

**United States Department of the Interior  
Heritage Conservation and Recreation Service**

**National Register of Historic Places  
Inventory—Nomination Form**

See instructions in *How to Complete National Register Forms*  
Type all entries—complete applicable sections

For HCRS use only  
received  
date entered

**1. Name**

historic Coplay Cement Company Kilns  
and/or common Saylor Park Industrial Museum

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APR 11 1980

**2. Location**

street & number North Second Street

PH & MC  
Historic Preservation 15 not for publication

city, town Coplay \_\_\_\_\_ vicinity of \_\_\_\_\_ congressional district 15

state Pennsylvania code 42 county Lehigh code 077

**3. Classification**

<b>Category</b>	<b>Ownership</b>	<b>Status</b>	<b>Present Use</b>	
<input type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture	<input checked="" type="checkbox"/> museum
<input type="checkbox"/> building(s)	<input type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial	<input type="checkbox"/> park
<input checked="" type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational	<input type="checkbox"/> private residence
<input type="checkbox"/> site	<b>Public Acquisition</b>	<b>Accessible</b>	<input type="checkbox"/> entertainment	<input type="checkbox"/> religious
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes: restricted	<input type="checkbox"/> government	<input type="checkbox"/> scientific
	<input type="checkbox"/> being considered	<input type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial	<input type="checkbox"/> transportation
		<input type="checkbox"/> no	<input type="checkbox"/> military	<input type="checkbox"/> other:

**4. Owner of Property**

name Lehigh County (Mr. David K. Bausch, County Executive)

street & number Fifth and Hamilton Streets

city, town Allentown \_\_\_\_\_ vicinity of \_\_\_\_\_ state Pennsylvania

**5. Location of Legal Description**

courthouse, registry of deeds, etc. Recorder of Deeds, Lehigh County Courthouse

street & number Fifth and Hamilton Streets

city, town Allentown \_\_\_\_\_ state Pennsylvania

**6. Representation in Existing Surveys**

Record

title Historic American Engineering has this property been determined eligible?  yes  no

date 1971  federal  state  county  local

depository for survey records Historic American Engineering Record

city, town Washington \_\_\_\_\_ state D.C.

## 7. Description

<b>Condition</b>		<b>Check one</b>	<b>Check one</b>
<input checked="" type="checkbox"/> excellent	<input type="checkbox"/> deteriorated	<input type="checkbox"/> unaltered	<input checked="" type="checkbox"/> original site
<input type="checkbox"/> good	<input type="checkbox"/> ruins	<input checked="" type="checkbox"/> altered	<input type="checkbox"/> moved date _____
<input type="checkbox"/> fair	<input type="checkbox"/> unexposed		

### Describe the present and original (if known) physical appearance

From 1893 to 1904 these nine Schoefer vertical kilns, constructed of locally made red brick, were utilized by the Coplay Cement Company for the production of portland cement. Not only do these structures represent the transition in kiln technology from the bottle or dome kiln to the rotary kiln, but they stand as a fitting monument to the pioneering role of David O. Saylor, and Coplay Cement Company, and the Lehigh Valley area in the development of the American portland cement industry.

Several years before he constructed his first cement plant in 1866, David O. Saylor purchased the land where it and the future mills of the Coplay Cement Company would be located. His first mill, often referred to as Plant A and where he made his first portland cement in 1871, was utilized well into the 1890's but was demolished early in the 20th century. The only other structure with a close association with Saylor, an Allentown residence located at 35 South Fourth Street, has also been demolished.

In 1892, eight years after Saylor's death, the Coplay management, faced with a growing demand for its product, decided to construct a new mill, Plant B, a few hundred feet south east of the old facility. The company probably was motivated as well by new advances in cement kiln technology which had led to the development of kilns that not only made higher quality clinker but produced it on a continuous basis as well. For years the firm had utilized bottle or dome kilns which not only had to be cooled down before the clinker could be removed but which sometimes produced a product of varying quality.

