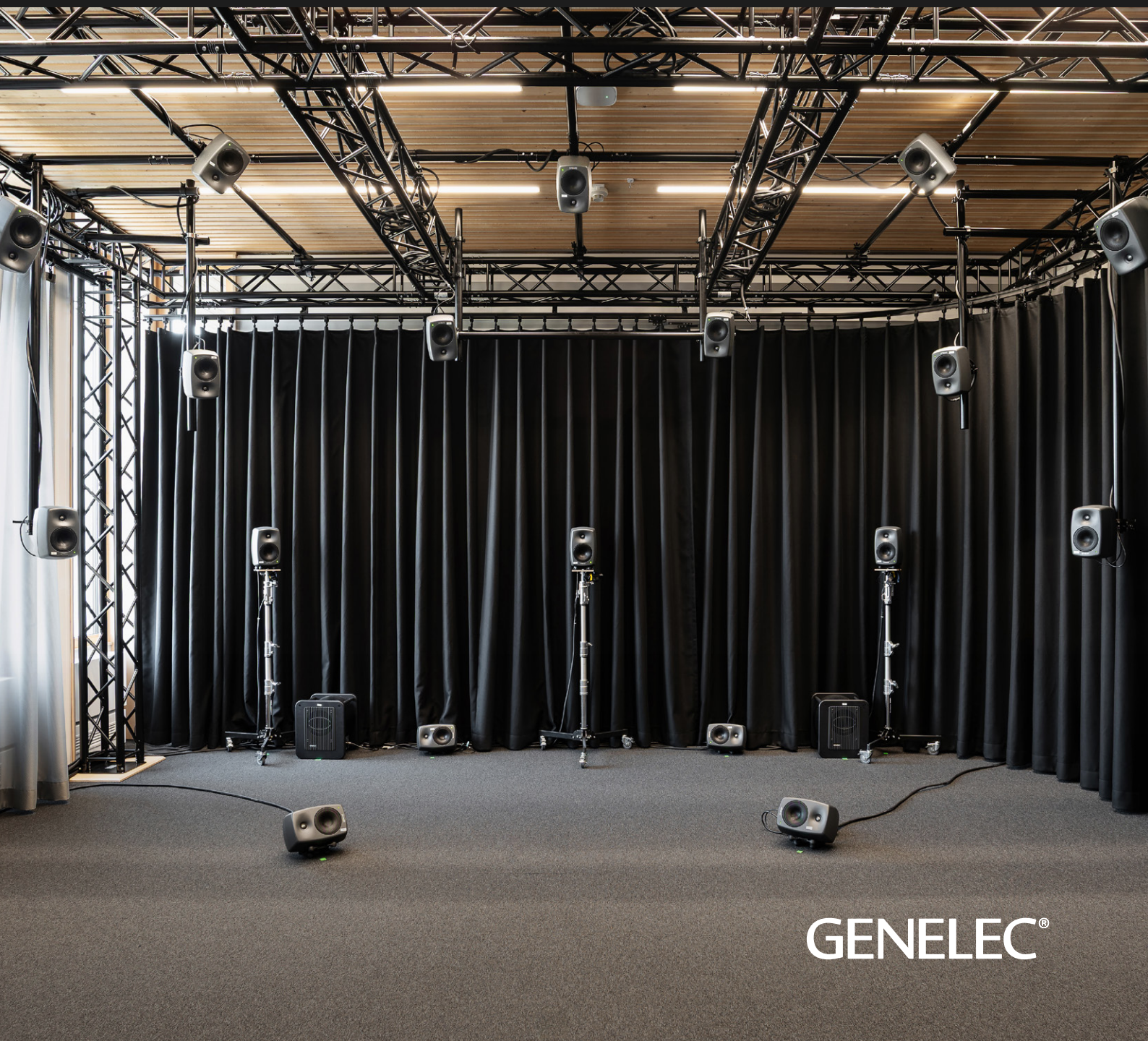
CASE STUDY

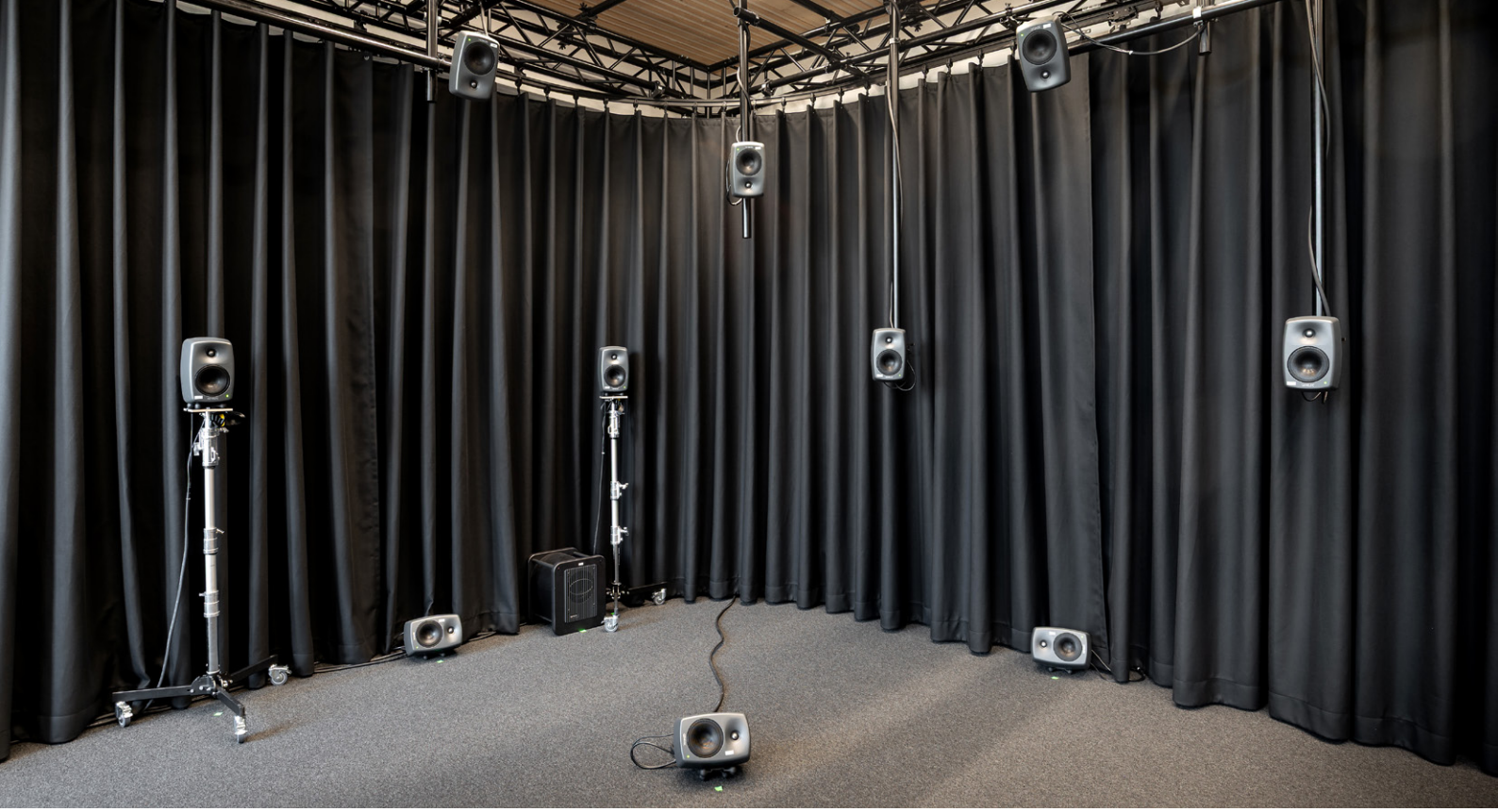
KreativInstitut.OWL

DETMOLD, GERMANY

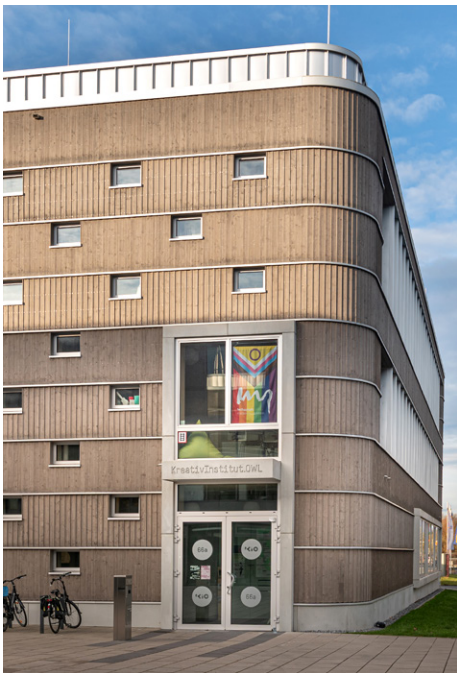
Genelec brings musicality to KIO's new Spatial Audio and Arts Lab



