City Pools Benefit from UV Filters

Portland Parks & Recreation has installed UV filters on all Portland City pools.

Purchasing Green

In 2006, Portland Parks & Recreation installed an ultraviolet (UV) filter at the Mt. Scott Community Center's indoor pool to address high levels of chloramines in the water. Although chlorine is an effective disinfectant, it reacts with organic material in pools (such as perspiration, body oil, and urine) to create combined chlorine, or chloramines. Chloramines are responsible for the bleach-like odor, eye and skin irritation, and respiratory problems often associated with chlorine. The UV filter, which is a supplement rather than a replacement for chlorine, uses light to destroy offending chloramines.

Benefits

Within 24 hours of introducing the UV filter, the chloramine concentration of Mt. Scott's pool dropped from 2 ppm to 0.3 ppm—an 85 percent reduction. This dramatic decrease in chloramines has significantly improved water and air quality at the facility, creating a healthier environment for swimmers. Since chloramines are also responsible for the corrosion of unpainted metal surfaces—such as handrails, ladders, and a facility's heating, ventilation, and air conditioning systems—costs associated with the upkeep of the pool are reduced.

The UV filter replaces more resource-intensive methods of controlling chloramines. Superchlorination, the standard practice of getting rid of unwanted chloramines in pools, involves adding ten times the amount chlorine present in a pool and adding more chemicals to bring the chlorine concentration back to normal.

In addition to reducing chloramines, the UV filter is adept at killing chlorine-resistant pathogens such as bacteria and viruses. Cryptosporidium, or "crypto," is one of these pathogens, an intestinal parasite that is increasingly becoming a concern for swimmers. UV filters sterilize 99.9 percent of crypto, significantly lessening the risk of infection

Cost

Adding a UV filter costs about $30,000-$40,000 per pool. Although expensive, Portland Parks & Recreation feels the gains in swimmer health are well worth the additional cost. The UV system is virtually maintenance-free, requiring only an annual replacement of its light bulb, which costs about $2,200.

Performance

The improvement in water and air quality at indoor Portland pools has been significant, and Portland Parks & Recreation believes this attracts more swimmers to its pools.

At a glance –

Who –

- **Portland Parks & Recreation**

Product –

- **UV filter for indoor pools**

Cost –

- **$30,000-$40,000 per pool**
- **Reduces maintenance costs by preventing corrosion of facility**

Benefits –

- **Increases water and air quality**
- **Replaces more resource-intensive options**
- **Reducers swimmers' exposure to bacteria and viruses**

"Using UV filters to sanitize pools is common in Europe, and Portland Parks & Recreation's indoor pools are some of the growing number of pools in the U.S. that are benefiting from this technology. The improvement in water and air quality has been significant."

Nancy Roth,
Aquatic Program Supervisor,
Portland Parks & Recreation

Their experience has been so positive that they have since installed UV filters at all City-owned indoor pools: Mt. Scott's lap pool and at the Southwest Community Center's two pools in 2007, the Matt Dishman Pool in 2008, and the Columbia Pool in 2008. The East Portland Community Center Pool also included a UV filter when it was built in 2009. Any proposals for future indoor pools will include this technology.

Lessons Learned

Pools outfitted with UV filters have generally been associated with a reduction in chlorine use. Portland Parks & Recreation, however, has found that the UV filter not only reduced the amount of chloramines in the water, but also the amount of free chlorine (i.e. chlorine that has not reacted with organic matter and is "free" to sanitize). Chlorine has to be added more often to make up for the chlorine being "burned" off by the UV filter.

According to Portland Parks & Recreation, UV filters have been a wonderful addition to the City's pool system. For others looking to add UV filters to their indoor pools or spas, they advise to get all costs estimates from the sales reps, including costs for servicing and part replacement, before taking the plunge.

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About Portland Parks & Recreation

Portland Parks & Recreation provides care to over 10,000 acres of parks and natural areas, and offers thousands of programs for all ages at its community centers, swim pools, and other recreation facilities.

For more information: *Nancy Roth, Aquatic Program Supervisor, Portland Parks & Recreation, 503-823-5102.*