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## MASTERING THE MOVES

Dansehallerne in Copenhagen choreographs flexibility and advanced tech for contemporary dance





## A SHOW OF AGILITY

Flexibility and connectivity took centre stage when consultant and integrator Stouenborg delivered technology for Dansehallerne, a unique space dedicated to dance and choreography. **Anna Mitchell** reports.

In the heart of Copenhagen's Carlsberg City District, an old industrial building has been given new life as Dansehallerne, a cutting-edge facility dedicated to dance and choreography. Within this 4,600 sq m space, once known as Kedelhuset, lies a perfect blend of history and modern technology. The transformation of the building, with its high ceilings and rugged architecture, has created a striking space designed to support the diverse needs of performers, students, and visitors alike.

"The entire venue is primarily for contemporary dance and that's something that's really quite unique in Denmark," explains Anders Jørgensen, project manager at Stouenborg, the technology consultant and integrator on the project.

From the ceiling to the floor, every consideration has been made within this space to ensure it is dedicated to the specific needs of dance and choreography. A case in point, Jørgensen notes: "Harlequin floors are used throughout the whole building. And if you know anything about dance floors, that's like purchasing a McLaren or Ferrari."

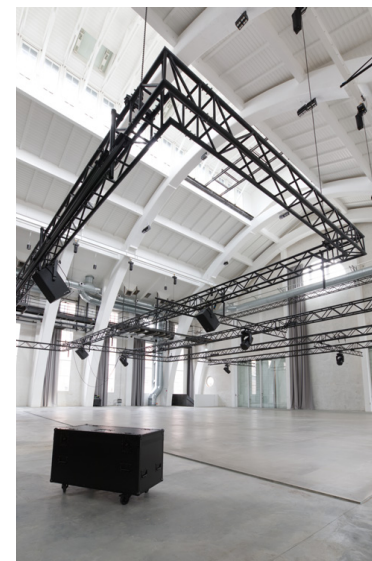
At the core of Dansehallerne's advanced technology set up is a state-of-the-art audio, video, lighting, and staging set up that allows for unparalleled flexibility. This system plays a vital role in maintaining the adaptability required for an ever-changing performance environment, with reconfigurable seating, audio, light and video capabilities that enable seamless transitions across various spaces. With two main performance areas, blackbox and whitebox, as

well as multiple dance studios and meeting spaces, the entire venue is a complex yet interconnected stage.

### Flexible performance spaces

The main entrance of Dansehallerne brings you into a foyer with a bar and direct views into glass-walled studios and offices. From here stairs wind up through the building and lead to whitebox: an open, high-ceilinged space and the largest performance area in the building. In a clever approach to redevelopment of the historic site, the project's architect, Mikkelsen Arkitekter, included a second performance space behind whitebox. Called blackbox, its ceiling acts a mezzanine for viewing whitebox from a height, while inside an intimate, enclosed performance space offers a





completely different aesthetic from whitebox. Retractable and reconfigurable seating was supplied in these spaces.

The large whitebox allows the original industrial architecture of the listed building to shine; its open ceiling space is dominated by original arches and a series of tall windows flank the performance space on either side.

“We could not reinforce the ceiling in whitebox,” notes Jørgensen. “We had to be very careful to ensure we did not jeopardise or vandalise any aspect of the listed building and it was very difficult to work around the original arches.”

Stouenborg was responsible for delivering the chain hoist and trussing systems which became a feat of engineering within the confines of building. “In an ideal

**We had to be very careful to ensure we did not jeopardise or vandalise any aspect of the listed building.**

*Anders Jørgensen, Stouenborg*

world we would have added a spider or some kind of steel structure inside the building but that was not allowed,” adds Jørgensen.

Weight was a huge consideration and Stouenborg steered the team at Dansehallerne to Moveket hoists, which were lighter than alternative options being considered. With the venue’s ceiling only able to take limited weight, the lighter system made a huge difference in the loads the Eurotruss trusses could ultimately handle.

Loudspeaker positions are completely flexible; a multitude of connection boxes and power outlets throughout the space allow them to be repositioned as needed, while seating configurations can be easily altered to create unique audience experiences. This flexibility means that whether the

space is being used for a traditional seated performance or an immersive dance experience, the technology can be tailored to the production’s specific requirements.

“We created a very flexible but complex sound system together with the client, because they had really diverse requirements and ambitions,” says Jørgensen.

At first glance the Dansehallerne’s requests were incompatible: they wanted Meyer Sound’s Space Map Go system in both whitebox and blackbox, Yamaha mixing consoles and a Sennheiser wireless microphone system. Stouenborg was already grappling with a mix of Dante and AVB but there were analogue connections that had to be made as well. And then there was the need for complete flexibility of the system.





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“We had to find a translation box that could handle all these requirements and settled on DirectOut which enabled us to deliver a system where you could route everything everywhere using a mixture of AVB, Dante and analogue,” says Jørgensen.

Stouenborg delivered 32 point source loudspeakers, a mixture of Meyer Sound Ultra-X20 and Ultra-X40 units. These were backed up by four LFC-750 subwoofers and four LFC-900 subwoofers. Two Meyer Sound Galaxy audio processors power the Space Map Go system, allowing Dansehallerne to create spatial sound systems in both whitebox and blackbox.

Panasonic projectors were also supplied by Stouenborg and, again using the multiple connection boxes throughout the venue, can be used separately or combined and positioned wherever they are needed for any given performance. Stouenborg also provided two Da-Lite micro perforated projection screens measuring 540cm x 290cm each.

