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Out of This World

The Rancho Mirage Observatory makes its dazzling debut.

by June Allan Corrigan

Recently, the City of Rancho Mirage held a dedication ceremony for what may be its most enterprising venture to date. With the grand opening of the Rancho Mirage Observatory, directly adjacent to the Rancho Mirage Library, the City is quite literally reaching for the stars. The fanciful new structure you may have noticed being erected over the past year houses a research-grade telescope. The

project's completion marks the first time an observatory has ever shared a library campus in the state of California. It is a truly inspired combination that heralds a bright future of events, discoveries, and learning opportunities designed to benefit all ages. Collectively known as the Rancho Mirage Library and Observatory, the facility is not only stirring interest among local residents, it's catching the

attention of those in the greater astronomy community and serving as a model for other enterprising institutions.

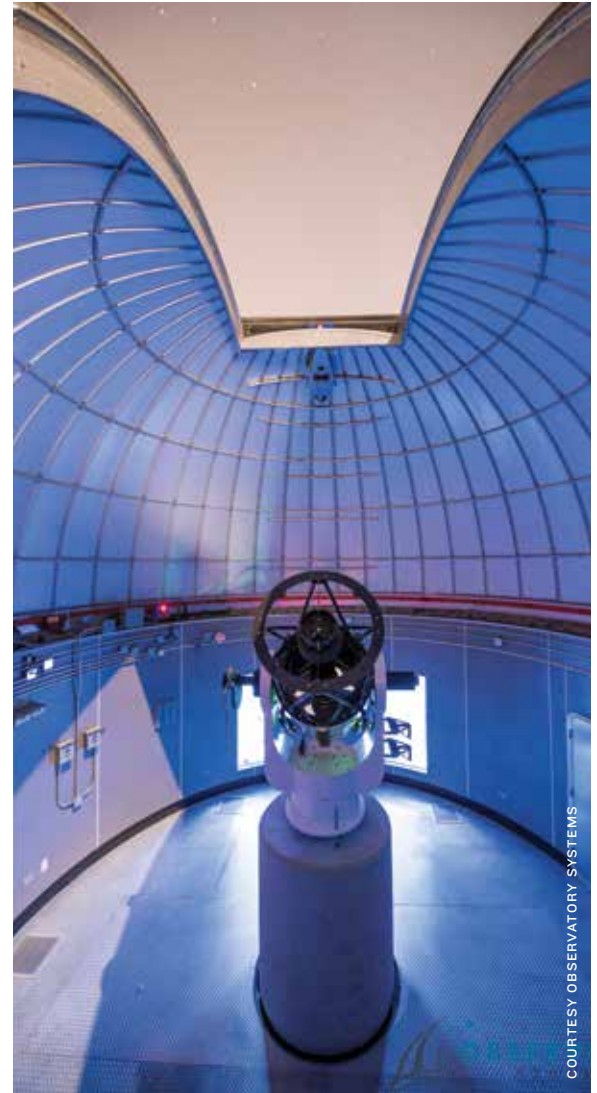
The Power of Suggestion

The wondrous new ability to explore the cosmos from a point in Rancho Mirage demonstrates how influential a single resident can be. Just ask Marilyn Bauer. This involved citizen was serving on the





Above: The design of the Observatory incorporated materials to create a beautiful and durable structure that will hold up to the desert climate. The exterior of the Observatory structure is clad with stucco, corten steel, and copper cap flashings. The viewing deck and walls are covered with a very dense hardwood: Brazilian IPE. The structure is built with concrete caissons, concrete walls, steel post and I-beams, and heavy gauge steel studs. Right: The Rancho Mirage Observatory houses the PlaneWave CDK700 telescope, a revolutionary optical system with innovative technology of the highest quality.



City's Historic Preservation Commission in 2013, and she remembers being invited to a panel discussion. A query went out during the meeting for ideas to bring into the City, some venture heretofore unseen, and Bauer stood right up and suggested an observatory. Her mind had flashed back to memorable childhood visits made to an observatory in her native Toronto and how fascinating and fun those trips had been.

"The thing I liked about an observatory as I thought more of it, is there is no discrimination regarding age or gender or anything. It's just a very mystical thing. My motto has always been 'Reach for the moon and you get a few stars,'" Bauer says. It's amazing to think just a few years later, the moon, the stars, and countless other celestial bodies are now readily accessible

for a close-up view. Her idea appealed to a City Councilmember who championed it, proving true the old adage that it never hurts to make a suggestion!

Up to the Challenge

The idea of an observatory in the City quickly gathered steam. Residents responded favorably to a survey that was circulated, and a parcel of land featuring particularly dark night skies was selected. By a stroke of good fortune, it happened to sit right next to the Rancho Mirage Public Library. Not that the site didn't present its own unique set of challenges. It fell to the architect hired for the project — Charles Martin of Palm Desert-based Narkweather Architects, Inc. — to work out ways to overcome them.

