

Dr. RANA RABNAWAZ AHMED

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OBJECTIVE

To pursue a professional career in an organization that offers a competitive environment, demands excellence in performance, and provides opportunities to attune professional growth based on individual's merit, performance, and capabilities.

QUALIFICATION

- **Ph.D. – Civil Engineering, Specialization in Construction Management (2021)**
Department of Civil and Environmental Engineering, The Hong Kong University of Science and Technology, Hong Kong.
- **Master of Engineering Management (MEM) Construction Management (2014)**
Passed with 3.60 CGPA, NED University of Engineering and Technology, Karachi, Pakistan.
- **Bachelor of Engineering (B.E) Civil Engineering (2011)**
Passed with 1st division (80%), NED University of Engineering and Technology, Karachi, Pakistan.
- **Intermediate Pre-Engineering (2007)**
Passed with A-Grade (75%) from Government, Degree Science College Malir Cantt, Karachi, Pakistan.
- **Matriculation (2005)**
Passed with A-1Grade (80%) from Al- Manar Model School, Karachi, Pakistan.

JOB EXPERIENCE

- **Assistant Professor**, Department of Civil Engineering, NED University of Engineering & Technology (September 2021 – To Present)
- **Class Advisor** (Third Year) Department of Civil Engineering, NED University of Engineering & Technology (February 2023 – To Present).
- **Lecturer Adhoc**, Department of Civil Engineering, NED University of Engineering & Technology (February 2016 – August 2021)

- **Ph.D. Scholar**, Department of Civil and Environmental Engineering, The Hong Kong University of Science and Technology, Hong Kong. (September 2017 – August 2021).
- **Graduate Teaching Assistant**, Department of Civil and Environmental Engineering, The Hong Kong University of Science and Technology, Hong Kong. (February 2018 – August 2021).
- **Lecturer (Contract)**, Department of Civil Engineering, NED University of Engineering & Technology (February 2014 – February 2016).
- **Graduate Research Scholar**, Department of Civil Engineering, NED University of Engineering & Technology. (June 2012- To June 2014).
- **Visiting Faculty Member**, Department of Civil Engineering, NED University of Engineering & Technology (Spring 2013 & Fall 2013).
- **Teaching Assistant**, Department of Civil Engineering, NED University of Engineering & Technology (Spring 2013).
- **Junior Engineer** in the Engineering Department at ESS-I-ARR Consultants, Karachi. (March 2012 - May 2012)

AWARD OF APRECIATION & FUNDINGS

- Certificate for training on **Effective Quality Management Audits** Under NED QEC, December 2024.
- **Invited** as “Session Chairman” at the *12th International Civil Engineering Conference, “Integrating Technology in Civil Engineering”*, 13-14 May 2022.
- **HEC Approved Ph.D. Supervisor** in the discipline of Engineering & Technology, for a period of **three (03) years** starting from February 2022.
- Nominated as **Member Admission Committee** for the Postgraduate Admissions at Department of Civil Engineering, NED University of Engineering and Technology, (2021-2022)
- **Full Ph.D. Funding** from **Higher Education Commission (HEC)**, Pakistan under Faculty Development Program for Higher Studies – Batch – V.
- Obtained valid Ph.D. admission offers from, *Asian Institute of Technology (AIT), Thailand* with Partial Funding (**PKR = 1.13 million** in 2017), *University of Han Yang, South Korea* (Under HEC Scholarship), *University of Malaya, Malaysia* (Under HEC Scholarship), *The Hong Kong University of Science and Technology, Hong Kong* (Under HEC Scholarship).

- Received **Partial Funding for Master’s** Program at NED University of Engineering and Technology, Pakistan from NED Alumnus in Dalhousie University (**Funding Amount = PKR 100,000/-**)
- Won **Meritorious Scholarships** during all 4 Years of **bachelor’s degree** in Civil Engineering from NED University of Engineering and Technology, Karachi, Pakistan.
- Award of Appreciation on presenting the research paper as a Co-Author titled, **“Development of Risk Indicators for Intelligent prediction model”** in **6th International civil engineering congress (ICEC-2013)**.
- Worked as a researcher on funded research project of **“Urban Metabolism for Mega cities”** funded by ENEL Foundation, Italy (**December 2013**).

