



# LIME KILN CHRONICLES

Newsletter of the Friends of the Cowell Lime Works Historic District  
University of California, Santa Cruz

---



Sally Morgan

Cooperage

## *Friends Receive Community Foundation Grant*

The Community Foundation of Santa Cruz County provided a grant of \$10,000 for making a Historic American Building Survey (HABS) record of the Cooperage. The building will be meticulously examined, photographed, and measured, and the drawings made in 1988 will be updated. The resulting document will provide critical guidance for future restoration. Such a document was recently completed for the Hay Barn (page 4).

The Cooperage is located near the campus main entrance. Sometimes mistaken for a barn, it is on stone pillars and was where wooden lime barrels were assembled and stored. The building was built in 1869 and was essential to the lime industry. All of the lime made here was shipped in redwood barrels.

We sincerely thank the Community Foundation for their support.

## *Lime Kiln Sesquicentennial*

Each day thousands of people travel through the UCSC campus main entrance, passing by a row of four historic lime kilns. While the exact age of three of the kilns is uncertain, the one closest to the road (and the one which is a different shape from the others) is 150 years old this year. We know this because of a small item in the newspaper near the end of 1861 listing a "patent lime-kiln" as one of the recent improvements by Davis and Jordan (then owners of the lime works).

This type of kiln goes by several other names: continuous kiln, perpetual kiln, or vertical shaft kiln. It operated differently from the adjacent pot kilns. The pot kilns were loaded, fired, cooled, and then unloaded. The continuous kiln (as its name implies) could run continuously. Rock was dumped in at the top and the finished lime taken out from the bottom every few hours. At the same time, workers stoked the built-in fireboxes with cordwood.

(Continued on p. 5)



Frank Perry

The continuous kiln is located near the campus main entrance.



Cooperage

### *A Step Back In Time*

Our thanks to Dawn Johnson for generously sharing these photos of the Historic District taken by her father, Ernest C. Johnson, in August, 1964. This was a year before the campus opened for classes. Do you have photos from the '60s, '70s, or '80s? We'd love to see them. Email to [limeworks@ucsc.edu](mailto:limeworks@ucsc.edu).



Lime kilns with oil tank on right (later removed). Cabin on hillside has since disappeared.



Part of the Cooperage is being dismantled to make room for Coolidge Drive. Still more was removed before the end was boarded over.

Cooperage (left), continuous kiln (center), two oil tanks, and the Hay Barn (upper right). The Hay Barn was in severe disrepair at this time and was later restored by the University. It is once again in severe disrepair.





## Boy Scout Troop Restores Fencing



Sam Muse cuts a board for the fence.

This past summer, Boy Scout Troop 674, under the direction of Eagle Scout candidate Sam Muse, restored a substantial portion of the picket fence that defines the historic workers cabin complex at the Lime Works.

The project was a great example of collaboration in historic preservation. Big Creek Lumber generously donated lengths of redwood, and Lud McCrary of Big Creek taught Sam how to split this into pickets. Wood milled from trees cut from a construction site at the University was used for fence rails and replacement fence posts. The boys and adult volunteers set the

new wooden posts to support sections of fencing that could be reused, digging holes under the supervision of archaeologist Pat Paramoure, who watched for buried archaeological materials. Finally, missing segments of the fence were filled in with the newly-split pickets.

The historic fences throughout the district are an important element of the historic landscape. We sincerely thank Sam Muse and Troop 674 for their hard work on this project. —S.M.



## District Happenings



Restoration volunteers discovered this sign nailed face-down inside Cabin B. It turns out that Aaron Gosliner operated a shoe store on Pacific Avenue in Santa Cruz during the early 1900s. How this sign ended up in the cabin is a mystery.

The first of six interpretive signs was installed this past summer. Located at the entrance to the Admissions Office (Cook House), it introduces visitors to the lime works history. Other signs (designed but waiting for funding) will tell about the Cook House, lime workers, Cooperage, kilns, and Cardiff House.



The newly-updated guide to museums in Santa Cruz County now includes the Cowell Lime Works Historic District.

