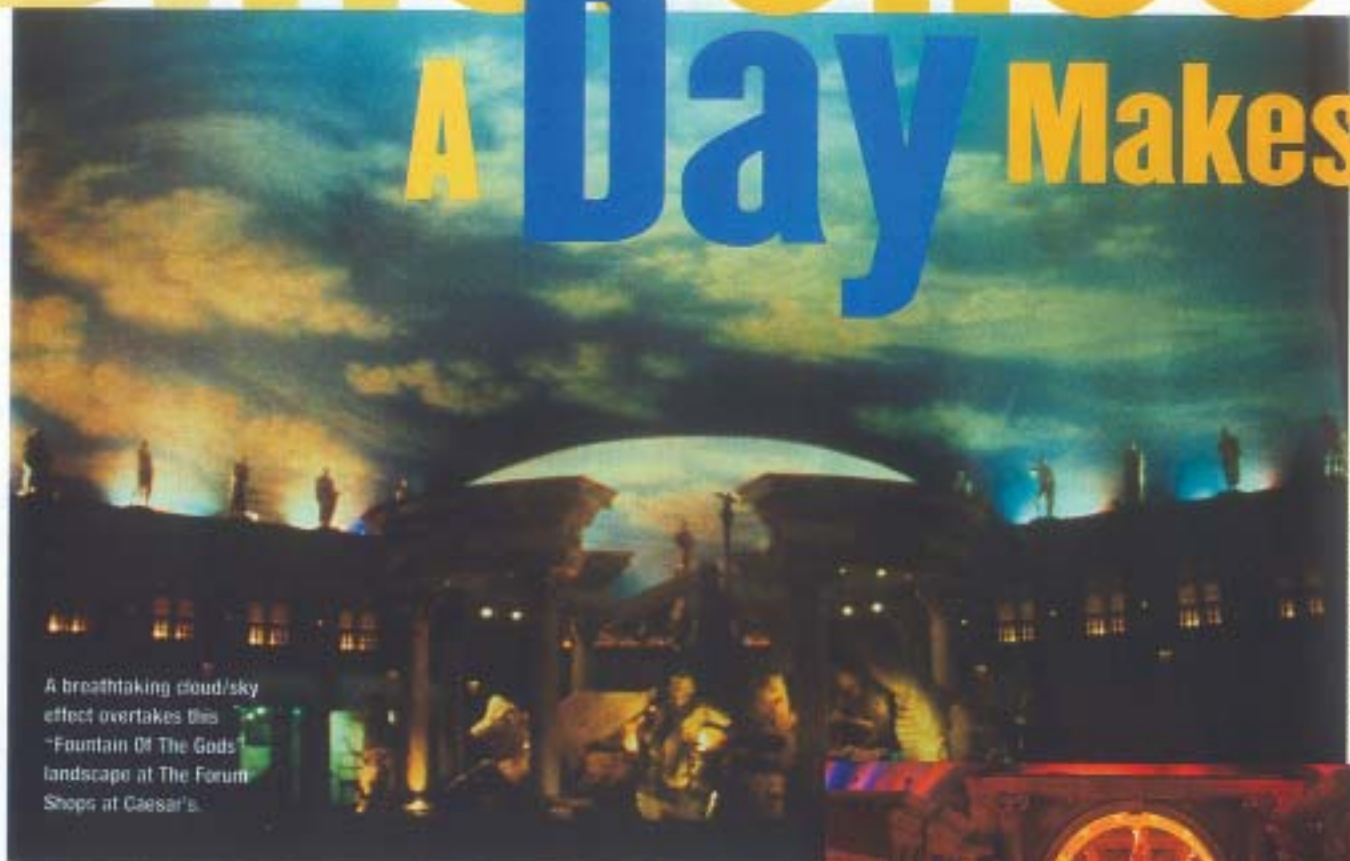


What a Difference A Day Makes

Timed halogens, gels and paint create a unique theatrical lighting effect at a famous Vegas hotel.



A breathtaking cloud/sky effect overtakes this "Fountain Of The Gods" landscape at The Forum Shops at Caesar's.

