



THE CONNCRETE TIMES

Spring 2012

The Connecticut Concrete Promotion Council (CCPC) of the Connecticut Ready Mixed Concrete Association
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DIRECTOR'S MESSAGE

Concrete production in the State of Connecticut has undergone consolidation, decreased production, and a negative business environment. Even so, the industry has shown tremendous resilience. I look at the design community as a barometer for the near term construction activity level. Architectural firms have been aggressive with designer level employment which generally indicates an uptick in anticipated project design.



National associations such as National Ready-Mix Concrete Association and Portland Cement Association have experienced a slowing of revenue which made them work smarter and be resourceful with available assets. The CCPC has followed the national associations' lead and directed resources to areas that are in the forefront of concrete use. The "green movement" has been CCPC's focal point and we continue to be very involved in the Low Impact Development (LID) market. Pervious concrete has been widely and positively received by the design community with projects such as the Green Capitol Project at the state capitol.

The New England Water Environment Association recently held its One Day Specialty Seminar Exhibit and Tour at the State Capitol and many water resource "eyes" got to see pervious concrete first hand. The Promotion Council is very optimistic that 2012 will be the turnaround year for concrete producers. The Lafarge article announcing a recent new cement facility is included in the newsletter. This will be the bellwether for future growth.

Thank You for your support.

Jim Langlois

ON THE CONCRETE SCENE



Q BRIDGE UPDATE

by Bruce Dykty, The Suzio York Hill Companies

Since the last article in Spring 2011's *ConnCrete Times*, the Pearl Harbor Memorial Bridge Project has come a long way.

As the joint venture of Walsh Construction and PCL Corporation began their contract in the Fall of 2010, two-thirds of the foundation was in place and some of the approach from the west was complete. Work then began on the towers to support the extradosed cable stay concrete bridge. Work began on the towers in conjunction with the columns and hammer heads that would support the new concrete roadway. The concrete mix for this work was the 75% GGBFS used on the last contract. This mix was temperamental because of the fine blaine of the slag. Any small deviation in the moistures of the fine and coarse aggregates would call for an adjustment. We would have a Quality Control Representative checking each truck before it was sent to the jobsite and another QC Representative relaying test results from the job. Working with our admixture suppliers we were able to dial in admixture dosage rates based on the current conditions. Moistures are checked on a regular basis to get a baseline for these adjustments. The eight towers rose in 13 foot sections. The two main towers are 44 meters (145 feet) tall and the two smaller anchor towers are 23 meters (75 feet) tall. They are completed at this time.

Cover story continued on page 6

CCPC PROFESSIONAL MEMBERS

**American Concrete Pumping
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Sika Corporation
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Terracon
Tilcon Connecticut**



FOR THE RECORD

AT THE CAPITOL: CCIA Supports Clean Water Funding

*by Matthew Hallisey,
CCIA Director of Government Relations &
Legislative Council*

Connecticut Construction Industries Association and its newest division, Connecticut Environmental and Utilities Contractors Association, supported the Draft FY 12 and FY 13 Clean Water Fund Priority List proposed by the Department of Energy and Environmental Protection in testimony before the agency in March.

Clean Water Fund authorizations are directed to municipal storm-water and sewage treatment projects across the state. The draft priority list proposes a two-year funding strategy for wastewater infrastructure projects related to Long Island Sound and combined sewer overflow improvements in the state's largest cities.

In recent years, the state has increased revenue bond authorizations and general obligation bond funds for the Clean Water Fund, restoring it to a level where it was years ago. These investments address many important policy objectives, such as:

- protecting the environment,
- protecting the health of our citizens and improving the quality of life,
- establishing an infrastructure to support growth and development, and
- creating jobs and generating economic activity.

CCIA argued that regular wear and tear on systems that is not being addressed grows more expensive to rehabilitate as the systems slide deeper into disrepair. Rehabilitation that may be performed in 2012 may require extensive demolition and reconstruction if investments are not made in a timely manner. Additionally, contractors currently have substantial excess capacity and the fierce competition between contractors is driving down prices, making this an excellent market for public entities to take advantage of tremendous purchasing power to buy more construction for the dollar.

