## List of Technical Papers Presented at 2022 SHASE Annual Meeting

(All Papers are written in Japanese except for Papers starting with IS lecture numbers.)

**A-1** Development of Optimal Controlled Air Supply System with Fan Powered Terminal Unit Part 1. Development Overview

Naoki Onishi et al.

**A-2** Development of Optimal Controlled Air Supply System with Fan Powered Terminal Unit Part2 Performance evaluation in development phase

Taizo Shimo et al.

**A-3** Development of Optimal Controlled Air Supply System with Fan Powered Terminal Unit Part3. Verification of Indoor Environment and Operation before Completion of Construction

Fuyumi Iijima et al.

**A-4** Development of Diffuser Unit Sending Periodic Fluctuating Airflow Using VAV System (Part3) Evaluation of Comfort and Thermal Environmental Performance

Atsushi Tamiaki et al.

A-5 Evaluation method for energy saving effects by VAV/VWV control in buildings Part-8 Confirmation of behavior and characterization of each control method using actual operation data of demonstration test equipment

Kento Motonari et al.

**A-6** The Influence of Airflow Control Function of Air Conditioners with Human Sensor on Indoor Thermal Environment

Tsuyoshi Ueno et al.

A-7 The Study on Air Conditioning Efficiency Improvement in the Office Building Part II Study for Air Outlets to Improve Short-Circuit Rate during Cooling and Heating Air Outlet

Eiki Tachibana et al.

**A-8** Study on Improvement of VRF air-conditioning system Performance Evaluation of efficiency and indoor quality improvement by Individual Defrosting operation

Ken Miura et al.

**A-9** Study on Improvement of VRF air-conditioning system Performance Part2 Evaluation of efficiency and indoor quality improvement by low heating capacity operation at night

Tomoki Shimizu et al.

**A-10** Development of Equipment that Assess Performance of Air-Conditioner with Heat Load Simulator

Ryohei Mori et al.

**A-11** (Part.2) Performance evaluation of Air-cooled heat pump chiller in the installation case

Yuta Hanaizumi et al.

A-12 Characterization of heat source characteristics during defrost operation of room air conditioners Part1 Construction and validation of a measurement system capable of quantitative evaluation of heat balance

Shohei Yasuda et al.

**A-13** A case study of the application of Simple Adaptive Control(SAC) in Environmental Test Lab

Tatsu Kishida et al.

**A-14** Verification and Evaluation of a Ventilation System using Membrane Type CO2 Removal Device (Part 1) Development of Membrane Type CO2 Removal Device

Katsuya Umemoto et al.

A-15 Verification and Evaluation of a Ventilation System using Membrane Type CO2 Removal Device (Part 2) Verification and Evaluation of Impact of Air Conditioning system Using Membrane Type CO2 Removal Device on the Indoor Environment

Yuki Nishio et al.

**A-16** Analysis Operation of Air Conditioning Equipment in the COVID-19 Measures -Evaluation in a Library in Alpine Climate-

Ryo Takamura et al.

A-17 Sealing Efficiency of Double Air Curtain Part 14 Experiments and CFD Simulation on Effect of Disturbances Caused by Air Conditioning and Moving Human Body on Sealing Efficiency

Shunsuke Ogita et al.

**A-18** Study on consideration of direct expansion system for environmental test laboratory Part3, Refrigerant distribution method to the heat transfer of the evaporator

Junichiro Nagata et al.

**A-19** Study on the Outdoor Air Intake Technology to the HVAC System Utilizing Package Air-Conditioner and Total Heat Exchanger Part-4 Effectiveness verification on the installation of combination control between outdoor air cooling and ventilation volume control utilizing the demonstration experiment and the simulation

Subaru Morita et al.

**A-20** Prediction of Indoor Environment for Impinging Jet Ventilation System Part 8: Improvement of the Calculation Model for Predicting Vertical Profiles of Temperature and Contaminant Concentration

Haruna Yamasawa et al.

A-21 Displacement air conditioning outlet and air conditioner unit suitable for large spaces

Koichi Okawa et al.

A-22 Research on Blending Wellness and Zero Energy in Small and Medium Size Office Building in Cold Climate Area (Part5) Experimental Results on the Influence of The Floor Ventilation System on Ventilation Efficiency

Taisei Akamatsu et al.

A-23 Study on PIV measurement and analysis using multicamera • laser Part 1 Basic Study on PIV measurement for Full-Scale Indoor Space

Shin-Ichi Akabayashi et al.

A-24 Study on Dynamic Control Method of Air Conditioning Airflow Based on Reverse Simulation for Unsteady CFD Analysis Part1 Dynamic control of outlet temperature for simple-shaped room

Kohei Ishii et al.

A-25 Modeling of air conditioning CFD parts using Momentum method Part2 Basic study on reproduction of outlet airflow of single-line diffuser

Shuhei Ishida et al.

**A-26** Performance Comparison of Air Conditioning Systems with Different Airflow Directions (Part1) Evaluation of Thermal Environment and Energy Consumption during Heating

Naoya Shinada et al.

**A-27** Study for advancement and improved applicability of liquid desiccant air conditioning system. Part 3: Energy performance evaluation of liquid desiccant air conditioning system using Cogeneration waste-heat.

Kazuki Yamada et al.

**A-28** A Study on the Energy Performance of Geothermal Heat Ventilation Systems Installed in School Facilities

Kazuki Arita et al.

**A-29** Study on Energy Performance of Air-conditioning Systems using an Outdoor Air Handling Unit with Self Precooling and Reheating Part 1 Outline and Model Construction of an Outdoor Air Handling Unit

Yasuhiro Tomuro et al.

**A-30** A study on dedicated outdoor air handling unit systems regarding to widespread of ZEB Part4 Comparison of room environment and energy performance

Shougo Suzuki et al.

**A-31** The control of variable airflow to the rotor-type dehumidifier for the low dew point room air conditioning Hirofumi Morimoto et al.

**A-32** A Survey on the Actual Conditions of Latent Heat Sensitive Separation Air Conditioning in Asia's Hot Region. Actual Survey and Energy Simulation Verification.

Junya Okamoto et al.

A-33 Development of Closed Wet Desiccant Air Conditioning System Examination of Moisture-permeable Hollow Fiber Membranes and Dehumidification / Humidification Experiments Using a Demonstration Machine Hikaru Kobayashi et al. A-34 Research on Performance Evaluation of Air Conditioners with Humidity Control Function (Part 1) Overview of Air Conditioning System and Field Test Method Yoichi Miyaoka et al.

A-35 Performance Evaluation of Air Conditioners with Humidity Control Function (Part 2) Test Results and Discussion of Cooling and Heating Operation

Shigeki Ishizaka et al.

**A-36** Study on energy consumption reduction of desiccant air conditioner with variable air volume control

Rvoko Inoue et al.

A-37 Measurement Results and Problems of Measures Against High Humidity with Desiccant type Dehumidifier in underground Cultural Properties Storage Room

Shuichi Kurose et al.

**A-38** Review of Training Data by Declaration Data of Multi-Package Type Air-conditioning System using IoT and Machine Learning

Fusachika Miyasaka et al.

**A-39** Switch-less air conditioning system design and evaluation of comfort and energy-saving Part3 Operational acceptance testing and Policy for upgrading

Sumio Shiochi et al.

**A-40** A Study on Prediction Method of Multi Air Conditioning System for Buildings Performance Using Artificial Neural Network Part1. Prediction Method Based on Laboratory Data

Katsuhiko Tanaka et al.

A-41 A Study on Prediction Method of Multi Air Conditioning System for Buildings Performance Using Artificial Neural Network Part2.Application of Cooling Capacity Estimation Model to Actual Machine

Hiroto Ogami et al.

**A-42** Investigation of energy-saving effects by heat source renovation in a university facility

Daisuke Oishi et al.

A-43 Study on design guideline of multi-split air-conditioning systems to realize the ZEB Part 1 Research outline and survey of multi-split air-conditioning systems design

Makoto Satoh et al.

**A-44** Study on design guideline of multi-split air-conditioning systems to realize the ZEB Part 2 Survey on Actual Conditions

Mao Serikawa et al.

A-45 Study on design guideline of multi-split air-conditioning systems to realize the ZEB Part 3 Measurement of actual energy performance of a multi-split air-conditioner in a test facility

Masato Miyata et al.

**A-46** Study on design guideline of multi-split air-conditioning systems to realize the ZEB Part 4. Modeling of multi-split air-conditioning systems and validation with experimental data

Eisuke Togashi et al.

A-47 Study on design guideline of multi-split airconditioning systems to realize the ZEB Part 5 Case studies on energy saving performance using the model building

Norie Tsujimaru et al.

**A-48** Study on design guideline of multi-split air-conditioning systems to realize the ZEB Part 6. Outline of guideline for planning, design, and operation

Kosuke Sato et al.

**A-49** Study on Performance Evaluation and Operational Improvement of Individually Distributed Air-conditioning System Part5. Outline and Results of Measured Survey and Calculation of Heat Disposed.

Kentaro Matsuda et al.

**A-50** Study on Performance Evaluation and Operational Improvement of Individually Distributed Air-conditioning System Part6. Study on detailed measurement method

Masaru Ishikawa et al.

A-51 Study on Performance Evaluation and Operational Improvement of Individually Distributed Air-conditioning System Part7. Detecting the Number of People in a Room Using a Camera and Simulating the Air Conditioning Load Using the Detection Results

Yudai Fukuda et al.

A-52 Study on Performance Evaluation and Operational Improvement of Individually Distributed Air-conditioning System Part8. Estimation of Sensible Heat Factor and Air Conditioning Load using Indoor Temperature and Humidity

Takahiro Yamamoto et al.

A-53 Study on Performance Evaluation and Operational Improvement of Individually Distributed Air-conditioning System Part9. Estimation of Electricity Consumption and Thermal Environment of Electric Heat-pump Type Multi-air Conditioner for Buildings

Toshiya Iwamatsu et al.

**A-54** The diffuser basis VAV air-conditioning system which promotes "Wellness" for occupants

Jun Mizutaka et al.

A-55 Development of Supply Inlet for Personal Air Conditioning with Differential Pressure Damper and Verification by Subjective Experiment

Koichi Ito et al.

**A-56** Development of a local air conditioning system using the people-following airflow nozzles (Part1) Development of a people-following airflow nozzle system

Masashi Hayakami

A-57 Air Conditioning System for Office Building Reducing the COVID-19 Spread

Tomoe Kaku et al.

**A-58** Research on Task Ambient Air Conditioning Using Underfloor Air Distribution System Part3. Analysis of Eye Blink to Evaluate the Effectiveness of Maintaining Arousal Level and Experiment under Heating Condition

Jiang Zhang et al.

**A-59** Status Survey of Chairs with Cooling and Heating Functions in a Practical Office

Shintaro Hanazono et al.

**A-60** Effects of Air-Conditioning based on Wristwatch Wearable Sensor on Comfort and Productivity Part I: Outline of System and Air-Conditioning Logic

Yusuke Suzuki et al.

A-61 Effects of Air-Conditioning based on a Wristwatch Wearable Sensor on Comfort and Productivity Part II: Association between Vital Signs and Thermal Sensation/Arousal Levels

Wataru Umishio et al.

**A-62** Study on Energy Saving Effect and Comfortableness of Radiant Panel Air Conditioning System

Riki Sakai et al.

**A-63** Validation of Radiation Model and Model Analysis of the Effect of Wall Emissivity on Thermal Comfort of Occupants

Kanako Yamao et al.

A-64 Research on thermal environment in music hall during performances with radiant air conditioning (Report 1) Summary of Actual Measurements and Questionnaire Results Kyogo Hayashi et al.

A-65 Research on thermal environment during performances in a music hall with radiant air conditioning (Report2) Analysis Based on Actual Measurement Results

Masashige Soejima et al.

**A-66** Basic performance of independent radiant cooling system in large spaces - Evaluation of indoor thermal environment and cooling capacity using laboratory experiments and field measurements -

Yuki Nishjima et al.

**A-67** Radiant Air-Conditioning System with Personal Floor Air Supply (Part 1) Concept and Overview of the Building Facilities

Koichiro Sakai et al.

**A-68** Development of Direct Expansion Radiant Air Conditioning System (1ST.)System Overview and Measurement of Cooling Capacity of Radiant Panels

Ryuhei Watanabe et al.

**A-69** Study of energy evaluation of radiant air-conditioning systems during the cooling season

Ryota Kobayashi et al.

**A-70** Effect of Airflow Angle Impinging on Textile Ceilingon Airflow Pattern Passing Through Textile

Honoka Kawashima et al.

A-71 Research of Thermo-Active Building System with Non-embedded Coolants Tube (Part 8) Results of Measurement during Summer

Kinuko Kuwayama et al.

A-72 Research of Thermo-Active Building System with Non-Embedded Coolants Tube (Part 9) Analysis of First Year Energy Consumption and System Operation

Koutarou Makino et al.

A-73 Optimal Control for a Large-Scale TABS and its Verification using Multi-Physics Modeling (Modelica-IDEAS)

Fumiaki Deguchi et al.

A-74 Study on Operating Method of Thermo-Active Building System in the Office (Part5) Correction of Load Prediction Results by Kalman Filter considering building operation phase

Kiyoto Koga et al.

**B-1** Proposal of Hand Washing Methods Considering Hygiene and Water Saving for Various Faucets in Contact Infection Control (Part 1) Investigation of the effects of automatic faucets

Megumi Itabashi et al.

