

# FOCUS ON SUSTAINABLE DEVELOPMENT

**Learn the latest from expert papers, presentations and a product expo.**

Join us for the *2008 Concrete Technology Forum: Focus on Sustainable Development*, May 20-22, 2008, at the Marriott Denver Tech Center. The forum will bring researchers and practitioners together to discuss the latest advances, technical knowledge, continuing research, tools and solutions for sustainable development.

## Session Topics

Researchers, designers, contractors and product manufacturers will present state-of-the-art developments, new construction techniques and product formulations that optimize environmental performance of concrete construction including:

- ♦ Pervious Concrete Systems
- ♦ Concrete's Impact on Urban Heat Islands
- ♦ The Carbon Footprint of Concrete
- ♦ Sustainable Development Initiatives
- ♦ Optimizing Recycled Content

## Product Expo

A product expo featuring companies that offer products and services for sustainable development will be open during the conference.



## Attendees

Researchers, engineers, architects, contractors, concrete producers, public works officials, material suppliers, and concrete industry professionals are invited to attend.

## Professional Development Hours

Attendees will earn valuable professional development hours (PDHs) and will receive a copy of the conference proceedings.

## Register Early and Save

Sign up today for the *Concrete Technology Forum* and enhance your expertise and knowledge on sustainable development.

- ♦ Early Registration: \$595 (on or before 4/28/08)
- ♦ Late Registration: \$695 (after 4/28/08)
- ♦ Students and Speakers: \$295

Register online at [www.ConcreteTechnologyForum.org](http://www.ConcreteTechnologyForum.org), by phone at (240) 485-1152, or complete the attached registration form.



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## Sponsors



## Organizational Partners

American Coal Ash Association | American Concrete Institute | American Concrete Pavement Association | American Society of Concrete Contractors | Colorado Ready Mixed Concrete Association | Construction Institute of ASCE | Portland Cement Association | Rocky Mountain Cement Council | Silica Fume Association | Slag Cement Association

Join us for the Pre-Conference Reception in the Exhibit Hall (Rocky Mountain Event Center) on Monday, May 19, 6:00 PM – 7:00 PM

