



**PORTAL
RIDERS**

PORTAL RIDERS

Embark on an exhilarating journey as you ride the portals, granting glimpses of extraordinary creatures in unexplored realms. Don't be surprised if you encounter some fascinating beings or get wet as they playfully interact with your boat. Upon returning, indulge in the delights of freshly caught fish at Kai's 'Ugly Fish' restaurant overlooking the expansive lake teeming with tropical creatures. Admire the captivating crystal tree of Ana Nalowale as it stands majestically amid the glistening waters.

Portal Riders combines a thrilling dark water ride with a seamless, immersive, and interactive digital experience, taking riders to unique fantasy and adventure landscapes.



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THE LEGEND OF 'ANA NALOWALE'

When the storytellers of ancient Hawaii gathered by the light of candlenut torches, they told tales of the land, sea, and gods. For generations, the inhabitants of a small secluded village told their children of a legend about a mysterious cave believed to harbor strange, otherworldly sea creatures.

Known as "Ana Nalowale" - Lost Cave, the sea cave has always remained untraceable, eluding all attempts to discover its whereabouts. According to the stories, the cave is a secret habitat for sea creatures that have escaped from another world. When fishermen encounter strange fish in their nets or spot large sea beasts that could overturn their boats, they whisper of Ana Nalowale.



This is Kai. Kai and his family live in a small village in the heart of Hawaii. As the eldest son, he has been helping his father catch fish for over 17 years near his village. In recent years, Kai has seen their catch steadily decrease, and he and his father no longer return to the shore with a boat full of fish to share among the villagers.

Kai remembers his parents and grandparents telling him and his siblings bed-time stories of the mythical cave and the colourful creatures found within its depths. There was a widespread belief that the tale of the elusive cave of strange sea creatures was just that—a tale ... until recently.

THE DISCOVERY

It was a scorching hot day when Kai took his family's small fishing boat out by himself. His father had been unwell for several days and Kai could manage the boat alone. After several hours at sea without catching a single fish, Kai felt irritated and overheated. Seeking shelter from the sun, he scanned the coastline and spotted a cave he had never seen before and decided to take the boat into the cave to escape the heat. As he ventured further into the cave, he discovered a labyrinth of caves. Remembering to heed his father's advice, Kai marked the rock with a / for left, a \ for right and a - for straight ahead by using his fishing spear and reversing the route on his return, preventing himself from getting lost. The further Kai took the boat into the cavern, the more caves he discovered.

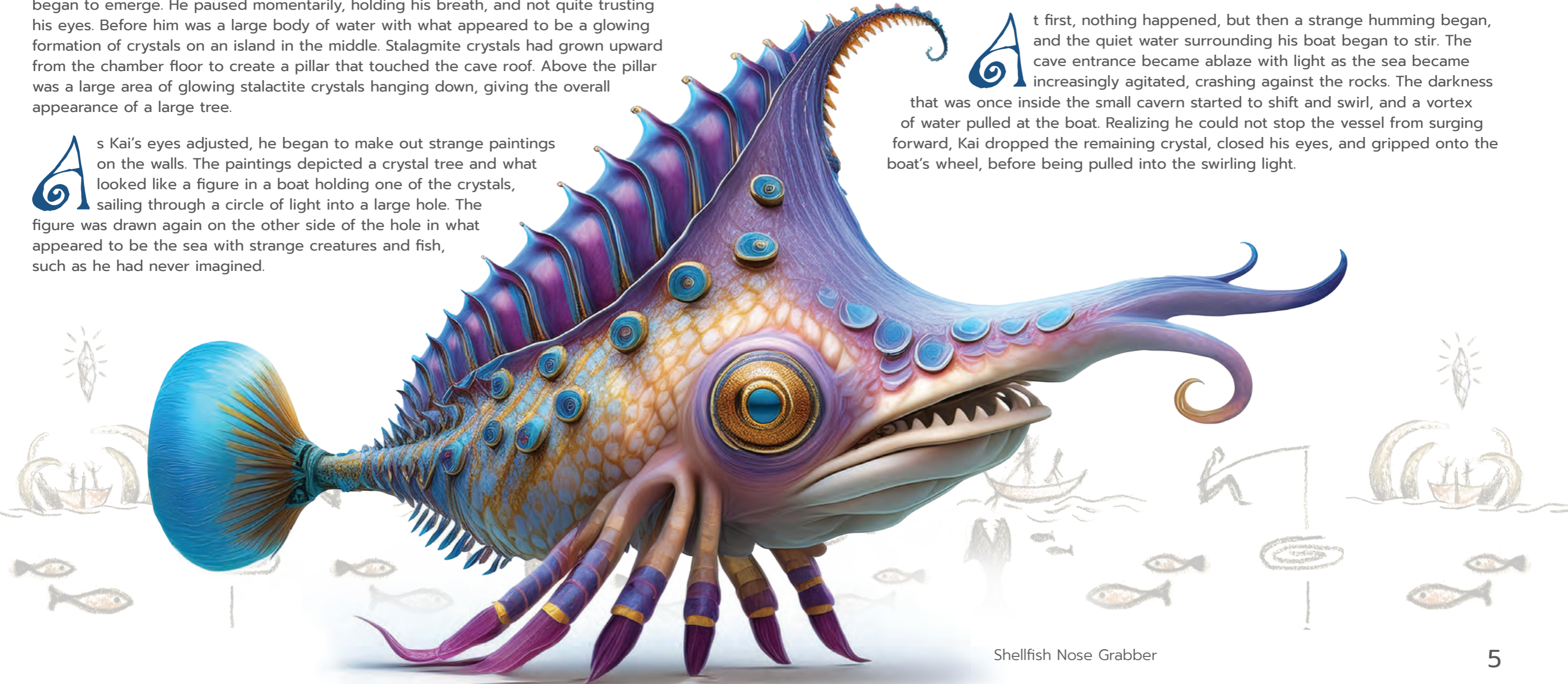
Growing concerned, he was about to turn the vessel around to leave, but glimpsed a flicker of light to his left. Slowly moving the boat deeper into the cave, a large chamber began to emerge. He paused momentarily, holding his breath, and not quite trusting his eyes. Before him was a large body of water with what appeared to be a glowing formation of crystals on an island in the middle. Stalagmite crystals had grown upward from the chamber floor to create a pillar that touched the cave roof. Above the pillar was a large area of glowing stalactite crystals hanging down, giving the overall appearance of a large tree.

As Kai's eyes adjusted, he began to make out strange paintings on the walls. The paintings depicted a crystal tree and what looked like a figure in a boat holding one of the crystals, sailing through a circle of light into a large hole. The figure was drawn again on the other side of the hole in what appeared to be the sea with strange creatures and fish, such as he had never imagined.

Initially, Kai was apprehensive but continued to explore the large crystal chamber. Kai found that some of the crystals were much darker than the others, and they glowed, even when broken off. Investigating the large cave further, Kai located several smaller caves, which were long and narrow. After rounding a bend, he discovered each tunnel had a stone gateway with seven evenly spaced holes on each side that appeared to be cut deep into the rock.

Returning to the main chamber, Kai examined the cave paintings again. In a moment of epiphany, he realised the 'circle of light' drawn on the cave wall was a stone gateway with crystals inserted into the holes. Feeling extremely excited, he broke off fifteen blue crystals that he could easily reach from the tree and took them to his boat and took the boat back to one of the archways. To his delight, fourteen crystals fitted into the voids, and he kept hold of the last crystal, just as the figure in the cave painting had.

At first, nothing happened, but then a strange humming began, and the quiet water surrounding his boat began to stir. The cave entrance became ablaze with light as the sea became increasingly agitated, crashing against the rocks. The darkness that was once inside the small cavern started to shift and swirl, and a vortex of water pulled at the boat. Realizing he could not stop the vessel from surging forward, Kai dropped the remaining crystal, closed his eyes, and gripped onto the boat's wheel, before being pulled into the swirling light.



Shellfish Nose Grabber



NAVIGATING OTHER WORLDS

Kai's eyes fluttered open, and he found himself gazing at a breathtaking sight. Rising from the ocean, a colossal figure crafted from stone stood a hundred feet tall, casting its shadow over the surrounding islands. As Kai navigated his boat around the foot of the immense statue, a peculiar sea creature suddenly leapt from the water, causing a massive wave to crash over the deck before disappearing beneath the waves. The clear waters teemed with an array of unfamiliar, exotic fish.

As Kai's small boat gently rocked on the water, he couldn't help but feel dwarfed by the massive creatures swimming beneath it. Occasionally, he could sense their immense bodies brushing against the hull. With no clear sense of his location and feeling a sense of uncertainty, he resolved to explore one of the nearby islands and took in the amazing sights. As Kai skilfully guided the boat nearer some rocks, he was struck by the sight of two enormous faces intricately carved into the monoliths. Drawing closer, he was aware of the water stirring around his boat, and two stone arches with seven crystals rose out of the sea.

Kai's boat was drawn forward. The landscape started to shift and swiftly melt into a giant swirling light—another vortex.

The boat came to a jolting stop as it made contact with the water, engulfed instantly by a dense fog. Rain poured down, obscuring visibility and adding to Kai's growing unease. As he reduced the boat's speed, a strange sound from above caught his attention, and intermittent glimpses of a massive winged creature's shadow passed over his small vessel. Gradually, the fog began to lift, and Kai cautiously poked his head out of the wheelhouse. Initially, the sky appeared empty, but an immense airborne beast loomed into view, and was steadily approaching.

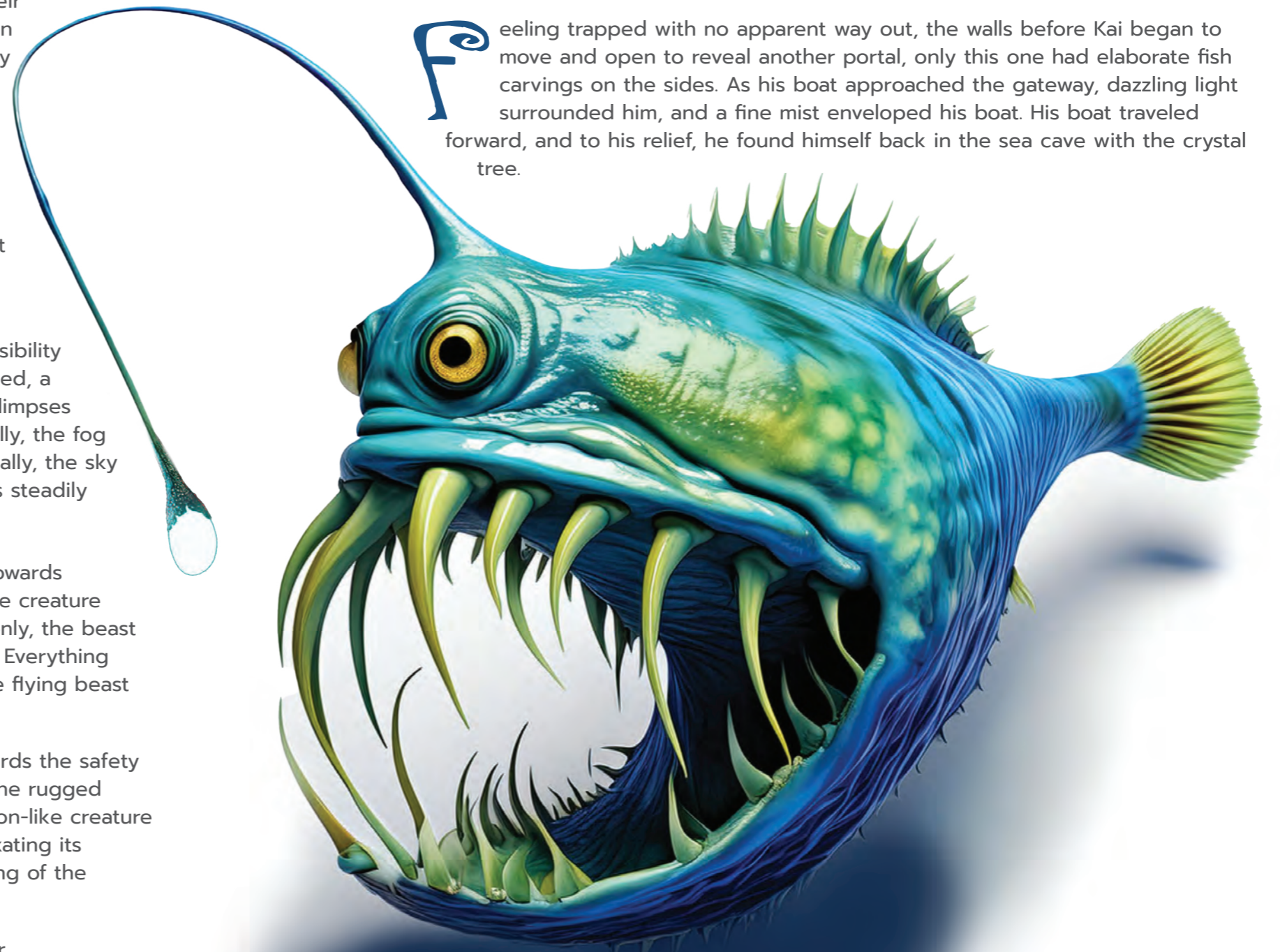
Kai was terrified. He swiftly put the boat into its fastest gear and motored towards the shoreline, hoping to find a cave or somewhere out of sight. However, the creature appeared to be heading towards something in the water to his right. Suddenly, the beast dived into the sea, sending huge waves crashing over the sides of his boat. Everything went silent, then the sea erupted to his left and out of the depths came the flying beast with a weighty, tentacled sea creature in its mouth.

Kai sailed quickly away from the dramatic scene, maneuvering his boat towards the safety of the shore. Soon, he spotted some rocks with an old temple carved into the rugged rock-face. As he approached the temple entrance, he noticed another dragon-like creature perched on the rocks to his left. The creature emitted a thunderous roar, fixating its gaze on something imperceptible to Kai. Racing his boat through the opening of the temple, he found himself in a chamber of water surrounded by statues.

Without warning, massive gates slammed shut, sealing the chamber, and another portal materialized in the water. In front of Kai, water gushed down from above, and a moment later, the statues of strange creatures around the room started to spout fish and sea water.

Frantically searching for the crystal he had dropped on the deck of his boat earlier, Kai was alarmed to find that it was barely glowing. He was frantic as to whether he would ever make it back home. Suddenly, his boat started to rise as the water level rose, and the portal was completely submerged. Peering at the tops of the temple walls, he observed ancient murals portraying a civilization. These images showed what Kai assumed was the same temple with men in boats pulling bulging nets full of strange and exotic sea creatures. Other images showed people kneeling in front of enormous figures that were part man, part fish. The temple appeared to be a place for the people to worship sea gods, and a place to fish.

Feeling trapped with no apparent way out, the walls before Kai began to move and open to reveal another portal, only this one had elaborate fish carvings on the sides. As his boat approached the gateway, dazzling light surrounded him, and a fine mist enveloped his boat. His boat traveled forward, and to his relief, he found himself back in the sea cave with the crystal tree.



Storyboard showing Kai's journey as shown in the Volume



1



2



3



4



5



6



FURTHER ADVENTURES

During the summer, Kai embarked on a journey of exploration and discovery that changed his life forever. He uncovered the ancient secret that a crystal was the key to unlocking portals to different realms. This crystal, now carefully safeguarded in a holder on his boat, held the power to activate the portals and transport him across various dimensions.

As Kai ventured into unknown worlds through the portals, he encountered starkly contrasting landscapes and inhabitants. The dark crystals led him to foreboding realms teeming with menacing, otherworldly creatures that regarded him as prey. Narrowly escaping these perilous encounters, he found solace in the light crystals, which transported him to breathtaking landscapes populated by gentle creatures, welcoming him into their midst.

In each return to the sea cave, the magical vortex unintentionally brought fish along, leading Kai to realize the origins of the legends surrounding the enigmatic sea animals of Ana Nalowale. Eager to share his remarkable discovery with others, he brought some of these unusual fish back, cooked them, and found them to be delectable. The rumors of the cave's findings spread throughout the village, yet only Kai possessed the skills to navigate the mystical realms. Ultimately, he resolved to bring his oldest friend, Nalu, along on his journeys, eager to introduce him to the wonders that lay beyond the portals.

Kai was always amazed by the abundance of mesmerizing fish in and sea creatures in the temple, and began to cast his nets into the waters activated by the shimmering mid-blue crystals. Each time he returned home, his

nets were overflowing with a colorful array of fish. In contrast, Nalu loved visiting other realms and harbored a deep desire to share the enchanting secrets of the other worlds by guiding fellow adventurers through the mystical portals.

Now, you can embark on an exhilarating journey as you ride the portals, granting you glimpses of extraordinary creatures in unexplored realms. Don't be surprised if you encounter some fascinating beings or get wet as they playfully interact with your boat. Upon returning, indulge in the delight of freshly caught fish at Kai's 'Ugly Fish' restaurant overlooking the expansive lake teeming with tropical creatures. Admire the captivating crystal tree of Ana Nalowale as it stands majestically amid the glistening waters.



