

IN THIS ISSUE	
TITLE	PAGE
ISCP Member News	1
Industry Resources	1-2
Industry Publications	3
Conference News	4
Call for Abstracts	4
Call for Papers Digest	5
Upcoming Events	5

ORGANIZATIONAL MEMBERS & MAJOR EVENT SPONSORS:

- 50<sup>th</sup> AMERICAN CONCRETE PAVEMENT ASSOCIATION ANNIVERSARY
- capgtg
- Cement Association of Canada / Association Canadienne du Ciment
- CEMEX
- CIMA / Partenaire de génie
- CRSI
- FEDERAL AVIATION ADMINISTRATION
- FUGRO
- GENIVAR
- Holcim
- ICH / Instituto del Cemento y del Hormigón de Chile
- Manitoba
- National Concrete Pavement Technology Center
- NPCA
- ONTARIO CANADA
- PCI / Precast/Prestressed Concrete Institute
- Stantec
- Transports Québec
- UCPRC
- Wirtgen

## ISCP MEMBER NEWS

### ISCP Bed & Breakfast Auctions - Two Down, Two to Go ...



ISCP Member John Ries, *Expanded Shale, Clay and Slate Institute*, was the successful bidder in the first auction of certificates for two nights of bed and breakfast, for two persons, at the Fairmont Le Château Frontenac in Québec City, Québec, Canada, the site of the 10<sup>th</sup> International Conference on Concrete Pavements (10<sup>th</sup> ICCP). John's winning bid was \$427, and he is claiming two of the four certificates at that unit price. Thanks, John!

Two certificates remain and a new members-only online auction will begin in early June – all current ISCP members will be notified by e-mail.

As a reminder, these certificates each have a value that approaches \$1,000 CDN (actual value depends upon the type of room chosen and the date of redemption) and can be used anytime before April 1, 2014 (subject to availability; not available on Carnival weekends and holidays). The next auction will again be held for one week. As before, proceeds from the auction will be used to defray ISCP costs for hosting the 10<sup>th</sup> ICCP.

## INDUSTRY RESOURCES

### Roller Compacted Concrete Pavement Perfectly Suited for Intermodal Facility at Airport in North Carolina, USA



While Roller Compacted Concrete (RCC) Pavement is not a new or unique process, the RCC pavement project at the North Carolina (N.C.) Charlotte Regional Intermodal Facility at Charlotte-Douglas International Airport is unique for two reasons. The project is specified to accommodate multiple transportation needs - rail, truck and air; and a portion of the project entails two-lift RCC pavement. The intermodal facility, to be completed by the end of 2013, is part of Norfolk Southern Railroad's "Crescent Corridor" project, intended to enhance the railroad's north-south shipping and distribution capabilities with 2,500 miles of upgraded tracks between New Jersey (northern USA) and Louisiana (southern USA).

ISCP Member, Corey Zollinger, P.E., *CEMEX*, said that the Charlotte intermodal facility pavement has tremendous strength needs with the transporting of containers, stacking of containers, and load-carrying vehicles not typical on the highway. RCC pavement is best suited for this project because RCC is used for strength, ease of installation, durability, smoothness and economics.

#### Advantages of RCC construction?

RCC has the same materials as conventional concrete, and can be constructed fast, on or near the worksite, is durable and has a high compressive and flexural strength. It is easily built in industrial areas while keeping the traffic flowing freely during construction, and can be completed in half the time of conventional pavements.

#### The Intermodal Project:

Charlotte's new 200-acre intermodal yard is between two parallel airport runways, and will allow trains and trucks to easily make 200,000 transfers and stack hundreds of thousands of containers of goods per year. That compares



photo: Greg Dean, ACPA-Southeast





Photo:  
Charlotte Business Journal

## RCC Placement is straight forward: Mix, place, compact & cure!

### • Mix Materials:

Sand, aggregates, cement and water. The aggregates have a dense gradation and are easily compacted. RCC is drier than conventional concrete which results in higher early compressive and flexural strengths. Mix designs vary based

### • Placement:

It is placed with regular asphalt pavers or high-density pavers, and then compacted with rollers. No forms or reinforcing steel are required for strength gain and durability.

