An underwater photograph of a swimmer in a pool, viewed from below. The swimmer is in a streamlined position, moving towards the surface. A large plume of white bubbles follows the swimmer's path, indicating recent movement or a stroke. The water is clear blue, and the pool's lane lines are visible in the background.

# Disinfection and Control Solutions for Aquatic Applications

Water Technologies

**SIEMENS**



Serving the needs of municipal, industrial and aquatic customers globally, Siemens Water Technologies helps customers conserve, protect and manage the world's limited water resources.

With the largest portfolio of innovative products and services, and the most knowledgeable people in the industry, Siemens Water Technologies is uniquely positioned to provide answers for some of the world's most pressing water challenges.

Siemens Water Technologies is the premier provider of disinfection solutions designed to meet your most rigorous demands in virtually any aquatic application and give you access to both the latest advances and widest range of proven technologies.

An extensive range of Wallace & Tiernan® and Stranco® on-site hypochlorite generation, chlorine dioxide, gas feed, UV disinfection and analyzers and controllers provide a unique solution capability from a single source covering the entire aquatic water and wastewater treatment process.

Monitoring and control of all water parameters are considered with a wide range of analyzers and controllers, from simple measurement to complete water management including all the dosing controllers and data logging plus PLC and visualization systems.

Water sports are growing in popularity and require the best conditions for training and competitions. Clean water and clean air above the waterline help protect the health of competitive swimmers and spectators. Solutions from Siemens Water Technologies ensure the optimum water environment for competitive swimmers.

Aquariums and basins for aquatic animals in parks and zoos need the water quality to meet specific life supporting requirements. Siemens Water Technologies provides consultation for aquatic environments to keep the animals healthy with products and solutions for any kind of aquatic applications.

Fountains, water parks and water playgrounds are attractive if the water is in good condition. This is the case if the ground of the fountain is clearly visible and meets the engineer's design specification. The right designed water treatment system by Siemens Water Technologies keeps the water and the fountain crystal clean and clear.

Keeping our children in mind, water park water has to be in excellent condition. Siemens provides systems specifically developed for swimming and leisure pools and precisely engineered for your application to achieve the best water quality. Cost effective operating with environmentally friendly water and low energy consumption are the key benefits for the operator.

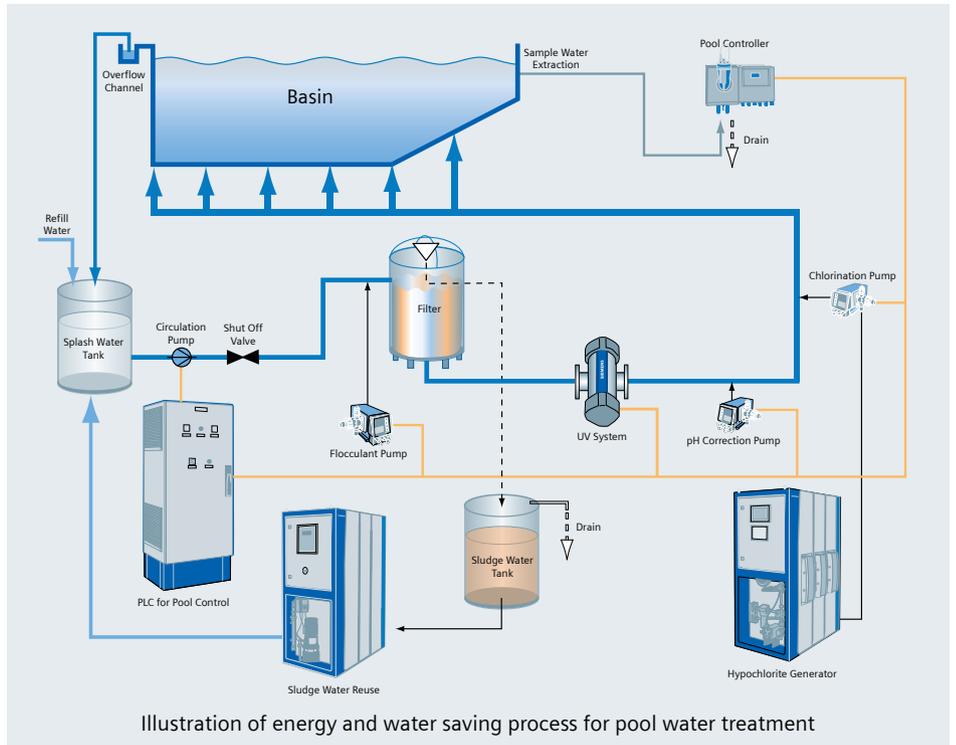
Saving water and energy is the top priority of our innovations. At an average public leisure center more than 50 tons CO<sub>2</sub> reduction per year can be achieved to protect the environment. Under good conditions investment returns on these savings can be seen in under two years.





