



INTERNATIONAL SOCIETY FOR CONCRETE PAVEMENTS

IN THIS ISSUE:	
TITLE	PAGE
Technology Transfer Postings	1-2
Conference News & Updates	2-3
Call for Abstracts & Papers	3-5
Thesis Abstract	5
Industry Resource & Cornerstone	5-6
Upcoming Events	6

ISCP e-NEWSLETTER
VOLUME 8, NUMBER 6
JULY 2011

TECHNOLOGY TRANSFER POSTINGS

ACPA "On the Grade" e-News: Instant App Technology, Transportation Bills, DOT Concrete Pavements & More ...



To provide instant mobile technological communication, through web- and mobile-apps, ACPA is trying several options to test compatibility with web browsers (computers, iPads, smart phones, etc) and other mobile devices. Robert Rodden, P.E., answered the call from the Transportation Curriculum Coordination Council to provide them with these time-saving, necessary apps. To read this article, **TCCC Asks ACPA for Guidance on New Technology** as well as the articles listed below, please go to: [ACPA On The Grade](#).

ACPA: Now is the Time to Push for Highway Bill Voigt Urges Keep the Pressure on at Rally for Roads
ACPA Calls for Membership Records Update



For the American Concrete Pavement Association "On The Grade" full report, please go to: [ACPA On The Grade](#).

Maximum Joint Spacing Calculator

ORGANIZATIONAL MEMBERS: & MAJOR EVENT SPONSORS:



PRECAST CONCRETE PAVEMENT TECHNOLOGY ~ RAPIDLY EVOLVING ...



June was a productive month for precast concrete pavement (PCP) technology transfer. Two showcases were held to demonstrate two different approaches for the use of precast concrete pavement to rehabilitate high traffic volume highway corridors.

THE UTAH, USA SHOWCASE

This Showcase, held on June 7 in Salt Lake City, Utah, USA, was sponsored by the Utah DOT and the FHWA Highways for LIFE Program Office. The Utah DOT used a precast pavement system to replace a 600-foot ramp section along the I-215 pavement in the Salt Lake City area.



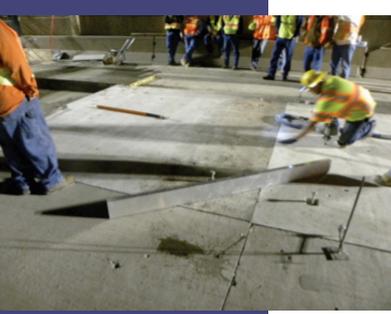
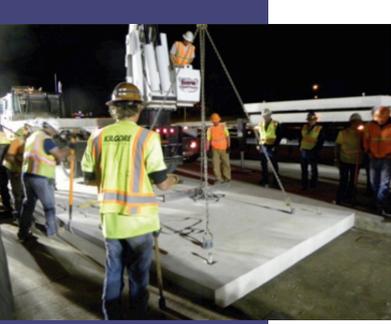
The panels were 12 by 12 feet and 9 inches thick. Each panel was set at the designated elevation, using four setting bolts that were positioned over metal plates placed on the base. A gap of about 1/2 to 1 inch was maintained under each panel. The gap was filled using injected urethane grout. The showcase included a workshop and a night-time visit to the project site where the 130+ attendees were able to see various installation activities, including existing pavement removal, base preparation, panel installation and the urethane grout injection. The installed panels were opened to traffic the next morning and load transfer at transverse joints was provided the next night using the dowel bar retrofit technique. It was estimated that 15 to 20 panels were installed per 6 to 8 hour night-time lane closure. This unique design boosted the durability and speed of construction and greatly minimized public inconvenience.

THE CALIFORNIA, USA SHOWCASE

This showcase was held on June 15 at the "Hilton ~ Pleasanton at the Club" in Pleasanton, California, USA. The Open House was organized and sponsored by Caltrans (The California Department of Transportation, USA) and the FHWA (Office of Pavement Technology and Highways for Life Program Office). It was co-sponsored by SHRP2 (Strategic Highway Research Program 2) and PCI (Precast/Prestressed Concrete Institute). Caltrans used an 8 1/2-inch thick precast concrete pavement system to rehabilitate a section of I-680 near Oakland, California, USA. Caltrans' approach included:

1. For rehabilitation of sections greater than 64 feet in length, the use of precast, prestressed concrete pavement (PPCP) system was applied. The PPCP incorporated longer lengths of post-tensioned sections formed by post-tensioning together a series of panels. At the I-680 project, the post-





Salt Lake City, UT
Pleasanton, CA

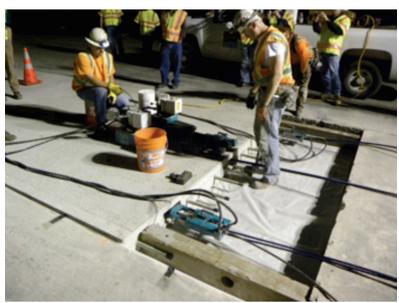
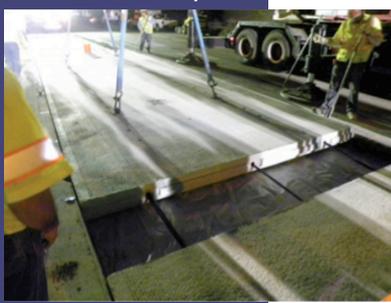
tensioned section length ranged from 108 to 216 feet. A reinforced gap slab was used between the post-tensioned sections.
2. For rehabilitation of sections equal to or less than 64 feet, a jointed PCP system incorporating prestressed (pre-tensioned) panels was used.

This project includes several innovative features, as follows:

1. For the PPCP system:
 - a. The one-lane wide panel length ranged from 18 to 36 feet
 - b. The prestressing done at the joint panel face, eliminated the need for surface stressing pockets. This approach required use of a gap slab between the post-tensioned sections to allow for the post-tensioning operation.
 - c. Two tendons per 2-inch diameter duct, reduced the number of ducts used.
 - d. New 6-inch thick rapid-setting lean concrete base
2. For the jointed system:
 - a. Full-depth dowel bar slot systems at transverse joints
 - b. Pre-tensioning of panels in both directions
 - c. New 6-inch thick rapid-setting lean concrete base

The showcase included a workshop and a night-time site visit to the project where the 60+ attendees were able to see various installation activities, including existing pavement removal, the rapid-setting lean concrete base preparation, panel installation and the post-tensioning operation. The installed panels were opened to traffic the next morning and the slab under-sealing and tendon duct grouting was performed during the next lane closure. Up to 400 feet of PPCP installation was achieved per 6- to 8-hour night-time lane closure.

~ Prepared by: Shiraz Tayabji, Fugro Consultants, Inc., stayabji@aol.com



CONFERENCE NEWS & UPDATES

12th International Annual Roads, Bridges, Tunnels Exhibition in St. Petersburg, Russia



Please join *The Roads, Bridges, Tunnels* Annual Specialized Exhibition, September 21-23, 2011 in Mikhailovsky Manege (Winter Stadium), St. Petersburg, Russia. Technical re-equipment of the road industry strongly facilitates quality improvement of construction, repair and maintenance works, of car roads, bridges and other transport facilities. *The Roads, Bridges, Tunnels* Exhibition is devoted to solving problems concerning development and application of new and future technology, materials, mechanisms and equipment.

The Annual Exhibition is estimated to be one of the largest of the Russian North-West.

The Roads, Bridges, Tunnels Exhibition has been bringing together the industry specialists to the same venue for 12 consecutive years, and today experts estimate it as one of the largest projects of the Russian North-West.

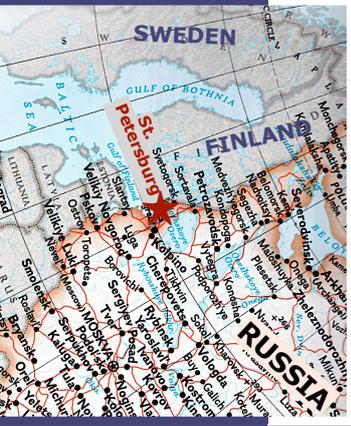
This event entails three trade shows integrated at a convenient and comfortable venue in the historic center of St Petersburg.

