



Shaping Tomorrow's
Built Environment Today

MINUTES

**RESEARCH ADMINISTRATION COMMITTEE MEETING
MARRIOTT
INDIANAPOLIS, INDIANA**

JUNE 22ND & JUNE 26TH, 2024

Note: These draft minutes have not been approved and not the official, approved record until approved by the Research Administration Committee.

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JUNE 22ND & JUNE 26TH, 2024**

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**PRINCIPAL MOTIONS
RESEARCH ADMINISTRATION COMMITTEE
JUNE 22ND & JUNE 26TH, 2024**

NO.	PAGE	MOTION
1	1	Minutes for the RAC 2023 spring meetings be approved as drafted.
2	3	1962-RTAR , The Impact of Facade Penetrations (e.g. ERV / HRV, exhausts) on Residential Building Pressurization and Ventilation Air Distribution, sponsored by - TC 4.03, Ventilation and Filtrations be returned.
3	3	1973-RTAR , Improving Zone Air Distribution Effectiveness (Ez Factor) Accuracy for Heating with Ceiling Supply and Return, sponsored by - TC 4.03, Ventilation and Filtrations be accepted with comments.
4	3	1974-RTAR , The Effect of Tap Shape on Air Device Performance for Exposed Duct-Mounted Diffusers, sponsored by - TC 5.02, Duct Designs be <u>accepted with comments</u> .
5	3	0003-WSP , <i>Design Guide for Radiant Heating and Cooling Systems</i> , sponsored by TC 6.05 Radiant Heating and Cooling, be <u>conditionally accepted</u> .
6	3	1856-WS , <i>Moisture Tolerance and Materials Compatibility in CO2 Refrigeration systems</i> , sponsored by TC 3.02, Refrigerant System Chemistry and Contaminant Control; co-sponsored by TC 10.6, Transport Refrigeration be <u>returned</u> .
7	3	1895-WS , <i>Effect of penetration through particle pre-filters on the performance of gas filters - TC 2.03 (Gaseous Air Contaminants and Gas Contaminant Removal Equipment)</i> ; co-sponsored by TC 2.04 Particulate Air Contaminants and Particulate Contaminant Removal Equipment, GPC 35 Method for Determining the Energy Consumption Caused by Air-Cleaning and Filtration Devices be <u>conditionally accepted</u> .
8	4	1925-WS , <i>Development of view clarity metrics for fenestration systems</i> , sponsored by TC 4.5 Fenestration, be <u>conditionally accepted</u>
9	4	1927-WS , Building Operations and Equipment Key Performance Indicators, sponsored by TC 1.04 Control Theory and Application; co-sponsored TC 7.05 Smart Building Systems be returned.
10	4	1937-WS , <i>Capillary Tube and Short Tube Orifice Performance for Lower GWP Refrigerants</i> , sponsored by TC 8.08 Refrigerant System Controls and Accessories; co-sponsored by TC 1.03 (Heat Transfer and Fluid Flow, TC 8.11, (Unitary and Room Air Conditioners and Heat Pumps, TC 10.06, Transport Refrigeration) and TC 10.07 Commercial Food and Beverage Refrigeration Equipment be <u>returned</u> .
11	4	1950-WS , <i>Effect of residential exhaust terminations on jet mechanics and resulting required intake separation</i> , sponsored by TC 3.03 Ventilation of Health Care Facilities; co-sponsored by SSPC 62.1 be <u>conditionally accepted</u>
12	4	1961-WS , <i>Updating enclosed commercial and multi-family parking garage ventilation for current populations of vehicles</i> , sponsored by TC 4.03 Ventilation and Infiltration be <u>returned</u> .
13	4	Dr. Riley Barta of Purdue University be the recipient of the 2024-2025 Innovative Research Award.

