



CBE Publications & Report List

April 2023

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.

2023

Ko, W.H., S. Schiavon, L. Santos, M. G. Kent, H. Kim, and M. Keshavarzi. 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> **NEW**

Ju, Y., X. Ju, H. Zhang, B. Cao, B. Liu, and Y. Zhu. 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> **NEW**

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> **NEW**

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> **NEW**

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> **NEW**

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> **NEW**

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> **NEW**

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> **NEW**

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> **NEW**

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> **NEW**

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

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- 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>
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- Parkinson, T., H. Zhang, E. Arens, Y. He, R. de Dear, J. Elson, A. Parkinson, C. Maranville, and A. Wang. 2021. Predicting thermal pleasure experienced in dynamic environments from simulated cutaneous thermoreceptor activity. *Indoor Air*. May. <https://doi.org/10.1111/ina.12859> <https://escholarship.org/uc/item/1xd8n2t0>
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- Liang, R., M. Kent, R. Wilson, and Y. Wu. 2021. The effect of thermochromic windows on visual performance and sustained attention. *Energy and Buildings*, Volume 236. April. <https://doi.org/10.1016/j.enbuild.2021.110778> <https://escholarship.org/uc/item/9kt889fn>
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- Lehrer, D., E. Arens, H. Zhang, and D. Fannon. 2020. Prototyping solutions to improve comfort and enable HVAC energy savings. *Proceedings, ACEEE 2020 Summer Study on Energy Efficiency in Buildings*. August. <https://escholarship.org/uc/item/0h64g14s>
- Altomonte, S., J. Allen, P. Bluysen, G. Brager, L. Hescong, A. Loder, S. Schiavon, J. Veitch, L. Wang, and P. Wargocki. 2020. Ten questions concerning well-being in the built environment. *Building and Environment*, 180: 106949. August. <https://doi.org/10.1016/j.buildenv.2020.106949>
- Liu, S., Z. Wang, S. Schiavon, Y. He, M. Luo, H. Zhang, and E. Arens. 2020. Predicted percentage dissatisfied with vertical temperature gradient. *Energy and Buildings*, 220. August. <https://doi.org/10.1016/j.enbuild.2020.110085> <https://escholarship.org/uc/item/0s76t57k>
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- Kent, M., T. Cheung, J. Li, and S. Schiavon. 2020. Experimental evaluation of visual flicker caused by ceiling fans. *Building and Environment*. Volume 182, Pages 1-14. July. <https://doi.org/10.1016/j.buildenv.2020.107060> <https://escholarship.org/uc/item/3wj1f6xj>
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