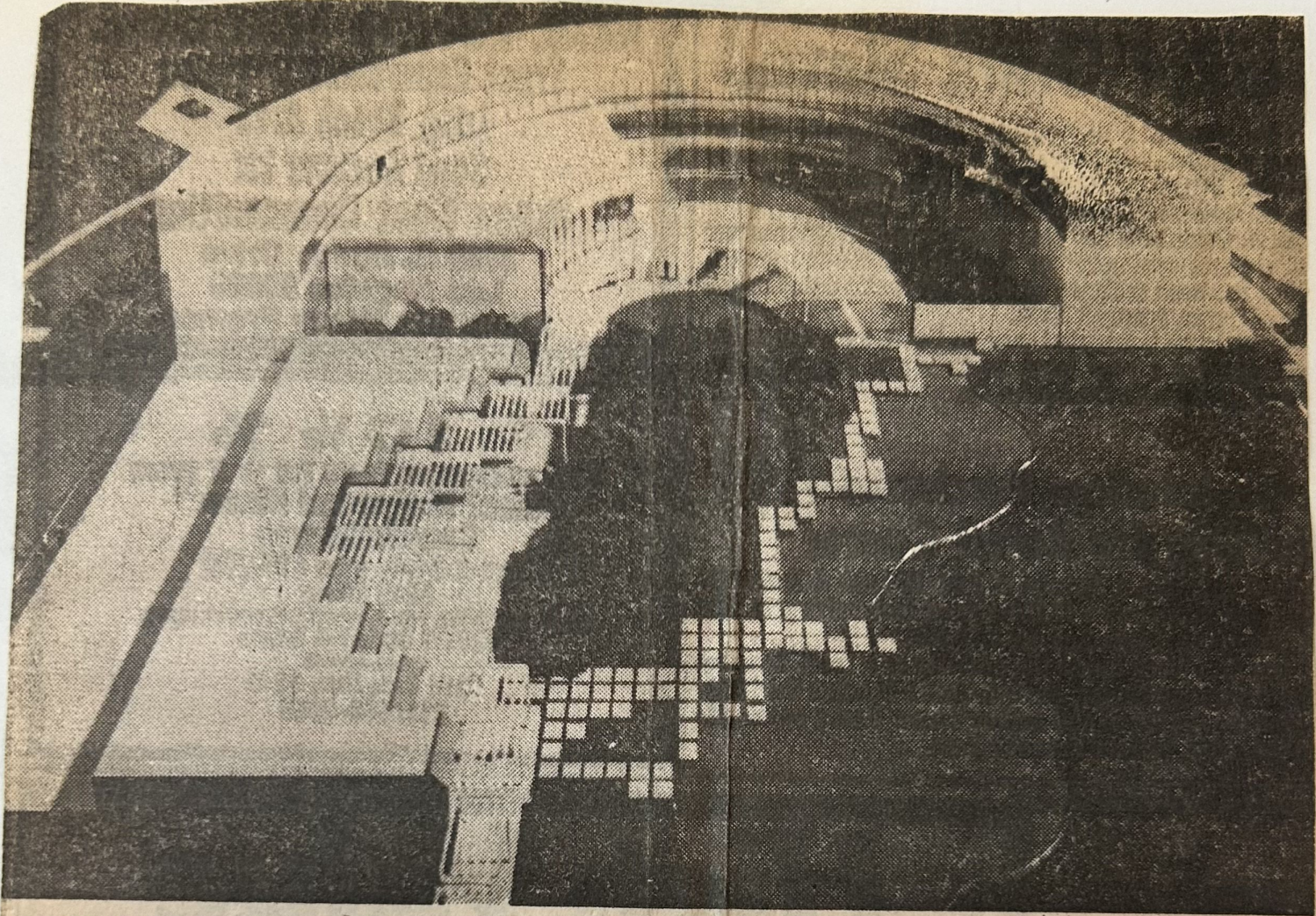


News Tribune Photos

## **ENERGY RESEARCH UNDER WAY**

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Brea Mayor Don Fox looks over a model of a gasoline molecule with Barbara Orosz, a librarian at Union Oil's Fred L. Harley Research Center in Brea (left). To the right is some of the equipment used in the development of refined fuels. Groundbreaking ceremonies were held yesterday for a \$25 million expansion

that will double the size of the research facility. Hartley, chairman and president of Union Oil, told more than 750 guests that the facility will continue its research into the development of shale oil and geothermal energy, along with new technologies for converting more exotic sources into energy.



