



# Construction Management Research Group



## GROUP INTRODUCTION

Construction Industry is one of the major economic pillars with direct relation with their performance and growth throughout the world. An efficient construction industry ensures the successful completion of its projects by not only achieving vital infrastructure but also through promoting sustainable development. The Construction Management Research Group seeks opportunities to explore core issues and problems faced by the construction sector at local as well as global level. This includes various domains related to the Construction Management, Project Management, Health and Safety Issues, Environmental Concerns, Energy Consumption Patterns, Green Rating Systems and application of AI to improve the construction processes. The main aim lies in promoting the sustainable development methods and solution to enhance the construction practices.

## GROUP HEAD

**Dr. Syed Shujaa Safdar Gardezi**

Dr. Syed Shujaa Safdar Gardezi received his PhD in Civil Engineering (Construction and Project Management) from Department of Civil and Environmental Engineering, University Teknologi Petronas (UTP), Malaysia in 2017. He has a diverse experience of more than seventeen (17) years including both professional industry and education sector. Currently, he is serving as Assistant Professor in Department of Civil Engineering, Capital University of Science and Technology (CUST), Islamabad. He is involved in teaching and active research supervision at both graduate and undergraduate levels. His research work has been published in well reputed journals and conferences. His projects also won achievement of various competition awards. Dr. Shujaa is a certified Building Information Modeling (BIM) professional and has been implementing BIM innovations at undergraduate as well post-graduate level studies and research. He is also the founding member and current Director of BIM Centre of Excellence (BIM CoE) at Civil Engineering, Department, CUST. During his PhD, he was part of research program sponsored by Ministry of Higher Education (MOHE), Malaysia to develop a "Smart Integrated Low Carbon Infrastructure Model" for sustainable development using Building Information Modeling (BIM) under "Sustainable Resources Mission Oriented Research (SUREMOR)". Before joining academia he also served as "Resident / Senior Engineer" in "National Engineering Services of Pakistan (NESPAK)" for almost almost a decade.



## GROUP MEMBERS

### Faculty Members

- Dr. Syed Shujaa Safdar
- Engr. Abdul Qadeer
- Mr. Usman Hussain

### PhD Students

- Engr. Shahid Kamal
- Engr. Junaaid Tariq
- Engr. Sajjad Shuker Ullah
- Mr. Hafiz M. Bilal
- Mr. Mustafa Sultan

### MS Students

- Mr. Daniyaal Shujaa
- Mr. Tayyab Shaukat
- Ms. Wafa Nasir
- Mr. Own Muhammad

## RESEARCH AREAS

- Construction Management and Sustainable Development
- Project Planning and Management
- Building Information Modeling
- Industry Revolution 4.0
- AI Applications in Construction Sector
- Energy conservation Patterns of Built Environment
- Construction Health and Safety Management
- AI Applications in Construction Processes

## SELECTED RESEARCH THESIS/DESIGN PROJECTS

- Assessment of Potential Effects of CPEC on Development of Pakistan's Construction Industry
- Development of Economic Risk Factor Matrix for project Construction
- Impact Assessment of a Housing Scheme Considering Environmental Aspect of Sustainability
- Energy Optimization of a Residential High Rise Building using BIM for Sustainability
- Comparative Analysis of Green Building Rating Systems for Sustainability Assessment of a Residential Building
- Health and Safety Framework Using Analytic Hierarchy Process for Building Construction Projects in Pakistan
- Development of Causal Relationship of Cost and Transformation of a Conventional Commercial Building to Net Zero Energy Building
- Green Rating Assessment of a Building Project in Pakistan
- Energy Performance Analysis of a Multi-storey Building using Building Information Modeling (BIM)

## SELECTED PUBLICATIONS

### Journal Publications

- A. A. Khan, M. U. Zaheer, S. Asghar, and S. S. S. Gardezi, "Green rating assessment of a residential building in Pakistan using leed's," *Open Journal of Science and Technology*, vol. 3, no. 2, pp. 126-139, 2020.
- S. S. S. Gardezi and N. Shafiq, "Operational carbon footprint prediction model for conventional tropical housing: a Malaysian prospective," *International Journal of Environmental Science and Technology*, vol. 16, no. 12, pp. 7817-7826, 2019.
- S. Nasir, S. S. S. Gardezi, M. F. Nuruddin, A. Zawawi, and N. A. Wan, "Recurrent carbon footprint assessment and forecasting for conventional housing in tropical regions: A Malaysian case study," *Environmental Progress & Sustainable Energy*, vol. 37, no. 2, pp. 839-849, 2018.
- S. S. S. Gardezi, N. Shafiq, N. A. W. A. Zawawi, M. F. Khamidi, and S. A. Farhan, "A multivariable regression tool for embodied carbon footprint prediction in housing habitat," *Habitat International*, vol. 53, pp. 292-300, 2016.

### Conference Publications

- S. S. S. Gardezi and N. Shafiq, "Prospects of a sustainable EOL - Carbon footprint assessment of a tropical housing habitat," in *6th International Conference on Civil, Offshore Environmental Engineering (ICCOEE2020)*, pp. 545-554, 2020.
- S. S. S. Gardezi and U. Hussain, "Sustainability assessment of a house by using Leed and Breeam," in *21st International Civil Engineering Conference (ICEC-2020)*, p. 5, 2020.
- U. Hussain, S. S. S. Gardezi, and I. Hassan, "Sustainability rating assessment of a building using Casbee tool," in *The 2nd International Sustainability and Resilience Conference*, pp. 1-4, 2020.

### Book Chapters

- "Prospects of a Sustainable EOL-Carbon Footprint Assessment of a Tropical Housing Habitat," *Proceedings of the International Conference on Civil, Offshore and Environmental Engineering*. Springer, Singapore, 2021.

