

# Case Study



## MARSH INDUSTRIES SELECTS WARDEN BIOMEDIA FOR UNI:GEM 75PE WITH POLYLOK 525 FILTRATION

Overstone Country Park is situated in 160 acres of beautiful Northamptonshire country-side. The park has the River Nene on its borders. Tourists, campers and locals use the extensive natural facilities for fishing, golfing and recreational pursuits.

A development of private houses for seventy five people on the private Overstone Park had been threatened with fines and possible prosecution by the Environment Agency (EA). The existing sewage treatment plant that had been originally installed was now failing to meet the acquired final effluent standard required by the EA. A number of companies were asked to put forward schemes to rectify the problems.

The successful proposal, put forward by Marsh, utilises the existing plant but as a primary settlement chamber. A separate aeration tank with humus final settlement was added. A continuous activated sludge recycling system was also installed. The final settlement tank was fitted with a Polylok 525 Filter. A Uni:Gem 75PE sewage plant upgrade was installed (complete with high level alarms, kiosks and Bibus Secoh compressors) and the renovation work of the existing tank was completed.

Biomarble was selected from the Warden Biomedica random filter media range to provide ultra-efficient and cost-effective aerobic treatment in the Uni:Gem sewage treatment plant.

With the philosophy of increased surface area, the eco-friendly trickling filter and biological filter media are injection-moulded in recycled polypropylene with specific design features to increase the efficiency of the effluent treatment process.

In a choice of spherical and tube formats, to suit the application, the random filter media provide excellent ventilation to speed-up the aerobic reaction, and also have high voidage to prevent blocking (and the resulting slowing-down) of the wastewater treatment process that might occur.

With purpose-designed features, the media in the Warden Biomedica filter range are an excellent alternative to traditional mineral-based media and are ideal for improved performance in new wastewater treatment plants. In addition they are perfect for overcoming problems in established trickling filter beds. Polypropylene biological filter media of the relevant dimensions can replace all or part of the mineral-based media to improve system efficiency

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where it has become impaired by overloading.

The excellent ventilation and high voidage performance of the Warden Biomarble media make them extremely effective in wastewater treatment applications. They are injection-moulded in polypropylene with specific design features to increase the efficiency of the biological process. Triangular fins increase the total surface area and encourage the formation of the biological films of bacteria, protozoa and fungi which will eat and biologically break down the organic content. The shape of the media has a significant influence on application and must be considered along specific surface area and void ratio. The surface area of media will be covered with biofilm. Attached growth bacteria will function cooperatively with suspended bacteria, thus its efficiency is higher when compared with other systems. The design also ensures high voidage to prevent blocking that might otherwise slow down the process. The serrated edges of the fins enable them to interlock in the filter bed giving excellent mechanical strength.

Steve Boyer, Director at Marsh Industries said, “**Marsh Industries works closely with Warden Biomedica and the two companies have a long established working relationship. Warden’s filter media have always met all of our expectations for efficiency and performance in our wastewater treatment package plants**”.



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