Monday Agenda

1. Welcome and Introductions—Chair Schokker welcomed everyone and led introductions.

Voting members in attendance:
Andrea Schokker, Chair
Julie Buffenbarger, Vice chair
Emily Lorenz, Secretary
Kelly Dudley, staff
James Aldred
Khalid Awad
Larry Church
Kelsey Edwardsen
Dean Frank
Per Fidjestol
Doug Hooton
Tony Johnson
Lionel Lemay
Kevin MacDonald
Charles Nmai
Larry Novak
Aimee Pergalsky
Julie Rapoport
John Ries
John Roberts
Larry Rowland
Koji Sakai
Arezki Tagnit-Hamou
Tom Van Dam
Jeff Volz
Peter Yen

Absent voting members:
Tom Adams
Florian Barth
Mark Chrzanowski
Dave Darwin
Moetaz El-Hawary
David Fowler
William Gaspar
Arturo Gaytan Covarrubias
Liv Haselbach
Per Jahren
Tracy Marcotte
Christian Meyer
Ted Neff
Matt Offenburg
Larry Sutter
Peter Taylor
Jeff West
Vicky Zajakowski

Others:
Wayne Adoska
Tom Bagsarian
Keith Bargheiser
Muhammed Basheer
Eckard Buhler
Cesar Chan
Nick Deniroli
Om Dixit
Jim Ernzen
Frances Griffith
Steven Hawkins
Jacob Henschen
Terry Holland
David Hoyt
Jiong Hu
Daniel Jansen
Kamal Khayat
Katie Kuder
Nick Lang
Federico Lopez-Flores
Mohamed Mahgaub
Homero Jesus Montano Roman
Julio Pecho
Farshad Rajabipour
2. Approval of Fall 2010 minutes—Larry Novak moved to approve the minutes, Aimee Pergalsky seconded. All approved.

3. Sustainability Sessions—Larry Rowland gave an overview of the sessions at this and future conventions. Anyone who is interested in co-moderating the education session with Farshad, please contact Larry.
   3.1. Sessions at this conference (Rowland)
      3.1.1. ACI & the Concrete Industry’s Approach to Green Building
              Wednesday, 9am-12pm, M-Meeting Room 4 (moderator: Larry Rowland)
      3.1.2. Performance-Based Requirements for Concrete and Sustainability, Part 1
              Monday, 2-5pm, M-Meeting Room 1 (moderator: Ken Rear)
      3.1.3. Performance-Based Requirements for Concrete and Sustainability, Part 2
              Tuesday, 9am-12pm, M-Meeting Room 1 (moderator: Mark Chrzanowski)
      3.1.4. Contractor’s Day Lunch, Engineering the World’s Tallest Structure
              Tuesday, 12-2pm, M-Salon 6 (speaker: Larry Novak)

3.2. Upcoming Sessions (Rowland)
   3.2.1. Green Codes (Cincinnati)
   3.2.2. Prestressed Concrete and Sustainability (Cincinnati)
   3.2.3. The Art of Concrete (Dallas)
   3.2.4. Applications and Modeling Thermal Mass for Sustainable Buildings (Dallas)

3.3. Topics for future conventions
   3.3.1. Curing and Lightweight committees are looking at a session for Toronto
   3.3.2. Fall 2012, Toronto, Ontario (Forming our Future—Teaching to students)
   3.4. Fall Sustainability Forum (Buffenbarger, Sakai)—Koji Sakai noted that they have not yet finalized the topics for the fourth sustainability forum.

4. Roster update—Chair Schokker noted that five voting members moved to associate, and five associates moved up to voting. We want to keep the committee at a manageable level, the best way to move up to voting status is to contribute on the subcommittees.

5. Special Publication from Pittsburgh session – update (Volz)—a lot of papers have come in, and they are being reviewed. Hoping to have the SP available at Cincinnati.