**EXPANSION BEGUN**—Model shows the new three-story administration building which will be

part of the more \$25-million expansion project at Union Oil Co. research facilities in Brea.

## Work Begun at Brea Union Oil Project <sup>350</sup>

Ground was broken last week in Brea for the more than \$25 million expansion of Union Oil Co. of California's research facilities, which have been named the Fred L. Hartley Research Center in honor of the firm's chairman and president.

The expansion, to be completed next year, will double the size of the current facilities.

The expanded Brea center will enable the oil company to increase its research into alternative energy sources and to conduct exploratory research into photo catalytic devices using solar energy to decompose water into hydrogen and oxygen, said Hartley, who had earlier served as Union's vice president in charge of research.

William L. Pereira Associates is the architect for the expansion and Pozzo Construction Co. is the general contractor.

Los Angeles, Cal.

TIMES JUN 1 1980  
(Daily)

# UNION OIL RESEARCH CENTER

DAILY STAR PROGRESS  
Brea/La Habra  
MAY 28 1980



(Star-Progress Photo)

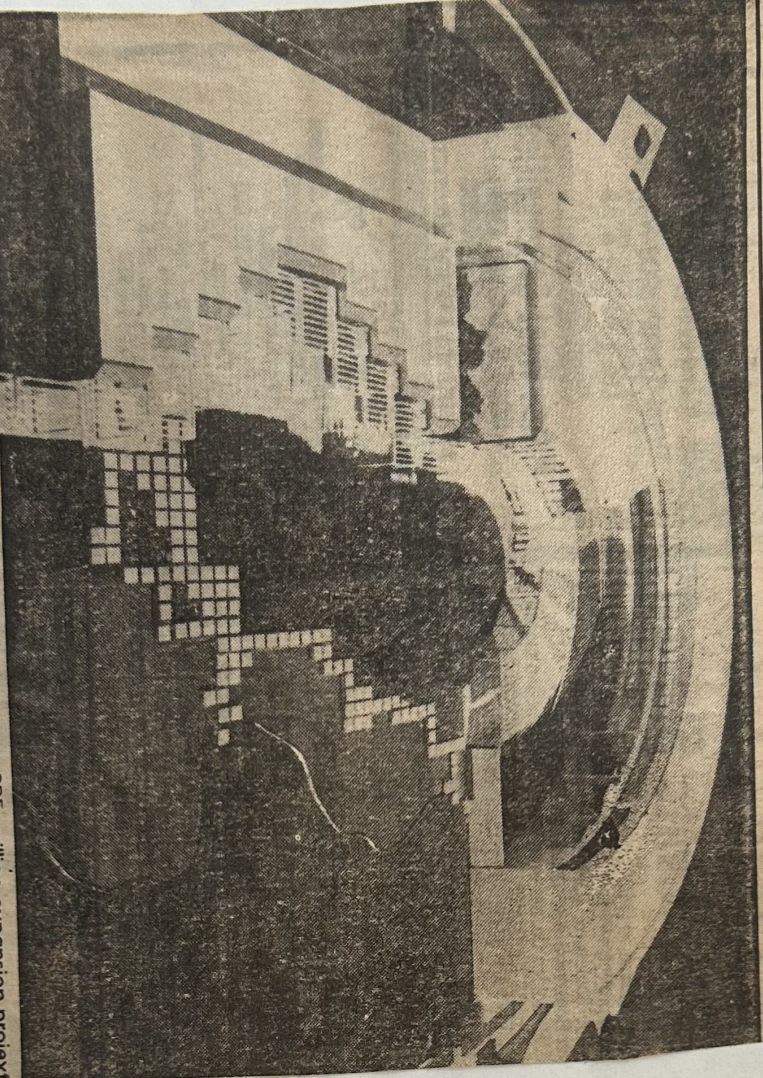
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DEDICATION GATHERING — Union Oil Company of California held groundbreaking ceremonies Tuesday for the \$25 million expansion of its Brea research plant. The center was renamed the Fred L. Hartley Research Center in honor of the company's chairman and president. Attending the groundbreaking from left are Mrs. Richard J. Stegemeier, Mr. and Mrs. Fred L. Hartley, Richard J. Stegemeier, president of the Union Science and Technology Division, and Brea Mayor Don Fox.



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News Tribune Photo by Jess Andresen Jr.

