PCAV
Precast Concrete Association of Virginia

Hard Facts
NEWSLETTER

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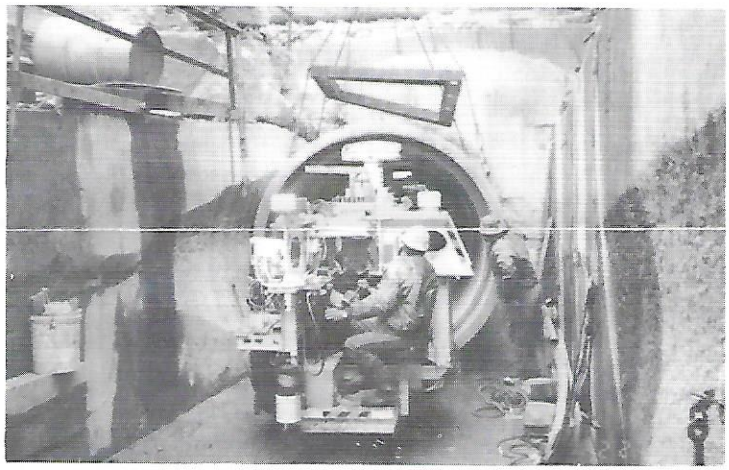
The Precast Concrete Association of Virginia is dedicated to the growth of the Precast Concrete Industry. We will educate specifiers and end users as to the advantages and proper utilization of products and systems, and we will represent the industry in the Commonwealth of Virginia.

City of Richmond Combined Sewer Overflow

By John Blankenship, P.E.
Eastern Region Engineer
Hanson Concrete Products

The City of Richmond recently completed a Combined Sewer Overflow Control Program project (CSO) consisting of three phases, and encompassing both banks of the James River through the center of the city. The first three phases of the project are designed to reduce the amount of untreated sewage discharge into the James River during peak flows, and to extend the discharge points further downriver below the fall line.

The city's combined system of sanitary and storm sewers has not had enough capacity to handle storage and treatment of all sewage and storm water during peak flows, typically experienced during heavy rainfalls. The EPA mandated Richmond correct the problem and the city has responded by authorizing the CSO work. The first three phases are now complete and additional phases are being engineered.



This new underground pipe-hauling train was used in Richmond.

Greeley and Hanson performed the engineering design and project engineering work for the first three phases. CSO-1 and CSO-2 projects on the south side of the river were constructed by general contractor English Construction Co. Kewit Construction Co. performed the work for CSO-3, on the north side, which also included renovation and reconstruction of the historic Haxall and Kanawha Canals and a turning basin. Hanson Concrete Products, Hanover and Southside plants, furnished all conveyance pipe and manhole structures for all phases.

CSO-1 included a series of 12 36-inch outlet diffusers below the fall line on the south side. From the outlet, 5,600 feet of 90-inch pipe proceeded along the river's south side westward. At this point, CSO-2 began with 320 feet of 84-inch pipe, 3,400 feet of 78-inch pipe paralleling the railroad, and 1,460 feet of 72-inch pipe extending westward to a new 42nd Street Regulator.

The first 650 feet of 90-inch pipe was installed in the river by conventional open-cut trench method, with a cofferdam and pumps to displace river water. The next 4,950 feet of 90-inch pipe was installed by boring a 10-foot diameter tunnel between two large access pits through the bedrock below riverbottom, and installing concrete pipe with a unique pipe-carrying vehicle. CSO-2 piping that runs along the railroad track was installed by standard open-cut trench method. The removal of rock in the vicinity of the railroad and existing CSO piping made for a challenging installation.

CSO-3 included a 1,300-foot section of 96-inch concrete pipe, 275 feet of 60-inch pipe, and 84-inch pipe that extended westward for 2,550 feet under the newly reconditioned Haxall Canal. Just west of the Gambles Hill Regulator is a new Headgate Structure, which regulates water flow into the reconditioned canal. A 2,580-

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From the President

Richard Rotondo
President, **PCAV**



The precast association continues to grow as a cohesive group of problem solvers with the common goal of increasing the demand for quality precast products. This diverse group of manufactuers has a unique flavor that broadens our overall spectrum of products, knowledge and effectiveness. We must continue to capitalize on this strength through the sharing of ideas and offer the market our full capabilities. This was well-exhibited at a recent VRTBA meeting, where numerous manufacturers from PCAV presented the latest technology on three-sided and arch bridges available in today's market.

