DURAPUMP
PERFORMANCE UNDER PRESSURE

The Challenge

This Midlands NHS hospital faced continuous issues with its sewage system including floating debris, fat building up and high solids content, leading to frequent blockages that required expensive tankers to remove the waste. The existing system was unfit for purpose and a more robust solution was needed.

Our Solution

To resolve this costly problem, Dura Pump installed two submersible Landia cutter pumps. These high-efficiency pumps are designed to manage challenging materials and high-volume waste.

In addition to installing the new pumps, we upgraded the system with a new control panel with inverters, a radar to measure the tank level and a program to deliver intelligent pumping controls and warning alerts.

The system dealt with the challenges in the following ways:

- Floating debris: The system pumps the fluid level down to the base of the pumps allowing them to skim all the floating debris off the surface. This can be repeated multiple times during the day.
- Fat Build Up: By regularly skimming the tank the levels of fat buildup are significantly reduced. This is further enhanced by have an adjustable stop / start level. This prevents the fat building up at one specific start / stop point.
- High solids content: The Landia pumps have an advanced cutting system capable of cutting up shoes, jeans and bed sheets to name a few items found in the tank!

The system included the remote monitoring and alert service which allows the system to be monitored remotely. The illustrations provided show the tank level plotted every hour along with the pump run times.

If there is a fault with the pump, the pit level or the power, an instant message will be sent to a nominated mobile number or email informing the receiver of the problem. This can be acted on before is causes a major issue.

Trends can be recognised over time giving indication of wear on the pumps, valve issues and other performance related issues.

Outcome

The installation of the Landia submersible cutter pumps with the advanced control system has delivered significant operational and financial benefits:

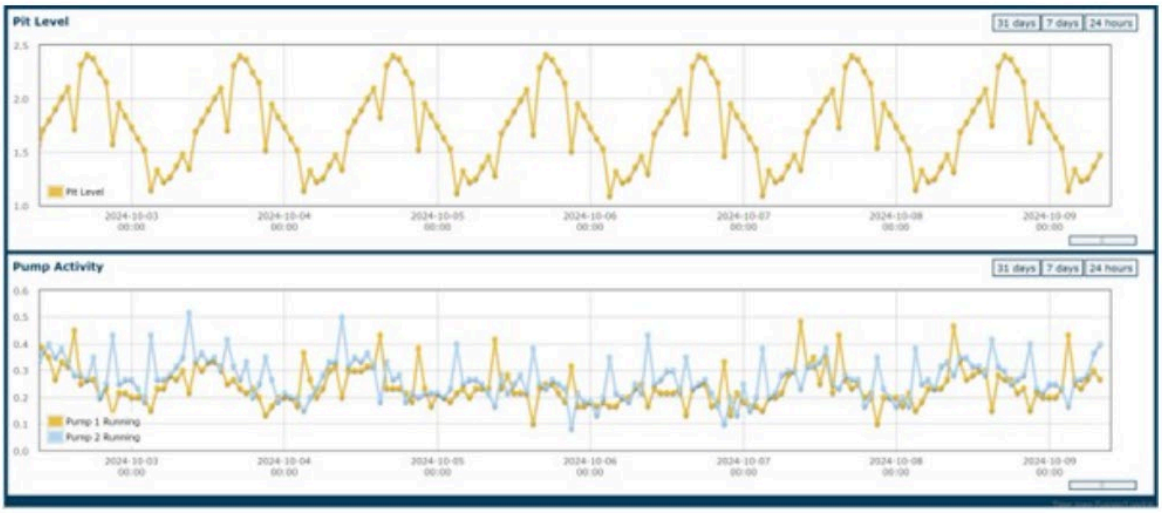
- **Reduced Costs:** An annual saving of three-quarters of a million pounds (for tankers to empty the constant blockages)
- **Minimised Downtime:** Near zero blockages and callouts means less disruption to daily operations.
- **Improved Monitoring:** Upgraded control panel with enhanced alarm visibility, allowing for quicker identification of potential issues.

This efficient solution ensures the hospital can operate smoothly, with fewer interruptions and with better cost management and energy savings.

Our Proserv maintenance contract is now also in place to allow us to service and look after the pumps in the future.

Technical Specification:

- Installed 2 x 15.0kW Landia DG-I 105 submersible cutter pumps with extended knife system.
- Twin control panel and Danfoss inverter drives.
- Radar level control system.
- Skimming function controlled by the advanced software.
- Energy optimisation – the system detects the incoming flow rate and controls the duty of the pump to match.
- Pipe Flushing function.



Pit Level: 1.583 m

Pump 1 Running	●	Pump 1 Fault	○
Pump 2 Running	○	Pump 2 Fault	○
Skimming Active	○	System Fault	○
Pumping Down	○	Pit Low Level	○
Backup Float Active	○	Pit High Level	○
Set Point: 1.600 m		Pit High-High Level	○