

# We think in systems!

Safe, efficient and economical solutions require a high degree of expertise. HST stands for more than 30 years of experience in the development of technology for water and other public supplies. Our team is made up of experts from a number of fields such as mechanical engineering, electrical and construction engineering and computing. This knowledge and know-how is dedicated to producing industry-specific products and systems for the equipment of buildings, process technology, process monitoring and operations management. In this way, every single step, from customer consulting, planning and start-up, from software development to service and maintenance, remains in the capable hands of our own specialists. And we stay close to you! In addition to installing and starting the customer's systems up, a network of regional engineering offices and HST branches (see page 153) guarantees efficient personal service on site.

The three divisions of HST, HydroSysteme (hydro systems), KlärSysteme (treatment systems) and IT-Systeme (IT systems) stand for ideas, innovation and engineering expertise - multiplied by 3.



Also: every product, every system and every solution by HST has an "i times 3" – a feature which is unique. That is the basis for the development of our products systems and solutions for water management, energy generation and other areas of infrastructure.

The following pages contain a more detailed presentation of our company – the management, the employees, the products and solutions of the three divisions of HST, as well as the contact persons in the various regions.



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# HST

## SYSTEMTECHNIK



Ralf Beckmann



Oliver Beier



Jörg Brandenburg



Christof Burmann



Werner Bucker

## Water systems – Products

### Products for the water and waste water industries

Water needs a future – HST-HydroSystems are machines, devices, technology like weirs, gates, measuring devices, baffles, screens, flushing devices, outlet controls that help you manage your sewer works in combined systems. In order to optimize the use of our sewers, retention/detention facilities and to maximize your investment you need to add technology. Adding HST-HydroSystems to your facilities often results in a reduction of the overall construction costs. Oftentimes we can reduce the size of the structure to achieve the same level of protection.

#### ASK-Weir



ASK weirs are used to keep the water level constant. This eliminates the necessity for extra height in dam overflows, thereby gaining additional storage volume. The regulating function depends purely on the upstream water, which means that ASK Weirs can also be used under back-pressure conditions as well as for flood control.

[i<sup>3</sup>]:

- Constant water level = constant top-water level for better volume utilisation
- No external power required for drive or control
- Exact control of water level - control hysteresis 3 cm

(Application s. page 94,102)

#### GSK-Weir



The economical way to maintain top water level, utilise volume and reduce requirement for building structures. In addition to controlling the top water level, GSK Weirs also contribute to flood protection and reduce necessity for spillways.

[i<sup>3</sup>]:

- Good maintenance of top water level through control disk cam and low moment of inertia
- Adjustable by means of weight disks
- Option: flood version which seals on all 4 sides

#### ESK-Weir



Electrical-hydraulic barrage weir (spillway system) for adjustable maintenance of top water level, back-pressure relief and flood protection (for sewerage systems).

ESK Weirs are used where varying amounts of water are drained off continuously which retaining constant and variable top water levels. Due to EMSR technology and drive activation system, the top water level can be varied according to event or over periods of time.

[i<sup>3</sup>]:

- Fully functional during power cuts through energy storage
- Opens against water pressure up to 10 mWS
- Automatic function monitoring through integrated Hytronic set, remote-control technology and recording of operating data with HST-TeleMatic technology

## Water systems – Products

### ALH-Weir



Ideal for refurbishment projects In addition to controlling top water levels, ALH Weirs also retain floating matter. Through their segmented cassette-type design, pneumatic-controlled elevating weirs are particularly suitable for refurbishing or refitting existing overflow structures.

[i<sup>3</sup>]:

- Air-controlling device prevents impact operation
- Flow measurement and function monitoring (add-on Hytronic set)



Herbert Bürger



Martin Eckart

### Dam Shield



The economical mechanical underflow alternative for maintaining top water level, utilising volume and reducing building structures Dam shields are automatic hydro-mechanical underflow-type weirs. In addition to controlling the top water level, dam shields also retain floating material and special types also contribute to flood protection.

[i<sup>3</sup>]:

- Good maintenance of top water level through optimum disk cam and low moment of inertia
- Adjustable by weight disks or spring setting
- Easy integration in HydroDat<sup>®</sup> process-control system and KANiO<sup>®</sup> works-management software.



