

Indirect benefits

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The assessment of underground structures is strongly related to the community valuation of drawbacks of surface or aerial structures in terms of environmental degradation.

Unfortunately, most of the numerous advantages of underground structures, especially those concerning the protection of the environment, cannot be assessed easily in terms of monetary value.

As a consequence of the mixing of well-defined and poorly- defined but important costs and/or benefits, the decision making process concerning the realization of an underground structure (especially when it is compared to an aerial or surface solution) is flawed.

Thus, cost comparisons should not only refer to the welldefined life-cycle costs, but must take into account the various advantages offered by the underground alternative, particularly the environmental benefits.

The International Tunnelling and Underground Space Association is working to help find means of quantifying these advantages with the cooperation of all the professions concerned (engineers, economists, planners, architects, ecologists, etc.).