CHEW LUP WAI (Dr)

PhD, MSc (Airflow Modelling in Built Environments) Massachusetts Institute of Technology

BEng (Mechanical Engineering) National University of Singapore

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ACADEMIC QUALIFICATIONS:

- Doctor of Philosophy, 2019 (Airflow Modelling in Built Environments), Department of Mechanical Engineering, Massachusetts Institute of Technology (MIT)
- Master of Science, 2017 (Airflow Modelling in Built Environments), Department of Mechanical Engineering, MIT
- Bachelor of Engineering, First Class Honors, 2011, Department of Mechanical Engineering, National University of Singapore (NUS)

EMPLOYMENT RECORDS:

- Postdoctoral Research Fellow, Department of Civil and Environmental Engineering, Stanford University (2020 – 2021)
- Postdoctoral Associate, Singapore-MIT Alliance for Research and Technology (2019)
- Teaching Assistant, Department of Mechanical Engineering, MIT (2019)
- Research Assistant, Department of Mechanical Engineering, MIT (2015 – 2019)
- Research Engineer, Institute of High Performance Computing, A*STAR (2014 – 2015)

PROFESSIONAL/CONSULTING ACTIVITIES:

- Invited Lecturer, Course 2.29 Numerical Fluid Mechanics, Department of Mechanical Engineering, MIT (2018 – present)

(Updated Mar 2022)

TEACHING:

- Research methods
- Fluid mechanics
- Heat transfer

RESEARCH INTERESTS:

- Airflows in built environments
- Natural ventilation in buildings
- Urban heat island and mitigation

SELECTED PUBLICATIONS:

- **Chew, L. W.**, Liu, X., Li, X. X., & Norford, L. K. (2021). Interaction between heat wave and urban heat island: A case study in a tropical coastal city, Singapore. *Atmospheric Research*, 247, 105134.
- **Chew, L. W.**, Chen, C., & Gorlé. C. (2021). CFD-Based Analysis of the Discharge Coefficient for Buoyancy-Driven Ventilation in a Full-Scale Operational Building. *Building Simulation 2021 Conference*. International Building Performance Simulation Association.
- **Chew, L. W.**, & Norford, L. K. (2019). Pedestrian-level wind speed enhancement with void decks in three-dimensional urban street canyons. *Building and Environment*, 155, 399.
- **Chew, L. W.**, Aliabadi, A. A., & Norford, L. K. (2019). Airflows in narrow street canyons: single or double vortex? *Proceedings of the 2019 CSME International Congress*. Canadian Society for Mechanical Engineering.
- **Chew, L. W.**, Glicksman, L. R., & Norford, L. K. (2018). Buoyant flows in street canyons: Comparison of RANS and LES at reduced and full scales. *Building and Environment*, 146, 77.
- **Chew, L. W.**, & Norford, L. K. (2018). Pedestrian-level wind speed enhancement in urban street canyons with void decks. *Building and Environment*, 146, 64.
- **Chew, L. W.**, Aliabadi, A. A., & Norford, L. K. (2018). Flows across high aspect ratio street canyons: Reynolds number independence revisited. *Environmental Fluid Mechanics*, 18, 1275.
- **Chew, L. W.**, Nazarian, N., & Norford, L. (2017). Pedestrian-level urban wind flow enhancement with wind catchers. *Atmosphere*, 8(9), 159.

AWARDS:

- Highly-Cited Paper (top 1%) on Web of Science: Chew et al. (2021) *Atmospheric Research*, 247, 105134
- NUS Overseas Postdoctoral Fellowship (2020 – 2021)
- MIT Graduate Association of Mechanical Engineers Service Award (2017)
- NUS Valedictorian, Mechanical Engineering (2011)
- NUS Lee Kuan Yew Gold Medal (2011)
- NUS Dean’s List (all semesters in NUS, 2007 – 2011)

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