**B-2** Examination of Splash of Airborne Droplets from the Water Closet and Its Evaluation (Part 2) Consideration on Various Water Closets and Attention of Infection Control Measures

Ayaka Kimura et al.

**B-3** Survey on Hygiene Around Urinals in Office Toilet Space Part 1: Examination of the Environment Surrounding Urinals in the Early Stages of Installation

Takumi Yamashiro et al.

**B-4** Survey on Changes in Water Use at Home Due to the Coronavirus Crisis Part-3 Analysis of Water Use Focused on Teleworkers

Ukyo Takeuchi et al.

**B-5** Survey on Changes in the Use of Residential Plumbing Equipment with Aging (Part 1) Analysis of Toilet and Bathroom

Chika Nakagawa et al.

**B-6** Analysis of factors contributing to longer occupancy times based on surveys of public restroom usage and comparison of the results of the calculation of the appropriate number of fixtures with the current technical requirements

Mikiko Takahashi et al.

**B-7** Life Cycle Cost reduction and Performance Improvement of Sky-source Heat Pump System (SSHP) (Part7) SSHP demonstration system at a real building site and operation results during the first summer

Masaki Shioya et al.

**B-8** Life Cycle Cost Reduction and Performance Improvement of Sky-source Heat Pump System (SSHP) (Part8) Operation results during the first winter at real building

Chisato Tsuchida et al.

**B-9** Study on Improving the Energy Independence of House by Using Air-Conditioning and Hot-Water Supplying System Utilizing PVT Air Collector & Heat Pump for Houses Construction of Winter Simulation and Case Studies for Improving the Energy Independence

Yuto Takahashi et al.

**B-10** Study of the Heat Recovery and the Mass Recovery applied in the Adsorption Heat Pump based on Numerical Analysis

Fang He et al.

**B-11** Research on Decarbonized Heating System Using Solar and Wood Biomass Heat in Tenement-Type Housing Tomoki Hotta et al.

**B-12** Study on High Efficiency of Air Conditioning System for Data Centers (Part 1) System Simulation Modeling and Energy Evaluation

Gen Nakamura et al.

**B-13** Study on Thermal Environment of Ultra-High Density Racks and Solution of Operational Problems Part.2 Study on Method of Estimating Supply Air Flow Rate in Response to Server Load Fluctuation

Yusuke Iso et al.

**B-14** Study on the Energy Saving Operation Method for High Load Data Centers (Part 3)Presuming the Operating Condition of Actual Server and Employing CFD model

Keisuke Umehara et al.

**B-15** Analysis of Thermal Environment and Energy Saving by Installing the Containment in a Data Center

Toshimasa Kakegawa et al.

**B-16** Next-generation data center planning and operational verification using AI (Part 1) Building / equipment plan and AI operation plan

Masahiko Fujisaki et al.

**B-17** Effect of Local CO2 Fertilization on Plants Grown on Recycled Fiber Media in Forcing Culture

Takeshi Takatsuka et al.

**B-18** Development of a Four-bed Room with Reduced Infection Risk. Part 1 Evaluation of Infection Risk in a Four-bed Room Using a Human Cough Simulation Machine and Fluorescent Lactose Powder

Kengo Tomita et al.

**B-19** Development of a Four-bed Room with Reduced Infection Risk Part 2 Assessment of the Risk of Airborne Transmission of a Hospital Room Using a Numerical Method to Reproduce the Characteristics of Human Expired Aerosol at Low Computing Cost

Miguel Yamamoto et al.

**B-20** Monitoring control of microdroplets in the hospital room Part2 Measurements in the simulated hospital room and Examined the system

Shohei Niino et al.

**B-21** Safe air-conditioning system for infection prevention Performance improvement of virus inactivating air-conditioning system

Hiroto Nakagami et al.

**B-22** Study on Ventilation Performance of Four-bed Ward with Vertical Induction Air-conditioning Part IV Study of Indoor Temperature and Concentration Distribution During the Heating Period Based on a Full-scale Experiment

Shaoyu Sheng et al.

**B-23** The Development and Practical Studies on the Siphon Drainage System for Apartment -Part 14 Effect to Drainage Stack System loaded Steady Discharge and Laundry Discharge

Kyosuke Sakaue et al.

**B-24** Verification of the Drainage Performance of a Compatible on the Slab Drainage System by Force-Feed Drainage Method Applied to Office Space

Natsuki Ono et al.

**B-25** A study on repair of waste pipe system such as bathroom in existing high-rise apartment houses. Part 7. Study of the effect of aged drainage pipes on drainage capacity and remedial measures.

Anna Fujita et al.

**B-26** A study on repair of waste pipe system such as bathroom in existing high-rise apartment houses. Part.8 Understanding pressure fluctuations and estimation of wastewater load in the actual residential building.

Toya Abe et al.

**B-27** Development of a Disposable Underwear Shredder Processing System Installed in Nursing Care Facilities, etc. (The 4th Report) Examination of the effect of Drainage Stack on Drainage Performance

Yuto Ino et al.

**B-28** A Study on Simulation Method for Identifying Transport Performance in Horizontal Drainage Pipes Connected to the Water-Saving Toilets -Mechanism Analysis of Water Flow in a Bend-

Shota Kaneko et al.

**B-29** Study on Development and Drainage Capacity Evaluation of Multi-pipe Joint Drainage System Applied to ALC Middle-rise Apartment Houses Part3 Verification of Various Piping Variations and Actual Drainage Load

Kanako Ishii et al.

**B-30** Examination of the Drainage Performance Evaluation of Horizontal Fixture Branch System for the House Built in a Narrow Space. (Part1) Effect of Confluence Joint Shape.

Torai Miyakoshi et al.

**B-31** Study on Drainage Pipe Cleaning by High-Pressure for Apartment Buildings Part 1 Insertion Performance of Washing Nozzle and Pressure loss of Washing Hose

Yoshifusa Nishimura et al.

**B-32** Study on rainwater quality in water collection of apartment rooftop Part 1 Comparison of initial rainfall removal methods and maintainability

Takuya Sekiguchi et al.

**B-33** Performance Verification of Composting Toilet using Air Solar Heating Collection System Actual Measurement on Compost Volume Reduction due to Solar Heat in Winter

Yoshiki Higuchi

**B-34** Basic Study on Wastewater Qualtiy Adjusting Method of Performance Evaluation Method of JOKASO

Toshihiro Sankai

**B-35** Study on Purification of Urine using Bamboo-Slanted-Soil-Chamber-Method, Eligibility for a Kenaf oxidation of Purification to Urine

Shintaro Taguchi et al.

**B-36** Research and investigation water circulation of laboratory by utilizing water treatment technology (Part2) Planning example with zero water building in mind

Takeshi Aoi et al.

**B-37** Study on water balance and environmental performance evaluation in buildings (Part1) Consideration of water balance and net zero water building evaluation in buildings

Toyohiro Nishikawa et al.

**B-38** Study on water balance and environmental performance evaluation in buildings (Part2) Comparative evaluation of reclaimed water use and rainwater use

Jun Oyagi et al.

**B-39** Building Mechanical Plan for Energy-saving Hotel in Local City Part 1. Energy-saving Strategy of Spa with Hot Spring

Kenji Ogawa et al.

**B-40** Water supply pressure fluctuation that occurs when the estimated terminal pressure of the booster pump system is controlled to be constant and influence on pump efficiency

Shigekazu Okauchi et al.

**B-41** Study on Water Supply Units for preschool -Analysis of Water Consumption using Data-base for Energy Consumption of Commercial building (DECC)-

Takehiko Mitsunaga et al.

**B-42** Survey of Water Usage And Units of Water Supply for Expressway Rest Area

Atsushi Umayahara

**B-43** Prediction Method of City Water Temperature for Hot Water Supply System Design Part 3 City Water Temperature for the Representative Cities in Japan

Renon Onishi et al.

C-1 Study on Electricity Supply and Demand Adjustment by Building Equipment Part6. Study on Method of Power Supply and Demand Adjustment using Water Heat Storage Tank and Research on Wide Area Potential

Akihiro Fukuba et al.

C-2 Study on Electricity Supply and Demand Adjustment by Building Equipment Part 7. Case study on electricity supply and demand adjustment by hot water supply system

Ryohei Fujii et al.

C-3 Study on Electricity Supply and Demand Adjustment by Building Equipment Part 8. Efficiency changes due to hot water supply equipment repair (water heater defrost)

Kaito Inomata et al.

C-4 Study on Electricity Supply and Demand Adjustment by Building Equipment Part 9. Direction of Design Hot Water Supply Systems that utilizes VRE in VPP

Hitoshi Akai et al.

C-5 Research on thermoelectric integrated energy system planning in smart communities -Part1-Advantages of the effect of introducing CGS and PV by the microgrid in the district

Shu Yokoyama et al.

C-6 Research on the contribution of smart energy systems to grid power by adjusting supply and demand -Part1-A method for adjusting output fluctuation of photovoltaic power generation using a cogeneration system and verification of its effectiveness

Tooi Honda et al.

C-7 Research on leading smart community technologies in regional compact city (Part 1) Project and energy system outline

Shingo Hagino et al.

C-8 Research on leading smart community technologies in regional compact city (Part 2) Outline of CEMS (Community energy management system)

Takehiko Suzuki et al.

C-9 Study on Extensive Renovation of Equipment in Skyscraper Public Building (Part 1) Analysis of the Building Situation about Air-Conditioning System and Energy Consumption at the Design Stage and Energy Saving Renovation Plans

Satoki Hoshino et al.

C-10 Study on Extensive Renovation of Equipment in Skyscraper Public Building (Part2)Renovation Plan not to Stop Administrative Function

Satoshi Okamura et al.

C-11 Study on Extensive Renovation of Equipment in Skyscraper Public Building (Part 3) Overview and Evaluation of Air Conditioning System with Large Temperature Difference

Michiyo Nagareda et al.

C-12 Study on Extensive Renovation of Equipment in Skyscraper Public Building (Part 4) Overview and Evaluation of Wide Range Water Temperature Supply System Masahiro Kinoshita et al.

C-13 ZEB Ready renovation case of medium-sized government building

Takuya Tago et al.

C-14 A Scheme of Super-Environment Office which Utilizes the Climate Condition and Local Culture of the Region (Part 3) Assessment of Thermal Comfort of Task/Ambient Air Conditioning System and Effectiveness of Reducing Solar Radiation Load of Kimusuko Louvers

Yasushi Miyamura et al.

C-15 A Scheme of Super-Environment Office which Utilizes the Climate Condition and Local Culture of the Region (Part 4) Survey on the Thermal Environment and Workers Thermal Sensation

Sonoka Shinmura et al.

C-16 A Scheme of Super-Environment Office which Utilizes the Climate Condition and Local Culture of the Region (Part 5) Actual Operation of the Air Conditioning System and Contribution to Zero Energy Buildings

Reina Koike et al.

C-17 Study on Mid-Rise Zero Energy Building in SENDAI city (Part 3) Field Survey on Thermal Environment and Natural Ventilation Operation in the Office

Akihiro Kawamura et al.

C-18 Study on Mid-Rise Zero Energy Building in SENDAI city (Part4) Questionnaire Survey and Analysis on the Indoor Environment

Masato Narita et al.

C-19 Evaluation and Verification on ZEB Renovation of the Office Building in HAKATA (Part 1) Renovation Outline and Operational Results

Yusaku Kuwata et al.

C-20 Evaluation and Verification on ZEB Renovation of the Office Building in HAKATA (Part 2) Experiment of Skeleton Heat Storage System and Indoor Environment Questionnaire

Daisuke Sumiyoshi et al.

C-21 Study on office building considering environment, strives to carbon-minus Part2 Energy consumption analysis and air conditioning operation results

Yuki Takenaka et al.

C-22 Study on office building considering environment, strives to carbon-minus (Part3) Evaluation of thermal performance of high insulation exterior building

Ryota Asano et al.

C-23 Study on Office Building Considering Environment Striving to Carbon-minus Part4 Verification of Thermal Environment during Summer Cooling and Winter Heating by Under Floor Air Conditioning

Yu Ito et al.

C-24 Plan and Verification of a Midsize Office Aiming for ZEB (Part 28) Improvement of CFD Analysis Accuracy and Understanding of Airflow Characteristics of the Air Outlet

Tsubasa Ochi et al.

C-25 Plan and Verification of a Midsize Office Aiming for ZEB (Part 29) Analysis about Situation of Utilization in the Building and Annual Running Result of Variable Air Conditioning System Using the Coanda Effect

Taiki Seino et al.

C-26 Plan and Verification of a Midsize Office aiming for ZEB (Part 30) Verification and Operational Improvement of Dynamic Range Radiant Panel Systems

Kunihiko Kintsu et al.

C-27 Plan and Verification of a Midsize Office Aiming for ZEB (Part 31) Introduction and Effect of Optimal Control System Linked with Spreadsheet Software

Yu Sakamoto et al.

C-28 Plan and Verification of a Midsize Office Aiming for ZEB (Part 32) Comprehensive Comparison between Convection and Radiant Air Conditioning Systems with the Evaluation of the Annual Primary Energy Consumption

Shun Kato et al.

**C-29** Research on ZEB of Mid-sized Office Buildings That Take Full Advantage of the Natural Energy

Takumi Nakai et al.

**C-30** Research on ZEB of Mid-sized Office Buildings That Take Full Advantage of the Natural Energy

Yuta Inada et al.