The fiscal years 2012-13 capital budget adopted in June 2011 by the General Assembly and the Governor increased Connecticut's ability to meet state wastewater infrastructure needs and provide a stimulus to a sagging economy. The budget set a new high for CWF allocations at a time when the benefits to the state will make a marked impact.

The department selected from the many and important wastewater and pollution control projects across the state those priority projects that it plans to fund in the next two years. By following a process that maximizes the use of limited resources while achieving the objectives of protecting public health and the environment, building infrastructure, and creating jobs, the state will achieve substantial benefits from the Clean Water Fund.

Agency staff will produce a report of testimony, including DEEP's response to comments. After evaluating the comments, a final priority list will be forwarded to the DEEP Commissioner for adoption.

SETTING NEW SITES

SOME GENERAL CONTRACTORS ADMIT SKEPTICISM OF CONCRETE

from Douglas O'Neill, LEED® AP
Senior Director, National Resources
National Ready Mixed Concrete Association
Phone: 585.436.8310 /doneill@nrmca.org

Across the country there is a renewed interest in concrete parking lots due mainly to concrete's ability to provide a superior pavement at or around the same cost as asphalt. Yet, here in the Northeast, the new barrier the concrete industry faces is skepticism from none other than the general contractors who are bidding larger projects. These GC's have been doing things the same way year after year and are slow to recognize concrete as an alternative to asphalt.

Despite decades of evidence that concrete out performs and out lasts asphalt in cold weather states like Michigan, Iowa, Illinois, Nebraska and Missouri, despite the use of concrete in loading dock applications on most larger projects here in the Northeast; the same old mentality is prevalent when discussing a concrete parking lot alternate on these same projects.

Owners and Developers are seeing the advantages of reducing their maintenance costs on their facilities and at the same time not increasing their initial outlay of resources. Recently NRMCA has been involved in several unique opportunities to compete head to head with asphalt on projects in the New England region. Although the concrete sub contractors offered competitive pricing, what they found were GC's unfamiliarity with concrete parking applications and simply not wanting to deal with changing the way they construct. Consequently, the owners lose out.

It can be done and in fact IS being done across the country. Designing concrete parking lots has never been easier with NRMCA's Design Assistance Program (DAP) that offers designers a no cost ACI 330R-08 designed concrete parking lot which includes pavement thickness, site considerations and a joint layout plan in CAD format. Once in the construction phase of a concrete parking lot, a GC does NOT need to reinvent the wheel. There is support from organizations like NRMCA and The Connecticut Concrete Promotion Council along with the many NRMCA Producer members in the state of CT can offer advice and assistance.

If you are a GC and would like to learn more about using concrete parking lots to stay competitive in today's marketplace, we look forward to receiving your call: (585) 436-8310 or (860) 529-6855.

The Suzio Family, owners of The L. Suzio Concrete Company, Inc., and James Beard, owner of Beard Concrete Co. of Derby, Inc., are pleased to announce that as of August 2011, The Beard Concrete Companies have joined The L. Suzio York Hill Companies.



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STRATEGIES FOR SUCCESS

Schedule, registration forms, and information
available at CCPC office.

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Holiday Inn, Portland, ME
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ACI FIELD TECH CERTIFICATION

CCIA/Tilcon
September 13, 15, 20 and 22,
2012

CCPC ANNUAL PICNIC

Odetha Campground
Bozrah, CT
August 2, 2012 5:00 PM

CRMCA GOLF OUTING

Torrington Country Club
Torrington, CT
September 24, 2012

ACI FIELD TECH CERTIFICATION

CCIA/Tilcon
October 25, 27 and November 1, 3, 2012

NEW CONCRETE POSSIBILITIES

UNH TEAM BUILDS CONCRETE CANOE

by Andrew Saunders, ASCE Student Chapter President, University of New Haven

The University of New Haven Concrete Canoe team originated in the late 70's when the American Society of Civil Engineers first formed the competition. The idea behind the concrete canoe competition is to give students pursuing a degree in engineering the opportunity to apply some of the knowledge they learn in the class room to a real life project. The competition requires a school's team to design, build and compete with their canoe all while managing a very detailed project schedule. The UNH team, after quite a few years of being absent from the competition, was reformed in 2007 by a small group of students with the goal to once again build and race a concrete canoe. Since then the team has been growing bigger each year. Each year the students look to push the envelope and improve many aspects of our canoe all while designing to the very detailed specifications provided by ASCE.

