

# ARCHAEOLOGY IN TUCSON

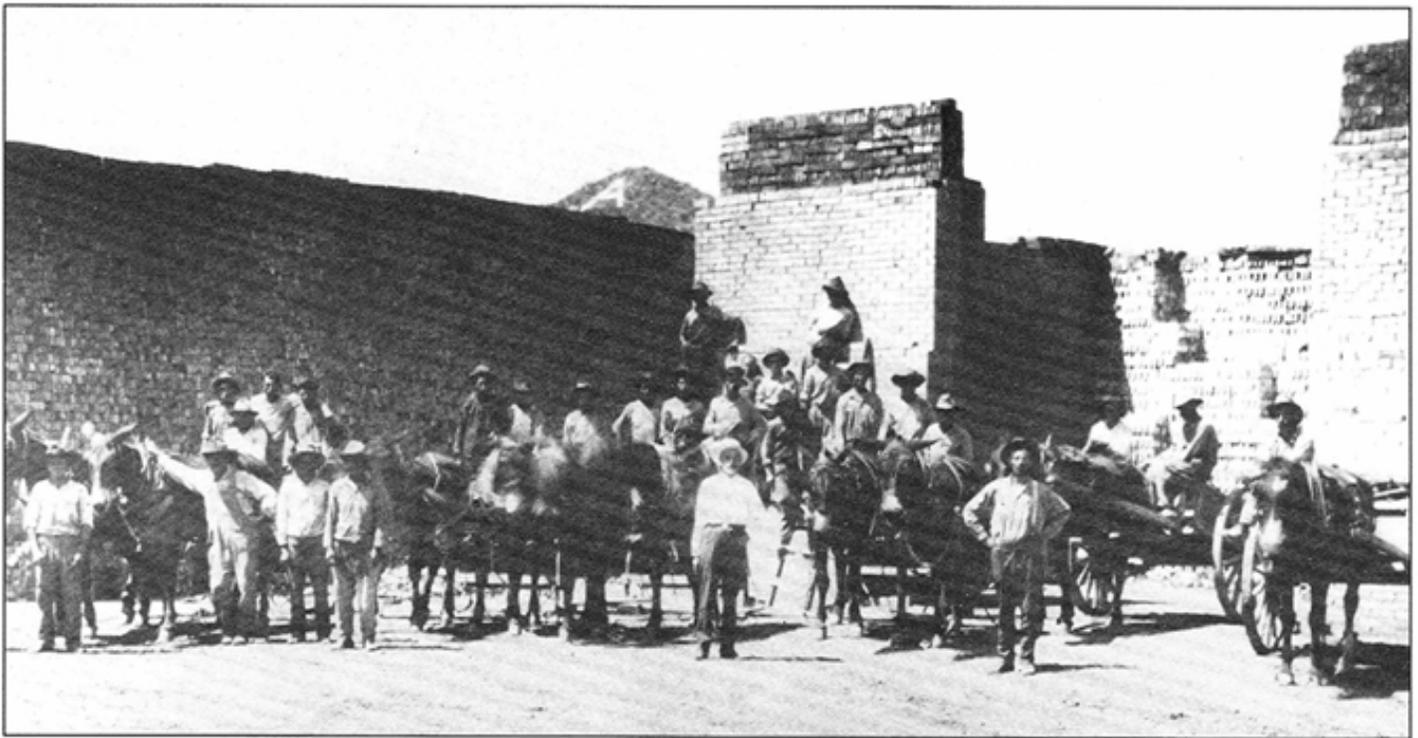
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Summer 1996

## Building Tucson in the Nineteenth and Twentieth Centuries

by Allison Cohen Diehl and Michael W. Diehl  
Center for Desert Archaeology



*Employees of the Tucson Pressed Brick Company posing in front of a partially constructed scove kiln (photo no. B92,788-92,791 courtesy of the Arizona Historical Society).*

Archaeological excavations conducted for the City of Tucson by Desert Archaeology near the 800 block of West Congress Street recently exposed the foundations of a turn-of-the-century brick manufacturing plant and several 2,700-year-old Early Agricultural period pithouses. Initially, the brickyard seemed like an obstacle between the archaeologists and the ancient site below. However, as excavations progressed, it became apparent that the historic component of the site could enrich studies of modern Tucsonans' efforts to adapt to life in the Santa Cruz River valley.