**AT UNION OIL** — The chairman and president of Union Oil Company of California, Fred L. Hartley (left), tosses the first spade of soil at the ceremonial groundbreaking for the \$25 million Fred L. Hartley Research Center at the Union Oil Science and Technology Division, Brea. Standing by is the president of the division, Richard J. Stegemeier. The expansion, to be completed in 1981, will double the size of the present Brea facilities. Brea civic leaders joined Union Oil representatives and guests in the Tuesday ceremonies.



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# Union Shale Project, Developed In Brea, May Be An Exclusive

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By Tony Saavedra  
DSP Staff Writer

BREA — It's not easy being a pioneer, laments Arnold Kelley, a top researcher at Union Oil of California's lab in Brea.

But the company's latest gamble could pay off with the final development of the nation's only major oil shale retort.

Moreover, Union Oil would have exclusive rights to its technology for retracting oil from shale on a large scale — rights that could be licensed to other agencies for a price.

And according to company chairman Fred Hartley, it's Union's technology that has kept the firm's shale project advancing, while most other major developments have been abandoned.

All eyes turned to Union early this month after Exxon Corp. scrapped a project to produce 50,000 barrels of shale oil a day by 1987, six years after beginning construction.

The program was tagged "the Colony Project" in Colorado, and Exxon, working with Tosco Corp., expected to finance the development for roughly \$3 billion.

However, when projected costs soared to as much as \$6 billion, the Colony was closed.

Kelley, vice - president of Union's engineering and development, admitted his firm was taking a calculated risk in continuing the quest to produce commercial quantities of shale oil.

But, he said, the odds were in Union's favor.

For one thing, the firm had a technological headstart, embarking on shale oil development almost 40 years ago.

Joe Walker, Union vice - president of chemical research, estimated that other companies didn't start their technology until roughly 20 years later.

Additionally, Union's project in western Colorado is less ambitious, at this point, than the billion dollar projects that have abandoned ship.

By 1983, 2 1/2 years after beginning construction, Union expects to produce 10,000 barrels of oil a day.

If successful, developments would be made to push production to as much as 100,000 barrels daily by 1988.

In contrast with the multi - billion dollar initial investment by

Exxon, Union expects to spend about \$550 million in the first phase. Total costs should hit around \$2 billion.

The local researchers conceded there was a lot of money and reputation riding on Union's commitment to the program, which was developed in a Brea lab.

One of the hardest aspects, explained Walker, was taking the technology from the lab and transplanting it to the 20,000 - acres of oil shale land in Parachute Creek, Colo.

"That's a hell of an upgrading," said Walker. "Too many things that have never been done before will have to be done."

While Union is ahead of the shale game, its research since the 1940's has oscillated on and off.

Spurred by an expected shortage of petroleum during World War II, Union began investigating the derivation of crude oil by heating shale rocks.

The predicted shortage never occurred and shale experimentation was put on the back burner — until the 1950's, said Walker.

However, great expanses of oil producing fields were discovered in the Middle East, dropping oil prices to about \$2 a barrel.

"We couldn't make oil out of shale for that price," said Kelley. So, again shale development was shelved.

"The government thought there was more goll - darn oil in the world than we would ever need," added Walker.

But with troubles in the Middle East, shale projects were pulled down from the attic around 1971.

Moving alone, Union is hoping

to finally finish the program that had its inception during the 1940's.

And the 2,400 workers at Parachute Creek, after seeing the massive layoffs at Exxon's Colony, are hoping the same thing.

# Union Oil dedicates Brea research center

SEPT. 23, 1982

**BREA** — A \$32 million expansion of the Fred L. Hartley Research Center was dedicated Monday after two years of construction. The center is headquarters for the Union Science and Technology Division of Union Oil Co. of California.

The facility — which was expanded from 21 to 29 buildings, encompassing 77 acres at 376 Valencia Ave. — added four laboratories, a new administration building with a 480-seat auditorium, a cafeteria, an ice bank for air conditioning and a new wing for its pilot-plant building.

The 165,000 square-foot expansion more than doubles the laboratory space at the center, which was originally built in 1951. The initial construction, 21 years ago, cost \$8 million, and the center, then, employed 225 research personnel.

Now the facility employs more than 1,000 scientists, engineers and technicians.

Research at the center has focused on processing fossil fuels and exploring for future energy alternatives. In fact, the Science and Technology Division developed all the major processes used in the company's shale-oil project in Colorado — the nation's first shale-oil venture.