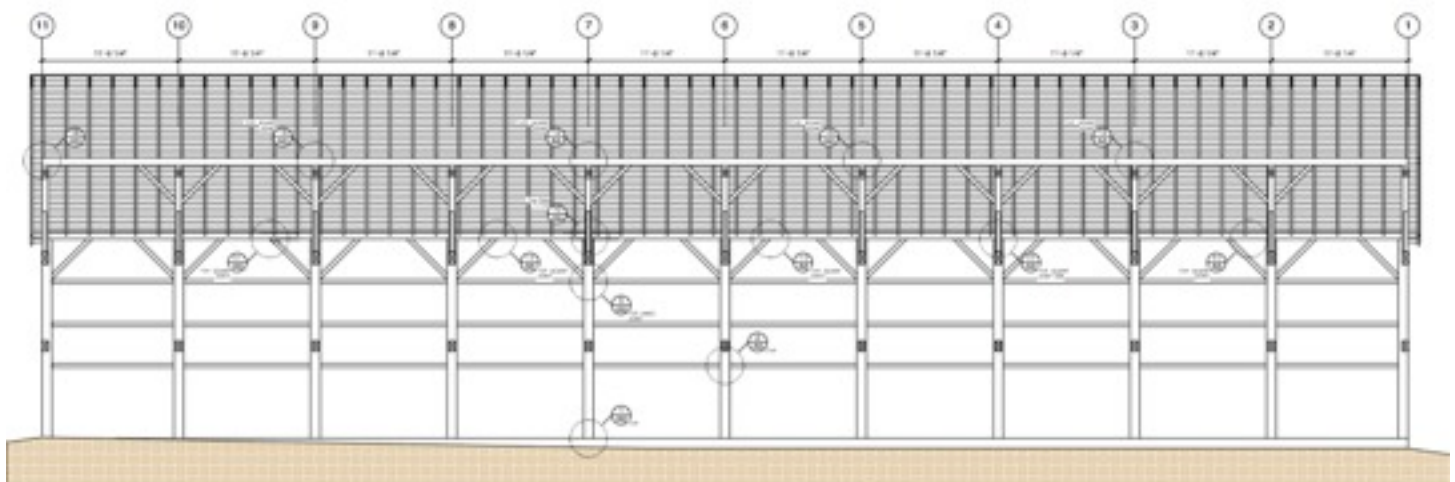
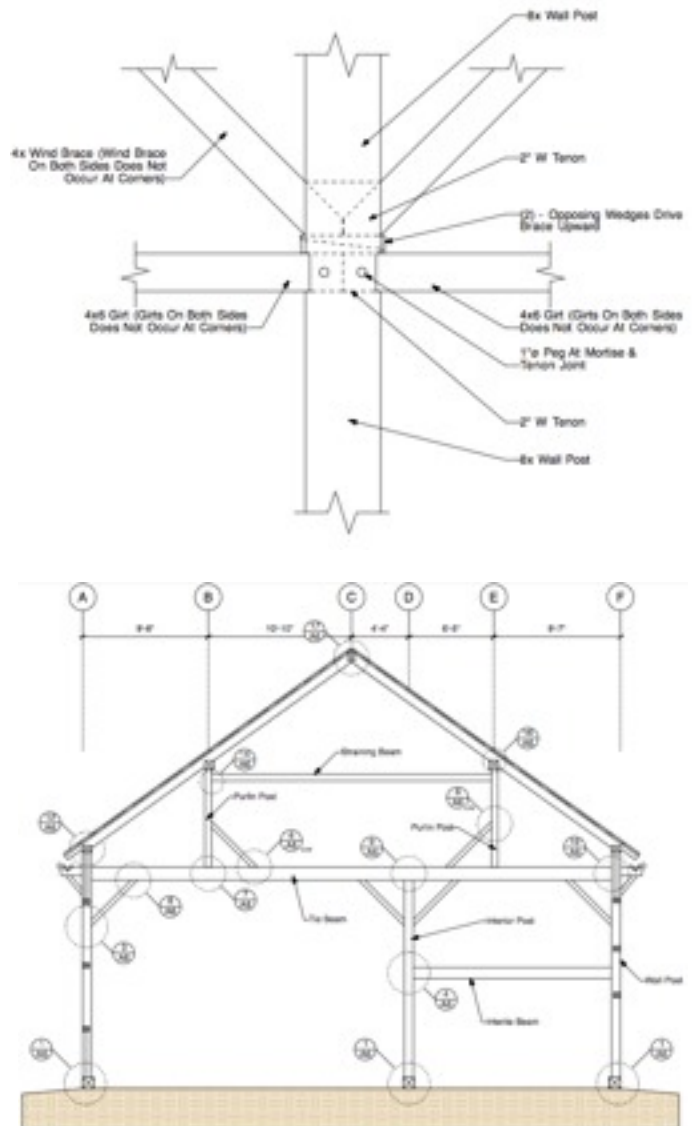
## Hay Barn Study Completed

