Book Preview

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Since the beginning of communication, people have told each other stories. On cave walls, pottery, papyrus, parchment, and paper. We have told stories of worlds after death, of lost continents deep beneath the waves, and of gods feuding atop the highest mountains. Conquistadors dreamed of jungles concealing cities of gold and the Fountain of Youth. Victorian authors conjured up fantastic worlds deep beneath the Earth’s surface, isolated at the frozen poles, or emerald cities over the rainbow. Our imaginary worlds expanded to include faraway galaxies with laser battles and spaceships, alternate realities where wizards and witches live out-of-sight lives, or mythical histories in which men and elves battled orcs and dragons. Books allowed us to read about these worlds; paintings allowed us to see frozen images; and cinema eventually allowed us to see these places brought to life in motion on the two dimensional silver screen.

In the middle of the twentieth century, however, a number of circumstances and visionaries manifested the possibility of building these worlds ourselves: physical places of bricks, mortar, fiberglass, cement, and steel, so that more than simply looking at these places, for the first time we could enter them. For every child and adult alike, the magic of being able to step into worlds where pirates still loot Caribbean towns, where daring adventurers explore booby-trapped temples, and where superheroes swing from New York skyscrapers battling sinister super villains, was born. This is a book about how to design those fantastic places, and the ingenuity that goes into their creation. Designer John Wardley explains:

> We’re entertainers. The fact that we use concrete and steel to do our entertaining as opposed to a piece of Shakespearean text or whatever is immaterial.¹

Whether at the scale of Disney and Universal, or the hundreds of other smaller theme parks and attractions around the world, themed entertainment is not easy. Designer Eddie Sotto explains:

> There are people out there that think they can copy Disney without any understanding of what or why it works for the guest. You can make a cheap Xerox of the park, leave out the detail, passion, care, branded characters, and intelligence that the first generation Imagineers brought to it by being artists themselves, and think you can just flip the switch and it works – not. At least not long term. [...] These poser parks are what super smart accountants thought a Disneyland was. Who needs designers? They just get in the way and cost you money. The guest will never know. Just to be safe, drop in a few wood coasters and some carnival rides.²

This book aims to pull together the collected wisdom of the designers that have created amazing spaces that let us step into stories, pulling together a portion of the infinite number of decisions a designer must orchestrate in the process of design. These are design decisions that a guest may never notice, but which if made wrongly, however insignificant they are individually, can accumulate into a project

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¹ (The Magic Factory)
² (Sotto, Eddie Sotto’s Take on the Current State of the Parks Part II, 2011, p. 111)
failure. No decision, no matter how small, should be overlooked if it can be used to improve the overall design. Writing of designer John Hench, commentator David Koenig made this observation about Hench’s attention to detail:

What I appreciated most about him was that he seemed to understand ‘Disney’ on a deeper level than anyone else I’ve ever listened to; he had a reason for everything — why a bench was a certain color, or a door was a certain width, or a curb was a certain shape. Not money reasons. Not random choices. Listening to John Hench, everything made sense.³

Describing Walt Disney, designer Dick Irvine said “He knew everything that went into the park. He knew where every pipe was. He knew the height of every building.” His wife, Lillian Disney, said he knew where every nail in the park was located.⁴ The only reason Walt knew these things and made a point of remembering them, was because they matter. An assistant landscaper described Walt walking up and down Main Street, U.S.A. (Disneyland, 1955) five days before the park’s grand opening: “[H]e would stop and face a building and look at it, step back, his head would kind of turn, and then he would make some notes in his little flip notepad. He then would look up at something else and make another note, look down at the bottom of the sidewalk, check out everything and a last-minute glance and he would go on to the next building.”⁵ Designer Randy Bright explains:

Disney people often point out that they are by far their own worst critics. They are constantly nit-picking, monitoring and looking for improvements, attempting to minimize contradictions and negative elements which occasionally crop up in such a complex production. There is the constant challenge of controlling thousands of individual bits of stimuli and attempting to keep them positive. They understand all too well that our show is not self-perpetuating nor self-correcting, that there must be a near fetish about maintaining and improving the level of quality.⁶

