Antipodean Colosseum

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"What is the total weight of scenery and lighting that will be used for opera or ballet productions?" – this question, fired at the writer during his first attendance at regular Architectural planning meetings, was the beginning of a long series of activities consequent upon the decision by the New South Wales Government to alter the planning brief for the Sydney Entertainment Centre. Originally conceived as a large stadium accommodating 10–12,000 people for sporting events, circuses, pop concerts etc, the Centre had been planned with a space frame roof construction, strong enough for the hypothetical layer of hailstones, and for lighting equipment arranged on a U shaped catwalk but evidently not to carry scenery.

The rapidly rising cost of good seats in the Sydney Opera House combined with an apparently growing interest in ballet and opera persuaded "them" to authorise changes in design and equipment so that the auditorium could be reduced by appropriately located divisions to create a 7,000 seat thrust stage theatre or a 3,500 seat proscenium style, known as the Lyric Theatre. Both these forms imply the use of scenery and conventional stage lighting hence the question quoted above. We agreed that 20 tonnes was a reasonable figure for actual working load, and that a further 20 tonnes would cover the weight of the hoisting equipment itself. Obviously, counterweighting was out of the question and therefore direct winching has to be used, the winches being located in the roof structure. By this time the structural engineer was reconciled to scrapping the roof plans and had changed the design from space frame to more conventional box trusses, these being approximately 5m depth × 1m wide, there being 2 in each direction, dividing the roof into 9 sections like a noughts and crosses game. The centre section was kept free of cross bracing as much as possible thereby gaining extra flying height. It had been hoped to provide a full grid over the Lyric Stage, but the statutory design loading for working floor areas would have increased the roof design requirements beyond acceptability so the final design uses 4 suspension beams with a catwalk alongside each, giving access to the loft blocks.

Currently the flying complement over the Lyric Stage has 4 fixed speed winches to carry masking legs and borders, plus 20 variable speed scenery battens and 18 spotlines. From a point during rehearsals immediately prior to the Opening and continuing as I write, there has already been investigation into the cost and feasibility of providing additional flying, as the initial quantity appears to be insufficient for major touring companies. However, the funds available only just sufficed to install the first lot after leaving out some fixed speed winches and also the remote control panel at floor level which was in our original specification.

The variable speed winches use 3 speed switched pole motors and have two adjustable working deads as well as automatic stopping at stage level and grid level. The 3 speed facility is only available between the working deads, rigging adjustments outside those deads being at minimum speed only by constant pressure key switches.

The bulk of the lighting comes from a catwalk slung below the trusses and lighting over the stage area can be hung on five 16m long self climbing trusses with a rated load of 700Kg each. These units, built by Telestage, can be hung anywhere over the stage area, including parallel to the long edges if required.

There are 496 lighting outlets with individual dimmers, 40 are 10kW, the remainder 5kW. These are controlled by an Australian built QLite Memory System which was born out of the British Thornlite, which was in fact the system originally ordered. The control is a 150 channel with facilities generally as Thornlite 500 excepting that it includes electronic patching to the 496 dimmers.

The lighting control room is in the centre section of the underslung lighting catwalk, with a sound proof audio control room alongside. As this is quite a long trek from arena level (and from sanitary accommodation alas!) the matrix pin patch back up with 20 masters has a duplicate control which can be connected at either of 2 floor level control positions. There is also a wireless riggers control for use when setting up.

The method of dividing the auditorium results from many discussions and trials of different materials ranging from conventional velvet drapes through painted canvas to plastic panels, timber frames and all sorts of gadgets which slid; flew or were otherwise disposed of when not required. This eventually boiled down to discussions with a local sailmaker and the final decision was to use stretched painted canvas in 4 large panels, using yacht mast extrusion to form head battens, and multiple sheaves with a single hauling line to lift each section into position as required. As can be seen from the photograph overleaf the Rosco painted canvas looks surprisingly solid, and when properly tied down at the base keeps quite flat and free of movement.

The proscenium for the Lyric mode is formed by the edges of the division canvas with an additional drape above, in velvet to match the house curtain, which latter has its own variable speed flying gear. Simple enough one might think until the Department of Services began to worry about fire regulations. All very well, they said, to have an open stage but when there is a proscenium the regulations require enclosure of the stage, a smoke hatch and a fire curtain. So, the roof has 2 large centre opening panels, and when the Lyric mode is rigged the stage is enclosed on 2 sides by 19m high ceramic cloth panels. The house curtain is backed with similar material as is the pro-

The Sydney Entertainment Centre looking to 1.5 million visitors a year