Moreover, Stouenborg supplied

an advanced lighting system; a mix of Astera, Robe and Prolights fixtures that numbers around 400 units. The lighting systems were set up by the venue’s lighting engineer and programmed for precision, adapting to different performances and creating atmospheres that can range from intimate and subtle to grand and theatrical, but always perfectly tailored to the specific needs of dance performances.

#### **‘A permanent rental system’**

AVL systems at Dansehallerne are almost like a permanent rental system that is available for use throughout the building. This approach protected the historic, listed building and ensures Dansehallerne is a dynamic space that can support a wide range of productions, from small, experimental dance pieces to large-scale performances.

The week the Dansehallerne opened, whitebox for example, was set up with a large tribune, but was transformed into a catwalk style performance space just a week later.

One of the most innovative features is the ability to share audio and video feeds from any point in the venue to any other. This means that performances happening in either space can be live streamed to the other, or into the smaller dance studios and meeting rooms. It also enables artists and audiences to experience performances in unconventional ways, allowing the entire venue to become a cohesive, flowing performance space. As guests walk through the building, they can encounter dance performances seamlessly moving from room to room, with perfectly synced audio and visuals that create an immersive experience.

Jørgensen admits this is an unusual approach but one that is currently gaining traction in arts venues. He also notes that it’s not new: “This idea of a total theatre show was something that happened a lot in the 1970s. When you walk through the door at the theatre, you’re part of the show, it happens around you and it starts right at the entrance. As you move around through the corridors and





## KIT LIST

### Audio

DirectOut AN8.IO convertor modules, Dante.IO and Milan.IO audio network modules, Prodigy.MC modular audio convertors, and Prodigy.MP audio processors

Meyer Sound Ultra-X20 and Ultra-X40 point source loudspeakers, LFC-750 and LFC-900 subwoofers, and Galaxy audio processor

Sennheiser TeamConnect ceiling microphones and wireless microphone system

Yamaha DM7 and DM7 Compact mixing consoles, DM7 Control expansion controller, and RIO1608-D2 remote I/O interfaces

### Control & distribution

Eaton EMAH28 power distribution units

Iiyama ProLite touchscreen monitors

Luminex GigaCore 18t and 30i network switches

### Lighting

Astera AX9 PAR lights and Titan Tube BTBs

L.S.C. Lighting Systems Gen12 power and lighting control systems

MA Lighting grandMA3 4Port Node converters and grandMA3 light consoles

Prolights ECLProfil CT+ LED ellipsoidal lights and EclCyclorama 100 linear lights

Robe LEDBeam 150 and 350 and Tetra2 LED moving lights; and T1 Profile hybrid wash spots

### Video

Bolin D20H encoders and decoders, B7-220 PTZ cameras and camera remotes

Brightsign media players

Da-Lite projection screens

LG displays

Panasonic PT-RZ120 projectors

the spaces and then you end up in the main hall, the show is with you for the whole journey.

“To achieve this, you have to create one big show for the whole venue and the only way you can do that is combine everything and have the flexibility to route any signal from wherever you want, to wherever you want.”

Achieving this level of flexibility required some significant infrastructure in a building that posed challenges to work in. “We created the whole infrastructure for the building. We’ve installed more than 20km of cables and have more than 250 network lines,” says Jørgensen. “Because of the nature of the listed building, we could not place power supplies and connection boxes everywhere we wanted to, so it was difficult to achieve.”

Thankfully, provision was made for a large technical room in the heart of the building that allowed centralised control and processing of the complex signal distribution needs. From a single room, racks of equipment are dedicated to whitebox and blackbox and the rest of the facility. Network cables from every single connection in the Dansehallerne return to this central control room. There are also screens that, informed by Elion load cell systems, show how much weight has been put on each chain hoist, which was vital given the limitations posed on the systems from the historic building.

### Facility-wide integration

In addition to the main performance rooms, the system’s versatility extends into the dance studios and meeting rooms, where video can be used for various other training purposes. Meeting rooms also boast a complete AV set up with Sennheiser TeamConnect 2 ceiling microphones, Bolin video recording system and LG screens.

“We chose Bolin as it runs on Dante video,” explains Jørgensen. “These were installed in performance spaces as Dansehallerne need to document what they are doing to access a lot of the funding they get from the national funding system.”

Further infoscreens were included throughout the foyer and central areas of the Dansehallerne with LG displays paired with Brightsign players.

### Technology meets history

Working within the confines of an old industrial building came with its own set of challenges, but the result is a space that retains the building’s original charm while embracing cutting-edge technology. This balance of old and new is at the heart of Dansehallerne, where the architectural history of Kedelhuset is preserved, while modern design and technology ensure the venue remains versatile and future-proof.

The collaborative effort between the City of Copenhagen and

numerous foundations has allowed for this impressive transformation. The DKK 170 million (approximately €23 million) renovation not only restored and preserved the historic building but also introduced the infrastructure necessary to support a highly flexible and advanced AV system.

One of the challenges of how the funding rounds happened however was that investment came in stages, making it hard to plan the final system from the outset and resulted in decisions being made during that build phase that placed restrictions on the technical installation further down the line. The final technical specification offers the flexibility and quality that the Dansehallerne dreamed of but the execution behind that, from both Stouenborg and the Dansehallerne team, required close collaboration, agile thinking, adaptability and huge amounts of skill.

With the system complete and the venue open, the technological integration serves as an example of how modern AVL solutions can elevate artistic performance, providing spaces that adapt to the needs of artists while enhancing the experience for audiences. By turning this historic building into a hub for contemporary dance and choreography, technology and art converge to offer an inspiring environment for both creators and spectators. 🌐