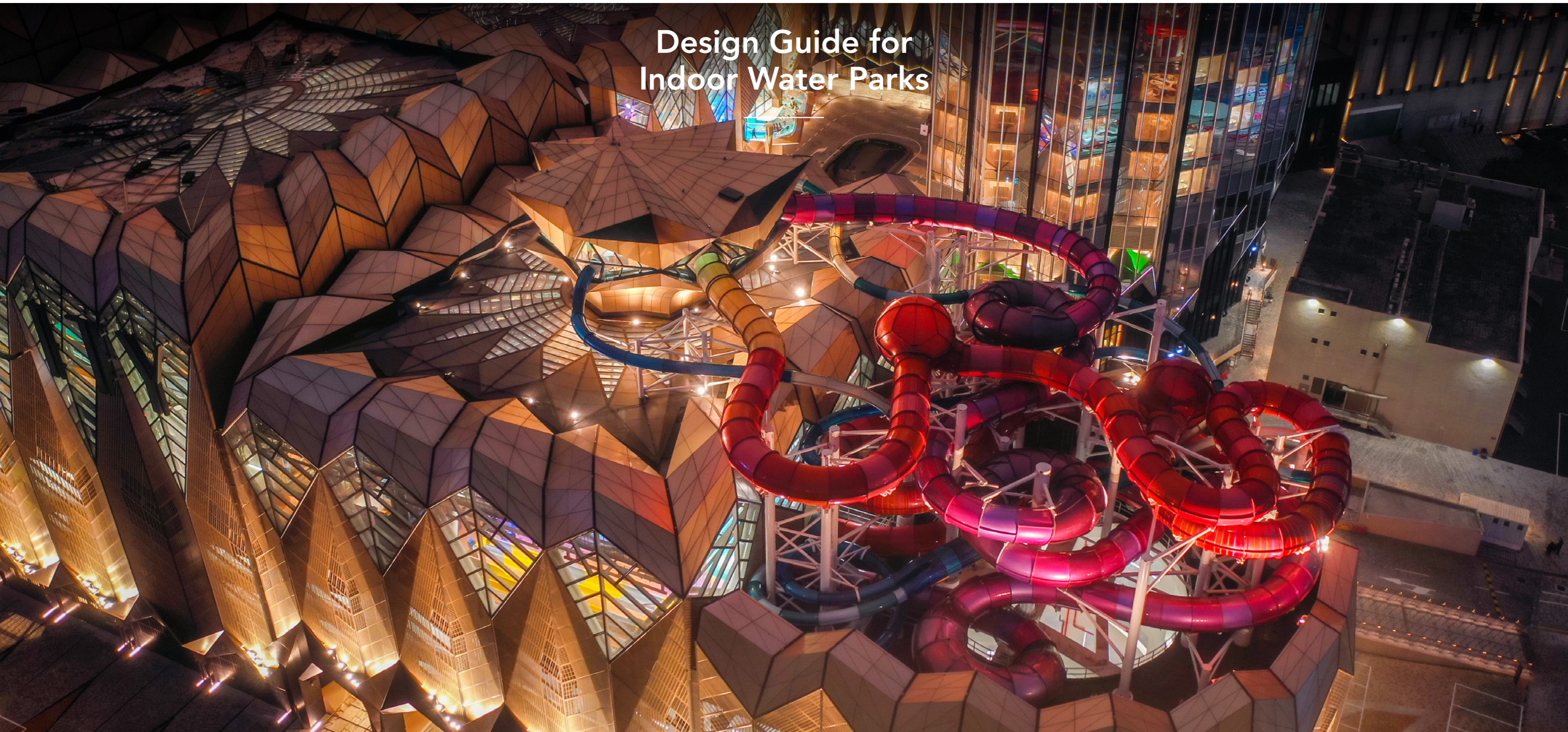




WHITEWATER®

Entertain the Possibilities

Design Guide for Indoor Water Parks





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Epic Waters Indoor Waterpark - Grand Prairie, USA

Finding the Right Partner

At WhiteWater, we understand not all water parks are created equal. There are several factors that determine if a park will be successful or not—some within your control and others, not. With over 40 years of experience designing and supplying indoor water parks all over the world, we understand the complexities of developing for these unique spaces.

Our team of architects, designers, and engineers have carefully crafted design solutions and attractions proven to work in these demanding environments, empowering parks to optimize the things they can control—because the manufacturer you choose is as integral to the efficient operations and long-term viability of your park as your location, staffing, and management. To put you in the best position for success, our team will merge our industry expertise with local market intelligence to ensure your venue meets the local regulations associated with these unique venue types.

To help you along this journey, we have created this guide to walk you through your planning and design considerations. We invite you to dream big in small spaces as we showcase our portfolio of attractions that have been developed for the different types of indoor water parks around the globe.



Rainer Maelzer
President, WhiteWater GmbH



SlideWheel® (Mt. Olympus Water Theme Park - Wisconsin Dells, USA)

