



## ABDUL WAHID ANWAR

CIVIL/STRUCTURE ENGINEER, Saudi Arabia

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## PROFESSIONAL EXPERIENCE

**Environmental Protection Society (EPS)**

**Swat, Pakistan**

*Field Engineer & Intern – Role & Responsibility*

*July 2023 – Dec 2024*

*Project Title: Leveraging Inclusive WASH for Empowerment (LIFE II-Pakistan)*

- **Structural Feasibility & Site Analysis:** Conducted geotechnical and topographic assessments using GPS/BIM tools to evaluate structural constructability in complex terrains, identifying foundation constraints and seismic risks for reinforced concrete (RC) infrastructure.
- **Design, Drafting, and Revit Modeling:** Developed detailed 2D & 3D structural models in Revit for RC water/sanitation facilities, optimizing reinforcement layouts to mitigate seismic vulnerability in beam-column joints. Ensured compliance with **ACI 318** and **IBC** standards.
- **Structural Assessment:** Perform thorough structural inspections/health monitoring to evaluate existing conditions, identify challenges, and guide project design.
- **Structural Integrity Assurance:** Performed on-site structural inspections to verify alignment of construction with design specifications, addressing material non-conformities and reinforcing detailing errors to ensure load-path continuity.
- **Cost Estimation & Scheduling:** Conducted detailed quantity take-offs using AutoCAD and developed accurate cost estimates in Excel. Utilized Excel spreadsheets and Primavera P6 for effective project scheduling, ensuring timely delivery and adherence to budget constraints.
- **Structural Documentation & Compliance:** Prepared shop drawings and technical documentation for contractor use, enforcing adherence to seismic detailing requirements and international codes during QA/QC reviews.

**NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LTD (NESPAK)**

**Islamabad, Pakistan**

*Engineer Intern*

*June 2022 – July 2022*

- Practiced with Revit as the primary architectural design tool.
- Interpreted structural drawings on the job site and drew appropriate parallels to the actual building.
- Understood building information modeling (BIM) fundamentals and their scope.
- Analyzed the geotechnical investigations of different sites.
- Developed expertise using various structural analysis and design programs (ETABS).

## EDUCATION

**Ghulam Ishaq Khan Institute of Engineering Sciences and Technology (GIKI)**

**2019 –2023**

*Bachelor of Science in Civil Engineering*

*Topi, KP*

- Awarded Fully Funded Chief Minister Khyber Pakhtunkhwa Merit-based Scholarship.
- **CGPA: 3.29/4.00**
- **Awarded 4 Dean's Roles of Honor for achieving academic distinctions.**
- **Thesis Title:** Application of Finite Element Method and Artificial Intelligence for Response-Based Assessment of Reinforced Concrete Beam-Column Connections.
- Societies: **Event Coordinator** at the Institution of Civil Engineers (ICE) in session 2022-2023.

- Awarded **Stoori da Pakhtunkhwa Scholarship** for securing 17th position (out of Top 20) in the Government Board of Intermediate and Secondary Education Swat (BISES).
- Grade: A1
- Rank: **3 out of 80 students** (Pre-Engineering Group)

## SOFTWARE KNOWLEDGE/SKILLS

Software Knowledge	Skills
<ul style="list-style-type: none"> <li>• <b>Microsoft Office Suite</b> (Professional Level)</li> <li>• <b>AutoCAD</b> (Professional Level)</li> <li>• <b>Revit</b> (Intermediate Level)</li> <li>• <b>ETABS, SAP200 and SAFE</b> (Intermediate Level)</li> <li>• <b>Primavera</b> (Intermediate Level)</li> <li>• <b>PlanSwift</b> (Intermediate Level)</li> <li>• <b>ABAQUS</b> (Beginner Level)</li> <li>• <b>ArcGIS</b> (Beginner Level)</li> <li>• <b>GPS &amp; Surveying Tools</b> - Google Earth, Chain/Tape Surveying – (Beginner Level)</li> <li>• <b>Python</b> (Beginner Level)</li> <li>• <b>MATLAB</b> (Beginner Level)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>RC Structures &amp; Steel Structures Analysis &amp; Design</b></li> <li>• Earthquake and wind analysis methods (<b>Equivalent Lateral Force (ELF), Push-Over Analysis (POA), Response Spectrum Analysis (RSA), Time History Analysis (THA), and Nonlinear Analysis</b>)</li> <li>• Knowledge of <b>international building codes</b> and compliance standards (ASTM, ACI, ASCE, IBC, ASHTO, BCP etc)</li> <li>• <b>Project Management:</b> Scheduling, Risk Mitigation, Contract Compliance</li> <li>• <b>Structural &amp; Shop Drawings</b></li> <li>• Can learn and <b>adapt any structure analysis software</b> used in Company.</li> </ul>

## ACADEMIC PROJECTS

### ***Senior Design Project (SDP):***

*"Application of FEM and AI for response-based assessment of RC beam-column connections."*

Our SDP focuses on enhancing the performance of reinforced concrete (RC) beam-column connections during seismic events. We analyze optimized reinforcement configurations to address congestion challenges in beam-column joints. Additionally, we investigate the effectiveness of using perforated steel haunches to strengthen RC beam-column connections. Lastly, we have developed a predictive model utilizing gene expression programming, enabling accurate estimation of the load-carrying capacity of reinforced concrete beam-column joints.

