

Setting their sites on Delco

A look back at how engineering shaped county as professional society celebrates its 75th anniversary.

By **KATHLEEN E. CAREY**

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They're the quiet ones, who tirelessly toil to make our lives better.

Not the ones on various athletic fields, gyrating for completing one aspect of the job.

They're engineers. Engineers of all types from civil to chemical. And, this year, the Delaware County Chapter of the Pennsylvania Society of Professional Engineers wanted to thank all those who helped form its 75 years as well as the quality of life shared here in Delaware County.

Eileen Nelson, president of the Delaware County chapter, said the 80 members felt it was integral to show gratitude for those who came before them.

In gathering information for the event, she said she's learned that engineers have worked tirelessly to build significant landmarks in the county without fanfare.

"It really does prove to me that engineers are really about the introspective part of their accomplishments not all the hoopla," she said.

The National Society of Professional Engineers was formed in New York City on May 25, 1934. Shortly after, the Delaware County chapter followed.

For those who continue to carry that banner, life here captures the essence of our founding fathers' hopes.

"I think Delaware County represents the American Dream in a microcosm," said Nick Cirilli, the Delaware County chapter's 75th anniversary event chairman.

A look at the history of engineering in Delaware County is revealing.

In May 1901, Joseph Newton Pew purchased 82 acres in Marcus Hook as a

place for a second refinery for a company he and Edward O. Emerson began to diversify their business by capitalizing on oil discoveries in Ohio and Pennsylvania. The name of the business was Sun Co.

In 1916, Pew's sons, J. Howard Pew and Joseph N. Pew Jr., established the Sun Shipbuilding and Dry Dock Co.

In 1906, the Eddystone plant of Baldwin Locomotive Works was opened and 2,500 locomotives were built. By the time production ends in 1956, more than 70,500 locomotives had been manufactured.

In 1925, the Ford assembly plant was built on the Front Street former site of Roach's Shipyard and Merchant Shipbuilding Corp. Three years later, the Chester plant was operating. At one point, the daily production was 280 cars

and trucks and one of its employees was Lee Iacocca, who later became CEO of the Chrysler Corp. The plant closed in 1961.

On May 6, 1935, the Works Progress Administration was established as an independent agency funded by Congress. Its purpose was to provide jobs for the unemployed.

The WPA provided almost 8 million jobs and cost almost \$7 billion.

The program brought many improvements to Delaware County from park landscaping and improvements to sewer construction and road and sidewalk improvements.

Many Delaware County municipalities benefited from road widening in Middletown to high school renovations in Clifton Heights to dyke repairs for the Darby Creek to curb and gutter construction in Haverford and street paving in Rose Valley.

The WPA worked in 43 parks in Delaware County, including Kent Park in Clifton Heights, Glenolden Park and the Swarthmore College athletic field.

In 1937, Westinghouse engineers built

the first industrial atom smasher.

Also that year, Sun Oil Co.'s Eugene Houdry patented the catalytic refining method at the Marcus Hook plant. This enabled the thick leftover oils from previous distillations to be transformed into gasoline.

This increased Sun's gasoline yield from the industry's 25-percent standard to 50 percent.

"That's a game changer," Cirilli said, adding that it gave the allied forces' vehicles more power.

In 1940, Frank Piasecki and some University of Pennsylvania engineering students formed the Piasecki-Venzi Engineering Forum to build a helicopter. Three years later, on April 11, 1943, they made their first flight with the PV-2 helicopter. It was second only to Igor Sikorsky's 1939 flight and Piasecki was 22 years old.

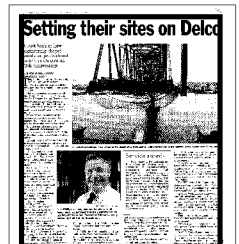
"They're both creating wealth," Cirilli said of Piasecki and Sikorsky and the competing companies that arose from their discoveries. "They're both creating value."

During World War II, many Delaware County companies contributed to the war effort.

Sun Shipbuilding expanded and became capable of building ships up to 20,000 tons.

Baldwin Locomotive manufactures tanks, with the first completed nine months ahead of schedule in May 1941.

In Darby Township, Sure-Fit Products produced kit bags and mosquito netting



and Westinghouse produced turbines for naval ships.

