

# Project Case Study

## The Arts Centre Gold Coast Dimmer Upgrade

Queensland, Australia—March 2010



The Arts Centre Fly Tower at night

### The Client

The Arts Centre Gold Coast (ACGC), located on the banks of the Nerang River in Australia's iconic Surfers Paradise, is the region's premier cultural facility, bringing visual and performing arts to residents of South East Queensland. Formerly known as the Gold Coast Arts Centre, the complex houses the 1,139 seat Arts Theatre, Gold Coast City Gallery, two Cinemas and the Arts Cafe as well as several stunning function rooms, a chapel and two smaller performance spaces.

### The Project

ACGC required their ageing analogue dimmer system to be replaced with the latest digital technology to control conventional and unconventional loads. The requirement to allow a group or any individual dimmer channel to be remotely switched between dimming and "clean" (non-triac/SCR controlled) mains power output, was a must. This need for true power is born from the demand of modern venues to control a myriad of devices, such as moving lights, LEDs, and the recent development of 80 Volt powered fixtures.



The "Old" dimmer cabinets— installed circa 1983

ACGC required that replacement dimmers be RDM compliant to meet the future needs of remote system monitoring and system configuration over the DMX512 network. All 500 plus channels had to be Pulse Transformer Fired Dimmers to handle the varying types of inductive and non-inductive loads used throughout the venues.

It was also necessary that each output channel be protected with both a thermal and an RCD breaker ensuring maximum protection for staff, performers and patrons, whilst providing minimal disruption to other channels during fault conditions.

Specialist Consultant for the project was Rob Mitchell from RTM International Theatre Design and Technology.



The labour intensive cable patch system

### The Equipment

ACGC chose LSC Lighting Systems EKO Installation Dimming System as their preferred solution. A number of factors convinced the ACGC technical team to select the EKO, namely; its ability to offer remote seamless switching between dimming and true power outputs; its compact physical footprint to allow high density installations; its proven track record in other similar venues; its overall low installation and on-going running costs; plus it provided the venue with a dimmer per outlet concept, rather than the more expensive and time consuming cable patch system already in use.

The EKO is a state of the art dimmer package providing individual channel selection of either Pulse Transformer Fired Dimming (PTFD) or TruPower Power Distribution. Channel mode can be triggered by a number of means – on the dimmers User Interface (manually); DMX512 via a Lighting Console; RDM via a RDM compliant controller; LSCnet via a range of wall mount push button controllers; or, via LSC's Houston Application software utilising Show Config (LSC's very clever PC based software for quickly changing, archiving or restoring system parameters).



EKO Installation Frames during the wiring-in phase

Equipment installed per Venue.

<b>Arts Theatre</b>	21	504ch	EKO 24 ch 10A Dimming System fitted with Trupower, MCB trip monitoring, RCD per channel, LSCnet, RDM/DMX512.
	1	12ch	EKO 12 ch 10A Dimming System fitted with Trupower, MCB trip monitoring, RCD per channel, LSCnet, RDM/DMX512.
	1		Houston Application Software with Show Config.
<b>Auditorium House Lights</b>	1	12ch	EKO 12 ch 10A Dimming System fitted with Trupower, MCB trip monitoring, RCD per channel, LSCnet, RDM/DMX512.
<b>Theatre Work Lights</b>	1	24ch	EKO 24 ch 10A Dimmer fitted with RCD per channel, LSCnet, RDM/DMX512.
<b>The Basement</b>	1	12ch	EKO 12 ch 13A Dimmer fitted with RCD fitted, LSCnet, RDM/DMX512.
<b>The Cinemas, foyer and display areas</b>	1	12ch	EKO 12 ch 13A Dimmer fitted with RCD fitted, LSCnet, RDM/DMX512.

**The Installation**

Installation of the new dimmer system was contracted to Ian Crossley and his team at I & R Electrical Pty. Ltd., who was charged with:

- removing the old dimmers and cable patch system
- upgrading the 1600 Amps per phase Distribution Board
- re-running cable to all lighting outlets ensuring each circuit was wired with a correctly rated active, neutral and earth (an essential requirement for dimmers protected by individual RCDs)
- to install the new 516 channels of EKO dimmers from LSC for the Arts Theatre.

The installation time frame was tight – just 4 weeks!

Ian had to design, build and supply a new Mains Distribution Cabinet to handle the extra channels of dimming. In addition, extensive new lighting circuits had to be run with new cable management trays installed throughout. To aid Ian with his limited onsite time, LSC supplied the EKO dimmer Installation Frames weeks in advance of the actual dimmers being delivered to site. The EKO's unique two piece design allows for all lighting circuits and network cabling to be terminated and tested on the Installation Frame prior to the physical dimmer module being installed.

The dimmers were supplied to site a week prior to the completion date. I&R Electrical hung and connected the dimmers and did the initial power testing. Trevor Sykes, LSC Technical Manager and Greg Hughes, LSC Queensland, commissioned and programmed the entire dimmer network in less than a day. The system was signed off on March 4<sup>th</sup> and the dress rehearsal for the venues first performance proceeded using

**The Result**

*"During the upgrade process, I have worked closely with Greg Hughes from LSC to achieve the best outcome for the venue and its needs. Greg provided us with the best customer support and had realistic views on our situation and needs. He went out of his way to ensure we have been 100% satisfied with the product. Greg and his team at LSC listened to our needs and were willing to explore ideas and take them away to provide a solution. Greg still checks in to see how things are going – yes, you can say we are very pleased with the product and service provided by Greg and LSC."* Chris D'Bais, ACGC Venue Operations Manager.

ACGC now has a fully networked LSC EKO Dimming System comprising **576** channels throughout its performance spaces. Each and every dimmer channel can be remotely configured and monitored for settings and fault diagnosis, without any staff member being at the dimmer. The dimming system is now centralised based on one dimmer per outlet, protected by individual RCD's.

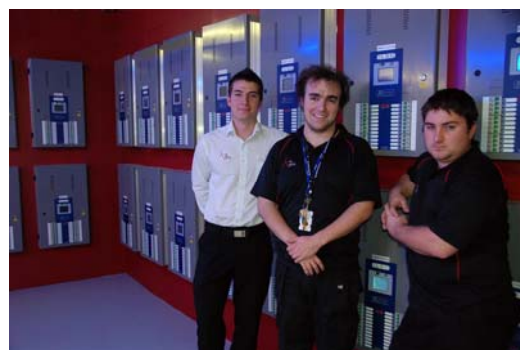
Patching is now done solely at the lighting console as there is no more tedious cable patching to deal with. ACGC estimates that this alone will provide a manpower saving of **4-6** hours per performance, thus resulting in a massive per annum saving of approximately **600** hours.



Ian Crossley (second from left) with his installation team from I & R Electrical



EKO Dimmers now installed and running prior to final coat of paint.



Venue Operations Manager, Chris D'Bais with Alex Fox and Jesse Radatti, Senior Lighting Technicians, ACGC