CONTENTS

| • | ; Officers, and Conferences and Expositions Committee Society Address, Thomas H. Phoenix, 2014–2015 ASHRAE President | |
|-----------|---|-----|
| | dress, T. David Underwood, 2015–2016 ASHRAE President | |
| • | ogram | |
| | | |
| | TECHNICAL PAPERS | |
| AT-15-001 | 2014 Update to Climatic Data for Energy Standards Criteria Development: Part 1—CDD and HDD Baseline Values | |
| | John Hogan, PE, Member ASHRAE | 3 |
| AT-15-002 | 2014 Update to Climatic Data for Energy Standards Criteria Development: Part 2—Representative Weather Files John Hogan, PE, Member ASHRAE | 20 |
| | | 20 |
| AT-15-003 | A New Clustering Method to Identify Outliers and Diurnal Schedules from Building Energy Interval Data Saurabh Jalori, Affiliate Member ASHRAE; T. Agami Reddy, PhD, PE, Fellow ASHRAE | 33 |
| AT 45 004 | | |
| AT-15-004 | A History of the Changing Concepts on Health-Care Ventilation Travis R. English, PE, Member ASHRAE; | |
| | Daniel Koenigshofer, PE, Member ASHRAE, HFDP | 45 |
| AT-15-005 | Plug and Process Loads in Medical Office Buildings | |
| | Ross Ruecker, Associate Member ASHRAE; Arash Guity, PE, Associate Member ASHRAI Jun Timbang, PE | |
| AT-15-006 | Energy Analysis of Cleanrooms in an Academic Research Building | |
| | Jared M. Levy, Student Member ASHRAE; Michael M. Ohadi, PhD, Fellow ASHRAE; Kyosung Choo, PhD | 71 |
| AT-15-007 | Energy Audit and Base Case Simulation of Ryerson University Buildings | |
| | Alan S. Fung, PhD, PEng, Member ASHRAE; Hessam Taherian, PhD, Member ASHRAE; Mirza Hossain; Md. Ziaur Rahman; Mohamed M. Selim | 84 |
| AT-15-008 | Design Criteria and Thermal Performance of a Building-Integrated Ventilated Concrete Slab | |
| | Navid Ekrami, Student Member ASHRAE; Raghad S. Kamel, Student Member ASHRAE; Alan S. Fung, PhD, PE, Member ASHRAE | 99 |
| AT-15-009 | Business and Technical Concepts for Deep Energy Retrofit of Public Buildings | |
| | Alexander Zhivov, PhD, Member ASHRAE; Ruediger Lohse, Member ASHRAE; John Shonder, Member ASHRAE; Cyrus Nasseri, Member ASHRAE; Heimo Staller; | |
| | Ove Moerck, PhD; Marko Nokkala | 111 |
| AT-15-010 | Environmental Degradation Effect on Airtightness of Pressure-Sensitive Adhesive Exterior Housing Tapes on Plywood | |
| | Megan Kreiger; Jedediah Alvey; Axy Pagan-Vazquez, PE; Dahtzen Chu, Member ASHRAE | 130 |
| AT-15-011 | Evaluating Chronic Carbon Monoxide Exposures: An Engineering Fundamentals Approach Juan C. Ramirez, PhD, PE, Associate Member ASHRAE; Atif Yardimci, PhD; | |
| | Michael R. Prisco, PhD, PE | 141 |

