

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC.
1791 Tullie Circle, N.E./Atlanta, GA 30329
404-636-8400**

TC/TG/TRG MINUTES COVER SHEET

(Minutes of all TC/TG/TRG Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/TRG NO 02.01 DATE 06/27/06

TC/TG/TRG TITLE Physiology and Human Comfort

DATE OF MEETING Tuesday LOCATION Delta Hotel, Quebec

<i>Distribution: All Members of TC/TG/TRG plus the following:</i>	
TAC Section Head:	Gary Phettaplace
TAC Chair:	Eckard Groll
All Committee Liaisons As Shown On TC/TG/TRG Rosters:	Paul Cabot – Standards Kimball Ferguson – Special Publications Mark Hydeman – Professional Development Comm Spencer Morasch – Program Guy Perreault – Chapter Technology Transfer Jeff Spitler – RAC John Wells - Handbook
Manager Of Standards	Claire Ramspeck
Manager Of Research & Technical Services	Mike Vaughn

**ASHRAE TC 2.1 Physiology & Human Environment
Draft Meeting Minutes
Quebec Meeting
June 27th, 2006**

These draft minutes have not been approved and are not the official, approved record until approved by this committee.

ASHRAE TC ACTIVITIES SHEET**DATE: June 2006****TC NO. TC 2.1****CHAIR: Peter Simmonds****TC TITLE: Physiology & Human Environment****SECRETARY: Mark Jackson**

Name	Affiliation	E-mail	TC (31)	PMS (9)	Research (24)	Handbook (11)
Berglund, Larry	USARIEM	Larry.Berglund@na.amedd.army.mil	X		X	X
Bourgeois, Denis	NRC	denis.bourgeois@nrc-cnrc.gc.ca			X	
Buchberger, Elena	Univ. Stu. Padoua, Italy	ebuch@iuav.it	X			
Bushnell, Jim	HVACCS	jimb@abac.com	X	X	X	X
Charles, Kate	NRC	kate.charles@nrc-cnrc.gc.ca	X		X	X
Dorgan, Chuck	U of Wisconsin	cedorgan@wisc.edu	X		X	X
Fanger, Ole	Tech Univ of Denmark & Syracuse U	fanger@mek.dtu.dk	X			
Hodeling, Jaap	IDDI	j.hogeling@isso.nl	X	X	X	
Horstman, Ray	Boeing	raymond.h.horstman@boeing.com	X			
Int-Hout III, Daniel	Krueger	dint-hout@krueger-hvac.com		X		
Jackson, Mark	Lennox Intl	mark.jackson@lennoxintl.com	X	X	X	X
Kenneth Roy	Armstrong World Industries	kproy@armstrong.com	X		X	
Landsberger, Brian J.	Univ. of Nevada, Las Vegas	bjlands@me.unlv.edu	X			
Lebbin, Paul	K-State	PLEBBIN@gmail.com	X	X	X	X
Levin, Hal	Building Ecology Research Group	hal.levin@buildingecology.com	X		X	
Loveday, Dennis	Loughborough Univ, UK	d.l.loveday@lboro.ac.uk		X	X	
Massao, Fabio	Embraer	fgmassao@embraer.com.br			X	
Melikov, Arsen	DTU	melikov@mek.dtu.dk	X		X	
Musser, Amy	Vandemusser Design	amy@vandemusser.com	X		X	
Olesen, Bjarne W.	Technical University of Denmark	bwo@mek.dtu.dk	X		X	
Paliaga, Gwelen	Taylor Engineering	gpaliaga@Taylor-engineering.com	X	X	X	
Reardon, James	NRC	James.Reardon@nrc.gc.ca	X	X	X	
Reynolds, Douglas	Univ. of Nevada, Las Vegas	reynolds@clark.nscee.edu	X			
Schmidt, Dietrich	Fraunhofer iBP	dietrich.schmidt@ibp.fraunhofer.de	X			
Schrock, Derek	Halton	dschrock@haltoncompany.com	X		X	
Sekhar, Chandra	National U of Singapore	bdgscs@nus.edu.sg	X		X	
Seppanen, Olli	Helsinki Univ of Technology	olli.seppanen@hut.fi	X		X	X
Simmonds, Peter	IBE	Peter.Simmonds@ibece.com	X			X
Swierczyna, Rich	Architectural Energy	rswierczyna@archenerg.com	X			

Tan, Liangcai (Tom)	Univ. of Nevada, Las Vegas	ltan@me.unlv.edu	X			
Tiller, Dale	Univ. Nebraska	dtiller@mail.unomaha.edu	X		X	
Wang, Lily	Univ. Nebraska	LWang4@unl.edu	X		X	X
Wells, John W.	Consulting Engineering Assoc	Jwells@cea_engineers.com				X
Woods, Jim	Building Diagnostics Research Institute	jewoods@aol.com	X			
Wyon, David	DTU	wyon@mek.dtu.dk	X	X	X	
Zhang, Hui	UC Berkeley	zhanghui@berkeley.edu	X		X	X

