

Man - Induced Effects on the Geological Environment of the Urban Area of Beograd

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The urban area of Beograd is characterized by a complex geological composition and a diverse man-induced impact on its geological media. Another distinctive feature is a very fast development, especially in the 20th century, when the town area proper was doubled every thirty years, on an average, whereby farming land and forests were turned into building sites, thus causing damage to the natural environment.

From the geological standpoint, the most adverse consequences are caused by:

- Soil and groundwater contamination;
- Excavations and fillings;
- Underground engineering structures;
- Reactivation of geodynamic processes, particularly of landslides;
- Uncontrolled underground disposal of water along with simultaneous reduction in infiltration from the surface of the ground;
- Various geotechnical remedial measures for the improvement of the terrain;
- Disposal of waste and harmful substances;
- Man-induced changes in the regime and chemistry of ground waters;

Built on the Sava and Danube estuary, the major part of the ancient town was constructed on a terrain whose geological history was characterized by numerous landslides. These were stabilized due to the deposition of loess, but many of them were subsequently reactivated either by erosional processes or engineering work. This is why about 20% of the city area is considered to be unstable, and about 30-40% potentially unstable.

Seepage from damaged water and sewage pipes, or other sources causes destruction of the loess structure thus bringing about a rapid subsidence of buildings. In some parts of the capital, up to 30% of structures suffered damage caused by very old water and sewage systems.

In Novi Beograd, new part of the Yugoslav capital built after World War II on the left bank of Sava, the original geotechnical conditions were greatly changed due to the placement of river sand over a marshy terrain.

All the points raised above are to be integrally discussed in the paper.