RESEARCH PUBLICATIONS

1. Rahimian, A., **Ahmed, R. R.**, Fazeli, A., Aghdam, E., Kumar Singh, A., Naji, M., ... & Zayed, T. (2025). Examining the Barriers to the Adoption of IoT-Based Technologies in Green Buildings. *Journal of Construction Engineering and Management*, 151(3), 04024211.
2. Ashrafi, S.M.Y, Alaloul, W.S., Farooqui, R., Saqib, M., **Ahmed, R.R.** & Khan, A.M. (2025): Evaluation and classification of risk from multi-party stakeholders of the construction industry, *Journal of Asian Architecture and Building Engineering*, DOI: 10.1080/13467581.2025.2507863
3. Hassan, M.K, Anas, A., **Ahmed, R.R** and Siqqiqui, A. Utilization of Plastic Waste in Developing Sustainable Construction Pavers. *Proceedings of the Global Conference for Green Construction Materials & Practices 2025*
4. Ali, S. M. S., & **Ahmed, R. R.** (2024). Designing a Material Database for the Flood-Resistant Housing. In *The 13th International Civil Engineering Conference (ICEC)* (p. 77). Trans Tech Publications Ltd.
5. Ashrafi, S.M.Y, Farooqui, R. & **Ahmed, R.R.** Energy Analysis of High Rise Building on BIM. *The Fourteenth International Conference on Construction in the 21st Century (CITC-14)* Rio de Janeiro, Brazil | September 2-5, 2024.
6. Zhang, X., & **Ahmed, R. R.** (2022). A queuing system for inert construction waste management on a reverse logistics network. *Automation in Construction*, Impact Factor (7.70), 137, 104221
7. Tabatabaee, S., Mohandes, S. R., **Ahmed, R. R.**, Mahdiyar, A., Arashpour, M., Zayed, T., & Ismail, S. (2022). Investigating the barriers to applying the internet-of-things-based technologies to construction site safety management, *Impact Factor* (3.390), 19(2), 868.

8. **Ahmed, R. R., & Zhang, X.** (2021). Multi-stage network-based two-type cost minimization for the reverse logistics management of inert construction waste. *Waste Management, Impact Factor* (7.145), 120, 805-819.
9. **Ahmed, R. R., & Zhang, X.** (2021). Multi-layer value stream assessment of the reverse logistics network for inert construction waste management. *Resources, Conservation and Recycling, Impact Factor* (10.204), 170, 105574.
10. **Ahmed, R.R., & Zhang, X.** Exploration of synergies between academic research and actual practice for improved construction waste management,” *Proceedings of International Structural Engineering and Construction*, El-Baradei, S., Abodonya, A., Singh, A. and Yazdani, S. (eds.), Vol. 8, Issue 1, ISEC Press, 2021.
11. **Ahmed, R.R., & Zhang, X.** (2020). Extended triple bottom line-based evaluation of reverse logistics options for construction waste material. The 5th Australasia and South-East Asia Structural Engineering and Construction (ASEA-SEC-05) Conference, Christchurch, New Zealand.
12. **Ahmed, R.R., & Zhang, X.** (2019). Logistics management of construction waste material: Exploration of future research directions. The 32nd KKHTCNN Symposium on Civil Engineering October 24-26, 2019, Daejeon, Korea.
13. **Ahmed, R.R., & Zhang, X.** (2017). Impact of Social Factors on Labor Productivity – A Case from the Construction Sector of a Developing Country. The 30th KKHTCNN Symposium on Civil Engineering, Taiwan.
14. **Ahmed, R.R., Farooqui, R.U., & Saqib, M.** (2017). Benchmarking of IT based Tools for Site Security, Safety and Communication on Construction Worksites in a Metropolitan city of a Developing Country. The 9th International Conference on Construction in the 21st Century (CITC-9), Dubai, United Arab Emirates.
15. Shabbir, M., Farooqui, R.U., & **Ahmed, R.R.** (2017). Fire Emergency Response Mechanism in Commercial Buildings in Karachi. The 9th International Conference on Construction in the 21st Century (CITC-9), Dubai, United Arab Emirates.
16. Farooqui, R.U., & **Ahmed, R.R.** (2013). [Marketing New Home Construction: What Do Buyers Value?](#) The 7th International Conference on Construction in the 21st Century (CITC-VII), Bangkok, Thailand.
17. Farooqui, R.U., & **Ahmed, R.R.** (2013). [Development of Risk Indicators for Intelligent prediction model.](#) The 6th International Civil Engineering Congress (ICEC), Karachi, Pakistan

