

Alireza Afkhami, M.A.Sc., M.C.P., P.Eng. Geotechnical Engineer

EXPERIENCE SUMMARY

Mr. Afkhami is a Geotechnical Engineer in Vancouver, BC. He has more than 16 years of consulting experience in seismic assessment and geotechnical design, with a specialized focus in engineering analysis. Sectors of extensive geotechnical practice include site characterization and seismic design including soil liquefaction analysis, site-specific response spectra analysis, pile design, slope stability and design of segmental and MSE walls, excavation and shoring design, and project management spanned over 400+ projects. He has provided geotechnical engineering services for a variety of market sectors including industrial, commercial, transportation, and residential; spanning a wide range of small to large scale projects.

RELEVANT EXPERIENCE

Projects that highlight Mr. Afkhami's experience include:

- **BC Ministry of Transportation - Evergreen Line Rapid Transit, (Burnaby and Coquitlam, BC) - December 2012 to June 2014:** Segment lead designer (including Lougheed Town Centre Station, Lougheed Special Structure, North Rd Elevated Guideway (2 Km, Burquitlam Station). Main responsibilities:
 - Planning for site characterization, field test processing (CPT, SPT, BPT and PMT)
 - Engineering analyses and report preparation including shallow footings, large diameter drilled shafts, soil liquefaction assessment, site-specific dynamic response spectra analyses, slope stability analysis, and pile lateral response analyses.
 - Attending weekly meeting and tel-conferences with other disciplines, especially with structural engineers, SNC-Lavalin and external advisors.
 - Construction support: attending kick-off meetings, field inspections, providing support to site engineers, reviewing daily construction reports, preparation of technical memos, reviewing IFC drawings.
 - Responding to the 'Owner's Engineer' comments and updating geotechnical design reports.
 - Special features: 2.4 to 2.7 m diameter drilled shafts (~ 50) with slurry and/or casing, 0.6 to 1.2 m driven piles, limit states design, interpretation of CSL and PDA test results and HP release, WEAP analysis, stone columns, soil mixing (~ 1000 columns), tunnel jacking (Barnet Hwy)
- **BC Ministry of Transportation Public Works – Alaska Highway Repair- November 2013 to June 2014:** Repair of Alaska Highway alignment at three areas; included providing several design options. The

EDUCATION

M.A.Sc., Geotechnical Engineering
Tehran Polytechnic University, Tehran,
Iran

B.Sc., Civil Engineering
Sharif University of Technology
Tehran, Iran

Design of Piled Foundation (short
course), Dr. Bengt Fellenius,
Vancouver, BC

Soil Liquefaction (short course), Dr.
Idriss & Dr. Boulanger, Vancouver, BC

Microsoft Certified Professional (MCP)
in Computer Programming

International Computer Driving License
(ICDL)

AREA OF EXPERTISE

Geotechnical design experience, from
field investigations to design and
construction inspection with
specialization in pile design, slope
stability analysis, segmental retaining
wall design, shoring design, seismic
analysis

REGISTRATIONS/ AFFILIATIONS

Association of Professional Engineers
and Geoscientists of British Columbia
(APEGBC)

Vancouver Geotechnical Society
(VGS)

Canadian Dam Association (CDA)

International Society for Soil
Mechanics and Geotechnical
Engineering (ISSGE)

Tehran Construction Engineering
Organization (TCEO)

Iranian Geotechnical Society (IGS)

AWARDS

Tetra Tech EBA Innovation Award
(2014) for retrofit of a MSE wall

OFFICE

Vancouver, BC

YEARS OF EXPERIENCE

16

CONTACT

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selected design consisted of SierraScape retaining wall. The main challenge was uncertainties regarding the subsurface condition and presence of crib walls and gabions on which the proposed wall will be supported.

- **BC Ministry of Transportation - Westside Road Interchange (Kelowna, BC) - August 2012 to May 2013:** Remedial design to stabilize a failing MSE wall using a combination of tie-back soil anchors and reinforced concrete wall supported on Helical piles; this included close cooperation with structural engineers, client and the contractor. Responsibilities during construction included reviewing the field inspection reports and addressing construction issues. Alireza co-authored a paper that will be presented in 2014 CGS conference in Regina, Canada. He also received the corporate wide innovation award for his design.
- **AB Ministry of Transportation - Northeast Anthony Henday Drive (Edmonton (AB) - June 2012 to January 2013:** Slope stability, bearing capacity and settlement analyses for Mechanically Stabilized Earth (MSE) walls and bridge abutments; reviewing pile design soil parameters.
- **BC Hydro - Interior to Lower Mainland Transmission Line (Merritt to Coquitlam, BC) - June to December 2012:** Pile design including static and seismic bearing, soil liquefaction and lateral spreading analyses, site-specific dynamic response spectra analysis, Cone Penetration Test interpretation and analysis; reviewing IFC drawings.
- **Roberts Bank Rail Corridor (Surrey, BC) - January to June 2012:** Pile design including static bearing and lateral deformation under seismic loads, abutment design using lightweight material (EPS), site-specific response spectra analysis (Seismic), Cone Penetration Test interpretation and analysis.
- **Douglas Channel LNG Plant (Kitimat, BC) - January to June 2012:** Site characterization, pile design for LNG tanks, settlement analysis, bearing capacity of rock sockets for dolphin structure, slope stability analysis and estimation of post-earthquake slope movements and induced loads on piles, seismic analysis based on ASCE, NFPA, CSA-Z276-11 codes. Preparation of geotechnical and seismic report.
- **Slope Remediation (West Vancouver, BC) - 2008:** Several slope stability analyses for a pile supported residential building situated on steep sloped terrain, including design of a 65 ft high Mechanically Stabilized Earth (MSE) wall using Lock Blocks, field reviews during construction.
- Design of various pile supported structures in peat area of Vancouver and Queensborough. Use of lightweight aggregates in very soft ground conditions. Projects spanned from residential buildings to parks, waterfront structures and BMX tracks.
- Alireza is co-founder of [Novo Tech Software Ltd.](#), a geotechnical software development company with hundreds of customers in more than 50 countries. Novo Tech products include Windows and tablet geotechnical software for soil liquefaction analysis, CPT interpretation, 3D soil profile visualization, bearing capacity and settlement analysis, laboratory testing and borehole log drafting.