In Eddystone, General Steel Castings created tank hulls and armor plate; Penn Steel Castings made steel plate for naval vessels; and Atlantic Steel Castings manufactured engine castings and pipe fittings.

In Marcus Hook, Sinclair Oil, Pure Oil and Sun Oil manufactured oil and gas; American Viscose Co. made Crown Rayon for parachutes; and General Chemical Corp. produced chemicals.

Yorkshire Mills in Clifton Heights manufactured flannel for Navy uniforms.

In 1959, the construction of I-95 through Pennsylvania and through Delaware County began.

A decade later, work on the Commodore Barry Bridge began, set to replace the ferry that connected Chester and Bridgeport, N.J.

The bridge was finished in 1974 at a

cost of \$115 million. It was the world's third-longest cantilever bridge with its longest span at 1,644 feet. The total length of the bridge is 13,912 feet.

It is now the fourth-longest cantilever bridge in the world.

In 1971, on the third day of heavy rains, a flood wiped out Eyre Park of Chester. Eight people were killed and more than 130 businesses and 723 homes were destroyed.

A year later, Hurricane Agnes smashed into Pennsylvania, dumping more than 6.5 inches of rain in Delaware County alone.

At the time, Walter Staret was working for the Philadelphia District Army Corps of Engineers and was involved in assessing the damage.

According to Cirilli, these two natural events forced the Corps to re-evaluate the timing of flood stages.

"From the '70s on, the focus was on stormwater," Cirilli said.

In addition, Catania Engineering Associates helped stabilize Chester and Upland from flood damage before and after the hurricane.

The firm worked on the Chester Levee in Eyre Park and the Upland Storm Sewer Flood Mitigation Project.

In 1972, the SOHIO/BP Oil Trainer Refinery invested more than \$200 million and installed one of the first centralized control rooms at an American refinery.

Ten years later, then-Philadelphia Electric's Eddystone Generating Station installed the first magnesium oxide scrub-

ber to comply with the Environmental Protection Agency's Clean Air Act.

Two years later, EPA awarded Philadelphia Electric the best environmental project of the year for this.

In 1991, the final section of the Blue Route between MacDade Boulevard and the Schuylkill Expressway opened to traffic.

All of that was just a foundation.

The American Society of Civil Engineers evaluated a variety of infrastructures throughout the country and found that everything from bridges to highways could use a little help.

"Our nation continues to be challenged, and engineers will continue to respond, turning problems into opportunities — opportunities to improve the human experience," Cirilli said.

He said engineers must continue to shape the world and make things work.

"I truly believe that many of the ifs in society are influenced directly by engineers," Cirilli said, adding that those ifs include improvements in water quality, air quality, roads, bridges, electrical grid, housing, production efficiency, workplace safety and renovations.

"Yes, scientists, physicists, metallurgists, and chemists all play a significant part, but engineers truly turn those ideas into a reality," Cirilli said.

Those interested in joining the Delaware County chapter of the Pennsylvania Society of Professional Engineers can visit their Web site at www.pspe.org/delco.



H. Gilroy Damon, Jr. on the right at work in the Sharon January 11, 1956.



Robert Naef, who served at the chairman of the Chester Water Authority, will receive an award for 39 years of service.

