



Newsletter

nebraska chapter
american concrete institute

PO Box 5144 • Lincoln, NE 68505 • www.acinebraska.org

ACI Nebraska Chapter Offers Scholarships for 2011-2012 School Year

Submitted by R.T. DeLorm, Executive Secretary

The Nebraska Chapter of the American Concrete Institute will be offering scholarships for the 2011-2012 school year, to students at two year and four year Nebraska Technical schools, Colleges and Universities, who are studying in the field of concrete design, construction, or materials.

Two \$1500 scholarships will be awarded at the annual banquet in February of 2010. One undergraduate scholarship is available for students who will be undergraduate students in the 2011-2012 academic year. One graduate scholarship is available for students who have been accepted (not necessarily at the time of application) for graduate study in the 2011-2012 academic year.

Applications are available on the Chapter website (www.acinebraska.org) or by contacting **Dr. Richard T. DeLorm** at (402) 466-3948, by emailing **Dr. DeLorm** at rtdelorm@msn.com, by contacting **Jereme Montgomery** at (402) 325-8414, or e-mailing **Jereme Montgomery** at jereme@nebrconconcagg.com. If you know of anyone who might be interested in applying for a scholarship, please pass this information on to them. Applications are due at the Chapter office, P.O. Box 5144, at Gateway Station, Lincoln, Nebraska, 68505, by Friday, December 17, 2010.



President's Report

Fall is upon us. I hope everyone had a great summer, and is ready to get back at it. I'm looking forward to a busy and productive fall.

Michael Gerdes is continuing his successful series of seminars for the fall. Keep an eye out for flyers and e-mails announcing the upcoming dates.

Training and certification schedules will be coming out later this fall. **Mike Willman** and **Larry Schmidt** will again be leading the charge. This takes a lot of their time and effort. Make sure you tell them thanks when you see them. If you don't need to get re-certified, make an effort to help at the certifications. We can't do it without volunteers and appreciate all the help we can get.



Steve Wobken
ACI Nebraska
Chapter President

I know there is plenty of construction to be completed yet so let's hope the fall weather lasts for a while. Thank you for everyone's participation and I look forward to seeing you at upcoming chapter activities!

“

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**AMERICAN CONCRETE INSTITUTE
NEBRASKA CHAPTER**
Chartered, December 1987

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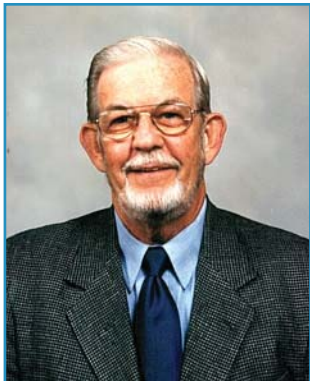
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Kenneth C. Hover Named President of AMERICAN CONCRETE INSTITUTE

FARMINGTON HILLS, Mich. (Sept 27, 2010) - The American Concrete Institute (ACI) announces Kenneth C. Hover, Ph.D., P.E., as its new president.

Dr. Hover assumes the post of president of the Institute after the passing of President Richard D. Stehly on Sept. 18, 2010. In accordance with the by-laws of the Institute, in the event that a current president is no longer able to continue his term, the senior vice president will complete the term.

The ACI Executive Committee, along with ACI Executive Vice President Ron Burg, and ACI's staff have expressed their support of Dr. Hover as president during this difficult time for the Institute.

"On behalf of the American Concrete Institute members and its staff, I would like to thank Kenneth Hover for graciously and humbly accepting the post of President of the Institute," said Ron Burg, executive vice president of ACI. "We are confident that Ken will continue Dick Stehly's ambitious visions for ACI during this time of tremendous loss for the Institute and the entire concrete industry."

"ACI has lost one of its most enthusiastic leaders, a dedicated and gifted visionary, and most of all, a good friend," said Kenneth Hover. "We can assure the Institute and the industry that our first priority is the continued pursuit of Dick's presidential objectives."

Dr. Hover is professor of civil and environmental engineering and Stephen Weiss Presidential Fellow at Cornell University, Ithaca, N.Y. An ACI member since 1980, Dr. Hover was elected vice president of the Institute in the spring of 2009. He currently chairs ACI Committee 301-C, Concrete Mixtures, Handling, Placing, Consolidating, and Curing, and also chairs ACI's Task Group on Fly Ash Communication. He currently serves on several other technical committees, including 318-A, Structural Concrete Building Code. Dr. Hover previously served on the ACI Board of Direction and was named a Fellow of ACI in 1992. In addition, he is a past president of the ACI Greater Miami Valley Chapter.

