



Details of finished products



I-beams lined up at the plant for storage

Full Speed into the new Millennium

Top Technology: Whisper-Steam lets Precast Systems' neighbours smile

Precast Systems Incorporated/Caledonia Concrete Corporation has recently opened up their new production facility in Allentown, New Jersey, USA. Since

the formation of the company in 1981 they have specialized in the manufacture of precast and prestressed concrete products.



A look at the plant in Allentown, New Jersey.

Originally set up to manufacture 16 ton Precast Dolosse for a jetty project along the New Jersey coast line the company has expanded their product offering to become the largest prestress plant in the state of New Jersey. "The goal was never to be the biggest producer in the state", says Bruce Post who is president and founder of the company. We started the business with a few simple goals that we still follow today."

At first: to provide a highly sophisticated management approach to construction projects requiring prestressed concrete. Second: to keep the plant work force at a minimum level by hiring only highly qualified and competent personnel. And 3rd: to maintain a low overhead to eliminate the pressure of having to obtain work with a low profit or high risk when the economic conditions of the construction market are unfavorable.

Precast Concrete Elements



The steam comes to the place of use via pipes.

Bruce Post involves himself in all phases of the business and under his guidance the company's reputation for quality highway and marine precast/prestressed products has grown. "The more difficult the job - the better we have an opportunity to offer value engineering". As an engineer he finds this type of work more rewarding than just taking a set of plans and producing for a low price.

One job that demonstrates this philosophy is a prestressed concrete roof system job for the Atlantic City/Brigantine Connector in Atlantic City, New Jersey. Precast Systems looked at the required 748 slabs that are 15 inches thick, 8 feet wide and 35 feet long weighing 30 tons. With his experience and that of design



The products harden under open skies while still remaining well protected.

consultant A. H. Sampie Inc. they developed an alternate design that helped them win the contract with Yonkers Contracting Co. Inc./Granite Construction Co. Joint Venture. According to Bruce "we

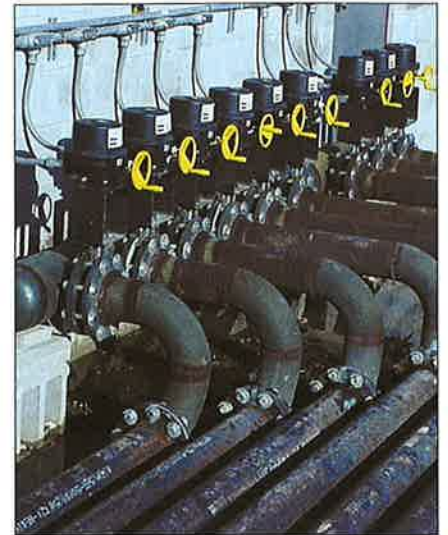
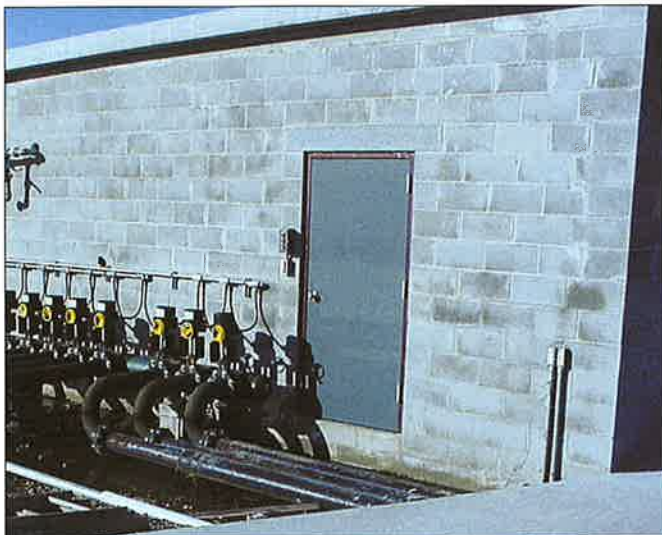
just looked at the job from outside the box and found where significant money

could be saved in the production of these heavily reinforced slabs".

Landing jobs like the Atlantic City tunnel in 1999 created the need to expand the facility. When the company was approached by their ready-mix supplier Ralph Clayton & Sons Inc. to move the plant to a more central location for the Mid-Atlantic States market the timing was perfect. It offered a chance to build a new plant that not only increased capacity but the opportunity to create a more efficient production facility. This modernization of the facility presents the opportunity to increase the types of products manufactured. Starting from scratch afforded the opportunity to improve every aspect of the operation.

»The more difficult the job - the better the opportunities«

The steam is produced behind these innocent-looking walls. Next to it is a look at the distribution station.





**Small but surprising:
The vapour energy plant.**

One of the aspects that were of significant interest was the new Vapor Energy steam curing equipment designed by Kraft Energy Systems. Precast systems has used a Vapor Energy steam-curing unit since 1984 and had seen many changes in the equipment over the 15 years. They knew that no one had a lower curing cost system. However their goal was to build an efficient state of the art plant and that involved the many technical changes that Kraft Energy Systems had incorporated into their Vapor Energy Curing units.

The most intriguing changes were in how Kraft Energy Systems had designed a system that provided total curing control. Bruce Post: "The new curing systems allows us to control our curing cycle on an unlimited number of beds from the plant office or offsite. We also like the totally self-contained feature of the unit. We operate in an open area where there are some houses. We want to be a good neighbor and the older style equipment was very noisy. The new Kraft designed units are very quiet and no one is aware that it is running in the middle of the night. Curing our product is something that we need to do precisely and at the lowest cost. Kraft's Vapor Energy Unit helps us compete in a very competitive market and produce a product with the optimum controlled curing results."

A specific example of this sophisticated management approach and utilizing the



The cover of insulated sheet steel allows the plant to "whisper".



The control for the entire plant.

ingenuity of their personnel can be seen in the approach to a recent Prestress I beam project. The product required 54 prestress strands, which was strenuous and time consuming to set up. Putting their minds to the task they devised this (refer to both pictures) prestress train to pull all 54 strands at one time complete with the bulkheads. It took engineering and vision to set up a system that would work.

Once the concept was developed it required everyone working as a team to

make it successful. "Our goal wasn't just to save man-hours. We wanted to save our employees energy so they would be able to work more effectively on the more technical portion which is ultimately more important in providing a quality product."

The relationship the company has with its customers, employees and suppliers is what give them a competitive edge. This type of progressive thinking is positioning the company for the new millennium. CPI

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Reduction of secondary efflorescence through reduced moisture absorption



Elimination of primary efflorescence



Transportable 6 - 8 hours after manufacture



Mobile units for temporary construction sites

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In one day: Manufacture, processing (grinding, sandblast) and delivery.

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Many concrete manufacturers think that concrete curing is a drying process.

This is not correct.

The concrete curing process is primarily a chemical/physical process - **hydration**. During this process, fresh concrete, being hardened, develops inherent heat. However, a lack of moisture and incomplete hydration leads to long hardening times.

Vapor provides for **quicker and complete hydration** through the **addition of heat and moisture**.

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