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| http://ashrae.org/Image%20Library/Static/logo_ashrae.png?code=72c4166c-fe1f-490d-abad-d16d2147f7f2  ***Shaping Tomorrow’s Built Environment Today***  **TC 7.6 Building Energy Performance**  ***Handbook Committee Meeting Minutes***  2015 Applications Handbook  Chapter 36 – Energy Use and Management  Chapter 41 – Building Energy Monitoring  Sunday, January 27, 2013, 3:00-4:00 pm, Sheraton Dallas, City View 3 |

1. **Roster and roll call – 3:05 PM**  Stafford
2. **Stanton Stafford**, Newcomb & Boyd

(Subcommittee Chair, Lead Author for Chapter 36)

1. **Dakers Gowans**, Left Fork Energy (Lead Author for Chapter 41)
2. **Vincent Galatro**, The Fulcrum Group (Author/Reviewer for Chapters 36)
3. **Dick Pearson,** Pearson Forensic Engineering

(Author/Reviewer for Chapters 36/41)

1. **Michael Deru**, NREL (TC 7.6 Past Chair)
2. **Shawn Masterson**, Arizona Pipe Trades
3. **Ron Nelson**, IMT
4. **D. Nimral Ram**, Cerebration Consultants

**Not in attendance**

1. **Jeff McLain**, Schneider Electric (Reviewer for Chapter 41)
2. **Hashem Akbari**, Concordia University (Reviewer for Chapter 41)
3. **Cedric Trueman**, Trueman Engineering Services (Reviewer for Chapters 36/41)
4. **Jared Higgins**, Parkhill, Smith & Cooper (Reviewer for Chapter 36)
5. **Georgie Sestak**, OMNEC Engineering (Handbook Committee Liaison)
6. **Old Business** Stafford
   1. OPEN Action Items – Chicago
      1. **OPEN** – Deru to provide insight on how ISO 50001 might be incorporated into Chapters 36 and/or 41. Stafford to follow-up before Denver.
      2. **OPEN** – Pearson to evaluate how Chapter 36 should be updated based on the ASHRAE Procedures for Commercial Building Energy Audits, Second Edition (Green Book). Stafford to follow-up before Denver.
      3. **OPEN** – Pearson to provide a contact at EPA/EnergyStar. Pearson mentioned the EnergyStar Energy Management Process diagram in Chapter 36 and suggested we ask EPA/EnergyStar to review and comment on Chapter 36. Stafford to follow-up before Denver.
   2. OPEN Action Items – San Antonio
7. **OPEN** – Stafford to discuss water savings with TC 2.8, SSPC 189.1 to develop a section on water utility/cost as it relates to energy for Chapter 36 and water metering for Chapter 41.
8. **OPEN** – Stafford to develop Chapter 36 content related to carbon footprint using Standard 105 (Deru) as a reference.
9. **OPEN** – Gowans to develop an outline for Chapter 41. Stafford to review and coordinate with Chapter 36 before submitting to the Subcommittee for comment.
10. **OPEN** – McClain to develop content related to Advanced Utility Metering / Network Architecture for Chapter 41. Stafford to follow-up before Denver.
11. **OPEN** – McClain to develop content to reference NEC and NFPA 70E for Chapter 41. Stafford to follow-up before Denver.
12. **New Business** .
    1. Chapter 36 – Benchmarking data Stafford
13. 2015 chapters likely to rely on 2003 CBECS data
14. ASHRAE bEQ is generating benchmark data on non-Energy Star building types. Stafford to contact Lilas Pratt (ASHRAE) regarding potential to use bEQ benchmark data in Chapter 36.
    1. Chapter 36 – Proposed section on “Source EUI” Galatro
15. Galatro presented his DRAFT version of the proposed addition
16. Deru suggested integrating Standard 105 references to “Source EUI”
    1. Chapter 41 – Outline and Ideas Stafford
17. “The WHY, WHAT, HOW and HOW MUCH of Building Energy Monitoring”

(handout)

1. Update focus to BEM to support energy management (vs. research)
2. Shift audience to building owners, operators and engineers – those who will be developing and using BEM systems for O&M
3. WHY? – aggregation, billing, cost allocation, demand side management, diagnostics, M&V, net metering, performance; draw links to Enterprise Energy Management
4. Data-driven approach to diagnostics
5. WHAT? – types of data/measurements, metering/monitoring devices, hardware/software, system/network types, input/output reporting
6. HOW? – Planning, Implementation, Analysis, Reporting
7. Monitoring-based Commissioning
8. BEM to support Operations & Maintenance
9. Real-world examples – dashboard graphics + trend overlays
   1. Chapter 41 – References
10. Performance Measurement Protocols Best Practices
11. ASHRAE Guideline 14
12. **Action Items, March 25th deadline**
    1. Chicago OPEN Action Items – Deru and Pearson to deliver recommendations. Stafford to follow-up relentlessly.
    2. San Antonio OPEN Action items – Gowans, McClain and Stafford to deliver recommendations. Stafford to follow-up relentlessly.
    3. Stafford to contact Lilas Pratt (ASHRAE) regarding potential to use bEQ benchmark data in Chapter 36.
    4. Gowans to review *Performance Measurement Protocols Best Practices Guide* while developing outline for Chapter 41. Stafford to review outline and distribute to Committee for comment.
    5. Stafford to develop outline for Chapter 36. Gowans to review before Stafford distributes to Committee for comment.
    6. Galatro to integrate Standard 105 into Chapter 36. Stafford to review before distributing to Committee for comment.
13. **Action Items, May 27th deadline**
    1. Gowans and Stafford to develop content for Chapter 41 based on outlines and feedback from Committee. Stafford to distribute to Committee for comment.
    2. Stafford to incorporate Galatro’s, Pearson’s and Deru’s feedback on Chapter 36 assignments (see Chicago and San Antonio OPEN Actions Items and Dallas Action Items above). Stafford to distribute to Committee for comment.
14. **Adjourn – 4:05 PM**

**NEXT MEETING: Sunday, June 23, 2013, Denver**