

[Related Commercial Resources](#)

CONTRIBUTORS

In addition to the Technical Committees, the following individuals contributed significantly to this volume. The appropriate chapter numbers follow each contributor's name.

Robert Berry, MSME (1)

Daikin Comfort Technologies Mfg. L.P.

Kevin Mercer (1)

Rheem Manufacturing Co

Frank Mills (2, 3, 5, 7, 24)

Frank Mills Consulting

Luke Leung, PE, LEED AP (4)

SOM

Duncan Phillips, Ph.D., P.Eng. (4, 58)

Rowan Williams Davies & Irwin

Dennis J. Wessel, PE, FASHRAE, LEED AP (4)

Kasteney A. Knutson

Anthony York (5)

Design Basis Engineering, LLC

Ralph Kittler (6)

Seresco, Inc

Itzhak Maor (8, 66)

Johnson Controls

Steven C. Snyder (8)

Johnson Controls

George Augustini, PE, CEM, HFDP (9)

Mazzetti

Amit Bhansali, PE, PMP, BEMP, CEM (9)

WSP USA

Alejandro Falcon, EurIng, C.Eng., HFDP, MCISBE (9)

WME

Heather Burpee, EDAC (9)

Integrated Design Lab

Travis English, PE, CEP, LEED AP (9)

Kaiser Permanente

Steven Friedman, PE (9)

Memorial Sloan Kettering Cancer Center

Eric Granzow, PE, FPE, CEM, HFDP (9)

Specialized Engineering Solutions

Daniel Koenigshofer, PE (9)

DRK Consulting

Viken Koukounian, Ph.D., P.Eng. (9)

KR Moeller Associates, Ltd.

Josephine Lau, Ph.D. (9)

University of Nebraska–Lincoln

Pavel Likhonin, PE, CEM, HFDP (9)

IPS-Integrated Project Services, LLC

Kenneth Mead, Ph.D., PE (9)

CDC/NIOSH

Michael Meteyer, PE (9)

ERDMAN

Ehsan Mousavi, Ph.D. (9)

Clemson University

Paul Ninomura, PE (9)

Indian Health Service

Erick Phelps, PE (9)

Burns Engineering

Gina Semerad, HFDP (9)

Jaros, Baum & Bolles

Paul Supan, DDS (9)

American Dental Association

E. Douglas Fitts (10, 23, 56)**Gursaran D. Mathur (11, 12, 53)**

Highly Marelli North America

Judith Anderson (13)

Association of Flight Attendants

Richard Fox (13)

Aircraft Environment Solutions, Inc.

Stephen Trent (13)

Boeing Commercial Airplanes

Ken Warren (13)

Port of Seattle

Ravisankar Ganta (15)

WSP

Andrew Louie (16)

Jacobs Engineering

Robert Z. Smith (16)

Innerquest LLC

Albert Hartman (17)

HED

Anthony Arens (18)

GM

Eileen Jensen (18, 28)**Yusuf Bhetasi (19)**

Encon Expertise Pvt. Ltd.

James F. Ridenhour (19)**Wei Sun (19)**

Engsysco Inc.

Gerardo Alfonso, Eng. (20, 57)

Ingeal S.A.

Don Beaty, PE, FASHRAE (20)

DLB Associates

Thomas A. Davidson, PE, Ph.D., BEMP (20)

DLB Associates

Dustin W. Demetriou, Ph.D. (20)

IBM Corporation

Daniel N. Donahoe, MBA, Ph.D., PE (20)

1000 Kilometers LLC

Mark Fisher (20)

Munters Corporation

John Groenewold, PE, ATD, MBA (20)

Vantage Data Centers

John Gross, PE, ATD (20)

J.M. Gross Engineering, LLC

Ali Heydari (20)

Nvidia Corp.

Phil Isaak (20)

Isaak Technologies, Inc.

Dave Kelley (20)

VERTIV

Robert E. McFarlane (20)

Shen Milson & Wilke, LLC

Christopher O. Muller (20)

Muller Consulting

Budy Notohardjono, Ph.D. (20)

IBM Corp.

Shlomo Novotny (20)

Chilldyne, Inc.

Gokhan Pekcan, Ph.D. (20)

University of Nevada, Reno

Morgan Hayes (25)

University of Kentucky

Nadia Sabeh (25)

Dr. Greenhouse

Scott Thompson (27)

Airtherm Corp.

Thomas B. Axley (28)

Erich Binder (28)

Erich Binder Consulting, Ltd.

Deep Ghosh (28, 29)

Southern Nuclear

John B. Riley (28)

Scott MacMurray (29)

Savannah River National Laboratory

Jason Brown (34)

Melink Corp.