The Tucson Pressed Brick Company (TPBCO) operated on the west side of Tucson between 1908 and 1963, but brick manufacturing on the site began as early as 1896. The founder of the brickyard was Quintus Monier, an architect and stone mason. Mr. Monier and the brickyard that he founded played a very important role in the expansion of Tucson by providing an abundant supply of low-cost, durable, fire-resistant construction material.

Excavations and historic research on TPBCO have shed light on early twentieth-century brickmaking and architecture. They also have revealed competing efforts to erase both the Old-Western and eastern American images of the city as economic fortunes changed. Early image-conscious Tucsonans' efforts were devoted to the eradication of Tucson's adobe heritage. Later campaigns to revive that heritage attempted to recall a stereotype of the Tucson that existed before the influx of eastern U.S. migrants, sometimes at the expense of memorable and monumental brick architecture.

### **THE TRANSITION FROM ADOBE TO BRICK AND STONE**

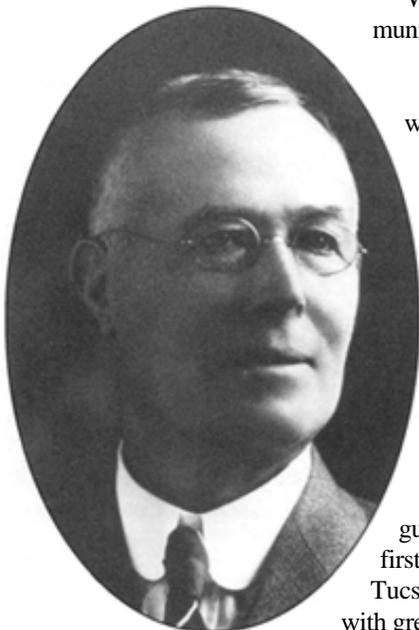
Before the arrival of the railroad in Tucson in 1880, most structures constructed in the city were made of adobe. This was a practical and abundant material for building homes in the desert. In contrast, lumber was expensive because it was locally scarce and had to be hauled into town by wagon.

Bricks were a known alternative to these materials. A few men were "burning" (manufacturing) brick in their backyards during the second half of the nineteenth century and selling them locally. However, these operations produced only small quantities of bricks, and their quality varied. Handmade bricks were often irregular or prone to rapid erosion.

The demand for better bricks and cheaper lumber was partly alleviated with the arrival of the Southern Pacific Railroad, which brought building supplies from Los Angeles and El Paso. With the railroad established, Tucson was effectively linked with the greater American economy—an event that may have spurred the desire to transform Tucson into an "eastern-looking" town.

On August 20, 1892, an editorial remark in the *Arizona Daily Star* pronounced: "The future building material for Tucson will be brick and stone. The adobe must go, likewise the mud roof. They belong in the past and with the past they must remain." Bricks were an attractive alternative to adobe because they too kept structures cool. Bricks were also superior for large public buildings and commercial facilities.

#### QUINTUS MONIER AND THE TUCSON PRESSED BRICK COMPANY



*Quintus Monier, founder of the Tucson Pressed Brick Company (photo no. 62374 courtesy of the Arizona Historical Society).*

When the Catholic community of Tucson decided to build the St. Augustine cathedral in 1897, they wanted it to be of monumental quality and sought a master mason to build it. Quintus Monier, a naturalized French architect who was highly regarded for his construction of the stone cathedral and other buildings in Santa Fe, was invited to Tucson to build the cathedral. The St. Augustine cathedral was the first large brick building in Tucson, and it was received with great acclaim.

Monier remained in Tucson to take advantage of the rush to "modernize" the growing town. Within a few years, Monier established a brickyard at the



*Pressed brick manufactured at the Tucson Pressed Brick Company showing maker's mark (drawing by Allison Cohen Diehl).*

West Congress Street location and became involved in many regional construction projects.