**RECURRING ACTION ITEMS
(EACH MEETING)**

Responsibility

Summary of Action

Chair	Report to Technology Council on RAC's MBO Status.
Research Liaisons	Remind all TC chairs and research subcommittee chairs in section that a draft of all Work Statement and RTARs, and all later versions should be sent to their Research Liaison for review before information is passed on to the Manager of Research.
RPS (Primary) RAS (Secondary)	Review RTARs
RAS (Primary) RPS (Secondary)	Review Work Statements
RAS (Primary) RPS (Secondary)	Review TRPs and URPs
RPS (Primary) upon (Secondary)	Review and revise the Society's Research Implementation Plan based accepted RTARs.
Subcommittee Chairs	Report Status of assigned MBOs.
Staff	Distribute copies of Technology Council's Action Items and Motions affecting RAC.
BOD ExO	Report to the RAC Chair BOD's Actions and Motions affecting RAC.
Staff	Forward URPs to RAS Chair to help identify a champion for the URP on RAC based on members background and experience. The RAC URP Champion will either help select a cognizant TC to review the URP or return the URP with a recommendation that it not be reviewed further as a possible ASHRAE research project.

RECURRING ACTION ITEMS
(FALL MEETING)

Responsibility

Summary of Action

RAS Initial Plan for Research Breakfast Workshop for Winter Meeting

RLs Review "Service to ASHRAE Research Award" nominations submitted by TC chairs and select the best nomination for RAC consideration.

MORTS Prepare semi-annual report to RAC by December 15.

RECURRING ACTION ITEMS
(WINTER MEETING)

Responsibility

Summary of Action

RPS Review New Investigator Award Nominations

RPS Review Homer Addams Award Nominations

RPS Review Innovative Research Grant (IRG) Pre-Proposals

MORTS Prepare semi-annual report to RAC by May 15.

RECURRING ACTION ITEMS
(SPRING MEETING)

Responsibility

Summary of Action

RPS Plan workshop for new RAC members at the Annual meeting.

RPS Review Grant-In-Aid Applications

RECURRING ACTION ITEMS
(ANNUAL MEETING)

Responsibility

Summary of Action

Chair Invite new RAC members to meeting and any training sessions at meeting.

Incoming Chair Finalize MBOs and roster assignments. Set date for fall meeting.

RAS Review Invited Innovative Research Grant (IRG) Full-Proposals

LIST OF ATTACHMENTS

None



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MINUTES

RESEARCH ADMINISTRATION COMMITTEE JUNE 22ND & JUNE 26TH, 2024

MEMBERS PRESENT:

William Murphy, *Chair*
Natascha Milesi-Ferretti, *Vice-chair*
Jin Wen, *Chair RPS*
Stefan Elbel, *Chair RAS*
Srinivas Katipamula, *RL Section 1.0*
Chris Gray, *RL Section 2.0*
Zheng O'Neill, *RL Section 3.0*
Douglas Scott, *RL Section 5.0*
James Bogart, *RL Section 7.0*
Carl Huber, *RL Section 8.0*
Roland Charneau, *RL Section 9.0*
WenBin Ng, *RL Section 10.0*
Ashish Rakheja, *Coordinating Officer*
Hywel Davies, *Consultant*
Xudong Wang, *Consultant*

GUESTS:

Allen Kirkwood, *Incoming RL*
Conor Murray, *Incoming RL*
Susanna Hanson, *Incoming BOD Ex-Officio*
Wade Conlan – *Incoming Coordinating Officer*

ASHRAE STAFF

Steve Hammerling, *MORTS*
Donna Daniel, *AMORTS*

VIRTUAL MEMBERS

Dennis Landsberg, *RL Section 4.0*
Matthew Mullen, *RL Section 6.0*

ABSENT MEMBERS

Drury Crawley, *BOD-Ex-Officio*

1, 2 & 3. CALL TO ORDER, ASHRAE VALUE STATEMENT, ROLL CALL & INTRODUCTIONS

Chair Murphy called the meeting of the committee to order Saturday, June 22, 2024, at 8:00 a.m. and recessed at 3:00 p.m. The meeting was reconvened on Wednesday, June 26, 2024, at 7:00 a.m. and adjourned at 10:00 a.m.

ASHRAE VALUE STATEMENT

In ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, inclusiveness and respect for others, which exemplify our core values of excellence, commitment, integrity, collaboration, volunteerism and diversity, and shall avoid all real or perceived conflicts of interest. Our culture is one of inclusiveness, acknowledging the inherent value and dignity of each individual. We celebrate diverse and inclusive communities, understanding that doing so fuels better, more creative and more thoughtful ideas, solutions and strategies for the Society and the communities our Society serves. We respect and welcome all.

