

TECHNICAL COMMITTEE 2.8 – Building’s Environmental Impacts and Sustainability

MEETING MINUTES – Denver, CO – June 27, 2005

Main Committee Meeting Minutes

Committee Chair Mark Case called the meeting to order at 5:00 p.m. Those present introduced themselves, and an attendance sign-in sheet was put into circulation. All attendees are listed on the Minutes Cover Sheet. A quorum of voting members was present (15 voting members and 47 total people were in attendance).

Introductory announcements:

- Next year’s roster was passed around and Mark requested all members (corresponding or voting) to verify.
- Mark mentioned the BOD meeting with the presentation by Ron Jarnagin on “Engineering for Sustainability”; will help increase visibility of the topic within the higher administration.
- TC 2.8 Web Site will be transferred over to ASHRAE’s web site; The 2.8 list server is still the method for people to sign up as corresponding members.

AGENDA REVIEW

- Minor changes to the agenda that Mark emailed out earlier.

ASHRAE LIAISON REPORTS (Italics had no representative or report)

- *RAC*
- *Special Publications*
- *Programs (Spencer Morasch)*
- *ALI (Stanley Mumma)*
- *Standards (Claire Ramspeck)*
- TAC: Fred Lorch is outgoing section head, and presented Mark with certificate of appreciation for a job well done the past two years. New policy for section heads to be taken from former TC chairs in that section. Gary Phetteplace is new section head.
- Bill Rose, Environmental Health Committee: Reported on IAQ 2007 to be held in Baltimore, “Health and Sustainability”. Format will be both symposium and seminar.

MEMBERSHIP SUBCOMMITTEE – Mark Case for Jim Keller

- Roster for 2005-06: Mark informed roster updates and leadership. Dru Crawley will take over as chair, Tom Lawrence as Vice-Chair and Tia Heneghan as Secretary starting in July 2005.
- TC 2.8 List server will be migrated to ASHRAE web site during upcoming 6-12 months.

APPROVAL OF MINUTES

- Meeting Minutes from Orlando: Motion made by Bill Coad and seconded by John Hagan to approve the minutes from the Orlando winter meeting. Vote to approve the minutes was unanimous.

Bill Coad, New Forum

- TC 1.7: “I didn’t promise you a Rose Garden”, TC 2.8 co-sponsor. Legal aspects of green design. Planned for Chicago.

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TOPICAL SUBCOMMITTEES:

Impact Material and Systems– Tom Cappellin

- 23 attendees at the subcommittee meeting Sunday. Full subcommittee meeting minutes are attached.
- Four sections:
 - Materials Types and Sources
 - The committee is tasked with preparing a list of materials that are a part of HVAC equipment and systems installed into buildings. In addition, materials that are a part of building envelopes and interior elements will be considered for inclusion. The list will be used to publish a “Consideration Matrix” that can be used to evaluate materials and systems for use by designers tasked with producing a Green Design.
 - Energy Consumption of Installed Systems
 - This committee is tasked with developing a reference document that enables designers determine how selection and installation of HVAC equipment and materials affect a building’s total consumption of energy.
 - Environmental Impacts of Indoor Contaminants and Outdoor On-Site Environmental Impacts
 - Coordinating with the GreenGuide committee to provide information to support expansion of existing chapters or in development of a new chapter tentatively titled, “Impact of Buildings and their Systems on the Local Environment”.
 - This committee is prepared to present a seminar based on indoor and outdoor environmental impacts as early as the next society meeting in Chicago.
- The Materials and Systems committee needs to development a concise title, purpose and scope that will enable interested parties to more clearly understand why the committee was formed and what is its scope of activities.
- Set deadlines for achieving above goals. This will be accomplished by on-going monthly contact with committee chairs and members. Also want to organize and chair a symposium based on the activities and goals of this committee.

Delivery Process – Frank Mills

- Report from Balaras Costas on EU perspective, anyone interested in more contact Frank and he will help point the way.
- In UK, national guidelines coming on for sustainability, including such areas as requirements for renewables.
- Looking for people who are willing to be liaisons with other organization committees, such as USGBC.
- ASHRAE HQ building information is now available to TCs to use as example for handbook chapter information. Information on ASHRAE website, need password access (see Frank for access).
- Internationalization of GreenGuide and 90.1 to make it less focused on U.S.

