

Amir Mirarab M.Sc.

Structural Forensic Investigator

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Professional Summary:

Amir Mirarab, M.Sc., is a skilled Structural Forensic Investigator who recently joined EFI Global Canada's Forensic Engineering team in June 2023. With a strong academic background and diverse experience in the construction industry, Amir brings valuable Civil Engineering and Environmental expertise to his role.

Amir holds a Master of Applied Science degree in Structural Engineering from York University. His research focused on the lateral performance of precast composite wall systems. He obtained his bachelor's degree from Toronto Metropolitan University, gaining expertise in the cracking behavior of reinforced concrete slabs.

Throughout his career, Amir has gained hands-on experience in multiple areas, including concrete material mix design and quality control for several ready-mix plants in the Greater Toronto Area (GTA). He has also conducted rebar inspections for diverse residential, commercial, and infrastructure projects in Ontario. Additionally, he has successfully managed projects for steel fabrication companies in the GTA, performed rebar detailing and estimation for a wide range of residential and commercial projects, and contributed to construction project management for residential renovation projects.

Amir's multidisciplinary experience has strengthened his ability to thrive in team environments. He has demonstrated proficiency in project coordination, cost estimating, report preparation, and the development of RFI and RFQ documents. Furthermore, his expertise includes supervising rebar detailers, reviewing structural and architectural drawings and rebar shop drawings, and conducting quantity take-off measurements.

Licenses and Certification:

- Engineer Intern Program (EIT)

Project Experience:

Construction Review: Conduct on-site construction reviews for various restoration or rehabilitation projects of residential single-family houses. Ensured compliance with design specifications, construction codes, and industry standards.

Concrete Quality Assessments: Performed site inspection and on-site ready-mix fresh and hardened concrete testing for a diverse range of projects. This included residential, single, and multi-family houses, mid-rise and high-rise buildings, as well as commercial and industrial projects. Ensured the quality and performance of the concrete used in construction.

RC structure Inspections: Carried out inspection of reinforced concrete structures to determine the origin and cause of failures and damages. These inspections were conducted during construction or after construction to identify any structural deficiencies and provide recommendations for remediation.

Rebar Inspection: Conducted comprehensive inspections for various projects, ensuring that the installation of rebar met the required quality standards and was in accordance with the structural and detailed drawings. Verified proper methods to evaluate the integrity and performance of material without causing damages.

Non-Destructive Materials Testing: Completion of in-situ non-destructive materials tests, involving structures to assess strength of materials, conformance to construction contract requirements, and for manufacturer warranties. Utilized various testing methods to evaluate the integrity and performance of concrete material without causing damages.

Rebar Contract Administration: Responsible for the administration of rebar supply contracts on construction projects, creation of rebar construction contract documents including specifications and drawings, submittal review, creation of contemplated changes and change orders.

Major Projects:

- **Structural Rebar Detailing, Various (2012-2023):** Rebar detailing and investigation for various projects including high-rise residential.
- **Post-Failure Assessment, Various (2012-2023):** Assessment for ready-mix concrete materials related failures or rebar related failures on several projects.
- **Rebar and Concrete Material Inspection, Various (2012-2023):** Inspection and assessment for concrete material quality and proper rebar installation during construction period
- **Structural Design Review (2016-2019):** Design review of various structures (Reinforced concrete and light frame steel). Shear walls, suspended slabs, strip foundations etc.

Professional Experience:

- **EFI Global Canada, Ottawa, Canada**
2023-Present
Structural Forensic Investigator
- **AM Struct, Timmins, Canada**
2020-2023
Project Coordinator

- **Northern College, Timmins, Canada**
2019-2022
Civil Technology Instructor
- **Mansteel Rebar., Richmond Hill, Canada**
2013-2015
Rebar detailer and project coordinator
- **National East Ready Mix, Markham, Canada**
2012-2013
Ready-mix Quality Control Engineer
- **Butler Inspection Group, Mississauga, Canada**
2011-2012
Rebar Inspector

Education:

- Master of Applied Science (M.Sc.), York University, Toronto, ON, Canada (Structural Engineering) (2016-2019)
- Bachelor of Civil Engineer (B.Eng.), Toronto Metropolitan University, Toronto, ON, Canada (2007-2011)

Training & Certificates:

- WHMIS Certificate (2023)
- Occupational Health and Safety Awareness for Workers Certificate (2023)
- Workplace Violence and Harassment for Employee Certificate (2023)
- AODA customer Service Standard Certificate (2023)
- Project Management with Primavera P6 (2019)
- Structure Design with S-Frame (2019)
- Structure Design with S-Concrete (2019)
- Structure Design with ETABS Software (2016)
- Structural analysis with VecTor2 & Response 2000 (2016)
- Project Management with MS project Software (2013)
- AutoCAD and RebarCAD Design (2012)

Academic Research and Presentation:

- Numerical Analysis of the Lateral Response of Precast Composite Wall Systems (Sep. 2017 - Apr. 2019)
- Seismic Design Review of Reinforced Concrete Shear Walls Under Cyclic Loading (Sep. 2016 - Jun. 2017)
- Cracking Behavior of one-way and two-way Reinforced Concrete Slabs (Apr. 2010 - Jun. 2011)