

## University of Birmingham Senate AV installation

Feature exclusive – AV magazine

By Mike Lethby

A venerable learning institution that once boasted as its Professor of Music Sir Edward Elgar is home to the most prominent UK installation to date of Renkus-Heinz's Iconyx digitally steerable array loudspeaker.

The Iconyx, which the Californian manufacturer claims is unique among digitally steerable arrays in being designed specifically for both the spoken word and music, has made a something of name for itself in its homeland in the 18 months since its official introduction, finding its way on to specifications from applications as diverse as cruise ships and cathedrals, theme parks and theatres.

At the University of Birmingham, backed by distributor beyerdynamic UK and accompanied by Biamp Audia, Crestron, Kramer, Sanyo, Sennheiser and, indeed, beyerdynamic, it has now found its way into the heart of academia.

The university resides in the leafy suburb of Edgbaston on the southern side of Britain's second city, a short train ride from the centre's concrete sprawl. Founded in 1825, the university enjoys an international reputation for music (when Worcester-born Elgar was in charge he was basking in his *Pomp and Circumstance / Land of Hope and Glory* success), along with chemistry, space sciences, cancer research, the development of microwave technology, archaeology and more.

At the elegant red-brick hub of its administrative buildings, facing a broad courtyard and slender clock tower, is its Senate Building, where a spacious marble floored atrium opens out to a soaringly ornate Great Hall.

Two floors up from the atrium is the inner sanctum, the gathering place for the University Council –the plush, restrained opulence of the Senate Chamber. The airy, octagonal, dome-ceilinged room, besides being the place where the university's major academic and business decisions are debated and concluded, is also hired out for high-level corporate meetings and presentations. Dating back to the turn of the century, its interior was gutted and refurbished in the 1970s with, we are told, all the style of that era.

In 2004 the decision was made to restore the chamber to its former glory, and to pave the way for a technological transformation into a fully-fledged, multi-function facility with state-of-the-art AV systems.

### DESIGN FOR DISCRETION

Enter Leamington Spa-based installation and production company S & P Productions, headed by Nick Myerscough, who several years ago installed a distributed speech PA system in the aforementioned Great Hall. S & P was asked to tender for the Senate AV design and installation, based on a fairly straightforward requirement that the room should be capable of hosting high quality live corporate-style presentations including the use of PowerPoint and DVD sources.

Acoustics in the chamber, which seats 80 in concentric U-shaped rows in front of a top table and lectern position, are lively under the tall, domed roof and high windows, and delivering high speech intelligibility in an environment where flutter echoes would be ever-present was the central issue for

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Myerscough and his team to consider, requiring very controllable directivity from a loudspeaker system. Complicating matters further was the requirement that the audio system be fully music-friendly, allowing DVD content to be viewed with full-frequency audio (although Myerscough comments that subwoofers were ruled out for aesthetic reasons).

Combined with the stipulation that all equipment had to be as close to architecturally invisible as possible, the S & P team worked on specifying a system that would deliver the goods within a physically compact form factor. "The main focus of it was to keep everything out of sight as much as possible," says Myerscough. "We had to come up with an AV design that would not impinge on the look of the room, but without compromising intelligibility and audio quality."

He opted to trial the smallest product in the Iconyx Series, the IC8, at the heart of which are eight individually amplified, individually processed coaxial drivers, under the control of Renkus-Heinz's BeamWare 2 software (according to the company, BeamWare 3 is scheduled for release this autumn, along with a 'touring' version of Iconyx, aimed primarily at the AV presentations market).

"I'd read about the Iconyx system in the trade press and started talking to beyerdynamic about them in quite some detail – I was curious because to me they seemed like a good solution for the project," says Myerscough. "When we analysed the room in EASE, it showed that a pair of IC8s would cover the whole room very well, with the exception of the Chairman area by the lectern. To provide foldback into that area we specified a pair of Tannoy i7 loudspeakers, driven by a Powersoft LD1404 amplifier. Beyerdynamic helped with the setup and then I got my head around BeamWare pretty quickly."

The room's octagonal shape made careful setup of the Iconyx system essential. "We used BeamWare to set up the Iconyx arrays to focus on the listeners rather than firing up towards the ceiling, which is where the acoustic problems lie.

"During the rebuild acoustic treatment had been built into the walls, which dampens it a fair bit compared to its original state, although it's still not acoustically brilliant. But with this system you can focus the acoustic energy a lot more tightly than with normal loudspeakers. They don't excite the room too much, which is crucial, and they're very musical."

