

New Book:

Underground Spaces: Design, Engineering and Environmental Aspects

This book contains some of the papers presented at the International Conference on Underground Spaces - Design, Engineering and Environmental Aspects, held on the Campus of the Wessex Institute of Technology in the New Forest. The Conference was launched to discuss not only the structural and environmental material characterization aspects but also the trends regarding the development of underground spaces.

Underground spaces are becoming increasingly important for meeting a wide diversity of needs. This phenomenon, which started in countries subjected to extreme climates, is now becoming more widespread as population growth and the demand for better accommodation and leisure facilities, combined with a desire to

improve the landscape, result in the need to develop maximize the use of available space. The uses range from classical excavations to subway constructions, underground sports halls, power stations, waste repositories, underground cities and many others. The construction techniques employed are also quite varied, from open-air excavation to newly developed injection methods.

The use of underground spaces is challenging for a wide spectrum of engineers, designers and builders. Structures constructed below the terrain require special attention in their design and safety assessment. This means that the degree of knowledge required is significantly different from that needed for surface structures. This is particularly the case with regard to chemical, nuclear or toxic waste repositories, where serious environmental issues can arise.

The response of the underground structures to the imposed loadings depends on a number of parameters that sometimes are too complex or not fully understood, resulting in budget overruns or even failures that lead to loss of property or life. Such uncertainties need to be addressed and engineers should be able to accurately predict a construction's performance throughout its construction and service life. The papers presented at the Conference address such varied topics as Underground space development; Blast impact on underground structures; Nuclear facilities; Artificial intelligence techniques and Numerical models; Unused mines;

Project management; Materials selection; Archaeological aspects; Structural Stability; and Ventilation systems.

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Details on the conference can be found at

<http://www.wessex.ac.uk/conferences/2008/underground08/index.html>

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Dee Halzack
Marketing Manager
WIT Press USA

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Dee Halzack
Marketing Manager
[Mailto:dhalzack@witpress.com](mailto:dhalzack@witpress.com)

WIT Press USA
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