

CURRICULUM VITAE

Mohamed Hassan Abbas Yousef

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EDUCATION

2022 –2025	<i>Master of Science (Research) (Environmental Engineering)</i> Egypt-Japan University of Science and Technology (E-JUST), Alexandria, Egypt Department of Environmental Engineering, Faculty of Engineering
Thesis Topic:	Energy Audit and Management Using Building Information Modeling for an Institutional Building: A Case Study of the E-JUST University Campus in Egypt.
Details:	Three-year full-time research program. Thesis length: 37,300 words. The thesis developed a multi-phase framework to assess and bridge the design-operation energy performance gap in hot-arid educational buildings. Using the E-JUST campus as a case study, the research integrated energy audit, BIM-based modelling, and calibrated building energy simulation to evaluate energy conservation and passive design optimization strategies.
Supervisor:	Prof. Hatem Mahmoud. Co Supervisor: Prof. Hamdy Hassan.
2012- 2017	<i>Bachelor of Architectural Engineering</i> Assiut University, Assiut, Egypt Department of Architectural Engineering, Faculty of Engineering.

PROFESSIONAL EXPERIENCE

January 2019 – Current	<i>Assistant Lecturer</i> Department of Architecture, Faculty of Fine Arts, Assiut University, Egypt
Responsibilities:	The role supports the academic and technical development of undergraduate architecture students by bridging foundational design theory with advanced software applications. It requires managing studio sessions, maintaining academic standards, and equipping students with the digital and environmental simulation skills necessary for modern architectural practice. My responsibilities have included: • delivering lectures and studio instruction for core courses including Architectural Design, Working Design, and Environmental Control; • instructing undergraduate students in 3D modeling, BIM, and environmental simulation workflows (AutoCAD, Revit, etc.). • preparing teaching materials, evaluating design portfolios, and providing constructive academic and technical feedback.

November 2017 – January 2019 *Architectural Engineer*
Engineering Consultants Group (ECG), Cairo, Egypt

Responsibilities: My role involved architectural design development and technical documentation for large-scale building projects. My responsibilities included:

- Prepared architectural and working drawings using AutoCAD and Revit.
- Developed BIM models and project documentation for submissions.
- Coordinated with multidisciplinary teams to resolve design issues.

RESEARCH EXPERIENCE

October 2022 – Current Graduate Researcher, Environmental Engineering, Faculty of Engineering, Egypt-Japan University of Science and Technology (E-JUST), Alexandria, Egypt

Responsibilities: My research focused on building energy performance assessment, design-operation energy performance gaps, passive cooling, and natural ventilation strategies in hot-arid climates. The research combined energy audit, BIM-based modelling, calibrated building energy simulation, parametric analysis, statistical evaluation, and CFD validation. My research activities included:

- Conducted energy audits, walkthrough assessments, utility bill analysis, and on-site measurements to evaluate actual building energy performance and indoor conditions.
- Developed and validated simulation-based energy models using Revit, DesignBuilder, and EnergyPlus, supported by operational data and indoor temperature/relative humidity measurements.
- Proposed and evaluated energy management and retrofit scenarios in terms of energy savings, thermal comfort, environmental impact, and economic feasibility.
- Conducted large-scale parametric simulations of more than 19,000 design alternatives using EnergyPlus and jEPlus to assess passive cooling and natural ventilation performance.
- Applied multi-objective optimization, statistical analysis, and sensitivity analysis using Minitab to identify optimal solar chimney parameters and quantify their impact on airflow and cooling energy demand.
- Validated selected passive cooling configurations using CFD simulation.
- First author of two peer-reviewed journal articles and presented/published one peer-reviewed international conference paper.

SKILLS AND COMPETENCIES

- Building energy simulation: DesignBuilder, EnergyPlus
- Parametric simulation and optimization: jEPlus
- BIM and architectural modelling: Revit, AutoCAD
- Statistical and sensitivity analysis: Minitab
- Energy assessment: energy audits, utility data analysis, model calibration and validation
- Environmental monitoring: temperature/RH data logging and air velocity measurement
- Weather data processing: EPW weather file review and editing using Elements software

RESEARCH PUBLICATIONS

Abbas, M.H., Hassan, H. and Mahmoud, H. (2026) **“A new approach to improve the energy efficiency of buildings by integration of building simulation and energy audit techniques”**, Energy Sources, Part B: Economics, Planning, and Policy. Accepted for publication / in press.

Type of Publication: Journal Article

Refereed Publication: Yes

ISSN: 1556-7249 (Print), 1556-7257 (Online)

URL: <https://doi.org/10.1080/15567249.2026.2697262>

DOI: 10.1080/15567249.2026.2697262

Impact Factor 2.2 (2024)

Authorship Statement: First author, my contribution included developing the research concept and methodology, conducting the energy audit and simulation work, analysing the results, and preparing the manuscript. The co-authors provided academic supervision, technical feedback, and revisions during manuscript development.

Abbas, M.H., Hassan, H. and Mahmoud, H. (2026) **“Parametric and multi objective optimization of solar chimneys for passive cooling in hot climates”**, Solar Energy, Vol. 310, Article 114502.

Type of Publication: Journal Article

Refereed Publication: Yes

ISSN: 0038-092X (Print), 1471-1257 (Online)

URL: <https://doi.org/10.1016/j.solener.2026.114502>

DOI: 10.1016/j.solener.2026.114502

Impact Factor 7.9

Authorship Statement: First author, my contribution included developing the simulation and optimization framework, conducting the parametric analysis, interpreting the results, and preparing the manuscript. The co-authors contributed through academic supervision, methodological guidance, validation support, and manuscript revision.

Yousef, M., Hassan, H., Nada, S. and Mahmoud, H. (2025) **“Optimizing Solar Chimney Design for Passive Ventilation and Energy Efficiency in Hot Arid Climates”**, in Dong, L., Ding, Y. and Liu, Y. (eds.) 9th International Conference on Energy and Environmental Science. ICEES 2025. Environmental Science and Engineering. Springer, Cham, pp. 1133–1145.

Type of Publication: Conference Paper in Proceedings

Refereed Publication: Yes

ISBN: 978-3-032-01035-3 (Print), 978-3-032-01036-0 (Online)

URL: https://link.springer.com/chapter/10.1007/978-3-032-01036-0_81

DOI: 10.1007/978-3-032-01036-0_81

Authorship Statement: First author of this conference paper. My contribution included conducting the simulation work, analysing the results, preparing the manuscript, and presenting the research at the conference. The co-authors provided academic supervision, technical feedback, and manuscript revision.

GRANTS AND AWARDS

2022–2025 — Fully Funded MSc Studentship

Provider: Missions Department, Ministry of Higher Education (MoHE), Egypt, in coordination with the Egypt-Japan University of Science and Technology (E-JUST).

Value: Full scholarship covering a preparatory academic period of six months to one year, followed by the complete two-year duration of the Master of Science program.

Role: Scholarship recipient; secured through a competitive academic admission and nomination process recognizing strong academic preparedness for postgraduate research.

2025 — Second Place Award, “Towards Sustainable Future” Competition

Provider: Egypt-Japan University of Science and Technology (E-JUST) and Birla Carbon Egypt.

Value: 12,000 EGP cash award.

Role: Award recipient; prepared and delivered a competition presentation on research related to sustainability, energy efficiency, and environmental performance.