A licensed Professional Engineer in Ohio and New York, Dr. Hover lectures nationally and internationally on concrete materials and construction. ACI has honored him with the Joe W. Kelly Award, Robert E. Philleo Award, and Structural Research Award. He is also a winner of the ASCE Materials Division's Best Basic Research Paper Award. The Weiss Presidential Fellowship is Cornell University's highest teaching award and he has received many other teaching awards in his department and college. In January 2006 at World of Concrete, he was named one of the "Ten Most Influential People in the Concrete Industry."

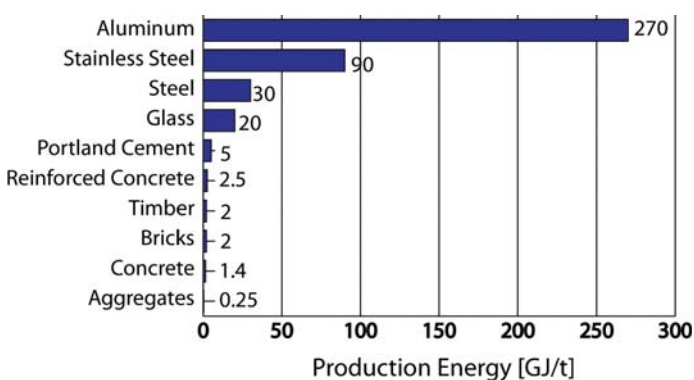
CONCRETE SUSTAINABILITY

Reported by ACI Committee 130

CHAPTER X—ENVIRONMENTAL, AND ECONOMIC IMPACTS

X.3.4—Energy. *The impact concrete has on energy is best described through a life cycle analysis. The life cycle of concrete is a cradle-to-cradle process going from production, to operation, to demolition, to recycling which can be used to supplement production. This cradle-to-cradle process involves two types of energy: embodied energy and operational energy.*

X.3.4.1 Embodied Energy. Embodied energy is the energy directly attributed to the production of concrete products. Production can be further broken down into raw material extraction, transportation, and manufacturing. Refer to embodied energy calculations in 130D. A research study compares the energy of production for concrete and other common building materials. The study concludes that the energy required to produce one metric ton of reinforced concrete is 2.5 GJ/t (2.2 million BTU/ton) compared to 30 GJ/t (25.8 million BTU/ton) for steel and 2.0 GJ/t (1.7 million BTU/ton) for wood.⁽²⁾



Embodied energy is also a large factor in regards to roadways and pavements. Athena Institute conducted a life cycle analysis on two-lane concrete and asphalt roadways to compare embodied energy for construction and maintenance over a 50-year life cycle. The study concludes that for a high volume highway, the asphalt pavement

requires anywhere from 2.3 times to 5.3 times more energy than the concrete pavement counterparts from a life cycle perspective. Across the two-lane designs, the energy advantage of Portland cement concrete roadways grows as soil bearing capacity declines or as the class of roadway increases.⁽¹⁾



X.3.4.2 Operational Energy. Operational energy encompasses the energy consumed during the functional portion of a concrete project's life cycle. This energy is significant when discussing buildings. The Building Energy Data Book (U.S. Department of Energy 2009) reports that the residential and commercial building sector in the U. S. had a total primary energy consumption of 38% for 2006, with a forecast of 41% for 2010, and over 50% by 2030. With the building sector representing approximately 40% of energy use in the U.S., it becomes the single biggest sector, making contributions of energy savings in the building area felt directly in total energy consumption.⁽³⁾

Concrete buildings can reduce energy consumption of buildings in a number of ways. One way is through reducing thermal transmission. Various concrete wall systems incorporate concrete as part of the building envelope that

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sandwiches outside or between layers of insulating material for energy conservation. Another way is through thermal mass. Concrete has a high heat capacity and low thermal diffusivity. Thermal mass tends to reduce the effects of outside temperature spikes on the building's interior and can contribute to passive heating and cooling in a building. Thermal mass is an area of potential energy reduction using concrete and masonry members, particularly in climates with large daily temperature swings. ⁽³⁾ Operational energy is also a large factor in regard to roadways and pavements.