At the time the Coplay executives made the decision to expand, two types of continuously operating kiln, the rotary and the upright, were available. The rotary type required little labor to operate it but had high fuel costs because of its dependence on crude oil. The upright kiln, on the other hand, used cheaper fuel but required a great deal of labor to attend it. Apparently, the cost of fuel swayed the management because they committed the firm to the upright kiln. In 1892-93 the company erected 11 Schoefer kilns, which were a Danish modification of an upright kiln originally developed in Germany.

In 1895, however, a Coplay competitor, whose plant was located nearby, developed a rotary kiln that used powdered coal for fuel. The drastic reduction in fuel costs made possible by this development as well as the cheaper labor costs of the rotary kiln quickly made the vertical kiln obsolete.

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In 1899 Coplay constructed its first rotary kiln, and in 1904 the firm shut down all its Schoefer kilns. Eventually, the company constructed its current mill, known as Plant C, a few hundred feet west and demolished all of Plant B with the exception of 10 of the upright Schoefer kilns.

For many subsequent years the Coplay Cement Company used these kilns, constructed of locally made reddish brick, for storage purposes. Originally, they were enclosed in a factory structure and rose to a height of 93 feet. Sometime in the 1920's, the building surrounding the kilns was torn down, and it was probably at this time that the upper 33 feet of the kilns were taken down as well. Late in 1975 the company donated the kilns and a small parcel of land to Lehigh County for a cement industry museum, and early in 1976 a restoration and stabilization project was launched.

Today the restored and stabilized kilns house a plexiglass-roofed cement industry museum at their base. Although one kiln had to be demolished, nine were saved and are presently utilized to house museum exhibits which trace the history of the American cement industry. With the exception of one kiln which is approximately 46 feet tall, all rise to a height of approximately 60 feet and have a circumference of approximately 20 feet at their base and 10 feet at their top. The kilns, which face westward toward the modern plant of the Coplay Cement Manufacturing Company, are a prime example of the many inherent possibilities in the adaptive use of obsolescent industrial structures.

Boundary Justification. The boundary described below consists of 2.594 acres and includes the nine kilns and all the land which form the Saylor Park Cement Industry Museum.

Boundary Description. As indicated in red on the accompanying maps I. (1) U.S.G.S. 7.5' Series, Pa., Catasauqua Quad., 1964, photorevised 1972; and (2) Saylor Park Plot Plan, Sheet no. 1 of 13, Bond-Miller-Seibert-Ferreira-Schlicting, 1975, 1"=50' I, a line BEGINNING at a point located in the northerly property line of Second Street (50' wide) said point being located 577.96' along the course North 63° 02' 00" West from the intersection of the northerly property line of Second Street (50' wide) with the

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westerly property line of Keefer Street (40' wide), said point being also in the right-of-way line of the Ironton Railroad (49.50' wide); thence along the northerly property line of Second Street (50' wide) North 63° 02' 00" West 27.00' to a point located in the easterly line of lands now or late of Coplay Cement Manufacturing Company; thence partly along said easterly line of lands now or late of Coplay Cement Manufacturing Company, the following four (4) courses and distances: (1) North 50° 44' 16" East 38.71' to a point; (2) North 35° 42' 18" East 78.20' to a point marked by an iron pipe; (3) North 9° 34' 44" East 385.42' to a point marked by an iron pipe; (4) North 59° 13' 50" East 147.57' to a point marked by an iron pipe located in the southerly right-of-way line of Lehigh Valley Railroad (66' wide); thence along said southerly right-of-way line of Lehigh Valley Railroad (66' wide) the following three (3) courses and distances: (1) Along the arc of a curve deflecting to the left, the radius of which is 703.06', with central angle of 16° 06' 18", the chord of which bears South 63° 56' 59" East 196.97', an arc distance of 197.62' to a point of compound curvature; (2) along the arc of a curve deflecting to the left, the radius of which is 1,510.47' with central angle of 9° 24' 36", the chord of which bears South 76° 42' 26" East 247.79' with an arc distance of 248.07' to its point of tangency; (3) South 81° 24' 44" East 40.60' to a point being the intersection of the southerly right-of-way line of Lehigh Valley Railroad (66' wide) with the westerly right-of-way line of the Ironton Railroad (49.50' wide); thence along said westerly right-of-way line of the Ironton Railroad (49.50' wide), the following three (3) courses and distances: (1) along the arc of a curve deflecting to the left, the radius of which is 653.52', with central angle of 43° 54' 05", the chord of which bears South 68° 27' 02" West 488.58' an arc distance of 500.74' to its point of tangency marked by an iron pipe; (2) South 46° 30' 00" West 196.70' to a point of curvature marked by an iron pipe; (3) along the arc of a curve deflecting to the right, the radius of which is 1,893.83', with central angle of 4° 10' 52", the chord of which bears South 48° 35' 26" West 138.17', an arc distance of 138.20' to a point, the place of Beginning.