In addition to numerous private residences, many large buildings were created using Monier's bricks: the St. Joseph Academy building, St. Mary's Sanitarium, the Santa Rita Hotel, the Eagle Milling Company Building, the Southern Pacific Roundhouse, the Heidelberg Hotel, the Ivancovich Building, Old City Hall, Steinfeld's Eagle

Building, Drachman's Shoe Store, and several University of Arizona buildings. These structures combined the durability of industrial layouts and brick materials with elements of northern European architectural embellishment, yielding structures that were a tribute to the wealth and worldliness of their owners.

In 1908, Monier incorporated his business as the Tucson Pressed Brick Company. Among Tucson's high-capacity brickyards, Monier's was the longest in operation, and during the peak demand for bricks it was a highly profitable enterprise. Monier reported that with the proper machinery, the Tucson Pressed Brick Company was capable of making 20,000 pressed bricks at a profit of \$800 a day. Extruded bricks could be manufactured at a daily profit of \$400, sewer pipe at \$660, and hollow tile at \$560.

Although Monier faced competition from the DeVry Brickyard and the Grabe Brick Company, by the time of his death in 1923, he had supplied the bricks for more than 100 brick buildings in Tucson, Yuma, Lordsburg, Bisbee, Nogales, Phoenix, and Tempe.



*The St. Augustine Cathedral on Stone Avenue under construction in 1896. Quintus Monier built it in part with bricks manufactured at his brickyard on West Congress Street (later the Tucson Pressed Brick Company). The adobe building in the foreground is typical of structures replaced as local brick production increased (photo no. B.92, 788-92, 791 courtesy of the Arizona Historical Society).*

## NEW OWNERSHIP

In 1923, the ownership of TPBCO transferred to Albert Steinfeld, a very successful local businessman, as the outcome of a legal claim. Steinfeld owned large amounts of land throughout Tucson and quickly harnessed the brickyard for his own building needs.

The twenties witnessed a huge surge in development in Tucson. Elite neighborhoods began to spring up on the fringes of town as more and more people acquired automobiles, allowing them to "commute."

In 1929, just before the stock market crash, Steinfeld erected the Pioneer Hotel, an 11-story skyscraper. Built to meet the demand for deluxe accommodations in the downtown area, the Pioneer building was designed to house business travelers and impress them with the economic health of a "modern" city. There are no records of this or other specific buildings being created with TPBCO brick during the time Steinfeld owned it, but the company appears to have stayed competitive throughout the thirties.

In 1935, Albert's son Harold Steinfeld sold the TPBCO. The purchaser may have been John S. Sundt, president of one of the Southwest's most successful contracting companies.

## The First Bricks in Tucson

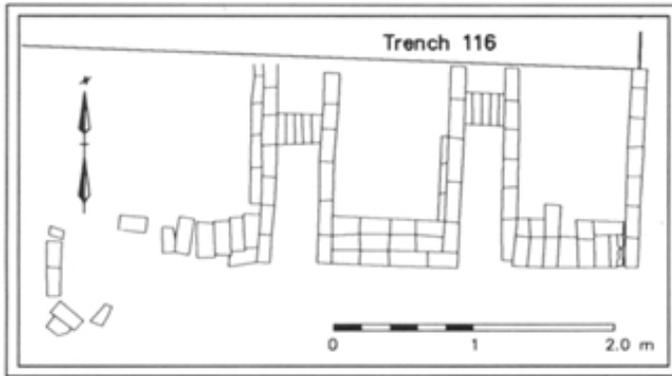
Adobe blocks and bricks are made of the same materials—clay, sand, and water. They differ in one main way: bricks have been heated to the point of irreversible change, whereas adobe has not.

The earliest "bricks" used for construction in the Tucson area were heated adobe blocks (terra cotta). By the late 1700s, fired bricks were used in areas where added strength was needed at San Xavier del Bac and at the San Agustín mission at the base of A mountain.

The bricks did not look like the common rectangular red bricks we think of today. They were probably made with the same molds used for adobe blocks, and their pale orange color suggests that they were fired at relatively low temperatures. Temporary kilns built at the construction site and fueled by wood and animal dung would have been used for firing.