The Blueprint for Success

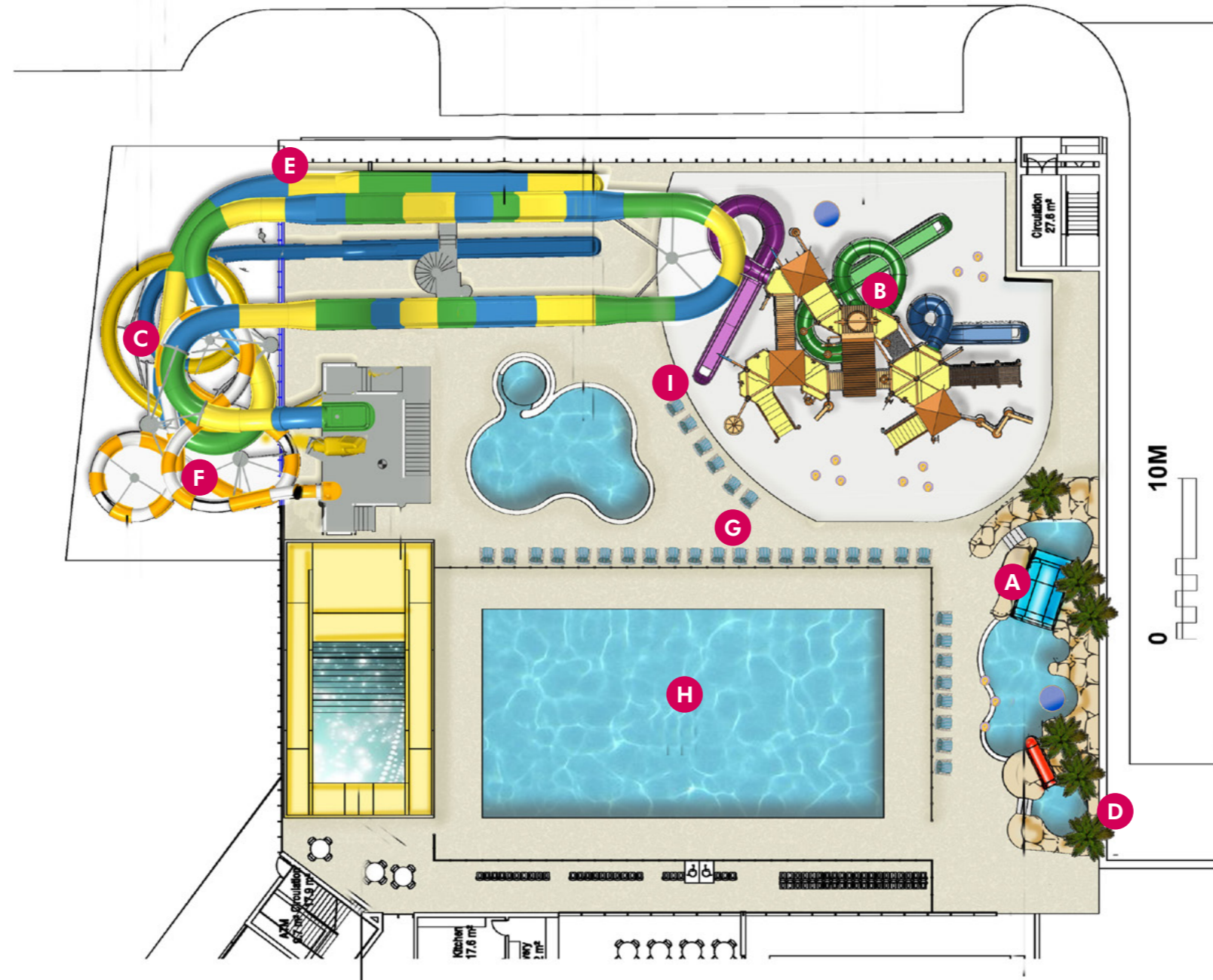
During the feasibility analysis, your park's key demographics and attendance projections were identified. Now comes the design and master planning where you will determine how to meet their expectations by developing your park's layout and attractions.

With just as much variability as outdoor parks, indoor water parks come in all shapes and sizes for diverse audiences and needs. Will you park cater to locals or tourists? Is it a standalone or attached to a hotel? Will your guests be young families or a mix? Your answers to these questions will determine the look and feel of your park.

We've included three WhiteWater designs from different park categories to show how available space, demographics, and attendance will determine the layout and ride mix for an indoor park. You'll note how we are able to overcome tight spaces by weaving slides around other structures, placing attractions outside of buildings, and getting creative within height limitations.

Community Centre

Under this business model, the focus is on bringing back the guest multiple times as they target the locals living in the surrounding areas. To be successful, the team recommend making the park easy to navigate, with rides that encourage repeat ridership and interactivity.



DESIGN TIP: aquatic play structures can help keep the guest visit fresh and exciting as they offer endless pathways of explorations for new experiences every time.

- A** Kid's Slides to entertain tiny tots
- B** AquaPlay for interactive experiences
- C** Slides taken outside of the building to increase floor space
- D** Use of plants to create more natural environment
- E** Inner tube slide for shared experience
- F** High speed body slide for older kids
- G** Passive capacity lounge chairs
- H** Swimming pool to help absorb park capacity, create multi-functional venue
- I** Lounge space for parents within arm's reach

Standalone

Because they aren't tied to another revenue source, it's important for standalone indoor water parks to have something unique. Whether that's a big, iconic attraction or theming that transports them into an entirely new destination, it's important for these venues to have something unique to 'put them on the map' and drive year-round attendance.

