Sonny Singha, M.A.Sc., P.Eng., MBA
Principal

Summary

Mr. Singha has been involved in a variety of geotechnical assignments throughout British Columbia, Alberta and the United States. These have included liquefaction assessments, design of ground improvement, shoring design and inspection, settlement analysis and preload design on silt and peat, pile design for both lateral and vertical loads, limit equilibrium slope analysis, and finite difference analysis of anchored walls, bridge abutments and slopes. In addition, he has extensive knowledge of many insitu soils investigation techniques and has undertaken fieldwork for numerous geotechnical engineering projects.

Professional Experience

2006 – Present
Braun Geotechnical Ltd.
Principal

2004 – 2006
Trow Associates Inc.
Senior Geotechnical Engineer

2001-2004
Thurber Engineering Ltd., Vancouver, BC
Geotechnical Engineer

1999-2001
Terra Macleod Engineering Ltd. (Currently Trow Associates Inc.), North Vancouver, BC
Geotechnical Engineer

1994-1999
Conetec Investigations Ltd., Vancouver, BC
Geotechnical Engineer

Education

M.B.A., 2003
Simon Fraser University

M.A.Sc., (Geotechnical Engineering), 1998
University of British Columbia

B.A.Sc., (Civil Engineering), 1993
University of British Columbia

BRAUN
GEOTECHNICAL LTD.

Professional Affiliations

Member, past Program Director and Treasurer, Vancouver Geotechnical Society

Member, Association of Professional Engineers and Geoscientists of British Columbia

Relevant Experience

Foundation Engineering

- Settlement analysis, preload design and monitoring of settlements for commercial development sites at the Fraserwood Corporate Centre in east Richmond and in the south Burnaby area. These areas are underlain with variable depths of highly compressible peat and soft silts.
- Pile, foundation, densification and shoring design for the Creekside Parkade and At Natures Door projects in Whistler.
- Investigation, foundation design, and excavation and shoring design for the Firenze development at Abbott and Keefer Streets in Vancouver.
- Foundation design for numerous communication towers throughout the Vancouver area on sites varying from dense till-like soils to highly compressible peat and organic silt.
- Analysis and design of pile foundations and bridge end fill for Irons Creek Bridge on the Alaska Highway and Partington Creek Bridge in Coquitlam.
- Geotechnical engineering and construction review for the BCIT Aerospace Campus on Sea Island.
- Pile design for protection of GVRD sewer lines from vertical loads to be imposed by a proposed railway line to be located above.
- Pile design and inspection of foundations, shoring, and pile installation for the office building and parkade development north of the Production Way Skytrain station in Burnaby.

Transportation

- Geotechnical investigation and approach fill design for the proposed Golden Ears Bridge between Maple Ridge and Langley.
- Slope stability analysis and foundation design for the approaches to the proposed Needles to Fauquier Bridge over the Lower Arrow Lake in southeast B.C.
- Feasibility analysis for widening Highway 1 through Kicking Horse Pass, east of Golden. Used the FLAC finite difference software package to analyze stability and stresses within the soil and structures for various highway upgrading options.
- Design of the retrofit anchored wall to replace the deteriorating bin walls on which the Trans-Canada Highway is founded adjacent to the Thompson River, northwest of Lytton. Assessed the feasibility of adding a new facing to the bins and anchoring the facing to the hillside or replacing the bin wall with a mechanically stabilized earth(MSE) wall. Organized and carried out a soil anchor test program at the site to assess the feasibility of anchor installation.
- Numerical modeling of the west abutment for the realignment of the Okanagan Bridge. Estimated displacements and stresses within the soil and structural components caused by loads transferred from the bridge deck. The proposed abutment was to be founded on piles and anchored horizontally with several pipe sections connected to deadman anchors.
- Analysis and design of pile foundations and end fill for Irons Creek Bridge on the Alaska Highway, Partington Creek Bridge in Coquitlam, and 192nd Street bridge over the Nicomekl River in Surrey.

Marine Facilities

- Carried out liquefaction susceptibility analyses, estimated seismically induced displacements, conducted laterally loaded pile analysis for a proposed dock, and conducted regular construction field reviews for Sapperton Park, a foreshore park constructed on fill placed over loose sediments within the Fraser River in New Westminster.
- Analysis of laterally loaded piles for Quayside Marina in False Creek, Vancouver.

Shoring and Excavation

- Shoring and excavation design for the Creekside Parkade and the At Natures Door projects in Whistler.
- Shoring design for Citygate projects in Vancouver.
- Shoring design and review for the Firenze Development at Abbott and Keefer in Vancouver.
- Shoring and underpinning design for 44 and 50 Water Street.

Site Characterization

- Conducted field investigations for the Canadian Liquefaction Experiment (CANLEX) at various locations including Richmond, Delta and Fort McMurray in Alberta. The purpose of the project was to carry out in-situ testing of soils at these sites to further the knowledge of soils that may be susceptible to liquefaction.
- Carried out post-failure field investigations at mine tailings facilities of Kennecott Utah Copper in Salt Lake City and BHP Miami in Arizona. The tailings were characterized with seismic CPT testing and instrumented to determine the post-failure soil conditions to establish the cause of the failures and prevent future ones.
- Soils investigation to characterize the Bennett Dam Sinkhole. The work was carried out to estimate the extent of the sinkhole and the strength and character of the soils within the sinkhole.

Engineering Knowledge Software

- Experienced in using several geotechnical engineering software programs for finite element/difference analysis, vertical and lateral loading of piles, settlement analysis, liquefaction analysis, slope stability analysis, and the design of mechanically stabilized earth walls.

Publications and Presentations

Mr. Singha has authored or co-authored several papers related to site characterizations using Cone Penetration Testing.