*Laborers constructing a rectangular scove kiln. Coal was placed into the horizontal flues visible in the lower right portion of the photograph and set afire (photo no. B.92,788-92,791 courtesy of the Arizona Historical Society).*



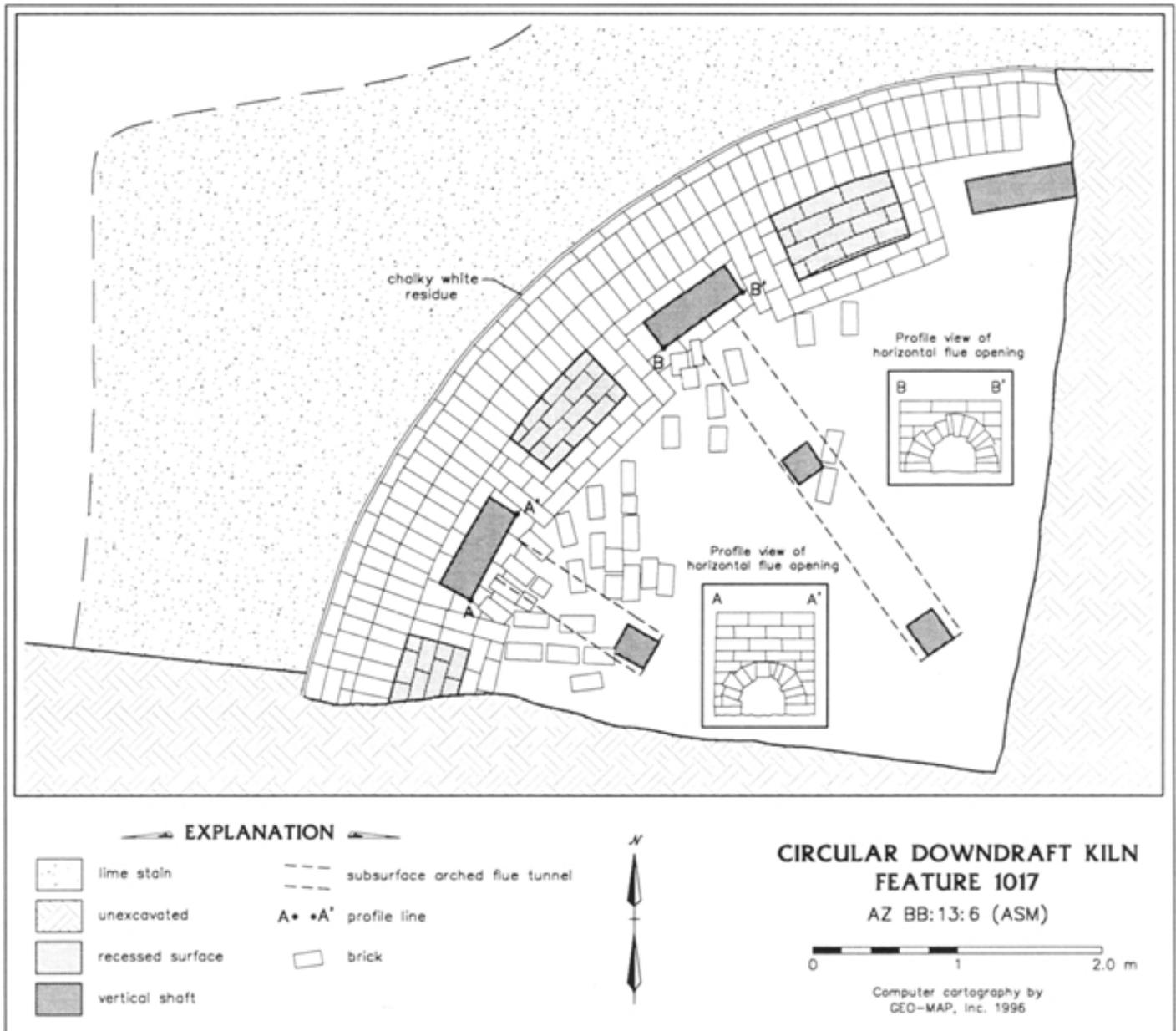
A portion of the foundation of a rectangular scove kiln at the Tucson Pressed Brick Company (Feature 1003). Coal was found in the two narrow chambers that open to the south.

According to city directories, Sundt and board members from his company owned the brickyard by the late 1940s. While the Sundt Corporation operated TPBCO, it constructed over 24 major buildings on the University of Arizona campus, as well as numerous others around the state.