### ***Complex Engineering Problem (CEP) Projects:***

- Transforming Plans into Comprehensive Reality Creating 3D Models with **Revit**.
- The geometric design of roads through the utilization of remotely sensed data.
- Construction proposal of underground structures to resolve traffic, water supply, urban flooding, and sewerage issues in Karachi city.
- Catchment delineation, stream network, river cross-section, and land classification using **ArcGIS Software**.
- Estimation of stream flow in Lake Tana "Ethiopia" using **HEC-HMS Software**.
- **Plaxis 2D** Simulation for Ensuring Stability in Deep Urban Excavations Adjacent to High-Rise Buildings.

### ***Problem-Based Learning (PBL) Projects:***

- Design of water sprinkler system in **EPANET Software**
- Performing Geotechnical investigations to develop bearing capacity and settlement curves for shallow foundations at a given site

- Estimating the needed fire flow demand for an academic block in Ghulam Ishaq Khan Institute of Engineering Sciences and Technology.

### ***Open Ended Lab (OEL) Projects:***

- Modeling and designing of 2D frame system in **ETABS** for seismic and gravity load analysis
- Experimental investigation of the phenomenon of hydraulic jump
- Performing various water quality analysis tests on influent and effluent water samples from a water supply scheme/treatment plant in our hometown/city
- Experimental study on properties of pavement materials and design parameters.

## **HONORS AND AWARDS**

- Awarded Dean's Honor Roll Certificate for securing the distinction in Spring Semester 2021, Fall Semester 2021, Fall Semester 2022, and Spring Semester 2023.
- Secured first position in final year project titled "Application of FEM and AI for response-based assessment of RC beam-column connections" in 2023.
- Shortlisted as one of the 256 candidates out of 12000 for the Prime Minister's National Innovation Award in 2023.
- Received a grant of 60,000 PKR for a final year design project titled "Application of FEM and AI for response-based assessment of RC beam-column connections" from the Pakistan Engineering Council (PEC) in 2023.
- Secured second position in Pakistan Water Week 2022 in the student competition of a short documentary under the theme of Climate Change and its impact on agriculture and water in 2022.
- Awarded Chief Minister Khyber Pakhtunkhwa merit-based scholarship in university (Worth 3.2 million PKR) in Session 2019-2023.
- Awarded Stoori da Pakhtunkhwa Scholarship (15,000 PKR on a monthly basis for a duration of two years) for securing the 17th position in the Board of Intermediate & Secondary Education Swat, Government Sector in 2018.

## **RESEARCH PUBLICATIONS**

<https://scholar.google.com/citations?hl=en&user=TruC3yMAAAAJ>

- H. A. Waqas, M. Sahil, M. M. Khan, **A. W. Anwar**, M. Ullah Shah, and M. Usman, "Optimizing Reinforcement Strategies for Robust Beam-Column Joints in Seismic Resistant Structures," Arab J Sci Eng, 2024. <https://doi.org/10.1007/s13369-023-08591-1> (IF=2.9, Quartile=Q1).
- M. Sahil, M. M. Khan, **A. W. Anwar**, W. Khan, and H. A. Waqas, "Numerical Study on The Out-of-Plane Behaviour of Brick Masonry Walls Strengthened with Cement Sand Mortar," Sustainable Structures and Materials, An International Journal, vol. 6, no. 1, pp. 116-120, 2023.
- M. Sahil, M. M. Khan, **A. W. Anwar**, W. Khan, M. Ilyas, and H. A. Waqas, "Numerical evaluation of response parameters and damage in the reinforced concrete beam-column connection joint," in Proceedings of the 2nd International Conference on Recent Advances in Civil Engineering and Disaster Management, 2022.
- Amin, Fayiz, Yasir Zaman, **Abdul Wahid Anwar**, Muhammad Asif, Khan Abdul Majid, Ahsan Niazi, and Hafiz Ahmed Waqas. "A Comparative Analysis of Thin-Walled Sections Using Finite Element Modelling." Emirati Journal of Civil Engineering and Applications 2, no. 2 (2024): 4-11.

## CERTIFIED ONLINE OFFICIAL COURSES

### AutoCAD

- Technical Drawing for Design and Drafting Issued on: 12/08/2023
- Annotating and Dimensioning for Design and Drafting Issued on: 12/08/2023
- Drawing Management for Design and Drafting Issued on: 13/08/2023
- Creating and Modifying Objects with Accuracy for Design and Drafting Issued on: 14/08/2023
- Layout and Output Drawings for Design and Drafting Issued on: 14/08/2023

### Revit

- Introduction to 3D Modeling for Architectural Design Issued on: 28/08/2023
- Advanced 3D Modeling for Architectural Design Issued on: 06/09/2023
- Families and Parameters for Structural Design Issued on: 23/09/2023



### Primavera P6

- Primavera P6 Project Management Issued on: 03/08/2024



- MATLAB Onramp Issued on: 22/06/2022



### WORLD BANK GROUP

- Designing Sustainable Infrastructure Projects Issued on: 07/06/2025

### COURSERA

- Engineering Project Management: Initiating and Planning Issued on: 15/09/2023

## STRENGTHS

- Proficient in multitasking and highly diligent.
- Adept at working collaboratively and contributing to team success, while also possessing self-motivation and the ability to motivate others.
- Experienced in coordination and collaboration, with a strong desire to support team members.
- Demonstrated leadership abilities, able to generate and implement innovative ideas.
- Driven to achieve set objectives and enthusiastic about taking on new challenges.

## LANGUAGES

- English – Professional proficiency
- Urdu – Full professional proficiency
- Pashto – Native language