

PENLAN COMMUNITY LEISURE CENTRE – UK

EVOQUA WATER TECHNOLOGIES HELPS STERLING HYDROTECH TO SAVE WATER FOR FREEDOM LEISURE

Freedom Leisure manages seven leisure centres on behalf of Swansea Council including Penlan Community Leisure Centre, where the eight lane 25m pool has recently undergone a major refurbishment and included an upgrade of the water treatment system. The works were carried out by Sterling Hydrotech, the specialists in commercial pools, spas and hydrotherapy pools whose customers include local authorities, schools, main contractors, facilities management companies, the NHS and military facilities.

THE CHALLENGE

As part of the refurbishment, Freedom Leisure was looking to reduce water, energy and chemical usage on site and consider more sustainable alternatives to the traditional method of sand filtration. There was also an access problem to the existing plant room. Further, Sterling Hydrotech was given challenging timelines to install the new plant in a ten day window during August 2019 to minimise pool downtime. This was a logistical challenge in which they would need to knock down a wall to install a conventional sand filtration system. Sterling Hydrotech has a long-standing relationship with Evoqua and discussed the problem with them.

THE SOLUTION

Evoqua selected the Defender® filter as being best suited to overcome the issues with access, as only one vessel was required. This offered not only a space saving solution but also superior filtration with reduced wastewater compared to the equivalent traditional sand filters. It has an automatic

Defender® Regenerative Media Filter features include:

- Remote monitoring/operation via browser or smart phone
- Modbus communication for PLC connectivity
- IP66 protection
- Automated Drain & Purge
- Water & waste reduction
- Space savings
- Energy savings
- Less fuel & chemicals
- Removes particles down to 1 micron

Wafer™ UV system features include:

- Inactivation of chlorine-resistant microorganisms
- Compact, hydraulically optimized UV disinfection generator
- Advanced polychromatic lamp technology
- Spectra control system with Modbus® communication for PLC connectivity



“bump regeneration” cleaning system which is more efficient than the long backwashing required in traditional filters, and a lower headloss that means lower pump power consumption. An additional benefit is the elimination of flocculent dosing as the filter captures particles as small as one micron. Evoqua paired the filter with their existing chemical-free, compact Wafer™ UV system to provide primary disinfection and a double barrier to Cryptosporidium outbreaks. The Wafer system includes variable power stepping from 100% to 30% to match bather loads and pool operating schedules, and a reactive boost function that automatically operates the lamps at maximum power from a combined chlorine alarm signal, when teamed with an Evoqua chlorine controller. This is a feature specifically designed for swimming pool applications to break down problematic chloramines as soon as they are detected, significantly improving water quality and eliminating the cause of strong chemical smells, red burning eyes, itchy skin and structural corrosion.

In addition, a new automatic system monitors the pool TDS levels and automatically dumps water and adds fresh water into the pool to keep within recommended levels. Sterling Hydrotech also replaced the old circulation pumps with new, energy efficient variable speed pumps which further reduced energy consumption and increased savings.

SUMMARY

The project was completed within the time window with circulation treatment and heating being available two days ahead of schedule. “Since its installation in the summer of 2019, the plant room is a much better place to operate in and reliability of the plant has improved massively”, says Dave Lanham, Area Technical Manager at Freedom. “Our online energy metering system has shown a drop in energy usage by installing smaller pumps and inverter drives and the new Defender® filter and TDS controlled dump system has saved on water bills.” Sterling Hydrotech are equally happy with the outcome. “The added benefits of a reduction in water usage and energy costs to the client was a key factor in our decision to install these systems,” says Managing Director Steve Thompson. “Given the current UK and global drive for a reduction in carbon footprint and the environmental benefits the Defender® filter gives, we at Sterling Hydrotech see this technology as the way forward in filtration for the pools industry”.



Wafer™ UV Disinfection System



Defender® Filter



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