Energy Resources – Don Brundage

- A four paper symposium planned for Chicago fell through; “Quantifying Environmental Impacts of Buildings” Jeff Haberl will submit his papers for other channels within ASHRAE.
- Main product is handbook, and Don made the suggestion to merge this group in with handbook. This will be discussed later with the incoming chair.
- Tidbit of information: R-22 is banned in new U.S. produced equipment starting 2010; but no current U.S. barrier to having China imports of R-22 equipment. Expect a big political push to close this loophole.
- TC 2.5 seminar in Quebec City on related issues being planned.

Handbook – Stephen Turner

- Thanked Don Brundage for his work in getting the reworked handbook chapter pushed through.
- Finished action item that listed all references to energy and sustainability in all four handbook volumes. Questions came up as to the method of how that was done, and a new update to include greenhouse gas emissions in 2-3 weeks. Fred Lorch has expressed interest in this result and which might prompt work in other

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TCs. Steve and the subcommittee will now focus on getting the new handbook chapter. Steve will email the result soon.

- Task groups formed in areas such as Energy Resources, Graphics (Dough Fisk: update and consolidate), Sustainability (Malcolm Lewis: fleshing out elements to include in the new handbook).
- Parts of the chapter as planned for now. 1. Energy resources; 2. Where resources are going; 3. How sustainability can change (improve) that picture.

ACTION: Steve Turner will email the results of the updated handbook key word search to the TC2.8 listserv within the next few weeks.

Web Site - Don Brundage

- Web site has not been updated before this meeting. Don will work with staff to get converted over to the ASHRAE web site, which may help with getting support.

Standards – Jay Enck

- LEED 2.2 will come out for second public review in next two to three weeks with 15 days turnaround; it includes a lot of updated ASHRAE standards.

Programs – Joy Altwies

- Current:
 - One forum Tuesday on what do we need in the handbook.
 - Co-sponsors with two others (TC 1.4 and gray water in HVAC)
- Future possibilities
 - Chicago: Frank Mills Judson College Case Study, TC2.8 is Co-Sponsor.
 - Chicago: Symposium, How Low Can You Go? Low-Energy Buildings through Integrated Design. Chair: Dru Crawley. (Co-sponsored with TC 7.1 and TC 7.6)
 - Chicago: Forum: Legal implications joint with 1.7 (Mitchell Swan) #2
 - Chicago: Seminar, Environmental Impact of HVAC Related Systems on Outdoor On-Site. Chair: Tom Lawrence #1
 - Deadline for papers for Ottawa is xxx, Chicago programs is August 5th.
- For Chicago is highly unlikely that TCs get more than one. Proposal made by Joy Altwies and seconded by Jay Enck to rank the “Environmental Impact” seminar #1 and the “Legal Implications” Forum #2 for Chicago. This priority recommendation was approved by unanimous voice vote.
- Programs are needed in the hopper for Quebec City. Dru Crawley will have papers coming out for review as part of the symposia being planned.

Research –Paul Torcellini

- 15 attendees to the subcommittee meeting Sunday.
- RTAR schedule is moving from once per year to three, corresponding with RAC meetings.
- Currently have four RTARs in work, including one that is primarily sponsored by TC 8.3 (TC2.8 is being asked to support or co-sponsor).
- Paul will send out copies of all these to the list server for comments by full committee.
- Mark Case stated that we are in good position to get research funded, but we are in good position now to have these approved.

GREEN GUIDE 2nd Edition – John Swift

- Full subcommittee meeting minutes are attached.
- Actively soliciting input from other TCs and GreenGuide users. Target publication for 2007 winter meeting in Dallas, work plan drafted to this means.
- Approval process is still being verified; confusing signals are being sent still.

