



CLIENT **ERZ Entsorgung + Recycling Zürich (ERZ)**

396,000 residents, 3000 km private sewer lines, 920 km public sewers
80 millionen cubic meters waste water per annum

MISSION **to ensure an optimum drainage with a water supply that is as natural as possible**

SINCE **June 2006**

PRODUCT **BaSYS HydroCAD**



“With BaSYS we have a stable planning tool available to us which has been proven in practice.”

Niculin Cathomen,
supervisor ERZ

Urban drainage in Zurich faces a variety of challenges: ongoing settlement development and highly defined topographic structures demand exact hydraulic calculations. Optimum drainage with a water supply that is as natural as possible is the objective. BaSYS HydroCAD for hydrodynamic sewer network calculation supports the targeted analysis of weak points for this purpose. Measures to minimise the negative impact of settlement development on the natural water supply can be planned effectively.

The largest city in Switzerland

Zurich with approximately 396,000 residents is Switzerland's largest city and its leading economic, scientific and social centre. The city is defined by dynamic urban development: over the last 50 years settlement areas have grown at tremendous speed into the city's surroundings. Numerous new building zones were created, some in areas on hillsides and with steep slopes.

According to the specifications of the general drainage plan (GEP, the official planning guideline for the public com-

munity in Switzerland), ERZ Entsorgung + Recycling Zürich (ERZ) is responsible for reducing the negative impact of settlement development on the natural water supply.

A natural water supply – with 1000 km of public sewers

This is no simple task in this magnitude – virtually insurmountable without a powerful management and calculation tool. The drainage network for the city of Zurich consists of around 3000 km of private sewer lines and 920 km of pub-



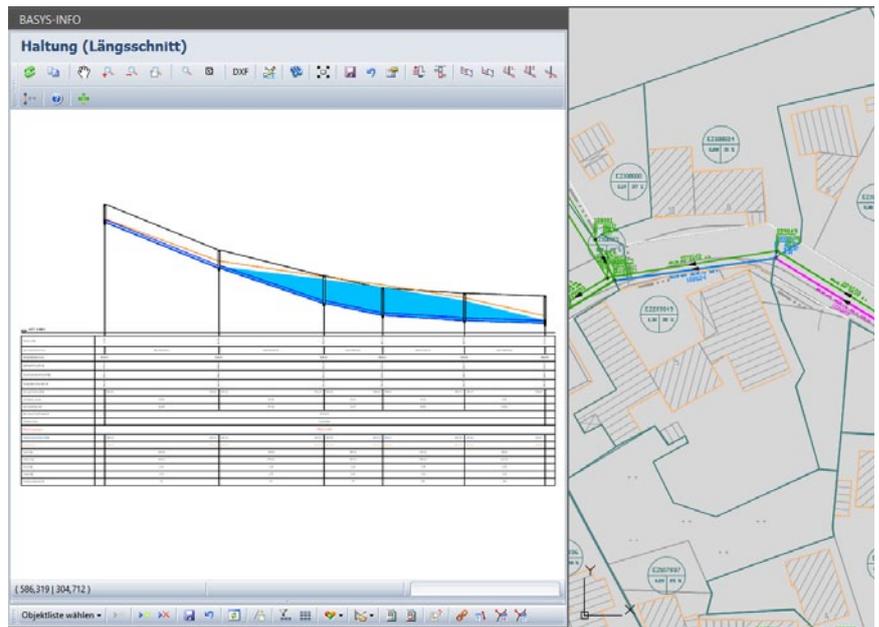
lic sewers, taking up to 80 million cubic metres of waste water annually to the Werdhölzli wastewater treatment plant and from there back into the Limmat river as cleaned water.

To avoid negative effects on the groundwater and surface waters, the hydraulic capacity of the continuously growing sewer network must be calculated exactly.

From the first drop of rain to the last drop of waste water

This is why the ERZ chose the proven hydrograph volume method of Dorsch International Consultant GmbH many years ago. It is integrated in BaSYS HydroCAD as the calculation engine. All drainage processes are realistically modelled within a time span from the first drop of rain to the last drop of waste water. The calculations are efficient, detailed and realistic. The results can be visualised in theme plans and animated in dynamic longitudinal sections. Weak points in the sewer system, such as overloaded reaches or flooded areas, can be identified by the user in the first step and then purposefully analysed. "By using BaSYS, the network can always be adapted to settlement development. This is the only way the required resources can be accurately deployed" reports Niculin Cathomen, the responsible Project Manager at ERZ.

BaSYS has also become an indispensable tool for planning new building zones: with BaSYS HydroCAD, the effects in



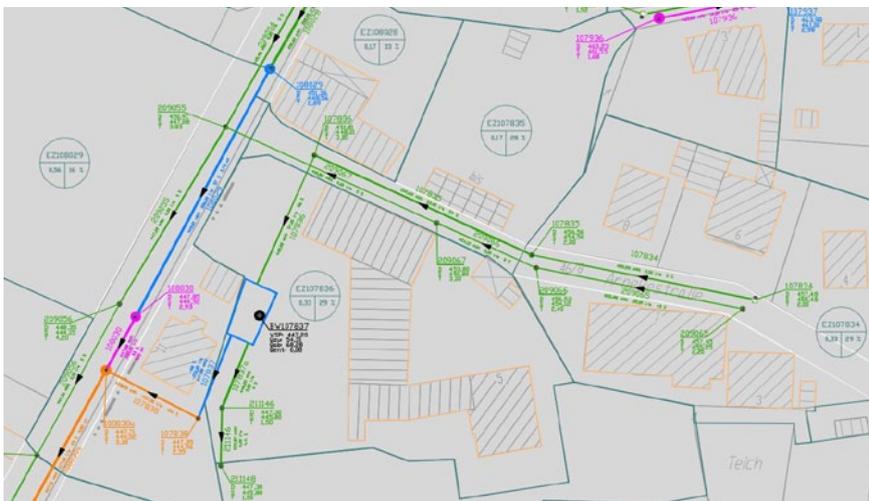
An interactive longitudinal planning section from BaSYS

terms of hydraulics on the existing waste water network can be analysed before the start of construction and the sewers can then be dimensioned accordingly.

Smooth interaction with other systems

BaSYS HydroCAD precisely adapts to the requirements for use in conjunction with other systems. BARTHAUER Consulting has configured the required interfaces for ERZ and implemented user-specific adaptations. As a result, data from other GIS systems can be transferred to and from HydroCAD 1:1 with no data losses. "Updates are very efficient and we are able to adapt our planning to the current conditions." is the satisfied statement of the ERZ.

Entirely in keeping with the multi-platform philosophy, the system can be readily combined with other solutions – for example from Intergraph and WinCan in this case. This means users in every specialist department always have the most suitable tool at hand. Becoming a BaSYS HydroCAD professional is not all that difficult: after just a few in-house training sessions in Zurich, the water experts – as the employees rightfully call themselves on their website – have become HydroCAD experts as well.



The results can be presented in the site plan. Various different aspects such as capacity and utilisation can be shown.