AQUIB WAHAB ALI, M.Eng, EIT

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Structural Engineer-in-Training (EIT) with an M.Eng in Structural Engineering and practical experience in 3D structural modeling, connection detailing, and on-site construction inspection. Proficient in applying building codes and writing custom scripts (Python/AutoLISP) to automate design and drafting workflows.

TECHNICAL SKILLS

Analysis & Design Software: SAP2000, ETABS, AutoCAD, Revit, Civil 3D, MS Office
Advanced Field Systems: Leica RTC360 Reality Capture, Data Collection, Site Audits
Programming and Automation: Python, AutoLISP, MATLAB, SQL, Data Structures
Design Standards: Ontario Building Code (OBC), National Building Code of Canada (NBCC), CSA S16 (Steel), CSA A23.3 (Concrete)
Core Competencies: Structural Detailing, Cross-Functional Coordination, RFI Management, Spatial Clash Detection

PROFESSIONAL EXPERIENCE

Structural Detailer/Designer
CUSTOM CAD CONSULTING INC., Waterloo, Canada
March 2023 – Present

- Model and detail 3D structural steel framing and reinforced concrete components following OBC, CSA S16, and CSA A23.3 standards.
- Analyze structural steel connections to verify load paths, evaluating shear, tension, and bearing capacities.
- Utilize 3D scanning technology to capture as-built field measurements for structural rehabilitation and retrofit design packages.
- Write custom Python and AutoLISP scripts to process geometric data and automate repetitive drafting production workflows.
- Perform self-checking and quality control reviews of drawings and material take-offs before final engineering review.
- Act as the central technical bridge across engineering disciplines, reviewing engineering markups, managing document control, and resolving complex spatial clashes to reduce project revision cycles by 20-25%.

Founder/Director, Site Engineer
MAKLER CONSTRUCTION COMPANY, Patna, India
June 2019 – May 2021

- Managed site engineering and construction execution for three distinct building projects with a total budget of $3.5 million.
- Conducted daily field inspections of reinforced concrete formwork, rebar placement, and structural steel framing to verify compliance with engineering drawings.
- Documented site deficiencies tracked geometric deviations from the design plans and coordinated with engineers to execute field fixes.
- Reviewed structural drawings and contract specifications to coordinate materials procurement and project scheduling.

EDUCATION

Master of Engineering (M. Eng), Civil and Environmental Engineering, in Structural Engineering
Western University, London, Canada, May 2021 – April 2022
Bachelor of Technology (B. Tech), Civil Engineering, in Construction Technology
PES University, Bengaluru, India, August 2015 – May 2019

PROJECTS, CERTIFICATIONS & PROFESSIONAL DEVELOPMENT

Projects:

- *Seismic Analysis and Design of a Multi-Story Building* (Western University)
  -Calculated lateral and gravity loads on a multi-story building according to NBCC load cases and combinations, scaled earthquake time-history data to match response spectrums based on specific soil classes and the fundamental period of the structure.
  -Analyzed drift and structural deflection to design concrete and steel sections within allowable code limits.
- *Dynamic Analysis of Multi-DOF Systems* (Western University)
  -Calculated natural frequencies, mode shapes, and modal responses for multi-degree-of-freedom structural systems under free and forced vibrations and coded the analytical equations in MATLAB to generate plots for acceleration and structural response curves.
- *Design of Steel Warehouse & Concrete Buildings* (Western University)
  -Performed structural analysis and sizing for a steel warehouse frame and a 16-story concrete building under dead, live, snow, and wind loads, checked member capacities for bending, shear, axial loads, and deflection limits under applicable limit states design rules.
- *BIM and Sustainability Planning & Modeling* (Western University)
  -Designed a building plan using location, sun paths, and wind roses to optimize passive solar heating and natural ventilation, Evaluated and implemented energy reduction strategies, including retrofits, efficient duct layouts, and low U-value window specifications.
  -Authored a BIM Execution Plan defining Level of Development (LOD) and team information exchanges for an 8-story hotel project.
  -Modelled structural elements, foundations, and layouts directly within Revit.

Software Certifications: AutoCAD 2D/3D, SolidWorks, Revit Structure, Autodesk Robot, Tekla BIMSight
Professional Development: EIT, G-License, ArcGIS with Python Scripting, Advanced Data Structures, Future Cities (EdX)