

Rebirth of a Live Sound Icon

The legendary Kuppel Basel has been completely reimaged as an architecturally and acoustically outstanding venue: impressive room acoustics, powerful AV technology, and excellent sound insulation come together to create an event space that sets new standards both sonically and visually in the heart of the city.

Text and Photos: Dirk Noy, WSDG

The new Kuppel Basel rises beneath a majestic dome near the center of Basel. What was once a legendary, tent-like nightclub - famous for great parties but poor acoustics - is now a purpose-built, permanent venue brought to life through seamless collaboration between architects, engineers, and AV integrators. WSDG, a globally recognised acoustic design firm, led the project's acoustic planning - from room and electroacoustics to sound isolation. With decades of experience in both live and listening spaces, WSDG ensured optimal sound experience without disturbing the surrounding environments.

"There are many unusual elements in this project," says Gabriel Hauser, WSDG Partner and Senior Acoustician. "The dome concert hall is just one, although the most prominent, element of a broader campus that includes the foyer, a band rehearsal room, a restaurant, a club, and office spaces. Additionally, the dome must accommodate a variety of users with very different needs."

Striking Roof

The venue, designed by *VécseySchmidt Architektinnen*, consists of two buildings: the dome with rehearsal rooms in the basement and an annex that houses a restaurant, offices, and the "Nest Klub" in the lower floor. While the original Kuppel was a temporary structure, the new venue was envisioned from the start as a permanent location with high-quality visual and acoustic appeal. "We wanted to reference the old Kuppel, which had a distinctive tent shape," says the *VécseySchmidt Architektinnen* team. "The venue is spanned by a bridge and visible from above, so it was very important to have a striking roof. That's how the idea of the dome structure was born."

Soundproofing in the Heart of Basel

The location posed a major acoustic challenge. “The building is in the middle of Basel, right next to a residential area,” explains Hauser. “We had to ensure the sound isolation was adequate for rock and pop concerts as well as for the dance club playing house, electro, and dance music, so as not to disturb the neighbors.” During a show, no 10-second interval may exceed a defined noise threshold. “That can be tricky, as the maximum permissible level indoors is 100 dBA. But if neighbor complaints require volume reduction, the experience could be ruined.”

To meet these demanding requirements, WSDG designed an internal concrete shell equipped with a balcony and stage, surrounded by a mechanically decoupled outer shell mounted on custom-engineered springs to isolate it from the inner core. “We placed another structure over the concrete shell - almost like a cheese dome,” says Hauser. “The most important thing is that the outer shell makes no mechanical contact with the concrete core. Otherwise, the soundproofing would have failed.”

Once the double-shell structure was complete, it was tested with a hammer mechanism, which is a device that excites the internal concrete with small hammers. “We used a stethoscope on the outer facade to check for any of these mechanical noises, and there were none. The decoupling worked perfectly.”

Designed for Experience

From the moment you enter the 40-square-meter foyer, sound and atmosphere take center stage. “The bar is located right at the entrance. The unisex toilets on the ground floor were even designed to accommodate a DJ setup,” says Hauser.

WSDG specified Coda Audio across the venue, starting with U12i subwoofers integrated into the seating benches in the foyer, supported by D8 coaxial speakers on the walls. The main concert hall upstairs features a parquet floor with a 390-person capacity, a 30 m² stage, and a balcony for another 300 guests. Coda APS arrays hang to the left and right of the stage, each paired with compact, high-performance APS subwoofers. An array of SCN-F subwoofers beneath the stage handles low-end coverage.

“We wanted a subwoofer array under the stage, but the stage couldn’t be too high for architectural reasons,” says Hauser. “We found a very compact yet powerful Coda speaker and were able to install five subwoofers in the desired position.”

The audio system - comprising Coda N-APS, HOPS8, Cue-Two monitors, Linus amplifiers, Symetrix DSP, Dante network, Yamaha CL4, and microphones from Shure, DPA, and Sennheiser - was selected for its performance, flexibility, and acoustic integrity.

Even the Panasonic video projector had to meet acoustic standards. “The projection wall is the only concave surface, which would normally create focusing effects, so it couldn’t be acoustically reflective,” Hauser explains. “We wanted the wall to be absorbent. That’s why we used micro-perforated wood that meets both projection and acoustic requirements.”

Lights, Motion, and a Giant Mirror Ball

System integrator Auviso oversaw the audio installation, while event specialists Konnex handled lighting, video, and DJ systems. “We used our experience from live events to anticipate future scenarios and install an infrastructure offering maximum flexibility,” says Gabriel Kreis, Managing Director of Konnex. The company installed both architectural lighting and dynamic options for stage and ambient lighting.

Martin MH-5 profile spotlights, Robe LEDBeam 150s, and a hybrid MA Lighting system give operators the option to switch between internal control and touring lighting consoles. “We had to make the best use of space,” says Kreis. “Depending on the event, the focus might be on the stage or on the whole room.” The crown jewel: a 1.4-meter, handcrafted mirror ball, custom-made by Konnex and assembled directly in the hall due to narrow access.

"Nest Klub": A Resonant Underground

Beneath the annex, the “Nest Klub” offers a completely different vibe. “You open a door at the back of the smaller building, go down a dark staircase, and everything is black,” say the *VécseySchmidt Architektinnen* team. “It’s still a fantastic experience. The lighting is great, the acoustics are great, and the DJ setup is excellent.”

Konnex installed KV2 Audio SL series stacks flush with the acoustically treated walls, along with EX28 monitors, Pioneer DJM-A9, CDJ-3000s, and Technics turntables. The lighting includes Showtec moving heads and a grandMA3-onPC system.

Although the “Nest Klub” is located beneath offices and a restaurant, it remains acoustically isolated - thanks again to effective soundproofing through acoustic decoupling.

The success of Kuppel Basel lies in its rare blend of technical excellence and creative collaboration. “The collaboration was really smooth: if I said, ‘We need to watch out for this or that,’ the architects usually already knew what I was talking about,” concludes Hauser. “We really felt like it was a ‘one project, one goal,’” adds Kreis. “It was something truly special.”