For designers, here’s a handbook to use as a shorthand in your designs, to quickly access the wisdom of your peers. For students, here’s a compendium of knowledge to form a bedrock from which you can launch your own innovative ideas. And for theme park fans, here’s a peek behind the curtain of how theme parks make their magic through skill, knowledge, and perseverance. As operator Lee Cockerell explains: “It’s not the magic that makes it work; it’s the way we work that makes it magic.”⁷ More than just listening to stories, it’s time to tell them, to touch them, and to step into them. Designer Joe Rohde explains:

At its most basic you are standing around a campfire telling stories, watching the audience for a reaction and then modifying it for improvements. You have to do it. Theme parks have a longer and slower cycle with bigger objects and ideas which take longer to observe, but the fundamentals are the same as those campfire tales.⁸

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3 (Koenig, Fond Farewells, 2004)
4 (Thomas, 1994, p. 536)
5 (Thomas, 1994, p. 530)
6 (Bright R., The Disney Theme Show Volume II: An Introduction to the Art of Outdoor Entertainment, 1975)
7 (Cockerell, 2008, p. 1)
8 (MacDonald, Tales from the Laughing Place #12, p. 32)
Using This Book

This book is divided into nine chapters:

Chapter 1: Medium defines what themed design, themed entertainment, and theme parks are, exploring their history, their product, and the reasons designers choose to theme their work.

Chapter 2: Business explores the business model of the themed entertainment industry, with the view that to design a good themed attraction is to design something that can be financially sustained.

Chapter 3: Process describes the full design process for a themed project from blue sky design to post-opening, and the individuals involved at each stage.

Chapter 4: Theme explores the difference between the manifestation theme and dramatic theme, and physical theming itself: its styles, its content, and its use across the different scales of design.

Chapter 5: Story looks at crafting a story for the themed experience: incorporating the guest as a character, structuring the experience, incorporating content, adapting Intellectual Property, writing, and the story techniques used to communicate with guests.

Chapter 6: Design defines the techniques that apply to themed design regardless of scale, from the styles of theme park design that are dominant, to techniques such as Forced Perspective, Intrusions, and Doubly Duty, alongside a number of key design disciplines.

Chapter 7: Theme Park Design looks at the widest scale of themed design: theme park archetypes, park layouts, how to coordinate an effective attraction mix, and exploring park-wide concepts such as employees, marketing, and park maps.

Chapter 8: Land Design focuses on designing a themed area containing multiple stories: land layouts, transition zones, designing the landscape and buildings, and what goes in them, such as restaurants, shops, and restrooms. It also include shows, parades, fireworks, and other spectacles.

Chapter 9: Attraction Design explores the design of singular story experiences, beginning with their ride type and ride system, and carrying on into attraction layout, ride vehicles, show scene design, and more.

Importantly this isn’t a book about how to design, it is about how to design for theme parks. A basic knowledge and skill with design should already be understood: this book won’t talk about color wheels, composition, and other basic elements of design theory, nor will it comprehensively cover every discipline involved. Instead of trying to cover all of architecture, lighting design, or illustration, the intent is to cover how these disciplines are adapted and applied specifically to theme parks, with all of the peculiarities of the medium explained. It won’t teach how to write, for example, but it will teach a writer how to write stories for themed entertainment. And while this book is written with theme parks in mind, these design ideas can be applied to all manner of themed entertainment, whether attractions, hotels, restaurants, or shops, as well as amusement parks, discovery parks, water parks, and so much more.

None of these are rules, and this book is not intended to be a book of formulas: any direction in this book can be broken by a person who has a good eye for design. Designer Steve Kirk explains:

One of the dangers now that you’re in the fourth generation of theme park designers, is that it becomes too self-referencing, and by not introducing new attitudes and new experiences and so forth, with there being so much competition for people’s leisure time and money, you really have to start infusing some new thinking into it so it’s not just “here’s another Pirates of the Caribbean.”

Theme parks will continue to evolve, guests’ desires will change, and a good designer must constantly be on the lookout for new ideas, stories, techniques, and technologies that can be brought into and innovate the theme park experience, while never losing sight of the decades of design practice that have been successful so far. It would not be wrong to say that a lot of great design is intuitive, but this is always based on a knowledge and experience, however conscious, of what works and what doesn’t. This book can be used as that foundation, and as a launching point for the new and exciting stories we are all awaiting.