By the time this newsletter goes to press, JRP Historical Consulting, working in collaboration with Paul Oatman of Sherwood Forest Timber Frames and Bill Hurley of Dos Osos Timberworks, will have completed the Historic American Building Survey (HABS) documentation for the Hay Barn. This study was funded in part by a grant from the National Trust for Historic Preservation and generous donations from members of the Friends. It includes a history of the barn, detailed architectural description and drawings of the timber frame, and large-format photographs of the structure. This documentation will ensure that the future reconstruction can faithfully replicate the original.

The barn has suffered further deterioration in the past year. However, this dark cloud had a bright side: the collapse and disarticulation of some of the timber-frame joints has provided an opportunity for experts to have a closer look at certain elusive details. For example, the barn's unusually robust ridge pole bears hardware that may represent an early makeshift hay carrier, installed during the original construction. This was later covered by a manufactured hay carrier. This addition to the barn, sometime after 1867 (the date of the hay carrier's invention), necessitated substantial structural retrofits. The evidence of the barn's joinery suggests that original construction took place before 1880, and possibly before 1867.

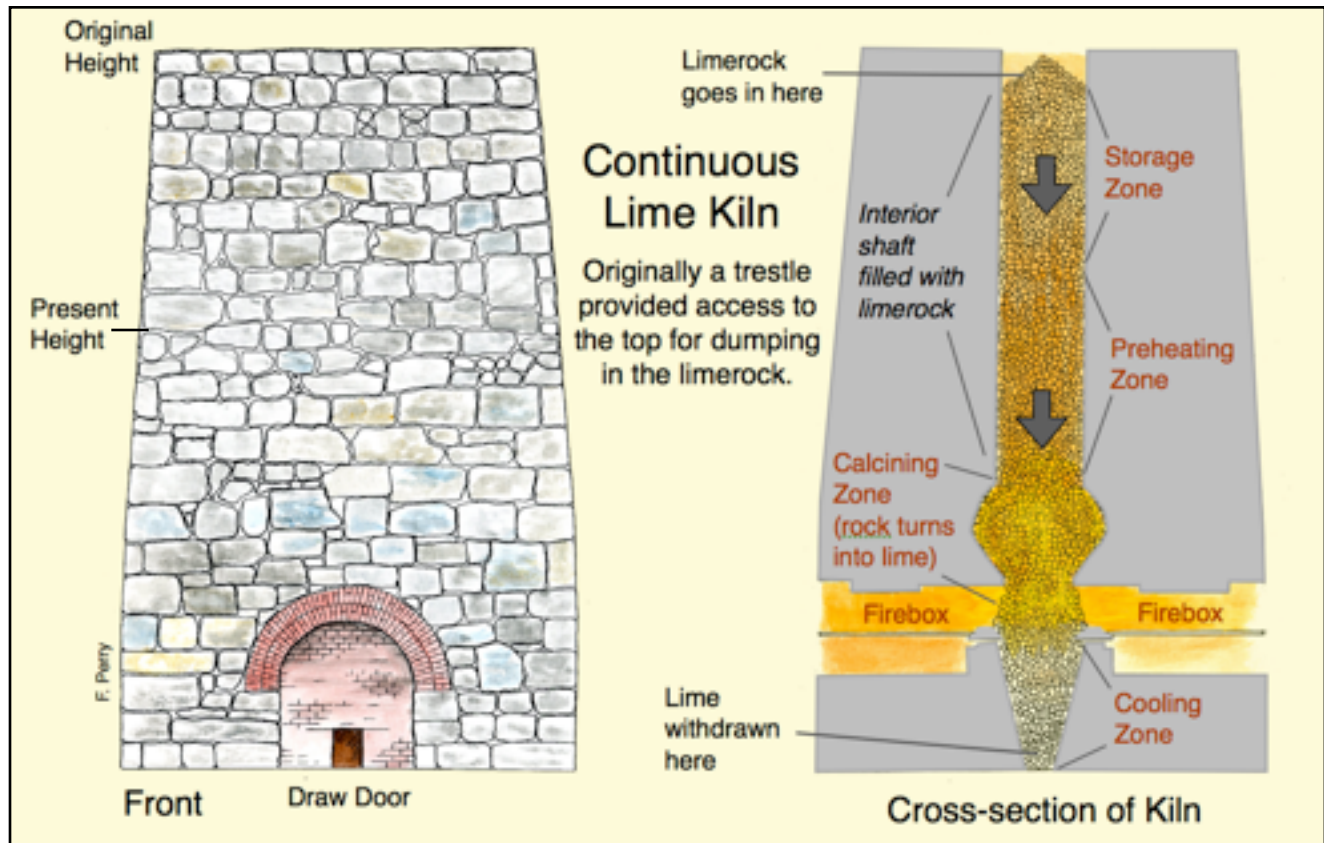
The HABS record eventually will be posted on the Friends web site.  
—S.M.

