



Hard Facts

N e w s l e t t e r

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PCAV Happenings



Mimi Rainero Coles
PCAV President

This is our first newsletter of the new year, and I'd like to wish a prosperous and happy new year to all the members and friends of the Precast Concrete Association of Virginia. It's hard to believe that 2002

passed so quickly! We now move on to a new year, new challenges and new opportunities.

A Job Well Done

As of March 1, 2003 the PCAV will have a new home. We would like to thank Betsy Parsons with HRUHCA for all of her help over the past 10 years. Betsy has taken very good care of our organization, our members and our business. We appreciate her help and wish Betsy and HRUHCA the best in the years ahead.

New Manager

PCAV is most fortunate to be affiliated with Mark Singer and his management organization—Advocates of Virginia. AOV has taken over the daily management duties of PCAV and will be our point of contact for producer and associate members and anyone seeking information about our organization, members or products. We very much look forward to working with Mark in the future and appreciate his interest in our organization. You can find our new address and Mark's contact information at the bottom of page 2.

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Precast Box Culvert Saves Time & Money

Joyce Engineering designed another successful precast box culvert to meet the need for a large drainage project called Peters Point Business Park in Petersburg, Va. This project, owned and developed by Reuse Technology of Woodstock, Ga., was designed with a road crossing a swamp to gain access to the center part of the project.

The box culvert was designed as precast so that they could get this project started very quickly as the main road entrance had a single line of 10X7 setting beside a quad line of 10X5, each being 40-feet long.

The precast box culverts were furnished by Americast Concrete Products Co. from its Ashland, Va. precast plant. The 10X5 box culverts were produced as double cells to help speed up the project, some weighing up to 24 tons each.

The contractor, Buchanan & Rice of Colonial Heights, had no trouble handling and setting the boxes with their 100 tons crane. The biggest challenge they had was poor soil.

B&R used a 6-inch pump to divert the creek while they undercut the base as much as six feet in some places and

backfilled with #3 stone and a #57 cap on top of the #3 stone. After B&R got the bed ready, they set all the boxes in just two days. Dale Buchanan was surprised and very pleased at the ease these large boxes went together.

Americast furnished the wing walls for this job, along with many different runs of reinforced concrete pipe.

This project would have been delayed several months had Joyce

Engineering specified cast-in-place box culverts. This is just another example of how "precast pays."

—Jim Richmond



Americast's box culvert saved B&R time and money.

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Nuclear Storage Vaults Measure Up BCP Keeping America Safe

Bayshore Concrete Products is manufacturing reinforced concrete storage vaults for the storage and containment of spent nuclear fuel rods, for several nuclear power facilities throughout the country. Bayshore has been awarded these contracts through a contractor licensed by the Nuclear Regulatory Commission.

Biological "Bouncers"

The vaults, called horizontal storage modules (HSM) are massive reinforced concrete structures that provide missile protection, passive heat removal, and biological shielding for the steel dry-shielded canisters (DSC). The DSC is the primary confinement for the storage of spent nuclear fuel assemblies.

These steel canisters, which are horizontally stored in the concrete

vaults, are loaded with spent fuel using underwater handling equipment. It is then sealed, dried, backfilled with helium, and



Bayshore Concrete Products is helping to protect America.

transferred to the HSM. These vaults have been designed and licensed for use as both transportation containers as well as for long-term storage. Once the vaults are in their final location, they are placed in close-packed arrays to maximize biological shielding of the highly reactive spent-fuel payload.

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President's Message

Continued from page 1

Website Improvements

The PCAV website continues to be updated and expanded. Visit us at www.gopcav.com for member information, product information, our calendar of events, technical articles, back issues of *Hard Facts*, and member links.

Help and Information

If you are interested in product information, member information or membership in our organization, please contact PCAV at 1-888-503-4800. We'll be happy to help.

Best wishes for a great 2003!

—Mimi Coles

VMI Says "Thank You"

Recently Scott Crumpler received the final report for ECAMP 2002, which was held at Virginia Military Institute in July. In an accompanying letter Camp Director Dr. John E. Riester wrote, "...the financial assistance from the Precast Concrete Association played a major role in conducting an extremely successful camp for rising 9th and 10th graders. In addition, the tour set up at Roanoke Cement contributed to the camp being able to offer an outstanding view of numerous areas of science and engineering in use." PCAV's assistance allowed them to keep the costs low and provide scholarships to more students.

Technical Brief

Rotondo Precast Utilizes SCC

Self-Consolidating Concrete (SCC) is a revolutionary new technology that is well suited to the precast concrete industry, where we typically see narrow walls and congested reinforcements and embedments. SCC is highly workable concrete that can flow through densely reinforced or geometrically complex structural elements under its own weight and adequately fill voids, without the need for vibration to consolidate it. The workability of SCC is higher than the highest class of workability associated with normal high-performance concrete typically used in precast concrete fabrication plants.

Rotondo Precast began producing a "Castle-Arch" 42-foot arched bridge structure, consisting of over 300 cubic yards of SCC, for VDOT October 2001. This bridge, located in northern Virginia, was in place and being used within three months of the start of production. Rotondo's Fredericksburg, Va. production facility worked closely with Dr. Celik Ozyildirim from the Virginia Transporta-

tion Research Council on this project as a pilot program for VDOT.

The mix used in this structure performed exceedingly well. The required compressive strength was 5500 psi and the average for this application was 7500 psi. An average coulomb value of approximately 800 was attained as well as a 28-day length change (%) of -0.0310 . After undergoing ASTM C672 (Deicer Scaling) the SCC specimen displayed a "0" rating, for no signs of distress. When exposed to the VDOT modified ASTM C666 Freeze/Thaw test, this mix exhibited an exceptional 0.0 percent weight loss and a durability factor of 97.

