Spring 2009

THE CONNCRETE TIMES

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

A BILLION DOLLAR BRIDGE

The CCPC's Winter 2009 newsletter was very well received by the construction community. We will be publishing the newsletter on a quarterly basis with stories and announcements to bring attention to concrete activities within the State.

Promotion efforts by CCPC and its members are often covered up by wood siding and dirt, making recognition of the use of concrete a difficult task. With the construction of the Pearl Harbor Memorial Bridge in New Haven, our industry will be very visible. The bridge's total cost will exceed $1 Billion, making it the most expensive project in CT DOT history. Concrete was the building material of choice vs. steel after the bidding process was completed and prices compared.

Pervious concrete is another type of concrete that will be very recognizable in the near future with projects throughout Connecticut.

In 2007, CCPC members helped build a Habitat for Humanity home in Bloomfield. Again, concrete was the building material of choice, with a 50% comparative savings for a concrete home vs. similar size wood framed HfH home. Look for follow-up stories.

The CCPC looks forward to receiving feedback on its articles.

All the Best,

Jim Langlois

ON THE CONCRETE SCENE

A STORMWATER RUNOFF SOLUTION

By Jim Langlois, Executive Director of the Connecticut Concrete Promotion Council
(Excerpts of article that appeared in May 09 *Habitat* magazine)

Protecting the environment by controlling runoff and pollutants is one of the biggest challenges we face. According to the EPA (US Environmental Protection Agency) runoff can deposit as much as 90% pollutants into our waterways and rivers. To address this, the EPA established stringent guidelines requiring state and local governments to reduce and implement stormwater runoff measures to improve water quality.

Pervious concrete was found to be an effective solution for meeting the EPA requirement and in 1999 the EPA recommended pervious concrete among the Best Management Practices (BMPs) for the management of stormwater runoff (epa.gov). Moreover, the Green Building Council's Leadership in Energy & Environmental Design (LEED®) offers project credit for the effective use of pervious concrete in building. Although pervious concrete has been around since 1852 and used in Europe since WWII, only in the last twenty years did it gain awareness in the United States. Today, a growing number of professionals are embracing pervious concrete as a natural, durable, economical, and LID (Low Impact Development), environmentally friendly pavement option for building roadways, parking lots, sidewalks, walkways, driveways, patios, decks, greenhouses, plazas, nature trails and a variety of applications.

THE SUCCESS IS IN THE MIX AND THE MIXER

Pervious concrete's effectiveness lies in its open-cell structure, often referred to as porous or no fines concrete, which allows rainwater or melted snow to drain and filter through to the underlying soil. It is comprised of a carefully controlled mix of stone aggregate, cement, water, little to no sand, and admixtures.

Pervious typically can run between 2500 and 3500 PSI with a 15-25% voids structure. A density test is presently being used and ASTM (American Society of Testing Methods) is in the process of packaging pervious testing practices. Density is dependent upon properties and proportions of materials used and compaction procedures.

Proper installation and appropriate maintenance are essential to ensuring long term effectiveness. A knowledgeable designer and qualified

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CCPC PROFESSIONAL MEMBERS

A. Aiudi & Sons
American Concrete Pumping
Barker Steel Co. Inc.
Barnes Concrete
BASF
The Beard Concrete Co.
Castle Concrete
CECO Concrete Construction
Concrete Anytime
Concrete Connections
Concrete Crafters of CT. Inc.
Concrete Enterprises
Concrete Express Inc.
Conn Bomanite Systems
Construction Solutions Inc.
Corsetti Construction, Inc.
Devine Brothers Inc.
Enfield Transit Mix
ESSROC Cement
F&F Concrete
W. R. Grace
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Headwaters Resources
Holcim USA
IMTL, Inc.
Jolley Concrete & Block
Kobyluck Ready-Mix Inc.
Laboratory Testing Services
Lafarge North America
Lehigh Cement Company
M.T. Group, LLC
Martin Laviero Contractor Inc.
Manafort Brothers
Materials Testing Inc.
Mobil Mix Concrete LLC
Modern Concrete Pumping
Mongillo Foundation Co. Inc.
JJ Mottes Co. Inc.
Myers Associates
Norlite Corp.
Northeast Solite Corp.
O'Dea Concrete Products Inc.
O&G Industries Inc.
H. O. Penn Machinery Co. Inc.
Polysteel Northeast LLC
Purinton Builders Inc.
RJB Contracting, Inc.
Short Load Concrete LLC
Sika Corporation
Spiegel, Zamecnik & Shah Inc.
L. Suzio Concrete Co. Inc.
Terracon
Terry's Concrete
Tilcon Connecticut
Wheaton Mobile