GENELEC®

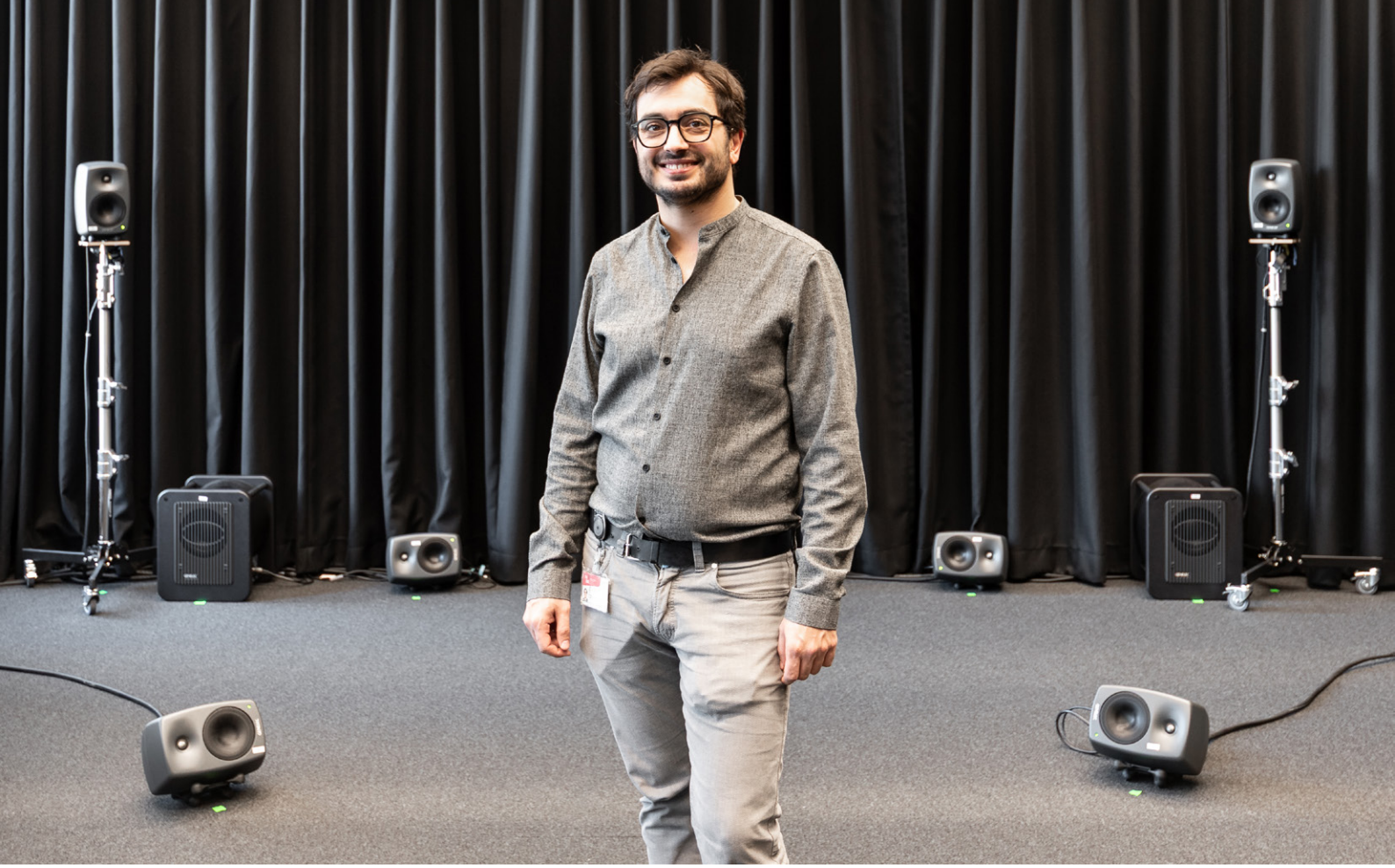


THE BACKGROUND



It may be compact in size, but when it comes to culture and education the German city of Detmold packs a serious punch. Framed by the picturesque beauty of the Teutoburg Forest, the city has recently become home to the KreativInstitut.Ostwestfalen-Lippe (KIO), which brings together the disciplines of digital media production, composition & sound design, digital humanities & music informatics, as well as artificial intelligence. The beating heart of KIO is the Spatial Audio and Arts Lab, a brand new facility powered exclusively by Genelec monitoring.

Situated on the Kreativ Campus Detmold, KIO serves as a centre of science and research and is jointly shared by Paderborn University, Detmold University of Music, and the OWL University of Applied Sciences and Arts. In bringing together creative minds from business and science, the institute is unique in Germany for its huge breadth of expertise. “For students, KIO offers enormous opportunities, as they can work with technologies that are rarely available together in one place,” explains **Sascha Etezazi**, KIO’s Artistic Research Associate in Composition & Sound Design.



THE CHALLENGE

KIO's Spatial Audio and Arts Lab (known as S.A.A.L. – an eloquent wordplay on the German word for 'music hall') functions as a high-resolution immersive monitoring room with a clear musical focus, allowing the mixing, production and presentation of content by students and researchers alike. As a creative playground for music, sound design and game audio, S.A.A.L. really takes some beating. Additionally, since KIO has a strong focus on the fast-growing area of Extended Reality (XR), S.A.A.L. also facilitates interdisciplinary and artistic research projects that encompass real-and-virtual combined environments, including VR, AR, and MR.

