



## HAINBURG FLOOD CONTROL MEASURES

Client: via donau - Österreichische Wasserstraßengesellschaft mbH (Austrian Waterways GmbH)

Development Period: 11/2007 to 7/2008

### THE PROJECT

The bridge succession in the community of Hainburg serves - in addition to the railway traffic - also as flood control for the adjacent municipal area.

During the flood of the *Danube* in August 2002, water leaks have been observed along the structure and the accompanying road.

For the improvement of the flood control, it is planned to implement an under-ground sealing between the bridge pillars in the area of the flood control walls. The sealing is to be carried out by means of jet grouting.

### OUR FUNCTION

BGG Consult has been commissioned for this project with an evaluation of the impact of the measures on the foundations of the railway bridges and on the railway station.

For this, an additional subsoil exploration campaign (core drillings with infiltration tests, dynamic probings) has been planned and supervised. In consideration of the projected sealing measures, calculations with a numeric ground water model have been conducted.

#### *Ground Water Model Calculations:*

Based on the results of the subsoil explorations, numeric ground water models were established for the relevant areas in the quaternary gravel and the Neogene formation.

For the areas of the pillars ("pillar arches" below surface) and the flood control wall, the changes of the hydraulic gradient were calculated for different scenarios (see illustration).

As a result, a negative effect of the measures on the bridge foundation was excluded. Furthermore, conclusions regarding the effectivity of the flood control measures could be drawn.

3D-illustrations of some model scenarios