One of the most critical goals of the concrete canoe is, of course, making concrete float. The UNH team achieves this by designing a concrete with a unit weight less than that of water. To do this, light weight fine aggregates, such as Pora-ver Spheres and 3M K-I Glass Bubbles are used. Each year the team looks to find new ways to improve strength while reducing the unit weight of the concrete. The 2012 canoe, "SuperCharger" had a unit weight of 60.2 pcf and a 28 day strength of 1600psi. According to the structural analysis of the canoe's hull, this concrete's strength met and exceeded our base line strength of about 600psi.

In past years, the UNH team has received several awards for many aspects of the concrete canoe competition. These awards include, 3rd place Oral Presentation, 3rd place Women's Sprint, and just last year our most proud accomplishment, 3rd place in final product. While the 2012 canoe, "Supercharger" didn't take home any awards, the team looks at it as a learning opportunity and looks to raise the bar next year. With over 35 members in the club now, the team is eager to continue the concrete canoe tradition at our school. Plans for the future include a completely redesigned hull, an even lighter concrete mixture and perhaps most importantly, rowing practice.



Figure 1: Measuring Out Cross-Section Location



Figure 2: Bolting together Cross-Sections for Cutting



Figure 3: Hot Wire Cutting Complete



Figure 4: Cutting the Ribs



Figure 5: Applying Form Release to the Mold



Figure 6: Finished Mold Ready for Pour



Figure 7: Mixing the Concrete

NEW CONCRETE POSSIBILITIES



Figure 8: Pouring the Rib



Figure 9: Applying First Layer of Concrete

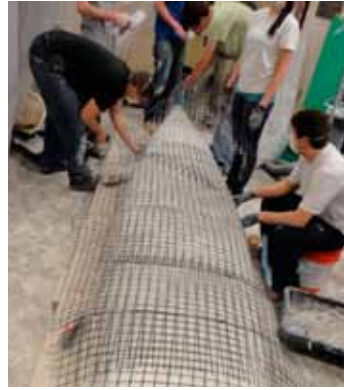


Figure 10: Second Layer of Carbon Fiber



Figure 11: Finishing Concrete Placement



Figure 12: Mold Removal



Figure 13: Sanding



Figure 14: Sanding



Figure 15: Taped off, Ready for Staining



Figure 16: **Final Product!**



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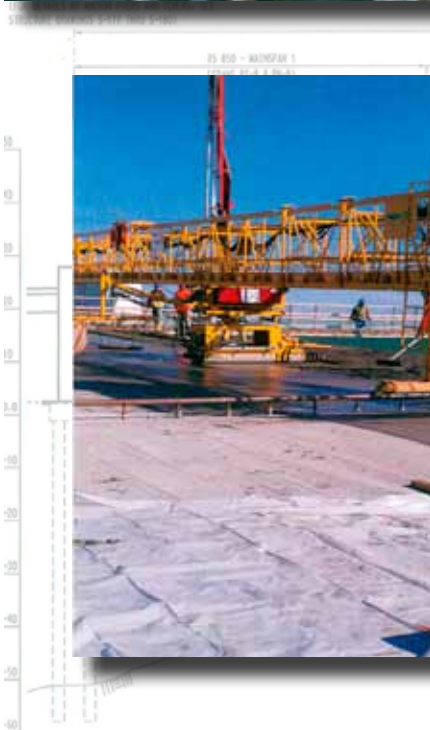