Frank Kohout (34)

Cyclone Energy Group

Jimmy Sandusky (34)

Halton Company

Michel Bernier, Ph.D., PE (35)

Polytechnique Montr éal

Steve Kavanaugh, Ph.D. M.Div. (35)

Energy Information Services

Theodore B. Reinhart, PE (35)

Energy-PE, LLC

Harrison Skye (35)

National Institute of Standards and Technology

Véronique Delisle, Ph.D. (36)

Natural Resources Canada

Birol Kilgis, Ph.D. (36)

OSTIM Technology University

Marija S. Todorovic, Ph.D. (36)

University of Belgrade

John Constantinide, PE, MS, CEM, CFPS, LEED AP BD+C (37, 42)

US Space Force

Nicholas Long (37, 42)

National Renewable Energy Laboratory

Michael MacDonald (37, 42)

Energy Performance Measurement Institute

Terry Sharp, PE (37)

Oak Ridge National Laboratory

Orvil Dillenbeck, B.Sci., P.Eng. (38, 40)

Canadian Nuclear Laboratories

Behrad Faramoushjani (38, 40)

Mall of Iran

Sonya M. Pouncy (38)

Building Vitals

Christine Gibney (40)

DC DOEE

Robert Hitchcock (40)

Hitchcock Consulting

Mike Galler (41)

National Institute of Standards and Technology

Zheng O'Neill (43)

Texas A&M University

Jin Wen (43)

Drexel University

Charlie C. Shieh, PE, Ph.D. (44)

CYS Consulting, LLC

Carolyn (Gemma) Kerr, Ph.D. (47, 66)**Chang-Seo Lee (47)****Caitlin D. Naske (47)**

Dynamic Air Quality Solutions

Terry Schroeder, PE, HBDP, LEED AP BD+C (48)

Whitman, Requardt & Associates

Jerry Lilly (49)

JGL Acoustics

Karl Peterman (49, 56)

Vibro-Acoustics by Swegon

Steve Wise (49)

Wise Associates

Tyler Anderson (50)

Chem-Aqua, Inc.

Jeff Boldt, PE, FASHRAE, LEED AP, HBDP (50)

IMEG Corp.

Joshua Ince, P.Eng, CEM (50)

DuBois Chemicals, Inc.

Clive Ling, LEED GA (50)

NALCO Water

Frank Morrison (50)

Baltimore Air Coil Company

Alain Trahan (50)

H2O Biotech, Inc.

Carl Hiller, Ph.D., PE (51)

Applied Energy Technology Co.

Paul Kinter (51)

Ecotope

Mike Scofield (53)

Conservation Mechanical Systems

John H. Klote (54)

SmokeControlExpert.com

Paul Turnbull (54)

Siemens Building Technologies, Inc.

James A. Carlson (56)

Seismic Source International

Jim Tauby (56)

Mason Industries

Frank Pucciano, CEM (57)

Pucciano Energy Consultants

Steven Rosenstock, PE (57)

Edison Electric Institute

Brandon Bates (58)

Energistics Laboratory

Frank Cuaderno (58)

Mars Air Systems, LLC

Kevin Gebke (58)

DuctSox Corp.

Chad Huggins (58)

Ryan Johnson (58)

Price Industries, Inc.

David Johnson (58)

Berner International, LLC

Kenneth Jay Loudermilk (58)

Titus Products

Robert J. Persechini (58)

NVS

Curtis A. Peters (58)

Air System Components

Krishnan Viswanath (58)

Dynacraft Air Controls & Air Technology & Systems

Craig Wray, P.Eng. (58)

Peng Solomon Yin, Ph.D. (58)

University of Louisiana

Randy Zimmerman (58)

Titus

Jim VanGilder (59)

Schneider Electric

Liangzhu “Leon” Wang, Ph.D. (59)

Concordia University

David Evers, PE, CEM, LEED-AP (61)

Dewberry Engineers, Inc.

Howard McKew (61)

BuildingSmartSoftware, LLC

Katja Auer (62)

American Ultraviolet

Aaron Engle (62)

Fresh-Aire

Wladyslaw Kowalski, Ph.D. (62)

Sanuvox

Ashish Mathur (62)

UVDI

Kathleen Owen, M.S. (62, 66)

Owen Air Filtration Consulting

Dean Saputa (62)

UV Resources

Alireza Behfar, Ph.D. (63)

Carrier Corporation

Guanhing Lin, Ph.D. (63)

Tsinghua Shenzhen International Graduate Student School

Greg Pavlak, Ph.D. (63)

The Pennsylvania State University

Devan Tracy, PE (63)

Lockheed Martin

Xiaohui Zhou, Ph.D. (63)

Slipstream

Ed Light, CIH (64)

Building Dynamics, LLC

Simon Pallin, Ph.D., CEM (64)

Frontier Energy

Bing Dong, Ph.D. (65)

Syracuse University

Tianzhen Hong, Ph.D., PE (65)

Lawrence Berkeley National Laboratory

Jared Langevin, Ph.D. (65)

Lawrence Berkeley National Laboratory

Na Luo, Ph.D. (65)

Lawrence Berkeley National Laboratory

Jeetika Malik, Ph.D. (65)

Lawrence Berkeley National Laboratory

