

Publication

A 3D spatial planning tool – application examples from the Basel region

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The Swiss contribution to the EU project “GeORG” (www.geopotenziale.eu) is the geological 3D-model of the Basel region (600 km²). The 3D-model was developed as a flexible tool for subsurface planning to account for the diversity of subjects which require detailed geological information of the subsurface in densely urbanized areas. The designed modular data management combines database, 3D-modeling and GIS. During the last years environmental agencies and engineering departments have acknowledged the advantage of such a planning tool. The possibility to flexibly generate exports and to combine hydro-geological information with infrastructural data for a detailed analysis gave rise to repeated requests concerning local subsurface development issues. Two examples illustrate the successful application of the tool: In cooperation with the Canton Basel-Landschaft a map was developed showing the general possibilities for the installation of heat-pumps. This multi-layer GIS map contains surface and subsurface information. For example, it delineates land-use data as groundwater protection areas and information extracted from the geological 3D-model as fault zones or units containing salt or anhydrite. During the planning of a highway tunnel below the city of Basel the 3D-tool aided to find a layout of the tunnel road and to avoid use conflicts with existing subsurface installations. Furthermore, data-gaps and potential geological and hydrological risks could be identified in an early planning phase. This allows planning security-precautions for the construction site more accurately and to prevent unexpected hazards after completion of the tunnel.

URL http://www.geopotenziale.org/service/documents/show_permission?download=308&idata=georg_gocad_meeting_edoc
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