

Water Reuse Essential for New Multi-Use Development Projects



With ongoing population growth and urbanization, increase in the development of new residential houses, private properties and recreational facilities outside the city boundaries, has created a need in new sustainable water management approaches. Many existing green belts, farm lands and Golf Courses are being developed with limits to resources to draw from and therefore, these developments have to come up with innovative solutions to their various constraints and sustainability challenges. In particular, golf courses face resource constraints related to irrigation, land footprint and isolation from municipal systems. In some instances, their locations are close to precious natural features, making growth and resource management a larger challenge.

Water Resources and Management

One particular challenge involves water management on golf courses and multi-use properties where residential developments are combined. In these instances, the courses are not able to withdraw from a municipal water supply system as it is not feasible economically to be connected via piping.

This type of growth and multi-use development has become increasingly more common and popular in the larger cities where the land value appreciation has created a financial incentive for the development. It is therefore imperative to look at ways to develop onsite and distributed neighborhood-scale approaches to water management, including drinking water supply, irrigation and wastewater treatment.



Integrated Water System Solutions

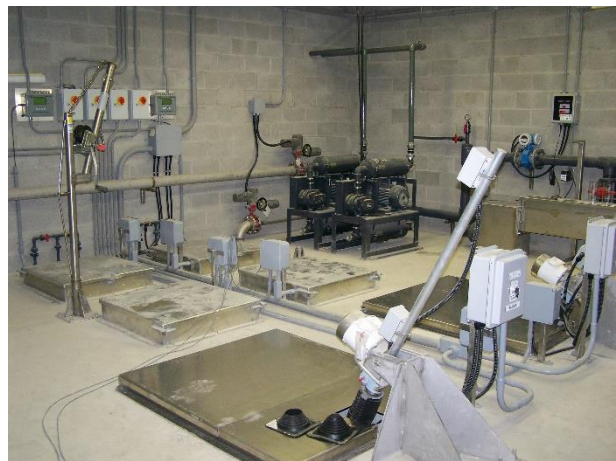
Utilizing a complete design approach, developments are able to integrate proper planning and implementation to build water systems for their respective properties. These communities are therefore able to take advantage of complete potable water treatment systems, pumping and piping systems, wastewater treatment and irrigation as their needs require.

Not only do these solutions allow for compact communal drinking water filtration systems, wastewater reuse and irrigation technologies, but they help reduce the overall footprint of these communities and golf courses, which are otherwise thought to be high-volume water users and resource extractors.



Case Studies

Recently, Aslan Technologies has been engaged in multiple development projects by progressive communities and developers in North America to provide integrated water treatment solutions to these developments and several Golf Courses' re-developments such as Westhill, Whiteville and Wyndrance and many other Club Link Golf Courses.



The West Hill golf course, has been a sustainable development that included a golf course, with a clubhouse and maintenance facility, in addition to 75 homes which all required clean drinking water and subsequent water treatment. For the golf course alone, 100 m³ a day of water was needed for irrigation. Utilizing a packaged water treatment and Sequencing Batch Reactor (SBR), the golf course and development was able to increase its capacity of clean water supply to 170 m³ a day.

Another example of a progressive and forward thinking group is the Whiteville golf course, where the developer built a community center and a shopping complex in addition to rebuilding a new clubhouse. The growth of this particular development puts constraints on their water resources, which are managed on a development-level, rather than supplied by the municipality. The capacity for this golf course was increased to 30 m3 a day. Wastewater is then collected and treated utilizing using a Sequencing Batch Reactor (SBR) as their one-stop-shop technology solution. This treated water is then collected in a centralized pond, which is then utilized for irrigating the courses. This demonstrates an integrated, compact solution from start (drinking water) to finish (sewage treatment and irrigation) for a golf course facility.

For the Wyndrance development, tree relocation saw the successful transplantation of hundreds of trees into the landscape of the new golf club. This ‘least disturbance’ golf course aimed to incorporate and preserve the natural features of the land as it is next to the ecologically significant Green Belt area.

These types of communal and integrated technology solutions are a best fit to integrate into their plan as it is able to filter wastewater from the community’s onsite wastewater treatment plant to be reused for advanced golf course irrigation.



“We are integrating technologies and systems that are proven to minimize any environmental impacts, in order to preserve both the natural functioning of the Moraine and its beauty” – Daniel Guizzetti, President of Empire Communities.

Next Steps and Future Applications

As more communities and golf courses look to expand the capacity of their properties, both in terms of occupancy and water usage, they will look to creative, sustainable and integrated approaches to managing their water and wastewater on site. These types of compact, small footprint and customized solutions will enable expansion and provide potential for more sustainable growth and development in future.