

CASE STUDY : FLOORING



Introduction

The flooring in the Rapid Gravity Filter beds at one of Scottish Water's treatment works is composed of an IMS Leopold structure, which has an integrated membrane. These were installed in 2005-06, but only lasted six years until they began tripping out due to "**high underdrain pressure**". It was clear that there was an underlying problem in the system.



Solution

Panton McLeod brought their **PM77 biofouling remover** to the table, which has been proven time and again across the water sector. Targeting lances were used to inject the chemical right down to the floor level, allowing the media to be **left in place**. The cleaning treatment on the membrane-based flooring was a **success**. The process has "brought underdrain pressure down from 564mb to 535mb", which has allowed for a **sizeable increase** in flow rate. A successful outcome whilst avoiding the high costs associated with traditional methods.

Investigation

To keep the RGFs in operation the team had no choice but to adjust their flow rate to "1500l/s compared to their 1850l/s design capacity", **slowing and disrupting operations** for some time. It was discovered that the filter bed membrane was being impeded by a build up of Iron and Manganese biofouling; it was determined that this was affecting underdrain pressure. A complete refurbishment would have been **very costly**. Scottish Water decided to come to Panton McLeod for a solution.

Challenges



The team from Panton McLeod effectively solved a number of problems in ensuring the **successful delivery** of this project. One example comes from dealing with the fragility of the filter flooring. Constant **attention to detail** was required when adapting plenum filling techniques in order to **protect** the floor's structural integrity.

Quotes taken from Iain Ross, *Capital Liaison Engineer*

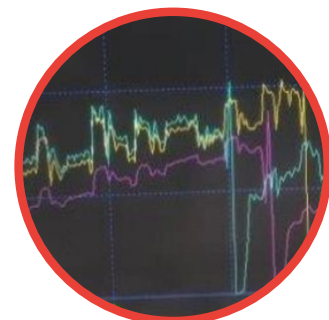
BENEFITS DELIVERED

-29mb

REDUCTION IN
UNDERDRAIN PRESSURE

+250l/s

INCREASE IN FILTER BED
FLOW RATE



REDUCTION IN HEADLOSS