



VECTORWORKS CASE STUDY



VECTORWORKS SPOTLIGHT GOES FOR THE GOLD AT AUSTRALIA'S COMMONWEALTH GAMES



WHEN IT CAME TO LIGHTING THE OPENING AND CLOSING CEREMONIES FOR THE XVIII COMMONWEALTH GAMES IN ONE OF THE WORLD'S LARGEST STADIUMS, VECTORWORKS SPOTLIGHT WAS THE DRAFTING SOFTWARE OF CHOICE.

How do you draw a lighting plan of a 100,000-seat stadium with 1,000-plus automated fixtures and 33,000-plus channels and keep it all together? Why, with VectorWorks Spotlight, of course.

The mammoth size of the Melbourne Cricket Ground presented quite a challenge for lighting the opening and closing ceremonies of the 2006 Commonwealth Games. Bigger than the Sydney and Athens Olympic stadiums, the arena sports a playing field of 475 feet by 560 feet.

Jack Morton Worldwide produced the ceremonies with executive producer Andrew Walsh, and Mark Hammer created the lighting design. Hammer

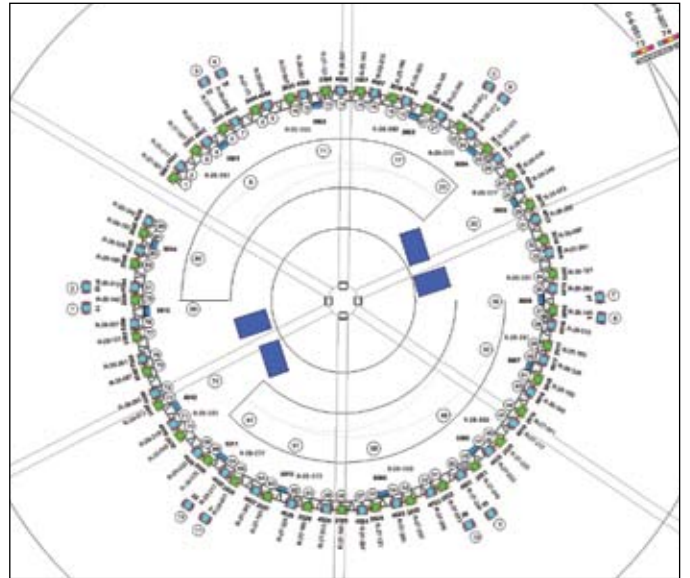
and Nick Eltis, the technical director, decided that VectorWorks Spotlight was the right software for drafting a rig for a show this size. Having been technical director on the Athens Olympics and the Rugby World Cup opening and closing ceremonies, Eltis has had some experience with large shows.

And a massive rig it was: with 1009 automated fixtures, more than 1.5 million single LEDs, 1,200 feet of truss, 40km (25 miles) of power cables, 1.5 million watts of light, 10,000 amps of power, 15,000 man hours to install, 33,792 control cables, and 25 trucks—plus 67 sleepless nights to make it happen.

"Shows of this magnitude come up only once in a while, and there won't be another like it in Australia for some time," says Peter Neufeld, a lighting designer based in Sydney who started drawing and organizing the plan for the ceremonies team.

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"VectorWorks Spotlight is increasingly being used as the drafting program of choice for the lighting of these extraordinary events," continues Neufeld. "We've clearly demonstrated that other programs can't hold a candle to VectorWorks Spotlight in terms of ease-of-use, comprehensive capabilities, and adaptability for different purposes throughout the production process." Neufeld drew the plan and organized it, working closely with Hammer and associate lighting designer Paul Collison from the start before handing it off to Melbourne-based Andrew Mutton to input all the numbers and finish the task.



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"This is a massive stadium, and trying to work out a method to convey all the information neatly took some thought," says Neufeld. "Luckily, by using VectorWorks Spotlight's viewports and sheet layers, we could adapt the program to our needs effortlessly."