*See page 8 for a list of donors to the barn project.*



Illustrations courtesy of Bill Hurley, Dos Osos Timber Works





(From page 1)

The term *continuous kiln* is preferable to patent kiln. Although some designs were patented, others (including this one) were not. Continuous kilns built in different locations seemed to vary slightly in design, in part to accommodate different types of rock and fuel.

The kiln is built out of limerock (the same kind of rock used to make the lime), with a 4-foot wide shaft down through the center. The shaft is lined with fire bricks. At the bottom of the kiln is a small doorway for removal of the finished product. Originally the kiln was between a half and a third again as high as it is now, the upper part having been removed sometime prior to 1910.

The primary reason for using this type of kiln was to save on fuel. Because pot kilns had to be fired up and then cooled down for each load, they were not very efficient. Continuous kilns, however, could run nonstop for days, weeks, or even months. Because the limerock passed down through a vertical shaft, heat from below pre-heated the rock before it reached the calcining zone (where it was converted into lime). This further added to fuel savings.

While a number of continuous kilns were built in Santa Cruz County, they never functioned as well as they might have. The problem was that much of the limerock

here is coarse grained. This rock tended to crumble, clogging the kiln. Only the finer-grained rock could be used in continuous kilns. If a lime company had a continuous kiln, it also had to have a pot kiln to make use of the coarse-grained rock. Otherwise, much of the rock that was quarried, which was usually a mixture of the two, would go unused.

Because the kiln produced a continuous supply of lime, the company needed a continuous supply of orders. Every stoppage sacrificed fuel efficiency. The pot kilns, though less efficient, could be fired as needed and could use either coarse-grained or fine-grained rock. By having three pot kilns—one being loaded, one being fired, and one being unloaded—they, too, could produce a nearly continuous supply of lime.

The continuous kiln is mentioned in several descriptions from the 1860s and appears in a photo taken in 1866. This photo shows a giant trestle built to provide access to the top of the kiln. There is little mention of the kiln after 1870, but it shows up in a panoramic view of the lime works taken around 1910. By then the trestle and upper part of the kiln had been removed.