Code of Ethics - <https://www.ashrae.org/about/governance/code-of-ethics>

Core Values - <https://www.ashrae.org/about/ashrae-s-core-values>

Diversity Statement - <https://www.ashrae.org/about/diversity-equity-and-inclusion-dei>

4. REVIEW AGENDA

No changes

5. APPROVAL OF MINUTES –SPRING 2024 MEETING

It was moved and seconded that,

- (1) the draft minutes of the RAC 2024 spring meeting be approved as drafted.

MOTION #1 PASSED: 12-0-0-1 (13) CNV

6. CHAIR'S REPORT

a) Disposition of Motions from Last Meeting or Letter Ballots – None

RAC awarded the following two research projects at their 2024 spring meeting:

1. **TRP-1889**, Graywater use in healthcare facilities- determining risk and appropriate design response; Responsible Committee: TC 9.06 (Health Care Facilities); Co-Sponsors: None; Estimated Duration: 12 months; Estimated Cost to ASHRAE: \$50,000.
 2. **TRP-1926** - Update of U-factors, Solar Heat Gain Coefficients and Visible Transmittances of Standard Fenestration Units made from Representative Fenestration Frame and Glazing Systems in the Fenestration Chapter of the Handbook of Fundamentals; Responsible Committee: TC 4.05 (Fenestration); Co-Sponsors: None); Estimated Duration: 12 months; Estimated Cost to ASHRAE: \$75,800.
- b) New & On-going Action Items Assigned by Tech. Council
- a) Better support Research Promotion in raising funds for ASHRAE research program.
 - b) MBO Status Report – Review with action items.
 - c) Research Promotions – asked that research projects abstracts be provided.
 - d) Who appoints members to the Research Advisory Panel

7. ASHRAE LEADERSHIP PRESENTATION

Susanna Hanson, BOD Ex-Officio gave a brief presentation on the Strategic Plan that will roll out early next year, mind mapping exercise and ways to grow ASHRAE membership. The presentation is available on basecamp.

Ashish Rakheja, Coordinating Officer gave a brief presentation.

8. DISCUSSION ITEMS

Strategic Plan

9. ACTION ITEMS & MBO REVIEW

- a) Recurring, Annual, Winter, and Fall
- b) 24-25 MBOs

10. COMMITTEE GOVERNING DOCUMENT DISCUSSION

- a) ROB
- b) MOP
- c) Reference
- d) Research Manual
- e) Website Changes
- f) Other Items

11. RTAR REVIEW

RAC reviewed three RTARs for this meeting. Two were accepted with comments and one was returned with comments.

It is moved and seconded that,

- (2) **1962-RTAR**, The Impact of Facade Penetrations (e.g. ERV / HRV, exhausts) on Residential Building Pressurization and Ventilation Air Distribution, sponsored by - TC 4.03, Ventilation and Filtrations be returned.

MOTION PASSED RAS: 5-0-0-1 (6) CNV

It is moved and seconded that,

- (3) **1973-RTAR**, Improving Zone Air Distribution Effectiveness (Ez Factor) Accuracy for Heating with Ceiling Supply and Return, sponsored by - TC 4.03, Ventilation and Filtrations be accepted with comments.

MOTION PASSED RAC: 13-0-0-1 (14) CNV

It is moved and seconded that,

- (4) **1974-RTAR**, The Effect of Tap Shape on Air Device Performance for Exposed Duct-Mounted Diffusers, sponsored by - TC 5.02, Duct Designs be accepted with comments.

MOTION PASSED RAC: 12-1-0-1 (14) CNV

12. WORK STATEMENT REVIEW

RAC reviewed a total of seven new and revised work statements and one work statement publication that were submitted to RAC. Four were returned with comments and four were conditionally accepted.

It is moved and seconded that,

- (5) **0003-WSP**, *Design Guide for Radiant Heating and Cooling Systems*, sponsored by TC 6.05 Radiant Heating and Cooling, be conditionally accepted.