Colossal Spiny Tentaculus

INTRODUCTION

World's Most Popular Theme Park Features

When creating ideas for the competition, we researched which elements people specifically target when going to a theme park. The results concluded that thrilling and immersive rides, transportation to other realities, and water rides were the most popular. Using these components, we explored creating an attraction using the latest VR technology, offering a new collective experience rather than an individual one.

Our main challenge was creating something seamless, sustainable, and entirely immersive that could be continually updated and changed. The overarching appeal of a theme park is enabling visitors to escape reality and enter different worlds. This made us think, what if we could create a water boat ride that would travel to several unique worlds?

Gaming Trends

We also looked at current trends in the gaming industry, and two themes emerged from our findings: fantasy and adventure. Fantasy is the most frequently played RPG. It is a platform for people to enter a realm where magical elements combine with beautiful backgrounds and mythical creatures.

Adventure continues to remain a much-loved genre today, especially because of its action and fast pace. Its themes are extremely versatile and have the potential to cater to a broad audience with diverse tastes.

Subsequently, we came up with a storyline which could relate to both narratives. We initially had three themes, and included a dark world that played to an older audience. Unfortunately, we ran out of room and decided to drop this concept for the other themes.

Back Story

The story behind the ride developed in tandem with our initial drawings and illustrations. Some of the story was adapted to fit the ride sequence and the images were created using AI to fit the story. Most of the images differed from what we were looking for and were amended in Photoshop to fit the narrative. Each creature has a name, and we would put themed interpretation boards around the queue line to describe their habitat and characteristics.

We also wanted to create a complete attraction where everything was themed and immersive and tied in with the story from the moment guests enter the building.

The result was a thrilling boat ride where guests could also eat, drink, socialise and shop in a beautifully themed environment.



Button Crusted Octopus

OUTSIDE FRONT ELEVATION



- Advertising Space
- Ugly Fish Restaurant Entrance
- Tinted Glass (Graphics)
- Digital Screen or Large Graphic
- Ride Entrance
- Ride Exit
- Digital Screen or Graphic

- Themed Structure of a Portal
- Bamboo & Grass Canopy



Reference



Reference



Reference

Sculpted Rock-work

LAYOUT OF ATTRACTION



- A - Entrance & Pay Desk
- B - Start Queue Line
- C - Crystal Tree & Splash Viewing Area
- D - Ugly Fish Restaurant
- E - Rest Rooms
- F - Waiting Area for Boarding
- G - Volume
- H - Disembark Boats/Disabled Boarding
- I - Rock Pools
- J - Store & Exit
- K - Disabled Access
- L - Dry Dock & Crane
- M - Maintenance Area
- N - Themed Areas

Considerations

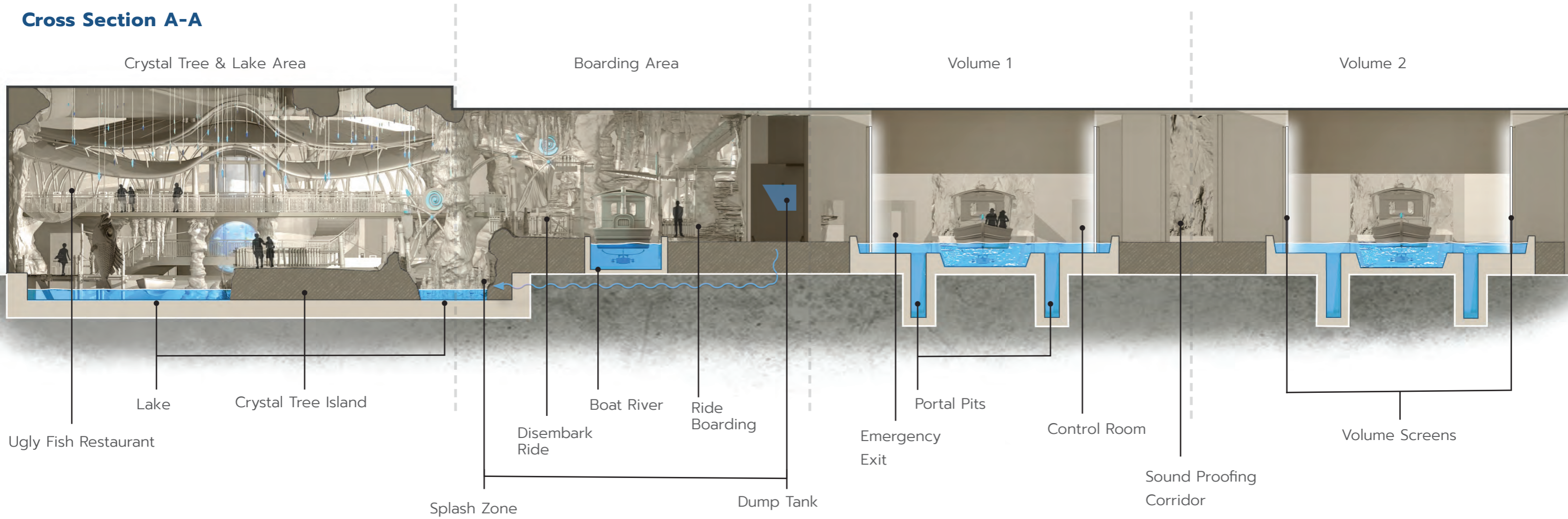
The layout of the building took several attempts to get right due to the size of the two Volumes and the room required by the boats to maneuver the rivers. We also considered the visitor flow and how that would fit around the ride. Our first queue line began outside in a themed rocky area, but it took up too much space and we had to redesign it.

We tried to think of everything that the attraction would need, such as disabled access, rest rooms, lifts, break-out spaces, special features, maintenance areas, emergency exits, storage space, plant room and server rooms.

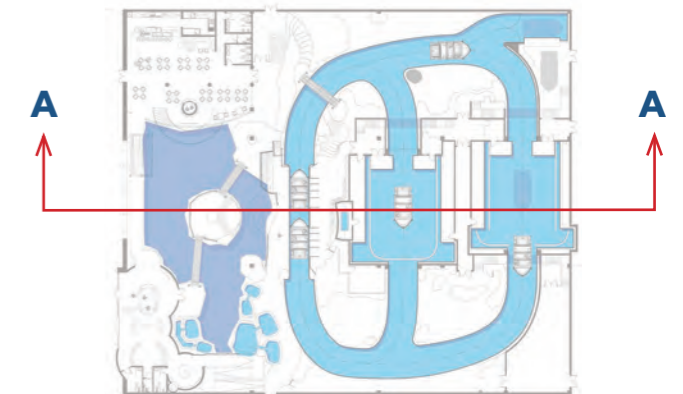
Scale 1:300 at A3

CROSS SECTIONS

Cross Section A-A



Crystal Tree & Lake Area





EXPERIENCE SEQUENCE

Boarding and Entering the Volume

The guests board the boats in a themed boarding area, supervised by a cast member who will be in the wheelhouse of each boat for the duration of the ride. When the boat is ready to leave, it moves along a track and travels along a narrow cave/tunnel with occasional crystals and themed vistas. Before entering the Volume - a completely dark sunken room of water, the entrance to the room is themed to look like a small cave and has a portal fixed in place, which the boat travels past as it moves further into the room.

Digital Media Rendered in Real Time

The room will have multiple floor to ceiling LED screens that show incredibly realistic and thrilling scenes by creating an environment around the visitors through the use of a Volume. Interlinked computers produce the images on the wall of the Volume, and a gaming engine, such as Unreal Engine, creates constant real-time displays of the correct lighting, depth, and perspective that someone might see if that world were real.

The area comes to life using moving viewpoint compensations (squincing), a technique that involves compensating for the distortion that passengers would see as they moved past the 3D screens by intentionally distorting the image in the opposite direction. As the viewpoint moves, the environment reacts and corrects the perception and depth of the objects and walls around it to make a realistic experience.

Guests then visit the various worlds for approximately two minutes in each and then the boat 'travels' through different portals using the 'Portal Sequence'.

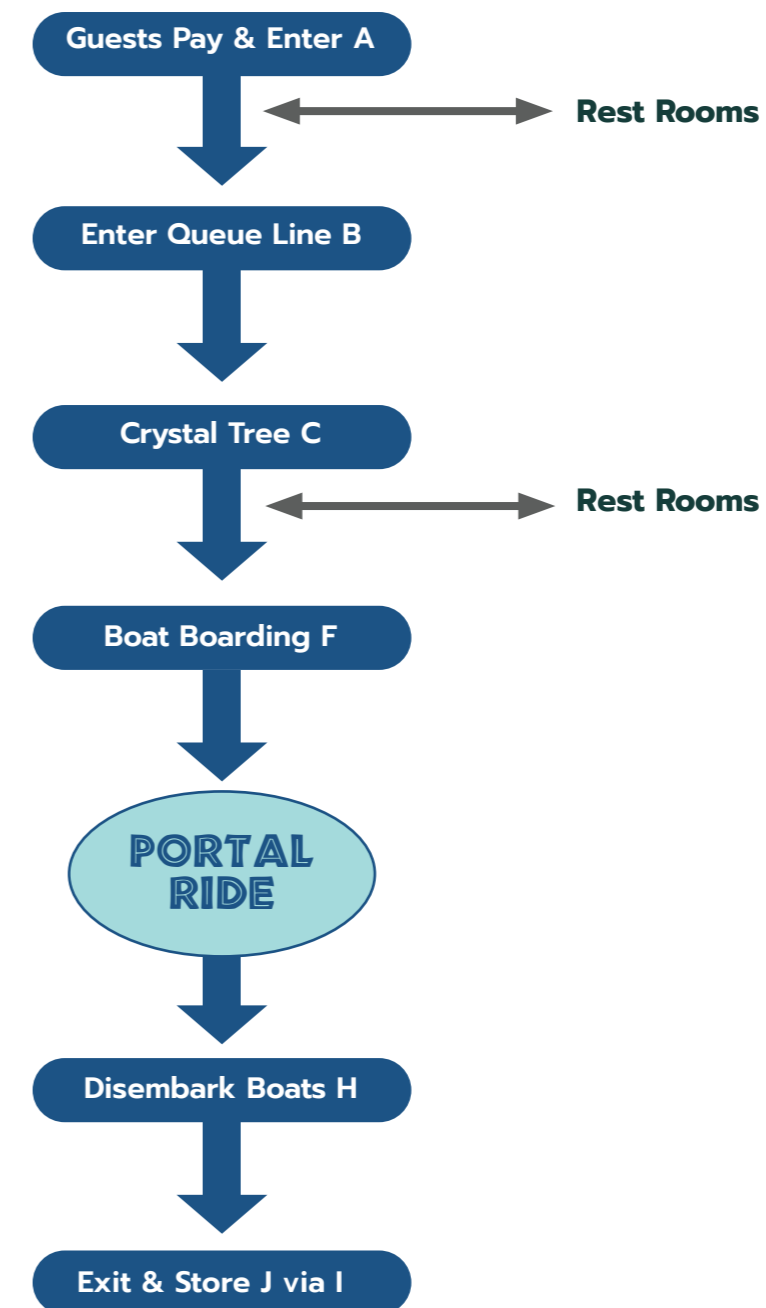
Portal Sequence

The portal sequence is a physical effect that allows guests to travel from one world to another. The sides of the portal with the crystals raise out of the water at the front of the boat. Once fully emerged, the crystals light up, and the portal spires track down the side of the boat, giving the impression that guests are moving through a portal and then sink back into the water again behind the boat, out of sight of the guests. When the sequence is completed, the portal spires travel under water back to the front of the boat. Ready for the next sequence or world.

The portal sequence will coincide with digital footage of a vortex before revealing a new landscape. As you travel through the portal, you will see the land you are leaving disappear into the vortex, which is level with the portal spires, and the new world will appear after the vortex sequence has finished. The vortex engulfs the room in darkness with swirling lights and then the new world appears, shown below.

End of Journey

On the final journey, the guests visit a temple or palace accessed by boat and find themselves in a chamber with no exit. Water will appear to pour in from several openings and begin to fill the chamber. The boat will appear to be rising in the water before two doors open and the boat leaves the Volume, as described in Kai's journey, traveling along a themed exit before disembarking.



THE VOLUME SCREENS

The guest's view from the boat will feel completely immersive as it navigates its way along seas and rivers. Images R and L show the left and right screens as viewed by guests within the Volume.

The portal spires come up from the water, image M, and move back alongside the boat before submerging again behind the boat, out of view of the guests.

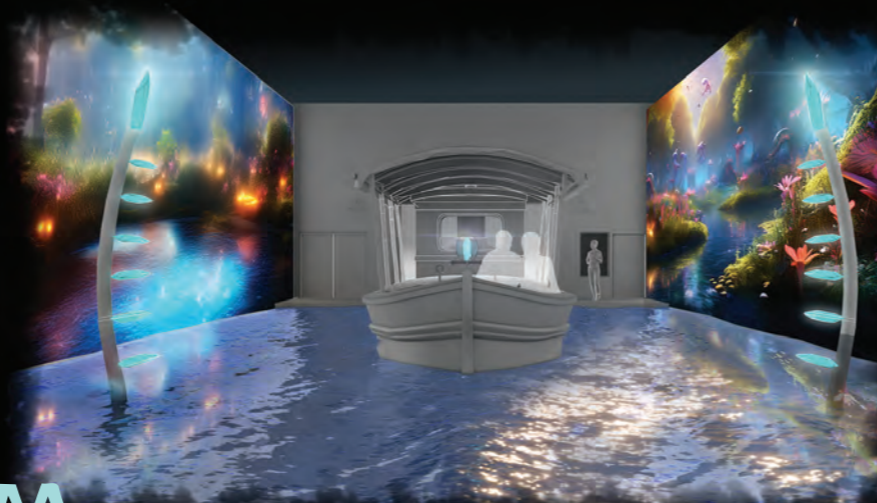
When the boat is level with the portal sides, the vortex becomes visible, image 1, and will show the next world that the guests are about to visit as shown in image 2.

The next world, image 3, will come into full view in a matter of seconds and be visible on all the screens within the Volume.

- R. Right side view.
- M. View facing the boat showing both left and right sides of the Volume before entering the vortex, via the portal sides.
- L. Left side view.
- 1. The vortex becomes visible.
- 2. The boat leaving one world and about to enter another through the vortex.
- 3. The boat enters a new location.



