GROUND IMPROVEMENT AND STRUCTURAL DESIGN APPLICATIONS IN GEOTECHNICAL ENGINEERING

EDITORS:
SITI NORAFIDA JUSOH
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UTM
UNIVERSITI TEKNOLOGI MALAYSIA

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Ground Improvement and Structural Design Applications for Geotechnical Engineering offers an in-depth exploration of innovative approaches to ground improvement techniques and structural design, combining sustainability with cutting-edge advancements. This comprehensive resource provides engineers, practitioners, and students with unparalleled insights into both theoretical foundations and practical applications.

Key features include:

1. A thorough exploration of both theoretical and practical aspects of ground improvement and structural design in geotechnics.
2. In-depth analysis of key methods for foundation design, slope stability, tunnels, earth dams, and more.
3. Insights into emerging challenges and future trends in the geotechnical field, alongside pioneering solutions.

Designed as an essential reference for geotechnical engineers and practitioners, this book also serves as an invaluable guide for students seeking to deepen their knowledge in this critical field. Rooted in extensive research and studies conducted by leading geotechnical experts in Malaysia, it provides a unique perspective enriched by regional case studies and practical applications.

Clear and engaging, *Ground Improvement and Structural Design Applications for Geotechnical Engineering* delivers essential knowledge and fosters innovation, making it an indispensable resource for those looking to excel in geotechnical engineering.

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PREFACE

The field of geotechnics presents a myriad of challenges, from the complexities of soil behaviour to the intricacies of foundation design. The geotechnics, unlike structural mechanics, is not an exact science as the uncertainty of subsoil and the orientation of the boundaries between the individual soil strata is always incomplete and often inadequate. As our infrastructure demands grow, so does the necessity for advanced knowledge and innovative solutions in ground improvement and structural design, for better design and sustainability developments in future. This book, *Ground Improvement and Structural Design Applications for Geotechnical Engineering*, is a comprehensive resource aimed at addressing these critical challenges. Conceived as an immediate reference for geotechnical engineers and practitioners, this book also serves as a vital guide for students aspiring to delve deeper into this essential field. The content is rooted in extensive research and studies conducted by leading geotechnical experts in Malaysia, offering a unique perspective enriched with regional insights and practical applications.

The strength of this book lies in its detailed exploration of both theoretical and practical aspects of ground improvement techniques and structural design applications. It underscores the importance of these practices in ensuring the stability and longevity of infrastructures, thereby underscoring their relevance for future reference. As we anticipate and prepare for future challenges in geotechnics, this book stands as a pivotal resource, equipping readers with the knowledge and tools necessary to innovate and excel in their professional endeavours.

We would like to express our deepest appreciation for the contributions of our colleagues, whose knowledge and insights have significantly enriched this work. Special dedication goes to our respectful

mentors, the late Fauziah Kassim and Muhammad Azril Hezmi, for their invaluable knowledge and the memorable moments we shared. We hope this book will not only enhance your understanding but also inspire new solutions in the ever-evolving field of geotechnical engineering.

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