CASE STUDY

ADVANCED FILTRATION SYSTEM FOR WASTEWATER REUSE IN VIETNAM

LOCATION:
Ho Chi Minh City, Vietnam

COMMISSIONED:
2025

TECHNOLOGY:
Automatic disc filters

CAPACITY:
34,000 m^3/h

CONTEXT

Ho Chi Minh City, the economic hub and most populous urban center of Vietnam, was facing water management challenges driven by urbanization and the pollution of river channels. Climatic conditions like monsoonal rainfall patterns and periods of extreme drought also increased the pressure on the city's water infrastructure.

The city launched the construction of the Nhieu Loc–Thi Nghe wastewater treatment plant (WWTP), one of the most ambitious urban water projects in Southeast Asia. Designed to treat wastewater from the Nhieu Loc–Thi Nghe basin, the facility was designed to serve a population of more than 1.4 million people.

To support long-term water sustainability objectives and improve the quality of the treated effluent, the project required an advanced filtration solution that could handle very large treatment volumes while maintaining high operational performance under demanding environmental conditions.

SOLUTION

H_2O Innovation Lama supplied an automatic disc filtration system designed to provide a reliable barrier for fine suspended solids before UV disinfection. The Rotativo system uses polypropylene discs with 20-micron filtration slots to retain particles from the biologically treated effluent, which enters the filters with a solids load of less than 20 ppm.

As the discs accumulate solids, an increase in pressure differential automatically triggers the backwashing sequence. Hydraulic valves decompress the discs and reverse the flow, allowing the retained solids to be discharged through the drainage system while filtration continues through the other units.

The system is made of two independent filtration stations with a total capacity of 320 m^3/h, stainless steel collectors, a high-density polyethylene drainage collector, and a RIO controller to manage the automatic cleaning sequence. The equipment was fully customized for the site's tropical, high-humidity conditions; this includes special anti-corrosive coating and adaptations to the electrical and hydraulic requirements. The system design takes account the operating pressure, effluent quality, material compatibility, and available space of the project.

RESULTS

The installation succesfully provides an additional filtration barrier that helps reduce the suspended solids and turbidity before the UV disinfection. By improving the quality of the filtered effluent, the system supports more effective UV treatment and contributes to the production of water that can be reussed in public spaces.

Plus the automatic cleaning sequence allows the filters to operate continuously without interrupting the treated-water flow, while at the same time minimizing the need for manual intervention. The compact, modular design also provides a practical solution for high-flow tertiary treatment.

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