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OLD BUSINESS:

Update on ASHRAE – USGBC Interactions

- Brendan Owens USGBC representative and Terry Townsend attended.
- Terry: Formal meetings are being held at least twice per year for coordination. ASHRAE wants to be the lead organization in our areas of expertise. Working with USGBC in educational programs, technical support, collaboration with specific TC’s to have actual voting representation on the ASHRAE TC’s as well as ASHRAE representatives to be voting members of LEED committees.
- ASHRAE also will have representative on Green Build committees.
- More prescriptive guidance on prescriptive guides for energy simulations. LEED NC 2.2 agreed that if you show compliance with Advanced Energy Guide for Small Buildings can “automatically” earn 3 points.
- Need for Performance Measurement. Hope to have white paper by this time next year.
- Terry put a plug for quicker turnaround for GreenGuide II. The industry is desperate for guidance and solid technical information in this area. Steve Turner requested potential funding for assistance in GreenGuide II in areas such as graphics; Terry requested that a dollar figure for this assistance.
- Terry mentioned that commercial side (with small commercial and retail) is first priority, but also want to include soon residential.

Policy Issue: Measurement and Verification for Greenhouse Gas Emissions Credits

- (See motion for Tech Council attached to these minutes). TC 2.8 is being asked to back a request for Tech Council to ask the Board of Directors to consider this policy statement. The motion was changed from what Mark Case circulated with the agenda since TC 2.5 did not approve supporting this motion (reasons are uncertain).
- Steve Turner suggested adding ISO as another interested party.
- Mitchell Swan: Should this include thermal plants that are not buildings *per se* and their systems (such as central plants, distributed generation, etc.)? After some discussion, Mark suggested that in his opinion the wording of the current motion adequately addresses all emissions related to the operation of building systems. The intent is to get ASHRAE BOD to step up and get ASHRAE involved. This issue (if agreed to by BOD) will likely get handed back to TC 2.8 to address.
- Motion by Steve Turner and second by Jim Keller to have the committee approve this. Steve does not agree with any change with modification to delete reference to TC 2.5. Passed 10 for, 0 against, 1 abstain.

SP102 [Advanced Design Guide: Small Commercial] Report (John Hogan)

- Small offices was published in January. Sold 2500 copies total so far.
- USGBC will allow 3 or 4 credits if prescriptive compliance is achieved.
- Steering committee work beginning on one for retail; with project committee work to start soon. Timetable: 35% Dec. 2005, 65% Jan. 2006, 95% April 2006, final publish June 15th.
- Mark requested volunteers for nomination to this committee.
- See formal report attached.

ASHRAE Measured Performance of Existing Buildings (Mark Case)

- Steering group activity taking place in getting a scoping document ready for October Tech Council; anticipating creation of a special project. Will ask for financial support for the volunteers to help defray the additional costs.

Greening of ASHRAE Meetings (Sheila Hayter)

- Terry Townsend asked Sheila to investigate if TC 2.8 might be interested in calculating the actual impact of ASHRAE meeting.

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- Sheila is requesting that people who might be interested in working on this to contact her. Between now and end of year this group would put together a plan on how this would be addressed. Naturally, this group would be done sustainable via internet and email.
- Steve mentioned the list serve thread about 18 months ago, which confirmed strong support. Current meeting thermal environment is too cool. Tia Heneghan, Mark Case, Jim Keller, Tom Lawrence volunteered.

NEW BUSINESS:

Green Globes, Green Building Institute

- Mark looking for a name to investigate what this is and should TC 2.8 participate.
- Some discussion as to if ASHRAE should actually get involved with this, since it does conflict with USGBC.

New Officers and Chairs:

- Dru as incoming chair thanked Mark for a good foundation for the new TC.
- Dru will emphasize subcommittee responsibility (Handbook, GreenGuide, Research)
- Do subcommittees work as they are organized now?

Future Meeting Schedule

- Timing of meeting proposed to change to 6:00 Monday or move back to Sunday night. Dru will make a choice and let all know.

ADJOURNMENT

John Hogan moved that we adjourn, and was seconded by Jim Keller. A voice vote signified approval and time for dinner.

Mark Case adjourned the meeting at 7:00 pm.

The next committee meeting will be held in Chicago on either the Sunday or Monday evening.