# PROGRAM AT A GLANCE

	TUESDAY, MAY 20	WEDNESDAY, MAY 21
7:00 AM - 8:00 AM	Breakfast in Exhibit Hall (Rocky Mountain Event Center)	Breakfast in Exhibit Hall (Rocky Mountain Event Center)
8:00 AM – 10:00 AM	<p><b>PLENARY SESSION</b></p> <p><b>G01 General Session (Evergreen A &amp; B)</b></p> <p>G01.1 The Strategic Opportunities of Sustainable Development, <i>Frank Craddock, CEMEX</i></p> <p>G01.2 A Utopian Vision of Concrete, <i>Scot Horst, Horst, Inc.</i></p> <p>G01.3 The Contractor's Role in Delivering Green Buildings, <i>Michael Deane, Turner Construction</i></p>	<p><b>CONCURRENT TECHNICAL SESSIONS</b></p> <p><b>T07 Technical Session (Evergreen A &amp; B) - Pervious Concrete</b></p> <p>T07.1 Best Strategic Advances In Pervious Concrete Technology, <i>D. Huffman</i></p> <p>T07.2 Pervious Concrete Pavement Hydrological Design Considerations and Methods, <i>J. Buffenbarger</i></p> <p>T07.3 Design of Pervious Portland Cement Concrete Pavement—How Important is Strength?, <i>A. Marks</i></p> <p><b>T08 Technical Session (Evergreen C &amp; D) - Mix Optimization</b></p> <p>T08.1 High Performance/High Pozzolan Concrete in Practice, <i>K. MacDonald</i></p> <p>T08.2 Traditional Concrete Design Impediments to Sustainable Concrete, <i>J. Shilstone</i></p> <p>T08.3 Development of High Volume Fly Ash Concrete, <i>M. Hansen, B. Phillips, D. Tullis, A. Baker and M. Distabazar</i></p> <p>T08.4 High Percentage Recovered Mineral Component (Silica Fume) in Cement and Concrete for Extreme Concrete Exposure and Exceptional Concrete Durability Applications, <i>E. Bühler</i></p>
10:00 AM - 10:30 AM	Break in Exhibit Hall (Rocky Mountain Event Center)	Break in Exhibit Hall (Rocky Mountain Event Center)
10:30 AM – 12:00 PM	<p><b>CONCURRENT TECHNICAL SESSIONS</b></p> <p><b>T01 Technical Session (Evergreen A &amp; B) - General Sustainability</b></p> <p>T01.1 Concrete and Climate Change, <i>L. Lemay</i></p> <p>T01.2 The Industry's Role in Ensuring and Promoting Sustainable Development, <i>K. Cooper Carter</i></p> <p>T01.3 Comparison of Green Building Rating Systems, <i>E. Ashley</i></p> <p><b>T02 Technical Session (Evergreen C &amp; D) - Recycled Concrete</b></p> <p>T02.1 The Many Uses of Recycled Concrete, <i>W. Palmer and P. Newman</i></p> <p>T02.2 Techniques of Recycling Demolished Concrete into Specification Aggregates for Re-use, <i>R. Givan</i></p> <p>T02.3 The Key to the Design and Production of High Quality Structural-grade Recycled Aggregate Concrete, <i>G. Fathifazi, A.G. Razaqpur, O.B. Isgor, A. Abbas, B. Fournier and S. Foo</i></p>	<p><b>CONCURRENT TECHNICAL SESSIONS</b></p> <p><b>T09 Technical Session (Evergreen A &amp; B) - Pervious Concrete</b></p> <p>T09.1 Development of a Test Method for Assessing the Surface Durability of Pervious Concrete, <i>M. Offenbergl and M. Davy</i></p> <p>T09.2 A Retrospective Look at the Field Performance of Iowa's First Pervious Concrete Sections as of Spring 2008, <i>V. Schaefer, J. Kevern and K. Wang</i></p> <p>T09.3 A Synthesis of Pervious Concrete Freeze-Thaw Testing Results, <i>J. Kevern, K. Wang and V. Schaefer</i></p> <p><b>T10 Technical Session (Evergreen C &amp; D) - Mix Optimization</b></p> <p>T10.1 High Limestone Cements for Performance as Well as Sustainability, <i>T. Cost</i></p> <p>T10.2 Green Cement: Achieving Durable Concrete with Environmentally Friendly Cements, <i>B. Williams</i></p> <p>T10.3 Preliminary Comments on Shrinkage and Shrinkage Cracking Behavior from Cement Systems that Contain Limestone, <i>B. Bucher, A. Radlinska and J. Weiss</i></p>
12:00 PM - 1:30 PM	Lunch in Exhibit Hall (Rocky Mountain Event Center)	Lunch in Exhibit Hall (Rocky Mountain Event Center)