TC 2.1 Physiology & Human Environment Main Meeting

Meeting Schedule

TC 2.1 Physiology & Human Environment (15/10) Tuesday 1:00-3:30p D/L'Accueil (4)

TC 2.1 PMS 1257 (15/10)(screen/E) Sunday 2:00-3:00p CC/205A (2)

TC 2.1 Research (15/10)(E) Sunday 3:00-5:00p CC/205A

TC 2.1 Handbook/Productivity (15/10)(Screen/E) Sunday 5:00-7:00p CC/205A

Main Committee Agenda

- Call to Order:** 1:03 p.m.
- Read Scope:** TC 2.1 is concerned with the relationship of man's living environment, as altered by air conditioning, heating, and ventilation systems to his comfort health and productivity.
- Introduction of Members, Guests, and Liaisons**

Roll Call: **Quorum:** 8/13 voting members present.

MEMBERS	PRESENT?
Peter Simmonds	Y
Eric Adams	
Gwelen Paliaga	
Larry Berglund	Y
James Bushnell	Y
Nicholas Rajkovich	
Alison Kwok	
Paul Lebbin	Y
Amy Musser	Y
James Reardon	Y
Sitaraman Chandra Sekhar	Y
Diotima Von Kempfski	INTERNATIONAL MEMBER
David Wyon	INTERNATIONAL MEMBER

4. Chicago Meeting Minutes Approval:

MOTION: approve Chicago minutes: Moved **Bushnell**, Seconded Bergland

Discussion: **none**.

Motion **Passed**, 8-0-0 CNV (Chair Not Voting).

5. Liaison Reports – No Reports

Liaison to 2.6 – Ken Roy

Liaison Environmental health – Hal Levin

- Writing front-end to handbook Chapter 8
- Writing “An Engineers Guide to Environmental Health”

TAC Chairman – Eckard Groll

TAC Section Head – Gary Phettaplace

Standards Liaison – Paul Cabot

Special Pubs Liaison – Kimball Ferguson

Professional Development Committee (EDUC) Liaison – Mark Hydeman

Program Liaison – Spencer Morasch

Chapter Technology Transfer Liaison – Guy Perreault

RAC Research Liaison – Jeffrey Spittler

Handbook Liaison – John Wells III

Staff Liaison (Standards) – Claire Ramspeck

Staff Liaison – Michael Vaughn

6. Chair’s Report – Peter Simmonds

Announcements

- Action Item Review

7. Subcommittee Reports

Programs – James Bushnell

Proposed Program for Dallas “Effects of Internal Environment on work performance in offices”, Chair Bill Fisk, (Preferred time 2nd session Tue morning)

Topic: Indoor Environment and Productivity

Chair: William Fisk, Lawrence Berkeley National Laboratory, USA

Programme and speakers:

1. Tham, Kwok Wai, National University of Singapore, Singapore
“Effects of temperature and ventilation on work performance – results from studies in field environmental chambers”
2. Wargocki, Pawel & Olesen, Bjarne, Danish Technical University, Denmark
“Effect of indoor environment on school work”
3. Tanabe, Shin-ichi, Waseda University, Japan
“Indoor environment and fatigue”
4. Seppänen, Olli, Helsinki University of Technology, Finland
“Indoor climate and productivity in life cycle cost analysis of building services”

MOTION: Approve seminar for Dallas “Effects of Internal Environment on work performance in offices” (preferred time, 2nd session Tue morning) Moved **Bushnell**, Seconded **Lebbin**

Discussion: Paper from Wargoeki & Olesen should not report on RP1257, which will be reported in transactions.

Motion **Passed**, 9-0-0 CNV (Chair Not Voting).

- Papers for Long Beach due October 1st, 2006.
- Symposium for Long Beach – Wyon – Environment in Schools; Noise
- New York – Noise Productivity (March 2007) Transaction.

Dallas (January 2007)

Research – James Reardon (substituting for Eric Adams)

1330-URP	2.1	RECOMMEND FUND OR NOT BY JAN. 2006	1330-URP	RECEIVED DEC. 2004, P.I. CAN'T START TIL 2006
1128-RP	2.1	PROVIDE NEW ESTIMATED END DATE FOR	1128-RP	CURRENT CONTRACT END DATE IS FEBRUARY 2005
1160-RP	2.1	TC APPROVE FINAL REPORT	1160-RP	RECEIVED JAN. 2003
1257-RP	2.1	PROVIDE NEW EST. END DATE OR FINAL RPT	1257-RP	CURRENT CONTRACT END DATE IS DECEMBER 2005
1269-RP	2.1	PROJECT UNDER CONTRACT AS OF 10/05	1269-RP	P.I. MUST SUBMIT PROGRESS REPORTS TO MORTS

1330 URP was withdrawn and not considered.

Review Projects:

RP-1160 “Limiting Criteria for Human Exposure to Low Humidity”-David Wyon

- Final report submitted to ASHRAE. The final report has been approved by a previous TC meeting with the condition that the contractor must submit their data to ASHRAE. Please let the chairman know when the data has been submitted.