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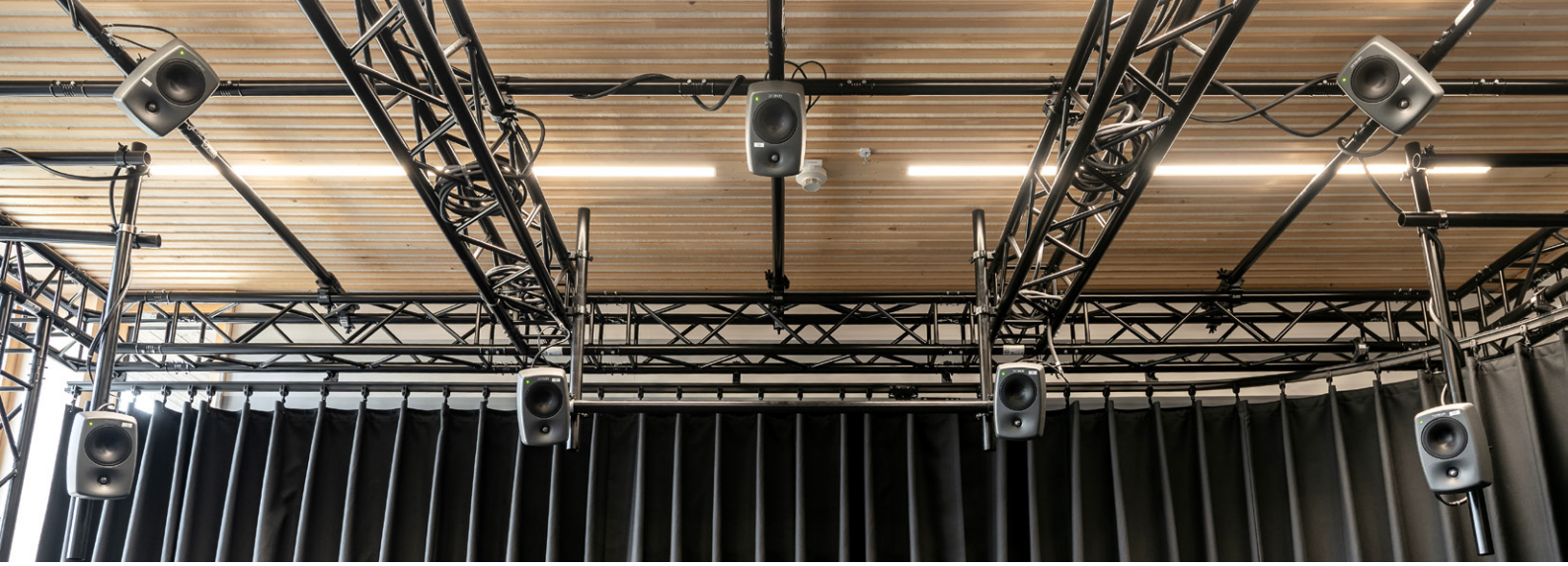
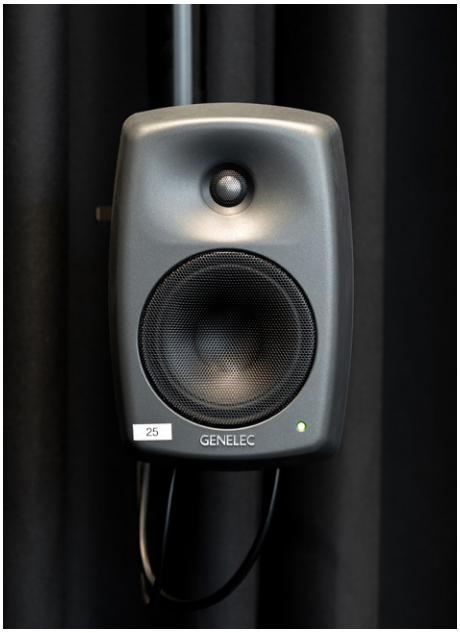


THE SOLUTION



“S.A.A.L. was designed as a high-resolution Ambisonics monitoring space, enabling full-spherical reproduction between the 5th and 6th order. At the same time, the room is fully compatible with channel-based formats and common consumer formats such as Dolby Atmos,” comments Etezazi. In designing the room, Etezazi worked closely with **Jörn Nettingsmeier**, consultant for immersive electroacoustics/ambisonics. With Nettingsmeier planning the truss structure, acoustic curtains and electroacoustics, Etezazi and his team defined the precise positioning and setup of the monitoring system.

Etezazi’s previous experience with Genelec played a crucial part in the monitor selection process for S.A.A.L.: “I’ve used a pair of Genelec 8330 SAM monitors in my own home studio for some years now. Having worked with them extensively, I could see that the controlled directivity and compact design of Genelec nearfields were perfect for the room here at KIO, allowing us to position a large number of monitors flexibly.”