### • Compact:

Density is critical. Most jobs require 98% density, either through a regular asphalt paver or a high-density paver, then static and vibratory rollers.

### • Cure:

The final step is, as with all concrete projects, curing to ensure proper strength gain and durability.

with 130,000 transfers a year at the company's current 40-acre downtown Charlotte yard. From the southeast coast shipping ports, container ships will unload metal boxes onto trains, which will bring the containers to the intermodal yard. From there, the containers will be transferred from trains to trucks, and some cargo will be transported to aircraft for national and global destinations.

According to Dan Vipperman, P.E., A.G. Peltz, this project is using high-density pavers - the key to achieving a higher density, without applying additional effort and minimizing roll down. Simply, the more density achieved out of the paver, the less rolling required. This is very important to achieving surface smoothness and final density. For this project, 94% to 96% density was seen directly behind the paver before the start of rolling.

**This RCC Pavement is specified to accommodate multiple transportation needs - rail, truck & air.**

Vipperman stated, "Throughout the project, quality control tests ensure strength and durability. Every mix is different, but having the right equipment and knowing how to operate it is a good start to ensuring a successful project. We make small changes in our process from mix design, mixing rates, paver settings, roller patterns, etc., on every job until we find the best process that ensures a final end product that we as a company are happy with, and that meets the owners' expectations. Because this is a multi-modal site, multiple specifications for this RCC pavement had to be taken into consideration. It takes testing, patience and time to achieve overall appearance, durability, strength, surface smoothness, etc., on every project." RCC mixture requires experience and knowledge of regional materials.

### The Two-Lift RCC Pavement:

Most of this project's RCC pavement comprises a 230 mm (9-inch) section over dense aggregate base, but there will be another small paved section that is 430 mm (17 inches) thick. The 430 mm (17-inch) portion requires two-lift RCC pavement. Two-lift RCC pavement is required when depths exceed 254 mm (10 inches). Each lift will be half of the entire thickness, or 215 mm (8.5 inches) thick. Two pavers will be used in this area. Typically, the first lift will be placed, achieve 98% density, and then the second lift will be placed within one hour. If the time frame cannot be met, a grout slurry will be used for bonding the lifts.

### The end result of the RCC Pavement?

According to Zollinger, the result is a reasonably smooth pavement that has the strength and durability of concrete, is economical, environmentally friendly, sustainable, and is ready to use in days.

This unique project has given the contractor and the Southeast chapter of the American Concrete Pavement Association (ACPA) opportunities to host several project tours, thereby introducing RCC to engineers and DOT personnel from many states. Additional tours will be conducted throughout the project construction.

To view the RCC Pavement video, "Benefits of RCC Pavements for Local Roads", please go to: <http://www.youtube.com/watch?v=CP8zjaT35X8>.

To read more about the Norfolk Southern project, please go to: <http://www.bizjournals.com/charlotte/blog/morning-edition/2013/01/norfolk-southern-to-invest-2b-in-rail.html>.



photo: Greg Dean, ACPA-Southeast  
1 - NCDOT personnel observing the High-density paver



photo: Greg Dean, ACPA-Southeast  
2 - High-density paver placing 9" pavement



photo: Corey Zollinger, CEMEX  
3 - Project tour



photo: Corey Zollinger, CEMEX  
4 - Site of mobile pugmill mixer



## Transports Québec Releases English Version of LCA Report



The Ministry of Transportation Québec (MTQ) has released an English version of the report "Comparative Life-Cycle Assessment of Cement Concrete Pavement and Asphalt Pavement for the Purposes of Integrating Energy and Environmental Parameters into the Selection of Pavement Types" (Report No. RTQ-12-01). A French version of the report is also available.

