

GEOTECHNICAL ASPECTS OF UNDERGROUND CONSTRUCTION IN SOFT GROUND

Editors: Arsenio Negro & Marlísio O. Cecílio Jr.



Preface

Underground Construction in Soft Ground is the name of the current Technical Committee 204, previously TC28, an active group within the International Society for Soil Mechanics and Geotechnical Engineering, and established in 1989. TC204 provides a forum for the exchange of ideas in the areas of tunnelling and deep excavations in soft ground, in urban areas.

The main goal of TC204 is to gather and provide information on the geotechnical aspects of the analysis, design, construction and maintenance of deep excavations, tunnels and large underground structures, with particular emphasis on the development, effects and control of ground movements, their interaction with existing structures, mitigation measures and risk management.

The first International Symposium of TC204 took place in 1993 in Delhi (proceedings published in 1994), thanks to the support of the Japanese Geotechnical Society, TC's first host society, and to the dedication of the first TC Chairman Professor Keiichi Fujita (1924-2010). Other hosting societies include the British, the French and currently the Dutch Geotechnical Societies. Other Symposium venues were London (1996), Tokyo (1999), Toulouse (2002), Amsterdam (2005), Shanghai (2008), Rome (2011) and Seoul (2014). The proceedings of all previous conferences can be found on:

<http://www.issmge.org/publications/online-library>

This book contains the papers presented at the Ninth International Symposium Geotechnical Aspects of Underground Construction in Soft Ground, held in Sao Paulo in April 2017, the first occasion away from the Europe-Asia route. The increased distance hindered contributions to the meeting: only 37 papers were accepted for publication apart from 4 invited contributions. On the other hand, a refreshing and sizeable American audience (from northern and southern countries) attended the Symposium: 105 American and 29 European/Asian attendees.

The Fujita Lecture, created in 2011 to honour the first TC Chairman, was delivered in Seoul in 2014 for the first time. Professor Hirokazu Akagi delivered the Second Fujita Lecture at IS 2017, included in this proceedings. Contributions to the Symposium are gathered herein under the following headings, in agreement with the terms of reference of TC204:

- Deep Excavations
- Interaction with Adjacent Structures
- Mechanized Excavations
- Sequential Excavations
- Physical Modelling and Field Tests
- Case Histories

Keynote Lectures were delivered by Dr. Mandy Korff, Prof. Michael A. Mooney, Prof. Tarcísio B. Celestino and Prof. Chungsik Yoo. Not all lectures are included in this volume. The first two days of the Symposium were dedicated to lectures and technical sessions with presentations and discussions. The third day was dedicated to the technical visit to Serra do Cafezal road tunnel, a sequential excavation through residual soil and weathered rock, with Side Drifts, Head and Bench sequence. This tunnel will accommodate three lanes plus shoulder, connecting Sao Paulo and Parana States in Brazil.

The successful completion of the Symposium and of this volume publication are due to authors, speakers and delegates that participated in IS 2017. Special thanks are due to TC204 Chairman Prof. Adam Bezuijen for trusting and supporting the local organization.

IS 2017 benefited largely from the 4th Brazilian Tunnelling Congress and from the Latin American Tunnelling Seminar that run parallel and sequentially to the IS 2017. The triple event and a large exposition were run and managed by CBT, the Brazilian Tunnelling Committee, the local chapter of ITA, the International Tunnelling Association and part of ABMS, the Brazilian Geotechnical Society, the local chapter of ISSMGE, the International Society for Soil Mechanics and Geotechnical Engineering. The generous support of CBT made IS 2017 viable and visible to some thousand individuals that shared the common space and social activities of the triple event and expo. Finally, special thanks goes to the paper reviewers.

Arsenio Negro & Marlísio O. Cecílio Jr.
Editors

Werner Bilfinger & Tiago G.S. Dias
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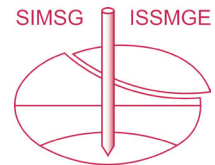
Organization

The Ninth International Symposium on Geotechnical Aspects of Underground Construction in Soft Ground (IS – Sao Paulo 2017) was organized by the Brazilian Tunnelling Committee (CBT) from the Brazilian Geotechnical Society (ABMS) under the auspices of the Technical Committee TC204 from the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE).

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