

Venues Special

Readers will recall over the past 2 issues we have detailed some of the entertainment technology inside the new Crown Casino complex in Melbourne.. It is the largest entertainment complex in the Southern Hemisphere. This issue we wrap it up - and there are whole venues we haven't reported on. Please understand its just not possible to fully chronicle a place like Crown in the space we have had available. Notable work which passes unrecorded: Vision Design Studio: were responsible for a vast part of the overall lighting design, and were the major consultant on site. David Bird from Vision gave up some valuable hours to guide us through the complex - thank you David. TCP also had a large role, they out fitted the Showroom and several other spaces. And finally Rutledge Engineering did a huge amount of audio visual / video work, much of which is by necessity secret. It is a Casino, after all. There were other firms too, it seems most of Melbourne had a slice of the action.

Odeon Crown Cabaret

Cunning sound design and a custom built matrix, on a budget.

[Julius Grafton](#) reports

The Odeon is one of the entertainment options at the crown Colossus. It's more suitable for older people like your editor, and features superior live music and also disco. The audio and lighting was installed and designed by Sven Langebeck, owner of Warehouse Sound. He was invited to quote by Jamie Nasser, Odeon owner, and previous owner of Chasers nightclub.

The sound is essentially a distributed stereo system. The room itself is an ellipse, an elongated circle so the audience is seated in a semi circle around a trust stage which is also elliptically shaped. The left/right system is a single 15" JBL and a 2" throat JBL driver (2447). Then there are 6 x JBL 2226 15" woofers under the stage in 3 Jands System cabinets acting as sub woofers.

There are 2 System 44 boxes over the dance floor for disco, and then four System 44's are fanned out in front of the stage a little further down the room, forming a stereo delay.

"The low ceiling means I wanted as near as possible a continual low sound pressure level throughout the room", said Sven. It's designed to work at 110 to 112dB, with a 115dB maximum. "It's what the audience want. They don't want to hear a trace of distortion. The whole point is the system sounds like a hi-fi".

The design process was done from the plans. "I drew some polar patterns of the speakers from various angles at the ceiling height, and cut them out and super imposed them over the room plan so I got even coverage".

"The delay is very short, 8 or 10 ms. I Wanted to get away from the doubling of the high hats you hear sometimes. By delaying the clusters the sound image stays on stage".

Every pair of speakers is powered by a Crest V1100 amp. For foldback there are a couple of System 400 wedges on stage and two flown above the stage, so there's 2 foldback sends from the FOH. There is a split multicore for people to bring their own foldback if they choose.

The desk is a Yamaha MX400 24 channel, "a surprisingly good desk for its price. It's basic but very quiet. The EQ is nice and open without ringing. Obviously we had to make a few compromises because of price".

For the system drive: "we're using new DBX 2231 dual third octave equalisers and have two - one for FOH and one for monitors. The (inbuilt) limiters are a bit savage you'd only use them (the limiters) for a last resort. The signal goes to the house limiter, an Aphex Dominator Mk II. It's simply the best limiter on the market in terms of audible quality, you don't hear any harmonics being generated by it. It acts like a three band compressor, it is designed for FM radio, it'll attenuate the low, mid and highs separately. We've been using it in disco's for years, this is the first time we've put one into a live system". The results have been fantastic, it's inaudible. It has an 'overeasy' type curve in each of the three bands, there's only gentle compression as you approach the threshold then it gets heavier. In practice it works as a compressor limiter".

The disco has a Rane MP24 mixer, going to a Mojo stereo equaliser, then it's own Dominator. It feeds into a matrix, which has 8 inputs:

2 foldback sends,
2 FOH (left and right),
2 from the disco
and 2 delay returns

Then this matrix outputs to every amp. It's custom made, no-one makes anything like it, although it's simple, just 32 op amps and 16 pots. Sven explains what it does:

"It's permanently configured, when the disco fades into the band they just start, their signal is live and active all the time, the FOH person turns up the fader and the DJ pulls down the fader so there's no fading required". "The reason the foldback goes through the matrix is that send 2 gets routed to the 2 speakers flown above the stage as side fill, so the disco send can be sent to those in stereo. When there's no band they can use the stage as a dance floor. There's a kill switch so when the bands on stage they don't get blasted, you can decide not to pump disco onto the stage".

The room gain on the matrix is setup so people can talk when the disco is playing, yet the live sound is fully audible when the band is on. In the live mode there is less level going to the dance floor speakers, they're down 6db in live mode, but in disco mode they're run at full with the delay speakers down about 6db. It's all preset for the room by Sven, it works, and it's good design.

The basic PA outboard effects are an Aphex AX 106 4 channel compressor, "which is a very musical compressor in my view" says Sven. There is also an AX 105 4 channel gate, and of course the house system has a basic microphone kit of 6 Shure SM 58s and 4 Audix D2's. "It's quite a nice drum mic" says Sven.

LIGHTING

Sven suggested that because of the low ceiling they install automated lights. Thus there are 8 Abstract Future Scan 3CED's, these have 12 colours, and 12 gobo's along with blackout function. The attraction is the lamp, which is a 150w MBI discharge lamp, running for a whopping 6,000 hours lamp life.

These are controlled by an Abstract 64 controller, which will run up to 16 fixtures. Effects include a Le Maitre Red Devil fogger, 2 Infinity DMX 1500w strobes (controllable for speed and intensity) and a bunch of mirrorballs. They are illuminated by the Abstract Future Scan's.

The stage lighting is 24 chrome cans, driven by a Jands ESP II 24 console and a dimmer rack, and a Pro Lite PR22-FS2K follow spot.

OUTCOME

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