CBE Publications & Report List
October 2024

Papers that summarize research by CBE and affiliated institutions have appeared in the following journals, trade magazines, and conference proceedings. Many of these publications are also available from the eScholarship Repository, online at http://escholarship.org/uc/cedr_cbe.

2024

Aijazi, A., Parkinson, T., Zhang, H., & Schiavon, S. (2024). Passive and low-energy strategies to improve sleep thermal comfort and energy resilience during heat waves and cold snaps. *Scientific Reports*, *14*(1), 12568. https://doi.org/10.1038/s41598-024-62377-5 ***NEW***

André, M., Schiavon, S., & Lamberts, R. (2024). Implementation of desk fans in open office: Lessons learned and guidelines from a field study. *Building and Environment*, *259*, 111681. https://doi.org/10.1016/j.buildenv.2024.111681 ***NEW***

Arens, E. A., Ghahramani, A., Peffer, T., Raftery, P., Zhang, H., & Anderson, M. P. (2024). *Ultrasonic anemometers systems for sensing air flows in rooms and ducts* (United States Patent No. US11994532B2). https://patents.google.com/patent/US11994532B2/en ***NEW***

Belyamani, M. A., Hurley, R. F., Djamasbi, S., Somasse, G. B., Strauss, S., Zhang, H., Smith, M. J., Van Dessel, S., & Liu, S. (2024). Local wearable cooling may improve thermal comfort, emotion, and cognition. *Building and Environment*, *254*, 111367. https://doi.org/10.1016/j.buildenv.2024.111367 ***NEW***

Benke, B., Roberts, M., Lewis, M., Shen, Y., Carlisle, S., Chafart, M., & Simonen, K. (2024). *The California Carbon Report Summary: Six Key Takeaways for Policymakers*. http://hdl.handle.net/1773/51415 ***NEW***

Benke, B., Roberts, M., Shen, Y., Carlisle, S., Chafart, M., & Simonen, K. (2024). *The California Carbon Report: An Analysis of the Embodied and Operational Carbon Impacts of 30 Buildings*. http://hdl.handle.net/1773/51287 ***NEW***

Cheng, H., Raftery, P., & Wendler, P. (2024). Re-optimizing Optimal Start and Morning Warmup. *ASHRAE Journal*, *66*(8). https://escholarship.org/uc/item/6zw3x4rt ***NEW***

Cheng, H., Wendler, P., & Raftery, P. (2024). *Hot Water Heating: Design and Retrofit Guide*. https://escholarship.org/uc/item/8m88d92j ***NEW***

Duarte Roa, C., Raftery, P., Webster, B., Hu, X., & Ackerly, K. (2024). *The Villages at 995 East Santa Clara St, San Jose: Energy & Emission Report*. https://escholarship.org/uc/item/5w54k5cn ***NEW***

Duarte Roa, C., Webster, B., Hu, X., Ackerly, K., Merkel, G. G., & Raftery, P. (2024). *Harmonized Resilience at Roosevelt Village: How Futuristic Grid-Interactivity and Resilience Come Together in Senior Affordable Housing*. https://escholarship.org/uc/item/8tq4k81m ***NEW***

Institute of Building Research & Innovation, Holzer, P., Abhishek, G., Arens, E., Attia, S., Corrado, V., Gupta, R., Hamdy, M., Homaei, S., Laouadi, A., Levinson, R., Selkowitz, S., Sengupta, A., Sodagar, B., Wang, L. (Leon), Zinzi, M., Stern, P., & Czarnecki, P. (2024). *International Energy Agency—Resilient Cooling of Buildings—Key Performance Indicators Report (Annex 80)*. Institute of Building Research & Innovation. https://doi.org/10.52776/RHET5776 ***NEW***

Katia, R., Raftery, P., Duarte, C., & Wang, Y. (2024). *Load Shifting and Enhancing Energy Savings with Dynamic Ventilation Strategies in Multi-Family Residential Buildings*. https://escholarship.org/uc/item/2cx301jq ***NEW***