Markus Ernst



Matthias Erlemeyer

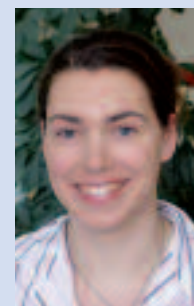
### RSK Flaps



RSK Flaps offer perfect protection under back-pressure or flood conditions. RSK Flaps are used in rainwater overflow systems, rainwater tanks and flood pump stations i.e. wherever backflow has to be prevented. Our mechanically operating level-controlled flaps close openings automatically when a certain downstream water level is reached. Their functioning principle ensures that no hydraulic loss occurs during normal operation, even for heavy structures at water pressures of up to 1 bar.

[i<sup>3</sup>]:

- Opening and closing operations related to water level
- No hydraulic losses
- Systemic type series with construction kit



Claudia Esser



Kurt Förster



Uwe Frigger



Petra Frigger



Dominik Gierse



Ferdinand Funke

## Water systems – Products

### STW/R and STW/V Submerged wall



The modern standard solution for retaining floating matter – an intelligent substitute for the fixed submerged wall. Ideal for adding to existing systems. Submerged walls are used for holding floating material in spillway systems, thereby reducing the discharge of faecal matter, paper, hygienic products and other floating material. Floating submerged walls also have the advantage of being continuously adjustable to the water level.

[i<sup>3</sup>]:

- High operational reliability and prevention of jamming through perfect bearing principle
- STW-R adaptable to any shape of threshold (round, S-shaped etc.)
- Both types adjustable by emptying or filling with ballast

### HSR-Screen



The tried and tested solution for trapping coarse and fine material in rainwater-spillway structures.

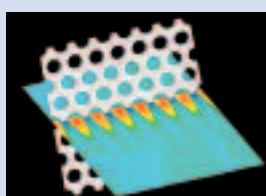
HSR Horizontal Bar Screens are an effective means of retaining coarse and fine matter in rainwater-relief systems, separating structures and clarifier overflows in mixed-water sewerage systems as well as inflows to ground filters. Through their design as back-raked screens, the material either remains in the waste-water current thereby entering the treatment plant or is removed from the system by a transport device.

[i<sup>3</sup>]:

- High hydraulic power
- automatic load-dependent cleaning and laying-control
- In standard configuration at operation completely overflowable
- Automation by system software for integrated remote-control technology and recording of operating data

(Application s. page 92)

### LSR Screen – Perforated Screen



The LSR Screen is an economical means of trapping material. Perforated plates are used instead of rods. Cleaning is automatic.

[i<sup>3</sup>]:

- Economical through standard screening surface of perforated sheeting
- Cleaning system based on water jet and brushes
- System series in construction-kit design

## Water systems – Products

### AWS Flushing dump



The low-cost solution for cleaning rainwater tanks. AWS flushing dumps mounted outside the medium (rainwater, waste water etc.) allow the efficient removal of deposits without using external energy. The shape of the AWS flushing dump, designed on the basis of FEM models is distinguished by its excellent material utilisation and low weight, and is the most modern design available on the European market.

- [i<sup>3</sup>]:
- Submersible bearings of cast stainless-steel
  - Ideal torque and stress pattern result in low loads and optimum utilisation of the construction
  - No mechanical noises

### AWS Flushing Flap



Surge cleaning for rainwater tanks and low-level sewers. Flushing flaps are closing elements of corrosion-resistant material mounted on rotating upper bearings and which form a seal around all edges. They are installed in sewerage constructions and retain water during inflow for flushing the bottom of the tank. When the flap is opened after the tank has been emptied, a powerful surge of water is created on the sole of the tank.

- [i<sup>3</sup>]:
- Reliable opening, locking and sealing through wedge pressure
  - Through lightweight flap body, no additional mechanism is required for delayed closing (damping) thereby minimising hydraulic loss and ensuring complete evacuation.
  - Specific weight of flap <25 kg/m

(Application see page 114)



Daniela Göddeke



Sebastian Griggel



Vera Grote



Frank Heutger



Peter Honsel



Benedikt Huss



Julia Kappe



Marco Kleffner

## Water systems – Products

### AWS Flushing Lock



The solution requiring no additional structures or other elements in the flow cross section. The AWS Flushing lock is a new and highly innovative cleaning device. Thick deposits in sewer retaining chambers and draining sewers are removed automatically (or avoided altogether) without any additional construction work. Lengths of up to 350 metres can be flushed without any other hydraulic elements restricting the cross section of the channel.