Studies conducted by National Research Council of Canada compared fuel consumption for a 100 km (62.14 mi) section of four different types of highway. These highways are paved with asphalt, concrete, or a composite blend of the two. The studies concluded that heavy trucks traveling on concrete pavement accumulate statistically significant fuel savings, ranging from 0.8% to 6.9%. The results showed also that speed of travel affects the efficiency. The higher end of the range is realized at 60 km/h (~37mph). ^(4,5)



1. *1.A Life Cycle Perspective on Concrete and Asphalt Roadways: Embodied Primary Energy and Global Warming Potential*, Athena Institute, Ottawa, Ontario, 2006.
2. *Pentalla, Vesa, Concrete and Sustainable Development*, ACI Materials Journal, September-October 1997, American Concrete Institute, Farmington Hills, MI, 1997.
3. *Schokker, Andrea J., 2010, The Sustainable Concrete Guide-Strategies and Examples*, U.S. Green Concrete Council, Farmington Hills, MI, pp.5, 22-23.
4. *Taylor, G.W., Additional Analysis of the Effect of Pavement Structures on Truck Fuel Consumption*, National Research Council of Canada (NRC), Ottawa, Ontario, 2002.
5. *Taylor, G.W. and Patten, J.D., Effects of Pavement Structure on Vehicle Fuel Consumption – Phase III*, National Research Council of Canada, Ottawa, Ontario, 2006.

Technical Committee Report

Submitted by Mike Willman

The 2009 - 2010 training season was completed in April with seven ACI Field Testing Technician Grade I certification Classes with 241 people attending, and 209 people certified. Six NDOR Field Testing classes with 155 people attending the classes and 149 certified.

One ACI Flatwork Finisher Class with 11 people attending and 11 Certified, two ACI Strength Testing Certification Class with 30 people attending and 25 certified, and four NDOR Plant Certification classes with 132 attending and 131 certified.

The 2010 - 2011 training schedule should be available on the ACI Nebraska web site www.acinebraska.org or the Nebraska Concrete & Aggregates Association website www.nebrconagg.com.

Certification programs are important to all of us in the concrete industry. The training programs continue to be cost effective and provide quality programs due to the support of the local Ready Mix Producers and all the volunteers.



I would like to extend a big thank you to **Rochelle Hitz, Leon Schaefer, Jereme Montgomery, Jim Musilek, Steve Weidenhammer, Larry Schmidt, Bob Irwin, Jerry Woods; The Nebraska Concrete & Aggregates Association, ACI Nebraska Chapter, and Nebraska Department of Roads** Volunteers for all their hard work to make these programs a success.

Nebraska Chapter ACI Board of Directors Meeting Minutes

September 14th, 2010

Attending: Bob Irwin, Steve Wobken, Aaron Luth, Randy Lane, Jereme Montgomery, Dale Kisling, Dick Delorm, Bill Cook, Michael Gerdes, Mike Willman, Joel Sedlacek.

Meeting Commenced: 7:45am

Opening Remarks: Recognition of Anti-Trust Statement

Approval of Past Minutes: Reviewed meeting minutes from May 11th, 2010. A motion was made and a second to approve meeting minutes of May 11th, 2010.

Treasurer's Report: Willman looked into moving some funds into a CD or Money Market account. Interest rates low. Motion was made and seconded to approve financial statements.



Executive Secretary's Report: No Report

Committee Reports:

- Awards (Schmidt, Montgomery, Sedlacek, Kisling): Committee should see activity over the next couple of months. Site selection, postcards, etc.
- Education (DeLorm): DeLorm has made new flyer for promoting ACI-NE scholarship. The Chapter needs to be more assertive in communicating this scholarship. DeLorm and Montgomery will meet to discuss possibilities of scholarship promotion.
- Libraries (Montgomery): 2010 Manual of Concrete In Practice has arrived. Group discussed moving last years manuals to local university library. Montgomery will look into UNL.
- Membership (Gerdes/Willman): No Report
- Newsletter (DeLorm): Newsletter articles are due Sept. 25th. DeLorm is looking for a couple more articles to complete quarterly newsletter.
- Nominating Committee (Busboom): No Report
- Programs (Gerdes): Committee has lined up program in September on testing laboratories. Committee is also considering a program in October on concrete durability. Still looking for topics to finish out remainder of programs.
- Programs – Golf (Menard): No Report



