Martin Audio TORUS for Tsukuba’s Capio Hall



The Tsukuba Capio complex in Japan’s Tsukuba city, Ibaragi, incorporates indoor sports halls, theatres and meeting rooms, while Tsukuba itself is renowned for being a scientific city of the future city. Opened in July 1996, Capio Hall has provided an authentic atmosphere for theatre and dance, with its distinctive seat arrangement and high-quality stage facilities.

Capio Hall recently underwent a major sound system overhaul, and new rigs were introduced, including the new Martin Audio TORUS as the main PA. Nobuhito Endo, technical manager of rental company Sigma Communications, who support the theatre, set out the reason for the upgrade and his choice of TORUS.

“Originally, the proscenium centre loudspeakers were exposed, and a cluster of several point-source systems was flown from the grid. Naturally, we considered utilising a line array replacement but found a problem. While the hall wasn’t very deep, the three-storey horseshoe layout of the auditorium was vertically too great for the coverage angles.

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“It was quite clear that a considerable number of line array cabinets would be needed if we wanted to provide complete vertical area coverage from its highest point, without converging on the frame of the stage.”

It’s then that the Constant Curvature array solution came to mind. In venues with high ceilings but requiring short throw Martin Audio’s new TORUS rig offers a practical solution. Full-blown line arrays would be impractical and cost-prohibitive for a 15- to 30-metre depth hall. However, a point source solution such as this would provide sufficient coverage and SPL. As a constant curvature array TORUS is designed to completely compensate all the gaps by combining optimised coverage, perfect SPL and cost efficiency.

During the renovation process a vertical array comprising four cabinets - two each of the T1215 and T1230, offering 15° and 30° vertical dispersion respectively - were deployed in grids at the proscenium to cover the vertical 90°, angled to deliver the sound from the third floor to the front seat of the first floor. Furthermore, a Martin Audio XD12, supplemented by SX118 subwoofer, was specified for the side column and powered by iK42 DSP amplifiers. For infills and balcony seats, six Blackline X8 were deployed.

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Takahisa Ota, who was responsible for the tuning of the system, said, “Originally, we planned a front wide / back narrow dispersion pattern, but as we adjusted this while listening to the sound, we discovered that specifying everything to a horizontal 90 degrees would give a better coverage. In that way, the proscenium could cover 80% of the venue. We adjusted the delays and SPL of the Blackline X8s so that they were blended to the proscenium, to cover the remaining tiny area. You can adjust the angle of the TORUS waveguide even with grills attached and this

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flexibility is such an advantage in situations like this.”

Mr. Endo concluded, “Capio Hall has to meet the requirements of various types of public events. Recently, students’ dance presentations have been taking place frequently, and consequently a higher level of sound pressure has been required. In this application, TORUS and the subwoofers have enough headroom to cope, and I am extremely satisfied with the choice of the new sound system.”

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