

GROUND IMPROVEMENT

An aerial, black-and-white photograph of a large-scale construction or ground improvement project. A massive lattice boom crane is positioned in the lower center, its boom extending diagonally towards the upper right. To the left of the crane, there is a large, dark, irregular pile of excavated earth or rock. The surrounding terrain is a vast, flat, and light-colored area, possibly a construction site or a cleared field, with some faint tracks or lines visible. The overall image has a grainy, high-contrast quality typical of older newspaper or magazine prints.

THE VANCOUVER GEOTECHNICAL SOCIETY
VANCOUVER, B.C.
MAY 28, 1993



VANCOUVER GEOTECHNICAL SOCIETY

GROUND IMPROVEMENT

7th Annual Symposium

Evening May 27, 1993 - Holiday Inn

May 28, 1993 - Ramada Renaissance Hotel

Vancouver, B.C.

The Canadian Geotechnical Society\La Societe Canadienne de Geotechnique

PROGRAM

May 27th, 1993

1730 onwards - Pre-Symposium Dinner

ADDRESS

Quality Control and Process Monitoring of Soil Compaction Projects
K. Rainer Massarsch, Geo Engineering AB and Royal Institute of
Technology, Stockholm, Sweden

May 28th, 1993

0800 - 0830 *Registration*
0830 - 1200 *Morning Session*

OPENING REMARKS

John A. Howie, Symposium Chairman
HBT AGRA Limited

KEYNOTE ADDRESS

Soil Improvement for Mitigation of Ground Failure Risk
James K. Mitchell
The Edward G. Cahill and John R. Cahill Professor of Civil
Engineering, Emeritus, University of California, Berkeley

0945 - 1000 Coffee Break

**Dynamic Compaction Densification for Liquefaction Mitigation and
Improved Foundation Support in the Fraser Delta - A Case History**
Ernest Naesgaard, Macleod Geotechnical Ltd. and
Nelson Beaton, Geopac West Ltd.

**Advances in the Design of Vibro Systems for the Improvement of
Liquefaction Resistance**
Juan Ivan Baez, Hayward Baker Inc. and
Geoffrey Martin, University of Southern California

**A Case History of Dynamic Compaction Evaluation by the SASW
Method**
K.O. Addo, M. Kokan, D.J. Woeller, ConeTec Investigations Ltd. and
N. Beaton, Geopac West Ltd. and J. O'Brien, Macleod Geotechnical
Ltd.

PROGRAM (Continued)

Decision Analysis for Ground Improvement in Fraser River Delta
Bryan D. Watts, Klohn Leonoff Ltd., and Jean-Marie Konrad,
Université Laval

1200 - 1330 *Seated Luncheon & Displays Area*
1330 - 1645 *Afternoon Session*

Innovations in American Grouting Practice
Dr. Donald A. Bruce, Nicholson Construction Company, Bridgeville,
PA

Compaction Grouting of Liquefiable Soils at the CWOC Site
R.W. Boulanger, University of California; L.H. Mejia, Woodward-
Clyde; L.F. Harder, Dept. of Water Resources, Sacramento, CA; H.
Kanakari and Rice, Woodward-Clyde Consult., Oakland

Ground Stabilization by Compaction Grouting - A Case History
Peter To and David Broomhead, Klohn Leonoff Ltd.

1500 - 1530 *Coffee Break*

**Remedial Treatment of Embankment Failure at Westminster Avenue
Bridge, Burnaby, British Columbia**
Mark T. Bradshaw and Trevor P. Fitzell
Golder Associates Ltd.

**Ground Treatment for a Storage Tank Facility in Difficult Soil
Conditions**
Wayne H. Quong and Herb H. Hawson, HBT AGRA Limited

1630 *Closing Remarks*

INTRODUCTORY REMARKS

The alluvial, marine and swamp deposits of the Lower Mainland of B.C., the rapid growth of the region and the potential for earthquakes make a knowledge of ground improvement essential for geotechnical engineers seeking to design and construct engineering works on and in these soils. The 1993 VGS Symposium provides a forum for presentation and discussion of a range of ground improvement techniques. As in past years, we have invited prominent practitioners from afar as keynote speakers to share with us their experience and expertise. The remainder of the Symposium comprises case histories of and commentary on a variety of ground improvement techniques by local and out-of-town engineers.

The Organizing Committee greatly appreciates the efforts of the Symposium contributors. We hope that the information contained in this volume and the presentations and discussions at the Symposium will contribute to the understanding of the advantages and limitations of ground improvement techniques.

John A. Howie
Chairman, Organizing Committee

SYMPOSIUM COMMITTEE

Nelson Beaton, P.Eng.

John Brodie, P.Eng.

Derek Harris, P.Eng.

Susan Hollingshead, P.Eng.

John A. Howie, P.Eng.

Warren Newcomen, P.Eng.

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