MOTION: Proposed that TC-2.1 recommend approval for final report for RP-1160. Moved **Reardon**, Seconded **Sekhar**.

Discussion: **none**.

Motion: **Passed** 7-0-1

RP-1128 “Combined Effect of the Thermal Environment and Acoustics on Human Comfort in HVAC Controlled Buildings,” Dale Tiller.

Contractor is requesting a second no cost extension for 6 additional months.

MOTION: no cost 6-month extension for RP-1128. Moved **Simmonds**, Seconded **Lebbin**.

Discussion: **none**.

Motion **Passed**, 7-0-1

RP-1257 “Indoor Environmental Effects on the Performance of School Work by Children

- 2 papers accepted for publication in ASHRAE transactions, a 3rd paper forthcoming. To vote on acceptance in Dallas.
- Contractor is requesting a no cost extension

MOTION: no cost 6-month extension for RP-1128. Moved Adams, Seconded Lebbin.

Discussion: Final report in Dallas

Motion Passed, 7-0-0

RP- 1269 Occupant responses and energy use in buildings with moderately drifting temperatures. DTU – Bjarne Olesen.

- Contract signed in October. Update given at research subcommittee meeting.

Work statements:

Work statement “ASHRAE Standard 55 Users manual” Peter Simmonds

MOTION: To approve the work statement. Moved Adams, Seconded Levin.

Discussion: none.

Motion Passed, 7-0-0

This workstatement was approved in June 2005

RP-1322 (joint with TC-2.6) Productivity and perception based evaluation of noise criteria.

RP-1332 – Revision to ASHRAE Thermal Comfort Tool to maintain consistency with Standard 55-2004

- Request for source code – Paul Lebbin

RTARs:

RTAR – Thermal Comfort in Commercial Kitchens – Simmonds, Reardon

1445 -RTAR: “Energy Conservation, Air-conditioning and productivity in hot-humid tropical regions”. David Wyon.

MOTION: to approve the RTAR. Moved Adams, Seconded Bushnell

Discussion: none.

Motion Passed, 7-0-0

This RTAR was submitted to ASHRAE on 11 March 2006.

Request for clarification on Bidders writing (WS) - Jeff Spittler

Clarification of present state of bidders and non-bidders

1. Work statement must have at least 3 authors
2. At least 3 responsible bidders (score higher than 70)
3. Work statement author cannot win based on specialized equipment
4. If work statement author, must bid at least 90% of bid amount recommendation

Potential RTAR - Discussion on impact of IAQ on quality of sleep – Wyon, Muller

- 1st submittal was returned with request for changes
- If not ASHRAE who?
- Amy Muller will work with David Wyon on this
- COS – Commercial Off the Shelf equipment used for analysis (actimeter)

Hal Levin – Terry Townsend memo

Long-range plan -

Standards – Wayne Dunn (Peter Simmonds) SSPC 55

- Continuous maintenance to be worked on. (Proposal for 3 classes: compliance, draft/turbulence, mandatory)
- Published 2004
- Cooling effect of velocity
- Forthcoming recommendation to scrap the graphics and use thermal comfort tool.

Honors and Awards Peter Simmonds

- **The Ralph J Nevins award was discussed in an executive session.**
- George B Hightower Award (excellence in service to a TC)
 - Jim Bushnell & Larry Berglund suggested for award
 - Simmonds will send information around on the award

Handbook – Larry Berglund

Larry would like some help with the handbook as he has been carrying the torch long enough.

- Deadline for changes – February 7, 2007
- Simmonds will circulate by e-mail with a ballot vote – Sept 10th
- Discussion that secondary factors be considered, i.e.: age, disability, body surface area
- Bibliography needs updated
- Use of low humidity data developed by this committee to be considered – Wyon to make input
- “Figure 6” – Chuck Dorgan
- Look at Adaptive thermal control – look at 4 and 7 day averages – (European work)
- Productivity from REHVA (new publication in June '06)

Productivity – Chuck Dorgan

- No report – included in handbook discussion.

Webmaster – Nick Rajkovich & Paul Lebbin

- Rajkovich not present – Simmonds to contact
- Paul Lebbin & Amy Musser volunteered to work on the site.
- Possibility of user’s group for dialog discussed – categorize by thread

Old Business

none

New Business

- Membership
 - Rolling off at end of 2006 Annual Meeting:
 - Eric Adams
 - Allison Kwok
 - Larry Berglund

- Coming on:
 - Lily Wang
 - Ray Horstman
 - Jaap Hodeling

Next Meeting: Dallas, Jan '07 Dallas

Adjournment: 3:08 PM Motion – Simmonds, 2nd Reardon

PPT presentation on ASHRAE Thermal Comfort Tool Version 2.0 Beta 2 Presentation , Fue C. Vue, Boeing – presented by Raymond Horstman



"ASHRAE Thermal
Comfort Presentation