



ASSOCIATION
INTERNATIONALE DES TRAVAUX
EN SOUTERRAIN

AITES

ITA

INTERNATIONAL
TUNNELLING
ASSOCIATION

*Towards an
improved use
of underground
Space*

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Topic

UNDERGROUND AND ENVIRONMENT

Title

The Management of Tunnelling Accidents

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Abstract: -

Résumé: -

Remarks: Dr. Aliye P. Celik (New York Office, United Nations Conference on Human Settlements) at the opening ceremony of ITA '96 World Tunnel Conference in Washington (see TRIBUNE n°1) pointed out the need to create an urban world at peace with environment and with itself. A more widespread use of the underground space can offer interesting solutions, often unavailable, to create and maintain livable and sustainable cities (see A. Nordmark and J.P. Godard in TRIBUNE n°2).

THE MANAGEMENT OF TUNNELLING

Dr. Aliye P. Celik (New York Office, United Nations Conference on Human Settlements) at the opening ceremony of ITA '96 World Tunnel Conference in Washington (see TRIBUNE n°1) pointed out the need to create an urban world at peace with environment and with itself. A more widespread use of the underground space can offer interesting solutions, often unavailable, to create and maintain livable and sustainable cities (see A. Nordmark and J.P. Godard in TRIBUNE n°2).

Underground works are different from all other public works and far more complex than them, hence they require specific regulations. At the same time, they are extremely useful and the advantages they bring to environment and society are extraordinarily important, particularly in the long and medium terms. Therefore, if such advantages are taken into account in a correct and complete cost-effective analysis, they prove to be economically competitive too.

Due to the difficulties of underground works, some tunnelling accidents occurred during construction. Even if there are very few accidents in comparison with the thousands of kilometres of tunnels driven per year, collapses during tunnelling cause a sensation.

Tunnelling accidents should be a thing of the past. The elimination of collapses during construction will be increasingly imposed by the parties financing the works for two main reasons. Firstly, to prevent time frames to go beyond schedule and, secondly, to avoid disputes with the external environment which no longer passively accepts disturbance and risks. Disputes then entails further loss of time and higher costs. Improvements in investigation and technology should be continued so as to reduce such risks and consequently ease the decision making process in choosing the underground solution.



Collapse in a road tunnel in glossy schists

The Paris-based CEIFICI (Study, Information and Training Centre for Engineers of Building and Industry) addressed the incident matter in tunnelling with the idea that the description of encountered and overcome difficulties could be highly useful for all (engineers and contractors) who may be faced with difficult situations.

It must be noted that CEIFICI asked the speakers to limit their speeches to the description of the worksite condition after the incident and to the presentation of how the implemented solution was looked for and achieved to overcome the obstacle, leaving aside the reasons and the responsibilities at the origin of the incident. And the courage of the French, Swiss, Belgian and Italian engineers and contractors who accepted to speak in front of the audience invited by CEIFICI for the two day long technical sessions may only be acknowledged.

The sessions were successively chaired by:

- **Jean PERA**, president of AFTES, the French Tunnelling Society,

- **Willy de LATHAUWER**, general secretary of ABTUS, the Belgian Tunnelling Society and vice-president of ITA,

- **Kalman KOVARI**, president of the underground works group at SIA, the Swiss Engineer and Architect Society,

- **Sebastiano PELIZZA**, president of SIG, the Italian Tunnelling Society, and president of ITA.

Sixteen papers have been presented on more than thirty experiences during the last 20 years for road, railway and water transportation tunnels.

A great number of participants showed their interest in these technical sessions which enabled them to lengthen the list of the technical solutions likely to be implemented to solve the incidents that may be encountered across tunnelling.