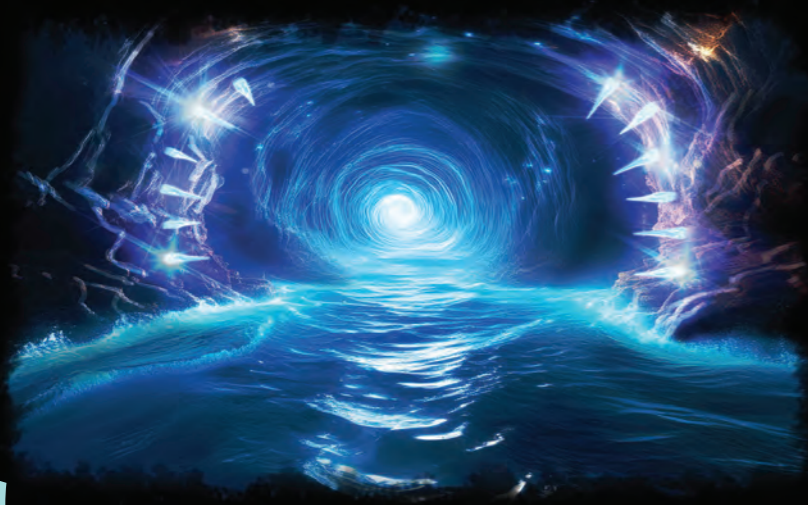
R



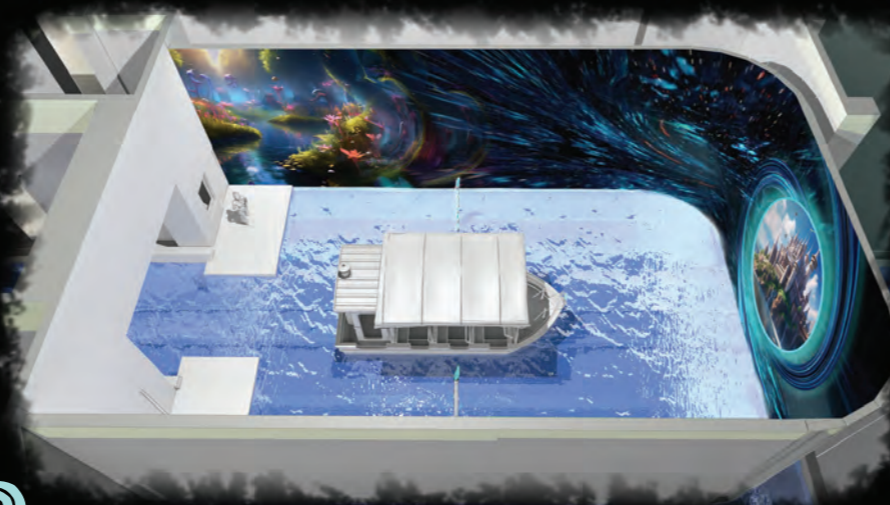
M



L



1

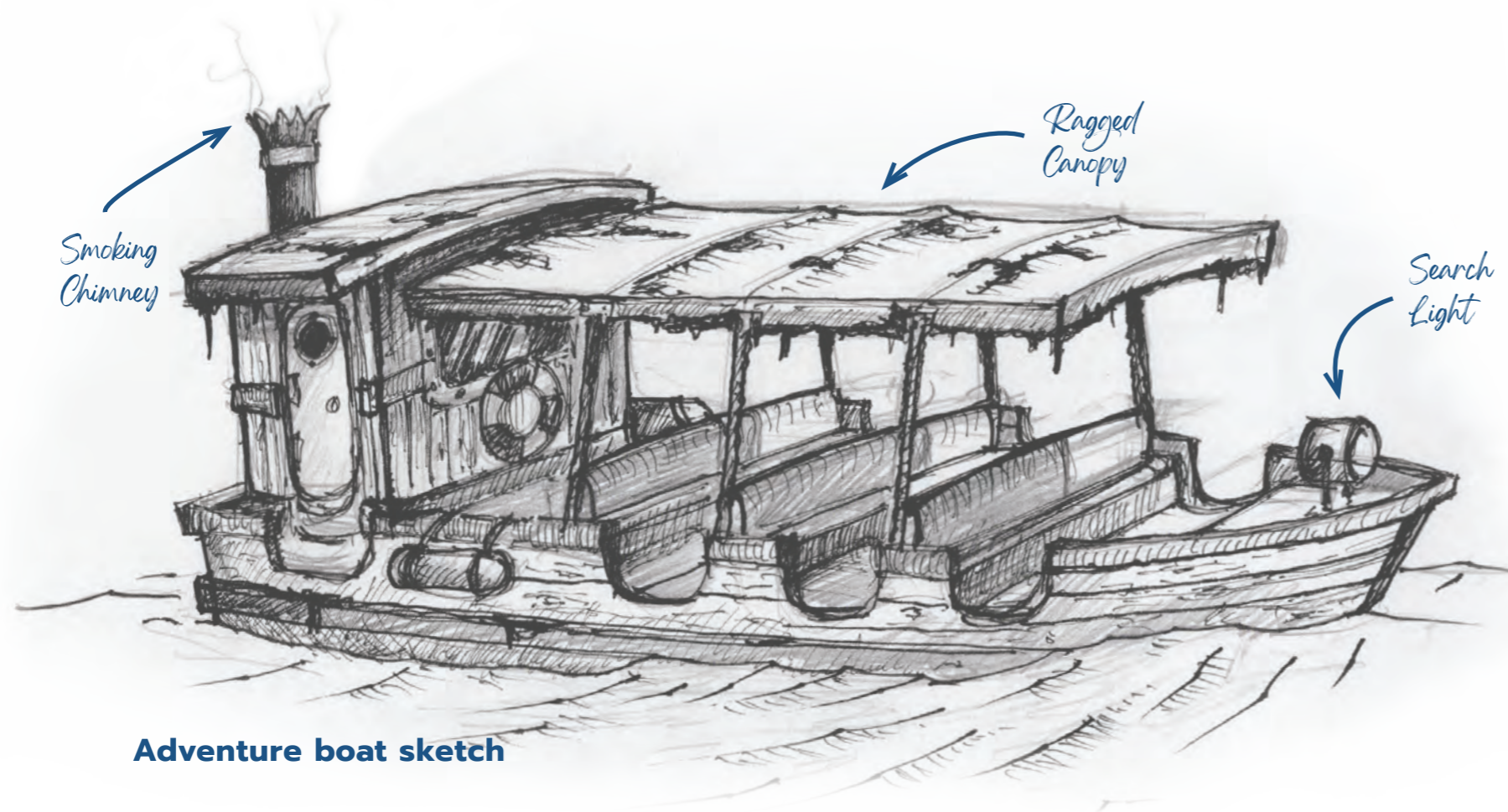


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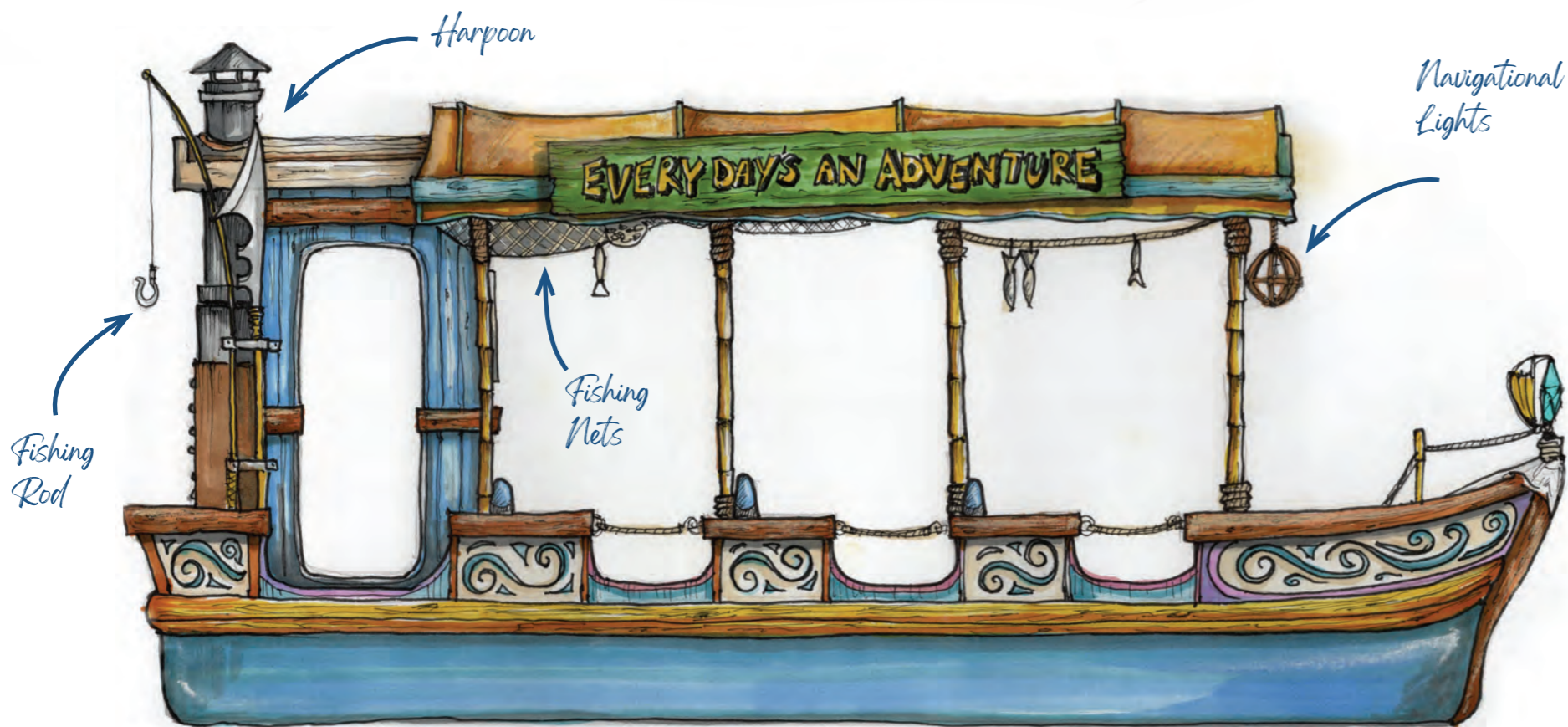


3

EXPLORER BOATS



Adventure boat sketch



Final concept

Design Considerations

The look and size of the Explorer boats were developed over time as the story behind Kai's journey took shape. The first concepts included a search light on the front of the boat, but when we thought about how and why the boats would 'come back' to the sea cave in this world, the idea behind the crystals activating the portals came about, and subsequently, included one fixed at the front of the boat. The crystals can light up, rotate, and act as a search light when the Volume is dark and reveal unexpected scenes.

We knew we needed a canopy and boat housed to limit some of the view within the Volume, and we wanted to be able to facilitate approximately 12-15 guests. With the ride taking between 15-20 minutes, we estimated that each portal ride would need three boats operating, six in total.

Initially, we decided to theme each boat differently, depending on the Portal journey chosen, but when we ran out of room for a third, dark world, we decided to keep the boats the same.

Boat Names and Theme

The boats are named to represent the worlds they visit.

The Fantasy Boats are:

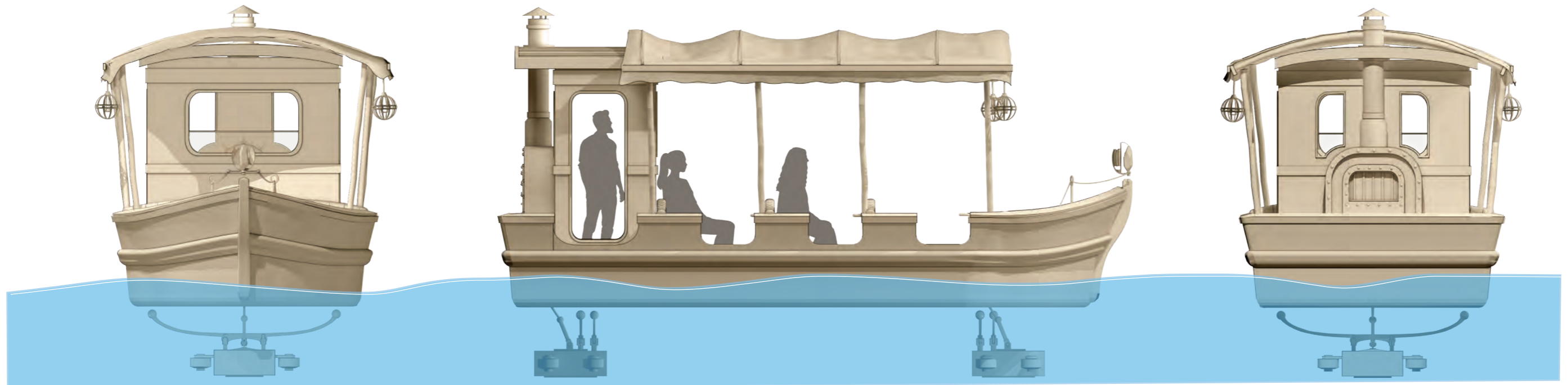
- Mālie - Calm
- Mahana - Warmth or sunshine
- Mahina - Moon or moonlight

The Adventure Boats are:

- Kainoa - Strength of the sea
- Kaikoa - Sea warrior
- Kawikani - The strong one

All the boats will be dressed with extreme fishing gear and equipment to look like they supply the Ugly Fish restaurant with their fish. Every boat has Hawaiian sea markings on the sides, and the boat name will be on the hull's exterior and the bow sides.

BOAT DESIGN



Front View

The boats have two navigational lights, one red and one green, to signal to other boats.

Side View

The boats are designed to take three rows of five guests, with a helmsman/cast member in the wheelhouse. The canopy roof protects the guests from rain or water from above.

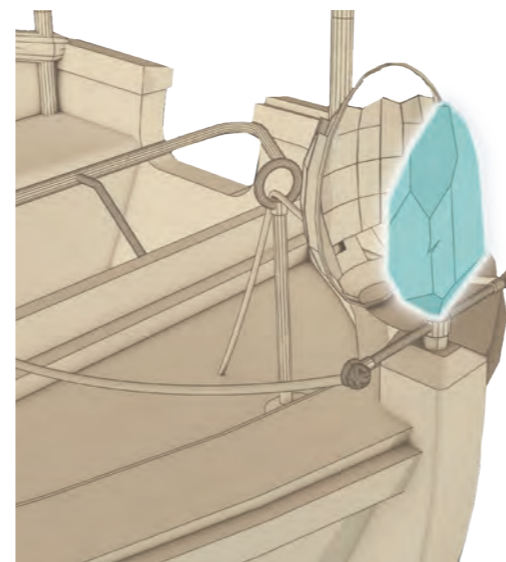
Rear View

The cabin at the back of the boat is there to stop people from seeing behind them. It also acts as a safety feature as guests will be monitored by a cast member.



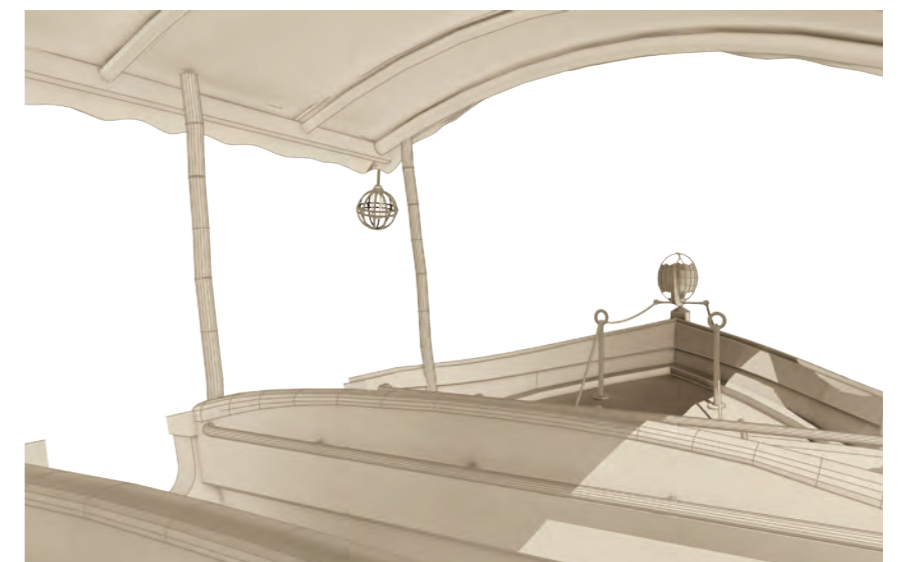
Top View

The canopy roof negates the need for an additional screen covering the ceiling of the Volume. The chimney emits 'smoke', which smells like burning coal.



Crystal Holder

The crystal glows once the portal sequence is activated and can interact with the Volume.



Passenger View

The crystal holder is moved via the ropes attached to the extended arms of the holder. The crystal can be operated by guest or cast member.



THE MECHANICS

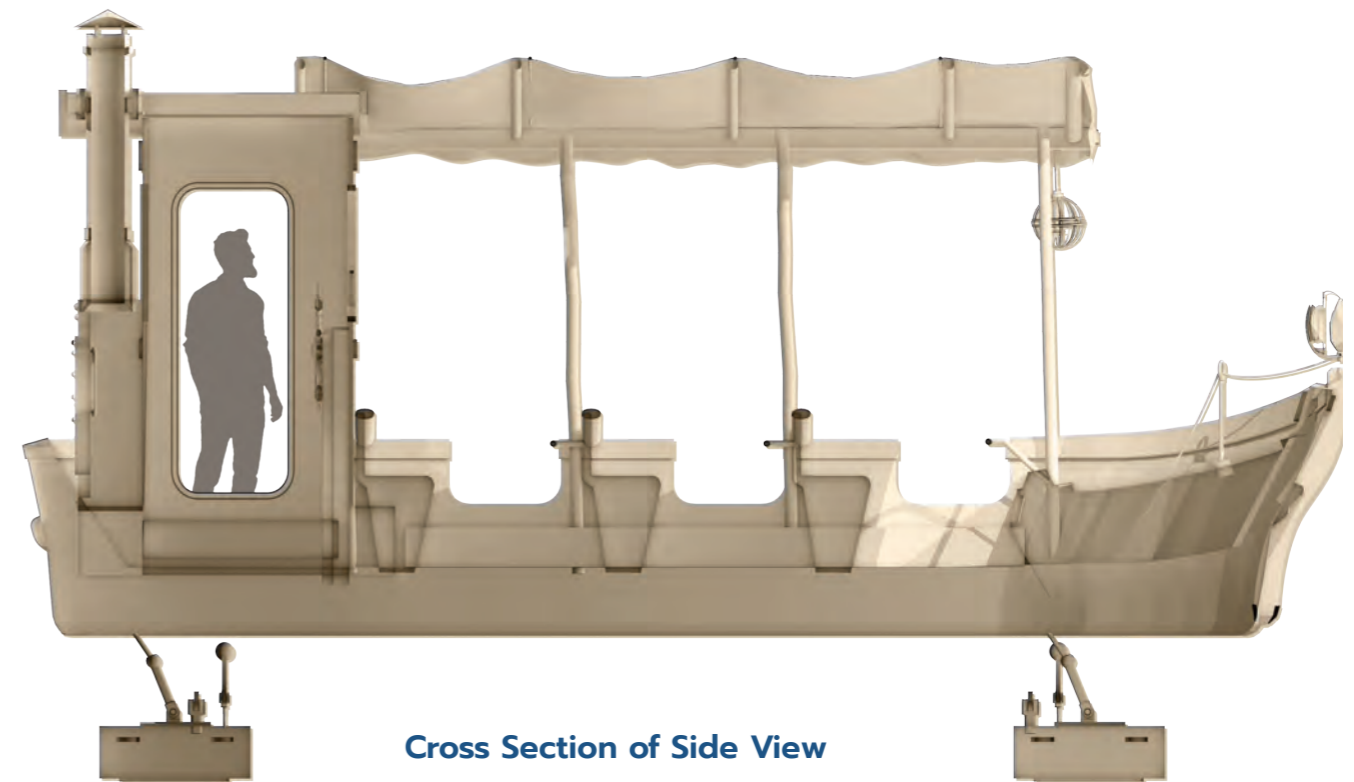
Beneath the Surface

The boat ride works on a track, similar to the Pirates of the Caribbean ride at Disney. Each boat is fixed at two points and runs on an electromagnetic track via magnets. They can also rock from side to side. Each of the mechanism runners under the boat has arms that come out on either side to rock the boat and emulate movement correlating to the digital footage. The arms also act as a safety feature so they cannot over rock or sink.