[i<sup>3</sup>]:

- Air as locking medium
- Can be added to existing equipment while in operation – no construction work necessary
- Sealing of sewer cross section even when deposits present

### AWS Water Jet – automatic high-pressure cleaner and AWS Rotating Water Jet – automatic rotating high-pressure cleaner



The AWS Water Jet is an automatic pressure generator for cleaning tanks and sewerage retaining facilities. The high-pressure cleaning jet is generated by a powerful pump with an ejector. Fixed or rotating ejectors can be fitted depending on requirements.

Thanks to their innovative automation technology, AWS rotating cleaning devices can adapt their operation effectively to remove various types of dirt and rubbish.

[i<sup>3</sup>]:

- Visual dirt detection
- Low-energy operation through
- special hinges for 280 ° rotation

### AWS Cleaning Lock – automatic flood gate



The perfect solution for retaining sewers with no constructions built into their flow cross-sections. The AWS Cleaning Lock is a cleaning device for sewer retaining compartments of any cross section. Accumulations of material are removed by surge waves.

[i<sup>3</sup>]:

- No structures in hydraulic cross section
- Can be fitted while sewer is in use
- Automation with cleaning-system software, remote-control technology and recording of operating data

## Water systems – Products

### AWS Rotating Jet – automatic cleaning device



The AWS Rotating Jet is designed for cleaning round tanks. A dry or wet-type pump generates both a cleaning jet and kinetic energy.

[i<sup>3</sup>]:

- Continuous operation possible in empty tanks
- Rotation energy from transport current
- Variable jet geometry



Theresa Kohlmann



Johannes Kotthoff

### Discharge controller HydroMatQ



Discharge controller HydroMatQ - the economical discharge regulator.

HydroMatQ discharge-controlling systems are fitted with the latest control components. In addition to exact quantity measurement, the HydroMat-Q control systems permit very accurate restriction of discharge quantities of around 0-1000 l/sec. They are remotely controllable and the automatic recording of operating data is part of their standard equipment.

[i<sup>3</sup>]:

- Under potential back-pressure conditions a specially developed double sensor is used
- Automatic function monitoring by calibration



Maik Kühlenborg

### HydroMat-E



The economic discharge-control system, electronically adjustable, ideal for replacing mechanical regulating devices.

The HydroMat-E discharge controllers are electrically powered, level-controlled devices for regulating water quantities or water levels. The controlling task is easily parametered by means of the user-friendly HydroMatic software module from the TeleMatic series.

[i<sup>3</sup>]:

- Optimum control in emergencies
- Positioning check and flush control
- Emergency control by installation of a light-fluid detector (e.g. in oil separators)



Dominik Lüpker



Bastian  
Martinschlede



Tanja Mertin



Günter Müller-Czygan



Arno Neuhaus

## Water systems – Products

### Flood-Level Pumping Station



The flood-level pumping station has a highly compact and economical design due to the use of a two-way hydraulic flap and water-channelling at three levels.

The water is pumped by means of inlet and outlet pumps which are installed in special pressure shafts.

[i<sup>3</sup>]:

- Use of 2-way hydraulic flaps
- Channelling of water at three levels
- No steel conduits required

## Treatment systems – Products

### Construction, Improvement, Refurbishment and Extension of Waste-Water Treatment Plants

As system supplier, we are the right partner for economical treatment systems, technical solutions and innovative products for the purification of waste water. We offer solutions for the treatment of:

- municipal and industrial waste water
- organically polluted industrial waste water with recovery of service water
- waste water from refuse disposal (seepage from landfill)

Our services include standard systems as well as economical individually designed solutions for modernisation, improvement and cost-effective process controlling of sewage-treatment plants. We supply systems for increasing operating efficiency as well as special machine components for the purpose.