THESIS REPORTS

- **Doctor of Philosophy:**

Ahmed, R.R., (2021). Towards the Effective Reverse Logistics Management of Construction Waste Material. **The Hong Kong University of Science and Technology, Hong Kong.**

- **Master of Engineering Management:**

Ahmed, R.R., (2013). Predicting Impact of Risk Events on Project Cost Performance in the Construction Industry of Pakistan - An Artificial Intelligence Model. **NED University of Engineering and Technology, Karachi, Pakistan.**

- **Bachelor of Civil Engineering Final Year Project:**

Performance Based Evaluation of Tee-Off Transmission Tower (Steel Structures), **NED University of Engineering and Technology, Karachi, Pakistan.**

OTHER PROJECTS DURING POSTGRADUATE STUDIES

- Development of a **Bid Selection Model** Using **Analytical Hierarchical Process (AHP)**
MS-Term Paper (**Risk Management & Decision Making in Construction**)

SERVED AS REVIEWER IN INTERNATIONAL JOURNALS / CONFERENCES

- The **14th International Conference on Construction in the 21st Century (CITC-14)**, 2-5 September 2024, Amman, Jordan.
- The **13th International Civil Engineering Conference, “Integrating Technology in Civil Engineering”**, July 2024, Karachi, Pakistan.
- The **12th International Conference on Construction in the 21st Century (CITC-12)**, 16-19 May 2022, Amman, Jordan.
- The **12th International Civil Engineering Conference, “Integrating Technology in Civil Engineering”**, 13-14 May 2022, Karachi, Pakistan.
- **Waste Management Journal**, Impact Factor (7.145), Elsevier Publishers, 2020 (2 reviews)
- The Fourth International Conference on **Mechanical, Electric and Industrial Engineering** May 22-24, 2021, in Kunming, China.

SERVED AS A MEMBER EDITORIAL TEAM IN INTERNATIONAL JOURNAL

- **International Journal of Architecture Engineering and Construction: Associate Managing Editor.**

International Journal of Architecture, Engineering and Construction (ISSN 1911-110X [print] and ISSN 1911-1118 [online]), IJAEC, is published by the International Association for Sustainable Development and Management (IASDM) and North China University of Water Resources and Electric Power. IJAEC is a scholarly peer-refereed journal that promotes scientific, technical, and managerial advances in the three intertwined disciplines of the built environment: Architecture, Engineering and Construction. IJAEC publishes original research papers, state-of-the-art review papers, novel industrial applications, and insightful case studies in a broad scope of topics related to the three disciplines.

TRAINING WORKSHOPS / SEMINARS ORGANISED

- International Seminar on **Construction 4.0: Digital Transformation for Success**, “Leveraging Innovative Technologies for Revolutionizing the Future of AEC Industry, 24, March 2022, NED University of Engineering & Technology, Karachi, Pakistan.
- 4- Months Postgraduate Certificate Program on **Certified Supply Chain Professional (CSCP-2016) Course Study Batch 02** (October 23, 2016 & February 05, 2017)
- 3-Week Interactive Workshop on **Computer Aided Project Management with PRIMAVERA P6 Batch 02** (October 21, 22, 28, 29 & November 04, 05, 2016)
- 5-Day Interactive Exam Preparation Course on **Certified Associate in Project Management (CAPM) – Batch 01** (Oct 23, 30 & Nov 6, 13, 20, 2016)
- Inaugural Ceremony of Building **Information Modelling (BIM) Centre** at NED University on Sep 29, 2016
- 2-Months Postgraduate Certificate Program on **Construction Project Management Professional (CPMP) Certificate Batch 02** (Oct 24 - Dec 07, 2016)
- 6-Day Interactive Exam Preparation Course on **Project Management Professional (PMP) for Engineers – Batch 02** (Oct 23, 30 & Nov 6, 13, 20, 27, 2016)
- 1-Day Interactive Workshop on **“Existing Locally, Thinking Globally : Building Better Professional Engineers by Promoting Religious, Ethical and Social Harmony”** (October 18, 2016)