Exhibition features:

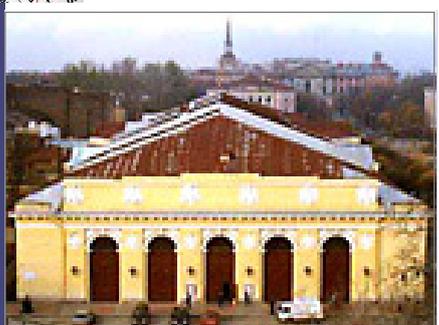
- *Urban Infrastructure International Trade Show*
- *Transport Security & Safety International Trade Show*
- *8th WORLD OF BRIDGES* - An International forum devoted to foster bridge construction development in Russia and worldwide

It is a unique open exposition that will offer business events devoted to the most current important industry issues, as well as rich cultural and off-site events. Exhibitors will have a unique opportunity to present their achievements in mechanical engineering; road and bridge design and construction; tunneling; R&D; software; and other relative industries. Participants will gain long-term experience and effectively promote products and services in the industry.

For Exhibition information, please go to:
<http://www.restec.ru/exhibitions/featured/transport/index.en.html>
For questions via e-mail, phone or fax, please go to:
interdep1@restec.ru
Tel./fax: +7 (812) 320-80-94



Mikhailovsky Manege (Winter Stadium) St. Petersburg, Russia



Sustainable Highway Construction with Industrial Byproducts Conference, Austin, Texas, USA

The FHWA and the Industrial Resources Council Present: *Sustainable Highway Construction with Industrial Byproducts*, to be held November 1st & 2nd, 2011 at The Sheraton Austin at the Capitol in Austin, Texas, USA. This conference will present details on how to effectively reuse various industrial byproducts in highway and road construction. The engineering feasibility of using recycled materials has been demonstrated in research, field studies, experimental projects and long-term performance testing and analysis. Significant advances in technology over the past decade have increased the types of recycled materials in use and the range of their applications. When appropriately used, recycled materials can effectively and safely reduce cost, save time, offer equal or significant improvement to performance qualities; and provide long-term environmental benefits.

Technical Presentations Will Include:

- Construction & Demolition Materials (concrete, shingles, etc)
- Iron/Steel Slag
- Foundry Sand
- Coal Combustion By-products
- Pulp & Paper Mill Residues
- Tire-Derived Aggregate

The goals of this conference are to provide pertinent information on practical applications for each of the six materials, including construction environmental issues, standards and material availability.

For conference information, registration, hotel accommodations, and all other information pertaining to the conference, please go to: http://rma.org/scrap_tires/conferences_and_events/industrial_byproducts_conference/



Recycled materials can reduce cost, save time, improve performance qualities & provide long-term environmental benefits.

Hosted By:



THE SCRAP TIRE RESEARCH AND EDUCATION FOUNDATION, INC.



CALL FOR PAPERS

Call for Abstracts due July 31 for SURF 2012 ~ The 7th Symposium on Pavement Surface Characteristics



"Smooth, Safe, Quiet & Sustainable Travel through Innovative Technologies" is the theme for the 7th Symposium on Pavement Surface Characteristics, to be held September 19-22, 2012 in Norfolk, Virginia, USA.

Abstracts for the symposium are due July 31, 2011. To submit abstracts, please go to: [SURF2012AbstractSubmission](http://www.surf2012.org/abstractsubmission). To download the Call for Papers Announcement, please go to: [SURF2012CallPapers.pdf](http://www.surf2012.org/callpapers.pdf).

The Symposium is organized by the World Road Association (PIARC), in partnership with the American Association of State Highway and Transportation Officials (AASHTO), the Transportation Research Board (TRB), the Federal Highway Administration (FHWA), the Virginia Center for Transportation Innovation and Research (VCTIR) and the Center for Sustainable Transportation Infrastructure (CSTI) of the Virginia Tech Transportation Institute (VTTI). The 7th Symposium will include:

- (1) sessions based on this formal call for abstracts and papers, with peer-reviews by the scientific committee
- (2) technology updates by equipment and data service providers
- (3) panel discussions to identify emerging issues, research problems and educational needs
- (4) optional technical visits
- (5) an exhibition

This is an excellent opportunity for equipment, data collection and pavement management service providers to display their products to reach pavement and asset management professionals from around the world, including: pavement infrastructure managers, companies that provide services for collecting and analyzing pavement, condition data (equipment manufacturers/data collectors) researchers/ specialists on surface characteristics. For the 5 Symposium Sessions and for the 12 technical/industry areas targeted, please go to: <http://www.cpe.vt.edu/surf2012/index.html>.

Sponsorships and exhibiting opportunities are available on a first-come, first-serve basis. We look forward to seeing you all in Norfolk, Virginia! For more information on SURF 2012, and for guidelines, please go to: www.surf2012.org.