Tom Lawrence
Secretary
TC 2.8

**Request for the Development of an ASHRAE Action Plan to
Address Anthropogenic Global Climate Change Policy**

The members of Technical Committees 2.5 (Global Climate Change) and 2.8 (Buildings’ Environmental Impacts and Sustainability) call upon the Board of Directors to establish an action plan for ASHRAE involvement in global climate change policy, specifically greenhouse gas (GHG) emissions, at the national and international levels. Such a plan might involve cooperation with the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), the Intergovernmental Panel on Climate Change (IPCC), the World Business Council on Sustainable Development (WBCSD), the Chicago Climate Exchange, and others engaged in the efforts of tracking and reducing global GHG emissions.

Motion:

That Technology Council request that the ASHRAE Board of Directors develop and implement an Action Plan for proactive involvement by ASHRAE in national and global policy level efforts to track and reduce GHG emissions, specifically those linked to the design, construction and operation of buildings and refrigeration systems within the purview of ASHRAE’s expertise.

The Action plan should, at a minimum, address:

1. How ASHRAE will identify appropriate organizations with which to engage in this effort
2. How ASHRAE will interact with these institutions
3. What resources ASHRAE currently has and will apply to these interactions
4. What resources and technical products are needed that do not currently exist, and
5. How ASHRAE will produce these resources and products in order to provide useful input into the policy development activities.

Background:

Carbon dioxide is the most important GHG contributing to anthropogenic forcing of climate change, or global warming. About 75% of human-caused carbon emissions result from the burning of fossil fuels¹, and buildings account for roughly 36% of that primary energy consumption². Hydrofluorocarbons, such as R-134a and R-152a, are increasingly being used in refrigeration systems, and are also classified as GHGs contributing to global warming³.

Models developed under the auspices of the IPCC project globally averaged surface temperature increases of between 2.5° and 10.4° F between 1990 and 2100. Even at the low end, the projected rate of warming is likely to be greater than the Earth has experienced over any period during the last 10,000 years⁴. It is therefore critical to act decisively and swiftly to reduce GHG emissions. It is difficult to imagine a problem that is both more significant to the long-term welfare of humanity and upon which ASHRAE could have a greater positive impact.

The time for ASHRAE to develop an action plan on global climate change is now. ASHRAE, which aspires to be the world leader in the arts and sciences of key building energy conversion and distribution systems (heating, ventilation, and air conditioning) and refrigeration, therefore can and should play a significant role

¹ World Watch Institute, *State of the World 2002*, pages 26-28.

² World Watch Institute, *State of the World 2001*, page 92

³ World Watch Institute, *State of the World 2002*, page 26

⁴ IPCC, *Climate Change 2001: Synthesis Report Summary for Policy Makers*, page 8

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in addressing the issue of global climate change. It would be appropriate for ASHRAE to work proactively with organizations identified in the action plan in order to:

1. Establish the linkages between building design, construction, and operation and GHG emissions, and communicate these linkages to policymakers
2. Establish the linkages between refrigeration system design, manufacturing, and operation and GHG emissions, and communicate these linkages to policymakers
3. Assist with developing accounting methodologies for quantifying these linkages in order to facilitate emissions credit tracking, reporting, and trading.

Many ASHRAE members already contribute in each of these areas through their employment with universities, government agencies, consulting firms, and industry. Technical Committees 2.5 and 2.8 believe that ASHRAE needs to explicitly recognize the importance of this work and establish a high level plan to move these efforts forward more effectively and rapidly.

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ASHRAE Green Guide Subcommittee Meeting Notes

June 27, 2005

2 PM to 3 PM

Attendees:

John Swift	Cannon Design	jswift@cannondesign.com
Mike Sherber	Lentz Engineering	MsherberLentzEng@cs.com
Malcom Lewis	CTG Energetics	mlewis@ctg-net.com
Gloria Sanderson	Superior Mfg. Div.	smdmag@aol.com
Charlie Sanderson	Superior Mfg. Div.	smdmag@aol.com
Tom Lawrence	University of Georgia	lawrence@engr.uga.edu
Mark Case	etc Group, Inc.	mcase@etcgrp.com
Dru Crawley	Dept. of Energy	drury.crawley@ee.doe.gov
Jim Keller	Gausman & Moore	jkeller@gausman.com
Frank Mills	EDC	frankmills@edc.me.uk
Jay Enck	CxGBS	hjenck@CxGBS.com
Jim Poulos	Servidyne	jim.poulos@servidyne.com
Costas Balaras	NOA	costas@meteo.noa.gr
Aziz Laouadi	NRCC	aziz.laouadi@nrc-cnrc.gc.ca
Bill Coad	Coad Engineering	wjcoad@coadengineering.com
Mitchell Swann	MDC Systems	swann@mdcsystems.com
Paul Torcellini	NREL	paul.torcellini@nrel.gov
Hakim Elmahdy	NRC Canada	hakim.elmahdy@nrc.ca
Neil Moiseev	Shen Milsom Wilke	nmoiseev@smwinc.com

