



RENKUS-HEINZ

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Renkus-Heinz the Sound of Beijing Wukesong Olympics Basketball Arena

SELF-POWERED PN102/LA LINE ARRAY POWERS LANDMARK ARENA

FOOTHILL RANCH, CA – AUGUST 2008 – With the 2008 Beijing Olympic Games now in full swing, the Wukesong Basketball Arena, one of the three major landmark buildings specially created for the Games, is delivering top quality audio to its 24,500 spectators with a Renkus-Heinz PN102/LA self-powered, digitally networked four-cornered centre cluster and distributed delay system.

Part of the Beijing Wukesong Culture & Sports Centre, it ranks alongside the Beijing National Stadium (the 'Bird's Nest') and Beijing Aquatic Park as one of the Games' three showpiece buildings. Post-Games, its world-class facilities will continue to host the NBA Basketball it was designed to showcase – as well as providing Beijing with a new, all-purpose live music venue, capable of seating up to 18,000 fans.

With a brief to deliver excellent speech and music to every seat, Taiwan-based Linfair Engineering – which has offices in both Hong Kong and Beijing, as well as Taiwan – won the contract to design, supply and install the complete audio and video systems into Wukesong Arena. The deal included a substantial audio system, the US-style four-face centre-hung video scoreboard cluster, and LED advertising banners that ring the playing area.

While the audio brief was large in scale, it was more than matched by the arena owners' high expectations. Many similar **Renkus-Heinz** arena systems have already been installed in the USA and around the world, most notably the Indoor Stadium in Singapore.

The tall, deep Wukesong Arena required careful audio design to ensure both vertical and horizontal front to back dispersion would deliver high intelligibility to each seat in a reverberant environment. Digital signal delivery and remote loudspeaker control and monitoring were also essential, using CobraNet and **Renkus-Heinz** R-Control respectively.

As Renkus-Heinz's distributor, Linfair opted for a midsize self-powered **PN102/LA line array**, configured as a four-cornered centrally flown system. Each 12-cabinet array is mounted slightly above and outside of the scoreboard screen cluster, exploiting the system's ultra wide 150 degree horizontal dispersion and up to 129dB SPL (program) output to maximum effect, with the line arrays configured as 'banana' arrays on BGV-C1 rated ATM flying hardware, supplied by Allen Products, to optimize coverage angles. These are supplemented by six self-powered **Renkus-Heinz DR18-2 subwoofers**.

The only seating locations not reached by the **PN102/LA arrays**, the upper ten rows, are specifically targeted by a ring of 20 **Renkus-Heinz ST7/94** self-powered three-way loudspeakers, which employ CoEntrant technology to blend high power with compact dimensions. The loudspeaker line-up is completed by four more self-powered cabinets, two ST7M/64 and two ST7M/94 versions, which provide playing court audio coverage.

Underlining the high level of engineering and commissioning support that **Renkus-Heinz** extends to major projects, **Technical Engineers John Olshefski** and **John Dowling** were closely involved – both in the California factory and on site in Beijing – in designing and commissioning the system's R-Control and

CobraNet infrastructure and fibre optic backbone. Rack room space, cabling and installation time alike were minimised through the use of an entirely self-powered system, each cabinet having internal Class D bi- or tri-amplification.

Linfair Engineering's Beijing office coordinated the installation and provided project personnel. **Jim Mobley, Senior Applications Engineer at Renkus-Heinz**, provided loudspeaker system design and system commissioning, modeling the room in **EASE**, while the Linfair Engineering team used **Renkus-Heinz's Aimware** software program to pre-determine optimum rigging point locations and coverage angle settings.

Jim Mobley comments: "We worked in great detail on the R-Control setup and were able to use it to apply a small but significant degree of the beam steering techniques we've developed for the Iconyx product line. This gave us an extra 'edge' in terms of dispersion controllability, which is a clear advantage in a reverberant space."

Audio distribution is accomplished via three MediaMatrix NION N3 processors, equipped with the MM AEC4 acoustic echo cancellation card, providing remote configuration of all signal processing and protection functions.

The source side of the system comprises a Yamaha M7CL digital console, with a pair of Shure ULXS4 wireless microphone systems for speeches and announcements. Furman PM-PRO E Series II and AR-2306 power conditioners deliver a smooth and well protected power supply to the audio system, which can be adjusted remotely via a wireless laptop from any seat in the arena.

The Wukesong Arena, also known as BOBA (Beijing Olympics Basketball Arena) hit the headlines after all remaining basketball tickets for the Games were snapped up in less than 11 hours to fans who'd queued outside the venue for up to two days. According to Li Bing, Vice Secretary General of the Wukesong Stadium, "most people wanted to buy tickets for China's matches, especially the match between China and the United States on August 10". Whatever the personal motivation, the spectacular new building is guaranteed full houses and pristine sound throughout the Games.

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Headquartered in Foothill Ranch, California, Renkus-Heinz, Inc. is the worldwide leader in the design and manufacture of audio operations networks, digitally steerable arrays, powered and non-powered loudspeakers, system specific electronics and fully integrated Reference Point Array systems. For additional information contact:

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