

Planned Occupation of Underground Urban Space, Rio de Janeiro, Brazil. Management, Optimization and Sharing.

¹SIQUEIRA, J. M.; ²STEIN, J. H.; ³DANCIGER, F.;
⁴DAVIDOVISCH, A. and PINTO, C. P. – ¹Rio Águas, Rio de
Janeiro, Brazil; ²EnviroGeo – Serviços de Geologia e Engenharia
Consultiva, Rio de Janeiro, Brazil; ³Serla-Superintendencia de Rio
e Lagoas, Rio de Janeiro, Brazil; ^{4,5}Noronha Engenharia Ltda, Rio
de Janeiro, Brazil.

The prospect of a number of large underground engineering works in the city *Rio de Janeiro* associated with roads, metro and underground car parks as well as the increasing usage of underground space for general infrastructure, led to the Geourbs Symposium held at Rio de Janeiro between October 16-18, 1998.

The purpose of the event was to assemble professionals and technicians from a number of private and public institutions, as well as concessionaires, contractors and other specialists with the specific knowledge of machinery and the new technologies associated with this branch of engineering.

The main conclusions were: (1) greater interaction is necessary between the planners and concessionaires with a view to integrated planning in digital format and the multiple usage of tunnels for utilities; (2) greater control over planning schedules; (3) greater enforcement of the environmental legislation; (4) establishment of criteria and norms for non-destructive methods including directional drilling, and methods that can be monitored from the surface; (5) creation of a specific agency to take responsibility for the overall management of underground engineering public and private projects with the power to arbitrate in conflicts between parties involved in specific aspects.