

NEW GRANDSTAND AT RANDWICK RACECOURSE

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After a 20 month total build time including a 10 month AV fit-out, the new \$152 million Grandstand at the Royal Randwick Racecourse in Sydney boasts the largest integrated network AV system in Australia. Over six levels, two structures and 25,000 m² of floor space, a 1000 port Ethernet network carries audio to and from more than 60 separate zones, as well as sixty channels of video and thirty channels of digital signage to over 800 screens.

The Australian Turf Club engaged consulting firm Norman Disney & Young to meet the required acoustic performance criteria for each space and a number of zones, along with an overview of functional requirements and environmental constraints. The number of TV channels required and an indicative number of TV screens were also proposed.

The P.A. People were employed to deliver the new networked television distribution and audio systems. The greatest acoustic challenge was maintaining a balanced audio level across adjacent zones with entirely different environments; internal to external, concrete to carpet and with varying ceiling heights. To this end, The P.A. People deployed over 1000 individual JBL loudspeakers across ten different models, including the Control Series, AWC Series, CBT Series and AE Series. This choice enabled a consistent brand 'voicing' across the site while serving each area's particular application and conditions.

The power amplification and processing is spread across

eight rack rooms, with 11 racks of equipment in total. Audio signal transport between the rack rooms is achieved with Audinate's Dante run over a dedicated HP Procurve Ethernet network utilising both fibre optic and Cat6 cabling. Twelve BSS Blu series digital signal processors fitted with Dante interfaces handle audio mixing duties and distribution to zones. Signal is connected directly via Cat5 to the 80 Crown amplifiers that power the system via the Blu's built-in BluLink proprietary digital bus and PIP-Blu modules fitted to the amps.

Four control PCs are installed across the site for audio system operation and monitoring. A virtual control desk for the DSPs and amplifiers was created using the BSS London Architect software, giving the operator both overall and individual zone level control. Within the DSP, paging sources including the race caller, the Weighing Room and lines from interstate sites are automatically prioritised over background music according to a three-stage hierarchy.

Among its more than 800 screens, the Grandstand's IPTV network includes the joint largest LED screen in the Southern Hemisphere, measuring 11 metres high by 40 metres long. Two 18 metre long super screens are located on ground level betting auditorium. The system deployed is from Scottish specialist supplier Exterity. The facilities in the new Royal Randwick grandstand represent one of the largest integrated networked AV systems in Australia.



Figure 1. The Royal Randwick racecourse and grandstand