Slope Engineering in Hong Kong, Li, Kay & Ho (eds) © 1998 Balkema, Rotterdam, ISBN 9054109351

IX

Table of contents

Foreword

The Annual Seminar on Slope Engineering in Hong Kong has been organized by the Geotechnical Division, Hong Kong Institution of Engineers

Cover photo: An aerial view of Hong Kong Island looking towards southeast and illustrating the intense hillside development; courtesy of Geotechnical Engineering Office



The texts of the various papers in this volume were set individually by typists under the supervision of each of the authors concerned.

Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by A.A. Balkema, Rotterdam, provided that the base fee of US\$ 1.50 per copy, plus US\$ 0.10 per page is paid directly to Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA. For those organizations that have been granted a photocopy license by CCC, a separate system of payment has been arranged. The fee code for users of the Transactional Reporting Service is: 90 5410 935 1/98 US\$ 1.50 + US\$ 0.10.

Published by
A.A. Balkema, P.O. Box 1675, 3000 BR Rotterdam, Netherlands
Fax: +31.10.413.5947; E-mail: balkema@balkema.nl; Internet site: http://www.balkema.nl
A.A. Balkema Publishers, Old Post Road, Brookfield, VT 05036-9704, USA
Fax: 802.276.3837; E-mail: info@ashgate.com

ISBN 90 5410 935 1 © 1998 A.A.Balkema, Rotterdam Printed in the Netherlands

Organization	X
Keynote address	
Risk management and slope safety in Hong Kong A.W.Malone	3
Invited lecture	
Some important aspects of design of soil slopes in Hong Kong Y.C. Koo	21
1 Case studies and slope hydrology	
A blast-induced rock slide T.Y.Irfan & N.C. Evans	33
Investigation and design of stabilization measures for the 1995 Fei Tsui Road landslide A. Kwong, B. Monaghan & H.N.Wong	43
The November 1993 natural terrain landslides on Lantau Island, Hong Kong H.N.Wong & K.C.Lam	51
Performance of excavated slopes at West Kowloon Reclamation JH.Yin, E.K.F.Chung, A.E. Easterbrook & J.Truebridge	59
Design, construction and monitoring of a soil nailed slope in decomposed volcanics K.P.Yim & K.S.Yuen	67
The effect of steady state rainfall on long term matric suction conditions in soil F. Kasim, D.G. Fredlund & J.K-M.Gan	75
Rainfall-landslide relationship update J.N. Kay	83
Predicting porewater pressures in slopes using artificial neural networks	87

Soil suction in relation to slope stability: A summary of research carried out in Hong Kong in 1978-1997 J.M.Shen	93
Analysis of infiltration in unsaturated ground H.W.Sun, H.N.Wong & K.K.S.Ho	101
A simplified approach to predicting groundwater responses to rainfall <i>C.T.Yip</i>	111
2 Slope stability assessment	
Geological assessment of slopes in areas close to major landslides on Hong Kong Island S.D.G.Campbell, N.P.Koor, C.A.M.Franks & W.L.Shum	121
Applications of catastrophe and bifurcation theories to slope failures <i>K.T.Chau</i>	129
The natural terrain landslide study N.C. Evans	137
Quantitative risk assessment of landslides – A case history from Hong Kong A.D. Hardingham, K.K.S.Ho, A.R.H. Smallwood & C.S. Ditchfield	145
Debris flow assessments for the Foothills Bypass, Hong Kong D. Hadley, G.J. Hearn & G.R. Taylor	153
Evaluation of the potential consequences of slope failure J.N.Kay	163
Strength of a loose remoulded granitic soil <i>K.T.Law, J.M.Shen & C.F.Lee</i>	169
The likelihood of earthquake induced landslides in Hong Kong J.W.Pappin & A.J.H.Bowden	177
Preliminary quantitative risk assessment of Boulder Falls in Hong Kong A. Reeves, H.C. Chan & K.C. Lam	185
Overview of risk of old man-made slopes and retaining walls in Hong Kong H.N.Wong & K.K.S.Ho	193
3 Design practice and special topics	
Geotechnical control system in Hong Kong R.K.S.Chan & T.C.F.Chan	203
Computerized databases of landslides in Hong Kong W.L.Chan, K.K.S.Ho & H.W.Sun	213
The design and application of sprayed concrete for slope stabilization <i>A.Cheung</i>	221

Applications of non-invasive geophysical techniques to old masonry wall investigations in Hong Kong N.P.Koor & L.S.Chan	227
A new slope catalogue for Hong Kong C.C.L.Lam, S.H.Mak & A.H.T.Wong	235
The assessment of old masonry walls C.O.Li, L.K.R.Woodrow & Y.C.Chan	243
Effectiveness of slope maintenance in reducing the likelihood of landslide D.O.K.Lo, K.K.S.Ho & H.N.Wong	251
Prescriptive design of soil nails to upgrade soil cut slopes L.S. Pang & H.N. Wong	259
Instrumentation for slopes in Hong Kong C.D.Spalton, J.A. Frame & M.W. Fern	267
Observations from some landslide studies in Hong Kong H.N.Wong, K.K.S.Ho, W.K.Pun & P.L.R.Pang	277
Re-engineering the mindset of the public towards the issue of slope safety K.P.Yim, S.T.Lau & K.C.Lam	287
Stability investigation and preventive works design for old fill slopes in Hong Kong K.P.Yim & C.K.Siu	295
General reports	
Case studies and slope hydrology Y.C.Chan	305
Slope stability assessment L.J.Endicott	311
Design practice and special topics K.T.Law	317
Discussions and contributions	
Stability investigation and preventive works design for old fill slopes in Hong Kong: Discussion J.N. Kay	325
Stability investigation and preventive works design for old fill slopes in Hong Kong: Reply K. P.Yim & C. K. Siu	327
Some important aspects of design of soil slopes in Hong Kong J.M.Shen	329

Observations on the level of peak ground acceleration in Hong Kong as suggested from a number of sources <i>G.Williams</i>	331
Natural slopes and landslide hazard W.W.S.Yim	333
Record of discussion K.K.S.Ho	335
Author index	342