By the 1870s continuous kilns made of stone had given way to monitor kilns. These had a stone base, but

the upper part of the kiln was an iron or steel cylinder lined with fire bricks. Locally, the first monitor kiln was built on Bull Creek near Felton in 1874. Because the walls were metal and brick, and much thinner than those of all-stone kilns, they could have peep holes for monitoring the burn (hence the name).

Of all the lime kilns that have survived in Santa Cruz County, the Cowell Lime Works continuous kiln is the most interesting and complex. And, unlike most of our historic lime kilns, we know the exact year it was built.

So, happy 150th birthday! This kiln was the high-tech wonder of its time. Today, it serves as a subtle reminder that energy conservation is not a new idea.

—F.P.

#### Further Reading

*Lime Kiln Legacies*, by Frank A. Perry, Robert W. Piwarzyk, Michael D. Luther, Alverda Orlando, Allan Molho, and Sierra L. Perry. Santa Cruz: Museum of Art & History, 2007.

## Making Movies on the Cowell Ranch

By Frank Perry and Randall Brown

In the early 1900s, Santa Cruz County's diverse scenery of forests, rivers, hills, beaches, and pastures lured dozens of movie crews to the region. Over fifty films were shot here in just the period 1915 through 1919. Some of the most famous stars of the silent film era, including Douglas Fairbanks, Mary Pickford, and William S. Hart, hammed it up before cameras planted on Santa Cruz soil.

The first two dramatic films shot in the Santa Cruz area were "A Diamond in the Rough" and "The Danites." Both were made in the fall of 1911, and both were filmed on the Cowell Ranch.

In early September, 1911, a local newspaper announced that, "permission has been secured from the Cowells for the use of the lands on hills overlooking Santa Cruz at the edge of the woods, back of the place of C. C. Moore. . . ." Today, this would be the area somewhere between Cowell and Stevenson Colleges and Coolidge Drive near the base of campus, perhaps



Movie advertisement for "A Diamond in the Rough."

including some of Pogonip. Permission was also obtained to use some of the Cowell ox teams in the films, which were promised to have "some of those startling feats on horseback in which Indians, cowboys, etc., figure so prominently."

In reading contemporary newspaper accounts, it readily becomes apparent that this was indeed the pioneer era before modern movie terminology. Actors were called "players." The shooting was described as a "moving picture enactment." Movies were still "plays," and Edendale (now the Echo Park section of Los



Cowell's oxen (perhaps even some of the ones in this old photo) were used in the 1911 movies.





Studio owner William Selig was one of the pioneers of motion pictures.

Angeles)—not Hollywood—was the film capital of the Pacific Coast.

Both movies were made by the Selig Polyscope Company, which was founded in Chicago in 1896 by William N. Selig. He was stocky, mustachioed gentleman who had once worked as a magician. By the 1900s his was one of the most prolific and widely-

known motion picture companies in the world. In 1909, with help from director Francis Boggs, the Selig company became the first film studio to set up operations on the West Coast. It was also the first to produce a film adaptation of "The Wizard of Oz" (1910). Altogether, Selig made over 1,000 motion pictures, but because so few of his films have survived, he is little-known today except among film historians.

In the fall of 1911 an advance team scouted out sites for filming both movies and secured the necessary permissions. "A Diamond in the Rough" actors arrived in Santa Cruz on Thursday, Sept. 28. "We are going to play the outside scenes of a drama while here, using the ox teams on the Cowell property in our work," said actor George Hernandez. "Five of the interior scenes of this play we have already enacted at the Edendale studio down south, and we have come to Santa Cruz to finish the story."

In the movie, a father arranges for his daughter to marry an ox-team driver. But the young woman rebels and wants to marry another man. In the end, her father consents. Twenty-one-year-old Bessie Eyton plays the role of the diamond, dressed shabbily, with her auburn hair "flying free over her shoulders," according to the *Evening News*. This one-reel short was written and directed by Boggs and



Writer/Producer/Director Francis Boggs.

released to theaters December 4 of that year.