**THE DEMISE OF TUCSON'S BRICK INDUSTRY**

Around the same time that Steinfeld acquired TPBCO, attitudes toward Tucson's image began to change. During the twenties, Tucson began to attract more and more tourists and vacationers. These visitors sought a taste of the vanished "Old West," and efforts were initiated to cater to their demands.

Entrepreneurs once eager to easternize the town now celebrated Tucson's Spanish and Mexican heritage. Brick buildings were stuccoed, flat-roofed "adobe" houses were constructed



The northwest portion of a circular, gas-powered kiln uncovered during excavations at Tucson Pressed Brick Company (Feature 1017).

with ornamental crossbeams, and the *Fiesta de Los Vaqueros* (Tucson's annual rodeo) was invented.

In a move that heralded the end of the era of easternization over which Monier and Steinfeld presided, the St. Augustine cathedral was modified to give it the appearance of a Spanish era mission. The cathedral's impressive hybrid brick-and-gothic image vanished under a facade of stucco.

Although TPBCO competed successfully throughout its years at the West Congress Street location, changes in the building industry eroded the economic base of brickyards both in Tucson and on a national scale. One by one, the Tucson-based yards closed as the demand for bricks in public, corporate, and domestic construction declined.

Very tall public and corporate buildings required concrete and steel for their massive frames. In Tucson, the revival of Old West and desert-oriented imagery made bricks unnecessary. Cheap concrete blocks could be enmeshed in wire and liberally plastered with stucco.

In the 1940s, TPBCO operated at least five kilns simultaneously, but by 1954 only one kiln remained in operation. In 1963, the Sundt Corporation moved TPBCO to South Houghton Road, and the original West Congress Street site was leveled. TPBCO ceased operation in 1974, and at the present time, Tucson does not have a resident brickyard.

## Brickmaking Then and Now

Bricks can be classified based on the way they were manufactured. Handmade bricks are made with clay that has been mixed with as much water as possible without making the mixture sticky. The clay is pressed into wooden molds with rectangular compartments. As brickmaking machines became common in the mid-to-late 1800s, this technique was largely abandoned.

Extruded bricks are made with less water than handmade bricks, so the clay is harder and stiffer. Machines force the clay mixture through a rectangular hole, forming a long ribbon. A piano wire or steel blade then cuts the ribbon into individual bricks.

Pressed bricks use little water. Clay is inserted into a rectangular mold and hydraulically compressed with a metal plate. The metal plate can also be used to emboss a maker's mark into the top of the bricks.

Once formed, the bricks are allowed to dry completely, and then they are fired in a kiln. Scove kilns are temporary rectangular kilns constructed of unfired bricks. The earliest American bricks were made in scove kilns following methods used in Europe. However, this method usually produced poorly fired bricks among the outer layers.

As technology improved, permanent kilns that improved heat distribution were designed. The results were better quality bricks with fewer firing flaws.

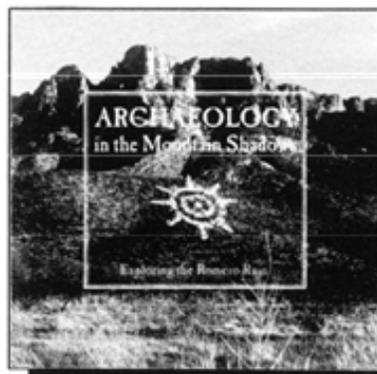
## WHY STUDY BRICKMAKING?

Desert Archaeology's investigations of brickyards involves two main efforts—historical research and archaeological investigation. Documents tie TPBCO to the commercial enterprises of many influential figures in Tucson's history, including Levi H. Manning, Fred Ronstadt, Mose Drachman, the Allison brothers, and Monte Mansfield, underscoring TPBCO's central role in meeting the demand for high-quality construction material in the early twentieth century. Newspapers and architectural history sources help to reconstruct the social context within which brickmaking thrived in southern Arizona at the turn of the century.

Archaeological work conducted at TPBCO has provided information about brickmaking during an innovative period for the industry. Evidence of several different brick-firing technologies uncovered at the site includes a high-capacity, round, gas-powered kiln and several rectangular scove kilns.

Many bricks bear a maker's mark that can be used as an identifier or a chronological marker, but most do not. Techniques that were originally developed to locate the sources of indigenous ceramics have been used on bricks collected in the TPBCO excavations. Analyses have matched TPBCO brick temper with local Santa Cruz River sand.

