

Practical example
Drinking water treatment system



TWA Grundmühle

Rehabilitation and extension



Rehabilitation and extension of the Grundmühle drinking water treatment plant

With a treatment capacity of maximum 400 cbm/h the companies **WBG**, **W.E.T.** and **Richter Steuerungstechnik**, situated in the district of Kulmbach, have taken into operation one of the largest ultrafiltration plants in Bavaria for the Kulmbach public utility company in February 2008.

The Grundmühle drinking water treatment plant has been operated as a hardening filter system 3 x 150 cbm/h, max. 3 x 200 cbm/h, since 1956. In order to continue securing the future drinking water requirements of the Kulmbach public utility company the existing waterworks required rehabilitation and extension..

In 2007 the Northern Bavarian companies **WBG**, **W.E.T.** and **Richter** did complete rehabilitation of the basin walls, filter bottoms and nozzles as well as an extension of the machinery and electrotechnology

With these alternations a high degree of automation was reached in Grundmühle and the water works were equipped with most modern remote control technology.

The following treatment steps have been realised within the scope of rehabilitation and extension:

- 1. treatment step:** **flat bed aerators**
normal operation 3 x 100 cbm/h
- 2. treatment step:** **hardening filter**
normal operation 3 x 100 cbm/h
- 3. treatment step:** **ultrafiltration**
Dimensioning: 4 x 100 cbm/h max.,
normal operation 300 cbm/h

The backwash waste water will be neutralised and evacuated into the receiving waters.

A clean solution:

The control concept of the Grundmühle drinking water treatment plant.

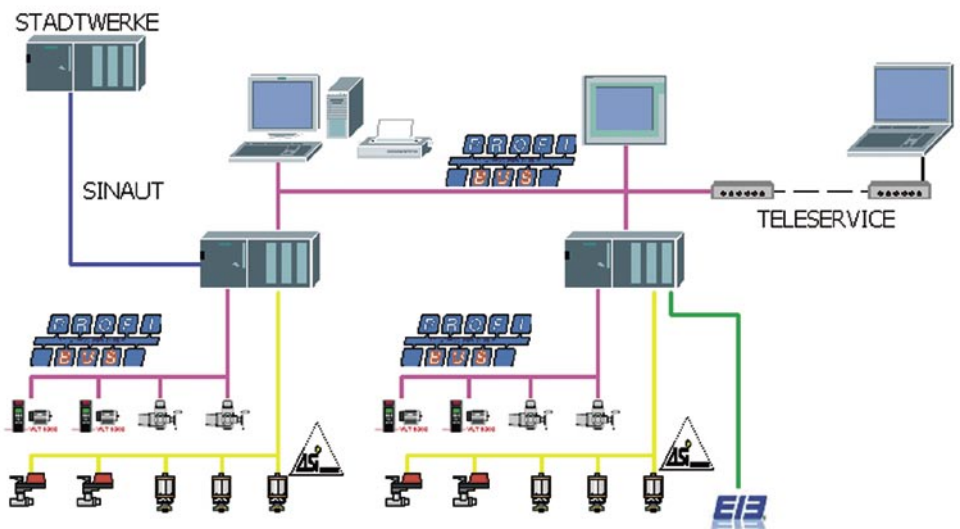
In order to achieve the maximum possible plant safety the drinking water treatment system was equipped with two independent free programmable controls (SPC). As operating levels one touch panel and a PC visualisation with archiving were used.

Miscellaneous bus systems were realised according to the state of the art:

As the lowest field level an AS interface is being used. This allowed an economical installation as well as a simple and fast troubleshooting

The second field level is based on the standardised bus system „Profibus DP“ This serves for data transfer with the frequency converter controlled actators as well as control valves.

A separate Profibus system has been set up for manipulation, visualisation and archiving of the plant data. This way, even in case of breakdown of one SPC, the data of the other control can still be handled. In addition a possibility has been created in order to memorise and represent signals of the building services engineering via EIB system.



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