C-31 Research on Blending Wellness and Zero Energy in Small and Medium Size Office Building in Cold Climate Area (Part4) Actual Situation of Energy Consumption and Indoor Environment after Completion of Construction and Statistical Analysis of the Effects of Energy Savings Methods

Takeru Yamauchi et al.

C-32 Study on the new office building for "Approachable ZEB" Part4 Actual annual energy balance under the building operation with teleworking

Kohei Shiraishi et al.

C-33 Study on Self Energy-supporting Urban Development by Skyscraper (Part 16) Impact of COVID-19 on Annual Energy Consumption Performance and ZEB Evaluation

Yuichi Akiyama et al.

C-34 A Verification of Realization to ZEB Government Building Part 4: Operation Status of Summer Air Conditioning System

Anri Itoh et al.

C-35 A Verification of Realization to ZEB Government Building Part 5: The Measurement of Indoor Environment and Questionnaire in Summer

Ryo Nakanishi et al.

**C-36** Efforts for Zero Energy Building in the Government Office Building

Yoriko Honda et al.

C-37 Study on the City Hall in SDGs Future City for Zero Energy Building Part 16. IoT Sensors and BEMS Reveal How Natural Ventilation Has Worked for 1.5 Year

Takuro Kikuchi et al.

**C-38** Study on the City Hall in SDGs Future City for Zero Energy Building Part 17. Actual measurement of indoor thermal environment in the office in the second year of operation

Rina Yamasaki et al.

**C-39** Campus Energy Management and ZEB initiatives for Decarbonization at Large-scale Universities

Toshihiro Suzuki et al.

**C-40** Performance Verification of the Public Research Facility realizing ZEB Part-8 Annual Energy Balance in Actual Operation Phase (FY2021)

Shogo Murakami et al.

C-41 Performance Verification of the Public Research Facility realizing ZEB Part-9 Evaluation of Energy Performance by Operation Improvement and Verification of Effect of Warm Pit

Takuya Ijima et al.

C-42 Performance Verification of the Public Research Facility realizing ZEB Part-10 Verification of the effectiveness of renewable energy use in heat source system

Ryohei Suzuki et al.

C-43 Performance Verification of the Public Research Facility realizing ZEB Part-11 Measurement Results of Indoor Environment in the Office and Verification of the Effect of Natural Light Utilization Technology

Miyujki Watanabe et al.

C-44 Achievement of "ZEB Ready Office in cold regions", built in Bihoro Town, Hokkaido (Part1) Verification of ZEB design method in cold regions and operation results

Takafumi Terashima et al.

C-45 Study on Environmental Conscious Public Office Building in Cold Area (Part 8) Heat Source System Performance and Energy Consumption Performance during six years after Completion

Yusuke Matsuo et al.

**C-46** Planning and Evaluation of the Energy Self-Sufficient Innovation Center (Part 18) Evaluation of ZEB Achievement Status and Countermeasures Two Years after Completion

Akihiro Shimizu et al.

C-47 Planning and Evaluation of the Energy Self-Sufficient Innovation Center (Part 19) Operational Evaluation by Simulation Based on Actual Heat Load Data

Yuka Mutoh et al.

C-48 Planning and Evaluation of the Energy Self-Sufficient Innovation Center (Part 20) Operational Results in the Use of Groundwater and Waste Heat

Kosuke Osako et al.

**C-49** Planning and Evaluation of the Energy Self-Sufficient Innovation Center (Part 21) The Dehumidifying Performance Evaluation of Outdoor Air Handling Units

Katsuhiko Shibata et al.

C-50 Planning and Evaluation of the Energy Self-Sufficient Innovation Center (Part 22) Performance Evaluation and Heating Measures for Displacement Ventilation Systems for Office Use

Kentaro Kimura et al.

C-51 Planning and Evaluation of the Energy Self-Sufficient Innovation Center (Part 23) Energy saving and comfort by individual control of ceiling radiation panel

Miho Suzuki et al.

C-52 Planning and Evaluation of the Energy Self-Sufficient Innovation Center (Part24) Development of Application for Improving Operability of Personal Comfort Systems

Kazuki Aono et al.

C-53 Planning and Evaluation of the Energy Self-Sufficient Innovation Center (Part25) Development and Evaluation of Personal Comfort System for Heating Function

Masanari Ukai et al.

C-54 Planning and Evaluation of the Energy Self-Sufficient Innovation Center (Part26) Annual Evaluation of Office Thermal Environment Considering Individual Diversity

Daiki Takehara et al.

C-55 Planning and Evaluation of the Energy Self-Sufficient Innovation Center (Part27) Annual Survey Results with Serendipity

Tsubura Watanabe et al.

C-56 Study on Realization of ZEB in Large-scale Factory Part1. Outline of Factory and Energy Performance Evaluation at the Planning Stage

Kunita Shindo et al.

C-57 Study on Realization of ZEB in Large-scale Factory Part 2: Visualization of Thermal Environment and Calculation of Energy Consumption Using Coupled CFD and Energy Simulation

Shiro Arata et al.

C-58 Environmental Performance Verification at Open-air ZEB Airport Terminal Part.5 Comparison of Environmental Satisfaction Models by Opening and Closing Windows

Ryosuke Onoda et al.

C-59 Environmental Performance Verification at Open-air ZEB Airport Terminal Part.6 Effects of Opening and Closing Windows on Thermal Environment and Comfort

Yutaro Ogawa et al.

**C-60** Environmental Performance Verification at Openair ZEB Airport Terminal Part.7 The Effect of Opening and Closing Windows on How Biophilia Feels

Miku Tazaki et al.

C-61 Study on Heat Load and Air-conditioning Equipment Capacity Calculation Method for ZEB design

Tomohisa Takebe et al.

C-62 Study on Cooling Equipment of Electric Room and Elevator Machine Room for ZEB Design (Part 1) Operational Data Analysis of Electric Room Cooling Equipment

Yoshito Takahashi et al.

C-63 Correlation Analysis of Facade Thermal and Light Performance and Energy Performance of an Office Building Examination for ZEB by Existing Building Database Analysis and Numerical Analysis

Shota Kamiyama et al.

**C-64** Evaluations of long-term insulation performance and thermal bridge on the double envelope VIPs

Jun Harada et al.

C-65 Study on feasibility of carbon neutrality Proposing of evaluation method, evaluation index for carbon neutrality and evaluation examples

Hideharu Niwa

C-66 Estimation of Photovoltaic Generation Considering Also the Exterior Wall Surface for ZEB Conversion of Housing Complexes in China

Shouchen Zhu et al.

C-67 Study on ZEB / Wellness in Urban Medium-sized Office Building (Part 1) System Overview and Energy Reduction Effect / ZEB Evaluation at the Planning Stage

Yuichi Nakagawa et al.

C-68 Study on ZEB / Wellness in Urban Medium-sized Office Building (Part 2) Verification of the Effectiveness of Deodorization Equipment Using Hypochlorous Acid Water

Hajime Omomo et al.

**C-69** Study on ZEB / Wellness in Urban Medium-sized Office Building (Part 3) Preliminary Verification of a Fluctuating Ductless Air Conditioning System using Multiple Nozzle Units

Tomoo Inada et al.

C-70 "Urban Compact Office" for the Aim to achieve Both the ZEB and the Wellness Part1 Building Outline and Technologies for Sustainable Society

Kan Arai et al.

C-71 "Urban Compact Office" for the Aim to achieve Both the ZEB and the Wellness Part2 Outline of Facility and ongoing Status of Operation

Ayana Fuchizaki et al.

C-72 Design and Operation on the Test Facility with ZEB+ Related Technologies (Part 10) Analysis of Energy Performance to Realize net-ZEB in Operation Phase: Full Year Report

Risa Murakami et al.

C-73 Design and Operation on the Test Facility with ZEB+ Related Technologies (Part11) Investigations on the Annual Thermal Environment in Demonstration Room

Takayoshi Iida et al.

C-74 Design and Operation on the Test Facility with ZEB+ Related Technologies (Part12) Investigations on the Summer Thermal Environment and Environmental Technologies in Moderate Air-Conditioned Spaces

Yusuke Doi et al.

C-75 Design and Operation on the Test Facility with ZEB+ Related Technologies (Part13) Investigations on the Midseason Thermal Environment and Natural Ventilation System in Moderate Air-Conditioned Spaces

Toshiki Isahaya et al.

C-76 Design and Operation on the Test Facility with ZEB+ Related Technologies (Part 14) Annual Survey Results of Office Space Satisfaction

Kazuhiro Minami et al.

C-77 Design and Operation on the Test Facility with ZEB+ Related Technologies (Part15) Development and Preliminary Verification of Indoor Positioning System Using Air Conditioning Unit

Nobuhiro Hirasuga et al.

C-78 Design and Operation on the Test Facility with ZEB+Related Technologies (Part 16) Verification of the Effect of Indoor Positioning System using Air Conditioning Units in the ABW Office

Hiroyuki Yamada et al.

**D-1** Power outage simulated experiment considering staying at home in a net Zero Energy House Part.1 Outline of target house and evaluation of power self-sufficiency and thermal environment in summer

Jungmin Kim et al.

**D-2** Power Outage Simulated Experiment Considering Staying at Home in Net Zero Energy House Part.2 Electricity Demand and Supply, and Thermal Environment in Intermediate Period and Winter

Minavo Imai et al.

**D-3** Energy consumption of households in smart town (Part.2) Relationship of energy consumption and activities of daily living in winter and summer

Tomoki Ichimura et al.

**D-4** Expansion of application area of the air-conditioner for the ZEH (Part 3) Estimation of AC operating status using HEMS data and comparison with measurements.

Yosuke Chiba et al.

**D-5** Self-consumption of photovoltaic by daytime boiling of heat pump water heaters

Yutaka Onishi et al.

**D-6** BCP Performance of Office Building Facilities -Correlation with Environmental Performance-

Haruka Kinoshita et al.

**D-7** Proposal of BCP performance evaluation method for building service systems

Yuta Nakatani et al.

**D-8** Research on Toilet Measures in the Event of a Disaster in an Apartment Housing Part 1) Considering the Formulation of a Disaster Toilet Stocking Plan

Hiroshi Kimura et al.

D-9 Research on the Resilience of the Heat Source System
 Part-1 Evaluation of the Resilience by Heat Available for
 Supply When Lifeline is Stopped

Ryota Miyamoto et al.

**D-10** Research on the Resilience of the Heat Source System Part2 Study on Heat Source System Planning that Combines Energy Performance and Resilience Performance

Haruto Makabe et al.

**D-11** Study of SBCM (Smart Business Continuity Management) for practical near-future cities / facilities Part 1 Concept of BCP, BCM, Resilience, and Compound Disaster Takehiro Tanaka et al.

**D-12** Study of SBCM (Smart Business Continuity Management) for practical near-future cities / facilities Part 2 Approach example of BCP, BCM(1)

Toru Fujii et al.

**D-13** Study of SBCM (Smart Business Continuity Management) for practical near-future cities / facilities Part 3 Approach example of BCP, BCM (2) SBCM of cities and facilities in the near future with an eye on with post-corona -Health air conditioning in the with-post-corona era using BEMS-

Kazunari Fukuda et al.

**D-14** Study on Improvement Technique of Safety and Quality for Construction and Maintenance in Building Facilities (Part29) Heatstroke Questionnaire of Construction Site in COVID-19 Related Confusion (3) Change of Construction Site Measures and Workers Awareness

Hiroyuki Wariishi et al.

**D-15** A Study of Openings and the Indoor Environment in Japanese Old Folk Houses

Genki Oka et al.

**D-16** Observation and CFD Analysis of Air Quality along Roads with Viaducts

Yutaro Takakura et al.

**D-17** Study on amenity of semi outdoor space in cities Part2 Consideration of visual and auditory elements

Keiji Sato et al.

**D-18** Research on Evaluation of Comfort in Open Spaces such as Plazas

Momoko Kinoshita et al.

**D-19** Development of urban energy simulator based on GIS Development of energy demand estimation method for Non-Residential buildings in urban scale

Hengxuan Wang et al.

**D-20** Social Implementation Research of Local Energy System for Realization of Decarbonized Town Development (Part 1) Development of Local Energy Planning and Evaluation System

Yujiro Hirano et al.

**D-21** Examination of Expansion of Heat Supply using Exhaust Heat from Incineration Plants

Mayumi Hamada et al.

**D-22** STUDY ON OFF-GRID CONVERSION OF SMALL OFFICE BUILDING

Yusuke Tosaka et al.

**D-23** Carbon Dioxide Emission Characteristics using Local Government Emission Chart

Hirotoshi Yoda

**D-24** On-Site Measurement of Thermal Insulation Performance by Probe Insertion Method: Evaluation of thermal bridge effect and uncertainty assessment

Wataru Senzaki et al.

**D-25** Determination of the Limit Value of Dew Water in and on Wall Insulation Materials

Eri Tanaka

**D-26** Numerical Analysis of Effective Diffusion Coefficient and Mass Transfer Coefficient on Measurement of Thermal Conductivity Change of Plastic Insulation Foam

Yasuhiro Nagasawa et al.

D-27 Evaluation Method of Complicated Shape Insulation Foam Part 12 Estimation Method for Thermal Resistance on Insulation Foam Based on Volume loss and Depth of Cavity Nao Nishikawa et al.

**D-28** Study on Evaluation of Thermal Performance in Traditional Plastering Materials Difference of Thermal Conductivity by Different Colors

Sho Asanome et al.

**D-29** Adaptation of electrochromic glass into airflow window system

Yuichi Omodaka et al.