6. CAM Sustainability Publications and corresponding e-learning courses—first book has been out a year, second book just came out. Industries and members of JSI contributed materials to the applications book, and Schokker compiled. First book has been translated into Spanish. All text for both books is available for use in the committee document, Julie Buffenbarger will be posting on the website, and all the pictures can be used. Rowland asked how to handle permissions. Schokker is going to check with ACI about what sourcing and credits need to happen. Starting with materials from this committee to create the e-learning course. If any committee members have an idea for e-learning, contact Larry Rowland.
   6.1. The Sustainable Concrete Guide – Strategies and Examples
   6.2. The Sustainable Concrete Guide – Applications
7. Outreach to ACI committees—Chair Schokker noted that there is a standard presentation available that everyone can use it if they want to present. Committee 555 (recycled concrete) was worried that ACI 130 might encroach on their mission. Chair Schokker will contact the chair of ACI 555.

8. JCI International Conference on Concrete Sustainability, May 2013 (Sakai)—Sakai noted that ACI has already agreed to support this conference. He asked this committee to support the conference. They are working on a schedule now for the call for papers.

9. First ACI Concrete Sustainability Award (update on nominations)—Will be awarded at the next convention. There was a large turn-out, and Chair Schokker thanked everyone for nominating individuals.

10. ACI Staff update
10.1. New ACI Director of Sustainability, Kevin Mlutkowski—Kevin will be

11. Update on committee document, “Guide to Sustainable Concrete” (details during Tuesday meeting, see Exhibit A)
11.1. Resolution of negatives, Chapters 4 & 5 (Kevin MacDonald & Matt Offenberg)
   11.1.1. Lionel Lemay motioned to find non-persuasive, John Ries seconded. Lionel Lemay withdrew his motion, and John Ries withdrew his second. Tracy Marcotte withdrew her negative, editorial.
   11.1.2. It will be fixed, Emily Lorenz withdrew her negative.
   11.1.3. Larry Novak withdrew his negative.
   11.1.4. Larry Novak motioned to find it persuasive, Larry Rowland seconded. Friendly amendment: Lionel agreed to provide a reference. 21 affirmative, 0 negatives,
   11.1.5. Lionel Lemay withdrew his negative, changed to editorial.
   11.1.6. Larry Rowland motioned to find it persuasive, Larry Novak seconded. 21 affirmative, 0 negatives
   11.1.7. Kevin MacDonald motioned to add reference note to ACI 555R to comment B, Larry Novak seconded. 23 affirmative, 0 negatives
   11.1.8. Larry Novak motioned to find it persuasive, Julie Buffenbarger seconded. Friendly amendment: Delete “concrete producers can” 23 affirmative, 0 negatives.
   11.1.9. Kevin MacDonald motioned to change sentence to “…ordinary portland cement is much more energy intensive than blended cement.”, Larry Novak seconded. 22 affirmative, 0 negatives, 1 abstention.
   11.1.10. Table until tomorrow
   11.1.11. Larry Novak withdrew negative.
   11.1.12. Lionel Lemay moved to find the negative persuasive, Tom VanDam seconded. 22 affirmative, 0 negatives.
   11.1.13. Kevin MacDonald motioned to find the negative persuasive, and add the reference to other ACI documents. Aimee Pergalsky seconded. 22 affirmative, 0 negatives.
   11.1.14. Kelsey Edwards motioned to find it non-persuasive, Tom Van Dam seconded. 22 affirmative, 0 negatives.
   11.1.15. Kevin MacDonald motioned to accept change with the swapping of “where practical” for “when possible.” John Roberts seconded. 18 affirmative, 3 negatives, 1 abstention.
   11.1.16. Lionel Lemay motioned to find it persuasive, and to write a paragraph to satisfy the negative. Julie Buffenbarger seconded. 18 affirmative, 0 negative.
   11.1.17. Kevin MacDonald motioned to find it non-persuasive, Aimee Pergalsky seconded. 22 affirmative, 0 negatives
   11.1.18. Tony Johnson withdrew and found editorial
   11.1.19. Tabled
   11.1.20. Tony Johnson withdrew and found editorial
   11.1.21. Tabled
   11.1.22. Tabled
   11.1.23. Larry Rowland motioned to find it persuasive and adding a sentence that references NRMCA program. Julie Buffenbarger seconded. 18 affirmative, 0 negative.
11.1.24. Kevin MacDonald motioned to find it non-persuasive and editorial, Emily Lorenz seconded. 19 affirmative, 0 negatives

11.1.25. Lionel Lemay withdrew his negative, editorial.

11.1.26. Kevin MacDonald motioned to find it persuasive, Tom Van Dam seconded. They both withdrew and tabled discussion to come up with better wording

11.1.27. Tony Johnson withdrew, negative.

11.1.28. Kevin MacDonald motioned to find it persuasive, Julie Rappaport seconded. 19 affirmative, 0 negatives. 19 affirmative, 0 negative, 1 abstention.