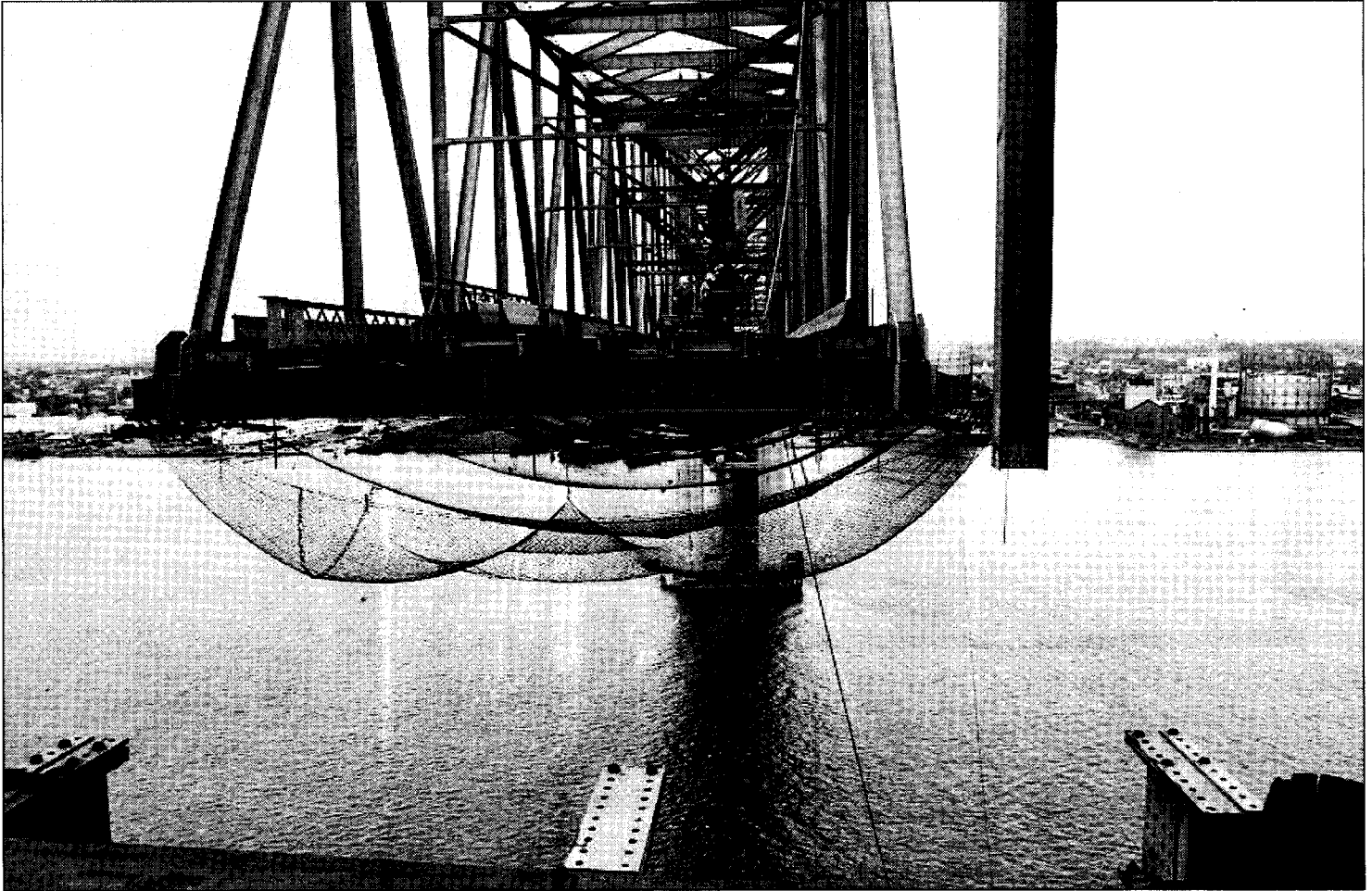


In photo at left, H. Gilroy Damon Jr., right, at work in his Sharon Hill office in January 1956. Top, A.F. Damon Jr. presenting Certificate of Election to H. Gilroy Damon as county surveyor Jan. 7, 1952 in Courtroom 1 of the Media Courthouse.



Times staff / PETER A. ZINNER

Nick Cirilli, a civil engineer and founder of Cirilli Associates Inc., is heading up the Delaware County Society of Professional Engineers' 75th anniversary ceremony April 1 at the Drexelbrook



All that stood between New Jersey and Chester were steel beams in this 1974 photo of the building of the Commodore Barry Bridge.

Service awards

Those receiving the Distinguished Service Award at the Delaware County Chapter of the Pennsylvania Society of Professional Engineers' 75th Anniversary include: Charles J. Catania for 52 years of service; Howard Doran for 51 years of service; Robert W. Naef for 39 years of service; Walt Staret for 50 years of service; James Swindell for 51 years of service; Joseph Vasturia for 49 years of service; F. Clark "Sande" Walton for 52 years of service; Yerkes Associates Inc. and H. Gilroy Damon Associates for four generations of service; G.D. Houtman & Sons for three generations of service; and Herbert MacCombie Consulting Engineers for 36 years of service.