If you would like to be a sponsor or an exhibitor during SURF2012, please contact:



SHERATON
AUSTIN at the
CAPITOL
701 East 11th
Street
Austin, TX
78701
Phone:
512.404.6902

To make your
reservations
online, go to:
FHWA IRC
Industrial By-
Products
Conference

Contact
conference group
reservations
center at:
1-888-627-8349





Dr. Gerardo Flintsch, Chairman
 SURF2012 Organizing Committee Virginia Tech
flintsch@vt.edu, telephone: 540-231-9748
 Edgar David de León Izeppi
 Virginia Tech Transportation Institute
edeleonizeppi@vti.vt.edu, telephone: 540-231-1504

Abstracts Deadline Extended to August 15, 2011 for fib Symposium: Concrete Structures for Sustainable Community ~ STOCKHOLM 2012

Due to a high volume of interest, the deadline for abstracts has been extended to August 15, 2011 for the fib Symposium, to be held in June 11-14, 2012 at the Royal Institute of Technology (KTH), Stockholm, Sweden. The fib (fib - fédération internationale du béton: The International Federation for Structural Concrete) Conference theme is *Concrete Structures for Sustainable Community*. Please consider submitting an abstract or encourage your Ph.D. students and colleagues to do so. Remember that abstracts on concrete structures are also welcome!

To submit an abstract, please go to:
[STOCKHOLM, 2012 fib Symposium Abstract Submission](http://www.fibstockholm2012.se/)

To facilitate the process and to complete the "Scientific Committee Form", please go to: <http://www.fibstockholm2012.se/>

VENUE: Stockholm was the venue for the FIP congress in 1982: *The Fédération Internationale de la Précontrainte FIP (International Federation for Prestressing)*. It was also the venue for the important CEB Plenary Session in 1997 when CEB made its decision to merge with FIP into fib.

ORGANIZERS:



Fib - International Federation for Structural Concrete
www.fib-international.org



Svenska Betongföreningen (Swedish Concrete Association)
betongforeningen.se



Royal Institute of Technology (KTH)
www.kth.se





Stockholm was the venue for CEB Plenary Session in 1997 when CEB made its decision to merge with FIP into fib.



Call for Papers for MAIREPAV 7, Auckland, New Zealand

The [University of Auckland](http://www.auckland.ac.nz) and the Organizing Committee, in conjunction with [iSMARTi](http://www.ismarti.org) is very pleased to announce the Call for Papers for the MAIREPAV 7 Conference (the Maintenance and Rehabilitation of Pavements and Technological Control), to be held in Auckland, New Zealand, August 28-30, 2012. Call for Papers are from July 31, 2011 through March 9, 2012. To submit your papers, please go to: http://www.mairepav7.co.nz/?page_id=5.

The themes of the abstracts are:

- Pavement materials and technologies including contracting
- Evaluation of pavement performance and performance models
- Full scale trials / Accelerated pavement testing
- Advanced trends in pavement design, rehabilitation and preservation
- Recycling and use of industrial by-products
- Management system / Life Cycle Analysis
- Technological control and trends in contracting
- Surface characteristics related to road safety
- Sustainable pavement systems

The 2012 MAIREPAV 7 Conference will be hosted by the [Dept of Civil and Environmental Engineering](http://www.auckland.ac.nz) and held at The University of Auckland's Business School. Organizers look forward to seeing you in Auckland in August 2012!

To register for the conference, to submit papers and for information, please go to: <http://www.mairepav7.co.nz/>. For questions and more information, please contact:

Petteena McOnie, Conference Coordinator, Conference Management Center for Continuing Education, The University of Auckland
 E-mail: mairepav@auckland.ac.nz Phone: +64 9 923 9695



CALL FOR PAPERS:
 July 27, 2011 through March 9, 2012

REGISTRATION OPENS:
 March 9, 2012

CONFERENCE:
 August 28-30, 2012

ISCP e-Newsletter
 July 2011
 VOLUME 8, NUMBER 6



Deadline for the Québec Canada 10th ICCP Papers Extended to September 30

The Editorial Committee will still consider submitted papers for the 10th International Québec Conference, to be held July 8-12, 2012. The PAPER deadline is September 30, 2011. For submission of papers please go to: <https://www.softconf.com/c/10thiccpc/>. For more information on the 10th ICCP Québec Conference, please go to: <http://www.concretepavements.org/10thiccpc/>.