The following is a summary of discussions at the meeting based on meeting notes taken by John Swift. Please contact John Swift at jswift@cannondesign.com with any suggested edits.

1. A document was passed out that listed suggested focus areas for the Green Guide 2nd Edition. (The document is attached.) The items were discussed and it was generally agreed that the suggestions that were on the list would be acceptable as long as information that is already available through handbooks, the work of othr TC’s, Standards, etc. was not duplicated.
2. Dru Crawley to re-announce to the other TC chairs that the Green Guide 2nd Edition was being worked on with a target date of winter 2007 for publication.
3. Dru Crawley and John Swift to make announcement in INSIGHTS re: 2nd Edition.
4. The group agreed with Dave Grumman’s suggestion to have a three to five person TC 2.8 review group. This group will be selected by the end of July 2005.
5. It was agreed that Malcolm Lewis’s suggestion that more guidance on LEED compliance would be useful in the GG.
6. John Swift will work with Mark Case to formally notify contributors to the GG First Edition to solicit their input for GG 2nd and to let them know that their content may be revised.
7. John Swift asked for input on authors and new chapters based on the updated outline of the GG Table of Contents distributed at the meeting.
8. Svein Morner of TC 6.7 will be the liaison for the Solar Power section.
9. It was noted that more references to other resources are needed in the GG.
10. Dru Crawley suggested that John Swift speak with Mickey Geschweiler about getting a technical editor on board at the end of the editing process.
11. Graphics issues were discussed relating to more diagrams being needed, consistent and high quality graphics, number of colors for printing, etc. Jay Enck suggested graphics on building form and orientation. John Swift will contact Mickey Geschweiler about color costs, printing and graphics assistance.
12. John Swift will solicit input from all TC’s that have subcommittees and or interested parties that relate to a specific chapter in the GG.
13. A monthly conference call will be scheduled for authors and reviewers to update workplan and assign tasks. The calls will be held on the last Friday of each month at 3 PM EST. The first call is scheduled for July 29, 2005.
14. The Materials and Systems Subcommittees of TC 2.8 will be providing content for GG 2nd on the following topics:
 - a. HVAC Materials Consideration Matrix
 - b. Indoor Pollution

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- c. Outdoor Pollution
- d. Energy Consumption of Installed Systems

UPDATE ON SP 102 ACTIVITIES

John Hogan, TC 2.8 Liaison to SP 102

27 June 2005

The ASHRAE Special Project (SP) 102 Committee supervised the production of the Advanced Energy Design Guide (AEDG) for Small Offices. (TC 2.8 was represented by Mark Case on the Steering Committee and Jay Enck on Project Committee.) The AEDG for Small Offices was published in late January 2005. To date, approximately 2500 copies of the AEDG have been sold (ASHRAE has sold 2100 copies, AIA has sold 400 copies). The U.S. Green Building Council has agreed to allow the AEDG for Small Offices to be used as a compliance option for 3-4 points under EA Credit 1 in the LEED program.

The planning is underway for the second document in the series, the AEDG for Small Retail Buildings. The ASHRAE SP 102 Committee has had five meetings/conference calls since the ASHRAE Winter Meeting in February 2005. The SP 102 Steering Committee has been identified to include five organizations: ASHRAE, AIA (American Institute of Architects), IESNA (Illuminating Engineering Society of North America), and the USGBC (U.S. Green Building Council), plus the USDOE (U.S. Department of Energy). The Project Committee is expected to be appointed soon with work to commence soon after.

The charge to the Project Committee will be to complete the AEDG for Small Retail Buildings by July 2006.

