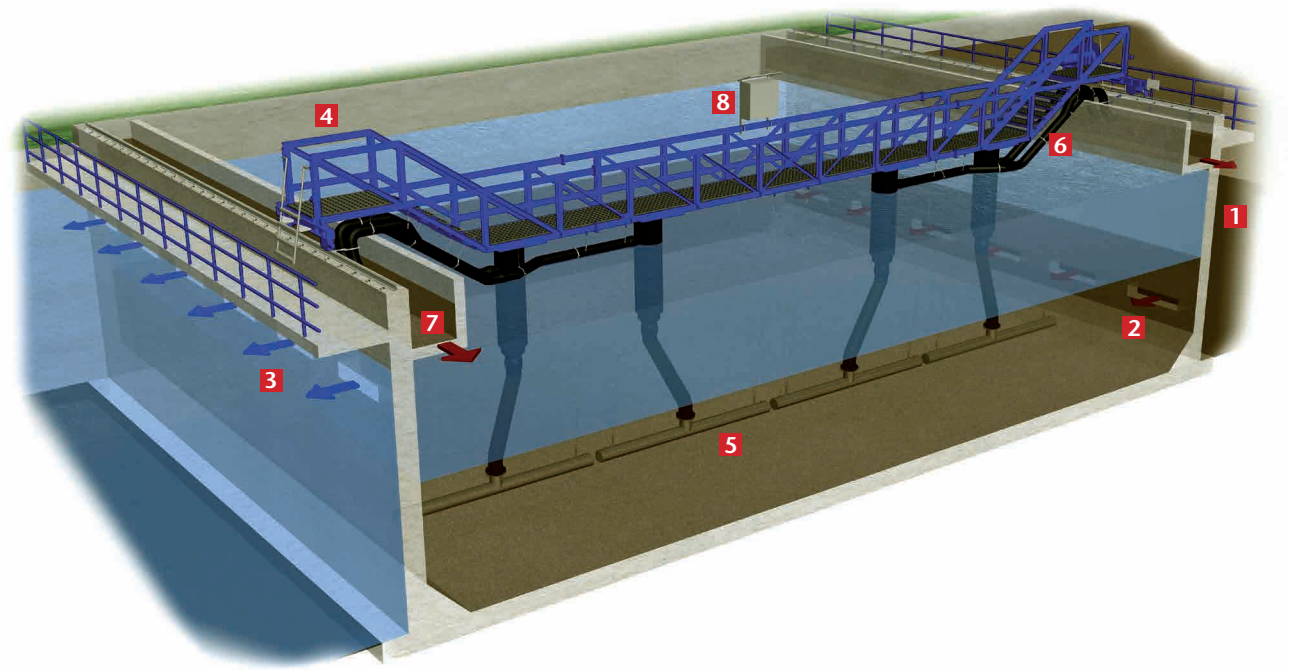
INTEGRATED CLARIFIER

BIOWORKS®

... the clear solution

Biological process and Clarifier go hand in hand

The secondary sedimentation stage (clarifier) is integrated in the process module. That is the philosophy of BIOWORKS® with regard to the important treatment stage of the clarifier. Biological process and clarifier complement each other. In contrast to conventional plants, which usually consist of several separated concrete tanks, BIOWORKS® requires only one process module, which is divided into several segments for the different consecutive stages of the waste water treatment. The clarifier consequently is integrated as the last treatment step. Interconnected piping and external pump stations are not necessary. The clarifier is separated from the fully mixed activated sludge stage by a vertical common wall 1, usually made from concrete. Approximately 1 m to 1.5 m above the clarifier bottom are the rectangular inflow openings 2, through which the water/activated sludge mixture flows from the aerated tank into the clarifier. In the clarifier the activated sludge will settle to the bottom. After separation of the activated sludge, the clear water will flow through the discharge openings 3 either to further cleaning stages or directly to the effluent. The activated sludge that has accumulated in the bottom zone is extracted by a travelling scraper bridge 4, on which suction tubes with internal pumps 5 are installed. The sludge is pumped from the tank bottom and flows into lateral return sludge channels 6, from where the sludge flows back to the inlet by gravity 7. The entire clarifier unit and the suction system are



Return sludge channel with pressure pipes

Clarifier module

made in Germany

Quality made in Germany

The components of the scraper bridge are sourced exclusively from German and European manufacturing and from reputable suppliers.
All wetted parts are made from stainless steel or high-quality plastics. For the bridge framework durable epoxy coatings or hot-dip galvanization is available. The scraper bridge is a modular design. Most of the parts are pre-assembled as far as possible, thus saving valuable installation time.

controlled by a local autonomous control cabinet 8. This clarifier, developed by BIOWORKS®, is successful in operation on many treatment plants and in diverse climate zones of the world. The operation is outspoken low maintenance because of the robust construction and high quality of the components (drives, pumps, chassis etc.). Different module sizes are available.
The BIOWORKS® process together with the integrated clarifier is the ideal combination for any waste water treatment.

Advantages by geometry

Conventional clarifiers commonly have a circular geometry. Particular during high hydraulic loads, turbulences at the center inflow and stirrup of settling sludge may cause problems. Often the inlet must be calmed down by additional measures such as deflecting panels. Circular tanks also do not utilize the available area as well as the BIOWORKS® rectangular Clarifier. This arrangement and rectangular shape of the BIOWORKS® clarifier has various advantages:

- direct wall connection to aeration basin results in large inflow area, therefore low inflow velocities
- optimal settling conditions for the sludge
- water flows by gravity through the plant, interconnecting piping between treatment steps is not required
- cost effective civil construction
- optimal land utilization by integrated construction

Nevertheless our clients can freely choose their favored clarifier system – the BIOWORKS® process is compatible with all kinds of clarifiers, also circular ones.

Pre-assembly of the pressure pipe system

Clear product water as the result

BIOWORKS® – THE CLEAR SOLUTION

→ **Highly effective technology**
→ **Cost effective operation**
→ **Safety and reliability**

BIOWORKS Verfahrenstechnik GmbH
Wernher-von-Braun Straße 9
D-85640 Putzbrunn

E-mail: info@bioworks-gmbh.de
Tel.: +49 - (0)89 - 451 519 56 - 0
Fax: +49 - (0)89 - 451 519 56 - 27
www.bioworks-gmbh.de

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