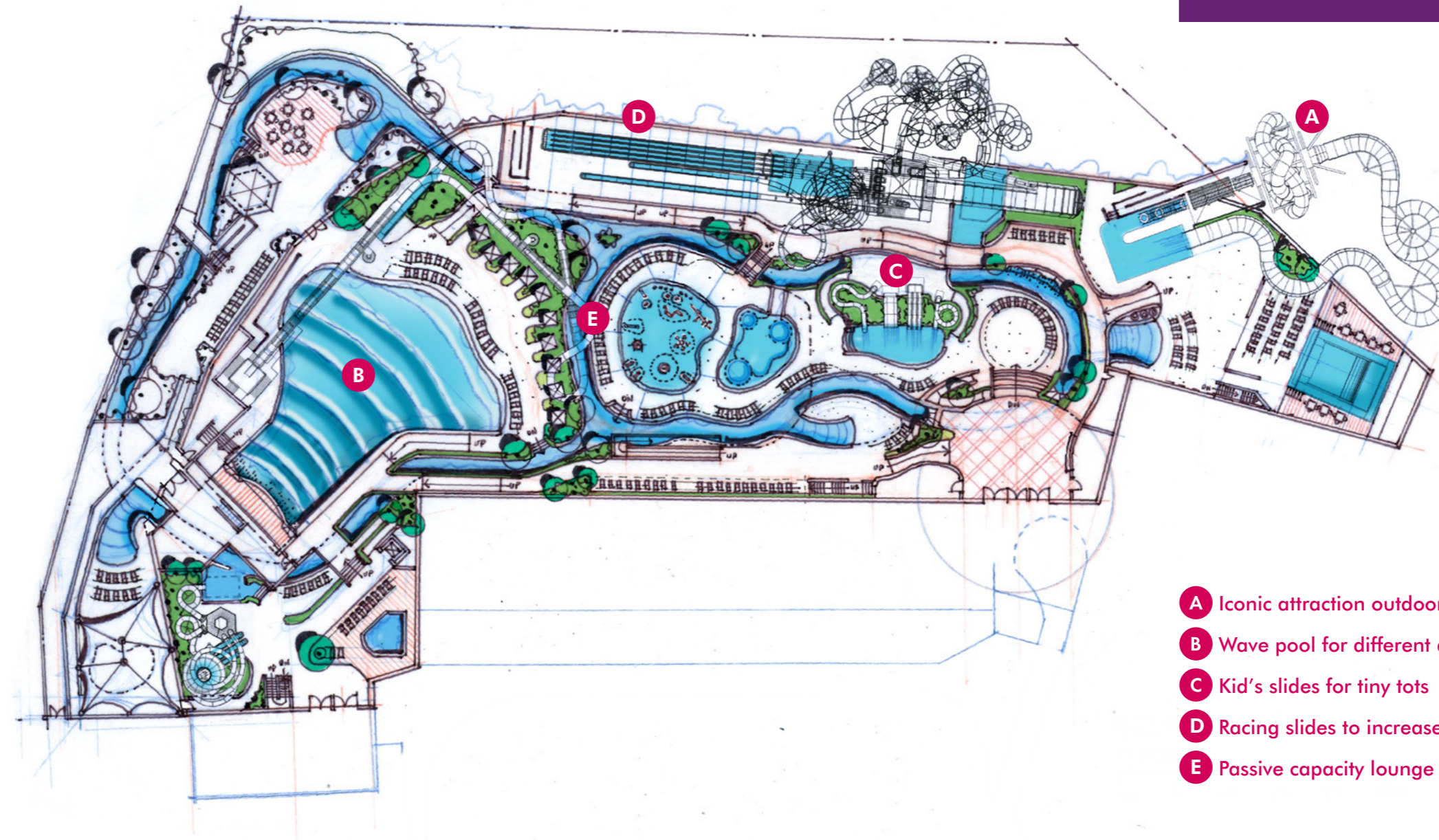


The iconic attraction doesn't have to be indoors! Place it outside of the building's four walls to maximize floor space and increase overall marketability and help drive traffic.

- A** Big iconic attraction to wow guests
- B** Thrill slides to capture tricky teen audience
- C** Wave pool to support passive capacity
- D** AquaPlay to create interactive experiences and encourage vertical play
- E** Racing water slide to encourage repeat ridership
- F** Theming in entrance continued into park to immerse guests as 'getaway'
- G** Higher viewing decks to engage guests not on rides
- H** Cabanas for added revenue
- I** Family raft rides to create shared experiences
- J** Use of trees to create more natural environment

Hotels & Resort

The third business model commonly found in indoor water parks is the hotel and resort. Focusing on bringing guests in and keeping them on-site longer, these venues should prioritize rides that are going to encourage guests to ride again and again either sharing an experience together or creating a sense of competition.



With two different business models, hotels need to decide if their operations are limited to resort guests or open to day guests as well. After your audience and attractions are decided, it's important to consider the F&B offering as this can help to keep people in the park longer and increase spend.

- A** Iconic attraction outdoors to drive attendance
- B** Wave pool for different demographics to spend time together
- C** Kid's slides for tiny tots
- D** Racing slides to increase dwell time
- E** Passive capacity lounge chairs



Overview (Water Sports Palace Luzhniki - Moscow, Russia)

Elements of Good Design

Guest Circulation

Before a layout can be made, water park designers need to give consideration to how they are going to encourage guest circulation and keep visitors in the park as long as possible. This is achieved through the delicate balance of active and passive capacity. While active capacity in water parks refers to the maximum number of guests that can actively participate in water-based activities at any given time, passive capacity refers to those not on an attraction but still in the park.

Passive Capacity

At WhiteWater, we design our attractions, and the spaces around them, to encourage guests to linger and watch other riders. For example, our aquatic play structures have clear sight lines so parents can relax from the sidelines while our FlowRider products provide ample entertainment and room for food and beverage so guests can sit and snack while enjoying the show of watching guests learning to surf. This helps to create a layout that accommodates guests across age groups, while at the same time achieving a fine balance between maximizing capacity and creating a steady flow of traffic from one attraction to another.

Here's a list of passive capacity spaces to remember during your planning:

- Areas where parents can sit within an arm's reach of their children
- Places where spectators can watch people on rides
- Mezzanines that give quiet areas for guests to relax
- Lounge chairs and cabanas
- Seating for F&B
- Locker & changing rooms



To learn more about how we design for capacity and the role it plays in guest satisfaction, download our Indoor Water Park brochure [HERE](#).



SlideWheel® (Mt. Olympus Water Theme Park - Wisconsin Dells, USA)

Ride Selection

Depending on your intended demographic, your ride mix should reflect the interests of that segment. To support you in your ride selection, we have created this framework to help you consider how you can get the most bang for your buck in optimizing revenue per square meter.

HIGH/INSTANTANEOUS CAPACITY

SHARED EXPERIENCE

HIGH-THRILL

KIDS' SLIDES

Wave Pool	Extreme River	AquaPlay	Blaster Battle	Whizzard	SlideWheel®	FusionFortress
Boomerango	Manta	Constrictor	Bowls	Rattler	Tailspin	Parallel Pursuit
Master Blaster	Flatline Loop	AquaLoop	AquaTube	Freefall	Speed Slide	High Speed AquaTube
Ramp Slide	Mini Open Flume	Mini Boomerango	Mini Body Slide	Mini Multi-Lane	Mini Rattler	Mini AquaSphere



OUR LINEUP OF ATTRACTIONS



Tailspin (Studio City Water Park - Macau, China)

Featuring: Inner Tubes

Coming in one to two person configurations, inner tube water slides are an industry staple. Full of tight corners and high-banking turns, these slides are highly configurable and can be enclosed or open with fiberglass colour patterns and sound and light finishes. Removing the need for a vehicle conveyor, inner tube water slides are a great option for parks looking to save some money and space in their ride selection while still creating excitement for guests.



Families, preteens, tricky teens (minimum height of 1.1 m | 42 in)



CONSTRUCTOR



TAILSPIN



RATTLER

CASE STUDY:

Andersontown Leisure Centre

Belfast, Ireland



Type	Community centre
Year opened	2020
Footprint	1,605 m ²
Attractions	Open & Enclosed, Pool Sider, AquaTubes, AquaDrop, Flatline Loop, Master Blaster, AquaPlay 1050, AquaSpray Toys, Kids' Ramp Slide



Slide Tower



Boomerango (Guangzhou Sunac Water Park - Guangzhou, China)

Featuring: Wall Rides

One of the most common targets for indoor water parks are families. To accommodate the entire unit, it is important for indoor water parks to consider a family raft ride that takes 3 to 6 guests at a time to offer medium to high thrills, perfect for guests of all ages. Creating zero-gravity and extreme Gs, wall rides make a big impression in your park, anchoring your park and featuring heavy on social media. These attractions can be placed inside for eager spectators to watch in anticipation or enclosed outside of the park's walls to help extend the indoor floorspace while acting as a billboard to pull people in as they drive by.

