

TYPHOON TEXAS HOUSTON



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Pumping Up Sustainability Efforts at Water Parks

From landscaping practices to reducing energy consumption, water park operators and suppliers offer tips to improve sustainability

by *Lisa A. Beach*

AS THE WORLD MOVES TOWARD A GREENER FUTURE, water parks are increasingly stepping up their sustainability game. The primary goal, of course, is to reduce parks' environmental impact. But beyond that, embracing sustainability delivers a host of benefits, from saving money and time to enhancing public image.

"The decision to invest into green practices has helped our operation become more efficient and lower operating costs," says Evan Barnett, president and general manager at Typhoon Texas. "In my experience, new construction is the easiest way to incorporate new sustainability efforts," he says, noting that more established parks are typically on a slower adoption path. "But as equipment needs to be serviced or replaced, that's the time when you can switch to more green practices."

While budget constraints might pose a challenge for implementing eco-friendly practices, every water park can make a difference—both big and small.

Start with Sustainable Planning and Design

Whether building a water park from scratch, adding a new ride, or retrofitting an existing attraction, consider the environmental impact. For instance, think about the deck materials, says Dawn Kirby, marketing manager at WhiteWater, a manufacturer of water attractions for more than 40 years. For example, WhiteWater's recommended aquatic safety flooring system, Life Floor decking, helps mitigate heat absorption and associated evaporation. Kirby says designing strategic shade integration helps reduce water evaporation and mitigate temperature impacts. Encouraging guests to rely more upon public transportation and shuttles for water parks located in an urban setting can help decrease greenhouse gas emissions.

Tap into Local Resources

While attractions might use suppliers from around the world (especially for highly specialized materials and equipment), sourcing local and using community goods and services whenever possible can enhance sustainability practices, such as tapping local farmers, honey producers, and dairies to source food and beverage products. This helps with supply chain efficiency, lessens an attraction's carbon footprint, and supports the local economy, says Kirby.

Use Sustainable Landscaping Practices

"On many of our outlying areas, such as under coasters and on our perimeter berms, we've begun to use a native wildflower seed mix instead of turfgrass," says Gaylee Gillim, general counsel at Kentucky Kingdom in Louisville, Kentucky. Besides being friendly to bees, butterflies, and other pollinators, native wildflowers save on labor and water costs because they

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At Kentucky Kingdom, native wildflowers save on labor and water costs, and once established, they require little to no supplemental irrigation.

only need to be cut back once a year. And, once established, they require little to no supplemental irrigation.

For other areas, the park closely monitors water needs and uses irrigation only as a supplement to Mother Nature, says Gillim, turning it off when soil is adequately saturated.

In the native wildflower areas, Kentucky Kingdom uses no insecticides or herbicides, which can be toxic to some guests. When it does use chemicals, they're applied as needed with a more targeted (rather than broad-spectrum) application. "Whenever possible, we use more natural products," says Gillim, noting the park avoids neonicotinoids, as they're detrimental to bee and bird populations.

Kirby points out that enhanced landscape development acts as carbon absorption and provides natural shade. Plus, sustainable solutions can reduce irrigation needs, enhance biodiversity, protect native flora, and reduce maintenance.

Reduce Energy and Water Consumption

"During our early phases of design, we knew one of our most impactful areas on sustainability would be with our water and power," explains Barnett. Typhoon Texas incorporated top-of-the-line filtration systems from Neptune Benson. "This saved up to 90% water waste through backwashing and water replacement in the pools, 50% less energy consumption, and 30% less chemical usage," says Barnett.

Typhoon Texas also uses variable frequency drives (VFD) on all its pumps to help control energy consumption. Plus, it uses aerators on bathroom sinks to reduce water usage and replaces standard toilets with low-flow or dual-flush versions.

Another energy saver at the park? Swapping out traditional lighting for energy-saving lights with sensors to automatically turn them on or off, or brighten and dim.

Kirby advises reusing as much water as possible by

minimizing all the ways it can be lost. "You can't eliminate water loss, but smart design can help," she says. How? By requiring less water to begin with and then doing a better job of preventing splash-out. This reduces a water park's environmental costs and saves money too.

Andreas Andersen, CEO of Liseberg in Sweden, is currently planning a new hotel with an indoor water park named Oceana, slated to open in early 2024. "We're doing our best to implement energy-saving techniques, most notably with efficient heat pumps, exchange systems for wastewater, and a large-scale solar panel system," says Andersen.

Establish Recycling Programs

With millions of plastic bottles and cans being thrown away in water parks, establishing a guest-participation recycling program can seem like low-hanging fruit. "We have guest recycling stations throughout the park and a dedicated cardboard recycling program," notes Barnett.

And how about all the natural debris that accumulates from landscaping? "Instead of putting it in a dumpster, it's shredded and composted," says Gillim. "This saves on labor costs because no one needs to constantly load and compact the dumpster to make space. And it saves a ton of money in dumpster/disposal fees."

Don't Overlook Eco-Friendly Policies

Set expectations at every level of the company with sustainability-focused operating policies. Typhoon Texas trains all its employees on specific energy consumption practices to minimize waste, says Barnett. For example, in its hiring processes, the park uses technology to minimize on-site use of utilities.

"On the operations policy side, one of the main challenges we face today is reluctance to change," notes Barnett. As a result, the park created a campaign around policy changes to establish long-lasting operational compliance. "We've found establishing the why up front has helped tremendously," he says.

Partner with Like-Minded Vendors and Organizations

Water Safety Products Inc.'s recycled life-guard chairs, shoe drops, height sticks, and other furniture are examples of sustainable products.

"Our operational and hardy deck furniture are all manufactured from high-density polyethylene (HDPE2), made from post-consumer and post-industrial milk containers," explains Marah Rodriguez, vice president of business development at Water Safety Products Inc. "Purchasing just one lifeguard chair prevents 650 milk containers from reaching the landfills." Plus, with a life expectancy of 20-plus years, these products require no real maintenance beyond cleaning. "This means the maintenance department spends less hours repairing or replacing products typically made of wood," says Rodriguez.

"At ProSlide, we've demonstrated a commitment to be conscientious of our impact on the environment through numerous innovations like our next-generation Blast propulsion," says Ray Smegal, the company's chief commercial officer. Unlike traditional sheet flow technology, Blast utilizes multiple water nozzles from the top to the bottom of the water coaster's upward booster zones. "This is the gold standard for modern water propulsion technologies and significantly reduces water flow and power," explains Smegal.

Sustainable Construction Tips

Consider these sustainability ideas when undertaking new construction:



Plan to minimize energy use, making new and renovated buildings less expensive to run.



Harvest rainwater to aid in flushing toilets after storms.



Bring fresh air inside, while avoiding materials that create harmful emissions.



Incorporate natural light.




Consider sound insulation to help in recuperation during a busy day.



Design additions to be flexible—where a retail space today can become a food service location in the future, thus avoiding the need to demolish or rebuild.

Source: The World Green Building Council

Other key ProSlide innovations include its water coaster's Eco-Mode, a propulsion software system that powers waterjets only when a raft is present. This leads to energy conservation and reduced operating costs. The manufacturer also optimized its water coasters with highly engineered nozzles that can reduce pumping requirements by 60% during the operating day.

If a water park is not sure where to start when it comes to best practices for increasing sustainability, Andersen advises, "Use existing standards, such as ISO 26000 (focusing on social sustainability), ISO 14001:2015 (environmental management system), and ISO 20121:2012 (event sustainability management systems). These will take you far." 

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