

Ji Yoon Bae

PhD Candidate in Architecture (Architectural Technology)

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Education

Aug 2022 – Present	PhD Candidate in Architecture (Architectural Technology), University of Pennsylvania (PENN), Philadelphia, PA, USA
May 2022	M.S MDC (Matter Design Computation), Cornell University, Ithaca, NY, USA
May 2020	M. Arch, School of Architecture, Syracuse University, NY, USA
Aug 2016	B. Arch, School of Architecture and Urban Planning Chonnam National University, South Korea

Fellowships

Jan 2025 – Present	NSF NRT Climate Care Fellow, PENN
Aug 2022 – Present	University of Pennsylvania Educational Fellow, PENN

Grants & Funded Research

2025	KlimaStol — Project Lead Funded by the Ramboll Foundation and the Kleinman Center for Energy Policy, PENN (PI: Dorit Aviv)
2024	TENOPY — Project Lead Funded by Penn4C, PENN (PI: Dorit Aviv)
2023	SimbioBrick — Project Lead/ Co-Investigator Funded by Environmental Innovation Initiative, PENN (PI: Laia Mogas-Soldevila)

Teaching Experience

2026 (PENN)	Lecturer (Spring 2026), ARCH 7325 Tech Elective: Homeostatic Architecture
2024 – 2026 (PENN)	Studio Teaching Fellow (Spring 24, 25 and 26), ARCH 708 Bioclimatic Studio (Prof. Dorit Aviv)

2023 (PENN)	Teaching Fellow (Fall), ARCH 633 Environmental Systems (Prof. Dorit Aviv)
	Teaching Fellow (Spring), ARCH 7325 Inquiry into Biological Material Architectures Development (Prof. Laia Mogas-Soldevila)
2022 (Cornell)	Teaching Assistant (Spring), Seminar - Bamboo Tactics: Mixed-reality Design and Making for Bamboo Material (Prof. Leslie Lok)
2019 (Syracuse)	Teaching Assistant (Fall), ARC 134 History of Architecture II
	Teaching Assistant (Spring), ARC 133 History of Architecture I
2018 (Syracuse)	Teaching Assistant (Fall), ARC 133 History of Architecture II

Academic & Practice Appointments

Aug 2023 – Present	PhD Student Researcher, Thermal Architecture Lab, University of Pennsylvania (Directed by Dr. Dorit Aviv)
Dec 2022 – July 2023	PhD Student Researcher, DumoLab, University of Pennsylvania (Directed by Dr. Laia Mogas-Soldevila)
Aug 2021 – May 2022	Research Assistant, Rural-Urban Building Innovation (RUBI) Lab, Cornell University (Directed by Leslie Lok)
May 2021 – 2021 Aug	Intern Architect, WSP USA, NY.
2021 Jan – 2021 Dec	Research Assistant, Environmental Systems Lab, Cornell University (Directed by Dr. Timur Dogan)
2018 (Jan – May)	Research Internship, MATR Lab, Center of Excellence, Syracuse, NY.
2016 (Feb – Dec)	Architectural Designer, Ryu-Ga-Ram Architecture, South Korea.

Awards and Honors

2025	– GAPSA Research Council Individual Travel Grant (594 USD), PENN – GAPSA Research Council Individual Travel Grant (1,080 USD), PENN
2024	– GAPSA Research Council Individual Travel Grant (1,080 USD), PENN
2022	– ACADIA Student Scholarship (500 USD), HoloWall, Author
2019	– GSO Travel Grant (500 USD), Syracuse University.
2018	– Creative Work Grant (1,500 USD), Syracuse Architecture. – El Seif Global Travel Awards (3,000 USD), Syracuse Architecture.
2017	– Graduate Architecture Scholarship (8,000 USD), Syracuse Architecture.

- 2015 – Korea Space Design Competition, Honorable mention, “Organic composition”, South Korea.
 - 2013 – Competition of Naju Innovation Center, 2nd Prize, South Korea.
– Korea Hanok (Korea Traditional Architecture) competition, Honorable mention, “Root and sprout”, Seoul, South Korea.
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Peer-Reviewed Journal Articles

Bae, Ji Yoon, Eric Teitelbaum, Sara F. Jacoby, and Dorit Aviv. 2026. “Community-Based Solar-Powered and Open-Air Cooling Shelter for Urban Heat Mitigation.” *Sustainable Cities and Society*. (IF: 12.0)

Peer-Reviewed Conference Proceedings

Bae, Ji Yoon, Yefan Zhi, Eric Teitelbaum, Masoud Akbarzadeh, and Dorit Aviv. 2025. “KlimaStol: 3D-Printed Cooling Chair for Mitigating Outdoor Heat Stress.” the 45th Annual Conference of the Association of Computer-Aided Design in Architecture (ACADIA).

Bae, Ji Yoon, Kayleigh Houde, Eric Teitelbaum, and Dorit Aviv. 2025. “Carbon Neutral Solar Powered Outdoor Cooling Shelter.” 2025 Annual Modeling and Simulation Conference (ANNSIM), May 26, 1–12.

Bae, Ji Yoon, Dorit Aviv, and Laia Mogas-Soldevila. 2024. “SimbioBrick: Carbon Sequestering Living Bricks by Fungi-Plant Symbiosis.” In 2024 Design Modeling Symposium: Scalable Disruptors, Kassel, Germany.

Cen, Yuanyi, **Ji Yoon Bae**, Andreina Sojo, Abigail Weinstein, Laia Mogas-Soldevila. “CanoPIT: Valorizing Unavoidable Fruit Waste into Printable Biomaterial Surfaces for Participatory Learning,” in 112th ACSA Annual Meeting Proceedings, Disruptors on the Edge (112th ACSA Annual Meeting, ACSA Press, 2024), 284–90.

Akbaria, Mostafa, Farzaneh Oghazian, **Ji Yoon Bae**, Felecia Davis, Laia Mogas-Soldevila, and Masoud Akbarzadeh. 2023. “Bio-Based Composite Spatial Shell Structures.” In Proceedings of IASS Annual Symposia, vol. 2023, no. 11, pp. 1-13.

Bae, Ji Yoon, and Jenny Sabin. 2023. “Neobrick: Environmentally Informed 3D-Printed Lattice Brick for Modulating Indoor Thermal Comfort.” In *In World Congress of Architects: Design for Climate Adaptation*. Springer International Publishing.

Lok, Leslie and **Ji Yoon Bae**. 2022. “HolloWall: A Mixed Reality-Informed Hollow Core Wall Assembly” In *Hybrids & Haecceities*, Proceedings of the 42nd ACADIA Conference, Philadelphia. (Proceedings of the 42nd ACADIA Conference).

Lok, Leslie, and **Ji Yoon Bae**. 2022. “Timber De-Standardized 2.0 : Mixed Reality Visualizations and User Interface for Processing Irregular Timber.” In *Post-Carbon: Proceedings of the 27th International Conference on Computer-Aided Architectural Design Research in Asia (CAADRIA)*, 121–30.

Bae, Ji Yoon, and Daekwon Park. 2019. “Weeping Brick: The Modular Living Wall System Using 3D Printed Porous Ceramic Materials.” In *Computer-Aided Architectural Design. Hello, Culture* 18th International Conference, CAAD Futures 2019, Daejeon, Republic of Korea, June 26–28.