If you are looking for a centerpiece for your water park to create an iconic attraction while bringing the entire family together, these are the top rides for you.



Families, preteens, tricky teens (minimum height of 1.1 m | 42 in)



CASE STUDY:
Akvamir
 Novosibirsk, Russia

Type	Standalone water park
Year opened	2017
Footprint	40,000 m ²
Attractions	Constrictor, AquaSphere, AquaLoop, Pool Sider, AquaTube, Ramp Slide, Space Bowl, Manta, Giant AquaTube, AquaPlay 1050, 18m Wave Pool



Manta



Super Bowl (Spa World - Osaka, Japan)

Featuring: Bowls

Bowls make a great addition to your ride mix by delivering a memorable centrifugal orbiting ride experience while also creating an attention-grabbing focal point in your park—without taking up space. From the Super Bowl to the Space Bowl, our series of Bowl water slides provide prime viewing opportunities as eagerly awaiting guests can watch riders circling below, building anticipation for the fun which is soon to come.



Families, preteens, tricky teens (minimum height of 1.2 m | 48 in)



CASE STUDY:
Guangzhou Sunac Indoor Waterpark & Guangzhou Sunac Land Park
 Guangzhou, China 

Type	Water & theme park
Year opened	2019
Footprint	20,000 m ²
Attractions	Galaxy Bowl, Mini Multi-Lane, AquaTube, Open & Enclosed, Pool Sider, Whizzard, AquaLoop, Flatline Loop, Constrictor, Open Flime, AquaSpray, Wave Pool, Boomerango, Abyss, AquaPlay 1050, Wave River



Galaxy Bowl



Master Blaster (Studio City Water Park - Macau, China)

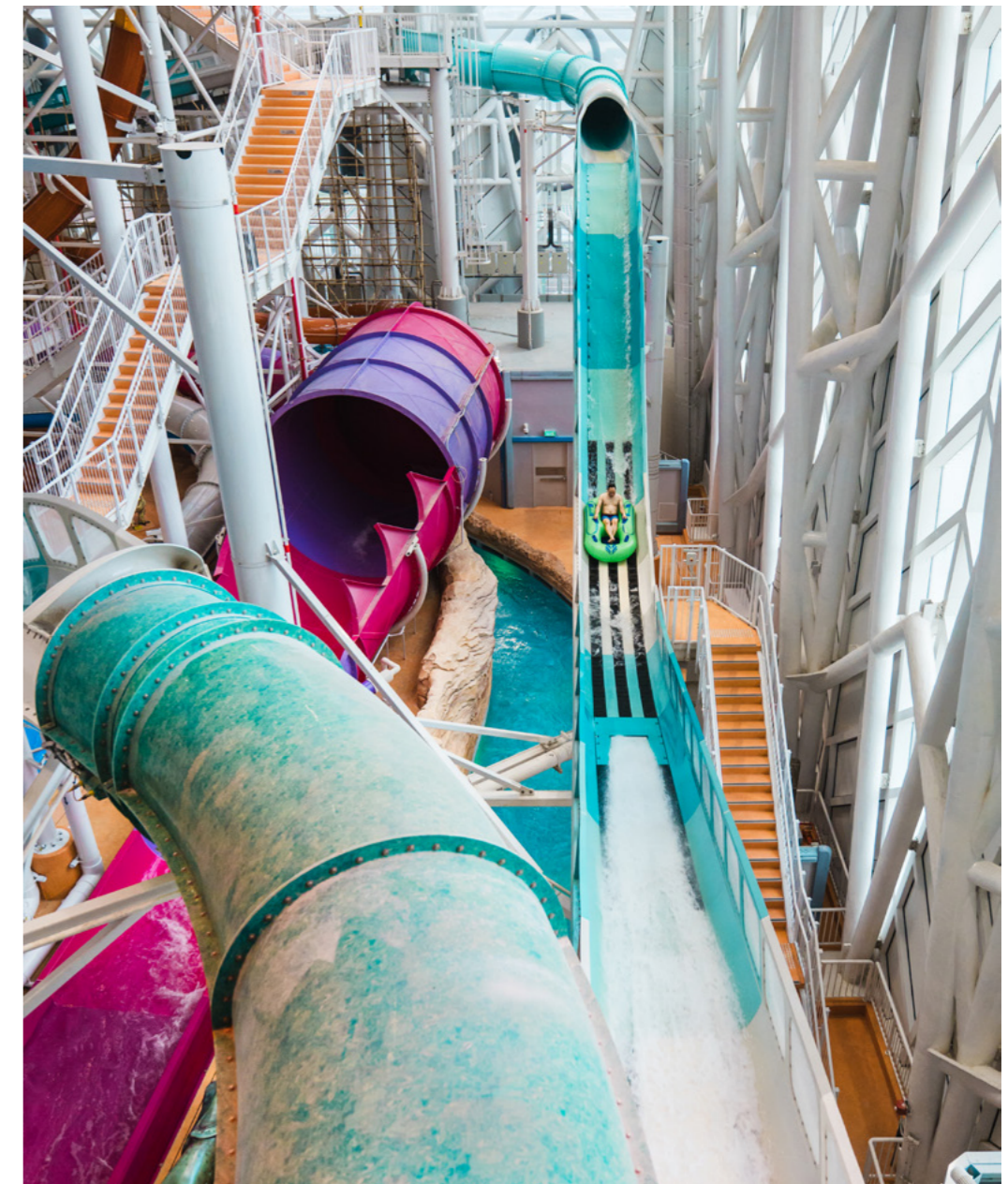
CASE STUDY:
Studio City Waterpark
 Macau, China [www.](#)

Type	Hotel water park
Year opened	2023
Footprint	10,500 m ²
Attractions	AquaPlay 1050, Drop Slide, Master Blaster, Parallel Pursuit, AquaSphere + Rattler Fusion, Constrictor, Tailspin, Flatline Loop, Constrictor + Rattler Fusion

Featuring: Blasters

Easy to adapt to a building's architecture, blaster water slides can help to add energy to your park with uphill blasts and zero-gravity sensations. The Master Blaster can be designed with a flexible slide path, to snake around a building's columns or existing attractions. With its potential to have a shorter tower than traditional water slides of equivalent slide length, blaster water slides like the Master Blaster can be a great option to deliver high entertainment value where height constraints are a concern.

