

INTERNATIONAL EDITION

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Tunnels

AND TUNNELLING



THAT'S A WRAP

Following breakthrough last year, a new LA metro line begins fit-out

UNDERGROUND SPACES UNVEILED

In his latest book review for *Tunnels and Tunnelling*, **Paul Perry** of Hewson Consulting Engineers reads *Underground Spaces Unveiled* by Han Admiraal and Antonia Cornaro from the ITA's Committee for Underground Space

Underground Spaces Unveiled, which has just been published by ICE Publishing, takes the reader through the history, the urban planning and the future of underground space development.

Each chapter is written concisely, illustrated by case histories and concluding with a reminder of the aspects covered. Also, the extent of references quoted at the end of each chapter also is useful for further reading beyond the authors' book.

Written jointly by a civil engineer and a planner, the text goes beyond the straight forward description of design and construction of case histories. It teases out reality, such as the expected and future urban fabric within a city, or even the finance and long-term planning of such space.

The first chapter highlights the importance of planning and managing the use of the subsurface. It states that urban planning needs to consider the needs of citizens, the influx of people into urban areas and avoiding urban sprawl, to ensure our cities become the cities we need. It warns that tunnels, basements, utilities and the plethora of underground construction below the ground needs to be planned to allow appropriate underground space to be developed. If not planned, it will restrict and constrain such future proposals.

In London, UK, so called "iceberg mansions" have made local authorities start to develop specific regulations such as the Basements Planning Policy, as an attempt at effective planning and control of such private underground construction and avoidance of restriction to future underground transport or utility tunnels and or subsurface public space.


When describing the inter-relationship between "humanity and nature", the authors provide advice on urban underground sustainability with the assistance of case histories. The proposed Stonehenge road tunnel for the A303 adjacent to the ancient monument is quoted as an interesting case in point.

A chapter on the historical approaches to underground living includes an interesting reference to Eugene Henard, who in 1910 published a paper on "The cities of the future". He analysed a typical street and proposed a radical solution with several levels for pedestrian/carriages, another for tramways, another for utilities and another for transport goods. In 2005, Almere in the Netherlands adopted this concept, where trains and busses arrive at the main station at different levels without traffic interference.

Design, Policy, Planning, Building, Value are all taken in stages leading to an informed suggestion of future, and even resilient cities, illustrated by a range of fascinating case history. Even when Governance and Legal challenges of underground space are discussed, the chapter starts with an intriguing photograph of the Desert Cave Hotel at Coober Pedy in Australia, almost suggests that despite these rules and restrictions,



underground space can be this attractive on a human scale. Here in Coober Pedy, with summer temperatures often exceeding 40 degrees, underground dugouts have been used as dwellings for years, where people live below the surface in caverns and tunnels taking advantage of the annual constant temperature and cooler than the outdoors, ground level, temperatures. The Desert Cave Hotel offers a good grade of accommodation, in an area of the world where specific requirements in its building code that deals with underground living.

Ending with not only a summary of the authors intent, but a glimpse into the possibilities the future holds for underground space, they encourage the thought that tunnelling and creation of such space is all very worthwhile. 

Get the book

To order *Underground Spaces Unveiled* by Han Admiraal and Antonia Cornaro, please visit the ICE Bookshop:
www.icebookshop.com/bookshop_main.asp?ISBN=9780727761453
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