# AquaNES BF site 3

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‚Balpart' well group, Budapest

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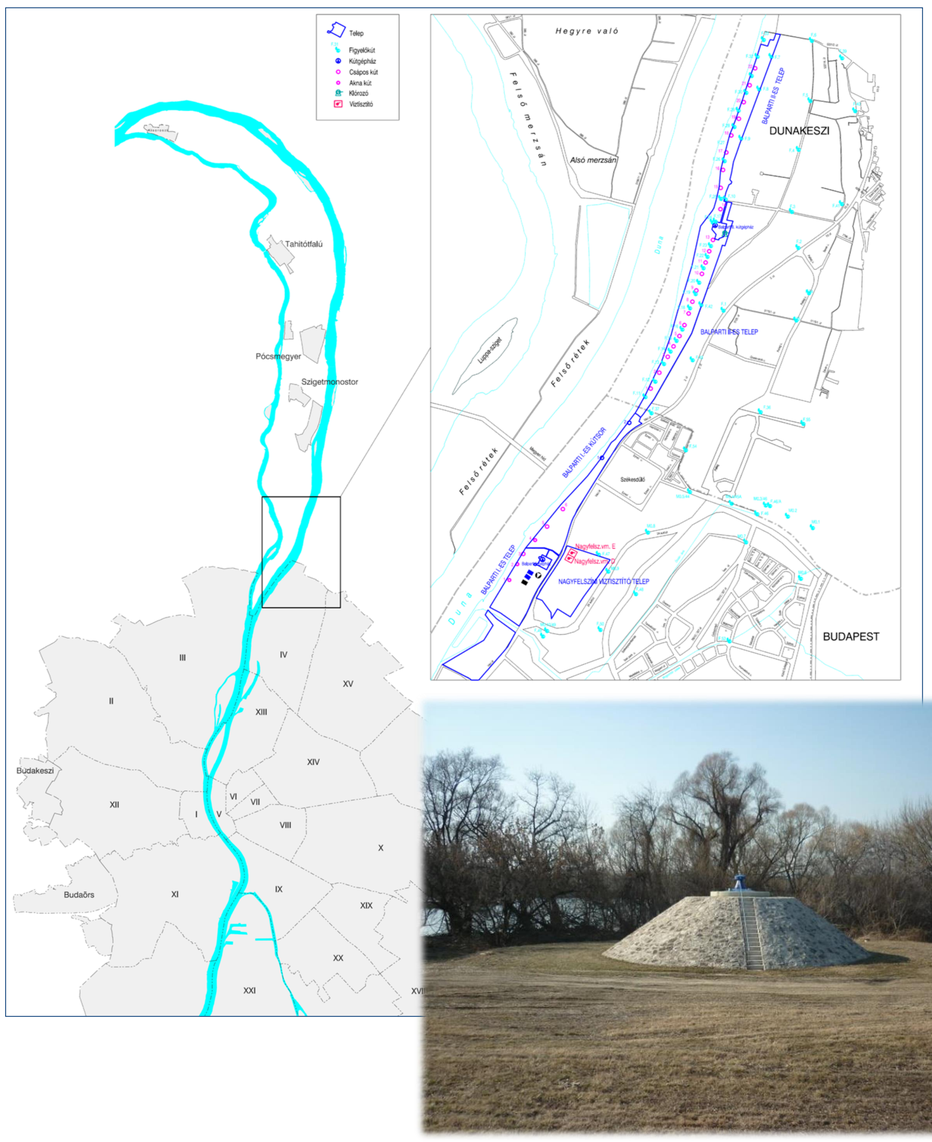
Pilot Water Treatment Plant, Baja







College campus on the shore of Sugovica

## Water intakes

- Max. 840 $m^3$/d surface water directly from Sugovica branch
- 3 groundwater wells (depths approximately 10 m, 20 m, 40 m)
- Rainwater from the stormwater pumping station
- Wastewater from the main city sewer (for artifical contamination)

## Pre-treatment options

- Coagulation-flocculation
- Rapid and slow sand filtration
- GAC
- Disinfection:
  - HOCl, $ClO_2$, UV, $O_3$
- RO and UF membrane