**D-30** Facade Plan In consideration of Heating and Lighting Case at The Skyscraper Twin Tower Complex

Yuya Asanuma et al.

**D-31** Optimization of Building Envelope Geometry with Daylight Utilization by Co-Simulation

Masaya Hirai et al.

**D-32** Experimental Results of Solar Radiation Shielding Performance of Eaves, Light Shelves and Horizontal Louvers and Accuracy Verification of Solar Radiation Analysis Study on Synthetic Evaluation Method for Energy Consumption Performance Concerning Openings and Air-conditioning / Lighting in Non-residential Buildings

Takuma Yamada et al.

**D-33** Heating and cooling load simulation using a shield of office buildings based on Tokyo 2010s Reference weather data — Load reduction effect by wooden blinds, honeycomb blinds, pleated screens –

Kyoichiro Isozaki et al.

**D-34** Study on evaluation of envelope performance using EnergyPlus

Takuya Nagata et al.

D-35 Regional Thermal Characteristics of Double-Skin
 Facade Based on 2021 Weather Data at 7 Points Nationwide
 Haru Yamaguchi et al.

**D-36** Dynamic insulation window using PCM and verification of ventilation air temperature rise

Yichen Wang et al.

**D-37** Quantification of the Heat Exhaust Effects of External Heat Insulation Double Ventilation Part.7 Completion of Simulation Model

Hideki Takamura et al.

 D-38 A study on the Cooperation between EnergyPlus and Grasshopper Part3 Development of an Integrated BES-CFD Analysis System for Wind Pressure Coefficient in the Cloud Hirotsugu Ueda

**D-39** NewHASP-Based Meta-Simulation Part 15 Meta-Simulation of Airflow Screen Up and Down Control

Hiroshi Ohga

**D-40** NewHASP-Based Meta-Simulation Part16 Calculation of light shelf optical performance values using Radiance

Chikako Ohki et al.

D-41 NewHASP-Based Meta-Simulation Part17 Calculation of thermal performance of buildings with indoor light shelf Keisuke Kimoto et al.

**D-42** Study of air conditioning load prediction with machine learning

Tasuku Hongo et al.

**D-43** Study on Energy Saving for Zero-Energy Apartment House Influence of Thermal Insulation Performance and Orientation of Main Openings on Heating/Cooling Load and Room Temperature

Kosuke Shinohara et al.

**D-44** Verification of ZEB Feasibility by Introducing Energy-Saving Method Based on the Actual Operation of Buildings in Southeast Asia

Yusuke Sakurai et al.

**D-45** Construction of the 2086 Expanded AMeDAS Future Reference Year

Hiroshi Akasaka et al.

**D-46** Critical Review of Four Calculation Methods of the Solar Declination and the Equation of Time and Comparison of Their Acculacy

Shin-Ichi Matsumoto

**D-47** A Study on Selection of Design Weather Data Based on the Joint Distribution of Multi Meteorological Elements Data: Copula Approach

Zhichao Jiao et al.

**D-48** Development of Spawn-of-EnergyPlus and Comparison with Existing Simulation Tools

Ken Takahashi et al.

**D-49** Improving the efficiency of building thermal model identification using hierarchical cluster analysis

Tomoko Yamanashi et al.

**D-50** Numerical analysis of solar water heating system aiming at energy-independent shelter gymnasium

Koichi Isawa et al.

**D-51** Prediction of Indoor Temperature Distribution Using Convolutional Neural Network Part 2 Comparison of Prediction Accuracy by Different Combinations of Training Data

Hiroki Ikeda et al.

**D-52** Data Modeling for Data-Driven Building Operations: Analysis of current metadata schema, and construction of Brick model of water side HVAC system and its use

Tomota Kogure et al.

**D-53** A Ductwork Layout Automation Based on an Undirected Graph

Wataru Yabuta et al.

**D-54** Verification of an Automatic Inspection System that Recognizes Analog Meters and Records Operating Sounds. Study on Optimization of Maintenance Plans of Air Conditioning Facilities Utilizing Maintenance Records Part 6

Masato Iguchi et al.

**D-55** Study for Rationalization of Building Management with Maintenance and Operation Data Part 5 Survey on long-term maintenance of an office building (Summary of survey and report on sanitary system)

Katsuhiro Miura et al.

**D-56** Study for Rationalization of Building Management with Maintenance and Operation Data Part 6 Survey on Long-term Maintenance in an Office Building (Situation and Analysis on Air-Conditioning System)

Shoichi Kimoto et al.

**D-57** Long-term operation results and future efforts in existing office buildings Part 1 32 years of operation results and maintenance

Hiroshi Kawasaki et al.

**D-58** Study on rigidity and earthquake resistance of resin panel duct (Part 4) Experiment on vibration characteristics of branch ducts with different construction methods

Hideaki Hiroi et al.

**D-59** Study on rigidity and earthquake resistance of resin panel duct (Part 5) Examination of own weight suspension interval and seismic support interval by numerical analysis

Takatomo Murata et al.

**D-60** Investigation and experiment on vacuuming work of refrigerant piping

Hiroyuki Hatada

**D-61** Research on work progress control for equipment construction using photogrammetry technology

Kaho Honda et al.

**D-62** Study on Technique Transmission and Skill Transmission in the Building Facilities Part 2 Comparison between the Gaze Points of Skilled Workers

Yohichi Udagawa et al.

**D-63** Construction of Temperature and Humidity Measurement Robot, Automation of Construction Site Operations

Nobuki Ito

**D-64** A Study on Area Revival by Renewable Energy at Mountainous Area in Tochigi Prefecture Part.3 Current Status and Issues of Biomass Power Generation

Yutaka Sato et al.

**D-65** Study on collaborative local energy business between local new electric power business utilizing local energy resources and heat supply business in local cities -Part 2-Study of heat supply model and regional new power model integrated with thermoelectric power in the redevelopment area in front of the station

Kazuma Ozawa et al.

**D-66** Study on collaborative local energy business between local new electric power business utilizing local energy resources and heat supply business in local cities -Part3-Examination of the effects of collaboration between the integrated heat and power supply business and the new regional electric power business

Ayaka Funada et al.

**D-67** Visualizing of Regional Circular and Ecological Sphere using Biomass Energy by Exergy Analysis

Keita Yamazaki et al.

**D-68** Development of Optimal Planning Method for Distributed Energy Supply System in the Remote Island Part5 Analysis of Electricity Supply-Demand Balance Adjustment by Hydrogen Storage and Biomass Energy

Ryotaro Matsuyama et al.

**D-69** Development of Optimal Planning Method for Distributed Energy Supply System in the Remote Island Part6 Effect of EV Adoption on Electricity Supply and Demand Adjustment

Koki Asakura et al.

**D-70** Hierarchical Optimal Control of Household Energy System (PV-FC-BT) -Verification of Power Interchange Effect by Constructing a Network between Households-

Momoka Okuda et al.

**D-71** Research and analysis use of renewable energy business for shizuoka prefecture

Nanako Takei et al.

**D-72** Optional Control of Energy Resources in All-electric House (Part1) Optimization of Each Device's Operation Plan in Consideration of Energy and Economic Efficiencies

Ayane Inokuchi et al.

**D-73** Optimal control of energy resources in all-electric home (Part 2) Operation method for electric vehicle assuming various lifestyles

Yui Osawa et al.

**D-74** Solution to introduce solar power generation to Tokyo Metropolitan area, considering power delivering situation in Tokyo Electric Power Holdings, Inc.

Takeshi Sase

**D-75** Using CityGML to Estimate Photovoltaic Potential in Urban Districts

Ryota Matsumura et al.

**E-1** Effects of the Amount of Planting in Real Office Space on Workers

Shogo Nakajima et al.

**E-2** The Effects of Indoor Greening and Satisfaction with the Light Environment of the Office Space on the Effects of Indoor Greening and Satisfaction with the Light Environment of the Office Space on the Physiological Quantity, Psychological Quantity, and Intellectual Productivity of Workers

Kanako Kobayashi et al.

E-3 Learning Performance in Odor Environment with Aroma Oils (Part9) Psychological Evaluation of Occupants Regarding Learning Performance and Odor in a self-study room sprayed with aroma oil

Shuichiro Fukumoto et al.

E-4 Influence of Indoor Environment Changes in Relaxation Space on Relaxation and RefreshmentEffects of Occupants (Part 3) Impact of Lighting and Air Movement,Odor Changes on Psychological Response

Natsumi So et al.

E-5 Influence of Indoor Environment Changes in Relaxation Space on Relaxation and Refreshment Effects of Occupants (Part 4) Influence of Lighting and Wind, Odor Changes on Physiological Response and Productivity

Tomoki Fujie et al.

**E-6** Experimental Study of Space Preference Characteristics in the Office Part1 The Case where the Experiment Participants were Students

Masaaki Higuchi et al.

**E-7** Cross-Sectional Survey of Facilities around the Office or Home and Related to Third Place of Work

Akira Saeki et al.

**E-8** Impact of Telework on Enterprise Productivity - Quantitative Analysis of Energy Consumption and Workers' Performance -

Sayaka Tsukahara et al.

**E-9** Relationship between skin temperature and sleepiness/ fatigue of workers based on subjective experiment

Kyohei Haga et al.

**E-10** Study on the Effect of Kitchen Environment on Health and Productivity Part.2 Correlation analysis of kitchen planning and subjective evaluation of kitchen workers' environment

Tatsuya Hayashi et al.

E-11 Effects of Air Conditioning System on Productivity of Office Workers (Part 6) Summery and IEQ Measurement Results on the Subject Experiment for Comparing Radiant with Convective Air Conditioning System

Hiroshi Shimizu et al.

**E-12** Effects of Air Conditioning System on Productivity of Office Workers (Part 7) Result of Psychological, Physiological and Simulated Work Performance of Summer Subject Experiment for Comparing Radiant with Convective Air Conditioning System

Sei Ito et al.

**E-13** Effects of Air Conditioning System on Productivity of Office Workers (Part8) Analysis Results Focusing on Gender and Sensitivity to Cold of Summer Subject Experiment for Comparing Radiant with Convective Air Conditioning System

Ritsu Usukura et al.

**E-14** Effects of Air Conditioning System on Productivity of Office Workers (Part 9) Investigation and Proposal of Qualification Method of Non-Energy Benefit of Building Installed Ceiling Radiant Air Conditioning System

Noriaki Satou et al.

E-15 Development of Air-conditioning System and Its Control System that Considers Human Factor (Part 23) Verification of Workability and Fatigue Level by Typing and Calculation according to Indoor CO<sub>2</sub> Concentration

Yosuke Sakai et al.

**E-16** Effects of Active Design for Workplace on Occupants Behavior Part 17 Cluster Analysis of ABW Office Workers based on Environmental Preferences in Office

Minami Seto et al.

**E-17** Effects of Active Design for Workplace on Occupants Behavior Part 18 The Relationship between Work Styles and Environmental Preferences

Yuki Saito et al.

**E-18** Effects of Active Design for Workplace on Occupants Behavior Part 19 Verification of Environmental Preferences in Office using Virtual Reality with HMD

Tomoko Tokumura et al.

**E-19** Effects of Differences in Workplace in ABW-Office on Intellectual Productivity, Psychological and Physiological Response Part 1 Outline and Analysis of Subject Experiment in the Middle and Summer

Teppei Tanaka et al.

**E-20** Evaluation of Office Environment with Locational and Biometric Data of Occupants Part 1 Field measurement at headquarter office in Tokyo:Research Overview

Hajime Iseda et al.

**E-21** Evaluation of Office Environment with Locational and Biometric Data of Occupants Part 2 Field measurement at headquarter office in Tokyo:Daily variation of concentration and stress level

Hiroki Takahashi et al.

**E-22** Evaluation of Office Environment with Locational and Biometric Data of Occupants Part 3 Field measurement at headquarter office in Tokyo:Spatial evaluation of office by concentration index

Fumi Kimura et al.

**E-23** Combination of Office Work and Working from Home for Improving Well-being

Toshiki Shinno et al.

**E-24** Follow up Survey Results of WEB Questionnaire CASBEE-Office Health Checklist

Yuko Morishige et al.

E-25 Effect of Applying Alcohol to Wooden Surfaces on VOC Emissions and Perceived Air Quality Part.1 Results of Chamber Experiment with Application of Alcohol

Nami Akamatsu et al.

E-26 Effect of Applying Alcohol to Wooden Surfaces on VOC Emissions and Perceived Air Quality Part.2 Results of Chamber Experiment with Repeated Application of Alcohol Kusuke Ikeuchi et al.

**E-27** Relationship between Odor Sensory Evaluation and Ouality of Panel's Memory

Akihisa Takemura

**E-28** Verification of the Effectiveness of Deodorizers in Diaper Storage Rooms in Nursing Homes

Ryosuke Hiura et al.

**E-29** Ventilation Performance Verification of Air-Conditioning System in Local Area of Clean Room Shigeki Tsuchiya et al.

**E-30** Study on Up-Flow Clean Rooms (Part 2) Comparison of Air Flow Types by Mock-Up Experiments

Takahiro Ishino et al.

**E-31** Efficiency Improvement of Clean Air Conditioning Control by Deep Reinforcement Learning

Takeyuki Someya et al.

**E-32** Particle generation and motion intensity during working in a cleanroom

Shota Endo et al.

**E-33** A Study on an Acid Gas Removal System Using Alkaline Electrolyzed Water for an Air Washer Part2: Performance evaluation of full-scale experiment device

Miki Hattori et al.