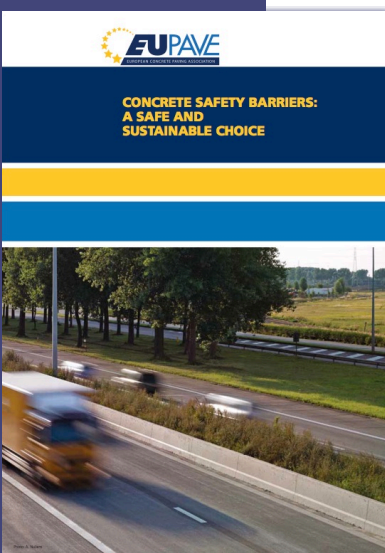
The aim of the study, which was conducted mainly between 2006 and 2009, was to adapt Life Cycle Assessment (LCA) concepts into a pavement type selection decision framework that was previously defined mainly by Life Cycle Cost Analysis (LCCA). Data for the study were provided by the Cement Association of Canada, Bitume Québec, the Ministère des Transports du Québec and other industrial associations, and results were developed to account for the entire MTQ road network, encompassing 16 functional classes of road design.

The LCA inventoried flows of energy and raw materials extracted from the environment, as well as flows of residual materials and pollutants emitted to the environment, thereby making it possible to compare the impacts of cement concrete and asphalt pavements on the basis of mass. The LCA also made it possible to extend the assessment by weighting the inventoried flows according to their potential environmental impacts on human health, ecosystems and resources.

The analyses suggest that asphalt pavement requires more natural resources, but cement concrete pavement usually emits more pollutants and residues. Fourteen of sixteen identified impact indicators were aggregated into four endpoint damage indicators, with three of these (human health, ecosystem quality and global warming) favoring asphalt pavement and one (resource consumption) favoring concrete pavement. The human toxicity indicator favored concrete pavement, but was aggregated into the human health damage indicator, which favored asphalt. Aquatic eutrophication, one of the non-aggregated indicators, also slightly favored cement concrete pavement.

A pdf of the English version of this report can be downloaded at no charge at: [http://www.mtq.gouv.qc.ca/portal/page/portal/Librairie/bpm/Rapport\\_recherche\\_comparative.pdf](http://www.mtq.gouv.qc.ca/portal/page/portal/Librairie/bpm/Rapport_recherche_comparative.pdf).

The original French version of the report can be downloaded at no charge at: [http://www.mtq.gouv.qc.ca/portal/page/portal/Librairie/bpm/ACV\\_chaussees\\_beton\\_RTQ\\_1201.pdf](http://www.mtq.gouv.qc.ca/portal/page/portal/Librairie/bpm/ACV_chaussees_beton_RTQ_1201.pdf).



## EUPAVE Releases New Publication: "Concrete Safety Barriers: A Safe & Sustainable Choice"



The European Concrete Paving Association (EUPAVE) is proud to release the brochure on Concrete Safety Barriers which focuses on both issues of road safety and sustainability.

Safer road infrastructure is one of the strategic objectives of the European Commission (EC) through safer roads. EC is also concerned with the use of sustainable solutions with respect to the Green Public Procurement concept. Concrete safety barriers address both issues of road safety and sustainability.

To read and download the free brochure from the EUPAVE website, please go to: <http://www.eupave.eu/documents/technical-information/eupave-publications.xml?lang=en>.

For more information on EUPAVE, please go to: <http://www.eupave.eu/documents/home.xml?lang=en>.

## VÖZ New Book: "Concrete Roads - The Manual, Guide for Practice"



The Association of the Austrian Cement Industry has published a new book, "Concrete roads - the manual, guide for practice". It is available from the Association and in specialty shops. For the first time, all technical foundations for the construction and maintenance of concrete pavements are drawn together in one publication - with focus on the internationally accepted high-level state-of-the-art practices in Austria.

This comprehensive manual and reference book covers all of the essential aspects of constructing concrete pavements in nine (9) chapters, including chapters on the properties of traffic lanes, composition of the construction material, the construction and implementation, as well as quality management and reaching as far as the maintenance of concrete pavements. This manual is for practical use of designers, local construction supervising agencies and operators, as well as for education in technical schools, technical high schools and universities.