Referencing

This book uses a referencing system for discussing theme park attractions, lands, and theme parks which highlights their location and opening year to foster an understanding of the context of their design. Its structure is as follows:

- Attraction / Show (Park, Opening Year)
- Land / Hotel / Cruise Ship / Special Event (Park, Opening Year)
- Park / Resort (Opening Year)
- e.g. Pirates of the Caribbean (Disneyland, 1967)
- e.g. Port of Entry (Universal’s Islands of Adventure, 1999)
- e.g. Efteling (1952)

8 (Kirk S., Steve Kirk Interview 1)
Themed Design can fundamentally be defined as the creation of a Dimensional Story Experience unified by a Theme: Dimensional in that in happens within a physical space, unlike a movie or video game; Story in that there is some narrative component that removes it from its full reality, however small that may be; and Experience in that every single element that a guest encounters, however large or small, intrinsic or peripheral, affects the overall guest’s perception. Amongst this is the eponymous Theme: a through line that ties the experience together, whether it is a dramatic theme, a manifestation theme, or both.

Themed Design’s core product, then, is an impression in the mind rather than any individual component that contributes to it, whether that is the architecture, the music, or the ride system. The product is not the Sleeping Beauty Castle structure, for example, but rather our experience of it: the sum total of the architecture, music, and detailing, the friendliness of the employees that directed us to it, our pre-existing aspirations to explore a fairy tale palace, our fondness for the fairy tale’s story and characters, and the shared enjoyment we take in experiencing the castle with our family and friends. Designer Peter Rummell explains:

The whole thing is a package. Disney figured out, long before anybody else did, that it’s not just buildings, and it’s not just costumes, and it’s not just landscaping – it’s the amalgam of all of them that really makes the theme park work.10

Designer John Hench explains:

Design considerations go beyond the attractions themselves to the service and operations staff, transportation, restaurants, shops, restrooms – even the trash cans.11

Within Themed Design, everything encountered within the visit either contributes or subtracts from the overall experience: the goal is to make everything, no matter how minute, contribute to the Show, a word used in this sense to mean the entertainment industry’s ethereal product, as in the phrase “show business”. If it is neutral and not contributing, or worse yet a contradiction, it is very likely a missed opportunity for an element which would strengthen the experience. John Hench further explains:

Designing the guest’s experience is what Walt [Disney]’s Imagineers came to call “the Art of the Show,” a term that applies to what we do at every level, from the broadest conceptual outlines to the smallest details, encompassing visual storytelling, characters and the use of color.12

Themed Design creates these experiences by orchestrating our natural desire to read story and emotion into everything we see. Consider a Weeping Willow tree: very often we will read into the tree that it is sad, despite the obvious understanding that a tree cannot hold emotion. By weaving symbols like these together, the themed designer is able to communicate a story in a language that largely does not require the written or spoken word. John Hench explains:

Walt had a keen sense of how images fit together and how they took their meaning from each other... and he knew how to eliminate contradictions. Ideas can be approached through a sequence, just like a book with chapters. Each succeeding chapter takes its meaning from the ones that precede it, and Walt used this for, of all things, an amusement park.13

Designer Joe Rohde explains of Disney’s Animal Kingdom (1998):

We really do think about it the way that we think about a movie, the way you think about a play, the way you think about a novel. It just happens to be built out of physical objects, but, in fact, it is meant to function like a story, a story that when people come they are wrapped up inside of this story. And to the degree that they choose to use their own imaginations and to indulge in the reality of that story, to that degree, we wanted to provide them a place to be that real for them. Not everybody wants to do that, obviously there’s some people who want to ping off every E Ticket they can here and then buzz off to another theme park. Okay, that’s great. I don’t actually think that’s the way to reap the value of what has gone into Animal Kingdom. I really think the best way to get the value out of Animal Kingdom is to really, really slow down and pay attention and sort of read it the way you would read a really, really complicated and rich kind of novel.14