MOTION PASSED RAC: 13-0-0-1 (14) CNV

It is moved and seconded that,

- (6) **1856-WS**, *Moisture Tolerance and Materials Compatibility in CO2 Refrigeration systems*, sponsored by TC 3.02, Refrigerant System Chemistry and Contaminant Control; co-sponsored by TC 10.6, Transport Refrigeration be returned.

MOTION PASSED RAS: 6-0-0-0 (6) CV

It is moved and seconded that,

- (7) **1895-WS**, *Effect of penetration through particle pre-filters on the performance of gas filters* - TC 2.03 (Gaseous Air Contaminants and Gas Contaminant Removal Equipment); co-sponsored by TC 2.04 Particulate Air Contaminants and Particulate Contaminant Removal Equipment, GPC 35 Method for Determining the Energy Consumption Caused by Air-Cleaning and Filtration Devices be conditionally accepted.

MOTION PASSED RAC: 12-1-0-1 (14) CNV

- (8) **1925-WS**, *Development of view clarity metrics for fenestration systems*, sponsored by TC 4.5 Fenestration, be conditionally accepted.

MOTION PASSED RAC: 13-0-0-1 (14) CNV

It is moved and seconded that,

- (9) **1927-WS**, *Building Operations and Equipment Key Performance Indicators*, sponsored by TC 1.04 Control Theory and Application; co-sponsored TC 7.05 Smart Building Systems be returned.

MOTION PASSED RAS: 5-1-0 (6) CV

It is moved and seconded that,

- (10) **1937-WS**, *Capillary Tube and Short Tube Orifice Performance for Lower GWP Refrigerants*, sponsored by TC 8.08 Refrigerant System Controls and Accessories; co-sponsored by TC 1.03 (Heat Transfer and Fluid Flow, TC 8.11, (Unitary and Room Air Conditioners and Heat Pumps, TC 10.06, Transport Refrigeration) and TC 10.07 Commercial Food and Beverage Refrigeration Equipment be returned.

MOTION PASSED RAS: 6-0-0 (6) CV

It is moved and seconded that,

- (11) **1950-WS**, *Effect of residential exhaust terminations on jet mechanics and resulting required intake separation*, sponsored by TC 3.03 Ventilation of Health Care Facilities; co-sponsored by SSPC 62.1 be conditionally accepted.

MOTION PASSED RAC: 12-1-0-1 (14) CNV

It is moved and seconded that,

- (12) **1961-WS**, *Updating enclosed commercial and multi-family parking garage ventilation for current populations of vehicles*, sponsored by TC 4.03 Ventilation and Infiltration be returned.

MOTION PASSED RAS: 6-0-0 (6) CV

13. INNOVATIVE RESEARCH GRANT

RAC reviewed two IRG full proposals.

- a) IRG-002 (Active External Zeotropic Mixture Control via Intermolecular Forces) - Barta
- b) IRG-006 (Using Surface Wettability to Deploy Frozen Water Droplet Vortex Generators on Fins to Enhance Air-Side Heat Transfer Performance during Frosting) - Sommers

It is moved and seconded that,

- (13) Dr. Riley Barta of Purdue University be the recipient of the 2024-2025 Innovative Research Award.