For the book, please go to: <http://www.zement.at/services/publikationen/strassenbau>.  
For the Association of the Austrian Cement Industry, please go to: [www.zement.at](http://www.zement.at).



## Wirtgen Wins Award at BAUMA 2013 Equipment EXPO



BAUMA 2013, was held April 15-21, 2014 at the Messe München exhibition center in Munich, Germany. Bauma is the world's largest international trade show for construction machinery, building material machines, mining machines, construction vehicles and construction equipment. Bauma 2013 hosted more than 3,400 vendors and set a record-breaking attendance record of 530,000 from over 200 countries. The countries of origin among the visitors were: Germany, Austria, Switzerland, Italy, the Russian Federation, France, Netherlands, Great Britain, Sweden and Poland. Indonesia was Bauma Germany 2013's partner country this year.

**The "Bauma Innovation Award 2013" was awarded to Wirtgen for the AutoPilot Field Rover**

This year marked the 10<sup>th</sup> Bauma Innovation Awards, which began in 1983. The jury was comprised of more than 20 equipment experts and dozens of journalists who judged a record 147 entries.

ISCP Member, Wirtgen GmbH was the winner of the "Bauma Innovation Award 2013 (in the "Machinery Component" category)" for The Wirtgen AutoPilot Field Rover. The jury deemed The AutoPilot Field Rover a pioneering development that has revolutionized road construction. With the AutoPilot Field Rover, Wirtgen has launched a technical development, that for the first time, enables fully automatic, stringline-free concrete paving. This system will enable road construction companies to complete jobs much more easily, quickly and, above all, economically. The 3D control system comprises a computer that is integrated in the machine and an intuitive control panel.

Bauma 2013 Exhibitors were very pleased that they were able to visit with many customers who came to the expo, expressing their concrete paving equipment needs for their future projects, and stated that Bauma Germany 2013 was a very good experience, creating invaluable contacts from all over the world.

To learn more about the Wirtgen AutoPilot Field Rover, please go to:

<http://www.bauma-innovationspreis.de/en/press/press-releases-on-innovations/29-pressemittelungen-innovationen-copy/128-wirtgen-gmbh-autopilot-field-rover-eng.html?template=baumainnovationspreis-leer>

The next Expo will be **BAUMA 2016**, April 11-16, 2016. For information, please go to:

[http://www.bauma.de/en/besucher\\_1/besucher\\_4.php](http://www.bauma.de/en/besucher_1/besucher_4.php)

photo 1, 2 & 3:  
Wirtgen GmbH  
1 & 2: Wirtgen GmbH  
AutoPilot Field Rover

3: Dr. Cyrus Barimani,  
Head of Development  
& Design  
& Matthias Fritz,  
Application Manager  
received the Bauma 2013  
Innovation Award at a  
ceremony at Allerheiligen-  
Hofkirche in the Munich  
Residenz.

Photo 4: ENR.com  
4. Record attendance



## CALL FOR ABSTRACTS

### Abstract Submission DEADLINE EXTENDED to June 5, 2013!



Upon request from interested parties and potential participants, and due to a substantial number of submitted abstracts, the deadline for abstract submission for the 12<sup>th</sup> International Symposium on Concrete Roads - Innovative Solutions Benefitting Society has been **extended to June 5, 2013!**

The Symposium will be held September 23-26, 2014 in Prague, Czech Republic. Focusing on the different themes and topics of the Symposium, abstracts have been submitted from over 25 countries. The success of the 12<sup>th</sup> International Symposium on Concrete Roads will once again be guaranteed!

To submit an abstract, please go to: <http://www.concreteroads2014.org/en/call-for-abstracts>.

To visit the Symposium website, please go to: [www.concreteroads2014.org](http://www.concreteroads2014.org).





