Contributions Regarding The Small-Sized Tunnels: Their Study And Inclusion Within The Systematization Of The Traffic In The Big Cities

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Summary

Against the background of the general evolution of the population, the modern age can be distinguished by a strong process of urbanization, sometimes explosive and very complex, with deep implications on the settlement of the constructional perimeter and on the life quality on the whole.

The tunnel erection developed simultaneously with the construction of the terrestrial ways of communication. The exigencies of the modern ways of communication, especially as regards the high designing speed and the smallest possible length of the route, lead, in the conditions of the relief, to the perforation of the masses of rocks and soil through underground constructions which can ensure the size for traffic of the vehicles of the respective means of conveyance.

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Using the subsoil seems to be thus an acceptable solution, knowing the underground environment by gathering information regarding the number and the position of the various urban underground networks or of the archaeological vestiges.

Nowadays, the small-sized tunnels are an optimal solution for the traffic problems which occur in the urban environment and can significantly improve the life and activity conditions in the towns. These tunnels are of great interest for the revitalization of the town centers, by releasing the soil surface and depleting the centers of traffic junction, with the advantage that they do not occupy passable space on the surface, and the exploitation speed as well as the transportation capacity significantly increase, and with the great disadvantage that they require very big investments.

The urban road tunnels with small size clear the surface of the crossroads from the vehicles of a certain category (in towns the traffic consists of small-sized cars and vehicles to the extent of 80-90%), reducing the noise, the vibrations and the pollution caused by their traffic.

In the first stage, after gathering documentary evidence regarding the small-sized tunnels problem, the author approached general aspects concerning the calculation and the technologies of execution of such tunnels. A large space is intended for the ventilation and illumination problems in the small-sized tunnels.

Further on, starting from the analysis of the traffic deployment under the current circumstances, the author suggests placing the small-sized tunnels in three crossroads in Iaşi municipality, as well as the calculation of the traffic capacity of these crossroads with and without a tunnel.

This paper may be a reference point for developing the main principles, the conception and the execution of the small-sized tunnels in the major crossroads from the urban areas but also for finding solutions for the urban traffic by building such tunnels and releasing the parkways from some of the major flows, providing comfort, fluency and traffic safety for the users.