1:30 PM – 3:00 PM	<p><b>CONCURRENT TECHNICAL SESSIONS</b></p> <p><b>T03 Technical Session (Evergreen A &amp; B) - General Sustainability</b></p> <p>T03.1 Environmental Life Cycle Assessment, <i>E. Ashley</i></p> <p>T03.2 Carbon Footprint of Concrete Buildings Seen in the Life Cycle Perspective, <i>C. Nielsen</i></p> <p>T03.3 A Comparative Life Cycle Assessment of Three Types of Residential Construction, <i>M. Marceau and M. Van Geem</i></p> <p><b>T04 Technical Session (Evergreen C &amp; D) - Recycled Concrete</b></p> <p>T04.1 Making Sustainability Work for You: How Your Company can Benefit from this Movement, <i>K. Cooper Carter and M. Stemen</i></p> <p>T04.2 Utilizing Deconstructed Masonry Materials as Recycled Aggregate in Concrete, <i>K. Wang, J. Hu and J. Gaunt</i></p> <p>T04.3 Durability Characteristics of Concretes Containing Fine Glass Powder, <i>N. Schwarz and N. Neithalath</i></p>	<p><b>CONCURRENT TECHNICAL SESSIONS</b></p> <p><b>T11 Technical Session (Evergreen A &amp; B) - Pervious Concrete</b></p> <p>T11.1 Sedimentation Effects on Pervious Concrete, <i>L. Mata and M. Fleming</i></p> <p>T11.2 Modeling the Retention of Oil in Enhanced Porosity Concretes, <i>B. Bhayani, O. Deo, T. Holsen and N. Neithalath</i></p> <p>T11.3 ASTM C 09.49 Subcommittee Activity on Test Methods for Pervious Concrete, <i>K. Obla</i></p> <p><b>T12 Technical Session (Evergreen C &amp; D) - Mix Optimization</b></p> <p>T12.1 Future Challenges and Possible Responses the Fly Ash Supplies Impacted by Regulatory Initiatives, <i>D. Goss</i></p> <p>T12.2 Beneficiation and Utilization of Coal Combustion Fly Ash, <i>S. Gasiorowski</i></p> <p>T12.3 Generation of Marketable Carbon Offsets Via Use of Alternative Cementitious Materials in Concrete, <i>R. Collins</i></p>
3:00 PM - 3:30 PM	Break in Exhibit Hall (Rocky Mountain Event Center)	Break in Exhibit Hall (Rocky Mountain Event Center)
3:30 PM – 5:00 PM	<p><b>CONCURRENT TECHNICAL SESSIONS</b></p> <p><b>T05 Technical Session (Evergreen A &amp; B) - General Sustainability</b></p> <p>T05.1 Reducing the Effect of Heat Islands Utilizing Concrete, <i>V. Pool</i></p> <p>T05.2 Solar Reflectance of Concretes for LEED Sustainable Sites Credit: Heat Island Effect, <i>M. Marceau and M. Van Geem</i></p> <p>T05.3 Preliminary Field Testing: Urban Heat Island Impacts and Pervious Concrete, <i>L. Haselbach and A. Galthier</i></p> <p><b>T06 Technical Session (Evergreen C &amp; D) - Recycled Concrete</b></p> <p>T06.1 Reuse of Plastic Returned Concrete and Wash Water, <i>C. Lobo</i></p> <p>T06.2 Crushed Returned Concrete as Aggregates for New Concrete, <i>K. Obla</i></p> <p>T06.3 Internal Curing with Crushed Returned Concrete Aggregates for High Performance Concrete, <i>H. Kim and D. Bentz</i></p>	<p><b>CONCURRENT TECHNICAL SESSIONS</b></p> <p><b>T13 Technical Session (Evergreen A &amp; B) - Pervious Concrete</b></p> <p>T13.1 Statistical Characterization of the Pore Structure of Enhanced Porosity Concretes, <i>K. Low, D. Harz and N. Neithalath</i></p> <p>T13.2 The Effect of Compaction and Aggregate Gradation on Pervious Concrete, <i>K. Mahboub, J. Canler, B. Davis and R. Rathbone</i></p> <p>T13.3 Self Consolidating Pervious Concrete for Overlay Applications, <i>K. Wang, J. Kevern and V. Schaefer</i></p> <p><b>T14 Technical Session (Evergreen C &amp; D) - Mix Optimization</b></p> <p>T14.1 The Fabrication of Low Energy Cements from Coal Combustion By-Products, <i>R. Rathbone, T. Robl, R. Jewell and K. Mahboub</i></p> <p>T14.2 High Volume Pozzolan Concretes (HVPC) with Low CO<sub>2</sub> Emissions and Energy Consumption: Three Years of Industrial Experience in Texas, <i>C. Pike, V. Ronin and L. Elfgrén</i></p> <p>T14.3 Impact of Using Alternative Fuels to Produce Portland Cement on Cement and Concrete Properties, <i>S. Akkapeddi, D. Swart, A. Schindler, S. Duke and D. Stafford</i></p>
5:00 PM - 6:00 PM		
6:00 PM - 7:00 PM	Reception in Exhibit Hall (Rocky Mountain Event Center)	Reception in Exhibit Hall (Rocky Mountain Event Center)