# 8. Significance

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input checked="" type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/ humanitarian
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input checked="" type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> theater
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> transportation
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input checked="" type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> other (specify)
		<input type="checkbox"/> invention		

site: ca. 1860-1904  
 Specific dates structures: 1892-1904 Builder/Architect Coplay Cement Company

**Statement of Significance (in one paragraph)**

Few firms and individuals contributed as much to the early development of the American cement industry as the Coplay Cement Company and its founder David O. Saylor. In 1871, 5 years after he had founded the firm, Saylor, says business historian Earl J. Hadley, "manufactured the first portland cement in America" and on September 26 of that year received the first American patent on that product.<sup>1</sup> Saylor's success in developing "an American equivalent of portland cement," according to distinguished scholar Carl W. Condit, marked the beginning of "the great age of concrete" and "the establishment of the artificial cement industry... as well as the beginning of a scientific understanding of the physical properties and structural behavior of concrete."<sup>2</sup>

By 1874 "Saylor's Portland Cement" was being manufactured on a large scale, and soon found a market throughout the eastern half of the Nation. In 1876 Saylor's product won the highest award for quality at the Centennial Exposition in Philadelphia. Two years later, the U.S. Government specified its use in the construction of the Eads Jetties at the mouth of the Mississippi River, "the first important public work," says Hadley, "on which domestic portland had been used."<sup>3</sup>

"Spurred by Saylor's success, "according to cement industry spokesman Joseph S. Young, "portland cement mills were soon promoted and put into operation in other states."<sup>4</sup> It was in the Lehigh Valley Region where the Coplay Cement Company was located, however, that the greatest expansion took place.

(continued)

<sup>1</sup>Earl J. Hadley, The Magic Powder: History of the Universal Atlas Cement Company and the Cement Industry (New York, 1945), 23.

<sup>2</sup>Carl W. Condit, American Building: Materials and Techniques from the First Settlements to the Present (Chicago, 1968), 158.

<sup>3</sup>Hadley, The Magic Powder, 23.

<sup>4</sup>Joseph S. Young, A Brief Outline of the History of Cement (Lehigh, Pa., 1955), 19.

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By 1900 this area produced nearly 75 percent of the Nation's cement and had been the scene of a number of technological breakthroughs like the development of the rotary kiln. Eventually, this growth, which was set in motion by Saylor and the company he founded, enabled the United States to become the world's leading producer of cement. By the early 1920's, says pioneer industrial historian Victor S. Clark, the Nation "manufactured about half of the world's output, and four times as much as Great Britain, its nearest rival."<sup>5</sup>

From 1893 to 1904 those nine Schoefer vertical kilns, constructed of locally made red brick, were utilized by the Coplay Cement Company for the production of portland cement. Not only do these structures represent the transition in kiln technology from the bottle or dome kiln to the rotary kiln, but they stand as a fitting monument to the pioneering role of David O. Saylor, the Coplay Cement Company, and the Lehigh Valley area in the development of the American portland cement industry. Recently restored and adapted for use as a museum, these kilns are the oldest extant structures associated with the Coplay Cement Company and are probably the only kilns of their type still standing.