Kent, M. G., Parkinson, T., & Schiavon, S. (2024). Indoor environmental quality in WELL-certified and LEED-certified buildings. *Scientific Reports*, *14*(1), 15120. https://doi.org/10.1038/s41598-024-65768-w ***NEW***

Ko, W. H., Burgess, I., Schiavon, S., Chung, S. T. L., MacNaughton, P., & Um, C. Y. (2024). Assessing the impact of glazing and window shade systems on view clarity. *Scientific Reports*, *14*(1), 18392. https://doi.org/10.1038/s41598-024-69026-x ***NEW***

Levinson, R., Kim, D., Goudey, H., Chen, S., Zhang, H., Ghahramani, A., Huizenga, C., He, Y., Nomoto, A., Arens, E., Álvarez Suárez, A., Ritter, D., Tarin, M., & Prickett, R. (2024). Hot, cold, or just right? An infrared biometric sensor to improve occupant comfort and reduce overcooling in buildings via closed-loop control. *Energy and Buildings*, *312*, 114063. https://doi.org/10.1016/j.enbuild.2024.114063 ***NEW***

Li, J., Pantelic, J., Merchant, C. B., Chen, K. W., Izuhara, I., Yuki, R., Meggers, F. M., & Schiavon, S. (2024). Comparison of the environmental, energy, and thermal comfort performance of air and radiant cooling systems in a zero-energy office building in Singapore. *Energy and Buildings*, *318*, 114487. https://doi.org/10.1016/j.enbuild.2024.114487 ***NEW***

Li, J., Zuraimi, S., & Schiavon, S. (2024). Should we use ceiling fans indoors to reduce the risk of transmission of infectious aerosols? *Indoor Environments*, *1*(3), 100039. https://doi.org/10.1016/j.indenv.2024.100039 ***NEW***

Porras-Salazar, J. A., Tartarini, F., & Schiavon, S. (2024). The effect of indoor temperature on work performance of fifty-eight people in a simulated office environment. *Building and Environment*, *263*, 111813. https://doi.org/10.1016/j.buildenv.2024.111813 ***NEW***

Raftery, P., Cheng, H., & Wendler, P. (2024). *Are we prioritizing the right thing? Cutting carbon emissions in California's large office buildings before installing a heat pump*. https://escholarship.org/uc/item/9cd4c4zt ***NEW***

Raftery, P., Singla, R., Cheng, H., & Paliaga, G. (2024). Insights from hydronic heating systems in 259 commercial buildings. *Energy and Buildings*, *321*, 114543. https://doi.org/10.1016/j.enbuild.2024.114543 ***NEW***

Roberts, M., & Thibaudeau, P. (2024). Soil carbon sequestration in building life cycle assessment: Offsetting measure or site impact. *IOP Conference Series: Earth and Environmental Science*, *1363*(1), 012061. https://doi.org/10.1088/1755-1315/1363/1/012061 ***NEW***

Russell, D., & Lamberti, V. (2024, August 15). *Mapping Advanced Facades: Creating a Building Taxonomy and Documenting Global Case Studies*. Facade Tectonics Institute. https://www.facadetectonics.org/papers/mapping-advanced-facades ***NEW***

Sultan, Z., Li, J., Pantelic, J., & Schiavon, S. (2024). Particle characterization in commercial buildings: A cross-sectional study in 40 offices in Singapore. *Science of The Total Environment*, *927*, 172126. https://doi.org/10.1016/j.scitotenv.2024.172126 ***NEW***

Sultan, Z., Luhung, I., Aung, N. W., Uchida, A., Natarajan, A., Puramadathil, S., Li, J., Schuster, S., & Schiavon, S. (2024). Effectiveness of triethylene glycol disinfection on airborne MS2 bacteriophage under diverse building operational parameters. *Indoor Environments*, *1*(3), 100042. https://doi.org/10.1016/j.indenv.2024.100042 ***NEW***

Sun, R., Schiavon, S., Brager, G., Arens, E., Zhang, H., Parkinson, T., & Zhang, C. (2024). Causal thinking: Uncovering hidden assumptions and interpretations of statistical analysis in building science. *Building and Environment*, *259*, 111530. https://doi.org/10.1016/j.buildenv.2024.111530 ***NEW***