Call for Abstracts & Papers DEADLINES Digest:

JULY 31, 2011: ABSTRACTS DUE for SURF 2012-the 7th Symposium on Pavement Surface Characteristics, to be held in Norfolk, Virginia, USA, September 19-22, 2012

JULY 27 through MARCH 2012: CALL FOR PAPERS for the MAIREPAV 7 Conference (the Maintenance and Rehabilitation of Pavements and Technological Control), to be held in Auckland, New Zealand, August 28-30, 2012

AUGUST 15, 2011: EXTENDED ABSTRACT DEADLINE for the "fib Symposium", to be held at the Royal Institute of Technology (KTH), Stockholm, Sweden, June 11-14, 2012

SEPTEMBER 30, 2011: EXTENDED PAPER SUBMITTALS DEADLINE for the 10th ICCP Québec Conference, to be held in Québec, Canada July 8-12, 2012

NOVEMBER 30, 2011: CALL FOR PAPERS for the 7th Symposium on Pavement Surface Characteristics, SURF 2012, to be held September 19-22, 2012 in Norfolk, Virginia, USA.

THESIS ABSTRACT

Cracking of Concrete Layers in Composite Pavements

By Priyam Saxena

A Dissertation Submitted to the Faculty of the Graduate School of the University of Minnesota in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

Lev Khazanovich, Advisor

Composite pavements are complex structures incorporating both asphalt concrete (AC) and portland cement concrete (PCC) layers. The behavior of composite pavements exhibit features of both rigid and flexible pavements. This research concentrated on the improvement of structural modeling of stress analysis for prediction of PCC fatigue cracking compatible with the Mechanistic Empirical Pavement Design Guide (MEPDG) PCC fatigue cracking modeling.

Temperature curling and axle loading cause bending stresses in concrete slabs. These stresses cannot be simply added because temperature curling causes a separation of the slab from the subgrade making the system behave non-linearly. Moreover, the loading durations of temperature gradients and fast moving traffic loads are significantly different. The MEPDG characterizes the viscoelastic behavior of the AC layer in a composite pavement through the use of a single load duration-dependent dynamic modulus. Therefore, for the case of composite pavements in the MEPDG framework the material representation of the AC layer using a single dynamic modulus seems to be an over-simplification.

A finite element (FE)-based model incorporating the viscoelastic behavior of the AC layer in composite pavements is presented. In order to maintain compatibility with the MEPDG framework, a procedure is developed such that the two different moduli are used to represent the AC layer for different loading durations determined using the MEPDG process. A framework for the implementation of the proposed stress procedure into the MEPDG has been developed so that minimum modifications to the existing MEPDG framework are required. The proposed stress computation procedure can be directly implemented into the MEPDG for predicting fatigue cracking in composite pavements.

INDUSTRY RESOURCE & CORNERSTONE

Vincent Chu Freely Shares His Books, Columns & E-mail Service (Internationally) To Assist Young Engineers

Vincent T. H. Chu provides great technical assistance to young, post-graduate engineering students by answering commonly asked questions in technical aspects of civil engineering practices. He provides free books, columns and e-mail service to them as they advance in their careers. He has written 5 civil engineering books, established a free e-mail service and writes 3 monthly columns.



THE INSTITUTION OF ENGINEERS SINGAPORE

Establishment of Free Engineering E-Mail Service

"Ask Vincent Chu" is a free engineering FAQ E-Mail Service, established in conjunction with the European Council of Civil Engineers, in which civil engineers from around the world can raise their questions through e-mail and promptly obtain solutions. This provides a systematic means of addressing their needs on a real-time basis and assists them in their day-to-day engineering works:

- *Civil Engineering Bulletin*: <http://cebulletin.com/forum/forumdisplay.php?f=56>
- *The Engineer Explains*: <http://engineerexplained.com/VincentChuColumn/#T1>



Vincent Chu received the 2008 "Young Engineer of the Year Award"



• *Engineeringcivil.com*: <http://www.engineeringcivil.com/ask-an-expert>

To summarize and save readers' valuable time, Vincent Chu has also liaised with engineering organizations to write monthly columns:

- *The Civil FAQ: The Hong Kong Engineer* by The Hong Kong Institution of Engineers
- *The Civil Q&A*: on the World Federation of Engineering Organizations Website
- *The Civil Corner* on the Websites of The University of Science and Technology (ASCE-International Student Group) and World Council of Civil Engineers.