# Call for Papers & Abstracts Digest

**June 5, 2013** Due date for papers for the 12<sup>th</sup> International Symposium on Concrete Roads - "Innovative Solutions - Benefitting Society" to be held in Prague, Czech Republic, September 24-26, 2014. For the Symposium website, please go to: [www.concreteroads2014.org](http://www.concreteroads2014.org).



**February 1, 2014** Due date for abstracts for the 8<sup>th</sup> International DUT-Workshop on Research and Innovations for Design of Sustainable and Durable Concrete Pavements to be held September 20-21, 2014 in Prague, Czech Republic. To submit an abstract by February 1, 2014, please send abstract to: Lambert Houben, *Chairman, Delf University of Technology (The Netherlands)*, E-mail: [l.j.m.houben@tudelft.nl](mailto:l.j.m.houben@tudelft.nl).



## UPCOMING EVENTS

**JUNE  
2013**

### **ASCE Continuing Education and ASCE's Transportation & Development Institute (T&DI) 2nd Part of 2-Part Webinar**

June 11, 2013 from 11:30 a.m. - 1:00 p.m. ET  
[http://mylearning.asce.org/diweb/catalog/item/id/92648/q/c=79&q=7256?utm\\_campaign=CE-20130425-7256&utm\\_medium=email&utm\\_source=Eloqua](http://mylearning.asce.org/diweb/catalog/item/id/92648/q/c=79&q=7256?utm_campaign=CE-20130425-7256&utm_medium=email&utm_source=Eloqua).

### **International RILEM Conference on Multi-Scale Modeling and Characterization of Infrastructure Materials**

June 10-12, 2013 in Stockholm, Sweden, <http://www.rilem2013.org>.

### **The 14<sup>th</sup> Euroseminar on Microscopy Applied to Building Materials (EMABM 2013)**

June 10-14, 2013 near Copenhagen, Denmark, <http://www.emabm2013.com/>.

### **Ninth International Conference on the Bearing Capacity of Roads, Railways and Airfields (BCRRA 2013)**

June 25-27, 2013 in Trondheim, Norway, <http://www.bcrro.org>.

**JULY  
2013**



### **ISCP Mid-Year Board of Director's Meeting**

July 8-9, 2013  
ACPA National Headquarter's Offices in Rosemont, Illinois, USA

### **ASCE T&DI 2013 Airfield and Highway Pavements Conference: Sustainable and Efficient Pavements**

July 9-12, 2013 in Los Angeles, California, USA  
<http://content.asce.org/conferences/pavements2013/>.

### **8th International Conference on Road and Airfield Pavement Technology (ICPT 2013)**

July 14-18, 2013 in Taipei, Taiwan, <http://www.icpt2013.org>.

**AUGUST  
2013**

### **International Symposium of Climatic Effects on Pavement and Geotechnical Infrastructure (ISCEPGI)**

August 4-7, 2013 in Fairbanks, Alaska, USA, <https://sites.google.com/site/iscepgiuaf/>.

### **ASCP Concrete Pavements Conference 2013**

August 12, 2013 in Sydney, NSW, Australia  
Conference Brochure and Call for Papers:  
<http://www.concretepavements.org/ASCP%20Conference%20Announcement.pdf>.

### **7th International Conference on Concrete under Severe Conditions - Environment and Loading (CONSEC'13)**

September 23-25, 2013 in Nanjing, China, <http://www.consec13.com>.

### **Innovative World of Concrete ICI-IWC 2013 and World of Concrete India 2013**

October 23-26, 2013 in Hyderabad, Andhra Pradesh, India, <http://www.ici-iwc2013.com/>.

For events taking place in November 2013 and beyond, please go to:  
<http://www.concretepavements.org/calendar.htm>.

**SEPTEMBER  
2013**

**OCTOBER  
2013**



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ISCP invites ISCP members and friends to submit articles and calendar items to the Editor-in-Chief for future issues.

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Please visit the **ISCP Website** at [www.concretepavements.org](http://www.concretepavements.org) for more information about ISCP.

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