unique BOSE®
Performance Guarantee.

So talk to us, and tell us what you wish to achieve. Let us
share your vision for your business or organisation, and allow us to
help you to reach that goal.

We look forward to working with you to produce and deliver
a total sound solution. And to proving that, whatever and wherever
the setting, BOSE means 'Better sound through research'.



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