There are two rocker arms on each runner, which can be raised at the front, back, or on opposite corners. They can also hit the boat, giving the impression that a creature underneath the vessel has bumped it. In short, the arms react to the environment shown in the Volume.

Both Volumes will have the ability to make waves from one end of the room. A wave disruptor at the other end prevents waves from doubling back on themselves. Water canons at the front of the boat create water splashes, and water jets under the water's surface can give the impression of water being spouted out, like a whale.

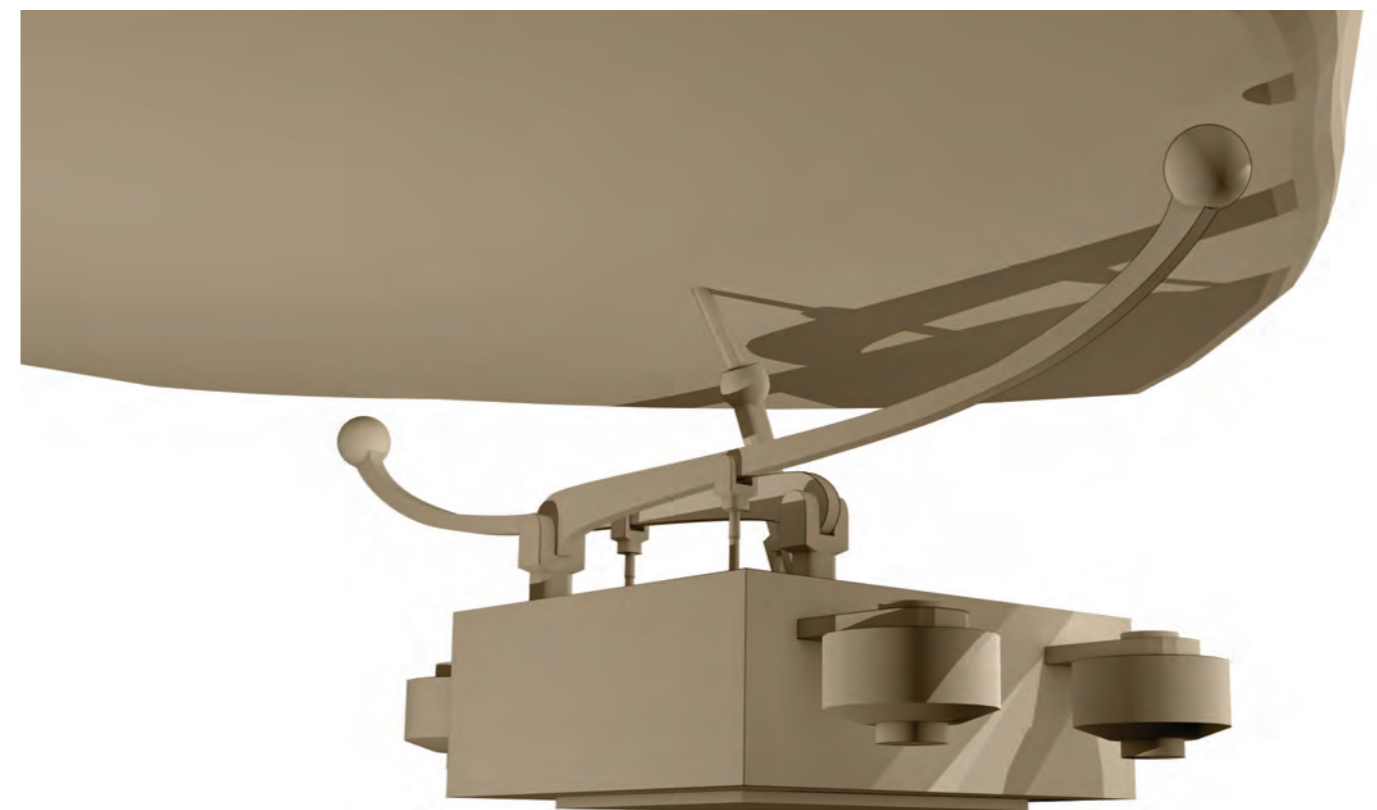
When the Volume shows rain in the digital footage, water sprinklers in the ceiling will hit the canopy roof. It is semi-translucent so that the lighting can emulate the environment and project creatures, shadows of creatures or other lighting effects.



Cross Section of Side View

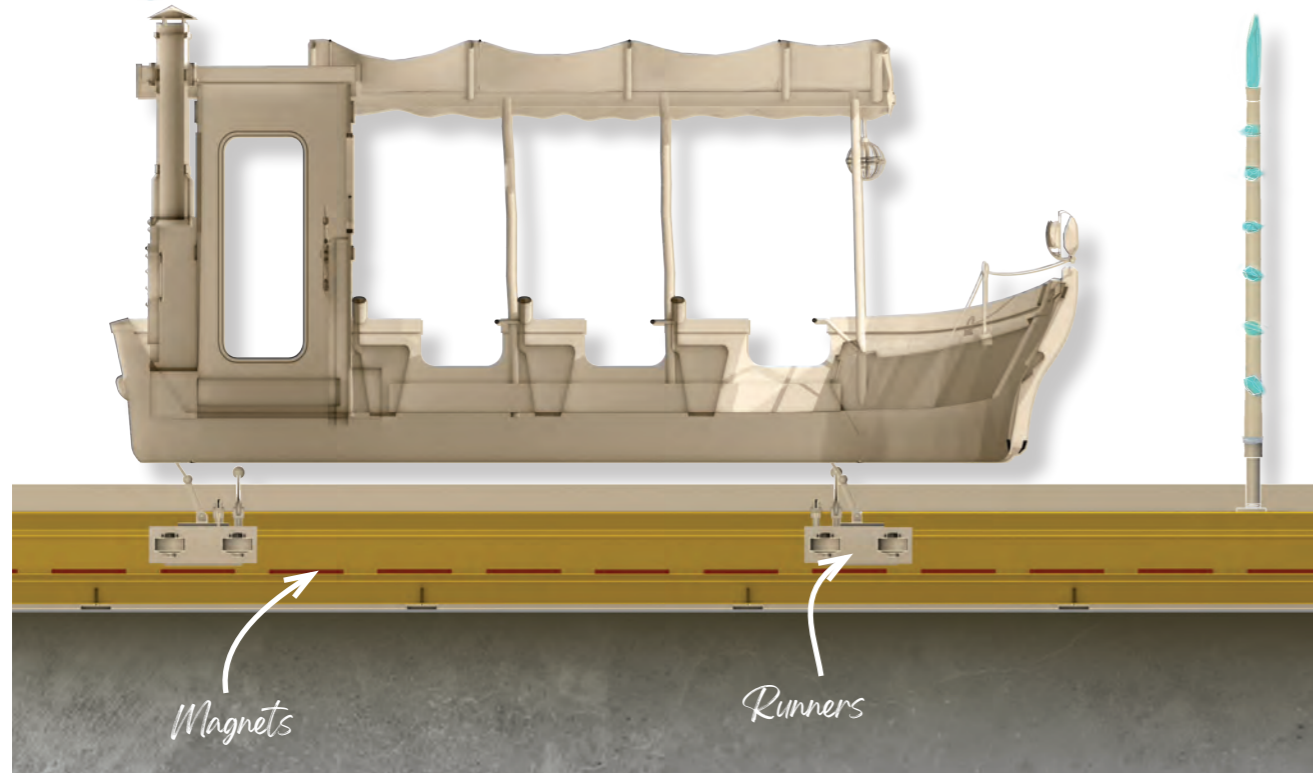


Runner Front View

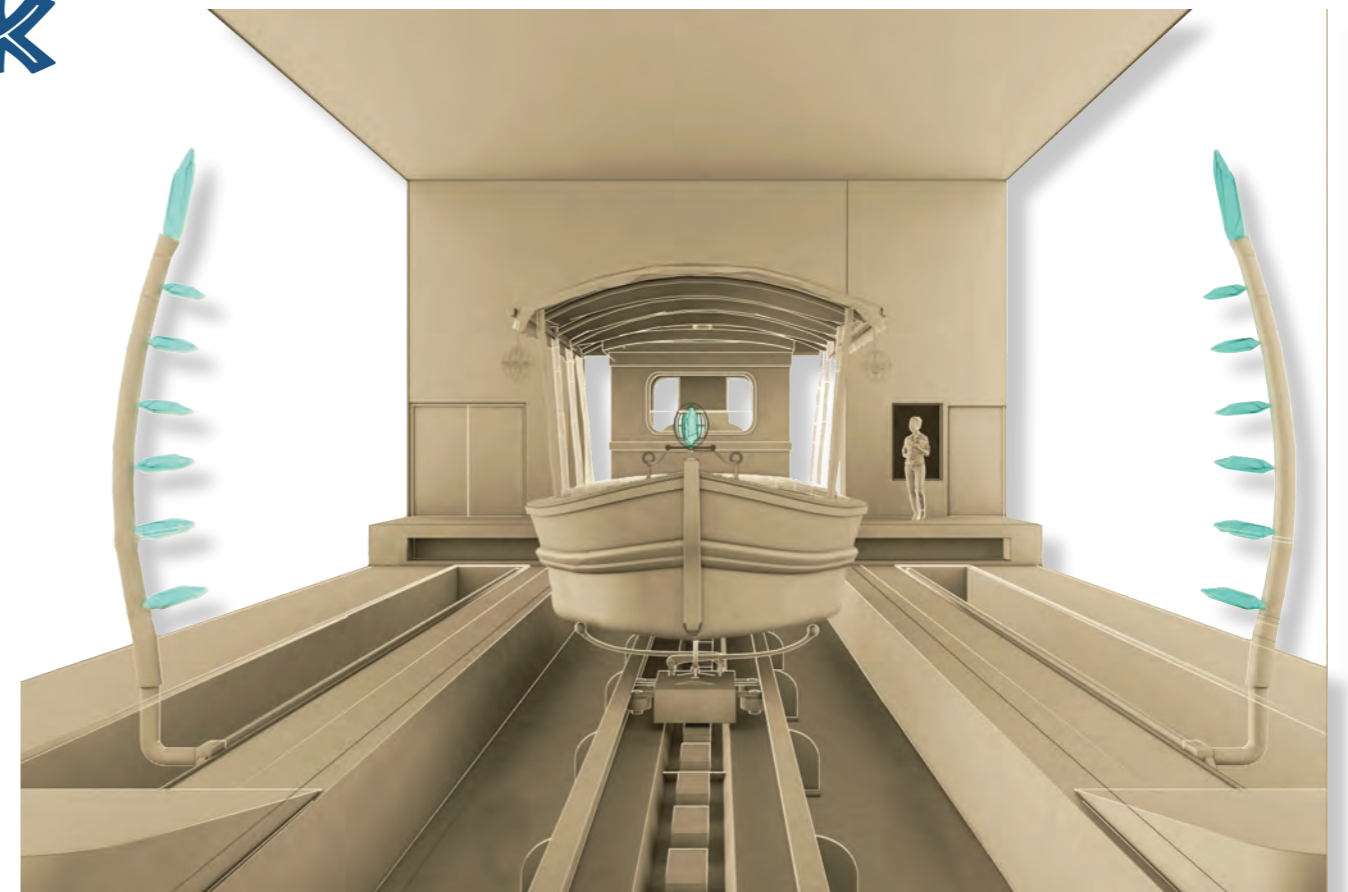


Runner Side View

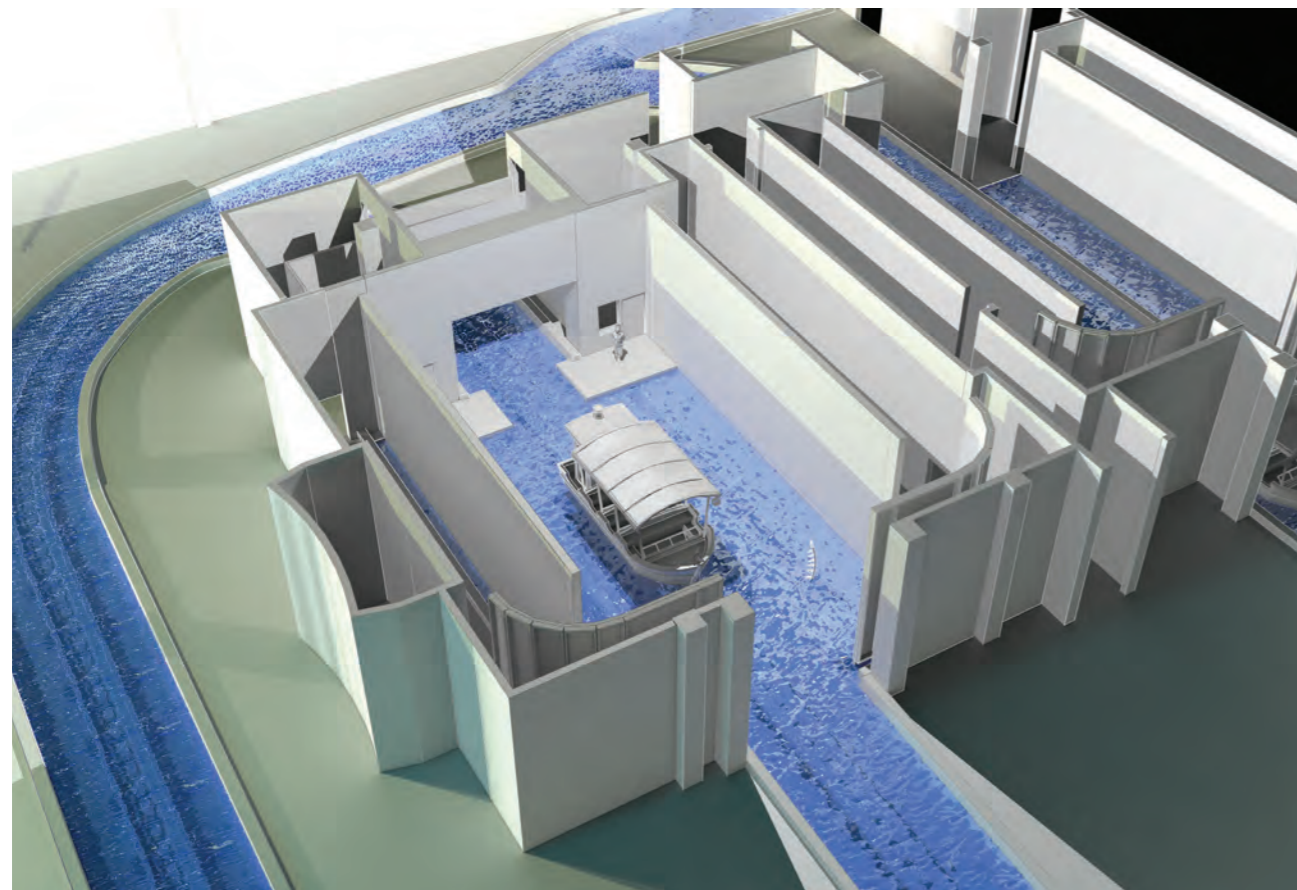
RAILS AND TRACK



Boat showing runners and track



Boat in the Volume without water



The route of the boats without any theming

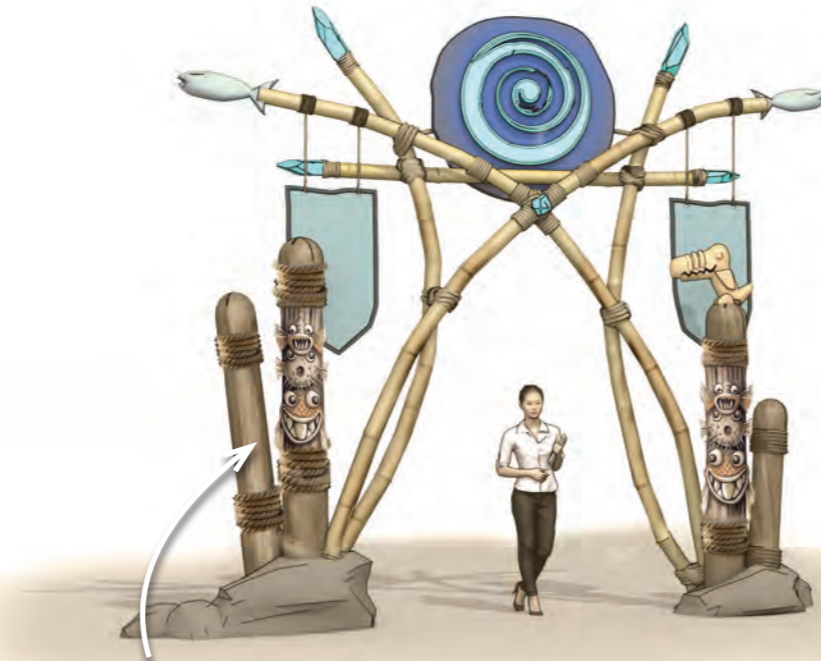


Boat in the Volume with water

WAYFINDING



Hand drawn sketch of a themed post featuring unusual fish, which features in the wayfinding arches.