The industry is changing with the demand for products that have a longer useful life and the introduction of alternative materials. PCAV has embraced this challenge with a vision toward high performance concrete, increased quality, alternate designs and education. In order for PCAV to increase its support of the precast market, a promotional person with a technical background will be employed. This commitment to education will enhance the awareness and stimulate the use of precast as the product of choice for years to come.

Letter to PCAV

Dear Friends,

Just wanted to personally let you know that after almost 45 years with VDOT, I plan to retire May 1. I have really enjoyed our associations together and appreciate the good relationships we have maintained. Thank you very much for helping to make my career so meaningful and pleasurable.

Hopefully, in some part-time capacity, I'll still be involved in a highway-related activity at least for a few years. It may be hard to quit cold turkey, especially since my work continues to be so enjoyable.

Again, thanks for the good relationships and your excellent spirit of cooperation.

Sincerely,
A. D. Barnhart

According to PCAV Vice President Scott Crumpler of Americast, Barney Barnhart has worked hard with the PCAV on several key initiatives during the Association's fledgling years. Prominent among them was the creation of the Precast Plant QA/QC System that is in place now, the success of which is owed in large part to Barney. His honesty and fairness are his trademarks. We look forward to working with him in some capacity in the future, and wish him a "low handicap" retirement!

How to Reach Us

Hard Facts editorial content is handled by The Williamsburg Wordsmith for the Precast Concrete Association of Virginia. ***Hard Facts*** is published as a service to the members of PCAV and other interested parties. PCAV and The Williamsburg Wordsmith are responsible for all editorial content of ***Hard Facts.*** Submissions, story ideas, letters to the editor, cartoons and other submissions are encouraged and welcomed.

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PCAV COMMITTEE UPDATES

BRIDGES and STRUCTURES

♦ The committee recently provided Mal Kerley, state bridge engineer, with a list of states that accept ASTM C789/C850 for precast box culverts. Kerley plans to review box culvert designs when LRFD specifications are completed and adopted by the Virginia Department of Transportation.

♦ A submittal has been sent to Kenny Payne, VDOT Location & Design, recommending a revision to the "R-2" style precast reducers. The committee is recommending an allowable fill of 20 feet above the "R-2" reduce slabs.

♦ Corrosion-prohibitive concrete additives are under review as a possible alternative to epoxy-coated reinforcing steel.

SPECIFICATIONS

♦ A presentation on the positive benefits of using water-tight gaskets on storm drain manholes and inlets was given by associate members. The committee is working to standardize the seven styles of VDOT DI-5 tops to two, and it is working on a standard concrete manhole design to accommodate vaccuum sanitary sewer systems.

♦ VDOT has requested assistance from the committee to help re-design the top unit used for storm water management structures.

MARKETING

♦ PCAV's display was exhibited at Construct '99, the annual trade show put on by Hampton Roads Utility & Heavy Contractors Association on April 1 at the Virginia Beach Pavilion. A total of 775 people attended the show.

PIPE

♦ The committee has submitted to VDOT new fill height and bedding designs for fill heights greater than 30 feet. VDOT has agreed to review them for approvals and/or revisions.

♦ The committee also will sponsor several seminars on the differences between rigid and flexible pipe. All engineers from local areas will be invited to attend.

Member Company News Briefs

- **GIFFORD HILL** recently changed its name to **HANSON CONCRETE PRODUCTS**.
- **HANSON CONCRETE PRODUCTS** has appointed Pat Morrison as its representative to the PCAV Board of Directors. We welcome Pat!
- **DAYTON SUPERIOR** and **RICHMOND SCREW ANCHOR** have merged to form **DAYTON/RICHMOND.**
- **INSTEEL** has acquired part ownership of **STRUCTURAL REINFORCEMENT PRODUCTS.**
- **BRIDGETEK** recently expanded into Georgia, Indiana, New York, New Jersey, and Pennsylvania.
- John Saintsing has joined **TARMAC** as a new sales representative.