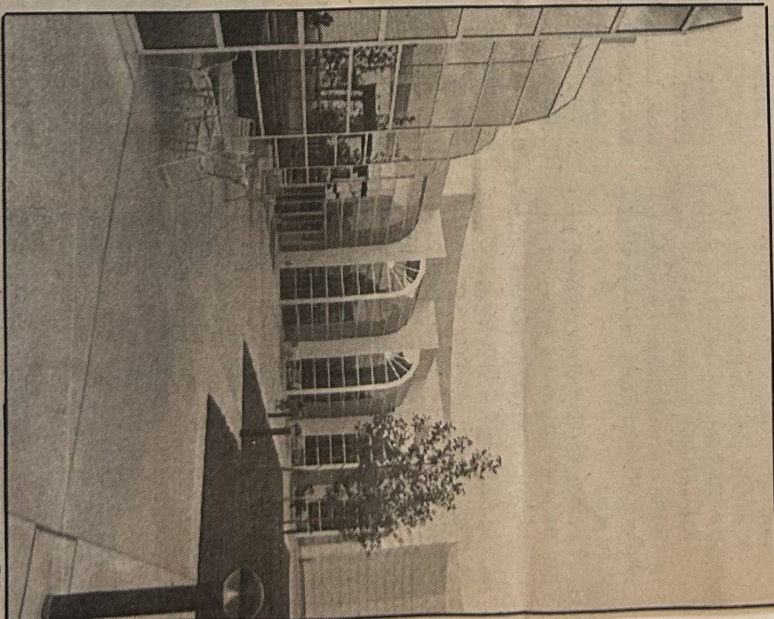
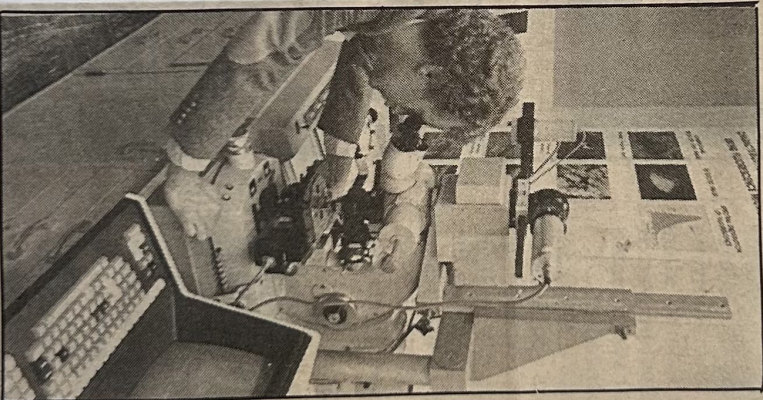
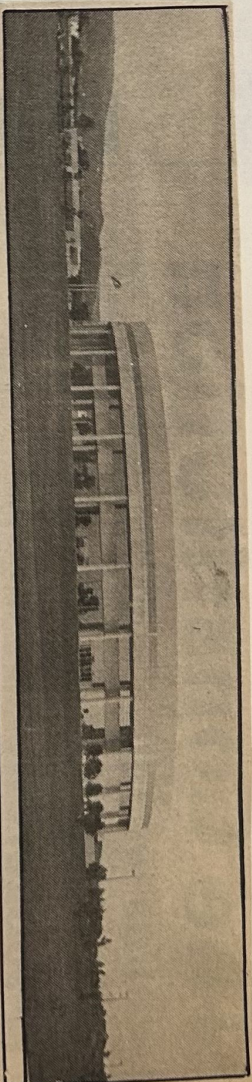
More than half of the new laboratory space will be devoted to research on conventional petroleum resources, including exploration methods, enhanced-recovery techniques and environmental-protection processes. Also, the facility will conduct tests on better uses of coal and tar sands.

Moreover, researchers will develop and test photocatalytic devices for solar-energy uses.

On hand for the ceremonies were Chairman Bruce Nestande of the Orange County Board of Supervisors and Mayor Ron Isles. Also, Fred L. Hartley, the president and chairman of the board of Union Oil Co. of California addressed about 450 guests.

Hartley, for whom the facility is named, said oil shale will lessen the nation's dependency on foreign-oil supplies.

"Next year we will start operating the first commercial oil-shale plant in the country," he said. "The plant will produce 10,000 barrels a day of high-quality, synthetic crude oil — the first signal to OPEC that America is capable of replacing its depleting oil resources."



Scenes from Union Oil Co.'s new research center in Brea

Jess Andresson, Jr./News Tribune

# Unocal celebrates century of progress

By Mark Berg  
DSE Staff Writer

BREA — For a century, Union Oil Company of California has been establishing itself as a worldwide presence in the petroleum industry, supported by the production of two important corporate installations here: the Science and Technology and Chemicals divisions.