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The first Hi-Performance mix was placed in the pier table connecting the two towers. This 6000 psi mix used Type III cement for early strengths and 20% slag. Microsilica was added to reduce the permeability and to reduce the migration of chlorides from road salts and ocean blown salts. A Superplasticizer was used for workability and a Retarder slowed the hydration process. The vast majority of the concrete was pumped and the one hour time limit on loads was strictly enforced. This platform was to be the base for the Form Traveler System. Four sets of Travelers were utilized, two on each main tower working out to the shorter anchor towers and two working toward each other to connect the center span. Still using the 6000 Hi-Performance mix, Walsh/PCL was placing two 15' x 60" segments a week. Sixty-five segments were to be cast. This Hi-Performance mix was reaching 4000 psi in 17 hours. This was above the required strength Walsh/PCL needed in order to strip their forms and maintain their pour schedule. These segments are hollow to accommodate an internal walkway for inspection. Slumps for each bridge segment pour started at 5" to "plug" the vertical walls (a slow process during this period of time). Then a higher slump of 8" was used for the bottom & top slabs. Placement time ran between seven and ten hours. Each segment took approximately 160 cu meters / 200 cu yds. A latex modified concrete is being placed on the approach and bridge decks as the final wear surface, doubling to reduce chloride issues.



INSPECTION OF FIELD	
METHODS	UNIT
ULTRASONIC	IN
NONDESTRUCTIVE PARTICULATE	IN
IN AT MODULAR JOINTS	

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The final segment and completion of the North Bound section is due to be poured the second week of May. A mid-July public opening for traffic is projected.

Another first on this project was the use of a slip form extruder for the Parapet Walls. This method allows the wall to be continually cast versus formwork being constructed for a cast-in place wall. As the extrusion machine slowly moved forward, the concrete was vibrated and formed into the Parapet. The mix was a standard CONN DOT mix with the exception that a $\frac{3}{4}$ " to 1" slump was required since too much slump would cause the wall to sag. After multiple trials CONN DOT approved the procedure and mix design. Approximately 4000 feet of Parapet Wall was placed in three weeks. Only a partial load of one truck was rejected in the entire placement of these walls.

For the approach decks leading to the bridge pumps placed a Superplasticized CONN DOT Class "F" mix. A power screed spanned the entire width of the 7 lane deck. The screed was able to speed productivity and approximately 350 cu yds were used for each placement. There were 15 deck pours.

This past year has been busy with many modifications new to our production staff. As the next phase is underway, adding 113 more of foundations and 4 more towers and then the remaining 12 of the bridge, we will try to catch our breath.



LAFARGE TAKES GIANT STEP TOWARD MODERNIZING RAVENA CEMENT PLANT

Lafarge's ambitious plans to modernize its New York Ravena Cement Plant achieved a momentous step forward with the acceptance of its final Environmental Impact Statement and issuance of permits by the Department of Environmental Conservation (DEC). The exhaustive and detailed process required Lafarge to prepare a 1,776 page Draft Environmental Impact Statement (DEISP) in which over 20 environmental aspects were carefully measured to determine the potential impact of the proposed modernization. In addition, Lafarge hosted three public information fairs to explain plan specifics and the DEC hosted a public information meeting and legislative hearing.

Plant manager Martin Turkecky noted, "Over the past

three years, our team has worked together with DEC and the community to develop a plan that is beneficial to the community, economy, and the environment. By transforming the Ravena Plant into the most advanced cement facility in NY State, we will remain competitive for the longer term, allowing the Ravena Plant to continue to produce high quality cement, and significantly cut plant emissions." In addition, the project will improve environmental performance and efficiency, cut fuel use by half and both solid waste generation and water consumption by 40 percent. To achieve these improvements, Lafarge will replace two existing wet kilns with a single, highly-efficient dry kiln. For more information go to www.lafargravenafacts.com



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Your CONNCRETE TIMES CONNECTION

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Cement Plant

**Credit: Newsletter Concept and Design:
Ann Beaudin and Andrea Beaudin**

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