BLUE FOOT
unbreakable membranes ™

TREAT MORE FOR LONGER
WITH 50% LESS ENERGY



PROJECT
The Lakes by YOO

LOCATION
Lechlade, United Kingdom

SECTOR
Municipal wastewater

OEM PARTNER
New Forest Solutions

APPLICATION
MBR Replacement

KEY WINS

50%
Lower MBR aeration energy consumption

90%
Reduction in maintenance downtime

380 m^3/ day
Peak wastewater flow treated

Energy and downtime reductions compared with the previous membrane installation.

THE CHALLENGE

Reliable treatment when occupancy changes

The Lakes by YOO is a lakeside residential and holiday estate in Lechlade, in the Cotswolds. Homes, apartments, a spa and a restaurant generate wastewater flows that vary significantly with occupancy.

Wastewater flows ranged from 50–70 m^3/day on weekdays to as much as 380 m^3/day during weekends and national holidays. The treatment system had to accommodate these peaks while meeting strict discharge requirements in a sensitive natural setting.

The existing membrane bioreactor used non-backwashable flat sheet membranes. It struggled with the flow variations, leading to system failures, downtime and increased energy and maintenance costs.

Working with OEM partner New Forest Solutions, **BLUE FOOT** supplied six backwashable IPC® Classic modules to replace the existing membranes. The replacement focused on handling peak flows, reducing maintenance downtime and lowering MBR aeration energy demand.

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A MEMBRANE REPLACEMENT THAT SIMPLIFIES OPERATION

THE SOLUTION

Backwashable membranes in the existing treatment process

Wastewater passes through a fine screen into a balancing tank before biological treatment in aerobic and anoxic zones. The existing non-backwashable flat sheet membranes in the MBR tank were replaced with **BLUE FOOT**'s backwashable membranes.

The membranes separate treated water from the biological sludge. Regular backwashing, combined with occasional chemical cleaning without prolonged chemical soaking, helps control fouling and maintain filtration performance as flows change.

Treated water is discharged to the River Coln through the existing vacuum drainage system.



6 IPC ® Classic modules

Less equipment. Lower operating demand.

One blower instead of two

The replacement membranes require less aeration, allowing one of the two MBR aeration blowers to be taken out of service. This reduced energy use for MBR aeration by 50%.

Biofilter no longer required

Improved removal of suspended solids eliminated the need for the downstream biofilter. The system continued to meet the site's discharge requirements with fewer treatment steps.

Reliability under peak flows

The upgraded installation handled peak flows of 380 m^3/day without the membrane clogging and system failures reported with the previous membranes. Maintenance downtime was reduced by 90%, supporting more consistent operation during weekends and holidays.

THE RESULT

> **BLUE FOOT**'s backwashable membranes enabled The Lakes by YOO to reliably manage peak flows while reducing energy use for MBR aeration and maintenance downtime. The upgrade also simplified treatment by eliminating the need for one of the two aeration blowers and the downstream biofilter.