

Integrated Infrastructure Solutions for a more resilient future of fast growing urban area

In many growing cities in newly-industrialized and developing countries, local water resources are insufficient to supply the population with clean drinking water. This results in a pressing need for action in the affected cities. The SEMIZENTRAL approach meets the requirements for flexibility and adaptability of infrastructure systems and sets new standards in the matter of resource efficiency.

The integrated approach

The unique characteristic of SEMIZENTRAL is its integrated approach. Conventional systems focus on a strict separation of the sectors of water supply, wastewater treatment, and waste treatment. In contrast, SEMIZENTRAL integrates these sectors into a holistic approach.



Semicentralized Supply and Treatment Centers (STC) offer a future-oriented and resource-conserving alternative to conventional centralized infrastructure systems. Module A: Greywater Treatment. Wastewater from showers and washing machines is treated and reused as service water for toilet flushing. This way, the daily water consumption is reduced by almost one third. In Module B, blackwater is treated. Module C, the energy center, includes the anaerobic (thermophilic) treatment of biowaste and sewage sludge. The emerging biogas is inhouse used for electricity production. The generated energy enables the energy self-sufficient operation of the STC. Compared to conventional infrastructure systems, the benefits lay in the reduction of water needs of at least 30%, no external energy demand for wastewater, sludge and waste treatment, greatly reduced transport demand, around-the-clock guarantee of servicewater supply with consistent quali-



The Partners

During the phase of planning and operational attendance of the semicentralized STC Qingdao, 14 partners from Germany headed by TU Darmstadt, the Tongji University Shanghai and the Qingdao Technological University work together with several Chinese Partners in a cooperative consortium. Investment as well as operating costs are paid by the WHE development company.

The German Federal Ministry of Education and Research (BMBF) finances the joint research group's scientific support during imple-

ty and high planning security.

The worldwide first STC is opened

On the occasion of the "World Horticulture Exposition 2014" (WHE) in Qingdao, China, the Supply and Treatment Center (STC) Qingdao of the project SEMIZENTRAL, was opened April 27, 2014. It is the worldwide first reference plant following the semicentralized, integrated infrastructure approach. The center will serve approximately 12,000 people.

mentation. MoST China supports the Chinese Universities in research.

Additionally, German Industrial Partners are in the boat: wilo SE contributes energy-efficient pumps and mixing devices, AERZEN GmbH energy-efficient blowers, Auma gearboxes for valves, OTT Systems highly efficient aeration elements, Binder GmbH the valves and electronic control devices for aeration and LAR Process Analyzers AG measuring devices.



Bundesministerium

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