FOR THE RECORD

AT THE CAPITOL

from Matthew Hallisey, CCIA Director of Government Relations and Legislative Counsel

Now that the Connecticut General Assembly has adjourned its 2009 regular legislative session without adopting a budget, lawmakers have convened a special session to tackle how much the state will tax and spend (or borrow!) its way out of an $8.5 *billion* deficit. The next regular legislative session will begin in February 2010. Meanwhile, for CCPC members, the '09 session produced several new laws that may affect the industry. They include:

- **Green building construction**.
  Public Act 09-192, effective July 8, 2009, requires: (1) the State Building Inspector and the Codes and Standards Committee, on and after July 1, 2010 to revise the State Building Code to require certain buildings that qualify as new construction or major alteration of a residential or nonresidential building to meet or exceed optimum building construction standards, referencing nationally accepted green building rating systems; and (2) that the revision include a method for demonstrating compliance at the time of application for a certificate of occupancy.
- **'Complete streets' law**.
  Public Act 09-154 requires that a reasonable amount of highway funds be used to provide sidewalks, bike lanes or other amenities for pedestrians and cyclists beginning July 1, 2009. On and after October 1, 2010, at least 1% of funds received by the Department of Transportation or cities and towns must be used for such purposes.

On the regulatory front, state agencies are busy. For instance, High Performance ('Green') Building Construction Standards for State-Funded Buildings, which were rejected in June by the Regulation Review Committee, are being revised by the Office of Policy and Management. The regulation, which requires construction of certain state buildings costing $5 million or more, renovation of certain state buildings costing $2 million or more, and renovation of certain public schools costing $2 million or more to meet or exceed certain energy and environmental standards and criteria such as LEED silver, will undergo review by the Attorney General and then be submitted again for approval by the committee. OPM plans to have the regulation in place by the fall.

STRATEGIES FOR SUCCESS

PROFESSIONAL SEMINARS & EVENTS!

- **CCPC ANNUAL PICNIC PIG ROAST**
  Picnic at Odetha Campground, Bozrah, CT 8/13 5:00 PM
- **AMERICAN CONCRETE INSTITUTE (ACI)**
  Field Tech Certification 9/17, 19, 24, 26
- **CONNECTICUT READY-MIXED CONCRETE ASSN. GOLF OUTING**
  Gillette Ridge, Bloomfield, CT 9/28
- **AMERICAN CONCRETE INSTITUTE (ACI)**
  Field Tech Certification 10/29, 31; N5, N7

To register, call Jim Langlois: 860-529-6855 or email jlanglois@ctconstruction.org
NOTE: CCPC is an approved sponsor of the Pervious Concrete Contractor Certification Program.
Discover how you can become a certified Technician, Installer, or Craftsmen. Call Jim Langlois at CCPC 860-529-2618.

A STORMWATER RUNOFF SOLUTION

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installer will take into consideration conditions such as adjacent landscaping, slope of land if surface is not level, rainfall specific to the location, storage capacity, permeability requirements, and infiltration rate. Guidance for selecting appropriate rate for infiltration can be found in texts and Soil Surveys published by the Natural Resources Conservation Services (http://soils.usda.gov/).

Possible clogging of void structures from accumulation of leaves, rocks, and other debris from surrounding landscape should be addressed with a maintenance program. Periodic vacuum sweeping, power blowing and pressure washing of pavement are recommended maintenance measures for any debris removal on surface.

ADVANTAGES OVER OTHER MATERIALS

One of the phrases often used to describe the benefits of pervious concrete is "When it Rains, it Drains." This phrase underscores pervious concrete's value over other building materials. Additional benefits include the ability to:

- Replenish water tables and aquifers by stemming the loss of rainwater
- Decrease the need and costs for constructing large detention ponds and expensive irrigation systems
- Mitigate surface pollutants through natural microbial growth
- Allow for more efficient approach to land development
- Reduce the heat island effect by absorbing less heat than darker pavements
- Permit air and water to reach tree and plant roots in a paved environment

PLACEMENT, PROCESS & QUALIFICATIONS ARE KEY

Prior to installation, a percolation test is taken of the soil type. The preparation and installation process involves the laying of an entire hydrological system which includes the soil which is the subgrade, covered with a non-woven geotextile fabric, followed by a subbase of crushed stone, and topped by the pervious concrete pavement. The pervious concrete is then smoothed with a roller screed and joints are cut with a finned roller and then covered with plastic and cured for a minimum of seven days. Detailed engineering specs can be found by visiting www.perviouspavement.org/engineering%20properties.htm.

Environmentally-conscious consumers and dedicated green minded builders, architects, planners, and municipal and state leaders are discovering myriad possibilities and solutions pervious concrete offers for environmentally sensitive construction, beautiful design and ease of maintenance.