History

David Oliver Saylor, the father of the American portland cement industry, was born in 1827 on a farm in Lehigh County, Pa. Details about his early life are sketchy, but apparently he cared little for farming as a means of making a livelihood. At any rate, he eventually moved to Allentown, Pa., and went into business. In the early 1850's Saylor became interested in cement manufacturing shortly after construction engineers for the Lehigh Valley Railroad discovered large deposits of cement rock while blasting deep cuts in the hills north of Coplay near the west bank of the Lehigh River. With the aid of his friends, Adam Woolever and Esias Rehrig, Saylor purchased land north of Coplay near the railroad cut.

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<sup>5</sup>Victor S. Clark, History of Manufactures in the United States, 1893-1928, Vol. III (New York, 1949), 253.

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For the next few years, he experimented with various types of stone found on the property in a makeshift laboratory, first grinding the rocks and then burning them in a cookstove, in the hope of producing an acceptable natural cement.

By 1866 Saylor's labors had been blessed with success. That year, with financial assistance from Woolever and Rehrig, he founded the Coplay Cement Company and constructed a manufacturing facility at Coplay which, according to Young, was "the first natural cement plant in the Lehigh Valley."<sup>6</sup> Saylor did not remain content for long, however, with producing only natural cement. For years, many individuals in the United States had attempted unsuccessfully to duplicate Englishman Joseph Aspdin's success in producing an artificial cement which was far superior in quality and performance to the natural product. Aspdin's cement won the name "portland" because when set it resembled the famous building stone quarried in Portland, England. Saylor believed, says Hadley, that "he could take the natural rocks of the Lehigh district, which were high in lime, low in magnesia, and low in iron, burn them at high temperatures to incipient vitrification, and grind the result to make portland cement."<sup>7</sup>

Determined to succeed where so many others had failed, Saylor resumed his experiments. Again he utilized his cookstove and crude laboratory to test the various types of stone found in the Lehigh Valley in the hope of finding the right combination of ingredients for portland cement. Finally in 1871 he manufactured his first batch of portland cement in an experimental kiln at his Coplay plant. Shortly after his breakthrough, two other individuals, Thomas Millen of South Bend, Ind., and John K. Shinn of Wampum, Pa., developed portland cements as well. But it was Saylor who, on September 26, 1871, received the first American patent on the product. (continued)

<sup>6</sup>Young, Brief Outline of the History of Cement, 17.

<sup>7</sup>Hadley, The Magic Powder, 22.

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Saylor's success in developing "an American equivalent of portland cement," according to Condit, marked the beginning of "the great age of concrete" and "the establishment of the artificial cement industry... as well as the beginning of a scientific understanding of the physical properties and structural behavior of concrete."<sup>8</sup>

Saylor did not begin to manufacture his cement on a commercial scale until 1874. Marketed under the brand name of "Saylor's Portland Cement," it won wide acceptance and was sold throughout the eastern half of the Nation. Two years later the Coplay product won the highest award for quality at the Philadelphia Centennial Exposition. In 1878 the Federal Government specified its use in the construction of the Eads Jetties at the mouth of the Mississippi River. "This was the first public project of any consequence," says Young, "upon which domestic portland was ever used."<sup>9</sup>

Because of Saylor's success with the Coplay Cement Company, says historian George W. Stark, "plants to make portland cement sprang up in several states."<sup>10</sup> The greatest expansion of the industry took place in the Lehigh Valley area where Saylor's plant was located. By 1900 this region provided the Nation with 75 percent of its cement and had been the scene of a number of technological breakthroughs like the development of the rotary kiln. In the long run, this growth, which was made possible by Saylor and his company, enabled the United States to become the world's leading producer of cement, manufacturing by the 1920's four times as much as Great Britain, its nearest competitor.

(continued)

<sup>8</sup>Condit, American Building, 158.

