



BRIDGELAND MASTER PLANNED COMMUNITY

ADVANCED FILTRATION SYSTEM PROVIDES DEFENSE AGAINST INVASIVE PESTS

NETAFIM APOLLO™ DISC-KLEEN FILTERS SIGNICANTLY REDUCE DESTRUCTIVE MICROORGANISMS IN TEXAS NON-POTABLE IRRIGATION SYSTEM

PROJECT OVERVIEW

The community of Bridgeland in northwest Houston is no exception to the old saying that Everything is Bigger in Texas. The 11,000+ acre master planned community, one of the largest multi-use developments in Texas, boasts almost every amenity a homeowner could ever need. Hiking trails, shopping centers, a bounty of open green spaces and nearly 1,700 acres of lakes are among the endless activities afforded to the area's residents.

Since its inception in 2006, the community has been widely recognized for its ability to blend conservation, recreation and transportation to create a desirable living environment for residents at any stage of life. Though throughout its 10-year history, the community has not been without its development challenges.

Tricia Brasseaux, Design Project Manager for the Howard Hughes Corporation, developer of Bridgeland, notes that one of the biggest problems the community faced was its ongoing battle with restricted use of its lake water irrigation systems due to clogging nozzles.

In partnership with Netafim, Tricia and her team sought out a solution to keep their pumping systems free of interferences that were costing tens of thousands of dollars monthly to maintain.

CHALLENGES

Bridgeland's non-potable irrigation system lifts water from the community's various reservoirs to provide irrigation for its vast amount of landscaping and turf areas. During the summer months and specifically in periods of drought, the lake levels lower such that large amounts of sediment, algae and microorganisms can interfere with the pumping and irrigation systems.

In its beginning phases of development, Bridgeland realized that traditional irrigation screen filters were not adequate to protect against the harmful effects of its sometimes unfavorable water quality. Bryozoans, more commonly referred to as moss animals, were among the biggest culprits of destruction - quickly growing inside distribution lines and subsequently clogging irrigation nozzles.

BRIDGELAND PROJECT STATS

LOCATION

Cypress, Texas

PROJECT MANAGER

Tricia Brasseaux, Design Project Manager, Bridgeland
Brad Waters, RLA, Area Specification Manager, Netafim USA

DESIGN CONSULTANTS

Brown & Gay Engineers, Inc.
Masuen Consulting, LLC

ISSUES TO ADDRESS

- Clogged irrigation systems due to invasive microorganisms

NETAFIM PRODUCTS USED

- Apollo Disc-Kleen Filters
- Octave Water Meter
- Netafim Controllers

RESULTS

- Maintenance costs savings more than \$100,000 annually
- Irrigation system free of invasive microorganisms
- Significantly less wear and tear on irrigation equipment

CHALLENGES (CONT.)

Furthermore, the seeds of the highly invasive Asian Clam were being pulled into the systems and eventually growing into mussels that could not be easily flushed out. In many instances, Bridgeland had to abandon using their drip irrigation system because of the clogging issues which negatively impacted their efforts to increase irrigation efficiency through drip irrigation.

“We struggled for nearly three years to get the problem under control,” said Brasseaux. “We tried everything from strainers, filters and flushing the lines - but no technique thoroughly rectified our issues.”

NETAFIM SOLUTION

Brad Waters, Area Specification Manager for Netafim USA and also a resident of Texas, notes that even the most advanced filters struggle to reduce invasive microorganisms because of their small size.

“In the case of Bridgeland, we had species that were so tiny that typical screen filters and other media filters just couldn’t capture what was coming in,” said Waters.

The solution proposed by Waters was the installation of the Apollo™ Disc-Kleen Filter, a system typically used in agricultural irrigation practices but with equal benefits in landscape. Bridgeland however, wasn’t immediately sold on the concept. Even though Brasseaux and her team were impressed with Netafim’s long and proven history in the irrigation industry, there was some hesitation to try yet another method of filtration.

“Since we had tried almost everything, we were skeptical at first about investing in the Netafim system,” said Brasseaux. “We sat through numerous presentations and had several discussions, but we wanted to see the system in action.”

Recognizing the need for this reassurance, Netafim hosted Brasseaux and her team at the headquarters for Netafim USA in Fresno, California. During the visit the Netafim team showcased three local operations where Apollo Disc-Kleen Filters had effectively reduced invasive species in poor water quality situations that were arguably worse than what Bridgeland was battling.

“Because of the failure of their old systems, we wanted to expose them to the product firsthand,” said Alex Nell, Product Manager for the Apollo Disc-Kleen Filter system. “Given California’s highly challenged irrigation space, we knew an in-person visit made the most sense.”

The visit didn’t take long to make an impact on the Bridgeland team.

“I was shocked to discover the level of cleaning that was accomplished with the Apollo system from some of the worst water I’ve ever experienced,” said Brasseaux. “The experience really showed us the long-term, sustainable solution for our operation.”



Netafim Apollo Disc-Kleen Filters (above) and Controller (bottom left).

RESULTS

The existing two irrigation pumping stations at Bridgeland were retrofitted with the Apollo Disc-Kleen Filter system. A third pumping station was in the process of being built and was also completed using the Apollo system. Just weeks after the installation(s), the results were easily recognizable.

Brasseaux and Waters both note that the pumps and irrigation lines are now virtually free of the intrusive pests that Bridgeland had long battled. Today the pumping stations only require a checkup every 3-4 months to make sure that everything is operating efficiently and accordingly - a dramatic change from the once-a-month cleanout process that existed with the prior filtration systems. As an added layer of precaution, a chlorine injection system was also added to the pumps to help temper the growth of microorganisms. Normally such chemicals would be corrosive to pump systems and filters, but because of the synthetic materials that make up the Apollo Disc-Kleen Filter, there is no damage caused by chemical injection or organic materials in the water.

Bridgeland plans to build 12 more pumping stations, all equipped with the Apollo Disc-Kleen Filter system to ensure minimum maintenance and maximum efficiencies. Furthermore, as Bridgeland continues to build out its master plan, which is slated to be completed in 2045, the use of more efficient irrigation systems will be an integral part of development.

“For Bridgeland, we definitely see a bigger benefit beyond just filtration,” said Waters. “We want to help make sure the community is utilizing the benefits of all our Netafim products, especially drip irrigation.”



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