### Clarified-water discharge HydroKlar-Mod/M and -Plus/M



The clarified-water discharge devices of type HydroKlar are for separating the clarified water during the decanting phase of the SBR process. The system which operates automatically as well as by turbidity measurement, channels the clarified water from the decanting phase to the main outfall. The amount of water discharged is adjusted to the current water level and the process sequence by the process-control system Hydro-Dat® V8.

[i<sup>3</sup>]:

- The change in position of the clarified-water decanter is based on the water level
- The amount of water discharged is precisely controlled
- Process-related operation improves operative duration, thereby increasing the reserves available for the purification process.

## Treatment systems – Products

### Scum ASSA-M



Filamentary bacteria in the form of scum and bulking sludge impair the biological process.

By efficient automatic separation of scum and bulking sludge from the surface of the activating and sedimentation tanks, the bacterial sludge can be stabilised, decomposition optimised and the sedimentation process considerably improved.

[i<sup>3</sup>]:

- Removal of scum and bulking sludge from the surface
- Automatic selection by sensor-controlled adjustable skimming duct
- Easy installation on top edge of wall, ideal for adding to existing structure



Dirk Prietzel



Reinhard Rohlmann

### Flotation MOTES



In the flotation process, fatty or emulsified substances are carried up to the water surface by forcing in bubbles of air. Best possible precipitation is achieved by using a suitable auxiliary substance for macro-flocculation combined with the correct size of bubble. The HST dissolved-air flotation process ensures generation of the bubbles of the correct size with a high degree of precipitation, while the know-how of the HST engineers guarantees the use of suitable auxiliary materials

[i<sup>3</sup>]:

- Optimised material consumption through finite-element method of container manufacture
- Very high material retention possible due to special combination of chemical and process technology
- Special technology for generating perfectly dimensioned bubbles

(Application see page 106)



Réne Salú



Norbert Schaake

### Treatment-plant set MBR-Set SBR-Set for industrial plants



The efficiency of sewage-treatment plant depends on the perfect interaction of a few essential products, regardless of whether the biological SBR process or the membrane process is in use. The HST sets for SBR and membrane-type treatment plants are made up of a few basic elements – the clarified-water discharge, aeration system and automation/IT (SBR) or membrane module, aeration system and automation/IT (MBR). The sets can be used as complete solutions in new plants or for refitting and improving existing ones.

[i<sup>3</sup>]:

- High degree of standardisation through use of tried and tested products
- Perfectly coordinated function of units
- Process control with HST HydroDat® V8

(Application s. page 104, 109)



Holger Schlumbohm



Christoph Schmehl



Simon Schulte



Rüdiger Schrewe



Kai Spitzer

## Treatment systems – Products

### Pre-fabricated treatment plants



Decentralised solutions for waste-water treatment must provide a high degree of purification as well as a high standard of quality. Based on the development of technology for the construction of large-scale sewage-treatment plant, the decentralised systems EuroCleany (max. 50 EW) and HST-Kompakt (max. 500 EW) offer a very high level of performance. The high degree of standardisation and the adaptation of the HydroDat® V8 process-control technology permit safe and economical sewage treatment in rural areas.

[i³]:

- Know-how from construction of large-scale plants adapted for small units
- System series in construction-kit design
- Online inspection system and maintenance

### HST-SBR System Treatment-Plants up to 30,000 EW



System sewage-treatment plants are specially configured standard SBR treatment plants. They are based on the experience gained in developing SBR technology and offer a highly economical alternative through their prior configuration.

[i³]:

- Know-how from construction of large plants integrated in small units
- Tank geometries based on MiniMax principle
- Automation with integrated remote-control technology, data collection and data logging

(Application s. page 125)

## IT systems – Products

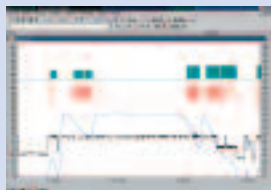
### HST IT Systems... always one idea ahead!

Open-ended systems for automation, process control and works management  
Integrated IT solutions – from one single source

The IT solutions developed by HST are integral overall solutions for every level from automation, process control and control technology to works management and maintenance. For us, information technology begins with control and remote-monitoring systems which enable important information transparent and available for use at every level. Our web-based monitoring and control system HST TeleMatic can be linked perfectly with our HydroDat® V8 process-control system and our KANiO® works-management system and is further supplemented by our innovative TeleCam camera system. Along with the V10 portal and the virtual pluviograph, these systems are all available on the web.

