

# From Space to Earth The Story of SOLAR ELECTRICITY



Courtesy of Powerlight



## Solarizing the Electrified

Combining added insulation underneath solar panels for roofing gives buildings like the Moscone Convention Center two benefits for the price of one—electricity and protection from solar heat in the summer.

*At the Santa Rita jail in Dublin, California, solar panels work together with a reflective roofing material to keep the inside of the facility cooler.*

Courtesy of SFPUC



*An extensive solar monitoring network indicates that much of San Francisco receives enough solar fuel to put the sun to work throughout the City.*



Courtesy of SFPUC

*Workers install solar panels on the Moscone Center.*

Courtesy of Pilkington Solar International



Photovoltaics can also serve as angled skylights or curtainwall on the south side of buildings. Not only do the panels shade the interior from the excessive heat of the summer sun, they also provide electricity for those inside.



Courtesy of Pilkington Solar International

Exhibit based on the book  
**From Space to Earth — the Story of SOLAR ELECTRICITY**  
by John Perlin

[www.californiasolarcenter.org](http://www.californiasolarcenter.org)



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Courtesy of Pilkington Solar International



## Solarizing the Electrified (continued)

Photovoltaic panels protecting otherwise open parking lots also bring multiple benefits, protecting cars from the elements while generating electricity. This Solar Carport at Los Angeles Department of Water & Power's headquarters also acts as charging station for electric vehicles.



Courtesy of Los Angeles Department of Water & Power

In 1989 Sacramento voters decided to close the Rancho Seco Nuclear Power Plant and instead, chose to invest heavily in solar electricity. The action led the Sacramento Utility District (SMUD) to set the precedent for forward thinking utilities throughout the country to sponsor solar electric projects in their territory. Sacramento is now home to over 10 Megawatts of solar electrical systems, mostly placed on rooftops throughout the city.



Courtesy of Sacramento Municipal Utility District

*A large solar array now resides next to the now closed Rancho Seco Nuclear Power Plant.*

Courtesy of Astropower



*One of many homes in California now with solar electricity. This solar array, installed on a patio trellis, provides shade while producing energy to power the home.*

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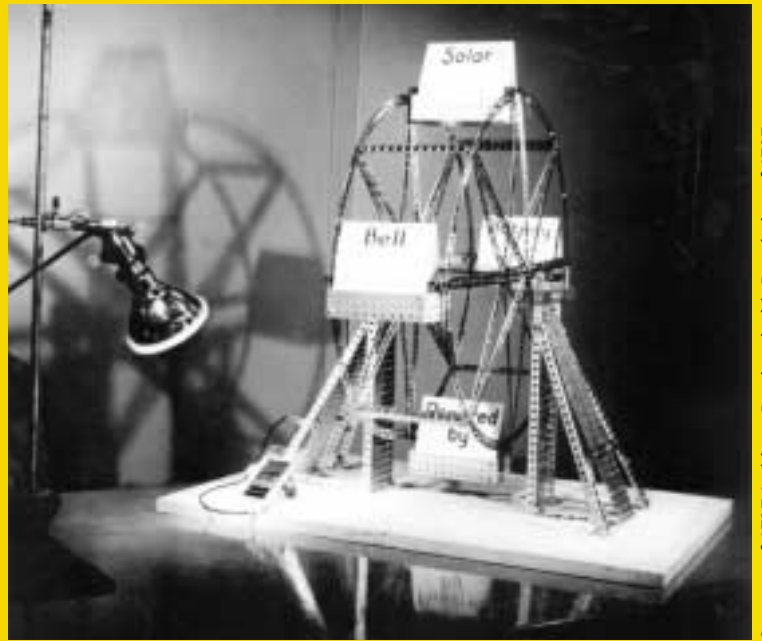


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## Solarizing the Electrified (continued)

The first power solar cells invented at Bell Laboratories in 1954 could only generate enough electricity to run this 21-inch Ferris wheel while today, solar panels drive a real Ferris wheel on the Santa Monica, California pier, demonstrating how far the photovoltaic industry has grown over the last 50 years.



Courtesy of AT&T Archives. Reprinted with Permission of AT&T



Courtesy of John Perlin Solar Archives

The sky is the limit for the future of photovoltaics as this solar-powered airplane demonstrates. It has flown higher than any other aircraft, reaching an altitude of 96,000 feet.



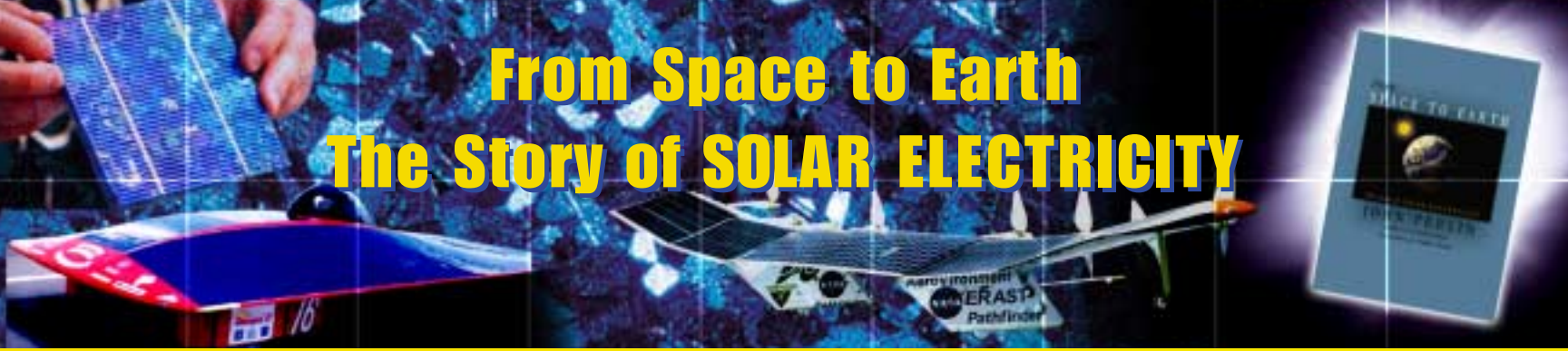
Courtesy of NASA

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Courtesy of Erickson Equine Images



*For this Eureka, California building, flexible panels are attached to a standard roof deck.*

## PIER Research

The Public Interest Energy Research (PIER) program of the California Energy Commission works with the solar industry to help develop improved ways of using photovoltaics. Better integrating solar systems with buildings helps to reduce concern over the appearance of photovoltaic systems and makes them standard material for housing. In fact, many housing developments throughout California now use photovoltaics on their rooftops.



Courtesy of Unisolar

*The flexible panels become the primary roofing material, as shown in this rendering.*

Courtesy of Astropower



*Solar Panels seamlessly integrated with a concrete tile roof.*



Courtesy of RWE Schott Solar

*A free-standing solar panel roofing material that just sits on the roof without any adhesion, without drilling supports into the roof, and yet can withstand winds of over 110 miles per hour.*



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