# PROGRAM AT A GLANCE

THURSDAY, MAY 22

7:00 AM - 8:00 AM

Breakfast in Exhibit Hall (Rocky Mountain Event Center)

## CONCURRENT TECHNICAL SESSIONS

### T15 Technical Session (Evergreen A & B) - Mix Optimization

- T15.1 The Role of Admixture Technology on the Sustainable Development of Concrete Construction, *M. Bury*
- T15.2 Optimizing Admixture Selection for Use of SCMs in Concrete, *A. Jeknavorian, P. Zhou and C. Forgey*
- T15.3 Next Generation Macro Synthetic Fibers: Advances in Durability, Ductility, and Joint Spacing, *D. Biddle*
- T15.4 Advances in Cost-Effective Cement Reduction, *R. Zubrod, C. Welker and P. VanderWerf*

### T16 Technical Session (Evergreen C & D) - Mix Optimization

- T16.1 Wal-Mart's Experiences with Adding Fly Ash to Concrete Mixes for Floor Construction, *K. Basham*
- T16.2 Use of Maturity Concepts for High Volume Fly Ash Concrete, *K. Obla*
- T16.3 Innovations and New Initiatives for Sustainable Development of Concrete Technology, *J. Cecere and A. Aswad*
- T16.4 Selecting Aggregates to Optimize Cement Content, *M. de Moya Hahn, M. Rached, D. Fowler and E. Koehler*

8:00 AM - 10:00 AM

10:00 AM - 10:30 AM

Break in Exhibit Hall (Rocky Mountain Event Center)

## PLENARY SESSION

### G02 General Session (Evergreen A & B)

- G02.1 Bendable Concrete for Sustainable Infrastructure, *Victor Li, University of Michigan*
- G02.2 Sustainability Through People, Process and Product Innovation, *Jean-Claude Roumain, Holcim, Inc.*

10:30 AM - 12:00 PM



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Agenda and speakers are subject to change

# FEATURED SPEAKERS

## Learn From Expert Papers and Presentations

Eighteen technical and general sessions are scheduled for the three-day symposium featuring over 50 presentations from world renowned researchers and practitioners. The technical sessions present state-of-the-art developments, new construction techniques and product formulations that optimize environmental performance of concrete construction. Featured speakers for opening and closing general sessions include:



**Frank Craddock, CEMEX** Frank Craddock is Executive Vice President of Cemex, USA in Houston, Texas. Mr. Craddock has over 28 years of experience in the ready mixed concrete, cement and aggregate industries, most of them with CEMEX and its predecessor, Southdown. He is chairman of the National Ready Mixed Concrete Association. Mr. Craddock is a past Board and Executive Committee member of the Florida Concrete & Products Association. He received a bachelor's degree from Auburn University and an MBA from the University of Central Florida.



**Scot Horst, LEED AP, Horst, Inc.** Scot Horst serves as chair of the US Green Building Council's LEED Steering Committee. He is President of Horst, Inc., a sustainable materials consulting firm, where he develops innovative programs relating to materials and their environmental impacts. He has served as a special advisor to Pennsylvania's Governor's Green Government Council, worked with Princeton University, the University of Pennsylvania, Penn State University, Grand Canyon National Park and many others. Horst also serves as Vice President of Athena Institute International, where he is involved with a broad range of work related to Life Cycle Assessment (LCA). Mr. Horst has authored and presented over 100 papers and presentations nationally and internationally including Standards Frozen in Time, Cement and CO<sub>2</sub> Offsets, The Durability of Structural Materials, Integrating LCA into LEED, LEED Lessons Learned, LEED, Technique and Transformation and LEED, Standards and Movements.



**Michael Deane, LEED AP, Turner Construction Company** Michael Deane's responsibilities at Turner include developing and implementing sustainable policy and training, green project setup, operational oversight, sales and acting as liaison to the US Green Building Council (USGBC) at the national and chapter levels. Michael has 19 years of construction project management and administrative experience as both owner and construction manager. Holding an MS in Historic Preservation from Columbia University, Michael has considerable experience in the renovation of landmarked structures. His experience also includes K-12 schools, libraries, various cultural institutions and hospitality. Michael is a founding board member of the New York chapter of the USGBC and served as Board Chair from 2003 to 2006. In 2005, Michael was elected to the USGBC National Board of Directors.