Watanabe, Y., Nomoto, A., Parkinson, T., Fukawa, Y., Ryuzaki, H., Moriya, Y., Nitta, Y., Miura, R., Oiwake, M., Ozeki, Y., de Dear, R., & Tanabe, S. (2024). Thermal perception of infrared radiation applied at different wavelengths to distal body segments in neutral and cool ambient environments. *Building and Environment*, *262*, 111783. https://doi.org/10.1016/j.buildenv.2024.111783 ***NEW***

Zhang, H., Zhang, H., Arens, E., Jin, L., He, Y., Zhou, E., Zhou, L., & Hu, J. (2024). A study of the inhibitory effect and mechanism of airflow regarding mould on building surfaces. *Frontiers of Architectural Research*, *13*(5), 1067–1078. https://doi.org/10.1016/j.foar.2024.03.007 ***NEW***

Chang, S. and Schiavon, S. Impact of Window vs Windowless Exam Rooms on Cognitive Performance: A Field Study During a University Exam. 2024. *PLEA 2024.* Accepted for publication. https://escholarship.org/uc/item/59w0x77k

Belyamani, M.A., Hurley, R.F., Djamasbi, S., Somasse, G.B., Strauss, S., Zhang, H., Smith, M.J., Van Dessel, S., and Liu, S. 2024. Local wearable cooling may improve thermal comfort, emotion, and cognition. *Building and Environment*, Vol. 254. https://doi.org/10.1016/j.buildenv.2024.111367

Greer, F., Raftery, P., and Horvath, A. 2024. Considerations for estimating operational greenhouse gas emissions in whole building life-cycle assessments. *Building and Environment*, Vol. 254. April. https://doi.org/10.1016/j.buildenv.2024.111383

Levinson, R., Kim, D., Goudey, H., Chen, S., Zhang, H., Ghahramani, A., Huizenga, C., He, Y., Nomoto, A., Arens, E., Álvarez Suárez, A., Ritter, D., Tarin, M., and Prickett, R. 2024. Hot, cold, or just right? An infrared biometric sensor to improve occupant comfort and reduce overcooling in buildings via closed-loop control. *Energy and Buildings*, In Press, Journal Pre-proof. March. https://doi.org/10.1016/j.enbuild.2024.114063

Nomoto, A., Ozeki, Y., Oiwake, M., Hisayama, R., Ogawa, Y., Akimoto, M., and Tanabe, S. 2024 Quantitative analysis of wavelength dependence of thermal perception. *Indoor Environments*, Vol. 1, Issue 1. March. https://doi.org/10.1016/j.indenv.2023.100003

Chen, X., Sun, R., Saluz, U., Schiavon, S., and Geyer, P. Using causal inference to avoid fallouts in data-driven parametric analysis: A case study in the architecture, engineering, and construction industry. *Developments in the Built Environment*, Vol. 17. March. https://doi.org/10.1016/j.dibe.2023.100296

Wendler, P., Raftery, P., and Cheng, H. 2024. Units: Temperature Stratification, Performance at Low Hot Water Supply Temperature, and Myths from the Field. *ASHRAE Transactions 2023*, Vol. 129 Issue Part 1, 8p. January. https://escholarship.org/uc/item/6b9590qr

Vernon, D., McMurry, R., and Raftery, P. 2024. Heating Hot Water Distribution Heat Losses: Detailed Measurement. *ASHRAE Transactions*, 2024, Vol. 130 Issue Part 1, 8p. January. http://escholarship.org/uc/item/7n6893n6

Das, H.P., Lin, Y.W., Agwan, U., Spangher, L., Devonport, A., Yang, Y., Drgoňa, J., Chong, A., Schiavon, S., and Spanos, C.J. 2024. Machine Learning for Smart and Energy-Efficient Buildings. *Environmental Data Science*, 2024 Volume 3, e1. January. https://doi.org/10.1017/eds.2023.43