Mutton adds, "The drawing had 1,000 moving lights when I joined the project. Changes were ongoing, and it took nearly three months to input all data to complete the drawing. Setting up the sheet layers was hard for a venue of this size—one of the largest stadiums in the world. But breaking it down to A3 paper sizes while still maintaining label legends that were readable for technicians was easy using VectorWorks Spotlight. There were more than 75 sheet layers with hundreds of viewports."

GAME-TIME CHANGES

Neufeld relied on VectorWorks workgroup referencing when he had to make revisions, "As one whole grandstand was being rebuilt and handed over the month before the show, we used workgroup referencing for all the stadium drawings from other departments as they were being finished. That way, if anything changed, we could easily just freshen the link to that file and carry on with the updated information in the lighting plan."

PREVENTING COSTLY ERRORS WITH KEYSTONE CORRECTION

The lighting design also worked in unison with some of the largest image projections ever seen. VectorWorks Spotlight again played a key role in the show by working out the incredibly complex "keystone" correction for the huge projections the internationally-renowned projection

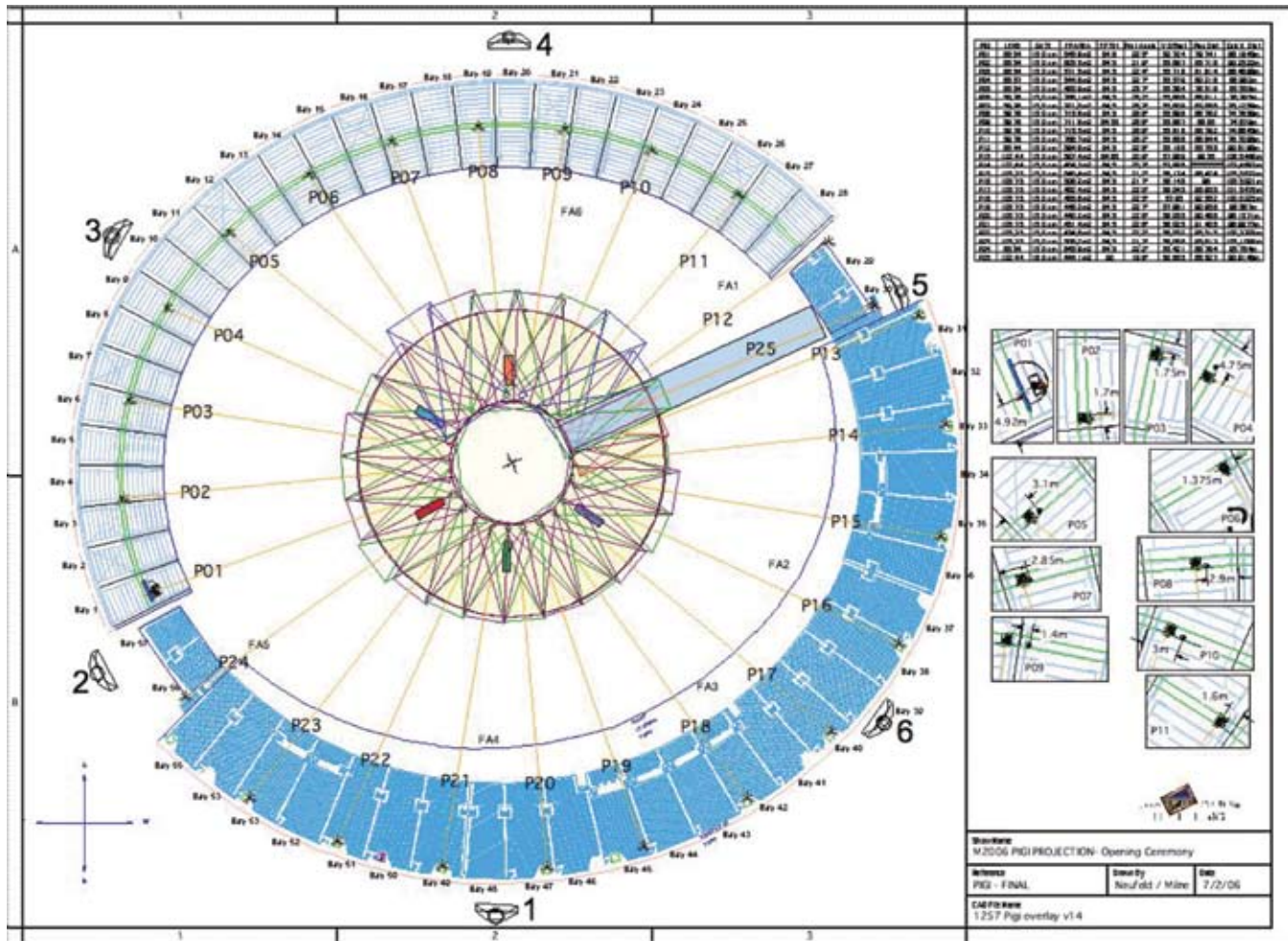
company The Electric Canvas provided. Using a range of PIGI and other high-powered projection equipment, The Electric Canvas create, design and present architecturally accurate projections onto buildings, monuments, stadiums, and complex structures—such as the enormous (100 meters or 330 feet) circular stage floor on the playing field. For this venue, a series of 25 large-format 8Kw Xenon PIGI projectors located along the back of one grandstand and rigged in the roof of the other "merged" together to make a single continuous image, or amazingly complex and beautiful rotating wipes and "reveals" of images on the floor.

