

SEWAGE TREATMENT PLANT BIEL, SWITZERLAND

SEWAGE PLANT BIEL, UPGRADING PROJECTS 1997 - 2000



The sewage treatment plant for the region of Biel, Switzerland, was commissioned in 1971. It was perceived as a modern facility and represented the state of the art at the time. Since then there has been no major investment, and the facility is consequently showing signs of wear and tear. To ensure that the facility will continue to operate reliably, and to enable the current guidelines for water conservation to be met, upgrading and redevelopment has become imperative.

The upgrading project

The project aim, in addition to maintaining the condition of the plant, is to achieve the following:

- To increase the purification performance and operational safety
- To reduce the levels of water pollution
- To upgrade the plant to reflect the state of the art from the engineering and ecological aspects
- To avoid odour and noise emissions

Following extensive project planning work in collaboration with the federal and state authorities, the 50 million

swiss franc project was awarded to a general contractor.

The entire plant is being fundamentally upgraded. All the mechanical equipment is new or has been completely reconditioned.

The pre-treatment tanks, aerating tanks and post-treatment tanks have been renewed in such a way as to give them the same life expectancy as new tanks. The engineers in the contracting companies responsible for planning chose the tried and tested VANDEX System products for the concrete repair and protection work.

To ensure the plant continues to operate at a minimum of 75% of full treatment capacity throughout the entire construction phase, the work will be carried out in four stages, each taking one year.

Participating parties: **Developer:** ARA Region Biel AG, CH-2501 Biel-Bienne/Switzerland; **General contractor:** Ratio Bau AG, CH-2501 Biel-Bienne/Switzerland; **Engineer:** Mathys Dr. & Wyssseier, E. Schüler-Str. 5, CH-2502 Biel-Bienne/Switzerland; **General contractor/Vandex operator:** Bautechnik AG, Wylstrasse 62, CH-3014 Biel-Bienne/Switzerland; **Subcontractor surface preparation:** Granjet Granelle AG, High pressure water jet blasting, Stumpfenweg 6 - 8, CH-5303 Würenlingen/Switzerland

CONCRETE REPAIR/ PROTECTION

The concrete repair and protection work was carried out in stages, all in accordance with the following concept:

- Preparation of the base using high pressure water jetting.
- Removal of all the noxious epoxy resin layers in the upper region of the tanks.
- Repair of cracks and concrete spillings with VANDEX CRS CORROSION PROTECTION AC and VANDEX CRS REPAIR MORTAR 05.
- Coating of the entire tank walls with VANDEX UNI MORTAR 1 Z, average thickness: 3 mm.
- Coating of the entire tank walls with VANDEX BB 75 Z, to a thickness of 2 mm, as surface protection in the easy-clean spray finish.

Total areas treated: 30,000 m²

SEWAGE PLANT BIEL

Connected: 10 districts (Biel conurbation)
 Population: 72,800
 Waste water volume per day: 40 – 50,000 m³
 Treatment stages: Mechanical, biological and chemical, as well as sludge treatment.



Application pictures.
 Left: Spray application of VANDEX UNI MORTAR 1 Z
 Right: Spray application of VANDEX BB 75 Z in "orange peel" surface finish

