

# Keep Watching the Sky:

## Restoring the Samuel Oschin Planetarium at L.A.'s Griffith Observatory


PHOTO: TIM GRIFFITH

Auerbach Pollock Friedlander Performing Arts/Media Facilities Planning and Design, and Auerbach Glasow Architectural Lighting Design and Consulting collaborated with Pfeiffer Partners Architecture, Levin & Associates Architects, and acousticians McKay Conant Brook on the Samuel Oschin Planetarium at Griffith Observatory in Los Angeles. The firm provided theatre consulting for planetarium lighting, audio systems design, projector lifts, and projection control infrastructure coordination elements for the project. The Griffith Observatory, a Los Angeles landmark, re-opened on November 3.

In April 2001, the design initiative began with HHPA (now Pfeiffer Partners Architects), in coordination with Griffith Observatory personnel led by the director Dr. E.C. Krupp. Creating a personal connection with the audience was a key consideration; emphasis was placed on the use of live presenters. In a venue filled

with high-tech systems, Auerbach Pollock Friedlander's charge was to hide the technology behind the show. Thus an extensive use of wireless control in the planetarium allows presenters to interact with audience members under a replica of the LA sky. "Our goal was to make the technology appear seamless within the scope of the project, while respecting the historic nature of the architecture," says Len Auerbach, founding principal of Auerbach Pollock Friedlander.

For example, the firm designed a high-precision lift, which allowed the Mark IX Universarium projector, from the German firm Carl Zeiss, to be hidden when not in use. The overall synchronized control of the Universarium, the laser projection, lighting, and sound is coordinated by a centralized show control system.

The presentation space provides for daily planetarium shows, and other events, such as lectures and live music, in a semi-front-facing seating configuration. A new

perforated 76' diameter Spitz dome replaces the old plaster dome. Full ADA access and accommodations were added throughout the planetarium. Lighting positions, a control area, and technical support are integrated into the room's architecture. The audio playback and control systems allow sound to have a three-dimensional quality and appear at any point in the dome, and behind the audience. A catwalk system is integrated with the dome to permit easy access to the technical areas. Wireless computer control of all show systems was installed.

The original quadraphonic sound system in the planetarium has been replaced by a 30-channel system, allowing each loudspeaker to be individually addressed and virtual sound sources to be located between loudspeakers. The loudspeakers are placed throughout to envelop the audience on all vertical and horizontal axes. A left-center-right system, plus special narration reinforcement



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microphones and additional loudspeakers to interface with the audio system.

Filling out the audio package are a Listen Technologies assistive listening systems; Clear-Com intercom; mics from Shure, Sennheiser, and AKG; EAW SM-200 stage monitors; and a Yamaha 02R96 digital mixing console. "The audio system brings the observatory into the era of new technology, enhancing the aural experience of the audience," says Greg

Weddig, project manager,

The lighting package includes two racks of ETC Sensor dimmers, one hundred-twenty-four 20A performance/architectural dimmers, an ETC Unison architectural processor to control house lighting, an ETCnet DMX-over-Ethernet system, control racks in the dimmer room and control area for house and work light control and data distribution, Ethernet network taps installed throughout the theatre, and an ETC Expression console. Four High End Systems automated fixtures function through automated concealed ports in the dome and can focus anywhere in the audience level of the planetarium.

The planetarium lighting is coordinated with the projection systems and the Universarium to create an illusionary response to a sense of space. The lighting of the dome is intended to make it disappear, whether with the movement of the setting sun or finding a direction on the horizon. This effect is created using a

continuous array of Altman strip lights with color filters on multiple dimmed control circuits, allowing the light effect to move around the horizon or fill the dome. The dome is also cross-lighted with arrays of Strand Fresnels that provide a smooth wash of light, making the dome invisible.

The planetarium features 298 seats in an architecturally integrated seating plan. The seats have a custom-designed tilt to provide comfortable viewing.

A two-part lift enables rapid deployment of the Universarium from its storage position to its full-height playing position in a matter of seconds. The telescoping lift system uses a four-point ball screw mechanism in coordination with two independent, precision linear actuator-operated lifts, to allow the Universarium to fit between the planetarium floor and the basement level 15' below. The lift has two programmed stops. The handrail position allows laser projectors to be used without being interrupted by the Universarium.

Controls for the Universarium lift are located at the control panel in the lift pit, in the planetarium's control area, and via a hard-wired umbilicus. Safety features include dead-man push-buttons for lift controls, door and railing interlocks, and astragal pressure tape switches at all shear points. The Universarium's controls are hard-wired through cable chains that allow power and control signals to safely navigate the lift mechanisms. Four custom-made floor panels cover the lift keyhole when not in use. They're finished with the same historically important cork flooring that covers the rest of the Planetarium audience area. The lift has an area of 148 sq. ft, and a total lifting and sustaining load capability of 20,000lbs. It travels 11' at 10' per minute. 

loudspeakers, provides primary audio to the audience in live presentation mode. Other loudspeakers allow simulation of sound movement; all of the units are placed behind the trans-sondent dome.

Corridors and circulation paths support backstage and front-of-house needs, with easy access between each zone. The HVAC systems are designed for both heat loads and acoustic criteria. The electrical systems are designed to support presentations by visiting companies, and K-rated transformers with isolated grounds were installed for lighting and audio power.

The sound package includes Meyer Sound CQ-1s for the narration, UPA-2Ps for the horizon loudspeakers and UPA-1Ps for the surround, USW-1Ps subwoofers, EAW UB-12s and Crown CP660s for side fill. The package also included a Level Control Systems control and playback system, a master show control system, provided and programmed by Bowen Technovation, and plug-in boxes to allow



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