For more information, contact CCPC Executive Director Jim Langlois at 860.529.6855 or email jlanglois@ctconstruction.org. For data, demonstration, guidelines on maintenance procedures, and questions and answers, visit the National Ready Mixed Concrete Association website at nrmca.org.

SETTING NEW SITES

CONCRETE IN THE PUBLIC EYE

By Doug O'Neill – LEED® AP
National Resource Director, NRMCA

Have you seen concrete in the media lately? With sustainability such a hot topic in today's environmentally conscious marketplace, more and more news coverage is showcasing the latest high tech advances in green building and not surprisingly concrete continues to be the story. Whether it is TV news coverage of stormwater management solutions highlighting pervious concrete in New Hampshire or Idaho, or stories featuring the energy efficiency of structures being built with Insulated Concrete Forms (ICF's) in Minnesota and Kansas, the fact is the media, in their search for a good story keep uncovering concrete's vast contributions to sustainability. The *New York Times* recently reported on the I-35 Bridge project in Minneapolis that was finished in record time, ahead of schedule due mainly to the unique concrete mix designs utilizing performance based criteria along with recycled materials like fly ash, slag and silica fume.

The LEED® Green Building Rating System offers designers and owners a step by step method for designing, constructing and operating the world's most environmentally friendly buildings and there is no other building material that can affect more credits within the LEED® Green Building Rating System than concrete. To learn more about concrete's contribution to sustainability and the advances in concrete technology, contact The National Ready Mixed Concrete Association at www.nrmca.org or the CTCPC and sign on for any number of nationally broadcast webinars highlighting one of the oldest, most versatile and environmentally friendly building materials on the planet, concrete! Build it right the first time… with concrete.

PROJECT PROFILE: TIRE RACK WAREHOUSE—WINDSOR, CT

By Kimberly Corwin

Constructing the 304,000 SF Tire Rack Warehouse offered many design and construction challenges, but time was primary. Utilizing Tilt-Up Construction provided a natural solution to meet the tough schedule requirements.

Cutler Associates of Worcester, MA, procured The Tire Rack Warehouse in Windsor, CT, as a design build package for Griffin Land Company, hiring Ace/Avant and S&S Concrete Floors and utilizing Tilt-Up Construction provided a successful solution. Cutler's scope of work included the steel erection package which would prove to be the biggest design challenge in this limited time frame. With over 37 years of experience with Tilt-Up Construction, Cutler knew that Tilt-Up would give them the control of the schedule they needed.

It was essential for the steel erectors to maintain their time frame and they could not work off the floor slab. This meant panels had to be poured and erected in a very limited space or casting slabs would be needed, adding to the expense of the project which was not in the budget. The brainstorm was to pour just enough of the floor slab to serve as the casting slab for the wall panels and still leave the center floor open/unpoured for the steel erection crew to work.

Griffin had the land cleared by mid-January 2009 and Tire Rack, the client, had already established a drop dead move in date of July 1, 2009. The team had less than 6 months to complete the facility and top it off. Mother Nature offered up one of New England's longest, coldest winters in almost 10 years.

The crews grabbed their winter gear and began foundations on March 2 and completed foundations on schedule on March 20. The 100' perimeter of floor which was 185,000 square feet of concrete was placed and finished in 6 placements. The floor has a rating of FF50-FL35. Ace/Avant mobilized on April 2 and committed to having panels ready for erection by mid-April. That gave them just 15 days to pour 132 panels at an average size of 17' wide x 38' tall weighing approximately 75,000 lbs each, with the largest panels weighing over 80,000 lbs. The panels were formed and poured in 12 days in 5 placements and on schedule.

Erecting these panels offered still another challenge. The single most expensive component of any Tilt-Up job is the cost of the crane. Optimum utilization of the crane is essential to the success and profitability of a Tilt-Up Project. Based on the panel sizes and weights a 300 ton crane was selected. However, the only way for this crane to maneuver on the site and lift the panels was from on top of the freshly poured wall panels, lifting the panels in order, and moving over the panels themselves. Special precautionary methods were needed to avoid damaging the panels. The crane needed rubber tires and a poly sheeting was placed under the crane on top of the panels to avoid "scuff" marks. The final panels were poured on Friday, April 17, a beautiful spring day in Windsor with temperatures hovering around 70 degrees.

Monday came and it was time to erect the panels. Mother Nature again threw us a curve ball—cloudy and overcast with temperatures dipping into the 40's. It had rained hard the night before and the skies looked ready to open up again. Rain was nothing new to this crew, John knew his crew had applied the Nox-Crete bond breaker correctly and they were ready to lift. Even under adverse conditions the Ace/Avant crew averaged 15 minutes per panel, with no complications. In just 4 days all 132 panels were lifted and in place.