- 2-Months Postgraduate Certificate Program on **Becoming a High Impact Leader in Engineering Organization Batch 01** (Feb 29 - May 04, 2016)
- 5-Day Interactive Exam Preparation Course on **Project Management Professional (PMP) for Engineers Batch 01** (01, 08, 15, 22, 29, May, 2016)
- 4- Months Postgraduate Certificate Program on **Certified Supply Chain Professional (CSCP-2016) Course Study Batch 01**(14 February - 29 May, 2016)
- 2-Day International Workshop on **Contracts, Claims & Disputes** (Fri 20, Sat 21, May, 2016)
- 6-Day Hands-On Interactive Workshop on **nD Building Information Modeling Batch 01** (13,14,20,21,27 & 28, May, 2016)
- 2-Day International Workshop on **Energy Efficient Building Design for Comfort, Economics and Climate Change** (04 - 05 April, 2016)
- 4-Day Interactive Workshop on **Computer Aided Project Management with PRIMAVERA P6 Batch 01** (Mar 18th to 19th - Mar 25th to 26th, 2016)
- 2-Months Postgraduate Certificate Program on **Construction Project Management Professional (CPMP) Certificate Batch 02** (Feb 16th - Apr 14th, 2016)
- 1-Day International Workshop on **Entrepreneurship and Business Opportunity Assessment for Engineers** (20 February 2016)
- 2-Day Interactive Workshop on **Agile Certified Practitioner (PMI-ACP) Exam Preparation Course** (27 - 28 February, 2016)
- 1-Day International Workshop on **Leadership Development for Engineers and Technical Mangers** (September 19th, 2015)
- 1-Day International Workshop on **Career Growth in the Fast-Changing World** (September 08th, 2015)
- 1-Day Interactive Workshop on **Becoming a High Impact Leader** (June 06th, 2015)
- 2nd International Workshop on **Building Information Modeling in Architecture, Engineering and Construction Industry (BIMAEC-II)** (June 2nd & 3rd ,2015)

- 2 Day Training Workshop on **Contracts & Claims** (April 7th & 8th ,2014)
- 1st International Workshop on **Sustainable Quality Improvement in Pakistan** (April 05th ,2014)
- 1 Day International workshop on **Fundamentals of Intellectual Property (IP)** (September 23rd , 2013)
- 3 Day Training Workshop On **Computer Aided Project Management With Microsoft Project 2010** (July 15th & 17th , 2012)
- 1st International Workshop On **Sustaining Accident Free Environment (SAFE-I)** In AEC Industry Of Pakistan (July 14th ,2012)

TRAINING WORKSHOPS / SEMINARS ATTENDED

- One day training on “**Developing Instructional Strategies**”, as part of Graduate Teaching Assistant Training Program, The Hong Kong University of Science and Technology, Hong Kong, (2017).
- One day training on “**Effective Teaching Skills**”, as part of Graduate Teaching Assistant Training Program, The Hong Kong University of Science and Technology, Hong Kong, (2017).