Although many tests are circulating or being developed, Rotondo Precast has chosen a series of QA evaluation tests that are relatively simple, yet definitive.

Rotondo Precast was able to utilize Self-Consolidating Concrete technology to improve the working environ-

ment in the plant, and to provide an improved product to the precast market place.

This is an excerpt from an article which Paul Ramsburg, Quality Control Manager at Rotondo Precast, wrote. He presented a paper on the topic at the 1st North American Conference on the Design and Control of Self-Consolidating Concrete, sponsored by the Center for Advanced Cement Based Materials (ACBM). The conference, held in Chicago on November 12-13, 2002, attracted an international audience with over 350 attendees from North America, Europe, Asia, and South America. All totaled, 70 papers were presented covering the latest research and state of the art regarding the use of SCC. The paper presented by Paul, coauthored by Bob Neal of Lehigh Cement Co., is titled, "The Use of a Natural Pozzolan for the Enhancement of Self-Consolidating Concrete". The paper provides a case study of the experiences at Rotondo Precast in the development and refinement of SCC using a calcined shale natural pozzolan. If anyone would like a copy of the paper, please contact Bob Neal at 804-356-7286 or rneal@lehighcement.com.

Nuclear Storage Vaults

Continued from page 2

Quality Assurance

As with all NRC-regulated facilities, extreme quality assurance/quality control standards must be met for the product to be accepted. The reinforcing steel is fabricated at two pre-approved steel mills which have been inspected for compliance with NRC quality assurance standards. All mill certifications are permanently recorded and become a part of the finished product. The steel formwork for the reinforced concrete is specially designed, fabricated and delivered to Bayshore Concrete Products' casting yard, where it all comes together. Other QA/QC parameters include stringent guidelines for concrete mix design to include strength, slump, air entrainment, permeability, shrinkage, and creep. Additionally, the casting process has extremely tight dimensional tolerances which must be met for all of the pieces to fit properly. All of

the castings are monitored and checked for conformance by on-site contractor representatives and Bayshore QA/QC staff.

Production Quantities

Bayshore Concrete Products casts approximately two vaults per week in modular sections and mock erects and match marks the units in the yard prior to disassembly and shipping. To date Bayshore has successfully cast over 100 of these vaults. This is evidenced by a recent statement made by the

contractor's Project Manager, "The projects have been a great success because of advanced planning and excellent performance by the project team and our suppliers!"

It is anticipated that additional storage vaults will be manufactured for states throughout the U.S. including Virginia, and we are anxious to continue casting safe, high-quality reinforced concrete nuclear storage vaults to protect our environment for years to come.

—Joe Rose



The pieces must fit properly for nuclear containment.

2003 Calendar of Events

DATE	EVENT
Mar. 12-13	Second Annual Concrete Conference, Holiday Inn Koger Cntr. So., Richmond, Va.
April 1-2	Contractor/Engineer Conference (VDOT-VRTBA), Norfolk, Va.
May 6	VRTBA Scholarship Golf Tourn. Hanging Rock, Salem, Va.
May 8	1:00 PM Committee Meetings 3:30 PM Board of Directors Mtg 5:30 PM Reception and Dinner w/Speaker, Boars Hd. Charlottesville, Va.
July 17	10:00 AM PCAV/VDOT Jnt. Mtg. 12:30 PM Luncheon with VDOT
Sept. 24-25	Annual Conference Wintergreen, Va.
Sept. (TBA)	ASCE Virginia Engineer Conference
Oct. 16-17	VDOT Transportation Conference VMI, Lexington, Va.

Membership News

The PCAV held a membership meeting on January 23, 2003 in Richmond. It was well attended, despite the frigid temperatures.

The day was action-packed, with committee meetings at 8:00 a.m., followed by a very productive meeting with VDOT, which attracted many Associate members. Later, the entire group had lunch together and listened to an informative address from Mal Kerley, VDOT's Chief Engineer for Program Development.

Kerley discussed the current struc-

ture at VDOT, as well as the upcoming projects. The group learned that the new VDOT website (<http://virginiadot.org>) will provide the "dashboard" to monitoring all projects. The state of the economy affects the entire Commonwealth, and cementing relationships between the PCAV and VDOT will surely help our members.

The next membership meeting will be held on May 8, 2003 at the Boar's Head Inn in Charlottesville. Mark your calendar now! —*Marie Derby*

PCAV Mission

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.

PCAV Past Presidents

Bill Tichacek, Americast	1991-1993
Jim Richmond, CP&P	1993-1995
Kirby O'Malley, Hydro Conduit	1995-1996
Don Anger, CP&P	1996-1997
Richard Rotondo, Rotondo Precast	1997-1999
Scott Crumpler, Americast	1999-2001

DON'T MISS THIS!

ACI Level One Certifications

April 2, 3 & 7 in Harrisonburg
May 7, 8 & 12 in Roanoke
June 11, 12 & 16 in Richmond
July 9, 10 & 14 in Hampton

Check out the PCAV website! <http://www.gopcav.com>

Hard Facts is a publication of the Precast Concrete Association of Virginia for its members. Submissions, story ideas, member kudos, letters to the editor and comments are welcomed. Contact the editor, Lois Carter Fay, APR, at 800.203.8660 or carterfay@tmgllc.net. Web design services for www.gopcav.com provided by NetTec NS (www.nettecnsi.com). Contact Joe Rainero at mail@nettecnsi.com or toll free at 877.881.4651 with ideas for the site.

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