 Families, preteens, tricky teens (minimum height of 1.1 m | 42 in)



Maser Blaster





Parallel Pursuit (Studio City Water Park - Macau, China)

Featuring: Racing Slides

Creating a sense of competition, racing water slides like the Parallel Pursuit or Multi-Lane Mat Racer keep guests in the park longer as every member of the family will want to face off against one another and take home the winner's title. With multiple lanes, racing slides entice guests to try every lane out to see which is the fastest, increasing their dwell time and helping to absorb crowds, boosting your overall throughput.



Families, preteens, tricky teens (minimum height of 1.1 m | 42 in)



PARALLEL PURSUIT



WHIZZARD



MULTI-LANE MAT RACER

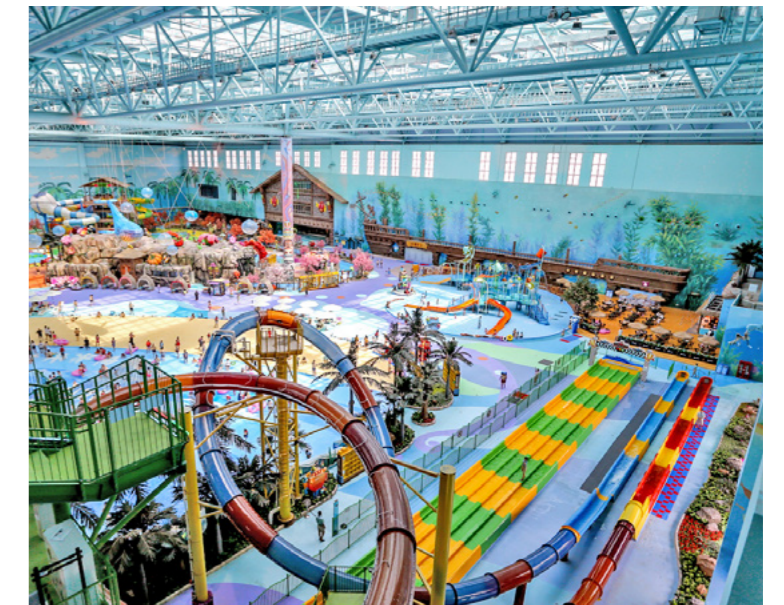
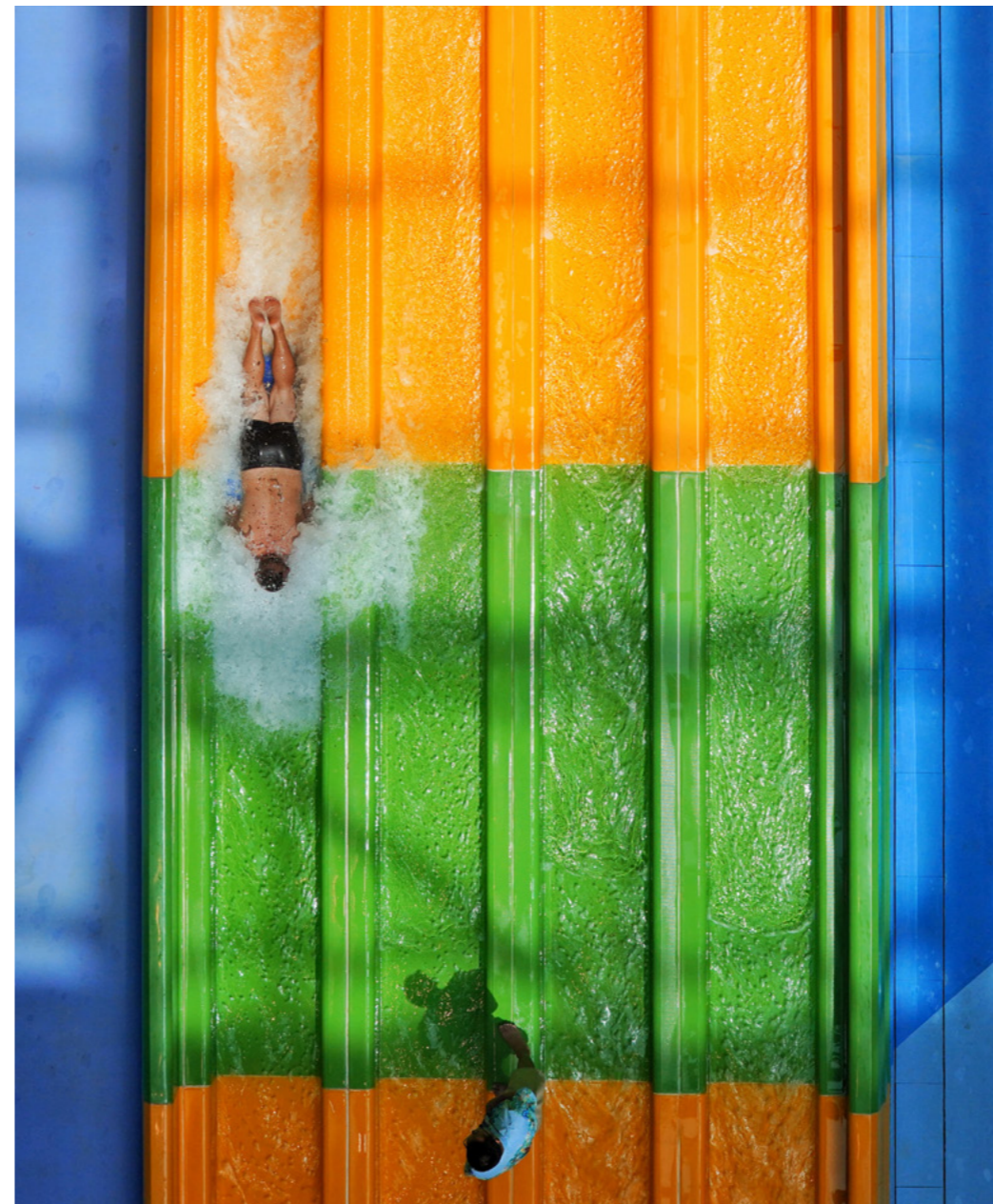
CASE STUDY:

Sunac Indoor Waterpark Chongqing

Chongqing, China



Type	Standalone water park
Year opened	2020
Footprint	28,000 m ²
Attractions	Whizzard, AquaLoop, Flatline Loop, Open Flume, Constrictor, Manta, AquaSphere



Whizzard



AquaPlay 350, (Americana Resort - Niagara Falls, Canada)

Featuring: Aquatic Play Structures

With a range of aquatic play structures in flexible sizes, and some in flexible footprints, these attractions can easily fit into small areas and make great places for families to congregate around for the day. Aquatic play also has the option for theming which helps build your story and makes for a more visually pleasing water park. Cause and effect interactive toys on the structure and at pool level keep kids entertained while helping to create zones where even the littlest of guests can have fun with water.

 **Tiny tots, preteens, families**



CASE STUDY:
Watiki Indoor Waterpark
 Rapid City, USA [www.](#)

Type	Hotel water park
Year opened	2006
Footprint	30,000 m ²
Attractions	Super Bowl, Giant AquaTube, AquaTube, AquaPlay 1050



AquaPlay 1050



Lazy River (Epic Waters Indoor Waterpark - Grand Prairie, USA)

Featuring: Wave Pools & Lazy Rivers

Wave Pools and Extreme Rivers are a natural addition to indoor water parks as they can easily accommodate a lot of people and create a 'home base' for guests to meet. Customizable in size to meet space constraints, Wave Pools also naturally create an opportunity for passive capacity areas for relaxing.

Extreme Rivers lend themselves well to indoor because they cater to guests of all ages and require minimal maintenance. Doubling as a form of transportation, the river can move guests around the park or help serve as a divider creating different zones.

 **Seniors, families, tiny tots, preteens, tricky teens**

 **FAMILY WAVES**

 **CHILDREN WAVE POOL**

 **LAZY RIVER**

CASE STUDY:
**World Waterpark at West
Edmonton Mall**

 Edmonton, Canada 

Type	Standalone water park
Year opened	1986
Footprint	20,000 m ²
Attractions	Wave Pool, AquaDrop, Speed Slide, Slideboarding, FlowRider, RainFortress, AquaSpray



Wave Pool



Flatline Loop (Studio City Water Park - Macau, China)

Featuring: High-Thrill Speed Slides

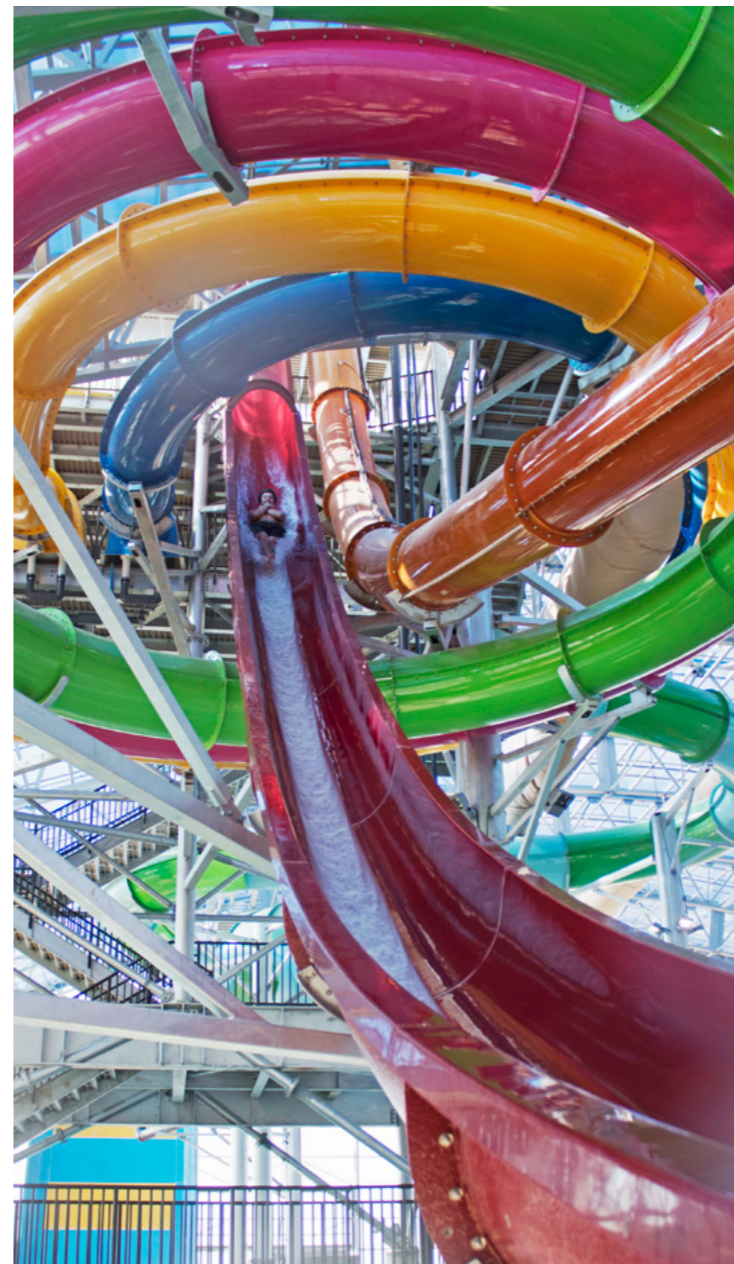
Customizable to meet your target audience, speed slides can be dialed up to reach the teens and older adults or dialed down to target preteens. Depending on the speed you're looking to achieve, the speed slides can be configured with a range of slopes and slide paths to thread through a slide complex (or around existing columns and supports) taking up no additional footprint.

