



Challenges & Changes

TUNNELLING ACTIVITIES IN JAPAN 2004

JAPAN TUNNELLING ASSOCIATION

Foreword



On behalf of the Japan Tunnelling Association, it is my great pleasure to present “Tunnelling Activities in Japan 2004”.

The Japanese archipelago extends northeast to southwest over 3,000km. Seventy percent of the national land is mountainous. Many cities and villages are dispersed widely apart from one another, occupying limited plains along the coast. After a rapid progression of urbanization, 50% of the entire population is concentrated in three major metropolitan areas that account for only 10% of the entire land area. Under such geographic and demographic conditions, we are constantly confronted with the need to develop infrastructure and promote versatile utilization of limited national land through innovative technologies and management systems in order to ensure the mobility of people and goods and enhance regional linkages.

In the metropolitan areas, it is essential for us to develop technology to enhance the utilization of underground space to achieve sustainable development and improve the environment we live in. It is our continuing mission to foster new technology and disseminate knowledge through international cooperation and a variety of activities such as the implementation of joint studies with the International Tunnelling Association.

“Tunnelling activities in Japan 2004” introduces the eminent examples of tunnelling technologies and the utilization of underground space in Japan. It is our sincere hope that this booklet will serve as a useful resource to our readers.

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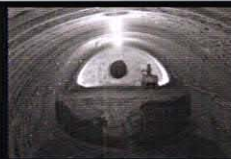
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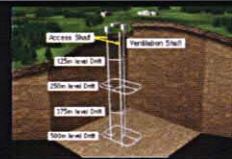
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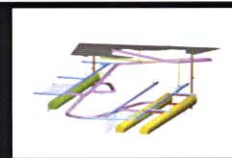
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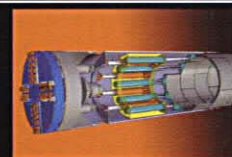
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