**E-34** Verification of Duct Insertion Type Pressure Fluctuation Suppression Chamber for the Purpose of Improving Room Pressure Stability

Yuki Murakami et al.

**E-35** Analysis of the Effect of Climate on Mortality over Time A Study of the Relationship between Climate and Mortality by Energy Conservation Category

Kyoko Aoyama et al.

**E-36** A Survey on Housing Environment and Health of Women and Children (Part 1) Association with Mental / Physical Symptoms in Women

Akane Ishii et al.

**E-37** A Survey on Housing Environment and Health of Women and Children (Part 2) Association with Allergic Disease in Children

Momoko Ohashi et al.

**E-38** A Study on Indoor Environment Adjustment and Measures against Influenza in Infant Facilities during Winter (Part 9) CO2 concentration and ventilation methods in nursery rooms in Tohoku and Kyusyu region

Ryosuke Ito et al.

**E-39** HVAC system considering infection control Part 1: Research Outline

Yukito Suzuki et al.

**E-40** HVAC system considering infection control Part 2: Measurements of local age of air and aerosol distribution in three different air supply and return system

Seiichi Tabuchi et al.

**E-41** HVAC system considering infection control Part 3: Distribution of aerosol in air conditioning room using LES Saori Yumino et al.

**E-42** HVAC system considering infection control Part4: Verification of virus inactivity effect by deep UV LED and development of UV unit

Masayuki Kawauchi et al.

**E-43** Performance Evaluation of an Air Purifier Combining UV-C LED and MEPA Filter

Hiroshi Nakayama et al.

**E-44** Study on Performance Evaluation of Ventilation for Aerosol Infection Control Part1 Experiment with CO2 and Aerosols in Classroom

Takayuki Matsunaga et al.

 E-45 Study on Performance Evaluation of Ventilation for Aerosol Infection Control Part2 Simultaneous Multi-point Measurements during Classroom Ventilation System Addition Harumi Kato et al.

**E-46** Infection risk assessment by carbon dioxide concentration considering considerable ventilation by circulation system

Atsushi Yanagisawa et al.

**E-47** Quantitative Evaluation of the Effect and Effect's Unbalanced Distribution of Portable Air Cleaner on Aerosol Infection Control

Yiming Xiang et al.

**E-48** Effects of Acrylic Partitions and Plastic Sheets as a Countermeasure Against COVID-19 on the Condition of Ventilation in Indoor Space

Yusuke Tomizawa et al.

**E-49** Measurement of Chlorine Dioxide Degradation Rate and Adsorption Rate in Chamber

Kazuki Shimotori et al.

**E-50** Study on droplet size distribution ejected from the human respiratory system (Part 2) Effect of drinking beverage on the droplet size distributions

Wonseok Oh et al.

**E-51** Study on droplet size distribution ejected from the human respiratory system Part 3 Numerical analysis on time variation of droplet size due to evaporation

Yunchen Bu et al.

**E-52** Study on the Diffusion of Droplets from Humans in Building Space Part 2 Measurement and CFD Analysis of Droplet Diffusion for a Heating Classroom

Yuki Arinami et al.

**E-53** Droplet Concentration Produced during Expiratory Activities and Evaluation of Relative Infection Risk

Arisu Furusawa et al.

E-54 Survey on Control and Maintenance of Indoor Environment and Indoor Air Concentration of Chemicals in Specific Buildings Part 1. Measurement Using a Passive Sampler in 2020

Hoon Kim et al.

**E-55** An experiment on SVOC emission behavior from plasticizers in a real space model

Yoshihito Masuzaki et al.

**E-56** A study on the status evaluation of fungal growth in geothermal heat exchangers using the fungal index

Shinji Kishida et al.

E-57 The actual condition elucidation of fungal flora in a cool pit

Kensuke Watanabe et al.

**E-58** Deposition behavior of suspended particulate matter on the surface of the human body -Airborne particle deposition experiment using a thermal manikin and silicon wafer-

Kosuke Kondo et al.

**E-59** A Study on the Air-Conditioning System Using the Floor Chamber for Residence Part 41. Comparison of Actual Measurement of Dust Diffusion and Simplified Simulation

Kosaku Urata et al.

**E-60** A Study on the Indoor Air Pollution Caused by Unvented Combustion Appliances (Part 3)

Atsuo Nozaki et al.

**E-61** Field Measurement of Micro-Plastic Concentration in Indoor Environment (Part3) Identification of microplastic components in house dust by  $\mu$ -FT-IR analysis

Yuan Ni et al.

E-62 Field Measurement of Micro-Plastic Concentration in Indoor Environment (Part4) Identification of microplastic components by LDIR analysis and adsorption SVOC concentration

Yifan Bai et al.

**F-1** Measurement of Ambient Temperature and Utilization Rate of Air-Conditioner's Outdoor Condensing Units at a High-rise Rooftop

Ken Matsumoto et al.

**F-2** Development of GHP Air-Conditioning System and Role of commissioning (10) Introduction of GHP to new home improvement store and verification of achievements

Satoru Arai et al.

**F-3** Comparative Evaluation of Continuous and Intermittent Operation of Air Conditioners under Low Loads in a Real Environment Using Two Residential Houses

Shinichi Ito et al.

**F-4** Study on Multifaceted Use of Ground Heat Source in Air-Conditioning Systems Part 1 Operating Results of Plural Heat Source System using the Well Water Heat Source during the First Year

Yuuki Yokota et al.

F-5 Studies on the Energy Consumption in the Art Museum Part 1 Building Outlines and Actual Energy Consumption for One Year after Completion

Takayuki Nagayoshi et al.

**F-6** Study on the Green Technologies in Smart Wellness Public Building in the City (Part 12) Analysis on the Energy Consumption and the Heat Source System during three years after Completion

Haruko Suzuki et al.

F-7 Study on Environmental Facilities Planning and Performance Evaluation in K City Hall (Part 1) Plan Overview and CFD Verification

Shotaro Shimizu et al.

**F-8** Study on Environmental Facilities Planning and Performance Evaluation in K City Hall (Part 2) Indoor Environmental Measurements and Energy Consumption Results

Kazuyuki Harada et al.

**F-9** Approach to performance inspection after the heat source repair work in a certain datacenter (part 3).

Taiji Kaneko et al.

**F-10** In an office building in Tokyo using BEMS data Survey on CO2 reduction effect of repair

Shinnosuke Yoshida et al.

**F-11** Importance and actual measurement results of supply and exhaust air flow balance of Existing Office Building (Part 4) Verification of air balance by repair work to secure the amount of outside air

Tarou Watanabe et al.

**F-12** Study on Measurement Method of Indoor Air Environment in Specific Buildings Verification Using an Office with an Individual Air-conditioning System

Keita Ito et al.

F-13 Actual condition survey on energy consumption in office building for energy saving (Part5) Operational improvements that save energy focused on electric energy and indoor environment data

Seiii Shimaoka et al.

F-14 Actual measurement and questionnaire survey by each seat in office for creating office environment visualization tool Part1, Analysis of what workers want in office environment

Sayuri Nishikawa et al.

**F-15** Next-generation office building aiming to realize a sustainable society Part1 Planning concepts and technical overview

Suguru Tanaka et al.

**F-16** Initiatives to reduce the environmental impact of next-generation training facilities in fully-wooden and fireresistant high-rise structure (Part1) Outline of building equipment and design intent

Yohei Moriyama et al.

**F-17** Study on Low-carbon Office using Radiation Air Conditioning and Active Chilled Beam Part 3. Verification of Environmental Performance by Measurement Survey After Completion

Miko Kobayashi et al.

**F-18** Evaluation of Low-carbon HVAC System using the Medium Temperature Chilled Water in a Large-scale Office Building (Part20) Evaluation of Air-conditioning System under the influence of COVID-19

Yasuhira Shimada et al.

**F-19** Study on Management Methods for Office Buildings in Operation Part1 Validation of Simulation Models for Air Conditioning Systems using Machine Learning

Kosuke Sasakura et al.

**F-20** Study on Management Methods for Office Buildings in Operation Part2 Human Thermal Comfort Estimation using Camera Image

Tatsuya Chuman et al.

**F-21** Design and Verification of a Cold Districts Broadcast Station in Consideration Energy Saving and Resilience Part1 Summary of the Building Plan

Shigeru Nakagawa et al.

**F-22** Design and Verification of a Cold Districts Broadcast Station in Consideration Energy Saving and Resilience Part2 HVAC Design of Call Center and Operational Result

Yuhei Seki et al.

**F-23** Design and Verification of a Cold Districts Broadcast Station in Consideration Energy Saving and Resilience Part3 Surveys of a Call Center using Radiant Air Conditioning in Winter

Nao Yamamoto et al.

**F-24** A Study on the Proper Renewal Criteria for Building Facilities Part10 Evaluation of optimal renewal cycle of HVAC system using Weibull process model and study conclusions

Daisuke Kuboi et al.

**F-25** The Impact of the Great Reset on Design for Improve Sustainable Building (Part.1) Overview of the Study

Masato Sasaki et al.

**F-26** The Impact of the Great Reset on Design for Improve Sustainable Building (Part.2) Sustainable Building Survey and Introduction in This Case Study

Teruhiro Watanabe et al.

**F-27** The Impact of the Great Reset on Design for Improve Sustainable Building (Part.3) CO2 emissions and cost estimation for building operation based on social changes

Taiki Uchida et al.

**F-28** The Impact of the Great Reset on Design for Improve Sustainable Building (Part.4) Study to improve wellness performance at the time of renewal

Kouta Nakamura et al.

**F-29** Ecology Building with BCP using Thermal Capacity of Building and Renewable Energy (Part 3) Verification of LCCO2 Reduction Effects by Introducing Thermo Active Building System

Masatoshi Kuboki et al.

**F-30** Realization of CO2-saving in the "TDU Tokyo Senju campus" Part-35 Understanding of the actual power consumption of the entire campus and the base power consumption

Gakuho Okawa et al.

**F-31** Realization of CO2-saving in the "TDU Tokyo Senju campus" Part-36 Actual Power Generation and Deterioration Diagnosis of Photovoltaic Power Generation Equipment

Shoichi Okita et al.

**F-32** Realization of CO2-saving in the "TDU Tokyo Senju campus" Part-37 Effect of Outside Air Volume Control on CO2 Concentration in Occupied Zone

Tatsuaki Sakae et al.

**F-33** Satisfaction both energy saving performance and comfort in open-plan school encouraged diverse interchanges. (Part 1) Validation by questionnaire survey to students and measurements of indoor environment in winter

Rvoko Miki et al.

**F-34** Satisfaction both Energy Saving Performance and Comfort in Open-Plan School Encouraged Diverse Interchanges (Part2) Study of number of occupants, indoor environment and energy consumption

Tatsunori Maeda et al.

**F-35** Study of Equipment System for Realizing Smart Campuses in Cold Regions

Rikako Ito et al.

**F-36** Planning and Evaluation of Small Offices with Consideration for Regional Decarbonization under Hotsummer Humid Continental Climate Part 1 Summary of the Project and Predicting Environmental Performance Using Architectural Passive Methods in the Design Phase

Shota Kawahata et al.

F-37 Planning and Evaluation of Small Offices with Consideration for Regional Decarbonization under Hotsummer Humid Continental Climate Part 2 Pre-Post Completion Evaluation of Daylight Environment

Yugo Tsuneoka et al.

**F-38** Planning and Evaluation of Small Offices with Consideration for Regional Decarbonization under Hotsummer Humid Continental Climate Part 3 Performance prediction by MEP system simulation applying architectural passive methods

Hiroaki Nakagawa et al.

**F-39** Planning and Evaluation of Small Offices with Consideration for Regional Decarbonization under Hotsummer Humid Continental Climate Part 4 Indoor Environment Evaluation in the Start-up Phase of Operation

Koki Kikuta et al.

**F-40** Planning and Evaluation of Small Offices with Consideration for Regional Decarbonization under Hotsummer Humid Continental Climate Part 5 Subjective Evaluation of the Office Workers in the Start-up Phase of Operation

Yasuko Miyakawa et al.

**F-41** Fukuoka Dental College Equipment plan of WELL function type environment conscious facility (Part9) Heat interchange among multiple buildings (Hospital building summer measurement results)

Yuji Tsuji et al.

**F-42** Fukuoka Dental College Equipment plan of WELL function type environment conscious facility (Part 10) Study on seasonal measuremental result of air-conditioning ventilation system in dental large examination room

Tomohisa Nakamura et al.

**F-43** Study of energy saving and MCP for energy centers such as hospital. -Part1- Comprehending the power consumption covered by the emergency generator at the time of a disaster and examining the power generation duration

Shodai Tanaka et al.

**F-44** Study on Energy Conservation and MCP strengthening in disaster base hospitals -Part1- Analysis of operation performance data in the first year of operation

Seishiro Murakami et al.

**F-45** Study on Verification and Evaluation of Energy Performance in the General Hospital located in Tokachi area of Hokkaido -part7- Examination of waste heat utilization methods for higher efficiency heat recovery systems

Akihiro Iwata et al.

**F-46** Construction of smart energy system by utilizing CEMS and verification of energy saving effect (Part5) Transition of plant operation by utilizing CEMS

Kazusa Koike et al.

**F-47** Study on Construction of Advanced Energy Management System in High-Rise Building (Part 10) Isothermal Effect under Heat Load Maldistribution Using Induction Diffusers with Fan

Megumi Suzuki et al.

**F-48** Study on Construction of Advanced Energy Management System in High-Rise Building (Part 11) Thermal Environment Evaluation of PMV Control System Based on Non-Contact Radiation Sensor

Kouichi Shinmura et al.