ALL PHOTOS COURTESY OF CAESARS PALACE

Artificial surroundings create a natural atmosphere in Las Vegas, with the cloud/sky show in the Forum Shops at Caesar's Palace Hotel illustrating its own unique theater effect. Through a combination of unadorned lighting, complex paintwork and a computer-controlled dimming system used throughout 500,000 square feet of exclusive shops, restaurants and boutiques, hotel guests experience a full day's light and night in just one hour.

"We wanted to have a sky where the clouds moved; but after extensive research and development, we realized that wouldn't be possible," says Mark Rosenberg, one of the original lighting designers. Along with Dick Woods, Rosenberg designed the lighting concept, an approach he calls "fairly simplistic."

Developed in two phases, the first in

1992 and the second in 1997, there are approximately 650 lights throughout the center, almost all of which are 1,000-watt halogen bulbs. According to Brian Furthmyer, an engineer with the Forum Shops since 1994, they go through approximately 1,400 halogen bulbs per year.

Four different types of colored gels—light blue, dark blue, clear and orange—were mixed to generate a realistic fusion of day and evening hues. Initially the gels burned out about once a month, but clear glass was inserted to buffer the gel from the light's intense heat; now they last about four months.

Dimmer boards contain the controls that affect the lights' intensity at various times



An example of theatrical lighting/special effects is illustrated here in this street scene phase II aerial shot of The Forum Shops at Caesars in Las Vegas.

throughout each cycle. There are 12 small dimmer racks, each about 3' tall and containing 32 boards and two 6' racks with 120 boards in each. The dimmers not only control the cloud/sky lights, but also the storefront facades and the "Fountain Of The

Gods" (where 1,500 watt lights are necessary to cover the dome arch in the ceiling).

Des Moines, Iowa-based Triad Productions designed the computer program that controls the dimmer boards. This program effectively takes the sky through a 24-hour cycle in 60 minutes. There are two computers in the control room, one for each phase, which must be manually started each day at 9:30 am. They're shut down between 11 pm and midnight, depending on when the shops close. According to Furthmyer, "They must be started at the exact same second each day, otherwise they will wind up way off track with each other, and you'll have half of the mall in high noon and the other half at dusk."

Optical Illusion: Color Me Fooled

"Numerous guests ask me if the clouds are moving," Furthmyer says. Even though the original goal to have the clouds move may not have panned out, the painting, created by Karen Kristin, owner and president of Sky Art design in Englewood, Colorado, is so effective that the optical illusion is successful.

"The first phase was definitely a bigger challenge," recalls Kristin. "We worked from

floor to ceiling. I would hold a laser light to the arched ceiling, while the painter worked. We collaborated with interior designer Terry Dugal, and we painted fairly neutral colors, like blues that could easily darken when cast under a gelled light. By the second phase, we knew exactly what we were doing, and it was only 29,000 square feet of painting, as opposed to the initial 92,000."

The paintwork is deceptively simple. It appears to be a blue sky with white clouds, but there are actually 14 shades included, nine of which create those fluffy white clouds. "Toward the end of the painting [which went in first], we overlapped with the lighting designers quite a bit to perfect the look," says Kristin.

Maintenance

Maintaining the lighting design is a full-time job. An engineer comes in five days per week, from 5 am until 9:30 am, and makes his way through all the catwalks, checking the lights and gels. According to Furthmyer, about three lights need to be replaced daily. "Sockets get corroded, and the dimmers need to be dusted regularly.

We send the boards to Marty's Theatrical for any necessary repairs."

Phased Out

During the initial phase in 1992, black lights were installed and tiny specks of white were painted to create the effect of stars shimmering in the nighttime portion of the cycle. However, as more shops opened, the design team added too much light and the effect was lost. By the time the second phase began in 1997, the project's movers and shakers abandoned the black lights and painted the ceiling without specks.

The Evolution Of Light

Creative ambience comes at an exorbitant cost. Because of halogen's immense heat output, some fluorescent lights, which change the overall effect but greatly reduce the electric bills and elongate the gels' life, are starting to be installed. This is an important consideration in a city that's blistering hot six months a year and in a time when electric bills and energy shortages are forcing engineers to rethink the way they expend energy. **BB**

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