11.1.29. Lionel Lemay motioned to find the negative non-persuasive, John Roberts seconded. 18 affirmatives, 0 negatives, 1 abstention. Charles Nmai motioned to amend sentence to add “chemically stabilizing in the drum, and batching new material. This must be done consistent with performance requirements and ...” Kevin MacDonald seconded. 20 affirmative, 0 negatives

11.1.30. Lionel Lemay withdrew, editorial.

11.1.31. Charles Nmai motioned to find the negative persuasive and delete the first sentence, Kevin MacDonald seconded. 18 affirmative, 2 negatives.

11.1.32. Kevin MacDonald motioned non-persuasive because dealt with already in 31. Larry Rowland seconded. 18 affirmative.

11.1.33. Kevin MacDonald motioned non-persuasive because dealt with already in 31. Larry Rowland seconded. 18 affirmative.

11.1.34. Kevin MacDonald motioned non-persuasive because dealt with already in 31. Larry Rowland seconded. 18 affirmative.

11.1.35. Tony Johnson withdrew his negative.

11.1.36. Larry Rowland motioned to find it persuasive with change from “can be” to “is,” Peter Yen seconded. 16 affirmative, 0 negatives, 2 abstentions. FAILED Larry Rowland motioned to find persuasive as written, Peter Yen seconded. 19 affirmative, 0 negatives.

11.1.37. Julie Rappaport moves to find it persuasive with deletion of parenthes, Larry Rowland seconded. 18 affirmative, 0 negatives.

11.1.38. Tom Van Dam motioned to find the negative non-persuasive, Julie Rappaport seconded. 18 affirmative, 0 negatives. Change “emissions” to “these”—editorial

11.1.39. Charles Nmai motioned to find the negative persuasive, Julie Buffenbarger seconded. Withdrawn and tabled for tomorrow. Jeff West motioned to accept the wording proposed by Andrea Schokker, Lionel Lemay seconded. 20 affirmative, 0 negative

11.1.40. Ted Neff withdrew his negative, editorial

11.1.41. Lionel Lemay withdrew his negative, editorial.

11.1.42. Lionel Lemay withdrew his negative.

11.1.43. Lionel Lemay withdrew his negative, editorial.

11.1.44. Julie Buffenbarger motioned to find non-persuasive because unrelated, Larry Rowland seconded. 21 affirmative, 0 negative.

11.1.45. Julie Buffenbarger motioned to find non-persuasive because unrelated, Larry Rowland seconded. 21 affirmative, 0 negative.

11.1.46. Tabled

11.1.47. Kevin MacDonald motioned to find non-persuasive because editorial, Julie Buffenbarger seconded. 20 affirmative.

11.1.48. Kevin MacDonald motioned to find non-persuasive because editorial, Julie Buffenbarger seconded. 20 affirmative.

11.1.49. Kevin MacDonald motioned to find non-persuasive because editorial, Julie Buffenbarger seconded. 20 affirmative.

11.1.50. Kevin MacDonald motioned to find persuasive and to add references, Dean Frank seconded. 20 affirmative, 0 negatives.

11.1.51. Kevin MacDonald motioned to find non-persuasive because unrelated, Tony Johnson seconded. 20 affirmative, 0 negatives.

11.1.52. Tabled
11.1.53. Kevin MacDonald motioned to find persuasive and make editorial changes, Julie Buffenbarger seconded. 20 affirmative, 0 negatives.

11.1.54. Kevin MacDonald motioned to find persuasive and make editorial changes, Julie Buffenbarger seconded. 20 affirmative, 0 negatives.

