Curriculum Vitae

ADNAN RAIS AHMED
Lecturer (BPS-18)
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EDUCATION

PhD in Civil Engineering In Progress
Enrolled in NED University of Engineering & Technology (Pakistan).

Masters in Structural Engineering (Civil) 2011
Enrolled in NED University of Engineering & Technology (Pakistan) for the 2009-10 batch. Obtained a CGPA of 3.05, therefore passing out successfully

Bachelors in Civil Engineering 2008
Enrolled in NED University of Engineering & Technology (Pakistan) for the 2004-05 batches. Obtained an aggregate percentage of 70%, therefore passing successfully with 1st division.

Advanced levels 2004
Appeared as a private candidate for Physics and Mathematics in 2003 and for Chemistry in 2004.
Obtained an average of 83 % in the above subjects

Ordinary levels 2001
Appeared as a candidate, on behalf of The City School (North Nazimabad, Karachi, Pakistan), for Physics, Chemistry and Computers as optional subjects.
Obtained an average of 80 %

RESEARCH WORKS

PhD Thesis (In Supervision of Prof Asad -ur- Rehman Khan and Dr Shamsoon Fareed**)** - Rais, A, (In Progress). *"Investigation of High Strength Reinforced Concrete Columns Subjected to Low-Velocity Impact Loading".* NED University of Engineering & Technology.

Rafi, M. M., Mohammed, A. F., Ahmed, M., Khan, M. S., Rais., A., & Baig, M. K. A. (2023). *"Tsunami Fragility Functions for Low-Rise Reinforced Concrete Buildings for Enhancing Coastal Resilience."* ASCE: Journal of Structural Design and Construction Practice, 30(4): 04025086, DOI: 10.1061/JSDCCC.SCENG-1804.

Rafi, M. M., Lodhi, H. A., Hasan, H., Rais., A., Ahmed, S., & Khan, S. (2023). *"Earthquake Thresholds for Tsunami Early Warning in Pakistan."* American Geophysical Union (AGU) Fall Meeting 2023.

Rafi, M. M., Khan, M. S., Rais. A., & Ahmed, S. (2022). *"Experimental Assessment of Proposed Seismic Strengthening Scheme for Adobe Structures."* Advances in Structural Engineering, 25(15), 3044-3058.

Rais, A., Liu, R., & Palermo, A. G. (2017). *"Damage Assessment of Concrete Road Bridges during the Kaikoura Earthquake 2016."* In *NZCIC Conference*.

Wellington.

Palermo, A., Liu, R., Rais, A., McHaffie, B., Andisheh, K., Pampanin, S., Gentile, R., Nuzzo, I., Granerio, M., Loporcaro, G., McGann, C. R., & Wotherspoon, L. M. (2017). *"Performance of road bridges during the 14 November 2016 Kaikoura Earthquake."* Bulletin of the New Zealand Society for Earthquake Engineering, *50*(2), 253-270.

Rais, A., Giovinazzi, S., Palermo, A. (2015). *"Pipelines at Bridge Crossings: Empirical Based Seismic Vulnerability Index."* ASCE: Pipelines 2015, 23-26 August.

Rais, A., Giovinazzi, S., Palermo, A., Lee, P. (2015). *"Bridge-Utility Systems: Learnings from the Canterbury Earthquakes (2010-11)."* Proceeding of NZSEE Conference 2015, 10-12 April.

ME Independent Study Project (In Supervision of Prof. Sarosh H. Lodi**)** - Rais, A, (2011). *"Developing Fragility Functions for Lifelines".* NED University of Engineering and Technology.

WORK EXPERIENCE

NED UNIVERSITY OF ENGINEERING & TECHNOLOGY

Employed as a full-time Lecturer at NED University of Engineering & Technology, since August 2011 to date. Have been teaching the following course subjects:

- Engineering Mechanics
- Mechanics of Solids / Mechanics of Materials
- Structural Analysis
- Structures for Architects
- Reinforced Concrete Design
- Design of Steel Structures
- Design of Temporary Structures
- Structural Design and Drawing

During the employment have been officially part of the following National & International research & Consulting projects:

Condition Assessment of Schools under PSP-Sindh.
(Aug 2024 - Dec 2024)
Worked as collaborator under the lead of Prof Abdul Jabbar Sangi (PI), as expert for Conditional Assessment of Low-Guage Steel (LGS) type School Construction.

Timber Housing Design (SHRRP).
(Jun 2024 - Oct 2024)
Worked as Design Engineer under the lead of Prof Rashid Ahmed Khan (PI), to develop a low-cost single-unit timber house based on flood resistant design principles, using local wood and community requirements. The project was initiated by Sindh Housing Recovery and Reconstruction Platform (SHRRP) for communities in Keti Bandar (Karachi) affected by the 2022 floods in Sindh

Seismic Evaluation of Existing Structures (State Bank of Pakistan, Quetta).

(Oct 2020 - Nov 2022)

Worked as collaborator under the lead of Prof Abdul Jabbar Sangi (PI), as expert for Performance Based Non-linear Seismic Assessment of Existing Structures.

Earthquake & Tsunami Hazard Assessment of Karachi (UNDP).

(Nov 2019 - Dec 2022)

Worked as collaborator under the lead of Prof Masood Rafi (PI), as expert for developing Tsunami Early Warning SOPs and byelaws for Pakistan.