- The Purpose will be to provide “how to”, user-friendly design assistance to contractors, designers, developers and owners of small retail buildings in order to achieve energy savings of 30% progress toward a net zero-energy building. (Net zero-energy building is defined as a building which uses equal or less energy than it produces on an annual basis.)
- A small retail building is one that is Group M (mercantile) occupancy as defined in the ICC International Building Code (IBC), and related service functions; does not exceed 20,000 gross square feet (as with the small office building, it can include single or multiple tenants; does not exceed one story; and whose heating and cooling is provided by unitary packaged HVAC equipment.
- Tentative schedule: 35% (concept) by December 1, 2005, 65% by February 1, 2006, 90% by April 15, 2006, and 100% (final technical information but not printing galleys) by June 15, 2006.

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DENVER MEETING MINUTES

MATERIALS AND SYSTEMS SUBCOMMITTEE

ASHRAE TC 2.8 “BUILDING ENVIRONMENTAL IMPACTS AND SUSTAINABILITY”

- A. Meeting called to order at 12:00 P.M. on Sunday, June 26, 2005.
- B. Introductions were made and attendance sheet distributed. A total of 23 persons signed in.
- C. The following committee reports were presented:
1. **Material Types And Sources committee** - Donald E. Larsson – Chair
 - a. Jim Keller reported due to the absence of Don Larsson
 - b. **The committee is tasked with preparing a list of materials that are a part of HVAC equipment and systems installed into buildings. In addition, materials that are a part of building envelopes and interior elements will be considered for inclusion. The list will be used to publish a “Consideration Matrix” that can be used to evaluate materials and systems for use by designers tasked with producing a Green Design.**
 - 1) The Matrix will help the Engineer rate the “Greenness” of potential materials and systems. The subcommittee will provide the criteria for decision-making but NOT a direct “How Green is this Product rating”. The focus of our work is to provide objectivity and education to help a third party make educated Green decisions.
 - a) The initial list includes various types of HVAC equipment plus piping, ductwork and insulation elements.
 - 2) It was suggested to add “refrigerants” and “lubricants” to this list plus other materials as they are defined during reviews of reference documents.
 - c. The committee’s goal is to have a draft copy of their “Consideration Matrix” delivered to TC 2.8 during the winter meeting in Chicago.
 2. **Energy Consumption Of Installed Systems** - Michael S. Sherber - Chair
 - a. **This committee is tasked with developing a reference document that enables designers determine how selection and installation of HVAC equipment and materials affect a building’s total consumption of energy.**
 - b. Additional scope of activity will include:
 - 1) Coordinate with the GreenGuide committee to add this information to an existing chapter of the Guide or to produce a new chapter tentatively titled, “Energy Consumption of Installed Systems”. It may b
 - 2) Organize Forums, Seminars and Symposiums for future ASHRAE meeting on the topic of energy consumption environmental impacts
 3. **Environmental Impacts Of Indoor Contaminants”** - John M. Swift - Chair
 - a. This committee is tasked with determining how to identify contaminants that can be found in indoor environments and determine how they might impact the comfort and health of building occupants.
 - b. **Coordinate with the GreenGuide committee to provide information to support expansion of an existing chapter or in development of a new chapter tentatively titled, “Impact of Buildings and their Systems on the Local Environment”.**
 - c. **It was suggested to combine this committee with “Outdoor On-Site Environmental Impacts.”**
 4. **Outdoor On-Site Environmental Impacts** - Thomas Lawrence – Chair
 - a. This committee is tasked with determining how HVAC systems can impact a building’s surrounding outdoor environment due to discharge of airborne contaminants, water contaminants and generated noise..
 - b. Coordinate with the GreenGuide committee to provide information to support expansion of an existing chapter or in development of a new chapter on the topic of outdoor on-site environmental impacts.
 - c. **This committee is prepared to present a seminar based on indoor and outdoor environmental impacts as early as the next society meeting in Chicago.**
 - 1) **List of potential speakers has been established. Preference is for Chicago winter meeting due to that being the only availability of one speaker.**
- D. General Discussion:
1. **The Materials and Systems committee needs to development a concise title, purpose and scope that will enable interested parties to more clearly understand why the committee was formed and what is its scope of activities. This information will be provided on all future meeting agendas that are distributed to members and guests.**
- E. Goals Of Committee Chair – Thomas E. Cappellin
- a. **Set deadlines for achieving above goals. This will be accomplished by on-going monthly contact with committee chairs and members.**