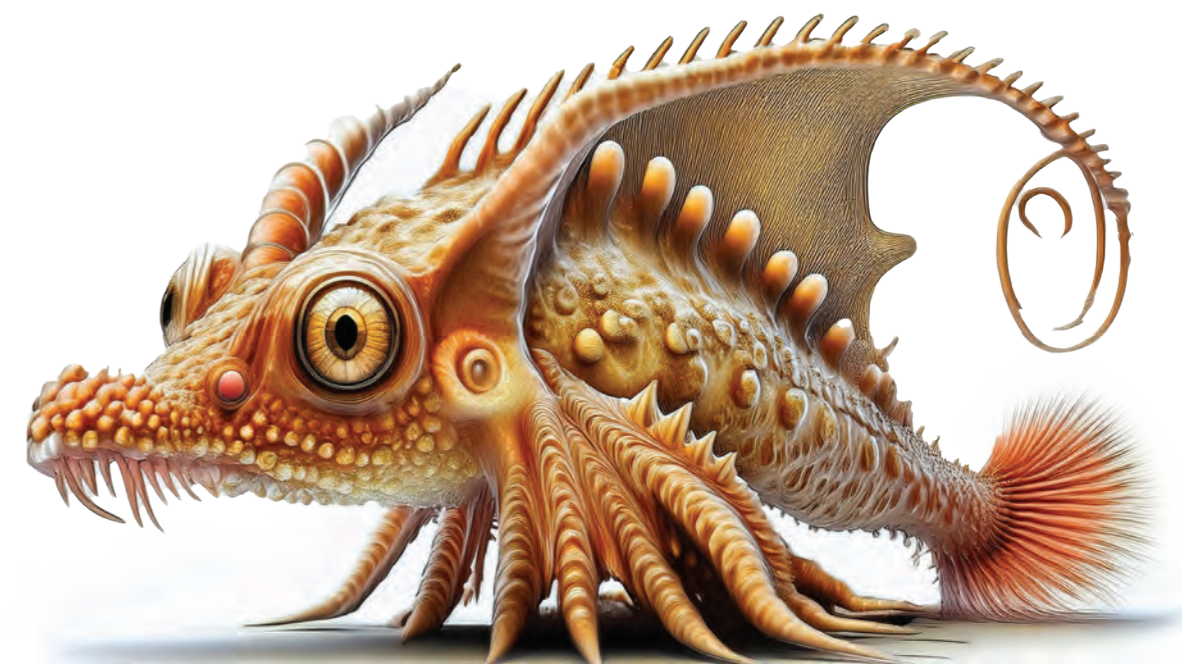
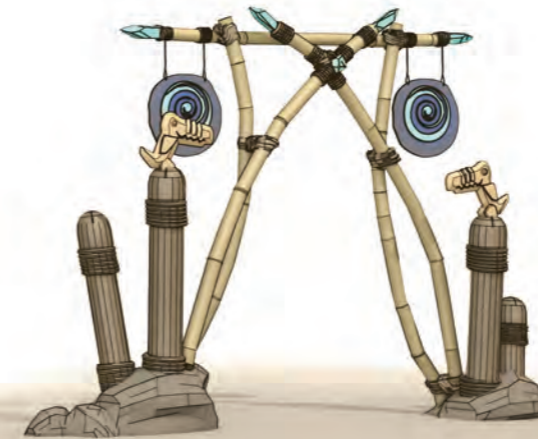
Themed post



Hand drawn sketch of the Portal arches.

Portal Arches

The Portal arches, themed with wooden replicas of some of the species of fish found in different worlds, are spaced along the queue line to indicate the route guests must take for the ride. They inform guests how long the wait is to board the boats.



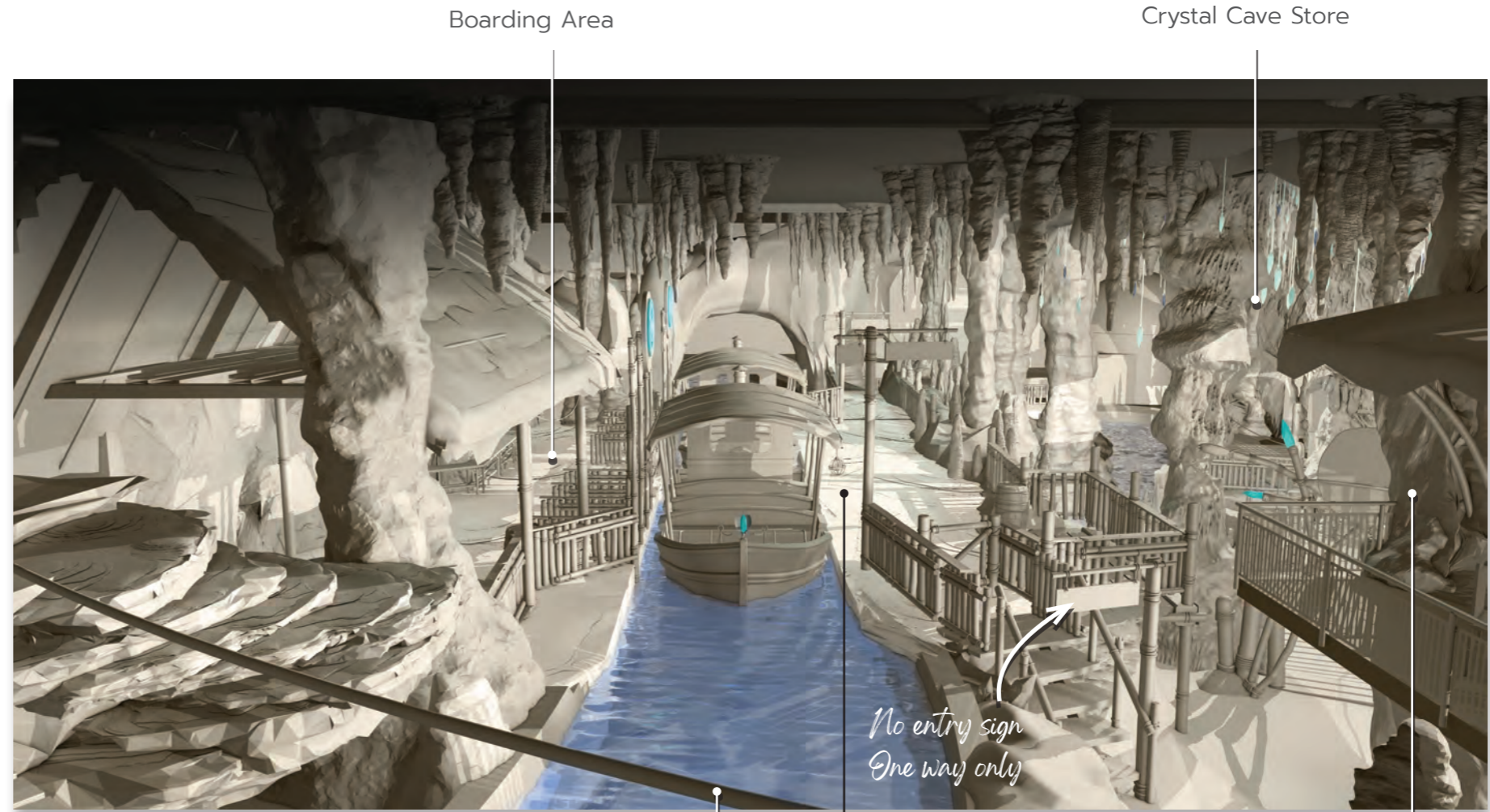
Lesser Startled Dragonfish

BOARDING

The boarding area, pictured on the left side of the river, will have three boarding lines for each ride, which will line up with the boats so guests can get on safely. The boats can take up to four adults in a row, or three adults and two children.

Boarding passes will be checked by a cast members before the boats arrive, while two others can check guests are safely embarked before the boat departs. One cast member will be on the vessel in the wheelhouse and act as the helmsman to the boat. They can monitor the guests through the their experience in the Volume.

The river journey begins after the guests have boarded, and the boat passes under a bridge to the boarding zone. As the vessel moves under a rock arch, guests will experience a waterfall that briefly stops as the front of the boat meets the water, preventing it from getting wet. The waterfall resumes as the boat moves past it, sending water rushing over the sides while keeping guests dry under the canopied area.



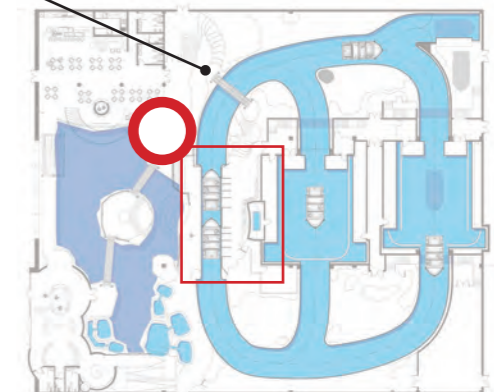
Signage Indicating Fantasy or Adventure



Disembark Boats

Ugly Fish Restaurant

Rope Bridge







ROCK POOLS



Disembarking

As the ride ends, guests will disembark on the left side of the river, where they will encounter a series of captivating rock-pools. These rock-pools are illuminated in various colors, and feature mesmerizing bubbling and spouting water reminiscent of the natural beauty of hot springs and geysers.

As guests immerse themselves in this breathtaking experience, they have the option to depart via the walkway leading to the Crystal Cave store or through the one-way exit



ADVENTURE WORLDS VOLUME 1

River Route and Portal Entrance

After boarding, the boat will travel along a physically themed environment surrounding the river, before entering Volume 1. As the vessel nears the portal entrance, the crystals around the portal, including the one fixed to the front of the boat, will glow. The boat will enter the Volume, which will be in darkness until the portal sequence begins, and the vortex appears within the Volume. The ride is meant to be thrilling, without being fast-paced or causing motion sickness. Although there will be movement and water splashes, the idea is to enjoy the environment with unexpected scenes that create suspense, rather than a violent boat ride.

Environment and Scenes

The thrilling adventure worlds are adorned with breathtaking landscapes, towering monuments, majestic mountains, and exotic plants and trees. These realms harbor uncharted perils on land, air, and in the depths, brimming with a diverse array of creatures and civilizations. From treacherous beasts to more perilous locations, guests will navigate through these immersive lands steeped in ancient mythology and spirituality, where deities are revered and traces of idolatry are apparent.



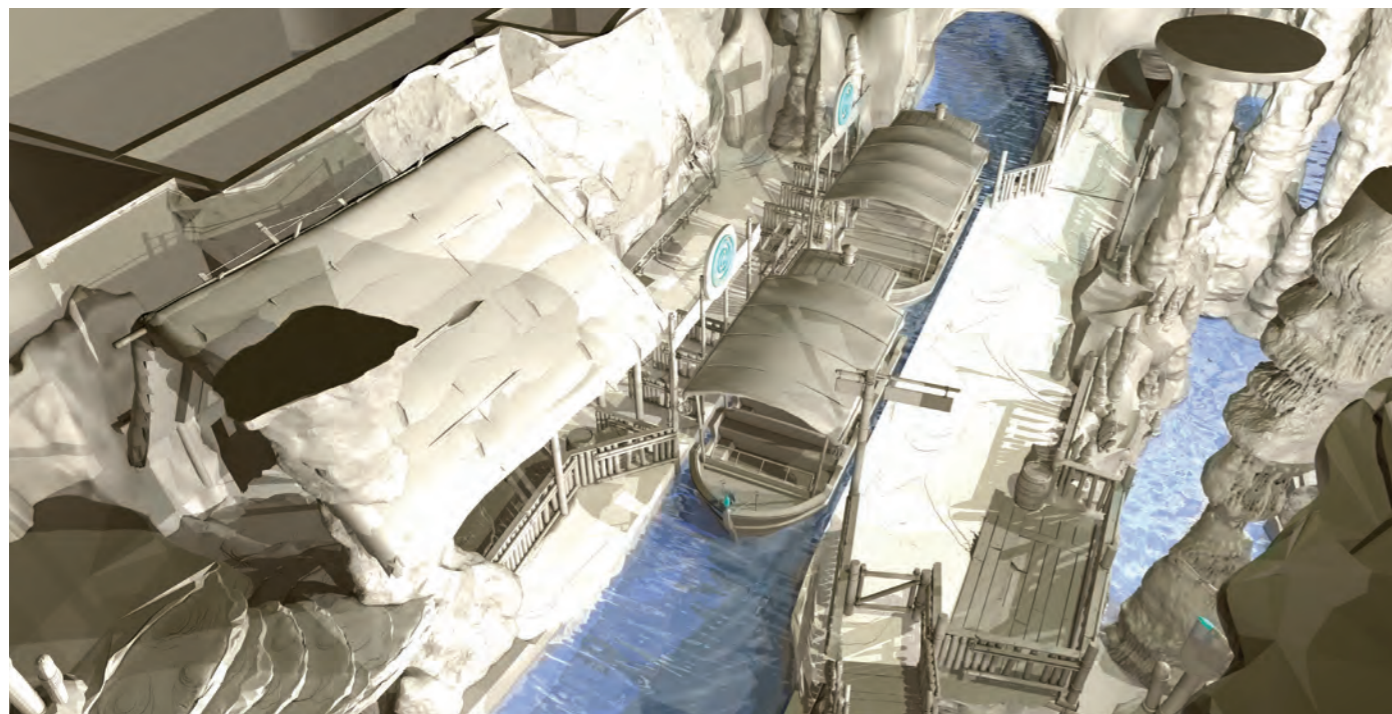
River of Gods



Razorback Ingenosaur



Entering the Land of Kings



Boarding area with theming, as observed above the rope bridge



View of Sea Dragon in Volume

FANTASY WORLDS VOLUME 2

Experience in the Volume

The fantasy world is a gentle ride with less suspense and dangerous creatures. Therefore, the boat will have less movement than the Adventure Worlds in Volume 1, but guests will experience water and lighting effects. On visiting Disneyland's Na'vi River Journey, we found the ride appealing but not overly exciting or unexpected. We wanted to create a ride where the environment is continually changing, and guests feel as if they are interacting with mythical creatures, creating occasional moments of thrill and suspense.

Environment and Scenes

The fantasy worlds are filled with lush green trees, colorful flowers, castles, waterfalls, and sparkling clear rivers. Most of the creatures are friendly, but some can be very timid, requiring guests to search carefully for them. Visitors may encounter colorful dragons, tiny glowing sprites, butterflies, unicorns, small flying animals, and stunning fish that occasionally leap out of the water. While darker realms may occasionally cross into their lighter counterparts, the majority of the places guests visit will be beautiful, safe, and magical.