A book tells stories through words on a page, a film tells stories through moving images on a screen, and a themed attraction tells stories with created environments. Through this approach a bar becomes a 1940s speakeasy, a roller coaster becomes a runaway mine train, and an entirely new mechanical contraption is engineered to provide the story experience of sailing a pirate ship over the edge of the world. These stories can vary in scale and subject: from a hundred acre theme park that pulls together lands based on the Seven Seas, to a small restaurant that recreates the atmosphere of a Tiki lounge, but throughout, and to different degrees, they all present a story. Layers are built on top of this: music, dialogue, characters, movement, temperature, textures, and numerous other techniques and practices to create an immersive space in which the audience is not just passively watching, but actively engrossed, and hopefully participating, within the narrative. While no one other than a child is going to believe it is the real thing, in the same way that watching a magic trick that we know is really a skilled illusion in no way diminishes the pleasure, themed design prompts a game of “What if it were real? What would it be like?”, triggering the guest’s willful suspension of disbelief and their decision to play ‘let’s pretend’. Designer Tim Kirk concludes:

What we always try to achieve is this sense of total immersion, and you can do that to a certain extent digitally of course, and

10 (All Architects’ Forum, 1990)
11 (Hench, Designing Disney: Imagineering and the Art of the Show, p. 20)
12 (Hench, Designing Disney: Imagineering and the Art of the Show, p. 2)
13 (Janzen & Janzen, The E Ticket #14, p. 33)
14 (Rohde, Disney’s Animal Kingdom 10th Anniversary Presentation, 2008)
Christmas festivals; Walt Disney World Resort (1971), by contrast, caters to an international market, and will attempt to draw guests every year or few years rather than the standard ‘Once in a Lifetime’ trip through vacation packages and the Disney Vacation Club timeshare company. Regardless of scale, theme parks then rely the technique of Repeatability (see page 168) to ensure guests can visit the theme park multiple times and still be entertained.

### Cannibalization

One of the most successful techniques in opening new revenue streams involves cannibalizing a competitor’s product with a similar product, and using synergy to make it cheaper or more convenient to visit than the competitor’s. For example, now that Walt Disney World Resort (1971) frequently draws guests to Orlando for the full length of the guests’ available vacation time, building additional parks simply won’t encourage them to stay longer: they do not have any more vacation days available. Therefore Disney has concentrated on cannibalizing guests from competitors’ attractions, and ensuring that every available day is spent on Disney property. If Disney has a Studio Park that will cost less and is easier to access than the competitor’s Studio Park, they will be likely to stick with Disney, ensuring Disney benefits from that increased Per Capita Spending. Walt Disney World Resort’s (1971) cannibalization strategy has involved:

- The Living Seas pavilion (Epcot, 1986), opened to cannibalize SeaWorld Orlando (1973).
- Disney-MGM Studios (1989), opened to cannibalize (and was fast-tracked through design to open before) Universal Studios Florida (1990).
- Disney’s Animal Kingdom (1998), opened to cannibalize Busch Gardens Tampa (1959).
- Walt Disney World Resort (1971) has developed numerous additional strategies which attempt to keep the guest on property for the full duration of their vacation, as seen in Table 2.3.
- Disney California Adventure (2001) similarly predicated many of its lands on attempts to stop Californian tourists from visiting other attractions in the state, including:

### Investment

A common rule of thumb for the themed attraction industry is that the initial investment on a project should be $100 for every expected visitor in the opening year; so if a theme park is targeting a two million attendance in its opening year, it should invest $200,000,000.

Money going into the theme park post-opening is directed into three areas: operating costs, sustainment additions, and motivating additions:

- **Operating Costs** are the expenses paid in order to run the attraction, including wages, energy costs, advertising, product, and maintenance, and are intended to produce the greatest impact for the lowest investment.

- **Sustainment Additions** describe building improvements which, rather than being intended to draw new guests, are simply intended to meet the demand that already exists. This may manifest itself as widening walkways, expanding restaurant kitchens, building new retail space, or even modifying attractions, such as increasing the size of ride vehicles, or Soarin’s (Epcot, 2005) addition of a third screen.

- **Motivating Additions** are intended to be marketable additions intended to draw new guests to the theme park or resort, and may include new attractions, special events, or even whole new parks.