The erection crew began placing steel on April 23, right on schedule, and completed it on May 22. S&S poured the remaining 119,000 square feet of concrete and finished the floor, maintaining the FF50-FL35 rating throughout. The project is the first tilt-up in the business park with more to follow. Interior finish work and landscaping is being completed now and everything is tracking for the owner to take on-time possession.

For more information on tilt-up concrete, please feel free to contact Kimberly Corwin, Business Development Manager at AH Harris and Sons, kim.corwin@ahharris.com or visit our web site at www.ahharris.com or the Tilt-Up Concrete Association, www.tilt-up.org.

STRATEGIES FOR PROFESSIONALISM

American Concrete Institute®

THE FOLLOWING IS A COMPOSITE OF ANSWERS FROM QUESTIONS POSED TO INDUSTRY PROFESSIONALS REGARDING THE ACI CERTIFICATION PROGRAM.

Q. What are the benefits of lab and field inspectors becoming ACI Certified on projects?
A. Certified technicians can bring accuracy, reliability, and confidence to testing activities to meet industry standards. Money must be spent to provide certified individuals. This levels the playing field for companies providing testing services. Companies cannot lowball jobs and provide unqualified personnel to earn profit.

Q. Can and should owners and designers specify that ACI Certification credentials of field technicians be checked on job sites?
A. Without job site control a testing company can send unqualified, or worse incompetent personnel, regardless of any resumes or certifications submitted during the quality selection process. The job site controls further promote a quality product for the owner and engineer, provides a safer construction site, make the job flow more smoothly, and prevents disagreements between on site contractors and testing technicians who may not be qualified. OSHA fines should be considered for personnel performing concrete testing who are not certified.

Q. Does the current evolution of concrete design (i.e.: admixes, lightweights, high strengths) require certified personnel and testing procedures more than ever?
A. It requires certification to begin with but it also requires an interest in concrete technology and the ability to understand and work with special materials. Current advances in technology necessitate certified personnel. Technicians who renew certifications are generally more informed as ACI memberships include free publications that outline many new concrete technical advances. Certified individuals generally take more pride in their work and are therefore generally more interested in the industry.

Q. What are the most common problems or issues that occur between yourselves and job site personnel such as PM's, architects, engineers, and suppliers?
A. Making decisions on site as to acceptability of materials, when to reject, how to apply specifications and still keep job running. Suppliers may not trust the technician's results as many testing agencies are allowed to man the job with unqualified individuals. Because of this history certain suppliers question the technician's ability immediately and try to use it to avoid their responsibility to provide the product that performs satisfactorily. The most common complaint we note is that the superintendent is not aware that the inspector is already on site and is performing his duties.
Project managers generally only get half of the story when their superintendents make complaints about the testing laboratory. Often the blame is put on the testing laboratory when work is not in accordance with the specification. Also, many will use the testing lab as a scapegoat for their substandard work. Fortunately most architects can see through this ruse. Mandatory certification can reduce this attitude by making it a more professional job.

Q. Any comments you would like emphasized?
A. Certification is important in today's work, but quality also requires dedication from the whole project team to prevent concrete problems by maintaining the basic practices of placement, finishing, curing, and weather conditions. Mandatory site checks for tech certification are a great idea but must be practical. The ACI Field Technician Certification course/exam is readily available. Other mandatory concrete certifications courses/exams are not available or are not yet widely accepted. The current Statement of Special Inspections format requires the ACI Concrete Construction Inspector certification. This certification is not even offered anymore from ACI. In its place, the Concrete Construction Special Inspector is offered. However, this certification is not offered in CT. With only 9 certified individuals residing in CT there are not enough certified inspectors to service the industry. Some Special Inspections require ICC certifications. Although this exam is offered in CT, the testing environment is less than ideal. In addition, there are only 5 individuals in CT that hold this certification (we have one on staff).

While the ACI Field Tech certification has become the norm, it seems the local construction industry has not yet adopted further certifications. Engineering Companies should not be exempt from the certification requirement. The tendency to allow engineering companies to perform construction testing without NVLAP certification has led to engineering firms low balling jobs and provides the Testing Laboratory with a 'work-around" to reorganize as an Engineering Company.

ACI Certification will help standardize testing but it is only a small part of the concrete testing process. The Testing Laboratory should be selected based on overall performance.

Your CONNCRETE TIMES CONNECTION

IN THIS ISSUE

WELCOME NEW MEMBERS

To become a member of a growing professional trade organization, contact Jim Langlois at CCPC 860-529-6855

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