- One day training on “**Marking and Grading**”, as part of Graduate Teaching Assistant Training Program, The Hong Kong University of Science and Technology, Hong Kong, (2017).
- One day training on “**Classroom Management**”, as part of Graduate Teaching Assistant Training Program, The Hong Kong University of Science and Technology, Hong Kong, (2017).
- A 20 hrs. training session under the theme of “**Professional Development for Research Postgraduate Students**”. The modules include seminars on: Research Ethics and Case Studies; Searching Research/Scientific Literature Effectively; Engineering Research Management; Being Intelligent Socially; Business Etiquette and Networking Skills for Young Professionals; LinkedIn Profile Development and Social Media Management; and Presenting Myself through a Winning Profile.
- Attended the joint webinar co-organized by CIC and ICE HKA on “**Enabling of Low Embodied Carbon Construction by using CIC Carbon Assessment Tool (CAT)**”, Mar 2021, Hong Kong.
- Participated in the **APRU Mini Certificate Training in Health Research Ethics**, April 2021.
- Passed the **E-learning course** on “**Introduction to Informed Consent**”, with a score of 85%, April 2021.
- Four Day Training workshop on **Supply Chain Management** organized by Quality Enhancement Cell NED University of Engineering & Technology, January, 2017.
- 8th International Civil Engineering Congress on **Sustainable Development through Advancements in Civil Engineering** Karachi, Pakistan. 23 & 24 December, 2016.
- Four Month certificate course in **Entrepreneurship** from Institute of Business Administration IBA, Center for Entrepreneurial Development. Oct,2015 – Jan,2016.
- Workshop on **Force Field Analysis** (October, 2015) jointly organized by Akhuwat Institute of Social Enterprise and Management (AISEM) and Institute of Business Administration (IBA), Center for Entrepreneurial Development Karachi.
- Workshop on **Six Sigma Yellow Belt certification** (October, 2015) conducted by ANSYTECH and NED Scholars.
- Four Day Training workshop on **Effective Teaching Skills** organized by Quality Enhancement Cell NED University of Engineering & Technology, August, 2014.

- Four day training workshop on **Technical writing with Latex** organized by Quality Enhancement Cell NED University of Engineering & Technology, 25,26,28 & 29 August, 2014.
- Two day international Research Workshop: **Analysis for Research - The Descriptive, Exploratory, Inferential, Predictive and Causal Analysis**. 30-31 July, 2013.
- First National One-day Seminar on Geotechnical Engineering **Geotechnical Engineering challenges and Opportunities**, September 15, 2012.
- Online course on **Scientific Writing** by **Prof. Dr. Jean Blair Smith** under Virtual Education Project Pakistan. (2012)

COURSES TAKEN DURING POSTGRADUATE STUDIES BOTH AT NATIONAL AND INTERNATIONAL LEVELS

- Construction Information Technology (HKUST, 2017)
- Project Management Framework and Tools (NEDUET, 2012)
- Decision Making and Risk Management in Construction (NEDUET, 2012)
- Principles of Project Finance (HKUST, 2018)
- Strategic Planning and Decision Making (NEDUET, 2013)
- Accounting and Financial Management (NEDUET, 2012)
- Operations Research (NEDUET, 2013)
- Organizational Systems (NEDUET, 2013)
- Queueing Theory (HKUST, 2019)
- Probability and Statistics (NEDUET, 2013)

COURSES AUDITED DURING POSTGRADUATE STUDIES

- Carbon Footprint Analysis and Reduction (HKUST, 2020)
- Transportation and Logistics Management (HKUST, 2018)
- Introduction to Data Analytics for Smart Transportation Systems (HKUST, 2020)

TEACHING AND SUPERVISION

COURSES TAUGHT AT UNDERGRADUATE LEVEL 2013-2024

- Construction Planning and Management (NEDUET).
- Construction Engineering (NEDUET).
- Construction Contracts (NEDUET).
- Temporary Structure in Construction (NEDUET).

- Fundamentals of Construction Project management (NEDUET).
- Building Construction Technology (NEDUET).
- Civil works Quantity and Cost Estimations (NEDUET).
- Construction Estimating (NEDUET).
- Construction Planning Scheduling and Control (NEDUET).
- Quality and Safety Aspects in Construction Engineering (NEDUET).
- Quantity and Cost Estimations (NEDUET)

COURSES TAUGHT AT POSTGRADUTE LEVEL 2021-2024

- Construction Claim Management (NEDUET).
- Construction Operations and Development of Technologies (NEDUET)
- Strategic Planning and Decision Making (NEDUET)
- Construction Claim Preparation and Analysis (NEDUET)

COURSES ASSISTED AS TEACHING ASSISTANT AT UNDERGRADUATE LEVEL BETWEEN 2018-2021

- Introduction to Construction Management (HKUST).
- Project Engineering and Management (HKUST).
- Construction Financial Management (HKUST).

