

**AGENDA**  
**ACI Committee 130 – Sustainability of Concrete**

**ACI Spring 2011 Convention, Tampa, Florida**  
**Part 1: Monday, April 4, 2-5pm, W-Ballroom 1**  
**Part 2: Tuesday, April 5, 2010, 11-1pm, W-Grand F**

**Monday Agenda**

- 1) Welcome and Introductions
- 2) Approval of Fall 2010 minutes
- 3) Sustainability Sessions
  - a) Sessions at this conference (Rowland)
    - i) ACI & the Concrete Industry’s Approach to Green Building  
Wednesday, 9am-12pm, M-Meeting Room 4 (moderator: Larry Rowland)
    - ii) Performance-Based Requirements for Concrete and Sustainability, Part 1  
Monday, 2-5pm, M-Meeting Room 1 (moderator: Ken Rear)
    - iii) Performance-Based Requirements for Concrete and Sustainability, Part 1  
Tuesday, 9am-12pm, M-Meeting Room 1 (moderator: Mark Chrzanowski)
    - iv) Contractor’s Day Lunch, Engineering the World’s Tallest Structure  
Tuesday, 12-2pm, M-Salon 6 (speaker: Larry Novak)
  - b) Upcoming Sessions (Rowland)
    - i) Applications and Modeling Thermal Mass for Sustainable Buildings (Cincinnati)
  - c) Topics for future conventions
    - i) Fall 2011, Cincinnati, Ohio (Bridging Theory and Practice)
    - ii) Spring 2012, Dallas, Texas (The Art of Concrete)
    - iii) Fall 2012, Toronto, Ontario (Forming our Future)
  - d) Fall Sustainability Forum (Buffenbarger, Sakai)
- 4) Roster update
- 5) Special Publication from Pittsburgh session – update (Volz)
- 6) CAM Sustainability Publications and corresponding e-learning courses
  - a) *The Sustainable Concrete Guide – Strategies and Examples*
  - b) *The Sustainable Concrete Guide – Applications*
- 7) Outreach to ACI committees
- 8) JCI International Conference on Concrete Sustainability, 2013 (Sakai)
- 9) First ACI Concrete Sustainability Award (update on nominations)
- 10) ACI Staff update
  - a) New ACI Director of Sustainability, Kevin Mlutkowski
- 11) Update on committee document, “Guide to Sustainable Concrete” (details during Tuesday meeting, see Exhibit A)
  - a) Resolution of negatives, Chapters 4 & 5 (Kevin MacDonald & Matt Offenber)
- 12) Adjournment of Monday meeting

## **Tuesday Agenda**

- 1) Welcome and Introductions
- 2) Brief review of Monday meeting (Schokker)
- 3) Subcommittee Updates (focused on “Guide to Sustainable Concrete” progress and needs)
  - a) 130A: Materials (Chairs: Doug Hooton & Tom VanDam)
  - b) 130B: Production/Transportation/Construction (Chairs: Kevin MacDonald & Matt Offenbergl)
  - c) 130C: Structures in Service (Chair: Tracy Marcotte)
  - d) 130D: Rating Systems/Sustainability Tools (Chairs: Jeff Volz, & Arezki Tagnit-Hamou)
  - e) 130E: Design/Specifications/Codes/Regulations (Chairs: Mark Chrzanowski & Larry Church)
  - f) 130F: Social Issues (Chair: David Darwin, Vice Chair: Kelsey Edwardsen)
  - g) 130G: Education/Certification (Chairs: Larry Rowland & Khaled Awad)
- 4) Presentation by Carol Bowers, Sustainable Infrastructure Systems Development, ASCE
- 5) Completion of any remaining business from the Monday meeting
- 6) New Business
  - a) Discussion of how to move toward “Sustainability Now”
- 7) Adjournment

# **GUIDE TO CONCRETE SUSTAINABILITY**

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**