**F-49** Study on Construction of Advanced Energy Management System in High-Rise Building (Part12) Perimeter-VAV Control System with built-in AI that predicts room-temperatures II

Daisuke Sakamoto et al.

**F-50** Study on construction of advanced energy management system in high-rise building (Part13) Energy supply plant initiatives in the redevelopment area

Wei Ling et al.

**F-51** Study on construction of advanced energy management system in high-rise building (Part14) Performance verification of the energy plant in the 2nd year and the plant initiatives

Yoshihiro Konnai et al.

F-52 Study on construction of advanced energy management system in high-rise building (Part15) Report of basic functions and operation plan results of energy management system

Narutoshi Suzuki et al.

F-53 Study on Construction of advanced energy management system in high-rise building (Part 16) Operation Plan Evaluation of Energy Plant Using Thermal Storage and CGS

Shunsuke Tomizawa et al.

**F-54** Survey on problems and awareness of equipment during long-term power outages due to natural disasters in housing

Ayako Yasuoka et al.

**F-55** Evaluation of Energy Consumption in Detached Houses Living in the New Normal after COVID-19 Part.1 Analysis of changes in lifestyle based on household electricity consumption and questionnaires analysis from 2019 to 2021

Ryota Yamazaki et al.

**F-56** Evaluation on Energy Consumption at Detached House living in New Normal after COVID-19 Part4 Analysis of changes in lifestyle due to working from home in the summer period from 2019 to 2021

Taiki Sakashita et al.

**F-57** A Study on Ventilation Behavior Modification Using Environmental Monitoring System for Elementary Schools Part 1. Analysis of behavior change by measurement and questionnaire responses

Yuichiro Amano et al.

**F-58** Research on indoor environment and energy consumption of elementary and junior high schools under the spread of novel coronavirus infection

Yusuke Sekiguchi et al.

**F-59** Commissioning of a Project to Renovation Heat Source and Air Conditioning Systems for a School in Cold Region Part-1 Project Overview and Investigation Phase in the Commissioning

Naomiki Matsushita et al.

**F-60** Commissioning of a Project to Renovation Heat Source and Air Conditioning Systems for a School in Cold Region Part-2 Design Phase in Commissioning, Design based on OPR

Yoichi Kobayashi et al.

**F-61** Part25: Long-term Evaluation of Water and Energy Consumption Trend Study on Verification of Indoor Environment and Energy Performance in Future Genration-Urban Hospital

Kiho Yoshioka et al.

**F-62** Part 26 – Long-term Evaluation of air cleanliness for humidification systems Study on Verification and Evaluation of Indoor Environment and Energy Performance in Future Generation - Urban Hospital

Naoki Takahashi et al.

**F-63** Data Analysis and Methods for BIM Utilization for Commissioning Process of HVAC systems

Rio Saijo et al.

**F-64** Energy-saving Renewal and Evaluation of Thermal Storage Air-conditioning System (Part4) ZEB rating and ongoing energy performance assessment

Hisaaki Sato et al.

**F-65** Energy-saving Renewal and Evaluation of Thermal Storage Air-conditioning System (Part5) Indoor Environment Assessment and Comfort Questionnaire Survey

Shohei Kurita et al.

**F-66** Energy-saving Renewal and Evaluation of Thermal Storage Air-conditioning System (Part6)Tuning of air conditioning system and verification of effectiveness

Kazunari Ishikawa et al.

**F-67** Renovation of HVAC Systems of Subway Stations and HVAC CBM System Applying Commissioning (Report1) The background of the renovation project and applying commissioning process

Shinaro Yamada et al.

**F-68** Renovation of HVAC Systems of Subway Stations and HVAC CBM System Applying Commissioning (Report 2) Design concept of the HVAC supervising system fulfilling condition based maintenance (CBM) in management and operation work

Junji Yamaguchi et al.

**G-1** Study on An Annual Utilizing System Using Exhaust Heat of Residential Combined Heat and Power Systems in Cold Regions

Mai Kanno et al.

- **G-2** Proposal and Verification of Operational Improvement for a Hybrid Heat System in a Hospital in Alpine Climate Ryoga Funo et al.
- **G-3** Research on the Operation of a Small-Scale Biomass District Heat Supply System for a Group of Houses in the First Year of Full-Scale Operation

Mashiro Okutsu et al.

**G-4** Improved Setting of VWV Control in Commissioning for Existing Laboratory Building

Hisashi Fujita et al.

G-5 Study on System Planning Considering DR Operation by a Multiple Heat Source System in Building Part 1 Examination of DR operation using operation data of the heat source system in a hospital

Yuki Yakita et al.

**G-6** Energy Saving Effects for International Exhibition Halls in Coastal Area: Estimating Energy Consumption of Chillers Connected in Series Including the Use of Seawater Heat Source

Minako Nabeshima et al.

- G-7 Evaluation of Heat Source Water Thermal Storage for Multi-Split Air-Conditioning System with Unutilized Heat Toya Tanaka et al.
- **G-8** Examination of seasonal operation patterns of heat source systems using solar heat and CGS waste heat

Masahiro Yamamoto et al.

**G-9** Study on the energy saving effects of Valuable Water Volume Part-1 Grasping the characteristics of configuration equipment related to inverter control of VWV experimental equipment

Shun Takagi et al.

**G-10** Water Intake Model of Vertical Inflow Diffuser in Temperature-stratified Type Thermal Storage Tank

Kazunobu Sagara et al.

G-11 Pumping Temperature Prediction Method for Planning Aquifer Thermal Energy Storage System (Part2) Model Considering Thermal Interference between ATES Wells

Masaki Nakao et al.

G-12 Study on Thermal Energy Storage System for Improvement of Partial Load Characteristics during Cooling—3rd Report: Improving Energy Efficiency by Operational Control—

Ryoya Hashimoto et al.

**G-13** Validation of a Mixing Model for Temperature Stratified Thermal Storage Tank Capable of Storing Heat in Multiple Temperature Ranges

Hiroaki Kitano et al.

**G-14** Verification of The Effect of Suppressing The Temperature Decrease of The Floor Surface of Phase Change Material Sheets in The Apartment Building

Rikuto Yamamoto et al.

**G-15** Charging and Discharging Characteristics of Phase Change Material under Varying Cooling Conditions and the Prediction Method

Satoshi Miyagi

**G-16** Estimation of soil effective thermal conductivity from practical data of shallow geothermal system by data assimilation using ensemble Kalman filter

Yutaka Shoji et al.

**G-17** Calculation of ground temperature surrounding slinky-coil type horizontal ground heat exchanger and applying for simulation tool for ground source heat pump system

Takao Katsura et al.

**G-18** Long-term Performance Evaluation of a Heat Recovery Ground Source Heat Pump System

Tomoya Ohara et al.

**G-19** Evaluation of Ground Thermal Properties and Ground Heat Exchangers by Statistical Data Analysis

Kohei Nimura et al.

**G-20** Proposal of Operation Method for Earth-to-Air Heat Exchanger system by Reinforcement Learning Part3: Applicability study of a fast prediction simulator using Random Forest

Takumi Koyama et al.

G-21 Research of Adsorption Water harvesting using Natural Mesoporous Material Construction of a small adsorption desalination system and experimental study of freshwater production and thermal efficiency

Toshiyuki Kitaoka et al.

**G-22** Measurement Survey and Analysis on the Effect of Installing Renewable Energy at SAGA Sunrise Park (Part1) Outline of the Buildings and the Renewable Energy

Yuki Sakamoto et al.

**G-23** Measurement Survey and Analysis on the Effect of Installing Renewable Energy at SAGA Sunrise Park (Part2) Thermal Response Tests of Geothermal Heat Pumps

Kazuki Muramatsu et al.

**G-24** Research on the use of thermal energy in the region, Classification of Unused Thermal Energy and Heat Utilization Strategies in Hot Spring Facilities

Masaki Sakamoto et al.

**G-25** Study on the Economical Construction for a District Heating and Cooling Network Part 3) Economic Optimization Theory of Heat Supply Piping Network in Directly Buried Two-Pipe Insulated Hot Water Piping System

Masaya Tachibana et al.

**G-26** Supply Optimization in Urban District Heating and Cooling Part1 Example of variable temperature and variable pressure supply of chilled water and its evaluation

Yuka Takeda et al.

**G-27** Study on CGS Capacity and NEB Considering BCD in Regional Energy Planning

Megumi Shirai et al.

**G-28** Heat Recovery in Boiler Room for District Heating and Cooling by Heat Pump Part 5 Measurement of COP and CFD Simulation on Heat Pump Efficiency

Kensuke Oishi et al.

**G-29** Reduction of Heat Loss from Pipes in Tunnel for District Heating and Cooling Part 2 Study on Steam Pipes in Tunnel Completed in the 1970s and 2020

Yuki Yamada et al.

**G-30** Study about the Energy Saving Methods of Urban Facilities in DHC Part 5: Improvement of optimal setting automation method utilizing AI technology and evaluation with multiple heat sources.

Atsushi Yazaki et al.

G-31 Corrosion Prevention in an Operating District Heating and Cooling Plant With a Nonchemical Corrosion-Prevention System Part7: Influence of Flow Velocity on the Corrosion Inhibition Effect of Anion-Exchanged Hot and Chilled Water on Carbon Steel

Ikuhiro Yamada et al.

**G-32** Study on improving the efficiency of smart energy networks in the Toyosu Wharf area -Part1-Appropriate verification of the operational planning logic for higherficiency cogeneration and consideration of a new logic

Koudai Hirata et al.

**G-33** Study on commissioning of district heating and cooling system (Part 3) Analysis of operation performance data in the second year of operation

Ziyan Ren et al.

**G-34** Outline of the Renovation at the site of Shinagawa Higashiguchi-Minami District Heating & Cooling Plant, Report 4: Operation Result of 23 years

Sunao Ootsuka

G-35 Realization of Town Development Aiming at Decarbonization Through Energy Management in Collaboration with Supply and Demand (1st Report) Overall plan of the project

Akira Yokohama et al.

**G-36** (2nd Report) Proposal of Effect Appearance Condition Model for Implementation of Heat Demand Response

Yuri Nagase et al.

G-37 Study on the Introduction of Optimal Operation for an HVAC System Part 5: Optimal Control Method of Cooling Water System in Collective Type Cooling Towers

Kazuki Yajima et al.

**G-38** Study on the Introduction of Optimal Operation for an HVAC System Part 6: Evaluate the impact of replenishment water on cooling water system operations to reduce carbon dioxide emissions

Hajime Ogata et al.

**G-39** Integrated industrial energy simulator with calculation functions for economic assessment

So Muto et al.

**G-40** Development of ANN Models for Building Facilities based on Operation Data (Part 3) Influence of Output Nodes on Prediction Accuracy for Power Demand

Yuki Matsuda et al.

**G-41** Study on Reduction of Lighting Energy Consumption in Office Buildings When Telework Is Applied

Yasuaki Nose et al.

**G-42** Estimation of Annual Dioxide Emissions from Detached Houses Based on Residential Energy Conservation Standards

Yoshiki Nagasaki et al.

**G-43** Study on Energy Storage Systems in Buildings and Facilities - Examination a Capacity of Energy Storage with Batteries and Hydrogen -

Takeshi Okada et al.

**G-44** Development of an Integrated Energy Simulation Tool for Buildings and MEP Systems, the BEST (Part 256) Activities of the BEST and a Survey on Use of Simulation Tools in Studies for Built Environment

Hisaya Ishino et al.

G-45 Development of an Integrated Energy Simulation Tool for Buildings and MEP Systems, the BEST (Part 257) Report on the calculation results of the SHASE Guideline, test Procedure for the Evaluation of Building Energy Simulation Tools, by the BEST

Hiroshi Ninomiya et al.

**G-46** Development of an Integrated Energy Simulation Tool for Buildings and MEP Systems, the BEST (Part 258) Sensitivity analysis of the thermal characteristics of the Double Skin Facade

Takayoshi Shibahara et al.

**G-47** Development of an Integrated Energy Simulation Tool for Buildings and MEP Systems, the BEST (Part 259) Examination of Assumption of Unconditioned Core Spaces in Buildings

Kimiko Kohri et al.

**G-48** Development of an Integrated Energy Simulation Tool for Buildings and MEP Systems, the BEST (Part260) Study on Maximum Heat Load Calculation Method for ZEB Design Kohichi Shinagawa et al.

**G-49** Development of an Integrated Energy Simulation Tool for Buildings and MEP Systems, the BEST (Part 261) Study for ZEB by Water Heating System Using Solar Heat Collection and Photovoltaic Power Generation

Hasegawa Iwao et al.

**G-50** Development of an Integrated Energy Simulation Tool for Buildings and MEP Systems, the BEST (Part262) Outline of Equipment Characteristics on User-defined heat source and Air handling unit fan

Yukihiro Kawazu et al.

**G-51** Development of an Integrated Energy Simulation Tool for Buildings and MEP Systems, the BEST (part 263) Simulation study of steam use cogeneration system

Hiromichi Nishida et al.

**G-52** Development of an Integrated Energy Simulation Tool for Buildings and MEP Systems, the BEST (Part 264) Verification of simulation results of steam use cogeneration system

Tatsuo Fujii et al.

**G-53** Initiatives to Improve a System in a District Heating and Cooling Plant Part 3: Improvement Study and Effect Verification of Heating Tower Optimal Operation

Rika Yamakawa et al.