### **IN CONTROL**

In command of both the Iconyx outputs and audio source inputs is a Biamp AudiaFLEX digital audio platform, in the shape of a pair of 24-channel audio mainframes located in the adjacent control room.

Its versatility is effectively hidden from the user by the Crestron touch screen interface at the lectern, which provides a series of simple presets for the room's various modes, as well as control over the window blinds, projection screens, the video camera's functions and room lighting.

Sound sources begin with the lectern microphone itself – an AKG CK33 on a gooseneck while vocal pickup from around the room is augmented by a series of beyerdynamic MPC 22 half-cardioid condenser mics. The units, designed for integrated mounting in conference or boardroom tables, are mounted in the balustrades in front of the rear seating tiers. These allow debating sessions to be recorded and provide gentle sound reinforcement for contributors seated outside the inner Senate circle.

The main conference microphone system is a fully flight-cased beyerdynamic wi-fi system comprising MCW-D 50 control units, an MCW-D 523 Chairman's unit and 19 MCW-D 521 Delegate units.

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They are supplemented by a Sony radio microphone package ECM-77 mics, a pair of UWP-X1 tie clip upgrade packs, two UWP-X2 hand held packages and an MB-806A 6-way module rack with a pair of AN-820 'fin' antennae in the chamber.

Inputs both at the lectern and around the room allow CD sources and laptops to be fed into the system, again under lectern control, as well as a rack-mounted Denon DNV300 professional DVD player and a VHS machine in the control room. A dedicated Athlon 64 PC runs audio recording software using a Marantz solid state recorder, allowing sessions to be distributed or burnt to CD.

The room's CAT-5-based digital network, which embraces the video cameras, will permit future use for videoconferencing if required, and a Sennheiser infrared system caters for the hard-of-hearing.

### **VIDEO IN THE ROUND**

As with the audio, video projection was required to be largely hidden within the Senate chamber's infrastructure. During the rebuild, cavities were created in the walls below the high windows, three of which S & P filled with Da-lite Ascendor Electrol matte white HDTV projection screens, the central screen measuring 58 by 104", the side pair 52 by 92". Behind the screens, electronically controlled blinds can be lowered to fully mask off the windows, creating a dark projection environment.

Projection itself is handled by a trio of Sanyo PLV-80 WXGA projectors, each equipped with an LNS-T32A motorised zoom lens and a dedicated 'button' on the lectern's Crestron TPS4000 Isys touch screen. The latter also provides individual projector source selection, allowing live images of the presenter from a Sony EVI-D70 video camera facing the lectern to be shown on one screen while PowerPoint or DVDs play out on the other two – or any combination thereof.

"The Da-lite screens are very reliable," comments Myerscough, "after we'd installed them at the very start of the project, which was an absolute nightmare because of the room layout and location and the fact that the place was being rebuilt around us. We had to crane them up through the window and we had some interesting times with the construction guys, trying to work to their schedule as much as we could."

Controlled by the Crestron lectern touch screen – which is duplicated in the control room for operator control – video is handled by a Sierra Video Systems 1208V5VS 12 in / 8 out video matrix and a Kramer WP220 lectern AV panel with Kramer VGA and composite line drivers, up-scalers and VP400 VGA splitters.

Also at the lectern is a USB port which makes the job of loading a PowerPoint presentation a simple matter. Large buttons permit selection of projectors A, B and C, and equally straightforward selection of input options for each projector.

"While the university has technical staff," says Myerscough, "we designed the system so that it can be used by a non-technical person, at least as far as the basic modes and input and projector selection are concerned."

The final element of the control room picture is a sequential mains switching unit which ensures a smooth and transient-free system startup.

The Senate chamber has now reopened and, adds Myerscough, its users are extremely happy with the end results: "The Iconyx system has addressed all the acoustic problems that used to characterise the room, and the AV system and touch screen control provides the Senate with a

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level of functionality that transforms the way they can use the space – a pretty successful outcome.”

### **BOXOUT: S & P PRODUCTIONS**

Midlands-based AV service provider S & P Productions, which was formed by a team of like-minded freelancers within the entertainments business and corporate events market, recently celebrated its fifth anniversary. The company today produces conferences and live events of most types and its rural premises on a former farm house both a recording studio for bands and voiceovers and a video editing suite. Three years ago the University of Birmingham’s Great Hall became the company’s first major audio installation project, which has subsequently been joined by other AV installations in the West Midlands.