The company returned south after a few days to prepare for the filming of "The Danites." This film was based on an 1877 play by Joaquin Miller that had been made popular by actor/producer McKee Rankin. The motion-picture version was two-reels, or about 25 minutes long. In 1957, Santa Cruz historian Preston Sawyer described it as "one of Selig's outstanding western efforts." Sawyer, who was born in Santa Cruz in 1899, worked as a movie extra as a teenager and may well have had firsthand knowledge of the film.



Images: various online sources

The actors shot the indoor scenes at the Selig Polyscope Studios in Edendale, seen here in a 1920s postcard after it was bought by another company.

The dramatic story takes place in the Sierra foothills during the Gold Rush. A family is being hunted down by a group of murderers seeking revenge. After her little brother is killed, the young protagonist disguises herself as a man to hide her identity. This leads to other difficulties in the rugged mining camp, but eventually the murderers are hanged and the girl's identity revealed.

The Selig company, including director Boggs and several actors from the previous film, returned to Santa Cruz in mid October for the two-day shoot at Cowell's. The cast included Bessie Eyton, Betty Harte, Herbert Rawlinson, Hobart Bosworth, Tom Santschi, Ernest Garcia, Fred Huntley, and George Hernandez. All were famous actors of the era. In fact, each went on to appear in a least a hundred films. Rawlinson appeared in 394 titles during his career. Of course, in those days almost all movies were shorts.

While here, the Selig company hired a number of Santa Cruzans. A local deacon landed a role praying for the dead boy; several young men appeared as scouts on horseback; and some "old characters gathered from the County Hospital" were hired as extras, said the newspaper.

Continued on p. 8)

The biggest scene depicted covered wagons passing across the “plains,” each pulled by some of Cowell’s oxen. In all, forty oxen were used, with Cowell’s teamsters cracking the whips. Local mules, horses, and a Big Basin stage also paraded before the camera.

“The Danites” was not released until the following year (1912). Sadly, this film, like so many from the silent era, has disappeared. Back then there was little thought about preserving such movies for posterity. They were distributed to theaters, where they made the rounds and were later discarded. Too bad. Just imagine a procession of ox teams and prairie schooners kicking up dust in UCSC’s great meadow. At this point, it seems unlikely that some long lost copy of “The Danites” will be discovered. Instead, its scenes must remain relegated to the imagination.

#### *Further Reading*

The Santa Cruz Public Library website ([www.santa-cruzpl.org](http://www.santa-cruzpl.org)) has a list compiled by Ann Young of movies made in Santa Cruz County. It includes transcriptions of contemporary newspaper accounts. More on “The Danites” can be found in the book, *McKee Rankin and the Heyday of the American Theater* by David Beasley, 2002, and various websites. The original Joaquin Miller version of the play is available free online through Google Books. For more on the studio, see *Motion Picture Pioneer: The Selig Polyscope Company*, by Kalton C. Lahue, 1973.

#### ***Mark Your Calendar***

Historian Randall Brown will present a lecture on the first movies made in Santa Cruz, including “A Diamond In The Rough.” It will be Saturday, November, 12, 2:00 p.m. at the Humanities Lecture Hall, UCSC. Members of the Friends will be free. Non-members: \$5.00. Tickets at the door, reception to follow.

The annual Halloween Tour of the Historic District will be Saturday, October 29, 10:30 a.m. to 12:30. Meet at Barn Theater parking lot. Members free. Non-members: \$3 donation requested.

***More details to be mailed soon!***

#### ***Donors to Hay Barn Documentation***

Thanks again to those members who contributed to our year-end appeal last December, including several whose donations arrived after the last newsletter was published: Mr. and Mrs. John Barnes, Edith Bell, Diane and Donald Cooley; Neal and Lucie Coonerty; Peggy and Paul Danielson; Lee and Emily Duffus; Joe and Marcella Hall; Virginia Jansen, Peter A. Jordan, Don and Brenda Lauritson; Michael D. Luther; Edith Perry; M. Brewster and Deborah Smith; Frank Zwart and Julia Armstrong-Zwart.

Friends of the Cowell Lime Works Historic District  
Mail Stop PP&C  
University of California  
Santa Cruz, CA 95064