Earthquake Model of the Middle East region (EMME)

(Aug 2011 - Dec 2013)

This includes the deterministic seismic evaluation for Karachi city. A detailed vulnerability analysis is to be carried for the city, inclusive of buildings, infrastructure and transportation facilities. The aim of this analysis is to generate a socio-economic loss estimate for the city, associated with the seismic hazard. A detailed GIS is to be developed, which would be able to show the building types and population density (at plot level) and the infrastructure distribution throughout the city. The fragility obtained for the components are to be mapped with the hazard map, to obtain the loss estimation.

Building Capacity in Pakistan to Seismically Retrofit Essential Structure.

(May 2011 - Nov 2011)

Objective of the research is capacity building in Pakistan to seismically retrofit essential structures in collaboration with experts for Earthquake Engineering Research Centre, University of California, Berkley and John A. Blume Earthquake Centre, Stanford University, USA. Faculty from various Engineering Universities of Pakistan, as well as practicing professionals were trained in various aspects related to earthquake and its implication on the infrastructure, along with development of curriculum of undergraduate and post graduate level.

MUSHTAQ & BILAL CONSULTING ENGINEERS

Worked with Mushtaq & Bilal Consulting Engineers, during January 2009 to July 2011. During my employment, I have worked on the designs of various structures, some of which are stated under:

Recreational Structures:

- **Sheraton Golf City Club House, Islamabad:**
  Project comprises of a 2 basements & G+ 2 circular club areas, with overhead domes; a beam-slab moment resisting structural system was used with a raft/mat foundation. Structure was designed in accordance with SBC-2007 provisions for seismic zone III.

Hospitals:

- **Sheikh Khalifa Bin Zaid hospital, Islamabad:**

Project comprises of a basement & G+2 area for diagnosis and trauma center along with a helipad, and a G+5 story tower for patient rooms; a Flat-Slab with dual system was used with raft/mat foundation. Structure was designed in accordance with SBC-2007 provisions for seismic zone IIB.

Factories:

- **Extension Block for Exide Pakistan Ltd, Karachi:**
  Project comprises of a G+2 Structure for storage of lead and other heavy commercial machinery; a beam-slab moment resisting structural system was used with raft/mat foundation. Structure was designed using SBC-2007 provisions for seismic zone IIB.

Academic Institutions:

- **IBA Institute of Sukkur:**
  Project comprises of 3-4 story multiple blocks for administration, library and hostel purpose; a beam-slab moment resisting structural system was used with isolated & raft/mat foundations. Structure was designed in accordance with SBC-2007 provisions for seismic zone IIB.

- **Foundation Public School, Hyderabad:**
  Project comprises an extension of a 3-story Building for auditorium and educational purpose; a beam-slab moment resisting structural system for educational area and flat slab moment resisting structural system for the auditorium was used with isolated & combined foundations. Structure was designed in accordance with SBC-2007 provisions for seismic zone IIA.

Residential Projects:

- **Pearl Dune Residency, Karachi:**
  Project comprises of eight 20-story towers with 2 basements for residential use and a 3-story podium area for parking; a beam-slab dual structural system was used with isolated & raft/mat foundations used. Structure was designed in accordance with SBC-2007 provisions for seismic zone IIB.

- **Bismillah Castle, Karachi:**
  Project comprises of a basement & G+15 stories Structure for residential, parking and commercial purposes; a beam-slab dual structural system was used with raft/mat foundation. Structure was designed in accordance with SBC-2007 provisions for seismic zone IIB.

Hotels:

- **Nishat Suites, Lahore:**
  Project comprises of a 4 basement & G+8 story Structure for parking, dining, administration and suites; consists of a flat slab-column frame with shear wall interaction structural system, with a pile cap/raft

foundation. Structure was designed in accordance with SBC-2007 provisions for seismic zone IIA.

Bungalows:

- I've designed a number of bungalows (Karachi) comprising of a basement and G+2 structure for residential and recreational purposes; beam-slab moment resisting structural system was used with isolated &/or raft/mat foundations. Structure was designed in accordance with SBC-2007 provisions for seismic zone IIB or only for gravity, if the client does not demand seismic provisions.

Vettings:

- Have vetted the pile cap/raft foundation of the 25 story Avari Towers (Islamabad), in accordance with SBC-2007 provisions for seismic zone IIB. Alongside some other vettings have been done also.

OTHER ACHIEVEMENTS

- **15WCEE Blind Test Challenge.** Participated in collaboration with the Earthquake Engineering Department of NED University of Engineering & Technology, and obtained an overall 7th ranking.
- **45th Institute of Engineers of Pakistan (IEP) Convention 2012.** Participated by presenting my ISP project, i.e. "Developing Fragility Functions for Lifelines".
- **B.E. project based on Post Fire Evaluation of RCC structures**, under the supervision of Prof. Dr. Sahabzada Farooq Ahmad Rafeeqi.
- An **Internship at Lyari Expressway** for a duration of 2 weeks in the summer of 2007, covering the laboratory testing n laying up of rigid slabs, curbs, reinforced earth, n drainages.
- Non-linear analysis using **OPENSEES**
- Non-linear analysis using **SeismoStruct**
- A primitive knowledge of **PERFORM 3D** (For pushover analysis)
- Linear and Non-Linear Structural Design and assessment through **ETABs**
- Linear and Non-Linear Structural Design and Analysis through **SAP 2000**
- Design of Slabs and Foundations through **SAFE**

LANGUAGES SPOKEN

Urdu, as native language

English, speak fluently and read write with high proficiency.