- Public Relations (Lane/Schmidt): No Report
- Technical (Willman/Luth): Willman will meet NC&AA by end of month to schedule winter certification programs. Looking to coordinate ACI Flatwork Finisher class in Omaha and also Lincoln.
- Sustainability (Wobken/Luth/Montgomery): Wobken contributed on the document development of ACI technical committee 130 "Sustainability of Concrete". Wobken will distribute his portion to the group.
- Website (Willman/Irwin): Committee will discuss keeping dates current on website to Jill.
- Liaisons:
 - ACI International- Wobken and Montgomery will represent ACI-NE in Pittsburg for ACI Fall Convention.
 - NC&AA- Scholarship fund shoot on Sept. 24th in Grand Island.
 - NCPA- Field trip to witness cellular concrete in Council Bluffs, along with Souix city. Cellular concrete may be a possible December program. Harrison county completed 4" bonded overlay with Paxton currently placing a 5" unbounded overlay. Field trip for Paxton will be Sept. 16th.
 - ASCE-No Report
 - AIA-No Report
 - PCA North Central Region-No Report
 - ASTM- No Report
- Old Business- No Report
- New Business- Need to replace Dale Mueller. The board discussed adding Tony Roberts to the ACI-NE Board of directors. Tony is Quality Control Manager of CXT.

A motion was made and seconded to approve Tony Roberts to the Board of Directors. Need to replace Dale's executive board position with a current board member.
- Board would like to move some of the board meetings to York. Group approved.
- End of Meeting: A motion was made, seconded and approved to dismiss at 8:48am

2010 Programs Recap

Submitted by Michael Gerdes



February 6, 2010

Annual ACI Nebraska Chapter Awards Dinner



March 16, 2010

31 ATTENDEES

Presenters(s); Mark Deetz

Program Title:

"Concrete - from Stockpile to Site"

Summary: Presentation on raw materials, production, batching methods, admixtures, transport and everything it takes to make a load of concrete to your specifications and transport it to the site.



April 27, 2010

41 ATTENDEES

Presenter(s): Bob Irwin

Program Title: "Concrete's Here"

Summary: Presentation on job site delivery methods and techniques, handling, placement, finishing, consolidating and curing and job site related topics.



May 7, 2010

Annual Spring Golf Outing

Beatrice Country Club (Joe Menard, Michael Willman)



May 20, 2010

26 ATTENDEES

Presenter(s): Dr. Kyle Riding

Program Title: "Concrete Structures Investigation" Diagnosing concrete failure types and extent

Summary: Possible test methods that can be used to diagnose failure mechanisms in concrete, and the extent of damage. Descriptions of different non-destructive evaluation methods, their benefits, and limitations will be given.

Concrete Knowledge, Whats new in 2010...

Notable ACI publications and revisions

Jereme Montgomery,
ACI-NE Library Chair

117-10 Specification for Tolerances for Concrete Construction and Materials (ACI 117-10) and Commentary

This specification provides standard tolerances for concrete construction and materials. This document is intended to be used by specification writers and ACI committees writing standards as the reference document for establishing tolerances for concrete construction and materials.

360R-10 Guide to Design of Slabs-on-Ground

This guide presents information on the design of slabs-on-ground, primarily industrial floors. It addresses the planning, design, and detailing of slabs.

214.4R-10 Guide for Obtaining Cores and Interpreting Compressive Strength Results

This guide summarizes practices for obtaining cores and interpreting core compressive strength test results. Factors that affect in-place concrete strength are reviewed so sampling locations that are consistent with objectives of the investigation can be selected.

522R-10 Report on Pervious Concrete

This report provides technical information on pervious concrete's application, design methods, materials, properties, mixture proportioning, construction methods, testing, and inspection.

332-10 Residential Code Requirements for Structural Concrete and Commentary

The "Residential Code Requirements for Structural Concrete" cover the design and construction of cast-in-place concrete for one- and two-family dwellings and multiple single-family dwellings (townhouses), and their accessory structures.

551.2R-10 Design Guide for Tilt-Up Concrete Panels

This guide presents information to expand on the provisions of ACI 318, Section 14.8 applied to the design of site-cast precast, or "tilt-up," concrete panels, and to provide a comprehensive procedure for the design of these important structural elements.





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Progress through Knowledge

**Watch your email for
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Program Committee**

- ✓ Fall Breakfast Seminars
- ✓ Annual Awards
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Questions? Contact

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