Software for Design of Wastewater Treatment Plants and Aeration Systems

Design, Equipment and Economics
Simple Handling
The main level in AQUA DESIGNER leads you through the complete design process. The actual step of planning and the according design and engineering options are displayed.

Chinese Design Guidelines
You can select the german/european or chinese guidelines. The chinese guidelines has been developed and implemented in collaboration with chinese experts and our partners. The functionality of AQUA DESIGNER has been fully adapted to the chinese regulations.

Design of the Aeration
True Scaled Drawings support you during the design of the Aeration System. Tubes and Discs and various constructions are available.

Parameter selection
AQUA DESIGNER is variable in the selection of parameters. So you can adapt the calculation basis to the conditions of your project. For standard conditions standard values are set.
...from the Preliminary Treatment to the Sludge Treatment

Nitrogen Removal
The different nitrogen removal processes can also be arranged and calculated as cascaded denitrification. After distributing the inflow to the cascaded chambers, you get detailed balances and design results.

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Sludge Treatment
With AQUA DESIGNER you not only design the biological stage, but also preliminary treatment and sludge treatment. Sludge treatment includes thickener, digester with gas-, current- and heat-production. Loads and balances for supernatant and dry solids are also displayed and reported.

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Operational Costs
Energy demand, consumables, precipitants, sludge removal. Energy production from the sludge treatment will also be taken in consideration.
True Scaled Drawings
For all construction variants you can generate true scaled drawings. So the experienced engineer is able to prove the design. The drawing can be included into the documents or exported as dxf.

Extensive Documentation
You get detailed documentations in high quality format. All steps of calculations are documented with formulas, charts and graphics. It’s possible to print directly with word, so you can edit the documents by yourself and include it in other documents.

Language Versions
All tools, documentations and reports are available in 11 languages. For example you can calculate in english or german and print in one or more of the other languages.
Economical Design of Aeration Systems with AQUA AERO

A new Quality in Planning Aeration Systems
AQUA AERO provides a unique range of functions for the design of the aeration in wastewater treatment plants. This means not only the design but also construction, pipelines, economical tools and project life cycle analysis.

Design of Aeration
The detailed design of the aeration is important for an economical operation, the supply for varying loads, a sufficient elimination efficiency and the evaluation of process and system variants. AQUA AERO enables you to define all details, considers the local conditions, product properties, variants of construction and all theoretical demands.

Data Base for Machines
Suitable blowers, pumps or mixers are provided out of a data bank. In the data bank you will find several manufacturers and a large basis of informations, like type, power, design information.
Economy of aeration systems
The oxygen input is responsible for about 75% of the energy demand of a wastewater treatment plant. The economical design of the aeration system therefore is important for the efficiency of the whole plant. After designing an aeration system in AQUAERO you can evaluate the investment- and operational costs. An important value for the operational cost is the oxygen efficiency.

Construction
You are very flexible in the design of the aeration devices, by changing the number of devices, distributors or placing them in the chamber. Grids can be collected in zones, in order to create aerated and unaerated areas in a chamber.

True Scaled Drawings
True scaled drawings are automatically created in a CAD-environment.
Comparison of Aeration Systems

Comparison of Systems
With invest-, reinvest- and operational costs AQUA AERO takes in account the full life cycle of an aeration project. This allows a real comparison of different systems. Characteristic for aeration systems is a high difference in invest and operational costs between different technologies. A simple comparison of the invest cost is not sufficient to find the suitable system.

With AQUA AERO ist easy to make an high quality and meaningfull evaluation, by varing interest rates, reinvest times, project life time etc. It is not only possible to compare systems, but also to proof the effect of different manufacturers data.

Comparison of Concepts
Aeration systems are distinguished by very different invest and operational costs. A simple comparison of the invest costs is therefore not sufficient for a selection of the best variant.

With AQUA AERO its easy to make meaningfull comparisons, by varing interest rates, project life time, reinvest costs etc.. Therewith it is not only possible to compare

Variant 1: low Invest Costs (point t₀), high Operational Costs
Variant 2: high Invest Costs, low Operational Costs

Is the project life time higher than t₁, variant 2 will be the more economicle variant instead of higher invest costs.
Service

AQUA DESIGNER is the powerful tool for the planning of wastewater treatment plants, incl. preliminary treatment, biological and sludge treatment. AQUA DESIGNER provides numerous results for presentation and approval, including buildings, machines, operational costs and true scaled drawings.

AQUA AERO is a special tool for the design of aeration systems. This tool is totally new developed, based on our experience with AQUA DESIGNER and our project works. Further to the design there are tools for validation of economics like oxygen efficiency, total project costs or equivalent annual costs.

AQUA DESIGNER und AQUA AERO are continuously improved, extended and adapted to the state of the art and the actual guidelines.

Furthermore BITControl has a high qualified engineering support. We are collecting a lot of experience not only with our own projects but also out of the collaboration with our clients. So you get a high qualified support and practice oriented tools.

BITControl is more than Soft- and Hardware

We implement our experience in planning and operating wastewater treatment plants into our software products.

This will be reflected by our range of products:

- AQUA DESIGNER - Design of WWTPs
- AQUA AERO - Design, Engineering, Economic of Aeration Systems
- AQUA LOGIC - Fuzzy-Logic-Control
- AQUA PROVI - SCADA and Remote Control for water and wastewater
- BIO PROVI - SCADA and Remote Control for Biogas Plants
- BIO CONTROL - Controlling-Software for operating Biogas Plants
- PROVI ONLINE - Online-Portal for Plant Documentation at www.dieWartung.de

Our service doesn’t end with the installation of the software. We accompany you with our experienced engineers and IT-specialists in questions of planning and operating your plants.