RESEARCH PROJECTS SUPERVISED /CO-SUPERVISED AT UNDERGRADUATE LEVEL BOTH AT NATIONAL AND INTERNATIONAL LEVEL UNIVERSITIES

- Application of Circularity Principles for HSE Challenges (2024)
- Thermal Comfort Modeling for Institutional Building (2024)
- Digital Footprint of Heritage Building Information Modeling (2024)
- Digital Twin for Carbon Footprint Analysis (2024)
- Design for Material Passport System (2023)
- Plastic Waste Utilization for Recycling of Waste Bricks (2023)
- Loss Value Reporting System for effective Waste Management (2023)
- Waste Estimation and Recycling Potential at the Construction Worksites of Academic Institutions in Karachi. (NEDUET, 2022)
- Achieving Low-Cost Building via Material and Technology Innovation (NEDUET, 2022)
- Developing an Entrepreneurial Business Model for BIM Services (NEDUET, 2022)
- 7D BIM Modelling for High Rise Buildings in Karachi (NEDUET, 2022)
- Key drivers and barriers toward effective reverse logistics practices in construction waste management (HKUST, 2021)

- Consumer behavior modeling for food waste reduction using action-based strategies (HKUST, 2021)
- Value stream mapping in food waste supply chain management (HKUST, 2021)
- Carbon footprint measurement and forecasting for municipal solid waste (HKUST, 2021)
- Assessment of Queuing Delays at Waste Facilities in Hong Kong (HKUST, 2021)
- Developing a Multi-Criteria Decision-Making Model for Construction Waste Treatment Options (HKUST, 2020)
- Network Based Construction Waste Logistic Optimization Model (HKUST, 2019)
- Investigation of Construction Waste Treatment Method Selection in Developed and Developing Countries and Comparative Analysis based on Triple Bottom Line Approach (HKUST, 2019)
- Application of Queuing Theory in Construction Waste Logistics Management (HKUST, 2019)
- Cost Control and Risk Analysis on a Case Building Project using Palisade Decision Tools Suite (NEDUET, 2017)
- BIM Modelling and Commissioning of an ECO House (NEDUET, 2017)
- Development of a Cost-Effective Supply Chain Management System (SCMS) (NEDUET, 2015)
- Predicting Labor Productivity for Concrete Pouring activity using Fuzzy Logic for Construction worksites in Karachi (NEDUET, 2014)
- Development of Artificial Intelligence Model for Predicting the Cost of Risk Events for Construction Industry of Pakistan (NEDUET, 2013)
- Project Management Manual for Highway Clients-The Case of National Highway Authority (NEDUET, 2013)

RESEARCH PROJECTS SUPERVISED /CO-SUPERVISED AT POSTGRADUATE LEVEL

1. Moving towards Circular Economy based Construction Supply Chain Management
2. Circular Contracts Integrating Circularity into Construction Contracts
3. Development of Readiness Assessment Tool for Circular Supply Chain Management
4. Lean construction Application to Industrial Construction
5. Improving Productivity of Floating Jetties

INTERNSHIPS

- **National Engineering Services Pakistan (Pvt.) Ltd. NESPAK**, Structure Section, Karachi division. (2010)
- **Paragon Constructors** - Soorti Enterprise Ltd., Bin Qasim, Karachi (2011)

CERTIFIED COURSES COMPLETED

- **Auto CAD 2D/3D** from AUTODESK
- **MS Project** from International Office Products (IOP)
- **Primavera Project Planning (P6)** from Skill Development Council (SDC), Karachi

SOFTWARE SKILLS

- LINGO By LINDO Systems
- Arena Simulation Software
- Revit
- Draw.io
- Wordle
- GRASP
- AUTOCAD
- MS-PROJECT 2010
- PRIMAVERA P3/P6
- Microsoft Office
- Precision Tree
- Expert Choice
- Mat LAB

INTERESTS

- Traveling (Places visited, Saudi Arabia, China, South Korea, Hong Kong, Macau)
- Sports
- Event Management

Reference will be made available on request.