**G-54** Study on Energy Consumption of the Food Retail Store Part23. Relationship between outside air temperature, enthalpy in the store, and power consumption of refrigerators and space conditioners

Miwako Fujita et al.

G-55 Study on power demand adjustment ability of nonresidential building equipment Estimating the DR adjustment power of lighting, air conditioning, and hot water supply

Satoshi Matsumoto et al.

**G-56** Study on DR Controls in a Group of Buildings to Suppress the Rebound of Electric Power Demand and Deterioration of Indoor Thermal Environment

Jie Shen et al.

G-57 Remote automatic operation system for heat source plant using an optimized operation plan Part1: Functions and features

Yasushi Kamimura et al.

**G-58** Remote automatic operation system for heat source plant using an optimized operation plan Part2: Operation result

Sinya Fujie et al.

**G-59** Study on optimal operation support system of heat source system using actual operation data (Part4) Verification of adaptability of load prediction method in heat and power load change period by COVID-19

Naoki Tsuchiya et al.

**G-60** Study on Smart Communities with Heat Pump (Part14) Optimal Control of Heat Pump and Battery

Haochen An et al.

**G-61** A Study on the Cloud Computing of Building Management System

Takeshi Yoshida et al.

**G-62** A Study of Building Automation for Small and Medium-Sized Buildings Power Consumption Prediction and Load Estimation for Open Labs

Nami Suzuki et al.

G-63 Study on Data Driven Energy Management for Multiple Buildings Part-3 Classification of energy consumption using re-clustering and characterization by feature analysis

Yui Morinaga et al.

G-64 Study of BEMS Data Utilization for Energy Management in Hospitals Part-1 Prediction of energy consumption by uses and performance evaluation of heat source equipment based on baseline estimation

Hideki Tanaka et al.

**G-65** Energy management of commercial buildings based on electricity demand disaggregation.

Yuka Kambayashi et al.

**G-66** Analysis of Energy Consumption in Urban University Facilities, focusing on the Minoh New Campus of Osaka University

Akito Kobayashi et al.

**G-67** Study on rationalization of BEMS tools using TSC/naming\_codes Part1: Application to BEMS Graph Drawing Configuration Tool

Itaru Murasawa et al.

**G-68** Study on rationalization of BEMS tools using TSC/naming\_codes

Hideomi Ito et al.

**G-69** A Study on Energy Saving in University Facilities. Part3. Optimisation of Energy Consumption of Electricity and Liquefied Natural Gas in A University Cafeteria.

Moe Nabeta et al.

**G-70** A Study on Energy Saving in University Facilities, Part4 Verification of Energy Conservation Measures for Air Conditioning Equipment

Yuta Nakamura et al.

**G-71** Energy Consumption on Humanities and Science Campuses before and after the Spread of COVID-19

Takeru Kamide et al.

G-72 Differences in Electricity Rate Structures and the Use of Visualization Technology in Housing Complexes Evaluation of Electricity Consumption, Electricity Saving Awareness, Behavior Change, and Life Satisfaction in Summer

Yuka Yonekura et al.

**G-73** Inducing Energy-Saving Behavior through Practical Environmental Education Practical Verification in Elementary Schools in Fukushima Prefecture Using Nudges

Takaho Itoigawa et al.

**G-74** Research on Energy Saving Effect and User Behavioral Change Using Smartphone Applications Part1 Application Development and System Operation

Kotaro Shinmori et al.

H-1 Verification of Tracking Performance of On-demand Environmental Control System Using Infrared Array Sensor and Evaluation of Indoor Thermal Environment in Government Building

Mai Narabu et al.

H-2 Environmental and Energy Performance Evaluation of Moka City Hall Part 1 Building outline and actual measurement of indoor environment in winter

Ami Honda et al.

**H-3** Thermal environment and overall comfort in office buildings in Aichi prefecture in autumn and winter seasons

Katsunori Amano et al.

**H-4** Renovation of building with atrium and office space Part5, Effects of BIPV shading above top light on light and thermal environment

Raimu Nakamura et al.

**H-5** Improvement of Psychometric Survey Methodology for Thermal Environment of Office Workers

Koki Ogino et al.

H-6 The Effects of an Individually-controllable Environment with a Legs Infrared Panel Heater on Physiological and Psychological Response and Workplace Productivity (Part1) Overview of a Subject Experiment and the Result of Physiological Response

Mayumi Miura et al.

H-7 The Effect of an Individually-controllable Environment with a Legs Infrared Panel Heater on Physiological and Psychological Response and Workplace Productivity (Part2) The Result of Psychological Response and Task Performance

Haruka Ueda et al.

**H-8** A study on the effects of room temperature change on physiological and psychological responses, and work efficiency of office workers in summer

Mizuka Shimoyama et al.

H-9 Effect of Local Airflow with Different Diffusion Characteristics on Thermal Comfort (Part 2) Evaluation of Heat Loss Due to Draft Using Thermal Manikin

Junta Nakano et al.

H-10 Performance Verification Using General System for Activity Based Working Office in I building Part1) Outline of Air-conditioning System and Performance Verification of Natural Ventilation

Hirotaka Kubo et al.

H-11 Performance Verification Using General System for Activity Based Working Office in I building Part 2) Performance Verification of Air Conditioning Systems with Variable Radiation/Convection Components Using Building Structure and Natural Ventilation Systems

Keitaro Kubo et al.

H-12 Performance verification using general system for Activity Based Working office in I building Part 3 Indoor environmental evaluation and selection for Each Characteristic of Workers

Maya Shibata et al.

H-13 Study on Office for CO2 Saving and Wellness with Outdoor Environments (Part 1) Investigation of the Influence of the Environment on Occupant Behavior during the Intermediate Season

Shogo Ito et al.

H-14 Prediction Method of Thermal Environment for Perimeter Zone in Heating Condition using Architectural Measure and Heating Equipment (Part4) Temperature Distribution and Velocity Measurement by PIV near Window with an Exhaust System

Masahiro Katoh et al.

**H-15** Effects of Lavender Fragrance on Autonomic Nervous Activity and Thermoregulatory Response in Mild Cold

Juno Kita et al.

**H-16** Experimental study of thermal environment focused on airflow control Thermal physiological load and productivity considerations

Shoko Nishina et al.

H-17 Study on the Prediction Method of the Airconditioning System Using a Three-dimensional Wall Jet (Part2) Examination of Reproducibility By CFD Analysis Using Momentum Method

Ken Fukada et al.

H-18 Development of Zone Air-Conditioning System for Factories using Air Curtains First report: Results of the Thermal Environment Measurement in Laboratory Experiments

Yuudai Mori et al.

H-19 Development of Zone Air-Conditioning System for Factory using Air Curtains Second report: Thermal fluid analyses with CFD

Mizuki Satoh et al.

**H-20** Research on Operation Method of Outdoor Air Conditioning System considering Ventilation Performance Part2 Enlargement of CFD model including East side of the Hospitalization Floor

Masaki Takao et al.

**H-21** Study on the Survey of Detached Houses after Insulation Retrofit in Winter

Naoki Koike et al.

**H-22** Environmental performance improvement effect by refining apartment buildings -Quantitative Analysis of Environmental Impact Control and Health Impact-

Ryuta Tsukada et al.

**H-23** Study on a Ductless Central Air-conditioning System Utilizing Crawl Space as supply Chamber Part 3 Analysis of Air Volume Balance and Achieved Room Temperature Using Thermal-Ventilation Network Calculations

Masaski Wakaoji et al.

**H-24** Understanding the Actual Thermal Environment and Energy Consumption of Ducted Whole-House Heating and Cooling Systems

Hoshito Mori et al.

**H-25** A Study on Design Methods for Houses with Radiation Air Conditioning and Heating System Part 1. Examining the Optimum Specifications and Understanding of the System

Jurika Takeuchi et al.

**H-26** A Study on Design Methods for Houses with Radiation Air Conditioning and Heating System Part 2. Grasping the Actual Indoor Thermal Environment at the Time of residence

Shuhei Ohta et al.

H-27 Study on the Heating and Cooling System using Radiant Panels that Pass Through the Air Installed Under the Floor Part 1 Measurements of indoor wind speed and temperature distribution and study of numerical simulations

Yuki Sato et al.

**H-28** Evaluation of Thermal Environment in Convection □ Radiation Hybrid Air Conditioning System for Residential Buildings

Kyohei Aoyama et al.

**H-29** Study on the renovation effects of external wall insulation at the condominium Part 1, The Outline of the condominium and the analysis of thermal environment at heating period

Kazuaki Bogaki et al.

**H-30** Study on Highly Insulated Apartment Housing Part 2 Verification results of indoor thermal environment using ventilated doors

Masayuki Inoue et al.

H-31 Study on Highly Insulated Apartment Housing Part 3 Verification Results of The Effect of Using Heat Storage Materials to Reduce Temperature Differences Between Rooms

Masaaki Yamamoto et al.

H-32 Field Measurement of Airtightness and Thermal Environment in Precast Reinforced Concrete Boxed-Shaped Wall Houses

Mutsumi Yokoi et al.

**H-33** A Study on Residential Air Conditioning Systems for Promoting the Health (Part10) Discussion the Problems of Result on Case Study in Summer and Winter

Koki Shoji et al.

H-34 A Study on Residential Air Conditioning Facilities for Preventing and Promoting the Health (Part11) Analysis of the Relationship between Air Conditioning Operation and Personal Attributes and the Relationship between the Thermal and Air Quality of a House and Health

Genki Inagawa et al.

H-35 A Study on Residential Air Conditioning Facilities for Preventing and Promoting the Health (Part12) Subject Experiment on Impact of Difference in Speed of Room Temperature Change on Physiology and Psychology

Rvo Shikami et al.

H-36 Questionnaire Survey on the Effects of Air Conditioning Equipment on the Health and Quality of life Keiko Sekiya et al.

**H-37** Thermal Comfort of Houses in Hot Humid Regions Part 2: Thermal environment and energy consumption of three houses including ZEH

Kahori Genjo

H-38 Study on landscape and environment in historical buildings in Tochigi City, Tochigi Prefecture Relationship with main streets and actual measurement of indoor environment in winter

Yuna Yasuda et al.

**H-39** Research On Housing Environment And Energy Consumption In Clod Regions Of China

Ben Qiao et al.

**H-40** Validation of a CFD model simulating evaporation effects of droplets generated from an ultrasonic humidifier on indoor thermal environment using wind tunnel experiments

Naoto Ooya et al.

**H-41** Effects of air quality environment on sleep quality in spring bedrooms

Akemi Iwaki et al.

H-42 Online Questionnaire Survey on Changes in Bedroom
 Environment and Sleep Quality Associated with COVID-19
 Mizuho Akimoto et al.

H-43 Actual Survey on Thermal Exposure Environment before and during Bedtime and Sleep Quality in Winter Naoki Ogasawara et al. **H-44** Effects of Psychological State and Bedroom Environment on Subjective Sleep Evaluation

Shu Takemoto et al.

**H-45** Effects of low temperature and bedding on the lying human body in a simulated shelter environment

Kazuyo Tsuzuki

**H-46** Measurements of indoor environments of lecture rooms employing prevention of infection by cross ventilation Akiho Maeda et al.

H-47 Long Term Measurement on CO2 Concentration, Air Temperature, and Relative Humidity in High School Classrooms in Asahikawa

Rvuta Kaneko et al.

**H-48** Field Measurement on CO2 Concentration, and Air Temperature in Elementary School Classrooms in Tokyo under COVID-19 Calamity

Fumiya Dohi et al.

**H-49** Effecte of the thermal environment in a shelter on Physical and Psychological Responses with mask wearling.

Kumi Okabe et al.

H-50 Foot Thermal Sensation of "Hiesho" Women Considering the Movement Between Rooms (Part1) Subject Experiments on Physiological and Psychological Responses to Heating Systems

Kanari Hirama et al.

H-51 Foot Thermal Sensation of "Hiesho" Women Considering the Movement Between Rooms (Part2) Evaluation of Psychological Responses and Formula for Foot Thermal Sensation

Haruka Arai et al.

H-52 Development of a comfort test room that can simulate various thermal environments during heating (Part5)
 Reproduction method of air conditioning heating environment Toshiyuki Miyanaga et al.

H-53 Examination of the possibility of a telework space in apartment housing Part 1 Outline of the Experiment and Verification of Thermal Environment and Ventilation Performance

Kazuhiro Ikemoto et al.

**H-54** Examination of the Possibility of a Telework Space in Apartment Housing Part 2 Evaluation of the Telework Space by Physiological Indicators and Subjective Declaration

Yuichiro Inoue et al.

**H-55** Study on Environment Friendly Office with Thermal Sensation Vote Air Conditioning System (Part1)Results of the Office Worker's Thermal Sensation and Energy Efficiency Effects in Summer

Masafumi Mikuriya et al.

**H-56** Subject Experiment on The Effect of Self-Efficacy on Comfort and Satisfaction in A Thermal Environment

Yuho Kawai et al.

**H-57** Basic Study on Development of Environmental Soft Sensor and Prediction of Indoor Temperature Distribution

Rina Hirai et al.

H-58 Fundamental Study on Thermal Physiology Induced by Human Heat Stress (Part 1) Change in WBGT values assuming natural convection field due to ES

Ayumu Endo et al.

**H-59** Fundamental Study on Thermal Physiology Induced by Human Heat Stress Part2 Consideration of local convective heat transfer coefficient using CFD analysis

Tatsuhiro Yamamoto et al.