MOTION PASSED: 13-0-0-1 (13) CNV

14. AWARDS

None

15. CARRY-OVER TRPS, FUNDED EXTENSIONS & GRANT REQUEST

None

16. RESEARCH SUBCOMMITTEE CHAIR'S BREAKFAST

Presentation available via basecamp

17. TRPS TO POTENTIALLY BID FALL 2024

- **1566-TRP-R**, *Equations to estimate evaporation rates from heated water pools in indoor recreational aquatic facilities*; Responsible Committee: **TC 8.10** (Mechanical Dehumidification Equipment and Heat Pipes); Co-Sponsors: TC 9.8 (Large Building Air-Conditioning Applications); Co-funding: None; Estimated Duration: 24 months; Estimated Cost to ASHRAE: \$150,000; Status: **Ready**.
- **1873-TRP-R**, *Upper-Air Ultraviolet Germicidal Irradiation (UVGI) for Tall Spaces (Rebid)*; Responsible Committee: **TC 2.09** (Ultraviolet Air and Surface Treatment); Co-Sponsors: TC 9.6 (Healthcare Facilities); Co-funding: None; Estimated Duration: 30 months; Estimated Cost to ASHRAE: \$190,000; Status: **Rebid with revised WS and expanded recommended bidders list**.
- **1909-TRP**, *In-Tube Condensing Flue Gas Heat Transfer and Pressure Drop with Enhancements for Residential Furnaces*; Responsible Committee: **TC 1.03** (Heat Transfer and Fluid Flow); Co-Sponsors: TC 6.03 (Residential and Light Commercial Forced Air Heating and Cooling Systems); Co-funding: None; Estimated Duration: 30 months; Estimated Cost to ASHRAE: \$245,500; Status: **Ready**.
- **1910-TRP-C**, *Evaluation of Standard 103 Transient Components and Thermostat Cycle Times on the Resulting AFUE (rebid)*; Responsible Committee: **TC 6.03**, (Residential and Light Commercial Forced Air Heating and Cooling Systems); Co-Sponsors: None; Co-funding: None; Estimated Duration: 36 months; Estimated Cost to ASHRAE: \$235,000; Status: **Ready**.
- **1913-TRP-C**, *Study of the Corrosion Impact on Information Technology Equipment in Data Centers Located in Coastal Regions with High Sea Salt Concentration*; Responsible Committee: **TC 9.9** (Mission Critical Facilities, Data Centers, Technology Spaces and Electronic Equipment); Co-Sponsors: TC 2.03 (Gaseous Air Contaminants and Gas Contaminant Removal Equipment), TC 2.04 (Particulate Air Contaminates and Particulate Contaminant Removal Equipment); Estimated Duration: 24 months; Estimated Cost to ASHRAE: \$280,000; Status: **Ready**.
- **1915-TRP-C**, *Refrigerated Facilities Doorway Infiltration Air Energy Reduction*; Responsible Committee: **TC 10.02** (Refrigeration Applications); Co-Sponsors: None; Co-funding: None; Estimated Duration: 22 months; Estimated Cost to ASHRAE: \$300,000; Status: **Ready**.
- **1918-TRP-R** (Re-bid), *The Verification of openings, the limitations of openings, air distribution and humidity conditions in Naturally Ventilated spaces to compliment Section 6.4 of ASHRAE Standard 62.1*; Responsible Committee: SSPC 62.1, (Ventilation and Acceptable Indoor Air Quality); Co-Sponsors: None; Co-funding: None; Estimated Duration: 10 months; Estimated Cost to ASHRAE: \$104,940; Status: **Rebid with revised WS and expanded recommended bidders list**.
- **1947-TRP**, *Climate change driven extreme temperature effects for efficiency and resilience map of heat pump technology*; Responsible Committee: TC 2.05 (Global Climate Change); Co-Sponsors: TC 4.2 Climatic Information; TC 2.8 Building Environmental Impacts and Sustainability Co-funding: None; Estimated Duration: 36 months; Estimated Cost to ASHRAE: \$265,000; Status: **Ready**.
- **1964-TRP-C**, *Optimizing Heating System Performance in Warmup and Setback Modes*; Responsible Committee: **TC 1.04** (Control Theory and Application); Co-Sponsors: TC 7.05 (Smart Building Systems) None; Co-funding: None; Estimated Duration: 24 months; Estimated Cost to ASHRAE: \$280,000; Status: **Ready**.

18. CONSULTANTS REPORTS

AHRI – Xudong Wang gave brief report
CIBSE – Hywel Davies gave brief report

19. EXECUTIVE SESSION – SEPARATE AGENDA

20. RESEARCH LIAISON REPORTS

RL reports are available on basecamp

21. UNFINISHED BUSINESS

None

22. NEW BUSINESS

- RTAR and work statement cover sheets must be complete in all sections before submitting it to research liaison for approval.
- RLs must approve RTAR and work statements before submitting them to MORTS.

23. REVIEW NEW ACTION ITEMS

None

ADJOURNED

The meeting of the Research Administration Committee was adjourned at 10:00:00 a.m., Wednesday, June 26, 2024.