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- b. Combine the indoor and outdoor environmental impacts committees. This merger has the concurrence of both chairpersons.
- c. **Organize and chair a symposium based on the activities and goals of this committee.**

F. Adjournment

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**TC2.8 Research Subcommittee Minutes
June 26, 2005, Denver Annual Meeting**

Attendees:

Name	Company	e-mail
Hakim Elmahdy	NRC Canada	Hakim.elamahdy@nrc.ca
Bill Coad	Coad Engineering	wjcoad@coadengineering.com
Dave Grumman	Grumman/Butkus Assoc	dlg@grummanbutkus.com
Mike McDermott	Environmental Systems Design	mmcdermott@esdesign.com
Douglas Fick	BSA Lifestructures	dfick@bsalifestructures.com
Sara Frame	etc.Group	sframe@ectgrp.com
Mark Case	etc. Group	
Tom Lawrence	Univ. of Georgia	lawrence@engr.uga.edu
Jeff Haberl	Texas A&M	jhaberl@esl.tamu.edu
Malcomb Lewis	CTG Energetics	mlewis@ctg-net.com
Vik Patnaik	Trane	vpatnaik@trane.com
Mike Sherber	Lentz Eng’g	Msherberlentzeng@cs.com
Philip Haves	LBNL	phaves@lbl.gov
George Sestak	AstroZeneca Pharm.	georgesestak@astrazeneca.com
Frank Mills	EDC	fankmills@edc.me.uk
Paul Torcellini	NREL	Paul_Torcellini@nrel.gov

New process for next year: RTAR’s due 6 weeks before RAC meetings. Will have 3 opportunities to submit in the future. Next due date is 8/1/05.

Each of the following RTAR’s were discussed and the list prioritized.

Title	TC Priority	Society Status	TC Status
Procedures for Measured Performance of Green Buildings	1	Not submitted	Jeff Haberl and Tom Lawrence to work on before Denver
Procedures for Calculating Air Pollution and CO2 Emissions Associated with Building Energy Use	2	Not submitted	Near complete: to be completed by Jeff Haberl
Development of a Matrix and Computation Methods for Assistance in Computing Net Cost Savings for the Implementation of Sustainable Building Components	4	Not submitted	George Sestak and Malcolm Lewis to flush out
Sustainability Assessment of Absorption and Vapor Compression Chillers	3	From TC8.3	Co-sponsorship requested. Should go through Materials Subcommittee (Vic Patnaik)

Comments on each RTAR.

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General comment: each RTAR should have at least 2 authors.

#1.

Identify steps on what will be done—very open ended.

Identify unique aspects of green buildings that need to be “measured.”

Are certain green things done to make us feel good? How is this addressed?

Fix title: “measuring”

#2.

What will be the granularity of the resultant data?

Interaction with e-grid information

How will the data be tabulated? Annually and by season is a suggestion.

How will peak ozone days be incorporated? Is this a consideration?

Are the databases available for tabulation of such data? What level of data is available is needed and how does this project help that?

How will the age of the raw data be accounted for?

What methodology/experimentation will be needed to accomplish the objectives?

Will the base year be 1999 to match the standard?

#4.

Will be reworked before additional review.

#3.

Clearly identify that it is about looking at two systems.

Use the work to develop a framework for evaluating systems, in general. Follow a standard format and define a methodology. The work will then use the two systems mentioned as a framework. Otherwise, opening the question of when will the next xxx systems come.

Reference standard formats for data currently available, such as ecospol and information available at www.nrel.gov/lci

Not clear what the scope of the work is.

Work should yield a procedure and produce 2 test cases.

Include operational phase energy and maintenance

Want to use this work to push the concept of LCA analysis.

Subcommittee will recommend that this project be co-sponsored after addressing some of these issues.

Actions:

1. send out comments on RTAR’s to original authors for incorporation of comments.
2. send out RTAR’s to TC2.8 for other comments.
3. when comments are addressed, use e-mail to vote on RTAR’s.