Martin's approach entailed meeting with six different astronomers at such facilities as the Griffith Observatory in Los Angeles; the Mt. SAC-Randall Planetarium in Walnut, California; and the Lowell Observatory in Flagstaff, Arizona. "I asked each one of them to just tell me what *not* to do," Martin says. "And they were somewhat shocked. They said the architect usually tells us how *he's* going to do it!" An especially important lesson he learned centered around the issue of vibration. Essentially, a requirement for getting a good image on a telescope is that there be no vibration. "The possibility that Highway 111's proximity could produce vibration meant that the pedestal the instrument sits on needs to be not only decoupled, it needs to be of a pretty good mass so it doesn't

MARK DAVIDSON

COURTESY OBSERVATORY SYSTEMS

start vibrating in the dirt,” Martin explains. Gaining this insight and others like it helped inform his eventual design.

Martin was also inspired by the Library’s architecture. “I felt we needed to give a nod to the Library, the parent that’s there,” he says. Although he eschewed using the same materials, he did a plaster effect and then matched an elephant gray tone found on the Library building. Instead of copper, he used corten steel. “The materials are pretty simple and poured-in-place concrete. Now they’re all left to weather. They will become better as time goes on.”

The Heavy Lifting

General contractor Sea West Enterprises Inc. was engaged to bring the architect’s vision to life. Since the San Dimas-based company already has several dozen observatories to its credit, the City couldn’t have made a better choice. “We’re neophytes like everybody else when it comes to exploring the universe, but we know what works and doesn’t work when it comes to building observatories,” CEO Eric Simison says. “It’s always a collaborative effort. The architect designed a unique facility here. It’s a desert-like, rustic kind of look that houses probably one of the highest technologies in the valley. It’s a really neat contrast between architectural design and science and engineering.”

Well-versed on the undesirability of vibration, Simison emphasized the importance of deep foundations on this particular project. The Observatory perches on the edge of the Whitewater Wash, so the reinforced concrete footings supporting it extend 20 feet into the ground. Special drill equipment was required to achieve that depth. “Everything was built per the structural engineer. And it was over-engineered to exceed the code requirements,” Jesse Eckenroth, the City’s Director of Public Works, says.

The telescope itself called for what is known as a mass damping foundation. Simison estimates there are 60 yards of concrete underneath the project’s focal point housed in what resembles a large silo. There are essentially two independent structures on the entire site, although they operate as a cohesive unit: the telescope

and everything that supports the telescope and the building. “The concrete pedestal for the telescope is completely isolated from the building; the telescope is not tied to the building at all,” Eckenroth adds.

The Ancillary Parts

So, what is the purpose of the building? Or for that matter, the open deck stretching beside it? Well, these are the components of the Rancho Mirage Observatory that define

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its real purpose. Namely, it is a facility specifically designed to provide public outreach opportunities. The structure situated next to the large silo-shaped dome (home to the PlaneWave CDK700 telescope) is known as the Cosmic Office. In addition to serving as office space for the staff astronomer, it will feature additional computer workstations for amateur astronomers. The small silo-shaped dome at the opposite end of the structure is a restroom, the always-essential facility

that the architect delivered with a slight tongue-in-cheek flourish. The open-air space extending eastward from the Cosmic Office is known as the Exhibit Deck. There, astronomy enthusiasts will be delighted to find four amateur telescope pads complete with data ports and electrical power.

Visitors can come and set up their own lunar and solar telescopes to explore the cosmos. The concrete pads are flush with the wooden deck, so the space could be used for small gatherings as well.

Since it’s not visible from the parking lot, people may be surprised to discover an aptly named Sky Bridge traveling up the backside of the facility. Visitors can follow the ADA-compliant walkway up and around to enter a vestibule that leads to the CDK700 telescope and — yes! — a chance to peek through the eyepiece. As thrilling as that may be, even greater excitement for patrons will result from a fiber connection between the Library and Observatory. It provides an opportunity for live and pre-recorded celestial events to be broadcast on the big screen in the Library’s spacious Community Room.

Perhaps the pièce de résistance of the new Rancho Mirage Observatory is its ability to be operated remotely. The dome atop the silo, which houses the telescope, can be operated remotely, as can the telescope itself. The structure’s air conditioning and lighting system is tied in as well. An actual person will not have to physically be in the Cosmic Office coordinating usage. No matter what the hour, from whatever point in the world, the Observatory can be programmed to capture celestial images.

The Sky’s the Limit

It’s an extraordinary time in human history to look outside our known world. Scientific tools and technologies exist that were never available before. The City of Rancho Mirage is proud to be on the cutting edge and to present a facility that is built around community involvement and interaction. The unique collaboration between Library and Observatory spurs endless opportunities for cosmic exploration. The Rancho Mirage Library and Observatory represents one small step for the City, one giant leap for the Coachella Valley.