But projections become distorted when they hit the projection surface at an angle, unless the projector is perpendicular to this surface. By figuring out what the distortion, or "keystoning," might be, it can appear to project correctly, if the images are predistorted beforehand.

So Peter Milne, director of The Electric Canvas, asked for Neufeld's help. Neufeld employed the VectorWorks plug-in object called the "Keystoner," which was originally developed for The Electric Canvas by Julian Carr and Peter Neufeld for the Sydney 2000 Olympic Games, using VectorScript, the custom scripting language built right into VectorWorks.

"I worked out all the keystoning for each projector using the Keystoner, which certainly proved how VectorWorks Spotlight can be adapted for all kinds of uses", says Neufeld. "There was no template able to be used, as each projector was in a unique position. We didn't have the luxury





of testing each position out prior to the show, since the stadium wasn't handed over by the builders until the equipment was scheduled to be installed. So it all had to be done beforehand in VectorWorks. With the almost endless amount of expensive scrolling slide film—800 meters or half a mile, to be exact—being produced, a mistake of a millimeter at the film/projection end would result in a huge error of many meters due to the very long distance or 'throw.'"

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Needless to say, a very expensive mistake, and, with an estimated quarter of the world's population watching, Neufeld was nervous. But he was able to avoid it by using VectorWorks. "The exact points where the actual film planes would sit on the stands or in the roof were surveyed accurately and then reproduced in the VectorWorks Spotlight 3D model. The keystone images worked perfectly, allowing the artistic content to be met with huge acclaim."

VECTORWORKS SPOTLIGHT GOES FOR THE GOLD

By performing feats like these, VectorWorks came out a winner for the 2006 Commonwealth Games design team.

"The XVIII Commonwealth Games opening and closing ceremonies were a huge artistic and technical achievement," concludes Neufeld. "And VectorWorks Spotlight yet again proves to be a top performer at one of the biggest events on earth."

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THE COMMONWEALTH GAMES

Almost one-third of the world's population lives in Commonwealth countries—those with historical ties to Great Britain. Formerly known as the British Empire Games, the games were first held in Ontario in 1930 and have been held every four years since then, except during World War II. 71 countries and nearly 6,000 participants competed in this year's competition. An estimated 1.5 billion people tuned into the opening ceremony alone. And it is estimated to have cost AUS \$50 million to stage the ceremonies.