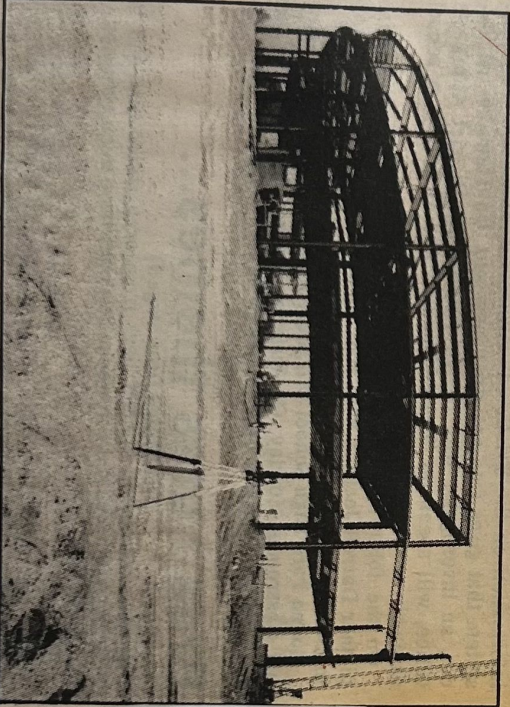
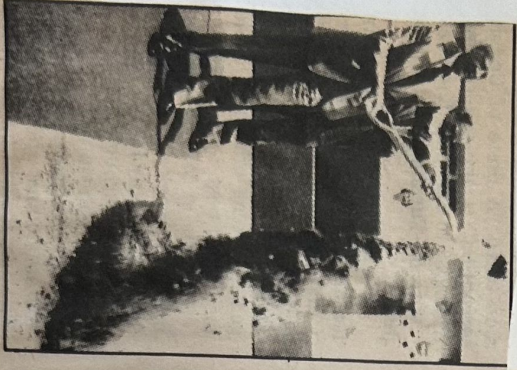
For several weeks, Unocal has been celebrating its 100th anniversary year, having incorporated in Santa Paula on Oct. 17, 1890, through the vision of Lyman Stewart. It was this man's passion to compete with the oil tycoons in the East and scratch out an existence that would endure years of tribula-

tion and successes.

Perhaps Stewart's most significant contribution to the company — and the industry — was to pioneer innovative uses of petroleum products through research conducted first in Santa Paula, then Los Angeles, and now in Brea at 376 Valencia Ave.

Among the company's early achievements were designing oil-drilling rigs that fueled from their own oil, use of steel-hulled oil tankers to avoid high-priced railroad transportation and vigorous expansion of land for oil operations.

The Stearns fee property, still a Unocal producer in the hills north of Brea, was first drilled  
(Continued on Page 2)



(Photos courtesy Unocal Corp.)

RESEARCH GIANT — In 1980, 90 years after Union Oil Company of California pioneered oil extraction and research techniques, construction began on the administration building of Unocal's Science and Technology Division on Valencia Avenue in Brea. At left, then-Unocal president Fred Hartley, with shovel, and current president Dick Stegemeier break ground at the center.

In 1896 and has proved to be a beneficial acquisition in keeping with the company's expansion philosophy. Still yielding 2,100 barrels of oil per day, the Stearns field is expected to outlive Unocal's other Los Angeles basin fields.

Other properties in Brea have been sold to and developed by a company subsidiary, the Unocal Land & Development Company. The Imperial Golf Course and Birch Hills Golf Course are both Unocal properties that have been slated for residential development. Long-term goals of Unocal Land include development of the Stearns property, including homes and a golf course with ongoing, secluded oil extraction.

A theme for Union Oil over the years has been diversity. In 1952, the company established Brea Chemicals, Inc. to manufacture and market oil by-

products. The chemical plant still exists today on Imperial Highway near Kraemer Boulevard. The plant's primary function, production of chemical fertilizer, has now been altered. Ammonia and urea are no longer produced there, but rather brought in by rail to be combined into the fertilizer that is distributed from the plant. Operations there will soon be phased out and moved elsewhere, with the land ultimately going to Unocal Land & Development.

Richard Stegemeier, a former Brea resident, became president of Unocal in 1985. Stegemeier and the company have continued their involvement here. The 50-acre site of Brea Olinda High School was sold to the Brea Olinda Unified School District at a reduced cost and the materials for the high school track and scoreboard were donated by the company last year.