

# ***Moniruzzaman Moni, Ph.D., P.Eng.***

76 Marilake Drive, M1S1V7.  
Toronto, ON, Canada.

Email: [moni98ce@gmail.com](mailto:moni98ce@gmail.com)  
Phone: 6475540681

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## **PROFILE**

Licensed Professional Engineer (P.Eng.) with a Ph.D. in Civil/Structural Engineering from the University of Toronto and over 15 years of progressive experience in the planning, assessment, analysis, design, rehabilitation, and construction of civil and transportation infrastructure across Canada and internationally. Extensive expertise in bridges, culverts, retaining walls, foundations, utility infrastructure, industrial facilities, commercial and institutional buildings, and multidisciplinary infrastructure projects.

Experienced in managing and delivering infrastructure projects throughout the project lifecycle, including feasibility studies, condition assessments, detailed engineering, rehabilitation planning, consultant management, procurement, construction support, and contract administration. Currently serving as a Senior Structural Engineer with the Ministry of Transportation Ontario (MTO), leading structural rehabilitation initiatives, consultant procurement, technical reviews, OSIM inspections, and engineering coordination for major transportation infrastructure projects.

Strong background in structural and seismic engineering with experience in transportation, utility, municipal, industrial, nuclear and building infrastructure. Project experience includes bridge engineering, underground utility infrastructure, electrical duct banks, drainage systems, pump stations, retaining structures, highway infrastructure, waterfront developments, heavy foundations, and structural rehabilitation. Proficient in structural analysis and design using SAP2000, CSiBridge, ETABS, SAFE, S-Frame, and other industry-standard engineering software.

Recognized for providing practical engineering solutions, leading multidisciplinary teams, coordinating with clients, contractors, consultants, and regulatory agencies, and successfully delivering complex infrastructure projects from planning and design through construction. Comprehensive knowledge of Canadian engineering standards and codes, including CSA S6, CSA S16, CSA A23.3, NBCC, ACI, AASHTO, and MTO standards, with strong adaptability to provincial and client-specific requirements.

## **KEY QUALIFICATIONS**

- Licensed Professional Engineer (P.Eng.) in Ontario with eligibility for registration across Canada and a Ph.D. in Civil/Structural Engineering from the University of Toronto.
- Over 15 years of progressive experience delivering transportation, utility, industrial, nuclear, and public infrastructure projects across Canada and internationally.
- Extensive experience leading multidisciplinary engineering projects through planning, design, condition assessment, rehabilitation, procurement, construction support, and contract administration.
- Current experience with the Ministry of Transportation Ontario (MTO), leading the delivery of bridge and culvert rehabilitation projects, including consultant procurement, scope development, condition assessments, rehabilitation planning, technical reviews, construction coordination, and contract administration.
- Experience conducting bridge inspections, structural condition assessments, OSIM inspections, rehabilitation evaluations, forensic investigations, and field assessments for transportation and public infrastructure.
- Strong knowledge and application of Canadian engineering standards and design codes, including CSA S6, CSA S16, CSA A23.3, NBCC, CSA N289/N291, MTO standards, ACI, and AASHTO.
- Extensive experience in structural analysis and design of reinforced concrete, steel, prestressed concrete, and composite structures, including bridges, buildings, retaining walls, foundations, industrial facilities, and heavy equipment support structures.
- Experience in seismic analysis, structural qualification, and engineering assessment of nuclear facilities, including response spectrum analysis, equipment qualification, and preparation of code-compliant engineering deliverables in accordance with CSA N289 and CSA N291.
- Experience in utility and municipal infrastructure projects, including underground electrical duct banks, drainage systems, pump stations, roadway infrastructure, waterfront developments, and multidisciplinary utility coordination.

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- Proficient in structural analysis and design software including SAP2000, CSiBridge, ETABS, SAFE, S-Frame, SpSlab, SpColumn, S-Concrete, and other industry-standard engineering applications.
- Strong experience coordinating multidisciplinary teams, including structural, civil, roadway, geotechnical, utilities, environmental, traffic, and construction disciplines throughout all phases of project delivery.
- Extensive experience preparing and reviewing engineering reports, feasibility studies, engineering assessments, rehabilitation strategies, design calculations, technical specifications, tender documents, cost estimates, and consultant deliverables.
- Proven ability to manage multiple complex infrastructure projects simultaneously, balancing technical, schedule, budget, and stakeholder requirements while delivering high-quality engineering solutions.
- Extensive experience resolving construction issues, reviewing shop drawings, contractor submissions, requests for information (RFIs), and providing engineering support during construction and rehabilitation.
- Strong leadership, communication, client relationship management, stakeholder engagement, consultant management, proposal preparation, and technical mentoring skills within multidisciplinary engineering environments.
- Valid Ontario Class G Driver's Licence with willingness to travel for project meetings, field investigations, construction support, and site inspections throughout Canada.