Richmond *continued*

foot run of 42-inch pipe extends westward alongside the CSX Railway tracks to a new regulator. CSO-3 also included 1,110 feet of 48-inch pipe.

The 96-, 84-, 48- and most of the 42-inch pipe for CSO-3 was installed by traditional open-cut trench. The run of 60-inch pipe was jacked into an 84-inch diameter tunnel liner beneath a section of recently constructed floodwall. A portion of the 42-inch pipe was jacked to avoid road closures and existing utilities. As with CSO-1 and CSO-2, a lot of rock was excavated to make way for the pipe.

All of the reinforced concrete pipe for CSO-1, 2 and 3 sizes 42-inch to 96-inch was wet cast in precision formwork in standard lay lengths ranging from 16 to 20 feet. Pipe consisted primarily of concrete joints with either one or two rubber O-ring gaskets.

A 400-foot section of the 48-inch pipe had to withstand 50 psi hydrostatic pressure due to its location immediately adjacent to a 12-inch water main. The section of 48-inch pipe was produced with steel joint rings. The two O-ring gaskets also had an air-test port between the two gaskets to allow for pressur testing after installation of each section.

Other pipe with a single O-ring gasket was tested during installation with an internal ring joint tester per ASTM C1103. Testing of the joints during installation provided immediate information about the integrity of the joint seal. Any problems were solved before additional pipe was laid. The top quality pipe and joint testing procedure proved a great success during the final field hydrostatic testing of the pipe lines, which witnessed outstanding water tightness. With more than 50 special fittings, elbows, tees, wyes and reducers and several thousand feet of beveled pipe, the versatility of precast concrete pipe proved a big benefit to the project's success.

The project remedied Richmond's storm water drainage problems.



Calendar of Events

TIME	DATE	EVENT
	May 25-26	Committee & Board Mtgs. & Dinner; Meeting with Associate (Boar's Head Inn, Charlottesville)
10 a.m.	June 8	Executive Committee Mtg.
10 a.m.	July 20	Meeting with VDOT
12:30 p.m.	July 20	Lunch with VDOT
1 p.m.	July 20	Board of Directors Mtg. (Willow Oaks CC)
10 a.m.	Aug. 10	Executive Committee Mtg.
	Sept. 16-17	'99 Conference Wintergreen
	Oct. TBA	VDOT Highway Conference
10 a.m.	Oct. 5	Executive Committee Mtg.
9 a.m.	Nov. 16	Committee Meetings
11:30 a.m.	Nov. 16	Board of Directors Meeting & Lunch (Willow Oaks CC)



The Inside Perspective

By Alex Oliver, Mamaging Cinsultant

Association surveys continue to indicate what members want is information. That's why PCAV's newsletter, ***Hard Facts***, highlights not only technical information, but also "up close and personal" facts. Each issue features articles written by members. If you have an idea for a feature article call the association office. Your contributions will be appreciated.

Let me also take this opportunity to remind you that PCAV's web site (www.gopcav.com) is another benefit. Our goal is to enhance communication between members and to promote the industry to the right audience. We look forward to hearing from you.

Sincerely,
Alex W. Oliver

Wintergreen update

If it's spring, you can rest assured plans for PCAV's 1999 Annual Conference at Wintergreen Resort, scheduled for Sept. 16-17, are well underway.

While this year's theme is still under discussion, Associates Director Marie Derby is on top of plans, which to date include bringing in the president of the National Precast Concrete Association and other speakers.

Also scheduled are the annual golf tournament and dinner, which for the first time will be followed by an entertainment comic/ventriloquist.

For information on room reservations, call Wintergreen toll-free at 1-800-266-2444. To register for the conference, call the PCAV association office toll-free at 1-888-503-4800.

For updates, you can check out PCAV's website at www.gopcav.com, where updates will be posted as they come in.

If you still have questions, you can call Marie directly at 1-757-880-5631.

Technical Note...

As a result of legislation by the 1999 Virginia General Assembly, VDOT will return to English/SI units in their design work in lieu of metrics. Projects already in the pipeline in metric will go forward in metric. Future designs, however, will return to English.

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