Depolox® or Strantrol® series pool controllers ensure that the water quality will meet local health organization regulations. Chlorine dosing and pH correction dosing are subject to a setpoint control which is also included in the pool controller as well as the flow dependent flocculant dosing.

The pool control panel adjusts the total flow of the swimming pool cycle water. The main effect is to minimize power consumption of the cycle booster pumps plus saving chemicals. But the water quality is the leading factor.



### Designed for Health and Safety

The highest quality specifications for swimming pool water are given in German regulations for public swimming pools. This is our reference for specification - globally. With this background we provide optimized solutions for your water treatment. And due to the interacting equipment the applications are kept simple to provide highest safety and availability.

### Energy and Water Optimization

Public indoor swimming pools need safety not only for the quality of the water but also the quality of the air. Investment in a pool water treatment system has to ensure the best total cost of the treatment equipment plus expected maintenance and sustaining cost.

Today's swimming pool operations are designed to meet exactly and continuously the regulatory specifications at the lowest possible operating cost including water and energy as well as ingredients like chlorine, pH correction and flocculation chemicals.

Analyzers and controllers from Siemens Water Technologies utilize specially developed algorithms that monitor and control all relevant water parameters to optimize the entire pool systems.

#### It is ensured that:

- Circulation pumps run at the lowest possible speed to save energy
- Chlorine dosing is minimized to meet the exact disinfection demand without wasting chlorine
- pH and flocculation dosing are minimized depending on circulation flow to save chemicals
- Backwash water is reused via a retention tank and treated by ultrafiltration to save fresh water
- Chloramines are reduced by UV disinfection to minimize dilution water

All of this can be incorporated as one package or each element supplied separately, depending on your needs or specification.

Additionally the pool controller can switch the output level on a UV Barrier® system to reduce the combined chlorine in the water cycle. This saves the fresh water which would be needed to dilute the basin and cycle water volume to meet the limits of allowed combined chlorine.

More fresh water plus energy for heating the water can be saved when using a UFOX system to reuse the filter backwash water. This water usually goes directly to the drain. UFOX recycles filter backwash water through a membrane filter system and water is given back to the process. This increases the overall safety of treating swimming pools.

Chlorine gas handling can be dangerous and expensive. This can be eliminated by use of an OSEC®-NXT system which prepares the disinfection solution out of simple brine using standard salt pellets.



*Disney's Typhoon Lagoon Water Park*

©Disney

### **Big Technology for Small Pools**

Technology for high capacity pools also is available for smaller pools. The focus here is to provide the best equipment for optimized water quality without the need for specialized operators. Siemens Water Technologies' analyzers and controllers provide the display of all required information at a glance and controls the water treatment and disinfection units.

### **Remote Monitoring: Simple and Secure**

All water quality information about all the pools in a leisure park is provided by a customized measurement panel. As the systems contain the controller capability it is applicable to install the units around the process equipment in the technical processing rooms. Each analyzer and each disinfection unit from the Siemens Water Technologies range provides capability of fieldbus and network communication. All process parameters can be displayed as a dashboard and monitored remotely by the pool operator on his or her network via the internet or ethernet via the ChemWeb Server. This unit provides a password protected screen overview of all connected equipment from each internet connected workstation – independent of location.

## Case Study:

### ***Disney's Typhoon Lagoon Water Park Walt Disney World® Resort***

Siemens equips the pools and attractions at the most outstanding water parks in Florida at Walt Disney World® Resort. MG/L5 controllers monitor and control the water quality. Carbon dioxide dosing systems ensure that the pH value is at the correct level.



Ian Thorpe Aquatic Centre

#### Key Benefits with Siemens Water Technologies:

- One Stop Solution Provider – Providing development, manufacturing, engineering, on site installation, after sales service and spare part supplies
- Specialists competence and customer oriented technical advice
- Innovative products and solutions
- Broad experience base
- Premium quality products

#### Competent and Reliable: Global Service and Support

As your partner, we offer far more than just products and systems: our comprehensive and innovative range of services are available to you worldwide.

Siemens Water Technologies operates in over 175 locations worldwide, with more than 5000 employees. Manufacturing of our disinfection and analyzer and controller products are strategically located in the USA and Germany, with support for customers around the world through local sales, service and distribution centers.

To protect your investment in our premium quality equipment, we deliver unrivalled after-sales service packages - including technical support, training, on-site service and spare parts - provided by a worldwide network of factory trained and dedicated professionals.

## Case Study:

### Ian Thorpe Aquatic Centre, Sydney NSW, Australia

The Ian Thorpe Aquatic Centre in Sydney, Australia, with its iconic roof design, is the latest of this city's aquatic attractions. The center's indoor 50m, leisure and program pools use Depolox® pool controllers, ChemAd® chemical pumps and carbon dioxide dosing systems to control chlorination and pH levels. The Barrier® M medium pressure UV systems maintain the center's air and water quality to the highest standards by preventing chloramines from building up, while also enhancing disinfection.

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