### **PROFESSIONAL EXPERIENCE:**

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|------------------------------------------|------------------------------------------------------|----------------------|--------------------------------------|
| <b><i>Senior Structural Engineer</i></b> | <b><i>Ministry of Transportation<br/>Ontario</i></b> | <b><i>Canada</i></b> | <b><i>February 2026- present</i></b> |
|------------------------------------------|------------------------------------------------------|----------------------|--------------------------------------|
- Lead scoping and technical coordination of a \$35M structural rehabilitation program (6 bridges, 1 culvert), defining scope, design requirements, and delivery strategy across assessment, design, and construction phases.
  - Manage procurement and oversight of engineering consultants, reviewing submissions, design approaches, and technical deliverables to ensure compliance with MTO standards, CSA codes, and project objectives.
  - Coordinate with multidisciplinary teams (traffic, environmental, construction, PM) to resolve technical conflicts, interpret requirements, and align execution with regulatory and design intent, including underpass reconstruction works.
  - Provide engineering review and decision-making support during construction, addressing field issues, non-conformances, and design clarifications.
  - Conduct OSIM inspections and translate findings into risk-based rehabilitation strategies, scope definitions, and prioritization frameworks.
  - Develop and review cost estimates, technical scopes, and consultant Terms of Reference, supporting project advancement from planning through implementation.
  - Engage with internal and external stakeholders to communicate technical requirements, justify engineering decisions, and support project approvals.
  - Reviewed the new MTO structural design manual and OSIM manual.
  - Reviewed bridge replacement shop drawings, consultant submittals for new construction of highway bridges.

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|-----------------------------------|------------------------------------------|----------------------|--------------------------------------------|
| <b><i>Structural Engineer</i></b> | <b><i>Stephenson<br/>Engineering</i></b> | <b><i>Canada</i></b> | <b><i>September 2023- January 2026</i></b> |
|-----------------------------------|------------------------------------------|----------------------|--------------------------------------------|
- Performed advanced structural analysis and design of concrete and steel systems (high-rise, mid-rise, modular, and institutional buildings) in accordance with OBC, NBCC, CSA A23.3, and S16.
  - Led seismic qualification of heavy-lift equipment for a nuclear facility, applying response-spectrum analysis (SAP2000) and CSA N289/N291 load combinations, delivering code-compliant engineering packages.
  - Reviewed and validated structural systems for constructability, safety, and compliance with governing codes and standards, including alternative design considerations.
  - Provided field engineering and site support, investigating construction issues (e.g., honeycombing, reinforcement exposure, deviations) and issuing practical, code-aligned resolutions.
  - Conducted condition assessments and structural evaluations, developing repair strategies for deterioration, serviceability deficiencies, and structural performance issues.

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- Reviewed shop drawings and coordinated with contractors and fabricators to ensure alignment with design intent, specifications, and code requirements.
- Designed temporary works and construction-stage systems, ensuring stability, safety, and compliance during execution phases.
- Prepared detailed calculation packages, technical reports, and engineering memos, supporting internal reviews and client decision-making.
- Mentored junior engineers and reviewed models, calculations, and drawings to maintain quality, consistency, and engineering rigor.

***Structural Designer/Engineer******Freelancer******Canada******September 2017- August 2023***

- Assessed embankment stability and designed retaining walls as per CHBDC standards.
- Conducted structural evaluations, inspections, and restoration designs for different infrastructures following the MTO inspection manual and MTO rehabilitation manual.
- Prepared technical reports and material specifications for different projects.

***Research Assistant and  
Teaching Assistant******The University of Toronto******Canada******September 2017- December 2023***

- Prepared project budgets and developed comprehensive technical specifications for clients.
- Gained extensive experience in technical writing and delivering presentations for various projects.
- Effectively coordinated with multiple stakeholders to ensure smooth project execution and communication.