<sup>9</sup>Young, Brief Outline of the History of Cement, 19.

<sup>10</sup>George W. Stark, The Huron Heritage: Fifty Years of Concrete Achievement by the Huron Portland Cement Company, 1907-1957 (Detroit, 1957), 28.



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David O. Saylor, however, did not live to see the great expansion of the portland cement industry which he had established in the United States. In 1884 he died at his home in Allentown at the age of 57. For some years after his death, the Coplay Cement Company continued to play a significant role in the cement industry. Around the turn of the century, however, it was surpassed in size and influence due in part to its slowness in adopting technological improvements like the rotary kiln. Still the firm has remained in operation down to the present day.

Continuation Sheet Coplay Cement Item Number 9 Page One

Clark, Victor S., History of Manufactures in the United States, 1860-1893, Vol. III (New York: Peter Smith, 1949). Published originally in 1929.

\_\_\_\_\_, History of Manufactures in the United States, 1893-1928, Vol. III (New York: Peter Smith, 1949). Published originally in 1929.

Condit, Carl W., American Building: Materials and Techniques from the First Colonial Settlements to the Present (Chicago: University of Chicago Press, 1968).

Hadley, Earl J., The Magic Powder: History of the Universal Atlas Cement Company and the Cement Industry (New York: G.P. Putnam's Sons, 1945).

Lesley, Robert W., History of the Portland Cement Industry in the United States (Philadelphia: American Cement Company, 1900).

Office of the Archivist, County of Lehigh, "Welcome to Saylor Park Cement Industry Museum of Lehigh County, Coplay, Pennsylvania," (Allentown: Office of the Archivist, County of Lehigh, 1976).

Portland Cement Association, The Making of Portland Cement (Skokie, Ill.: Portland Cement Association, 1964).

(continued)

# 9. Major Bibliographical References

Stark, George W., The Huron Heritage: Fifty Years of Concrete Achievement by the Huron Portland Cement Company, 1907-1957 (Detroit: Denman and Baker, Inc., 1957).

Young, Joseph S., A Brief Outline of the History of Cement (Lehigh, Pa.: Lehigh Portland Cement Company, 1955).

# 10. Geographical Data

Acreeage of nominated property 2.594

Quadrangle name Catasauqua, Pa.

Quadrangle scale 1:24,000

UMT References

A 

1	8	4	5	8	1	8	0	4	5	0	2	7	8	0
Zone			Easting				Northing							

B 

1	8	4	5	8	2	4	0	4	5	0	2	7	4	0
Zone			Easting				Northing							

C 

1	8	4	5	8	1	0	0	4	5	0	2	6	2	0
Zone			Easting				Northing							

D 

Zone			Easting				Northing							

E 

Zone			Easting				Northing							

F 

Zone			Easting				Northing							

G 

Zone			Easting				Northing							

H 

Zone			Easting				Northing							

Verbal boundary description and justification

(See last page of description.)

List all states and counties for properties overlapping state or county boundaries

state code county code

state code county code

# 11. Form Prepared By - Submitted by *Dr. Mahlon H. Hellerich*

Project Director, Lehigh County Historic Sites Survey Project

name/title Ralph J. Christian, Historian, Historic Landmarks Project

organization American Association for State and date March, 1978

street & number Local History 1400 Eighth Avenue South telephone 615/242-5583

city or town Nashville, state Tennessee 37203

# 12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

national  state  local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the Heritage Conservation and Recreation Service.

State Historic Preservation Officer signature

title date

For HCRS use only  
I hereby certify that this property is included in the National Register

date

Keeper of the National Register

Attest:

date

Chief of Registration

Coplay Cement Company Kilns  
 Northampton County  
 Zone 18 A E458180 N4502780  
 B E458240 N4502740  
 C E459100 N4502620

*Saylor Park  
 Museum*



7 MI. TO PA. 29  
 5865 (11 NE (CEMENTON) 0.6 MI.  
 4505  
 4503  
 4502  
 40'  
 4501  
 4500