2023

Thawer, M. and Raftery, P. 2023. Screening Method to Identify High VAV Minimum Airflow Rates and Retrofit Opportunities. *ASHRAE Winter Meeting, Chicago.* ASHRAE Transactions 2024, Vol. 130 Issue Part 1, 8p. December. https://escholarship.org/uc/item/6gz10718 ***NEW***

Betti, G., Tartarini, F., Nguyen, C., & Schiavon, S. 2023. CBE Clima Tool: A free and open-source web application for climate analysis tailored to sustainable building design. *Building Simulation*, Vol. 17, pp. 493–508. December. https://doi.org/10.1007/s12273-023-1090-5 ***NEW***

Nomoto, A., Kim, D., Zhang, H., He, Y., Huizenga, C., Arens, E., Prickett, R., Swaminathan, S., and Levinson, R. 2023. Field Study of Thermal Infrared Sensing for Office Temperature Control. *2023 ASHRAE Annual Conference.* December. https://escholarship.org/uc/item/69r9q3kg ***NEW***

Greer, F., Raftery, P., Brager, G., and Horvath, A. 2023. A perspective on tools for assessing the building sector's greenhouse gas emissions and beyond. *Environmental Research: Infrastructure and Sustainability*, Volume 3, Number 4. November. https://doi.org/10.1088/2634-4505/ad064d ***NEW***

Gao, S., Yang, L., Li, Y., Liu, S., Zhang, H., Arens, E., and Zhai, Y. 2023. Gender and age effects on metabolic rates of office work, housework, and different walking speeds. *Energy and Buildings.* Volume 298. November. https://doi.org/10.1016/j.enbuild.2023.113551 ***NEW***

Tartarini, F., Frei, M., Schiavon, S., Chua, Y.X., and Miller, C. 2023. Cozie Apple: An iOS mobile and smartwatch application for environmental quality satisfaction and physiological data collection. *Journal of Physics: Conference Series* Volume 2600, Health & productivity. November. https://doi.org/10.1088/1742-6596/2600/14/142003 ***NEW***

Raftery, P., Cheung, T., Douglass-Jaimes, D., André, M., Li, J., Kent, M.G., Khoa, K.H., Sultan, Z., and Schiavon, S. 2023. Fans for cooling people guidebook. October. https://cbe-berkeley.gitbook.io/fans-guidebook https://escholarship.org/uc/item/2qd7r5mp ***NEW***

Sultan, Z., Jia, H., and Schiavon, S. 2023. Energy Performance Assessment of COVID-19 Building Recommendations in Singapore. *Proceedings of the 5th International Conference on Building Energy and Environment.* pp 1767–1776. September. https://doi.org/10.1007/978-981-19-9822-5_184 ***NEW***

Guo, X., Wan, S., Chen, W., Zhang, H., Arens, E., Cheng, Y., and Pasut, W. 2023. Numerical simulation of cooling performance of radiant ceiling system interacting with a ceiling fan. *Energy and Buildings* 297, 113492. August. https://doi.org/10.1016/j.enbuild.2023.113492 https://escholarship.org/uc/item/0w2289kw ***NEW***

Duarte, C., Raftery, P., Prakash, A., and Peffer, T. 2023. Field Demonstration of the Brick Ontology to Scale up the Deployment of ASHRAE Guideline 36 Control Sequence. *ASHRAE Transactions*. https://escholarship.org/uc/item/5zt2d66r

Kent, M.G., Huynh, N.K., Mishra, A.K., Tartarini, F., Schiavon, S., et al. 2023. Energy Savings and Thermal Comfort in a Zero Energy Office Building with Fans in Singapore. *Building and Environment* 243, 110674. September. https://doi.org/10.1016/j.buildenv.2023.110674 https://escholarship.org/uc/item/894361mc

Salter, C. and Nash, A. 2023. Acoustical Intervention Study for a Small University Conference Room. June. https://escholarship.org/uc/item/6rg5j7hn