## Water production at BUWW

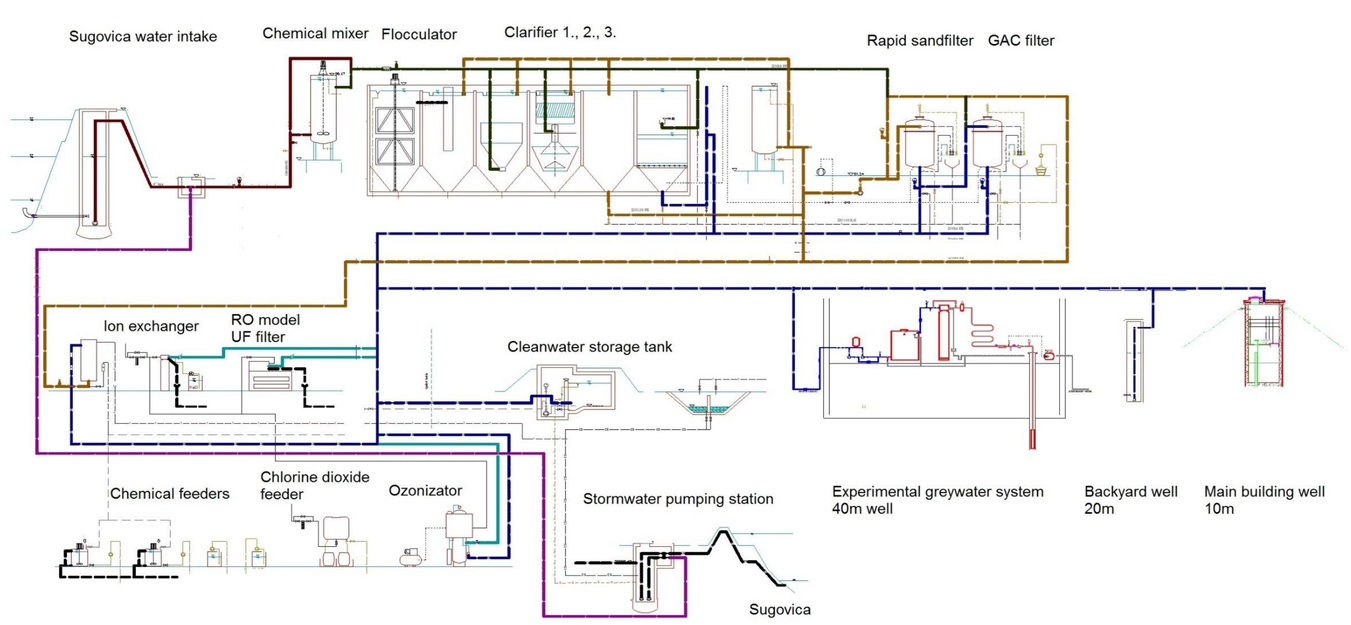
- 29 group of wells, more than 750 wells
- 2 Water treatment plants
- 7 inlet points, 102 pumping station, 68 reservoirs

## Treatment technologies

- Ozonization
- Rapid sand filtration
- GAC
- Disinfection: UV, $Cl_2$, NaOCl

## Study area: ‚Balpart' well group

- Constructed in 1896, 1899.
- Siphoned- and individual shaft wells, horizontal wells.
- Average capacity: 3.000 $m^3$/h




Water intake options and main process lines

## Demonstration plan

- Event based sampling and monitoring of available full-scale UV disinfection and $O_3$ oxidization process
- Assessment of well performance: applied energy saving and well maintenance methods
- Data collection and evaluation on riverbed clogging, dissemination of good practices
- Evaluation of full scale data and operational experiences
- Demonstrating of operating actions during high risk periods: floods and droughts

## Demonstration plan

- Biofilm kinetic studies - BF efficiency under environmental stress and extreme contaminant loads
- Transport of various substances investigated in the field and in sand column models:
  - Site at Baja suffers from high concentrations of groundwater contaminants - optimal retention time?
- Impact of bank filtration efficiency on treatment:
  - Disinfection (UV and $ClO_2$)
  - Membrane performace - energy demand, recovery and fouling rate with max. 0,3 $m^3$/d RO model

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