Ultimately, these studies may make it possible to identify sources of bricks used in historic buildings, even when the bricks lack maker's marks. Bricks can also be studied in order to trace business and personal networks among people. Finally, studies of the manufacture and use of bricks may help us understand the relationship between market forces and ideology in shaping the demand for commodities in our own society, and perhaps one day, in prehistoric societies as well.



Work north of Tucson has uncovered traces of four great cultures: Archaic hunters, Hohokam farmers, frontier Mexican ranchers, and Apaches who raided the cattle herds. This new 16-page booklet written by Deborah L. Swartz and



William H. Doelle reveals intriguing aspects of the Romero Ruin's 1,500-year history. Copies are \$4, plus \$1 postage and handling.

## Center for Desert Archaeology

3975 N. Tucson Blvd., Tucson, AZ 85716.520-881-2244

# Center for Desert Archaeology Honored

Each year the Arizona State Historic Preservation Office and the Arizona Preservation Foundation assist the Governor in the selection and presentation of a series of awards for historic preservation. The Archaeology in Tucson Program of the Center for Desert Archaeology won the 1996 award in the

educational category. The award is reproduced on these two pages. The illustration of the Center's excavations that exposed the Tucson Presidio, which was within the courtyard of the Pima County Courthouse, was drawn by Phoenix architect Don W. Ryden.

1996

## GOVERNOR'S AWARD FOR HISTORIC PRESERVATION

EDUCATION CATEGORY

awarded to

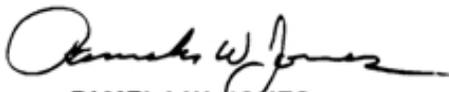
**CENTER for DESERT ARCHAEOLOGY**

Archaeology in Tucson, a public outreach and education program of the Center for Desert Archaeology, was initiated a decade ago. The program promotes preservation of archaeological resources by sharing information about Arizona's past with the general public, as well as the professional archaeological community. The program has provided a framework for undertaking a dozen archaeological research, preservation, and education projects that provide opportunities for members to participate in archaeological site surveys and excavations supervised by professional archaeologists.

An attractive quarterly newsletter, Archaeology in Tucson, provides members with information about the most current significant results of archaeological research in central and southern Arizona. Membership in the program has grown to approximately 350 participants, who represent an important increment to the Arizona constituency of historic preservation advocates.