Ju, Y., Zeng, T., Allybokus, Z., and Moura, S. 2023. Robo-Chargers: Optimal Operation and Planning of a Robotic Charging System to Alleviate Overstay. *IEEE Transactions on Smart Grid,* 1-1. June. https://doi.org/10.1109/TSG.2023.3286434 https://escholarship.org/uc/item/4tg1p5n7

Tanabe, S., Nomoto, A., Takahashi, Y., and Ogawa, Y. 2023. Human Thermal Comfort Modeling. *Personal Comfort Systems for Improving Indoor Thermal Comfort and Air Quality*, 61-78. June. https://doi.org/10.1007/978-981-99-0718-2_4

Wu, Z., Wagner, A., Jia, H., Schiavon, S., Wargocki, P., Schweiker, M., Dong, B., Koth, S.C., Kobas, B., and Vellei, M. 2023. Global Database of Thermal Comfort Physiological Responses. *18th Healthy Buildings Europe Conference*, xxxii-xxxiii. June.

Levinson, R., Arens, E., Corrado, V., Gilbert, H., Jaboyedoff, P., Krelling, A., Machard, A., and Tootkaboni, M. 2023. Policy Recommendations from IEA EBC Annex 80: Resilient Cooling of Buildings. June. https://doi.org/10.20357/B7288C https://escholarship.org/uc/item/6bp2w7t2

Blad, C., Bøgh, S., Kallesøe, C., and Raftery, P. 2023. A laboratory test of an Offline-trained Multi-Agent Reinforcement Learning Algorithm for Heating Systems. *Applied Energy* 337, 120807. May. https://doi.org/10.1016/j.apenergy.2023.120807

Kent, M.G. and Schiavon, S. 2023. Predicting Window View Preferences Using the Environmental Information Criteria. *LEUKOS* 19, 2, 190-209. April. https://doi.org/10.1080/15502724.2022.2077753 https://escholarship.org/uc/item/7rv6936v

Ning, B., Sekhar, C., Schiavon, S., Tham, K.W., Cheong, D., Jia, H., and Anand, P. 2023. Experimental and simulation assessment of an adaptable cooling coil in the tropics. *Journal of Building Engineering* 64, 105681. April. https://doi.org/10.1016/j.jobe.2022.105681

Ko, W.H., Schiavon, S., Santos, L., Kent, M.G., Kim, H., and Keshavarzi, M. 2023. View Access Index: The effects of geometric variables of window views on occupants' satisfaction. *Building and Environment* 234, 1110132. April. https://doi.org/10.1016/j.buildenv.2023.110132 https://escholarship.org/uc/item/46p439jv

Yang, S., Wang, L.L., Raftery, P., Ivanovich, M., Taber, C., Bahnfleth, W.P., Wargocki, P., Pantelic, J., Zou, J., and Mortezazadeh, M. 2023. Comparing airborne infectious aerosol exposures in sparsely occupied large spaces utilizing large-diameter ceiling fans. *Building and Environment* 231, 110022. March. https://doi.org/10.1016/j.buildenv.2023.110022

Ju, Y., Ju, X., Zhang, H., Cao, B., Liu, B., and Zhu, Y. 2023. Personalized local heating neutralizing individual, spatial, and temporal thermo-physiological variances in extreme cold environments, *Building and Environment* 229, 109950. February. https://doi.org/10.1016/j.buildenv.2022.109950

Peffer, T., G. Fierro, P. Raftery, D. Roa Carlos, M. Pritoni, M. Wetter, A. Prakash, L. Paul, and E. Paulson. 2023. Skewering the silos: using Brick to enable portable analytics, modeling and controls in buildings. January. http://escholarship.org/uc/item/04w0b9n2

Parkinson, T., S. Schiavon, J. Kim, and G. Betti. 2023. Common sources of occupant dissatisfaction with workspace environments in 600 office buildings. *Buildings and Cities* 4(1), 17–35. January. https://doi.org/10.5334/bc.274

Wendler, P., P. Raftery, and H. Chen. 2023. Variable Air Volume Hot Water Reheat Terminal Units: Temperature Stratification, Performance at Low Hot Water Supply Temperature, and Myths from the Field. January. https://escholarship.org/uc/item/6b9590qr