To view titles of Chu's 5 books and to review articles, please go to: engineeringcivil.com/theory/famous-civil-engineers and civilingeener.webinfofolist.com/ce-profile.htm.

UPCOMING EVENTS CALENDAR

JULY
2011



10th International Conference on Low-Volume Roads

July 24-27, 2011 in Lake Buena Vista, Florida, USA
<http://www.trb.org/conferences/2011/10LVLR>

AUGUST
2011

PCA Professors' Workshop

August 1-5, 2011 at the PCA Headquarters in Skokie, Illinois
Caron Johnsen: cjohnsen@cement.org or call 847.972.9058



ASCP National Conference

August 2, 2011 at the Ryde-Eastwood Leagues Club in Sydney, New South Wales, Australia
<http://www.concretepavements.com.au/Documents/Brochure%20-%20preliminary.pdf>



ISCP Board of Directors' Meeting

August 3, 2011 at the Ryde-Eastwood Leagues Club in Sydney, New South Wales, Australia
<http://www.concretepavements.com.au/Documents/Brochure%20-%20preliminary.pdf>

7th International Conference on Road & Airfield Pavement Technology

August 3-5, 2011 in Bangkok, Thailand <http://www.icpt2011.org/>

2011 International Concrete Sustainability Conference

August 9-11, 2011, in Boston, Massachusetts, USA. Co-hosted by the Massachusetts Institute of Technology. <http://www.sustainabilityconf.org/> or contact Lionel Lemay, Lemay@nrmca.org

MnROAD Research Conference

August 16, 2011 in Twin Cities area, Minnesota, USA

SEPTEMBER
2011

12th International Exhibition ROADS, BRIDGES, TUNNELS

September 21-23, 2011, Mikhailovskiy Manege (Winter Stadium), St. Petersburg, Russia
<http://www.restec.ru/exhibitions/featured/transport/index.en.html>

24th World Road Congress

September 26-30, 2011 in Mexico City, Mexico, <http://www.aipcrmexico2011.org>

NOVEMBER
2011



2nd International Conference on Best Practices for Concrete Pavements

November 2-4, 2011 in Florianopolis, Santa Catarina State, Brazil
http://www.ibracon.org.br/eventos/2nd_pavement/informacoes.asp

The Use of Industrial Byproducts in Highway and Road Construction

November 1-2, 2011 in Austin, Texas, USA
http://rma.org/scrap_tires/conferences_and_events/industrial_byproducts_conference/

8th International Conference on Managing Pavement Assets

November 15-19, 2011 in Santiago, Chile, <http://www.icmpa2011.cl/>

2nd International Conference Future Concrete

December 12-14, 2011 in Dubai, UAE, <http://www.futureconcrete.com/>



10th International Conference on Concrete Pavements

Organized by ISCP, July 8-12, 2012 in Quebec City, Canada
<http://www.concretepavements.org/10thiccp>

Please visit the ISCP calendar at: <http://www.concretepavements.org/calendar.htm>

DECEMBER
2011
JULY
2012



The ISCP Newsletter is produced by:
Editor-in-Chief & Art Director: **Amy M. Dean** aimdean@nc.rr.com
Technical Editors: **Corey Zollinger**, **Nancy Whiting**, **Cristian Gaedicke**
and **Robert Rodden** under the guidance of the ISCP Communications Committee
Neeraj Buch, Chair secretary@concretepavements.org

ISCP thanks **Tim Smith**, **Shiraz Tayabji**, **Petteena McOnie**, **Chan Kwoki-ki** and **Javier Castro** for contributions to this issue and invites ISCP members and friends to submit articles and calendar items to the Editor-in-Chief for future issues.

ISCP President: **Mark B. Snyder, Ph.D., P.E.** president@concretepavements.org
Vice-President: **José T. Balbo, Ph.D.** vice-president@concretepavements.org
Secretary/Treasurer **Neeraj Buch, Ph.D.** secretary-treasurer@concretepavements.org

Please visit the ISCP website at www.concretepavements.org for more information about ISCP.

Maps, globes from: National Geographic Family Reference Atlas of the World ©2002 National Geographic Society, Washington, D.C. & Concise Earth Book World Atlas ©1987 by Graphic Learning International Publishing Corporation, Boulder, Colorado, Esselte Map Service AB Stockholm