***Deputy Project  
Manager******Public Works Department (PWD)  
People's Republic of Bangladesh******Dhaka, Bangladesh******January 2016 – August 2017***

- Prepared inventory for the public infrastructure.
- Developed a manual for the inspection of the public infrastructure.
- Managed projects involving planning, designing, scheduling, supervision, quality control, and preparing technical reports and reviews.
- Conducted seismic assessment and retrofitting designs for government buildings and industrial facilities.
- Designed substructure multi-storied reinforced concrete buildings, including shallow foundation, Mat foundation, Pre-cast pile foundation, columns, beams, and slabs as per ACI 318-2014.
- Prepared cost estimations, schedules, and design guidelines for RCC structures.
- Conducted pre-cast pile load test.
- Prepared cost estimations, schedules, and design guidelines for RCC structures.

***Visiting Researcher******The University of British Columbia******Canada******August 2015- January 2016***

- Evaluated the performance of buckling-restrained braced steel-frame designs as per NBCC 2010.
- Assessed seismic retrofitting techniques for low-strength concrete buildings.
- Designed underground electrical utility infrastructure for BC Hydro, including reinforced concrete (RCC) and steel duct bank systems subjected to seismic loads, highway truck loads, earth pressures, and other operational loading conditions, ensuring compliance with applicable Canadian codes and client design requirements.
- Designed precast concrete parking structures in accordance with NBCC and CSA standards, including structural analysis, gravity and lateral load design, and member design for precast structural components.
- Slope stability analysis for the road embankment.

***Subdivisional  
Engineer******Public Works Department (PWD)  
People's Republic of Bangladesh******Dhaka, Bangladesh******June 2011 – July 2015***

- Prepared RFP/proposals, technical reports, and bidding documents.
- Played a crucial role in project management, overseeing the planning, scheduling, supervision, quality control, and successful completion of different public works infrastructures.
- Performed coordination with different stakeholders.
- Examined and reviewed over 200 building permit plans for architectural, structural, and fire safety compliance on behalf of Rajdhani Unnayan Karttripakkha (RAJUK), ensuring regulatory adherence.

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- Conducted seismic assessments and designs for government buildings and garment factories following IBC standards.
- Developed seismic design manuals for new and existing buildings in collaboration with the Japan International Cooperation Agency (JICA).

***Principal Structural Design Engineer      Prudential Consultants      Dhaka, Bangladesh      August 2006 – July 2015***

- Managed cost estimation, project planning, contract preparation, and client negotiations, leading project teams and interfacing with stakeholders.
- Led the design and development of land infrastructure, including guard rails, footpaths, drainage systems, pump stations, and waterfronts for industrial clients.
- Designed residential and commercial reinforced concrete and steel buildings and heavy machine foundations, ensuring structural integrity and compliance with industry standards.
- Conducted seismic assessments, retrofitting designs, and structural evaluations using non-destructive and destructive testing methods for reinforced concrete buildings.

***Research Assistant and Teaching Assistant      The University of British Columbia      Canada      September 2009-May 2011***

- Investigated innovative materials for reinforced concrete and steel buildings.
- Conducted seismic performance evaluations for retrofitted multi-column bridge bents.

***Structural Design Engineer      Acumen Consulting House Ltd.      Dhaka, Bangladesh      May 2005 – August 2009***

- Conducted cost-benefit analyses and feasibility studies for grade separator intersection projects, including scheduling and resource allocation.
- Designed pre-stressed highway bridges, hybrid grade separators (pre-stressed and reinforced concrete), and pile foundations following AASHTO standards.
- Performed contract administration for the bridge projects.
- Led the geometric design of highways, ensuring alignment with safety regulations and engineering best practices.

### **EDUCATION**

- Ph.D. 2024, Civil & Structural Engineering, The University of Toronto.
- M.Sc. 2011, Civil & Structural Engineering, the University of British Columbia (UBC) Canada.
- B.Sc. 2004, Civil & Structural Engineering, Bangladesh University of Engineering and Technology (BUET).

### **COMMUNICATION AND LEADERSHIP SKILLS:**

- Excellent verbal, written, and interpersonal communication skills in English and Bangla.
- Proven leadership and team-building strengths; skilled at analyzing requirements and motivating teams for successful project delivery.
- Demonstrated experience in preparing comprehensive presentations, reports, and briefing notes.
- Managed diverse and fluctuating workloads effectively, efficiently, and independently within acceptable timeframes.
- Able to build and maintain excellent working relations with the public, outside agencies, and contractors and to foster a respectful team environment with other employees.

### **PROFESSIONAL AFFILIATIONS**

- Professional Engineers Ontario-P.Eng. 2021 to present.
- Professional Engineers Ontario-EIT 2018 to 2021

### **References:**

Available upon request.