Quintana, M., S. Schiavon, F. Tartarini, J. Kim, and C. Miller. 2023. Cohort comfort models — Using occupant's similarity to predict personal thermal preference with less data. *Building and Environment* 227 (1), 109685. January. https://doi.org/10.1016/j.buildenv.2022.109685

He, Y., H. Zhang, E. Arens, A. Merritt, C. Huizenga, R. Levinson, A. Wang, A. Ghahramani, and A. Alvarez-Suarez. 2023. Smart detection of indoor occupant thermal state via infrared thermography, computer vision, and machine learning. *Building and Environment* 228, 109811. January. https://doi.org/10.1016/j.buildenv.2022.109811 https://escholarship.org/uc/item/3c9036vz

Raftery, P., D. Vernon, R. Singla, and M. Nakajima. 2023. Measured Space Heating Hot Water Distribution Losses in Large Commercial Buildings. *ASHRAE Winter 2023 conference*. January. https://technologyportal.ashrae.org/Papers/PaperDetail/11159 https://escholarship.org/uc/item/46h4h28q

2022

Tartarini, F., S. Schiavon, M. Quintana, and C. Miller. 2022. Personal comfort models based on a 6-month experiment using environmental parameters and data from wearables. *Indoor Air*, 32 (11): e13160. November. https://doi.org/10.1111/ina.13160

Qiu, Y., Y. Zhou, Y. Chang, X. Liang, H. Zhang, X. Lin, K. Qing, X. Zhou, and Z. Luo. 2022. The Effects of Ventilation, Humidity, and Temperature on Bacterial Growth and Bacterial Genera Distribution. *International Journal of Environmental Research and Public Health* 19(22), 15345. November. https://doi.org/10.3390/ijerph192215345 https://escholarship.org/uc/item/6fp048t4

Li, J., S. Zuraimi, S. Schiavon, M.P. Wan, J. Xiong, and K.W. Tham. 2022. Diurnal trends of indoor and outdoor fluorescent biological aerosol particles in a tropical urban area. *Science of the Total Environment* 848, 157811. November. https://doi.org/10.1016/j.scitotenv.2022.157811 https://escholarship.org/uc/item/00g3d5g0

Kent, M., N.K. Huynh, S. Schiavon, and S. Selkowitz. 2022. Using support vector machine to detect desk illuminance sensor blockage for closed-loop daylight harvesting. *Energy and Buildings* 274: 112443. November. https://doi.org/10.1016/j.enbuild.2022.112443

Tartarini, F., C. Miller, and S. Schiavon. 2022. Cozie Apple: An iOS mobile and smartwatch application for environmental quality satisfaction and physiological data collection. *ArXiv*. October. https://doi.org/10.48550/arXiv.2210.13977

Wu, Z., N. Li, and S. Schiavon. 2022. Experimental evaluation of thermal comfort, SBS symptoms and physiological responses in a radiant ceiling cooling environment under temperature step-changes. *Building and Environment* 224: 109512. October. https://doi.org/10.1016/j.buildenv.2022.109512

Nazarian, N., E.S. Krayenhoff, B. Bechtel, D.M. Hondula, R. Paolini, J. Vanos, T. Cheung, et al. 2022. Integrated assessment of urban overheating impacts on human life. *Earth's Future*, 10, e2022EF002682. August. https://doi.org/10.1029/2022EF002682

Roa, C.D., P. Raftery, R. Singla, M. Pritoni, and T. Peffer. 2022. Detecting passing valves at scale across different buildings and systems: a brick enabled and mortar tested application. *In Climate Solutions: Efficiency, Equity, and Decarbonization*. August. https://doi.org/10.20357/B7VP5H https://escholarship.org/uc/item/4xq5b54t

Lamon, E., P. Raftery, and S. Schiavon. 2022. Boiler retrofits and decarbonization in existing buildings: HVAC designer interviews. Prepared for *California Energy Commission*. Accepted for publication in *ACEEE Summer Study on Energy Efficiency in Buildings*, Panel 5. August. https://escholarship.org/uc/item/6k4369zv

