

CENTRALISED MEDICAL WATER TREATMENT AND SUPPLY AT THE HEART OF ZHEJIANG'S COVID-19 FIGHT



Located on the banks of the Qiantang River and southwest of Hangzhou's main urban area, the First Affiliated Hospital, Zhejiang University School of Medicine (Zhijiang Campus) is a modern hospital spanning nearly 100,000 square metres. It has a floor area of about 180,000 square metres, has more than 1,000 beds and features state-of-the-art equipment. It officially opened its wards in early 2020.

As the only provincial designated hospital for the prevention and control of the COVID-19 pandemic in the Zhejiang Province, the Zhijiang Campus was urgently activated to manage the outbreak. Leveraging the industry-leading concept of 'centralised water treatment and differentiated water supply', the hospital's water purification system has weathered the great test of the pandemic. It has showcased best practices and efficient solutions for hospital water supply management during a pandemic.

WATER SUPPLY IN CHINA'S HOSPITALS TODAY

Against the backdrop of COVID-19, the quality of China's medical management and practices have come under severe scrutiny. Among one of the most important processes in ensuring patients get the right medical treatment, is the management and use of water in a hospital setting. Every day, a general hospital needs a full range of pure water supply to meet daily diagnosis and therapeutic needs. This includes biochemic analysis and testing water, pathology water, blood permeable water, central supply room water, surgical flushing water, DSA catheter flushing water, dental flushing water, obstetric baby wash water and preparation room water.

Most hospital buildings built before the 1990s supply pure water by utilising independent water facilities situated in the different departments. Independent water machines not only occupy a lot of space, they also are used less, which means an increase in the workload of medical staff to maintain these water facilities. At the end of the 20th century, China introduced and implemented the concept of centralised water treatment and differentiated water supply. In recent years, due to its unique advantages, the centralised water supply system has been rapidly replacing decentralised water treatment and supply equipment. New and reconstructed general hospitals have also adopted this model to further improve the level of modern hospital management.



The Zhijiang Campus integrated user intuitiveness, efficiency and intelligence from the start of its construction, choosing to supply pure water to various departments by centralising its water supply system. During the outbreak of COVID-19, the Zhijiang Campus has been the designated hospital to treat critical and ultra-critical patients. The province's critical and ultra-critical patients were also transferred there. Protecting and supporting the smooth operation of the Zhijiang Campus, translated to saving the lives of patients. The stable operation of its pure water system directly contributed to the hospital and its medical team's successful fight against the pandemic.

EFFICIENT AND STABLE SOLUTIONS

The Zhijiang Campus adopts the TCHJ-36 centralised medical water supply system provided by Tianchuang Environmental Technologies, supplying the whole hospital's hemodialysis, testing, cleaning, flushing, and pure drinking water. The composition of the whole system implements the concept of centralised water treatment and differentiated water supply. This includes the pre-treatment system, reverse osmosis system, post-treatment system and pure water distribution system, which provide high-quality pure water to all departments in a consistent, stable way.

To meet the requirements of water pressure, transportation and other water supply needs in the centralised water treatment and supply system, Grundfos also provided comprehensive water supply and water treatment solutions. Amongst others, these included vertical multi-stage centrifugal pumps, reverse osmosis high-pressure pumps and disinfection metering pumps. In the Zhijiang Campus, Grundfos provided seven CR pumps and 14 CM pumps, highly favoured by customers for their high energy efficiency, low noise levels and stability.



Zhu Junfeng, Head of Marketing at Tianchuang Environmental Technologies, said, "During the pandemic, the pure water treatment and supply system of hospitals faced insurmountable challenges. We were managing the centralised water supply systems for 70 hospitals. The biggest challenge was how to keep the system running smoothly and how to identify and resolve problems in the first instance. Hospitals need stable water pressure, reliable operating equipment and a responsive after-sales service team to sustain their daily usage needs. Grundfos solutions are well positioned to help hospitals manage water more efficiently."

CENTRALISED WATER SUPPLY TRANSLATED TO COST-EFFECTIVENESS

The safety of medical water is particularly important for the treatment of patients, as well as the health and wellbeing of the medical staff. The centralised water treatment and supply system can realise closed-cycle water transport, eliminating water retention or pollution right from the source. The freshly made pure water guarantees quality and safety.

Zhu Junfeng said, "Compared to using a decentralised water supply system situated in the different departments, the hospital's pure water system is centralised in one machine room. This means only one engineer is needed to carry out daily equipment maintenance. The reduced manpower needs decrease the difficulty of personnel management during the pandemic and improves the efficiency of maintenance, helping save hospital space and reducing labour costs."



By centralising the water system, operation costs and the space needed is halved, with the unit's power consumption also greatly minimised. In addition, the whole solution enables 100% utilisation of precious water resources.

Following on from the pandemic, the centralised water treatment and supply system in the Zhijiang Campus has been running steadily for more than one year. With remarkable results, it's ensuring the safety of medical water, improving the efficiency of hospital management and reducing operating costs.