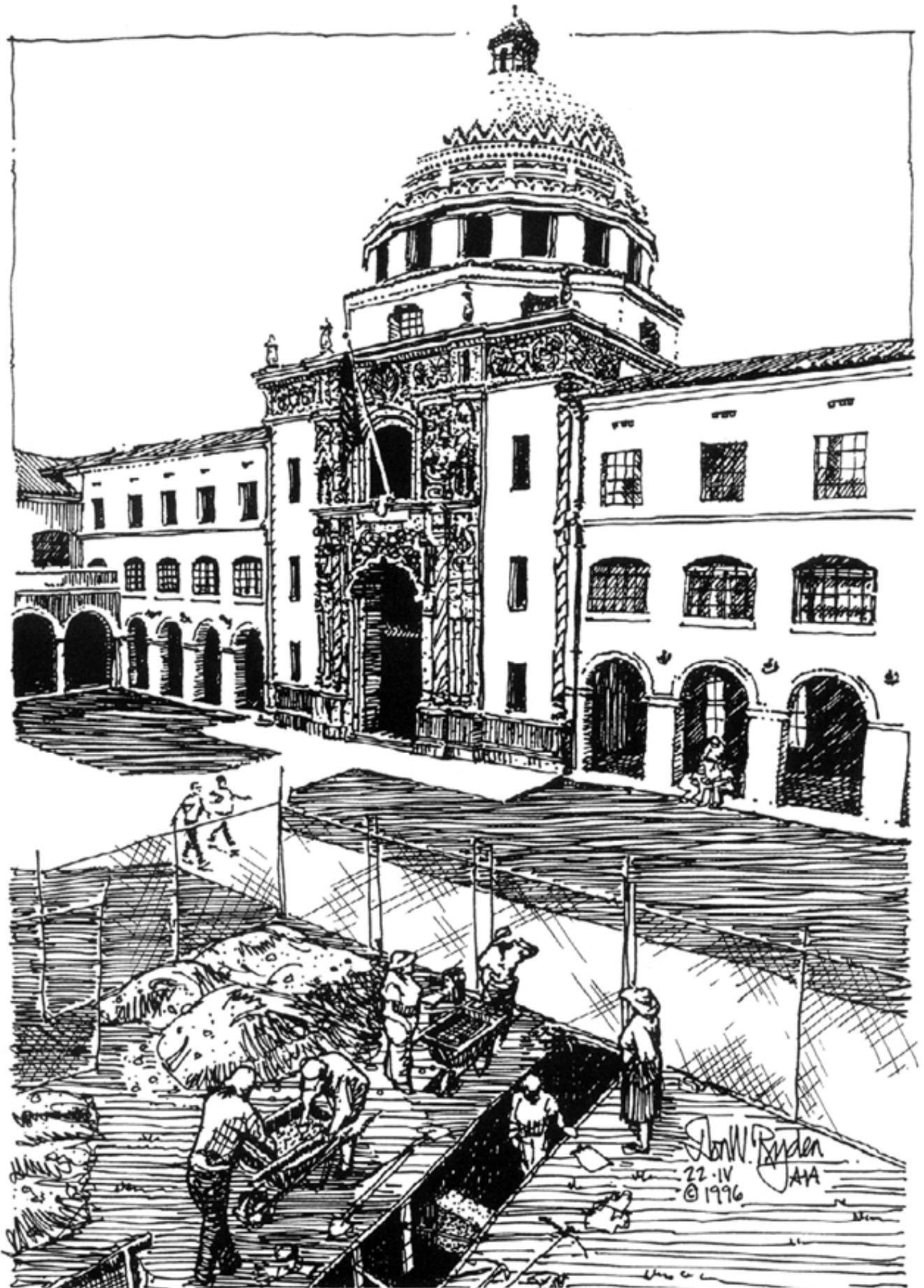
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ARIZONA STATE HISTORIC  
PRESERVATION OFFICER



**Center for Desert Archaeology**  
**Archaeology in Tucson**  
**3975 North Tucson Blvd. Tucson,**  
**AZ 85716**

ADDRESS CORRECTION REQUESTED



Bricks manufactured by the Tucson Pressed Brick Company can be found in many of Tucson's early buildings (see story on p. 1).

**Time to Renew?**

If your address label indicates that your *Archaeology in Tucson* membership has expired, please renew promptly to remain eligible for all activities, newsletters, and discounts on T-shirts and Center for Desert Archaeology publications.

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**CIENEGA VALLEY SURVEY**

	First Saturday	Third Sunday
September	7	15
October	5	20
November	2	17
December	7	15

To sign up please call Lisa Piper at The Center for Desert Archaeology, at 520-881-2244

**The Center for Desert Archaeology**

The Center for Desert Archaeology is a nonprofit research and education organization that specializes in the study of archaeology and history of desert regions. Our primary research focus has been southern Arizona.

**Archaeology in Tucson**

is the Center for Desert Archaeology's membership program. Center members receive the *Archaeology in Tucson* quarterly Newsletter; discounts on the Center's publications; and opportunities to participate in its archaeological projects, attend site tours, and come to archaeology lectures. Memberships runs for one year from when the dues are received.

For further information about the Center for Desert Archaeology or about the Archaeology in Tucson program, call Lisa Armstrong at 520-881-2244. For information on the *Archaeology in Tucson* newsletter specifically, please contact the editor, Homer Thiel.

**Archaeology in Tucson Membership Application**

Name \_\_\_\_\_ Phone \_\_\_\_\_  
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Center for Desert Archaeology  
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 d: \$ \_\_\_\_\_

Are you interested in volunteering on archaeology research projects? \_\_\_ Yes \_\_\_ No

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 3975 NORTH TUCSON BLVD.  
 TUCSON, AZ 85716

7/94

**Archaeology in Tucson  
 Annual Membership Categories and Rates**

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Family.....	\$15	Active.....	\$100
Supporting .....	\$25	Sponsor .....	\$200
Patron.....	\$500		