**Victor Li, Ph.D., University of Michigan** Dr. Victor Li is the E.B. Wylie Chair Professor of Civil and Environmental Engineering at the University of Michigan, Ann Arbor. Professor Li led the research team that invented engineering cementitious composites, popularly known as "bendable concrete". This ultra ductile concrete was elected by *Popular Mechanics* magazine as one of "10 Tech Concepts You Need to Know for 2007." Professor Li received the Distinguished Faculty Award from the University of Michigan in 2006, for "exceptional contributions in scholarship, teaching, mentorship, and service". In 2005, he received the Stephen S. Attwood award, one of the highest honors bestowed by the College of Engineering at the University of Michigan. In 2004, Professor Li was honored by the Technical University of Denmark with a "Doctor technics honoris casusa" in recognition of his "outstanding, innovative contributions to materials research and engineering and providing our society and the construction industry with new, safe and sustainable building materials" in the presence of the Queen of Denmark.



**Jean-Claude Roumain, FACI, Holcim, Inc.** Mr. Roumain is Corporate Product Manager for Holcim, Inc. He holds a Bachelor of Science degree in Civil Engineering from the University of Denver and is an ACI Fellow. He is an active member of the American Concrete Institute, Portland Cement Association, National Ready Mixed Concrete Association, and National Science Foundation for Advanced Cement Based Material. Mr. Roumain serves on the Executive Committee of the Strategic Development Council (SDC) where he championed the development of a concrete industry sustainability roadmap. He has conducted seminars throughout the world on topics such as the Mechanics of Plastic Concrete, Troubleshooting of Concrete Problems, and High Performance Concrete.

# 2008 CONCRETE TECHNOLOGY FORUM ♦ REGISTRATION FORM

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**Registrant is responsible for hotel and travel arrangements.**

## Conference Hotel:

**Marriott Denver Tech Center**  
4900 S Syracuse Street  
Denver, CO 80237

Make reservations by phone at (800) 228-9290 or online at [www.ConcreteTechnologyForum.org](http://www.ConcreteTechnologyForum.org). Mention "NRMCA" to receive the conference rate of \$169 per night (on or before April 28, 2008).

## Questions?

For additional information, contact Jessica Moore, (240) 485-1152, [jmoore@nrmca.org](mailto:jmoore@nrmca.org).

## Registration Fee:

<input type="checkbox"/> Early registration (on or before 4/28/08)	<b>\$595</b>	_____
<input type="checkbox"/> Regular and on-site registration (after 4/28/08)	<b>\$695</b>	_____
<input type="checkbox"/> Students/Speakers	<b>\$295</b>	_____
	<b>TOTAL</b>	_____

## Payment Method:

- Check** (make check payable to NRMCA)  
Mail registration form and check to:  
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## Cancellation Policy

NRMCA will refund registration fee less a \$100 administration fee if registration is cancelled on or before April 28, 2008. Cancellations after April 28, 2008 will not be refunded. Cancellations must be made in writing to NRMCA Meetings Dept., 900 Spring Street, Silver Spring, MD 20910 or by fax to (301) 565-8200. NRMCA reserves the right to close registration in order to not exceed capacity. NRMCA reserves the right to cancel the conference. If that should occur, NRMCA will notify registrants by fax or e-mail by April 28, 2008. NRMCA will refund the entire registration fee but not unused airline tickets, hotel reservation fees, or other travel related expenses.



This program fulfills some of the requirements for NRMCA's STEPS® Certified Concrete Professional (CCP) program. Visit [www.nrmca.org/STEPS](http://www.nrmca.org/STEPS) or contact Susan Bachenheimer at [susan@nrmca.org](mailto:susan@nrmca.org) or (240) 485-1166 for additional details.



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