 **Tricky teens (minimum height of 1.1 m | 42 in)**



CASE STUDY:
Epic Waters Indoor Waterpark
 Grand Prairie, USA 

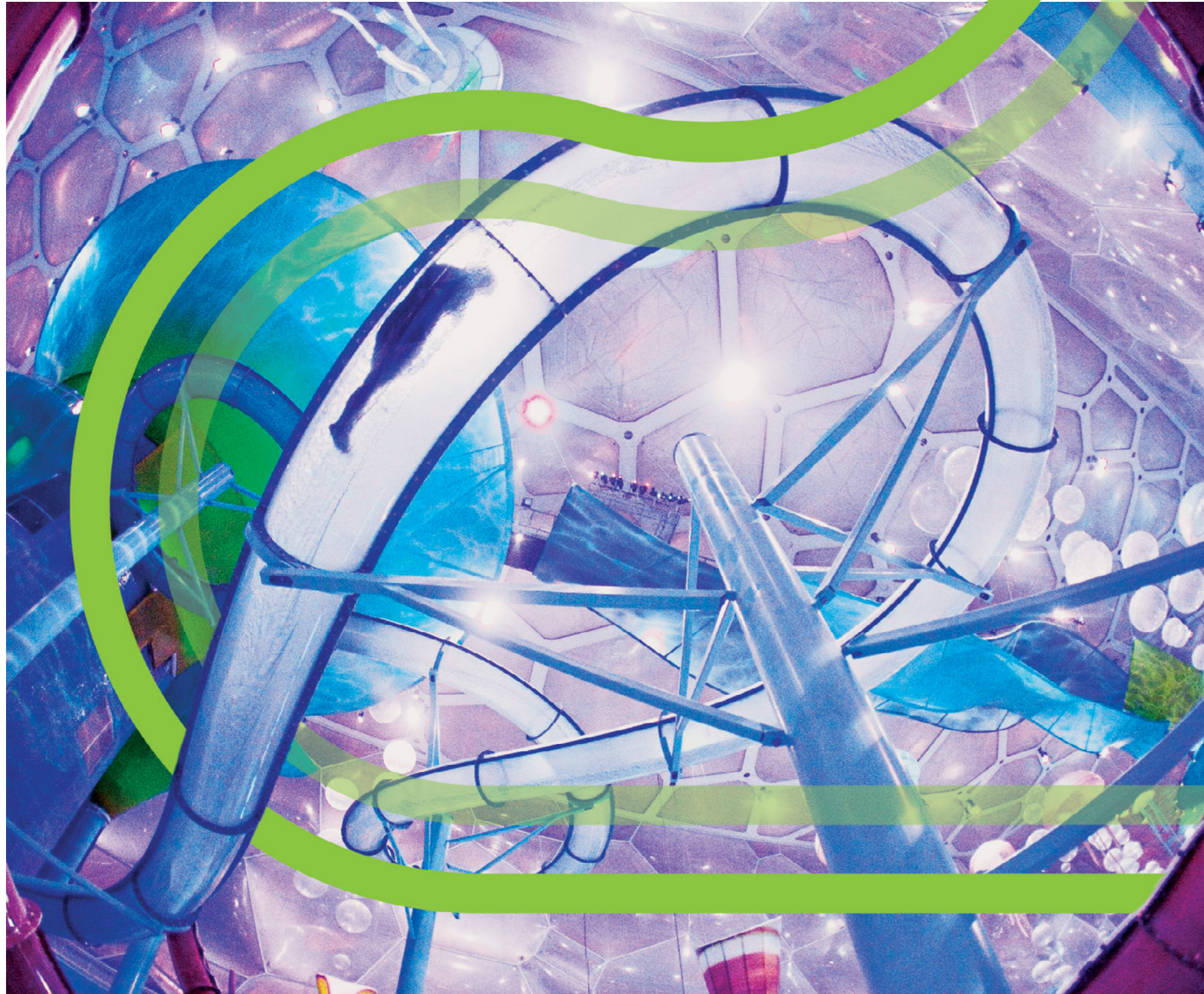
Type	Standalone water park
Year opened	2017
Footprint	7,430 m ²
Attractions	AquaTube, Freefall, AquaLoop™, Constrictor + Boomerango Fusion, AquaPlay 1050, AquaPlay 150, FlowRider® Double, Whizzard, AquaSphere, Wave Pool, Wave River, Open & Enclosed, Pool Sider



Freefall



AquaLoop



AquaTube (Beijing Water Cube Waterpark - Beijing, China)

Create An Immersive Experience

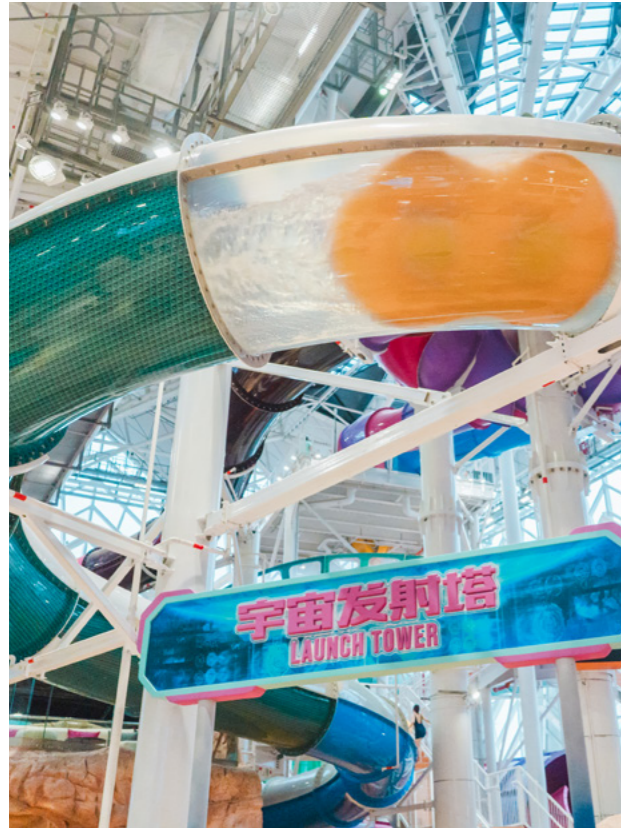
After the ride selection is made and the layout of the park is decided on, attention should be placed on how to extend a guest's length of stay. Whether it's use of colour to make the water park more inviting or the use of theming to totally transform your venue into a jungle oasis, we discuss a few ways parks can transform their interior to create a welcoming environment where visitors can go to escape their daily lives.