Opaline Fairy



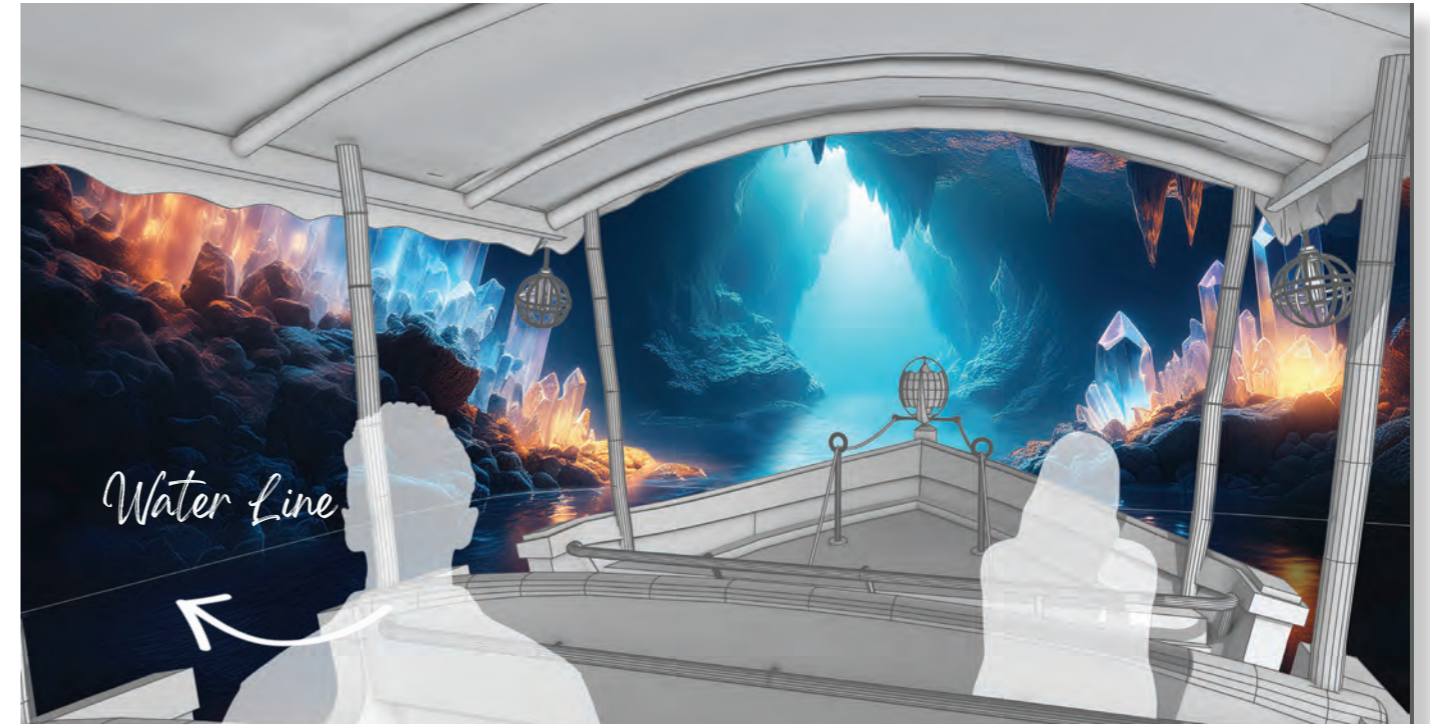
Blossoming Coralfish



Pearly Leafed Dragon



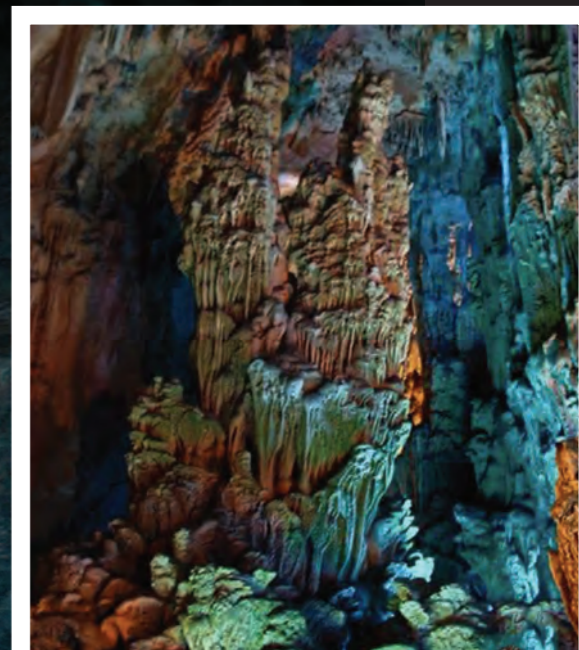
View of a fantasy land in the Volume



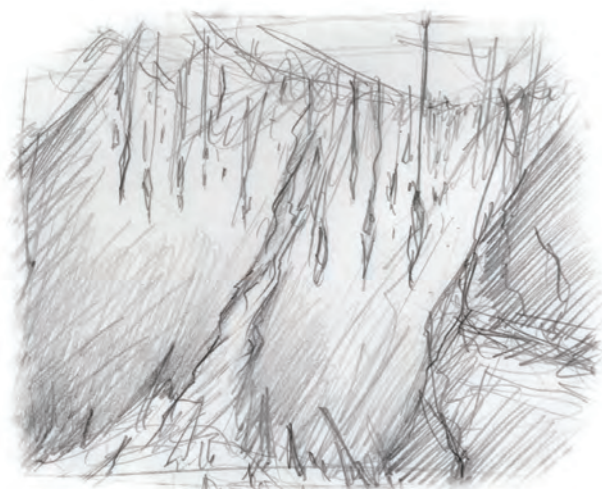
View of a fantasy cave in the Volume



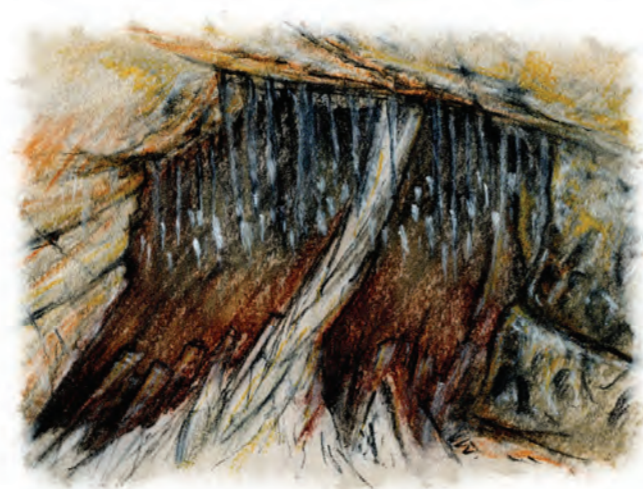
CRYSTAL TREE



Reference for rockwork



First sketch of crystal tree



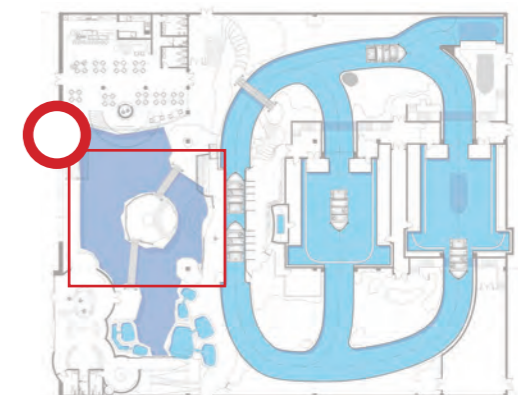
Colored drawing of crystal tree



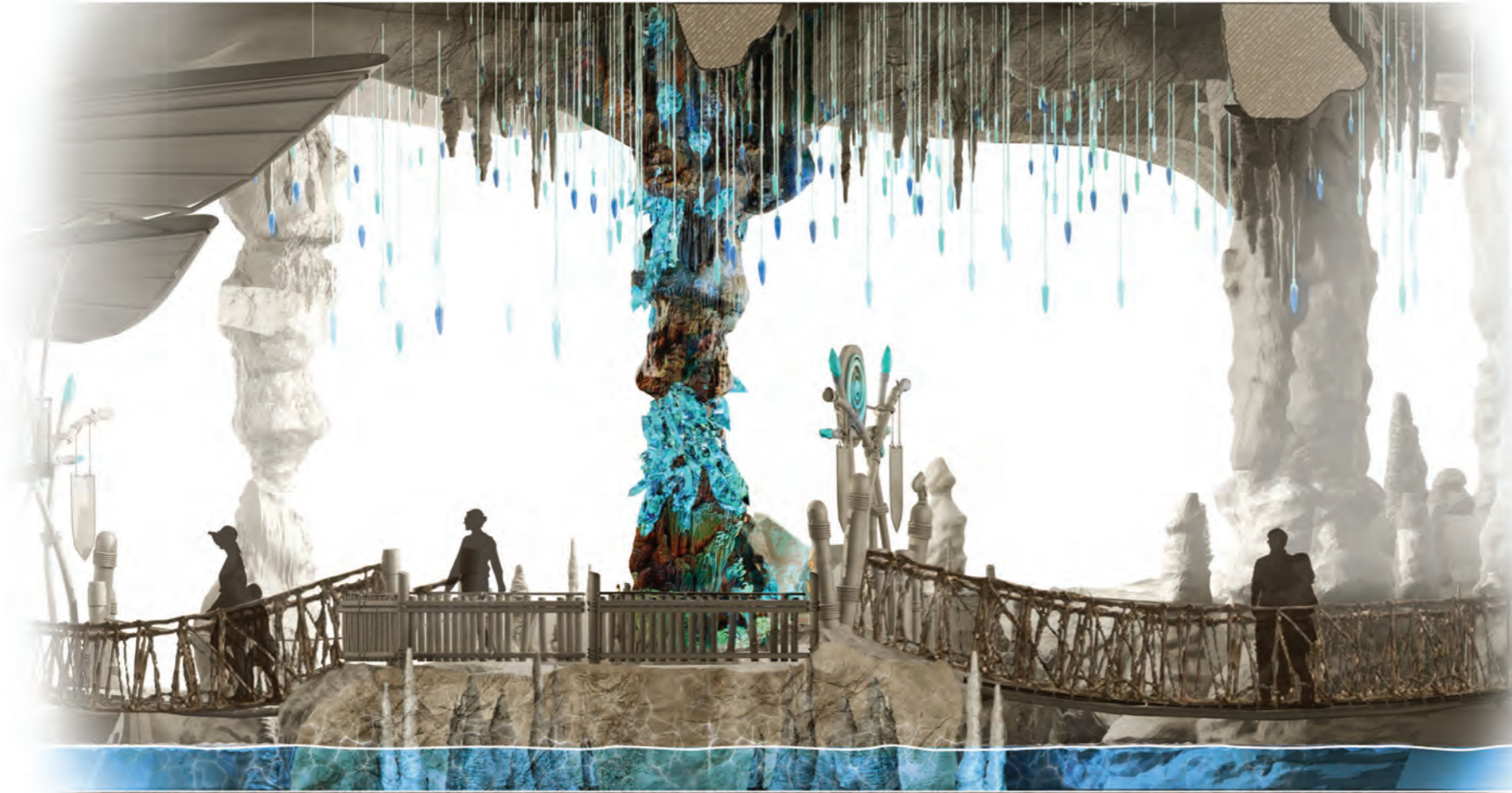
Sketch of crystal

The Crystal tree is in the center of the lake on an island and acts as a focal point for guests. There are three shades of blue crystals hanging from the ceiling, which are lit using LED lights and side glow fiberoptic cables. Caustic reflections appear in the lake as the water moves and reflects the crystals above.

The island is accessed by suspended bridges, which are fixed in place, creating stability when guests cross. The water depth in the lake is approximately one meter, and are filled with tropical fish and themed elements.



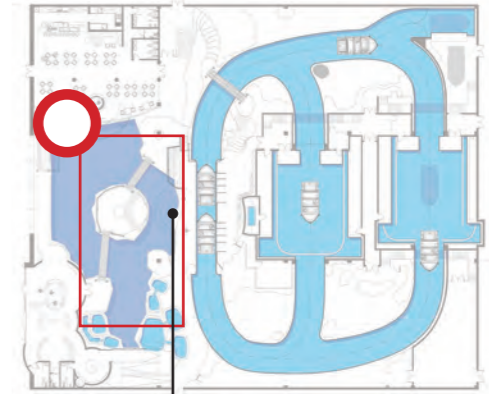
Cross Section of Crystal Tree



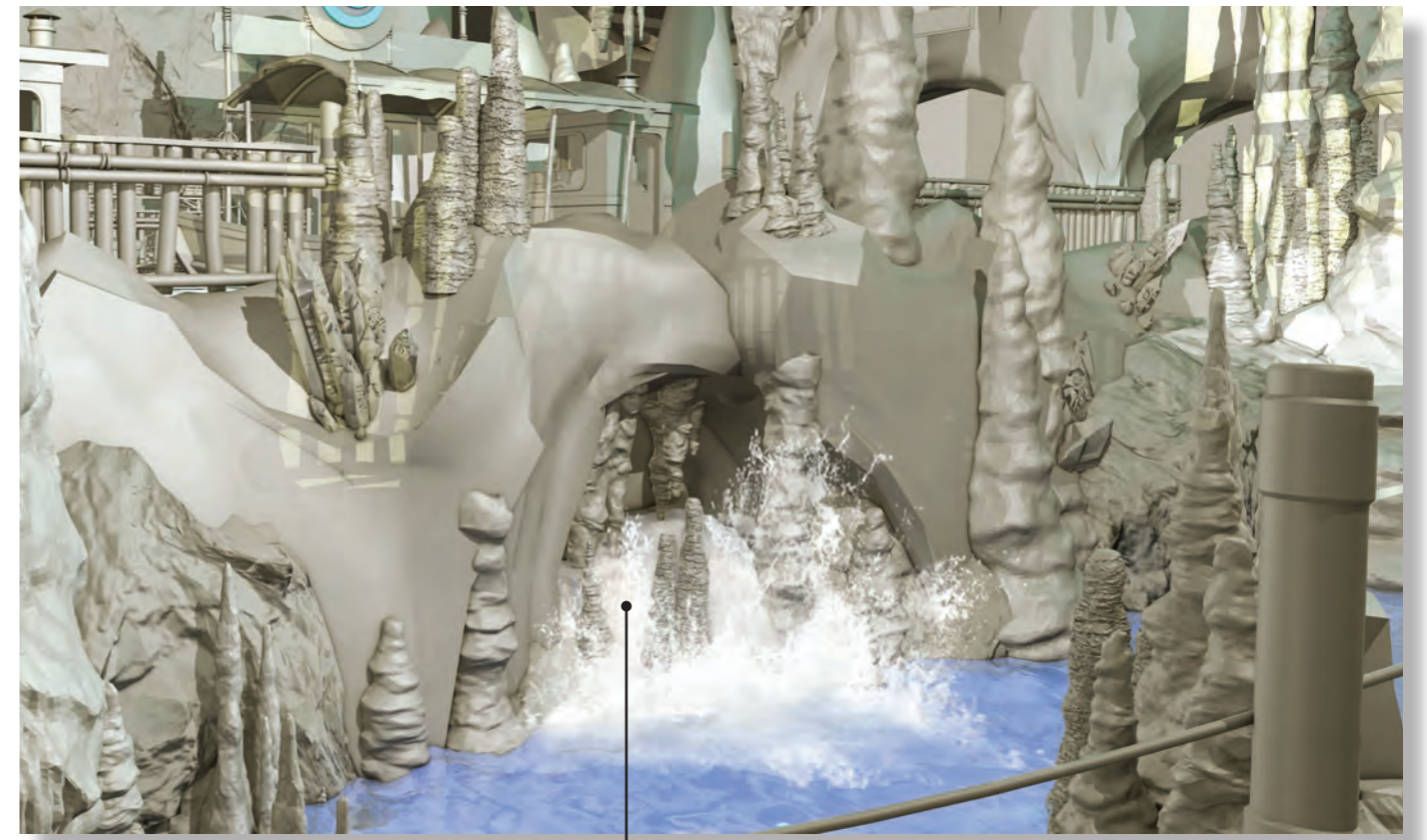
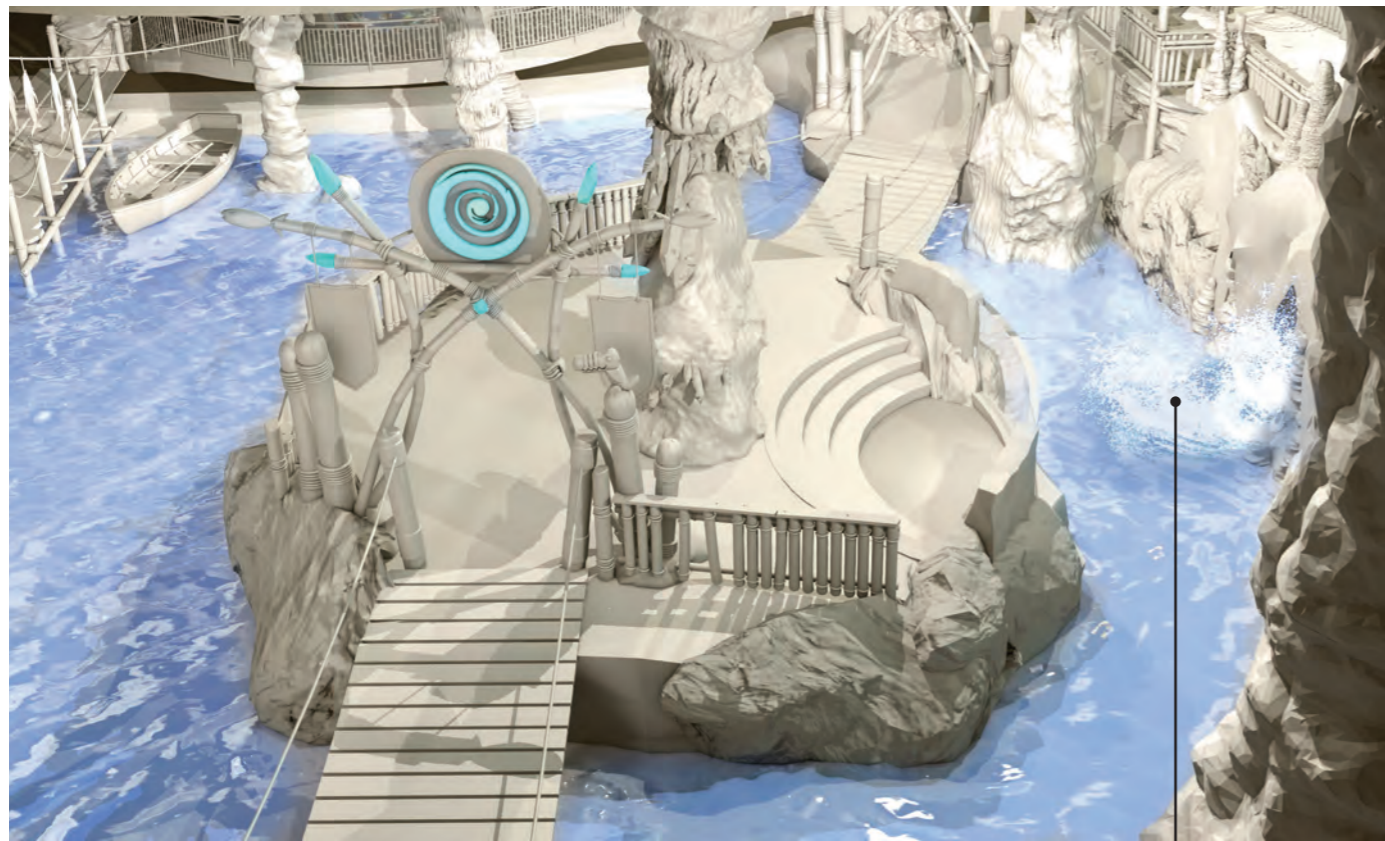
Splash Zone