11.1.55. John Roberts withdrew his negative because it will be covered later.

11.1.56. John Roberts withdrew his negative because it will be covered later.

11.1.57. Kevin MacDonald motioned to find non-persuasive, Larry Rowland seconded. 20 affirmative, 0 negative.

11.1.58. Kevin MacDonald motioned to find non-persuasive, Larry Rowland seconded. 20 affirmative, 0 negative.

11.1.59. Kevin MacDonald motioned to find non-persuasive, Larry Rowland seconded. 20 affirmative, 0 negative.

12. Adjournment of Monday meeting

Tuesday Agenda

1. Welcome and Introductions—Chair Schokker welcomed everyone and led introductions.

Voting members in attendance:
Andrea Schokker, Chair
Julie Buffenbarger, Vice chair
Emily Lorenz, Secretary
Kelly Dudley, staff
Tom Adams
James Aldred
Larry Church
Kelsey Edwardsen
Dean Frank
Doug Hooton
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Lionel Lemay
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Matt Offenburg
Aimee Pergalsky
Julie Rapoport
John Ries
John Roberts
Larry Rowland
Koji Sakai
Arezki Tagnit-Hamou
Tom Van Dam
Jeff Volz

Absent voting members:
Khalid Awad
Florian Barth
Mark Chrzanowski
Dave Darwin
Moetaz El-Hawary
Per Fidjestol
David Fowler
William Gaspar
Arturo Gaytan Covarrubias

Liv Haselbach
Per Jahren
Christian Meyer
Ted Neff
Larry Sutter
Peter Taylor
Jeff West
Peter Yen
Vicky Zajakowski

Others:
Rashid Ahmed
Michael Davy

Barry Descheneaux
Josh Edwards
Alfred Gardiner
1) Brief review of Monday meeting (Schokker)

2) Subcommittee Updates (focused on “Guide to Sustainable Concrete” progress and needs)—Chair Schokker noted that we don’t have to meet quorum on subcommittee ballots (only full committee), but it looks bad. If you haven’t been active on the subcommittees, you can move to associate member. Also, it was asked if we should ballot subcommittee sections at the main committee, or wait? It was decided that all subcommittee chairs should send an updated outline, which Chair Schokker will compile and include with each ballot of subcommittee sections. We will ballot smaller sections rather than wait. If subcommittee chairs have written a section they think should go somewhere else, they should send those sections to the applicable subcommittee chair with a copy to Julie Buffenbarger and Andrea Schokker.

a) 130A: Materials (Chairs: Doug Hooton & Tom VanDam)—Hooton reported that this chapter subcommittee has had 7 ballots since the last convention.

b) 130B: Production/Transportation/Construction (Chairs: Kevin MacDonald & Matt Offenberg)—have balloted 3 chapters. Chapters 4&5 have passed the letter ballot, resolving negatives.

c) 130C: Structures in Service (Chair: Tracy Marcotte)—Met this morning, initiated the ballot this morning.

d) 130D: Rating Systems/Sustainability Tools (Chairs: Jeff Volz, & Arezki Tagnit-Hamou)—They need a lot of help, if you have materials and can send to Jeff, or want to get involved, see him.

e) 130E: Design/Specifications/Codes/Regulations (Chairs: Mark Chrzanowski & Larry Church)—They need help, some sections are under-developed.

f) 130F: Social Issues (Chair: David Darwin, Vice Chair: Kelsey Edwardsen)—Chapter 13 should be ready for main committee ballot in the next couple weeks.

g) 130G: Education/Certification (Chairs: Larry Rowland & Khaled Awad)—Trying to develop on a certification program to green concrete certification (will liaison with CPC).

3) Presentation by Carol Bowers, Sustainable Infrastructure Systems Development, ASCE—Vice President for Sustainable Infrastructure Systems, developing a rating system. Institute for Sustainable Infrastructure, called Vision. Comprehensive, trip bottom line, but similar to LEED, less prescriptive more performance based. Will not be considering buildings.

Goals: provide a benchmark for sustainable infrastructure performance, Promote transformational approaches to sustainability, scalable and broadly applicable, accommodate sector-specific rating systems.

Benefits: increased sustainability due to life-cycle approach, transformation approaches, objective third-party project rating and verification, adaptable to varying knowledge and project types, promotes collaboration.

Implementation: Institute for Sustainable Infrastructure, Dec. 2010, 501c3, collaboration between ASCE, APWA, and ACEC. Core products: rating system, education and training, professional (individual) certification, project awards.