As a result, Etezazi and the KIO team specified a monitoring system comprising 43 Genelec 8030C two-way monitors – configured as a 360 degree spherical array measuring 7m × 6m × 3.8m – complemented by four 7050C subwoofers. “S.A.A.L. is a relatively large room, so we wanted to provide a wide listening area

where several people can also listen comfortably while standing," says Etezazi. "The 8030 model ticked the boxes for directivity and compact form factor, plus we also liked its clean and simple design. Another major advantage was the possibility of mounting the monitors directly onto the truss system using the appropriate brackets."

When it comes to those all-important low frequencies, the 7050 subwoofers cover four areas within the monitoring system. For Ambisonics applications the signal is decoded two-dimensionally for the subwoofers, while for other formats bass management can access the four subwoofers selectively – to enable localisation within the same segment as the corresponding monitors.

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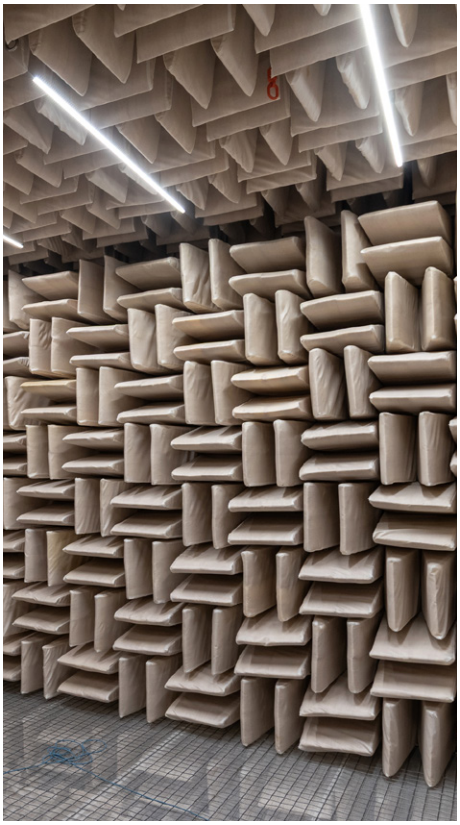
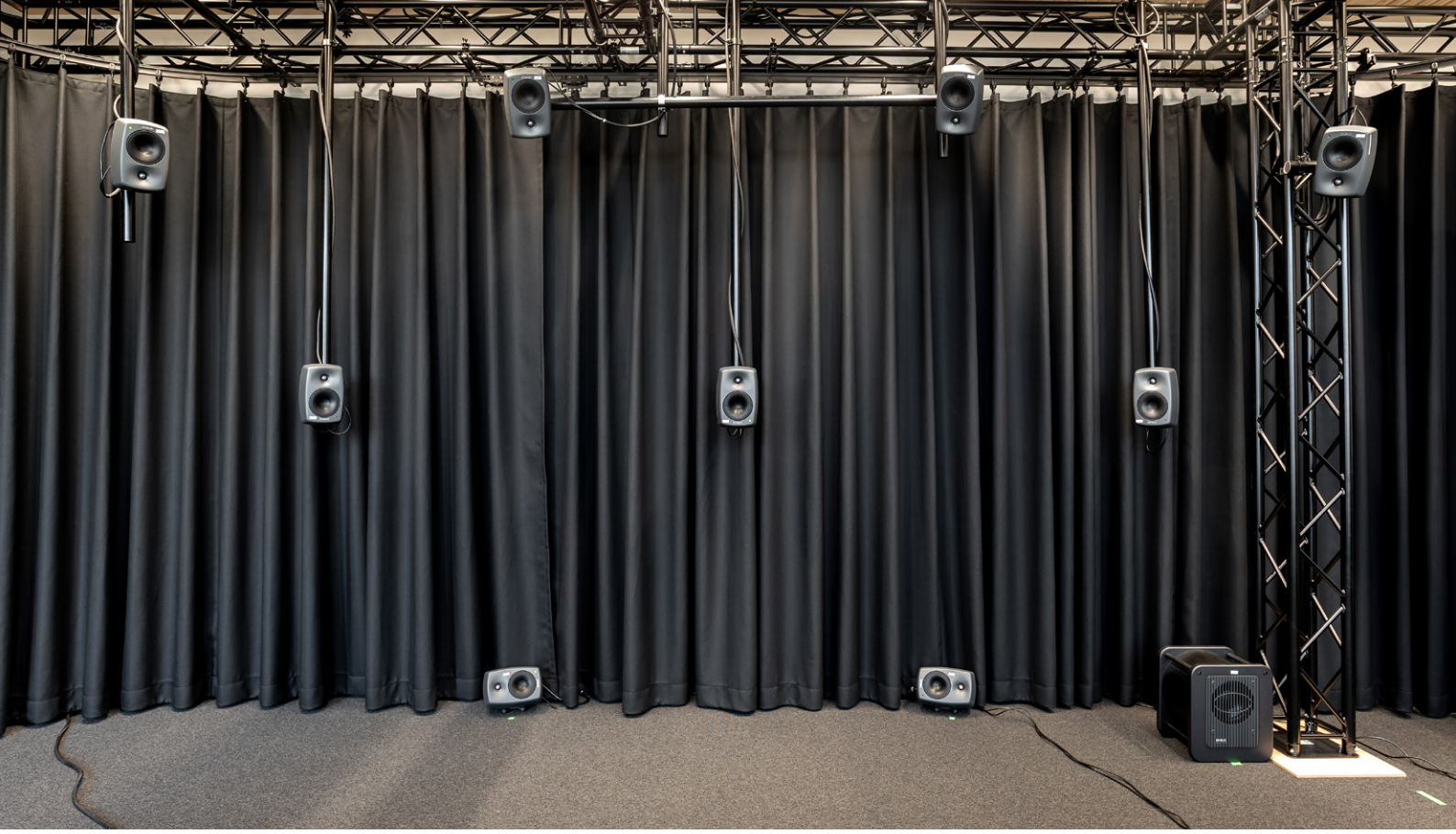
The system design and concept allow for an easy plug-and-play solution through the integration of common DAWs and playback systems, with a dedicated system for simple handling of the different formats and DirectOut PRODIGY.MC and Focusrite RedNet AM2 units looking after the audio conversion. With its huge diversity of projects, KIO relies on a highly flexible infrastructure, enabling students to prepare mixes remotely and then set up their workstation directly in S.A.A.L., connect to the playback system, and start working in a wide range of formats. Mixes created in the spatial room can then be experienced and evaluated elsewhere on campus – such as using a 3D headset with headphones, for instance.



With the room performing well acoustically, the KIO team found that each 8030's rear panel room correction DIP switches were more than sufficient for optimising the entire system for the space. These switches allow for simple fine tuning of bass roll-off, bass and treble tilt, plus a special notch filter for desktop operation. "Since the room acoustics are good, we found that the tonal adjustment of the 8030s using the DIP switches produces very good results – maintaining tonal balance all around – but with the option of using external room calibration systems if required."



THE CONCLUSION

Looking back on the project, Etezazi is happy that S.A.A.L.'s range of immersive playback formats is providing an environment where students can experience the full diversity of alternative approaches and possibilities, and work with them creatively. But it's also clear that the creation of a truly engaging Ambisonics listening environment is something that Etezazi is particularly passionate about:

"My background is as a Tonmeister, and my goal is for Ambisonics to be musically convincing rather than being perceived as a scientific-technical format only. Many still associate it with a rather 'technical' sound – or suffering from a very small listening sweet spot – but here, many people comment on how musical Ambisonics can actually sound. But crucially, putting technicalities aside, this Genelec system actually allows you to forget the playback format – and simply enjoy the music."

THE DETAILS

Loudspeakers

43 x 8030C
4 x 7050C

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