The island has a view of the Splash Zone, which is where water empties from a dump tank located at the rear of the boarding area and gushes out of a rocky recess into the main lake. When the water hits the stalactites and stalagmites around the recess, it creates a big splash every 5-10 minutes.

The dump tank fills with water over time, and when it gets full, it tips the water into a shoot that is underneath the boarding area and the water empties into the main lake, creating water movement. This does several things: it prevents the water from becoming stagnant and aerates the water for the fish and uses artificially created salt water, specifically for tropical fish. The water is also treated and UV filtered in the Plant Room to reduce algae.



Splash Zone



Splash Zone



THEMED RIVER



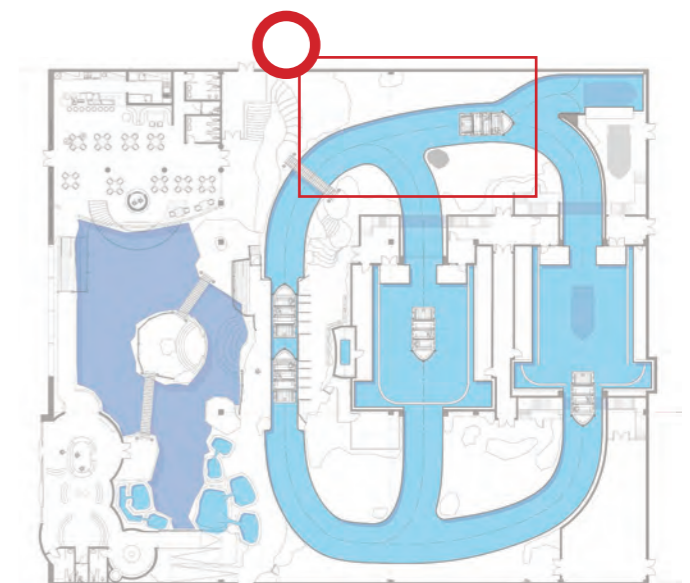
Fungilus

The areas on either side of the river will feature colorful, themed rock-work, oversized pink and purple mushrooms with small LED lights, glowing toadstools, iridescent sea flowers, and strange creatures who have unintentionally come through the portals. Some creatures are timid and prefer to remain out of sight but may appear behind a toadstool or rock. Some tend to be camouflaged, while others are very playful and will interact with guests.

Mossy Figgle

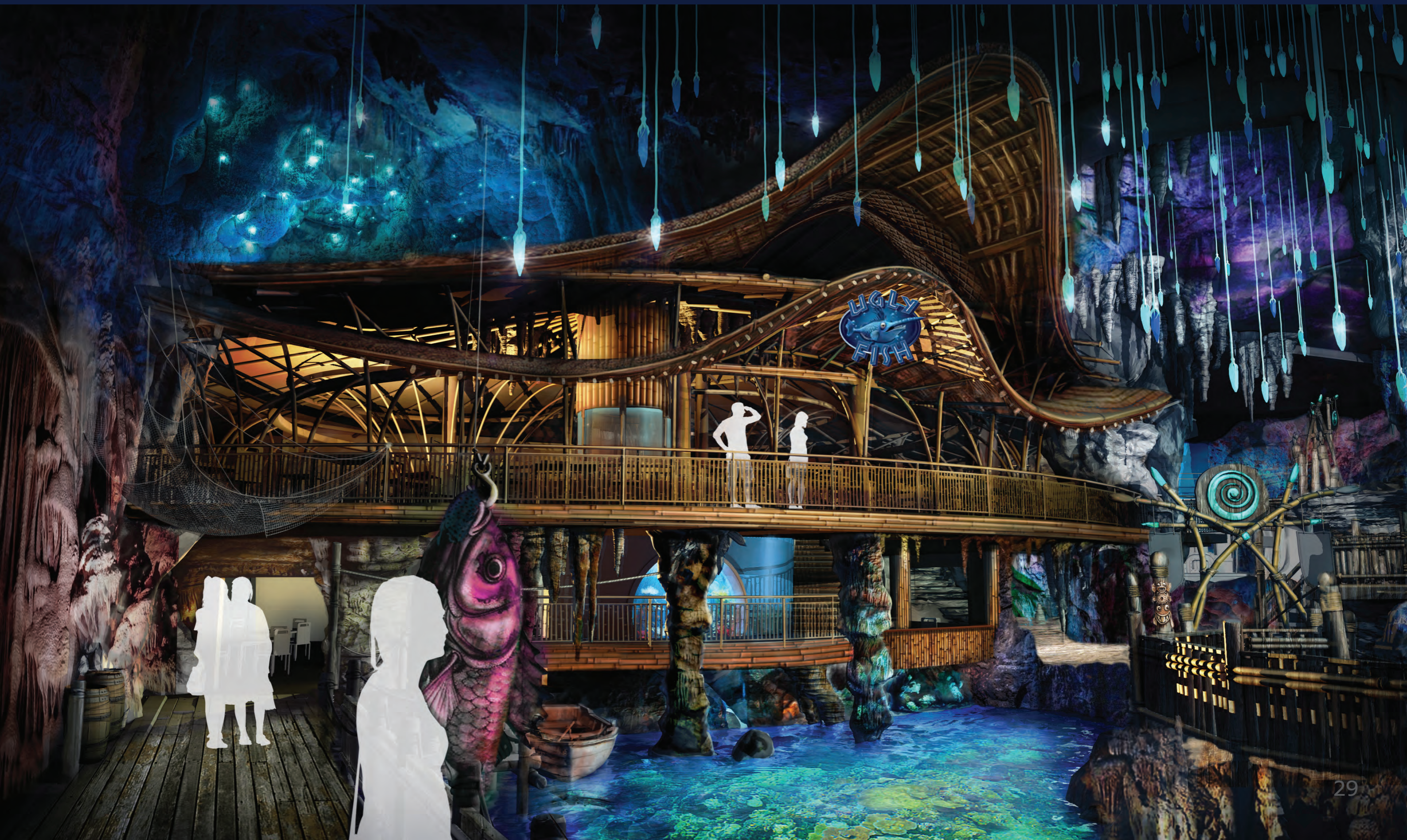


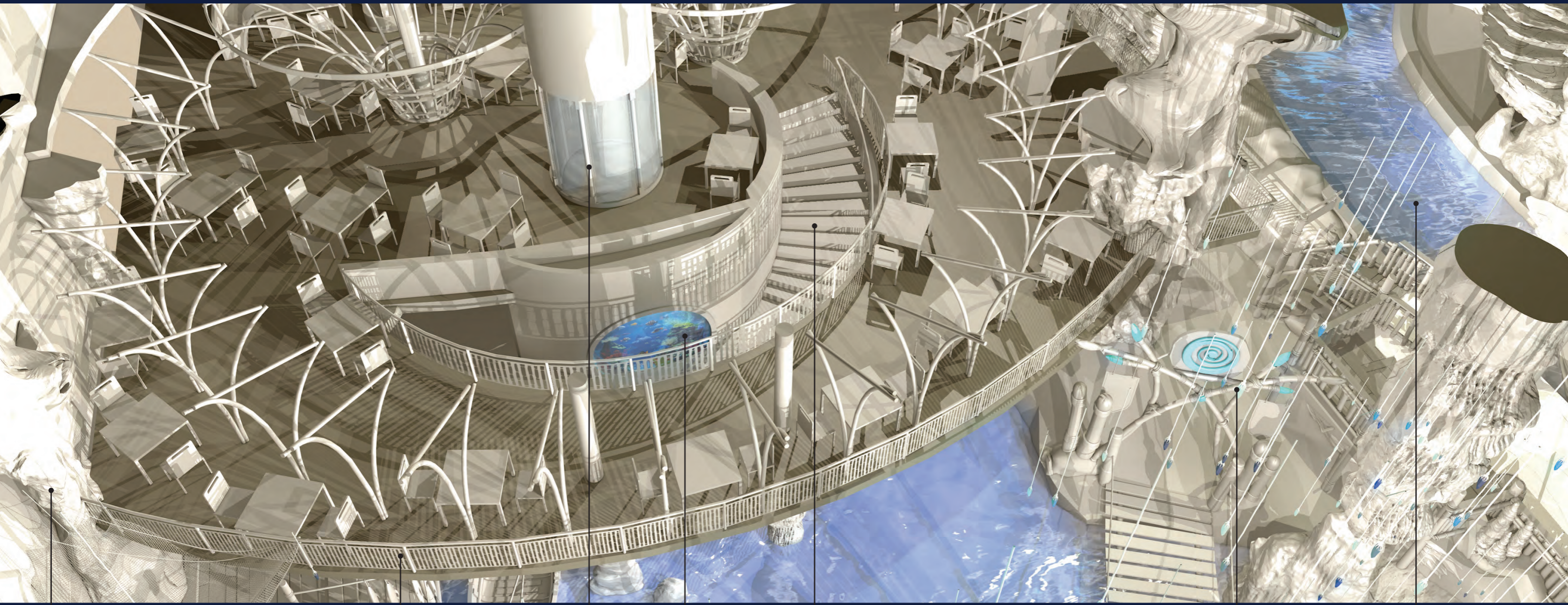
Reference





'UGLY FISH' RESTAURANT





Themed Rock-work

Cut-out
Bamboo Rails

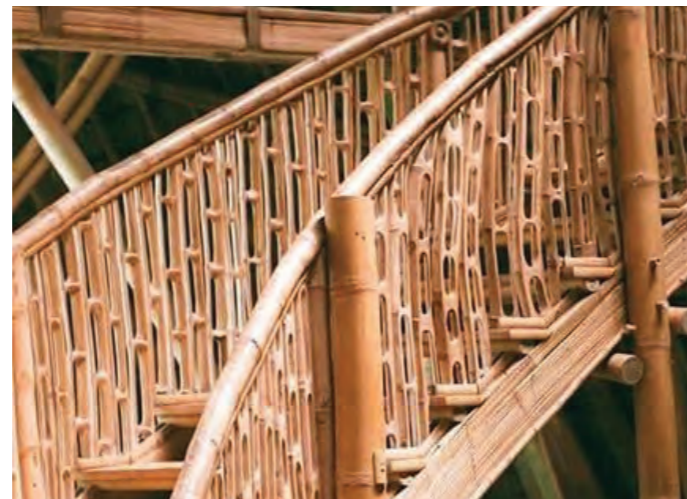
Elevator

Fish Tank

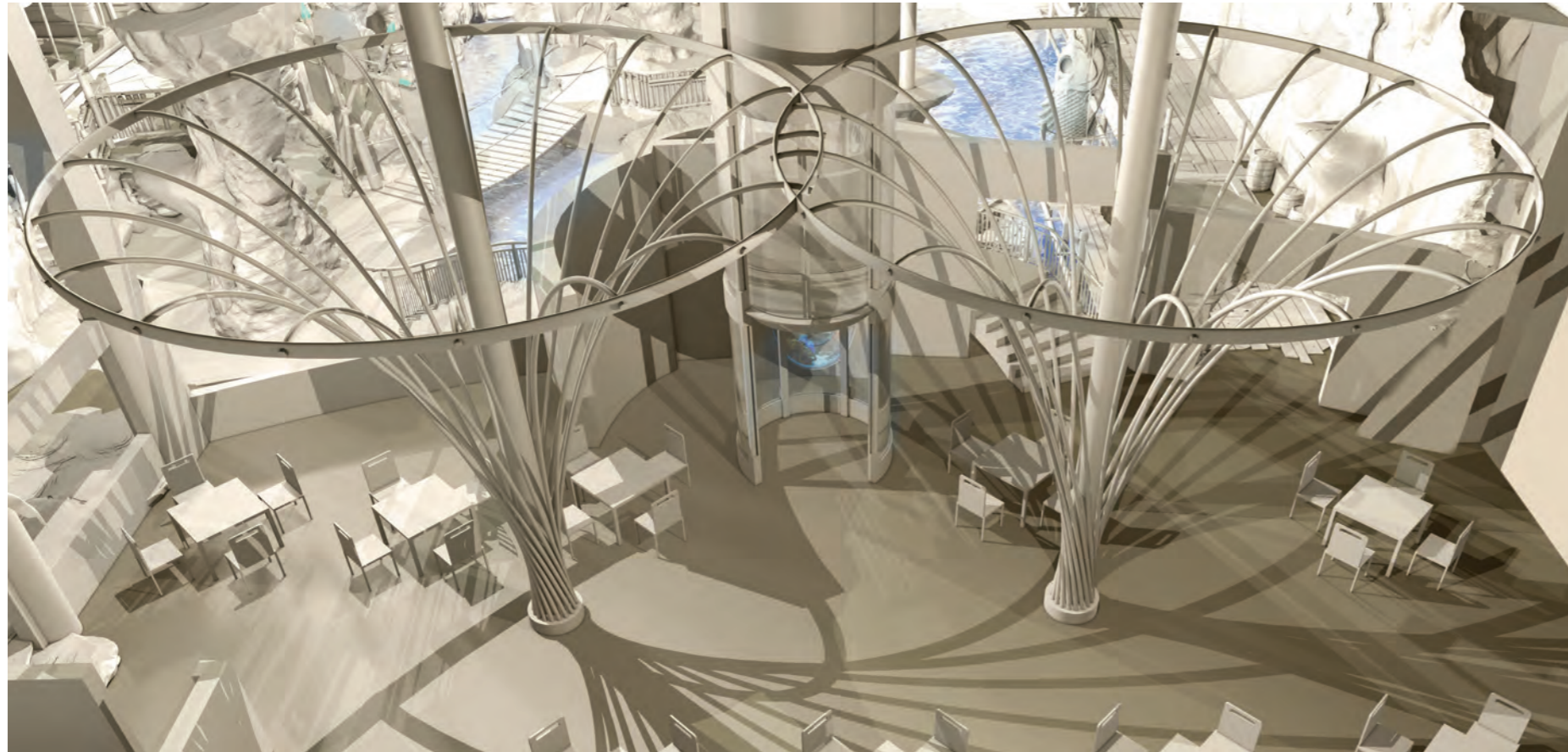
Spiral Staircase
with Viewing Area

Wayfinding Arch

River for Boats



RESTAURANT FEATURES



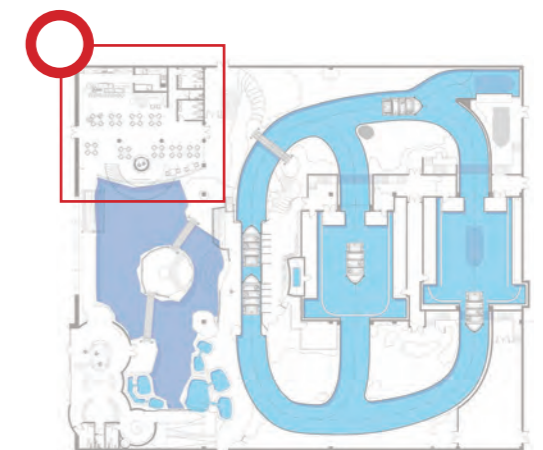
Twisted bamboo structures surround the supporting posts to make a feature pillar.