**H-60** Proposal for improvement based on CFD analysis and air flow measurement experiments around hospital beds in an existing hospital

Yuka Nakajima et al.

H-61 Research on comfort in high-temperature, low-humidity air conditioning (Part.2)Comparison of experiments with standing and seated subjects in various indoor environments

Kakeru Furuhashi et al.

H-62 Research on Comfort in High-Temperature, Low-Humidity Air Conditioning (Part 3) Comparison of skin surface temperature and heat dissipation due to temperature and humidity differences using a sweating thermal mannequin Sho Saito et al.

**H-63** Prediction Methods for Thermal Sensation and Comfort (Part 26) Investigation of Thermal Sensation of Various Human Body Parts Irradiated with Infrared Radiation of Different Wavelengths by Subjective Experiments

Yoshiichi Ozeki et al.

**H-64** Effect of wearing Ventilated Working Jacket and Trousers on physiological and psychological responses

Kouhei Kuwabara et al.

**H-65** Study on Effects of Thermal Environment and Exercise Intensity on Physical Workers (Part6) Comparison of Indoor and Outdoor Experiments and Examination of the Percentage of Exceedance of Reference Rectal Temperature at Construction Site

Ryouhei Ueyanagi et al.

H-66 Thermal Comfort Study Considering Spatial Characteristics in Semi-outdoor Environments Part 1: Environmental Grade Classification based on Impression Evaluation of Space

Yuyuko Watanabe et al.

**H-67** Thermal Comfort Study Considering Spatial Characteristics in Semi-outdoor Environments Part 2: Comparison of the Impact of Air Velocity on Pleasantness by Different Spaces Using a Real-time Voting System

Yuta Fukawa et al.

I-1 Verification of the Effectiveness of Ventilation Control in a City Hall with Void (Part 3) Wind Pressure Coefficient Results by Wind Tunnel Experiment, Examination of Control Setting Values by Ventilation Network Model and CFD Analysis

Tomoyuki Chikamoto et al.

**I-2** Optimal Design of Natural Ventilation with Waste Heat Utilization in Void (Part2) Optimization for Design Variables by Genetic Algorithm

Yoshihisa Momoi et al.

**I-3** Study on the Performance Evaluation of Natural Ventilation Control in Office Buildings - The Effect on Cooling Load Due to Adjust the Opening Ratio of Natural Ventilation Openings -

Kei Shimonosono et al.

I-4 Study on Unsteady Ventilation caused by Wind Part 4 Natural Ventilation for Building Models with Vertical Shaft by Wind Pressure Fluctuation and Temperature difference Han Wang et al.

**I-5** Ventilation Effect of External Wind Turbulence for a Room with Multiple Openings (Part16) Measurement of Ventilation Rate and Inflow/Outflow Velocity of a Room with Single-Sided Two Opening by Wind Tunnel Test

Kayuki Sano et al.

**I-6** Ventilation Effect of External Wind Turbulence for a Room with Multiple Openings (Part17) Investigation of Ventilation Rates Prediction Models with Minor Mean Wind Pressure

Zitao Jiang et al.

I-7 Research on natural ventilation system using fluctuations in wind direction and wind speed (Part.3) Measurement of ventilation air volume by natural wind with fluctuating wind direction and speed by model experiment

Kunio Mizutani et al.

**I-8** A Study on Ventilation Performance of Apartment Buildings Considering the Wind Catcher

Kotaro Ishikawa et al.

- I-9 Pilot Study on Monitoring Method for Windows Opening in Elementary School Classrooms with Measured Air Temperature Adjacent to Windows and CO2 concentration Go Iwashita et al.
- I-10 Control of Natural Ventilation Opening to Keep Energy Saving and Thermal Comfort in Office Room (Part
  2) Investigation of Maximum Air Charge Rate for Natural Ventilation Opening of Built-in Peri-Counter Box Type

Kenryu Niwa et al.

**I-11** Effect of Periodical Change in Directions of Cool Air Flow from Air Conditioner on Buoyancy Ventilation through Single Opening

Atsuki Ichikawa et al.

**I-12** Field Measurement of Natural Ventilation in Atrium of Large Shopping Mall

Koji Nagayama et al.

**I-13** Prediction of building wind pressure coefficient in the presence of surrounding buildings using neural network -Study of prediction accuracy for different training data-

Taku Kikuchi et al.

**I-14** A Study on Simplified Analysis of 3D Wall Jet using Momentum Method

Xinyue Wang et al.

**I-15** A Basic Study of Fast Fluid Dynamics (Part 2) CFD / FFD Analysis of Non-Isothermal Airflow using GPU

Koji Sakai et al.

**I-16** A Comparative Validation of CFD Analysis in Forced Convection Heating and Cooling Room

Yusuke Yamada et al.

**I-17** Investigation of effective opening area to improve heat exhaust effect in a factory with high heat generating elements

Mitsuru Takuwa et al.

**I-18** Study on Air-Conditioning and Ventilation Design Methods for Countermeasures Against COVID-19 Infections in Office Spaces

Nobuhide Ashiki et al.

**I-19** Study on ventilation method of university lecture room under COVID-19 crisis

Tomoki Miyake et al.

**I-20** Performance of Local Exhaust System as Prevention Measure of Infection in Consulting Room (Part 3) Exposure Concentration Response and Hood Capture Rate of Droplet Nuclei from Conversation and Coughing Based on Transient CFD Analysis

Ren Zhang et al.

I-21 Performance of Local Exhaust System as Prevention Measure of Infection in Consulting Room (Part 4) Estimation of Infection Risk due to Exposure to Droplet Nuclei from Infected Person in front by Means of CFD Analysis and the Full-scale Model Experiment

Jun Yoshihara et al.

I-22 Hygrothermal Simulations on a High Performing Single Family House with Traditional Timber Framed Modular Panels (Part 8) Evaluations on Ventilation Systems and Building Material Performances by the Multi-zonal Ventilation Network Model

Hideki Shibaike et al.

- **I-23** Study on the reproducibility of exhaust diffusion property in open corridors with a gas water heaters installed Saki Nakano et al.
- **I-24** Study on a Demand Ventilation Control in Consideration of Infectious Disease in a House -Experiments on a Method to Control Ventilation Rates Using CO2 Concentrations-

Yuki Yamazaki et al.

**I-25** Ventilation performance depending on use conditions of residential buildings

Hirokazu Nagaoka et al.

**I-26** Development of an automatic sliding window system to control adequate ventilation rate (Part 1) Natural ventilation by opening window to keep adequate ventilation rate

Akane Tsutsumi et al.

**I-27** Development of an automatic sliding window system to control adequate ventilation rate (Part 2) Full-scale measurement by using the automatic sliding window system

Sihwan Lee et al.

**I-28** Improvement Method of Thermal Environment and Reduction of HAVC Load in Food Factory Part 4 Thermal Environment and HVAC Load of Displacement Ventilation System

Kanade Yasunaga et al.

**I-29** Improvement Method of Thermal Environment and Reduction of HVAC Load in Food Factory Part 5 Relationship between Dew Condensation and HVAC System under Summer and Winter Conditions

Ren Sato et al.

**I-30** Study on Elimination of Oil Mist with an Electrostatic Precipitator Part1. Measurement of Extraction Ratio Based on Testing Method of Grease Extractors

Hajime Yoshino et al.

**I-31** Study on CFD analysis method applying GGDH when using pot in commercial kitchen (Part1)CFD Analysis Using Improved Koutani Model And Experiment Details

Mizuki Aruga et al.

**I-32** Study on CFD analysis method applying GGDH when using pot in commercial kitchen (Part 2) Validation of Analysis Model for Thermal Updraft and Capture Efficiency of Hood

Takao Osawa et al.

**I-33** Performance of Air Curtain Located at the Top of Large Opening (Part 5) Effect of Supply Velocity and Location on Heat and Mass Interruption under Operation with Space Heating

Chihiro Furuya et al.

**I-34** Application of Tornado Swirling Flow to Local Exhaust System (Part.1) Performance Evaluation of Experimental Tornado Exhaust Unit

Kazuya Akiyama et al.

**I-35** Application of Tornado Swirling Flow to Local Exhaust System (Part.2) Evaluation of Capture Efficiency by Actual Equipment Experiment

Yoshiyuki Hatta et al.

**I-36** Development of high-efficient ventilation system with supply-air fluctuation

Ayako Akahoshi et al.

**I-37** Study on Ventilation Efficiency in Radiant Air Conditioning Part 1. CFD analysis with different ventilation inlet/outlet

Atsuhiro Ohtsuka et al.

I-38 Thermal Environment, Ventilation Effectiveness and Infection Risk of Restaurant with Impinging Jet Ventilation Moe Koshida et al.

**I-39** CFD Simulation on Spread Index Proposed by Dr. Khankari for COVID-19 Infection Probability

Minami Miyazawa et al.

**I-40** Study on Measurement of Age of Air Distribution Applying Dynamic Steady-state Concentration Theory in a Space with Multiple Air-recirculating Systems

Haruki Taguchi et al.

**I-41** Study on the Range of Influence of an Air Cleaner Based on Measurement of Age of Air Distribution Applying Dynamic Steady-State Concentration.

Hiko Ri et al.

**I-42** Performance of Displacement Ventilation in a University Lecture Hall (Part6) Effect of handling of heat transfer and contaminant concentration distribution on CFD Analysis

Shinnosuke Ishikawa et al.

**I-43** Performance of Displacement Ventilation in a University Lecture Hall (Part7) Effect of Occupation Pattern on Distribution of Air Temperature and Contaminant Concentration on Field Measurement

Miharu Komori et al.

I-44 Performance of Displacement Ventilation in A University Lecture Hall (Part 8) Effect of Supply Diffusers Position on Temperature and Contaminant Concentration Distribution in Different Occupants Seating Pattern Cases Using CFD

Aya Essa et al.

**I-45** Development of Seat Air Conditioning for Arena to Improve Ventilation Efficiency Part 1 Concept and basic study by CFD and Pre-experiment

Makiko Kasahara et al.

**I-46** Development of Seat Air Conditioning for Arena to Improve Ventilation Efficiency 2. Performance test of personal diffuser for arena spectator

Nozomu Ota et al.

I-47 Verification Study on Infectious Disease Control Technologies for Post COVID-19 (Part 1) Evaluation of Ventilation Performance and CO2 Concentrations in Experimental Field

Shoko Arakawa et al.

**I-48** Verification Study on Infectious Disease Control Technologies for Post COVID-19 (Part 2) Performance Evaluation of MERV14 Air Filters

Kazuki Wada et al.

**I-49** Verification Study on Infectious Disease Control Technologies for Post COVID-19 (Part 3) The Actual Condition Survey of Re-scatter Possibility of Bacteria in Air Filter

Keita Yokoyama et al.

**I-50** Displacement Ventilation with Breathing Zone Air Supply for Prevention from Infectious Disease in Office (Part2) Study of the Ventilation Performance by Full-scale Model Experiments

Wakako Namba et al.

I-51 Displacement Ventilation with Breathing Zone Air Supply for Prevention from Infectious Disease in Office (Part 3) Study of the Ventilation Perforemence by CFD simulation Nana Shikano et al.

## **IS-1** Research on Tiled Stove (Kachelofen) Tatsuaki Tanaka

**IS-2** Research on Improving Hygrothermal and Airtightness Performances of Corrugated Steel Roofs in Mixed Climate Zones - Numerical Comparison on Various Thermal Retrofits with In-situ Natural Exposure Monitoring

Khairina Binti Kamarul Adlan et al.

**IS-3** Analysis of Oil Droplets Movement in Grease Trap by Using Particle Image Velocimetry

Teng Li et al.

**IS-4** Large eddy simulation of droplet transport and inhalation exposure between interacting virtual humans

Alicia Murga et al.

**IS-5** Research on pollen morphology and I/O ratio in winter

Wenchao Wahg et al.

**IS-6** CFD Simulation of Various Wind Angles on Wind-Driven Cross Ventilated Cuboid with Different Openings Arrays

Brian Yaputra et al.

IS-7 Development of a grid independent energy system using energy supply and demand prediction (Part 3) Designing Model Predictive Control by Energy Simulation Yuki Matsunami et al.

**IS-8** Development of a Grid Independent Energy System Using Energy Supply and Demand Prediction (Part 4) Multi-Step Solar Radiation Prediction Based on Deep Learning Model with Uncertainty Prediction

Yuan Gao et al.

**IS-9** Based on residential energy conservation puts forward the optimal methods and means to realize off grid housing Lian Haichao et al.

**IS-10** Development of a simulation tool for double spiral ground heat exchangers and its application

Kunning Yang et al.

**IS-11** Experiments on the Effect of Clothing and PPE (Personal Protection Equipment) on the Cooling Effect of a Water Mist Fan

Craig Farnham

**IS-12** Analyzing Energy Consumption and Indoor Thermal Comfort of a 'ZEB Ready' Office Building with Suspended Radiant Ceiling Panel Heating System in Cold Region

Minzhi Ye et al.

**IS-13** Study on behavioural adaptation for the thermal comfort in mixed-mode Japanese office buildings of Aichi prefecture

Supriya Khadka et al.

**IS-14** Effect of Building Height and Orientation on Indoor Air Temperature for Residential Building in Hot and Humid Climate

Naja Aqilah Binti Hisham et al.

**IS-15** Study on thermal environment and its passive improvements in the Nepalese school building

Mishan Shrestha et al.

**IS-16** Study on physiological adaptation, health problems and skin moisture perception in summer in Nepalese dwellings

Chaudhary Pabitra et al.