Rating System Elements: varying levels of participation, dual approach to sustainability:
- Pathway contribution (doing the right things)
- Performance contribution (doing things right)

Four rating system levels. First two levels will be out for public review in July.
**Ten primary criteria:** Pathway, project strategy and management, community: long and short term effects, land use and restoration, landscapes, ecology and Biodiversity; water resources and environment, energy and carbon,

Struggling with identifying the baseline.

A lot of this was based on CEEQUAL, but they’ve “gone beyond.”

Will be presented to the ISI board in April: Guidance manual, matrix of criteria, resource reference guide, calculating spreadsheet.

August-December 2011: public comment period  
January 2012: Commercial version available

Website: [www.sustainableinfrastructure.org](http://www.sustainableinfrastructure.org)  
Website contains the rating system for download and comment.

4) Completion of any remaining business from the Monday meeting

5) New Business  
   a) Discussion of how to move toward “Sustainability Now”

6) Adjournment
GUIDE TO SUSTAINABLE CONCRETE

Reported by ACI Committee 130

This report gives general information about concrete sustainability.

Keywords: sustainability; green; environmental; ...

CONTENTS

Chapter 1—Introduction
1.1—General
1.2—Background
1.2—Scope
1.4—Limitations
1.5—Background: Sustainability
1.6—Sustainable attributes for concrete

Chapter 2—Materials
2.1—Cementitious materials
2.3—Aggregates and fillers
2.4—Admixtures and additives
2.5—Water
2.6—Reinforcement

Chapter 3—Proportioning
3.1—Mixture proportion considerations
3.2—Overdesign implications

Chapter 4—Production and Transport
4.1—Environmental best practices for production
4.2—Transportation
4.3—On site
4.4—Innovative green products
4.5—Industry resources and programs

Chapter 5—Construction
5.1—Formwork
5.2—Placement and post-placement
5.3—Health and Safety

Chapter 6—Structures in Service
6.1—Durability
6.2—Asset management
6.3—Historic preservation and cultural significance
6.4—Environmental impacts

Chapter 7—Rating Systems
7.1—Overview
7.2—Recommended criteria for evaluating sustainability of concrete
7.3—LEED (Leadership in Energy and Environmental Design)
7.4—Green Globes
7.5—BREEAM (Building Research Environmental Assessment Method)
7.6—CASBEE (Comprehensive Assessment System for Built Environmental Efficiency (CASBEE)
7.7—Green Roads
7.8—GreenLITES (Leadership in Transportation and Environmental Sustainability)
7.9—U.S. Cities and LEED
7.10—CHPs (Collaborative for High Performance Schools)

Chapter 8—Sustainability Tools
8.1—Overview
8.2—Recommended sustainability tools for evaluating concrete
8.3—Athena
8.4—BEES
8.5—Concrete center thermal mass calculator
8.6—EcoConcrete
8.7—EcoQuantum
8.8—Envest
8.9—WRI
8.10—Black boxes
8.11—Comparisons
8.12—Applications

Chapter 9—Design
9.1—What is sustainable design?
9.2—Sustainable design starts at the conceptual level
9.3—PCA high performance concrete
9.4—Durability
9.5—Service life
9.6—Improvements needed for adoption

Chapter 10—Specifications
10.1—Elements of a sustainable specification
10.2—Sample sustainable specifications
10.3—Specifics for ACI 301

Chapter 11—Codes
11.1—Sustainable practices by understanding code requirements
11.2—Green building codes
11.3—Durability codes
11.4—Specifics for ACI 318

Chapter 12—Regulations
12.1—Global
12.2—Federal

Chapter 13—Social impacts
13.1—Needs
13.2—Stakeholders
13.3—Health and safety
13.4—Aesthetics
13.5—Societal connectivity
13.6—Residential

Chapter 14—Environmental impacts
14.1—Local and global climate
14.2—Water
14.3—Durability and longevity
14.4—Energy

Chapter 15—Economic impacts
15.1—Overall metrics
15.2—Cost of maintenance
15.3—Economic assessment
15.4—Balance of trade

Chapter 16—Summary and Conclusions

Chapter 17—References