The bamboo balcony on the second floor and the viewing area set back on the first floor provides an excellent view of the lake and crystal tree. It combines themed rockwork within the structure.



Reference Images of bamboo pillars and roofs

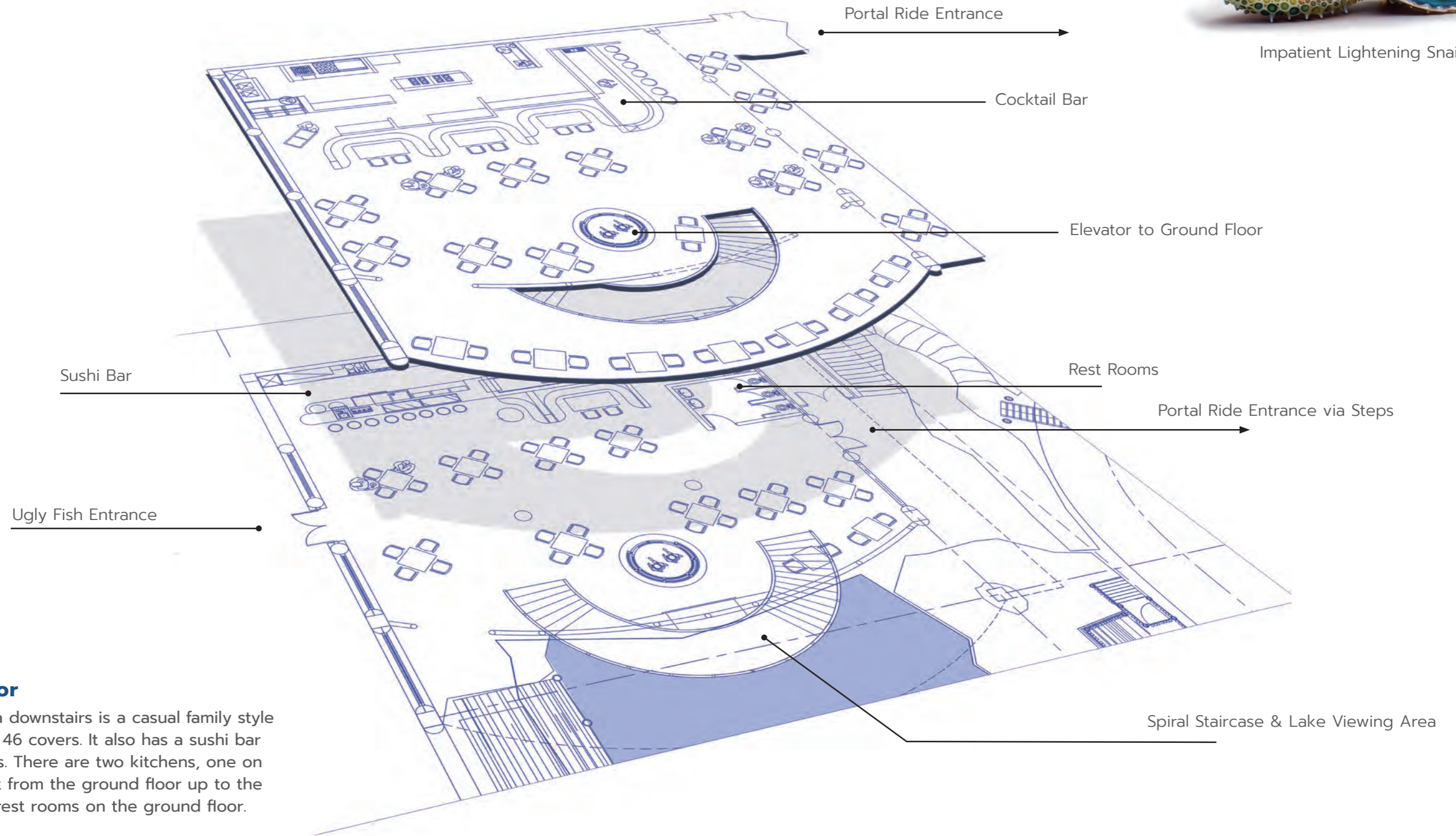


First Floor

The 1st floor dining area with the view of the lake has a contemporary casual feel, characterized by its creative cocktails and fusion food, and has 86 covers and seats seven at the bar.



Impatient Lightening Snail



Ground Floor

The dining area downstairs is a casual family style restaurant with 46 covers. It also has a sushi bar with eight seats. There are two kitchens, one on each floor, a lift from the ground floor up to the first floor, and rest rooms on the ground floor.

THEME & MENUS

Ambience

The restaurant has been designed to fit around the back story of Kai's journey to the temple, where he catches fish for the restaurant. It has a Tiki feel with a décor of cut-out bamboo, wooden carvings, lanterns, rattan furniture, tropical planting, brightly colored fabrics, fishing nets and an abundance of unusual wooden fish. There will be photographs of Kai and Nalu catching the exotic fish with descriptions of some of their adventures, and an enormous 'Catch of the Day' at the front of the restaurant.

Menu

The ground floor menu will have simple dishes, such as wraps, salads, burgers, fish and pasta dishes. It also has a sushi bar. The 1st floor is a seafood restaurant with a cocktail bar. Both menus feature some of the exotic fish caught in the other worlds and will describe their taste and texture, comparing them with their commonly eaten counterparts. All fish will be bought from responsible and sustainable sources.



Example Menu



Staff Tee-Shirt with Branding



Inside Restaurant Concept

CRYSTAL CAVE STORE



Merchandise

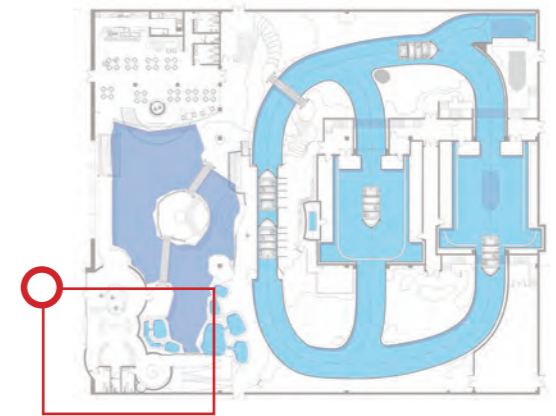
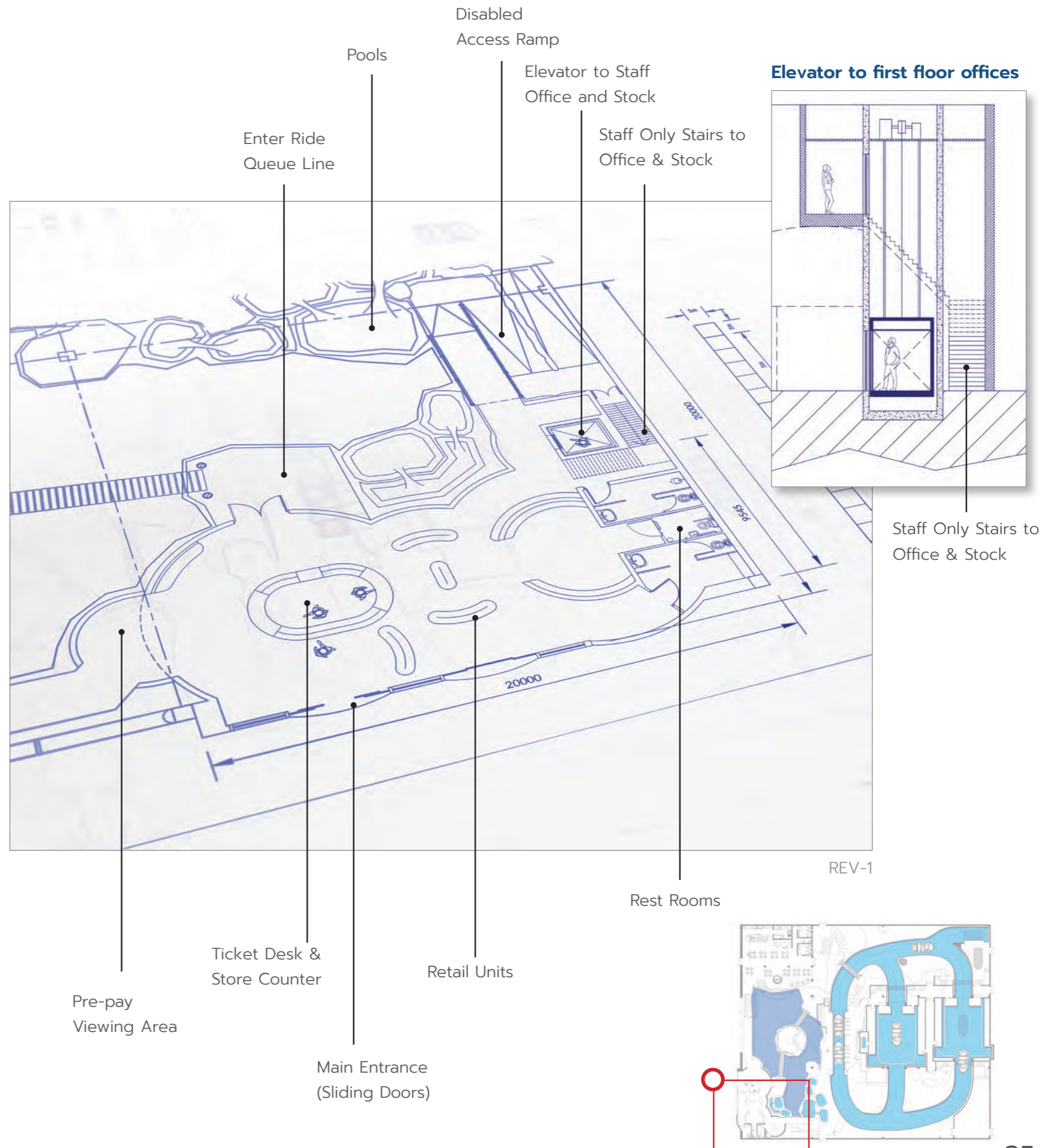
The Crystal Cave store has been themed with overtones of the Fantasy Worlds. It features the fantastical sea creature plushies, clothing with branding from the Portal ride and the Ugly Fish restaurant, ornaments, postcards, jewelery, and other gift store souvenirs.



We added a gift store, as they generate a large proportion of secondary spend and many guests like to relive the memories of their visit, keeping the attraction fresh in their minds.



All items will be available via an on-line store and feature digital loyalty programmes, special events and personalised offers.



SUSTAINABILITY

Building & Structure

The building's structure is made from a frame of **recycled steel**, which is robust and durable and does not lose its properties when recycled.

Bamboo, with its rapid regrowth, exceptional strength, and natural antibacterial properties, is a stand-out sustainable building material. When not chemically processed, it is 100% biodegradable, making it an eco-friendly choice.

Timber will be from a sustainable wood supplier, which means it can be used for construction without harming the environment. It comes from renewable sources where trees can be felled and replanted without negatively impacting on the local ecosystem, wildlife, or environment.

Ferrock is largely iron-rich ferrous rock. It is made from recycled materials and is typically used as an alternative to cement. Ferrock is good for absorbing and binding CO2. It is currently being used for marine applications, such as structures exposed to seawater. Ferrock is a tough and resilient material, being five times stronger than Portland cement and weighs between 10 to 25 per cent less than a structure made of bricks. Ferrock has greater flexibility than conventional concrete and sustains movement and pressure without cracking.

Plant-Based Polyurethane Rigid Foam is made from hemp, kelp and bamboo, which makes it resilient to moisture and heat. It even has better insulation and thermal resistance than fibreglass. It protects against mould and pests, is heat resistant, and acts as a sound insulator.



Spotted Bloater

Power

Green energy can be generated by installing solar panels on the roof of the building. The electricity produced by solar panels is noiseless, 100% emission-free and far cheaper than buying from an electricity supplier. Solar-powered systems need virtually no maintenance and operate year-round.

Emissions

We suggest the attraction develops an emissions reduction plan and determine a time-line for completing the plan.

Greenhouse gas emissions should be measured and reported annually, enabling the operations manager to identify, share, and implement strategies to reduce greenhouse gas emissions from operations and remove greenhouse gas emissions from the atmosphere.

Support strong nature-based solutions in international, federal, and state climate change policies.

Aquarium Lake

There are a number of organisations committed to conservation within the aquarium industry and provide advices and guidelines for sustainable and environmentally safe practices. Links to two of the sites are below.

Aquarium Conservation Partnership:
<https://www.aquariumconservation.org>

The World Association of Zoos and Aquariums - WAZA, have a program to align aquariums across the US around a shared climate commitment:

<https://www.waza.org/priorities/sustainability/a-guide-reducing-measuring-and-offsetting-carbon/>

Restaurant & Store

All fish and food supplies will be bought from responsible and sustainable sources.

The clothing range will strive to create a positive impact on people and the planet, will be made from sustainable materials, and promote ethical labor practices.



Sustainable Fishing



Building with Bamboo

STAFFING

Ride and Store

A great design alone cannot guarantee an amazing experience on a theme park attraction. To achieve that, a ride or show requires effective operations. Staffing an attraction requires careful planning and consideration, and, subsequently, we have based our calculations using a approximation from existing attractions.

Restaurant

Using recommended guidelines, we have estimated the staff numbers required for both restaurant areas based on the assumption that the restaurant is at total capacity.

Independent Businesses

The store and restaurant can be independent businesses, and will generate their income from secondary spend. Additional staff may be required in the store, but this will depend upon the number of guests purchasing goods.



Portal Ride

- Operations Director x 1
- Manager of Cast Members x 1
- Entrance/Pay Desk x 2
- Queue Line and Guest Relations x 2
- Pass/Ticket check x 2 (1 per ride)
- Boarding Area x 2 (1 per boat)
- Boat Ride x 2 (1 per boat)
- Control Room Staff & Technicians x 2 (1 per Volume)
- Boat Maintenance & Cleaning x 3
- Cleaning Team x 3
- Aquarist x 1
- Aquarist Assistant/Apprentice x 1
- Marketing Officer x 1
- Social Media Officer x 1
- Store Manager x 1
- Store Pay Desk x 1
- Store Assistant x 1

TOTAL 27

Ugly Fish Restaurant Ground Floor

- Restaurant Manager x 1
- Ground Floor Chefs x 3
- Dish Washing Staff x 2
- Serving Staff x 3 (1 per 4 tables)
- Sushi Bar x 1
- Bar Staff x 2

TOTAL 12

First Floor

- First Floor Chefs x 6
- Dish Washing Staff x 3
- Serving Staff x 5 (1 per 4 tables)
- Bar Staff x 3

TOTAL 17

Ride Experience Staffing

Ride/Experience	27
Restaurant Total	29
Total	56



Rainbow River Snail

ABOUT US

Richard has always been creative and started drawing, painting, and model-making from a young age. After leaving school, he joined an animatronic company, was responsible for painting scenic backdrops and murals, and was soon head of the art department. Richard had no formal training and, remarkably, taught himself. When the company closed in the 1980s, Richard set up his own company dedicated to design, theming, and manufacturing, utilizing the skills he had developed.

Richard and Amy got together on Christmas Eve 2004 when she was in her final year as a student nurse. After a whirlwind romance, they married in January 2007.

Together, they have had some fantastic and thrilling adventures and travelled worldwide, although Richard never managed to switch off from work and dragged Amy to every visitor attraction and theme park on each of their visits.

Richard says he brings out Amy's inner child, and Amy tries to be the sensible one and is always in charge of the tickets! Amy started her career as a nurse but never developed her creative side. Out of the two, she is the academic and wordy one, while Richard is the Imagineer. Recently, Amy has enjoyed expanding her creative skills and learnt how to visualize her ideas through Adobe software and AI.

During Richard's career, he has developed themed environments and exhibitions for some of the UK and Europe's best-known attractions and Sealife Centres. However, he has never designed a ride or attraction from scratch.

In June 2023, Richard was unexpectedly diagnosed with aggressive bowel cancer and had to have emergency surgery to remove an extensive tumour. He underwent invasive chemotherapy, which left him too unwell to work for over six months. During his recovery, Richard reflected on his career and felt he had much more to offer.

When they saw the Storyland Competition advertised, they felt this was the perfect opportunity to unleash their full creativity together. They combined their love of story telling, enthusiasm for theme parks with their design skills to create a complete adventure of their own.

Contact Details

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