Roa, C.D., P. Raftery, R. Sun, L. Paul, A.K. Prakash, M. Pritoni, G. Fierro, and T. Peffer. 2022. Towards a Stronger Foundation: Digitizing Commercial Buildings with Brick to Enable Portable Advanced Applications. *In Climate Solutions: Efficiency, Equity, and Decarbonization*. August. https://doi.org/10.20357/B7ZG6R https://www.osti.gov/biblio/1888244

Sultan, Z., J. Li, J. Pantelic, and S. Schiavon. 2022. Indoor air pollution of outdoor origin: Mitigation using portable air cleaners in Singapore office building. *Aerosol and Air Quality Research* 22 (10): 220204. July. https://doi.org/10.4209/aaqr.220204

Dong, B., Y. Liu, W. Mu, et al. 2022. A global building occupant behavior database. *Scientific Data* 9 (1): 369. June. https://doi.org/10.1038/s41597-022-01475-3 Data available at https://doi.org/10.6084/m9.figshare.16920118.v6 https://ashraeobdatabase.com

Porras-Salazar, J.A., S. Schiavon, and K.W. Tham. 2022. Effects of IAQ on office work performance. *Handbook of Indoor Air Quality*. June. https://doi.org/10.1007/978-981-10-5155-5

Kent, M.G. and S. Schiavon. 2022. Predicting window view preferences using the environmental information criteria. *LEUKOS.* May. https://doi.org/10.1080/15502724.2022.2077753 https://escholarship.org/uc/item/7rv6936v

Arens, E. and H. Zhang. 2022. Mainstreaming Personal Comfort Systems (PCS). *Buildings and Cities* [commentary]. May. https://www.buildingsandcities.org/insights/commentaries/mainstreaming-personal-comfort-systems.html

Ko, W.H., S. Schiavon, S. Altomonte, M. Andersen, A. Batool, W. Browning, G. Burrell, et al. 2022. Window view quality: why it matters and what we should do. *LEUKOS*, Volume 18. May. https://www.tandfonline.com/doi/full/10.1080/15502724.2022.2055428

Cheung, T., L. Graham, and S. Schiavon. 2022. Impacts of life satisfaction, job satisfaction, and the big five personality traits on satisfaction with the indoor environment. *Building and Environment*, Volume 212. March. https://doi.org/10.1016/j.buildenv.2022.108783 https://escholarship.org/uc/item/84r525hj

Sun, R.J., C. Duarte Roa, P. Raftery, and G. Fierro. 2022. Enabling portable and reproducible long-term thermal comfort evaluation with brick schema and mortar testbed. *ASHRAE 2022 Annual Conference.* January. https://escholarship.org/uc/item/5640w8m0

2021

Luo, M., H. Zhang, Z. Wang, E. Arens, W. Chen, F. Bauman, P. Raftery. 2021. Ceiling-fan-integrated air-conditioning: thermal comfort evaluations. Buildings and Cities 2(1), 928–51. December. https://doi.org/10.5334/bc.137

He, Y., T. Parkinson, E. Arens, H. Zhang, N. Li, J. Peng, J. Elson, and C. Maranville. 2021. Creating alliesthesia in cool environments using personal comfort systems. *Building and Environment*, Volume 209. December. https://doi.org/10.1016/j.buildenv.2021.108642 https://escholarship.org/uc/item/35k2c351

Kent, M., and J. Jakubiec. 2021. An examination of range effects when evaluating discomfort due to glare in Singaporean buildings. *Lighting Research and Technology*. December. https://escholarship.org/uc/item/50t169w4 https://doi.org/10.1177/14771535211047220

Parkinson, T., S. Schiavon, R. de Dear, and G. Brager. 2021. Overcooling of offices reveals gender inequity in thermal comfort. *Nature Scientific Reports*, Volume 11, Issue 1. December. https://doi.org/10.1038/s41598-021-03121-1 https://escholarship.org/uc/item/5rk4b607

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