The Importance of Colour and Light

Indoor environments present parks with a different set of challenges than outdoor—in indoor parks, guests tend to get up closer to slides, the interior of slides tend to be darker, and the lighting highlights every nook and cranny of an attraction. It's why we recommend our award-winning SilkTek resin transfer-moulding (RTM) fiberglass. Smooth and shiny, both inside and out, our SilkTek RTM slides not only last longer than open mould (OM), but also look better and are easier to clean. Dust and dirt also tend to stick to the rough, uneven outsides of OM fiberglass. In addition to RTM fiberglass, we offer a range of fiberglass finishes and effects that can add visual interest for guests viewing the slides while also elevating the ride experience.



To see a complete list of water slide and tower finishes and effects, view the guide [HERE](#).



FIBERGLASS EFFECTS

Don't underestimate the impact fiberglass can have, not only on your water slide's appearance, but also on its ride experience. At WhiteWater, we offer a range of processes, colours, and finish options to help you create attractions that stand out and last. This could be through Translucent fiberglass, renowned for its unparalleled clarity and strength, giving guests a chance to see riders flying by overhead, or through veil effects creating patterned layers to the fiberglass to give the illusion of guests sliding down a giant snake or swinging on a jungle vine.



THEMING

Commonplace in theme parks, theming is something that the world's best brands such as Disney and Universal embrace. A well developed and executed theme transforms a space into a retreat where guests want to stay, photograph, and share on social. The good news is that you don't need Disney's budget or resources to add theming. Our in-house team of architects and designers are some of the best in the world and can work with your existing brand or create one for you.



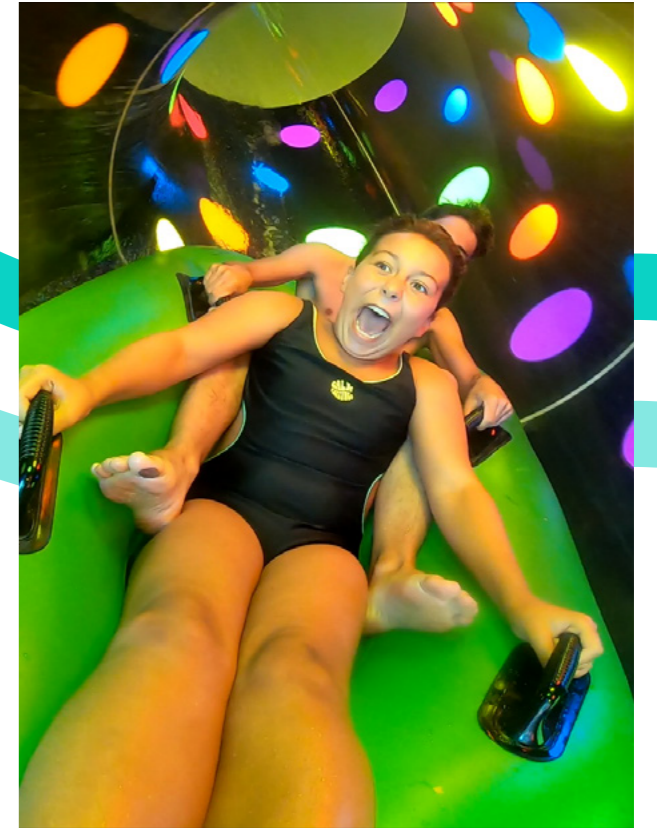
SOUNDS & LIGHTS

A custom Sound and Light package can be created to complement your ride's slide path with multi-colour LED lights and sound effects to help brighten up the park during the darker winter months and create a more welcoming and engaging guest experience. WhiteWater can also add lights to slides that extend outside of your building to create a compelling roadside attraction, piquing commuters' interest.



COLOUR

Often relying on natural light, indoor water parks rely on colour to help brighten up the space and set the vibe of the venue. With 60+ colour options, WhiteWater's design services team can help to recommend different colour combinations to make the best aesthetic and visual impact for your park, whether that's with natural jungle hues or bright pastels.



LIGHTING

Enhance your park with strategically placed AquaLucent patterns to heighten the guest's ride experience. By adding colourful bursts of light to enclosed tubes with translucent patterns, such as rings, polka dots, or your logo, you can create moments of surprise to wow your guest and get them re-riding the attraction to make sure they saw everything.

Methods of Conserving Energy

Water Conservation

In outdoor water parks, aeration in the water slide turns into humidity which gets blown away by the wind. However, in indoor parks, the humidity caused by aeration sticks to the walls and can create corrosion as well as challenges for a park's HVAC system. To minimize aeration WhiteWater uses proprietary simulations to identify the optimal positioning for nozzles and the right range of water flow needed so no additional water is used.

Sealing Environments

Taking big, iconic features outside of the building can help save space, but it can also introduce cold air inside of the building if not constructed correctly. The key for developers is to ensure that the sealing is done properly so the environments do not mix with each other. 'Pucks' can be added to the open area of the water slides to help limit the airflow through the ride and limit the heat loss when the slide is not in operations.

Energy Conservation

As technology gets smarter and smarter, so too can your operations. Variable Frequency Drives (VFDs) can help a water park use, on average, 27% less power by enabling the operator to change the speed of the motor, so parts wear out slower and you save on power. VFDs are retrofittable on nearly every product from every supplier.



AquaPlay 750 (Center Parcs Domaine Les Landes de Gascogne - Beauziac, France)



To learn more about sustainability, download our water & energy brochure [HERE](#).



Photo credit: Aquatopia Indoor Waterpark at Camelback Lodge - Tannersville, USA

Ready to think inside the box?

Although there are some unique challenges involved in designing and operating an indoor water park, the potential rewards are considerable. With the ability to generate revenue year-round instead of being dependent on weather conditions, indoor water parks can be a game-changer for your property.

Coming in many shapes and sizes, an indoor water park can be attached to a hotel providing an additional incentive to book and boosting the overall occupancy rate; or a driver for the community to come together making its main revenue through season passes.

We hope that this guide has been informative as you navigate the process of designing and selecting rides for your park. Whether you choose to follow a hotel-based or community-focused model, we wish you all the best in creating a successful indoor water park.

If you're ready to explore how to make every inch of your indoor footprint profitable, **contact us at whitewater@whitewaterwest.com**.



WHITEWATER

EST. 1980

If you'd like to learn more about what attractions make the most sense for your venue, contact Grant Poje. Located in Europe, Grant is available in your time zone and ready to help you dream big in small spaces.

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