## IT systems – Products

### HydroDat®



The dependable and user-friendly process-control system HydroDat® V8 controls all centralised and decentralised elements in all types of water-management facility.

HydroDat® V8 processes all types of data from visualisation and analysis to reporting and alarming. It operates on the basis of national water legislation and industrial control regulations such as those of the DWA.

[i<sup>3</sup>]:

- Intelligent data-archiving process Delta-Event-Plus
- No compression of data, so no loss of information with long-term storage
- Supports numerous automation, remote-monitoring and visualisation systems

(Application s. page 100, 111, 116, 120, 122)

### KANiO®



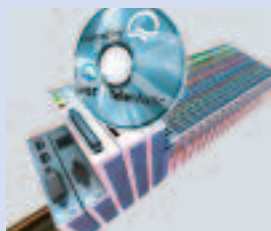
The efficient and economical planning, preparation and documentation of operating processes are the main strong points of our works-management system KANiO®. This is the leading software system on the market and provides optimum support in the fields of maintenance, servicing, quality assurance and compliance with statutory regulations

[i<sup>3</sup>]:

- Leading works-management system in the field of water economy
- Status-independent maintenance by process-data interface (OPC)
- Integration in GIS, PLS and ERP systems.

(Application s. page 98)

### TeleMatic



The web-based process-monitoring and control system combines innovative remote-control concepts, high industrial standards and SPC reliability in one single system. The open and highly modular TeleMatic system guarantees the perfect collection and monitoring of data from decentralised facilities as well as the effective automation of machines, equipment and processes.

[i<sup>3</sup>]:

- Integration of automation and remote-control technology
- Universal in application through world wide standards (IEC 61131-3, Windows, OPC, IEC 60870-5)
- Web-based communication to DWA-M 207

(Application s. page 96, 116, 120, 122)



Stephan Tillmann



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Vorderwülbecke



Helmut Wegener



Susanne Wiegand



Tobias Wiese



Evelyn Zipfel

## IT systems – Products

### HydroMatic



The HydroMatic module library provides effective support in controlling, regulating and optimising machinery for water-management applications, whether simple or complex. The ideal hardware platform is provided by our high-performance TeleMatic controllers. All control systems programmed to IEC 61131-3 are also supported.

[i<sup>3</sup>]:

- Standard modules tried and tested in practice
- Specially designed for water-management facilities
- Complies with IEC 61131-3

### TeleCam



The web-based camera system TeleCam allows visual remote diagnosis of decentralised plant. Critical operating states are detected by the integrated visual-analysis system and (in combination with TeleMatic) an alarm signal released.

[i<sup>3</sup>]:

- Integration in TeleMatic and process-control technology
- Web-based communication

### V10-Portal Monitoring of machinery on the web – no limits!

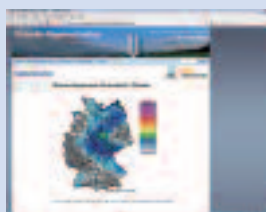


The novel V10-Portal provides an infrastructure for creation of monitoring networks. The consistent use of internet technology means that even very small facilities can be monitored cheaply and efficiently. Payment is by a monthly flat-rate provider fee, as with a mobile telephone.

[i<sup>3</sup>]:

- No investment necessary for centralised hard and software
- Web-based communication between external station and portal
- Visualisation in Internet (PC, PDA, Smart-Phone, ...)

### VRS Precipitation measurement with radar – comprehensive and up to the minute



The data VRS service "Virtual Pluviograph" is a joint product of HST and Meteomedia and is a highly innovative means of measuring precipitation. Forecasts for the next few hours are also an integral feature of the VRS.

[i<sup>3</sup>]:

- Innovative measuring process
- Comprehensive up-to-the-minute coverage
- Data delivery via Internet
- Integrated precipitation forecasts

## Contacts in your area



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Petra Räuber

Our close customer support is guaranteed by the HST-Office (Agency South), engineering and sales branches in Germany as well as agencies abroad. Our Technical Office in Berlin, managed by Ortrun Franchy, is your first point of reference for projects abroad. Contact data for all our staff can be found at: [www.systemtechnik.net](http://www.systemtechnik.net)