ASHRAE Transactions v

| AT-15-012 | Energy Consumption and Performance Comparisons of Supermarket Refrigeration Systems (RP-1484) |
|-----------|--|
| | Orkan Kurtulus, PhD, Associate Member ASHRAE; Eckhard A. Groll, PhD, Fellow ASHRAE; W. Travis Horton, PhD; Joseph R. Poland |
| AT-15-013 | A Unified Inverse Modeling Framework for Whole-Building Energy Interval Data: Daily and Hourly Baseline Modeling and Short-Term Load Forecasting Saurabh Jalori, Affiliate Member ASHRAE; T. Agami Reddy, PhD, PE, Fellow ASHRAE 150 |
| AT-15-014 | An Economic Analysis of Conventional and Heat Pump Heating and Cooling Systems in the DOE Prototypical Elementary School Building in Various Climatic Zones William Ryan, PhD, PE, Member ASHRAE; Marek Czachorski |
| AT-15-015 | Distributed Predictive Optimization of a Building HVAC System Matthew Elliott, PhD, PE; Bryan Rasmussen, PhD, PE, Member ASHRAE |
| AT-15-016 | Gray-Box Modeling of Multistage Direct-Expansion Units to Enable Control System Optimization Jie Cai, Student Member ASHRAE; James E. Braun, PhD, PE, Fellow ASHRAE |
| AT-15-017 | HVAC Nonlinearity Compensation Using Cascaded Control Architectures Christopher Price, Student Member ASHRAE; Shuangshuang Liang, PhD; Bryan Rasmussen, PhD, PE, Member ASHRAE |
| AT-15-018 | Use of Vertical Shafts as Routes of Smoke Extraction and Safe Egress During High-Rise Fires Guanchao Zhao; W.Z. Black, PhD, PE, Life Member ASHRAE; Liangzhu (Leon) Wang, PhD, Member ASHRAE |
| AT-15-019 | Modeling Smoke Movement in Shafts During High-Rise Fires by a Multizone Airflow and Energy Network Program Dahai (Darren) Qi, Student Member ASHRAE; Liangzhu (Leon) Wang, PhD, Member ASHRAE Radu Zmeureanu, PhD, PE, Member ASHRAE |
| AT-15-020 | Seasonal Part-Load Value (SePLV)—A New Index for Evaluating Water Chiller Seasonal Performance Chengbin Wu; Wenxing Shi, PhD; Minghong Yang; Baolong Wang, PhD; Xianting Li, PhD, Member ASHRAE |
| AT-15-021 | Estimating Daily Domestic Hot-Water Use in North American Homes Danny S. Parker; Philip Fairey, Member ASHRAE; James D. Lutz, PE, Member ASHRAE |
| AT-15-022 | Evaluation of Airflow Measurement Methods for Residential HVAC Returns Iain Walker, PhD, Fellow ASHRAE; J. Chris Stratton |
| AT-15-023 | Development of a Fault Detection and Diagnostic Tool for Use in Walk-Through Energy Audits Priyam Parikh, Student Member ASHRAE; Bryan P. Rasmussen, PhD, PE, Member ASHRAE |
| AT-15-024 | Identification and Elimination of Hunting Behavior in HVAC Systems Rohit Chintala, Student Member ASHRAE; Christopher Price, Student Member ASHRAE; Shuangshuang Liang, PhD; Bryan Rasmussen, PhD, PE, Member ASHRAE |
| AT-15-025 | A Simplified Model of the Fan/Motor Performance of Fan-Powered Terminal Units that Use Electronically Commutated Motors Dennis L. O'Neal, PhD, PE, Fellow ASHRAE; Carl L. Reid, Student Member ASHRAE; Douglas D. Ingram |

vi ASHRAE Transactions

| AT-15-026 | Development of Models to Simulate the Part-Load Performance of Oversized ECM Fan-Powered Terminal Units Dennis L. O'Neal, PhD, PE, Fellow ASHRAE | 321 | |
|---------------|--|-----|--|
| AT-15-027 | In-Situ Fan Differential Pressure Rise for a Series VAV-Fan-Powered Terminal Unit with SCR Control | | |
| | John A. Bryant, PhD, PE, Member ASHRAE; Stephen J. Bryant | 334 | |
| AT-15-028 | Modeling Fan-Powered Terminal Unit Fan/Motor Combinations Controlled by Silicon Controlled Rectifiers Dennis L. O'Neal, PhD, PE, Fellow ASHRAE; Douglas D. Ingram; Carl L. Reid, Student Member ASHRAE | 342 | |
| AT-15-029 | Survey of Sky Effective Temperature Models Applicable to Building Envelope Radiant Heat Transfer Salem Algarni, Student Member ASHRAE; Darin Nutter, PhD, PE, Fellow ASHRAE | 351 | |
| AT-15-030 | Develop a Radiant System Module for the Simulation and Analysis of Spaces and System (RP-1383) Charles S. Barnaby, Member ASHRAE; Curtis O. Pedersen, PhD, Fellow ASHRAE | | |
| AT-15-031 | Investigation of Attic Space Airflow and Temperature Distribution Using a Computational Fluid Dynamics Program Ahmed Cherif Megri; Abd Alnasser Almate A. Ali | 375 | |
| AT-15-032 | Withdrawn | | |
| AT-15-033 | Feasibility Study of Deep-Lake Water-Cooling System at Ryerson University Alan S. Fung, PhD, PE, Member ASHRAE; Hessam Taherian, PhD, Member ASHRAE Md. Ziaur Rahman; Mohamed M. Selim | | |
| AT-15-034 | An Ensemble Model for Predicting Energy Performance in Residential Buildings Using Data Mining Techniques | | |
| | Subramanian Manimaran; Ibrahim AlBastaki; J. Alamelu Mangai | 402 | |
| | SOCIETY BUSINESS | | |
| 2014–2015 A | ASHRAE Officers, Directors, Staff, and Council and Committee Members | 413 | |
| | Chapter Officers | 419 | |
| | ASHRAE Technical Committees, Task Groups, Technical Resource Groups, and Multidisciplinary Task Groups | 423 | |
| | ASHRAE Standard and Guideline Project Committees | | |
| | st Conferences | | |
| | idents | | |
| ASHRAE Ho | nors and Awards | 484 | |
| 2014–2015 A | ASHRAE Intersociety Representatives | 505 | |
| ASHRAE Ass | ASHRAE Associate Societies | | |
| In Memoriam | n, July 2014 to June 2015 | 510 | |
| Index of Tech | hnical Papers, Volume 121, Part 2 | 512 | |

ASHRAE Transactions vii