Addition investments will run through a Design Programming process to ensure a business case in that all additions will be required to earn their money back. A restaurant expansion must ensure that it will...
Longevity

Temporary popularity is not enough however, and with the typical theme park investment expected to draw guests for a minimum of ten years, the designer needs to be assured that the IP will not lose its popularity over a short period of time, particularly when the multiple years long design process for themed entertainment may eat up a number of those popular years. IPs which deliver over long periods of time are known as evergreens, perennials, or as having ‘legs’. Commentator Melody Malmberg explains:

Every Imagineering project starts with a great story. It can be a classic fairy tale, a vintage cartoon, a historical event, a recent animated feature. Whatever the source, the story needs to have ‘legs’ – a mix of timelessness and broad appeal.

Walt Disney Imagineering will often develop plans for an attraction based on an upcoming film so that it can be greenlit as soon as box office results reveal whether it is successful or not – the plans being stored away in a drawer if not. Simultaneous Release is a strategy pushed by John Lasseter upon taking the role of Principle Creative Advisor for Walt Disney Imagineering of opening new IP-based attractions in conjunction with the release of the film it is based on. By not opening an attraction shortly after the IP’s release, Lasseter argues, a theme park is missing out on the height of the franchise’s popularity. Conversely, however, designers have argued the difficulty in judging whether an IP will be successful before its release, worried about being stuck with an unpopular IP if the film fails.

Evergreen status may not be required by some parks which license IP only for a limited number of years. Instead, the designer may be tasked with designing into an attraction the ability to operate as a non-IP attraction once the license expires, removing any elements intrinsically associated with a media property (such as characters and names). Designer Anthony Esparza explains:

There’s certainly a tool in riding the wave of a hot short-term brand to drive attendance. [...] Whether I like it or not, I’m going to be making an attraction out of Tomb Raider. Now do I know going in that Tomb Raider’s not going to be popular after several years or there’s a chance that the franchise might not take off? Yes, but it’s designed in a way to be called Tomb Raider now, and then you can take the name off and call it something else when you get to a point that it doesn’t become relevant anymore. It’s still a fun experience, but now there’s no Angelina Jolie in there.

Conducive

A final requirement is ensuring that the IP is appropriate to the needs of the theme park: that it depicts worlds that can be physically built within a limited space and budget, that it presents characters, environments, and events guests want to participate in, that it can justifiably include food and merchandise facilities, that is has story-appropriate ride vehicles, and numerous other considerations. Adapting source material (whether individual books, films, video games, toys or franchises) to the theme park can viewed as similar to adapting a book to film, or a film to a videogame: some work better than others, and each conversion prompts numerous challenges and opportunities as the strengths and weaknesses of one medium are traded for those of another. Designer Eddie Sotto explains:

The whole thing is: can you re-tell the story, or put someone in it as good as, if not better than, their expectation? So if you really can’t tell the story or put someone in it better than the movie, then why are you doing it? You have to sort of start there. It’s like some books translate better to films than others. So what I usually do is I look at the world. I say: “What world is it?” Like for example, the movie may not be that great, but the world of Alice in Wonderland is a tremendous world.

Tony Baxter faced this problem with a number of Disney’s animated films in the 1970s and 1980s, which regardless of popularity did not provide the aspirational worlds required for a theme park. Describing Robin Hood, he explains:

Whether it’s a good movie or not is beside the point. It’s a movie that’s characters, there’s no atmosphere in it. I call it a ‘sticks and stones and rocks and leaves’ movie. First you have the stone walls outside the castle, then the stone walls inside the castle, then the leaves in the forest, that’s it. There are no exotic environments; you just have all these scenes with Robin meeting Friar Tuck, then Robin meeting Little John, then Robin meeting Maid Marian. That’s when I figured it out: the rides are about exotic places not characters. The best attractions are where you suddenly find yourself in a jewel mine or flying over London.

Issues of IP

Despite the benefits of IP, the approach does have some downsides. Some guests may critique the lack of originality in adapting IP, preferring a balance of original and IP attractions. Yet other guests see IP based attractions as marketing for the company’s other products rather than a legitimate attempt to design an experience, particularly when IP is shoehorned into an inappropriate setting, or in a manner of low quality. License expiration can cause problems for theme parks, forcing the retheming of an attraction, or an IP’s popularity fades, forcing either a similarly expensive retheme, or leaving the park with an outdated brand. Finally, there are simply the issues of adapting media to the theme park forcing compromises that may not have been needed in a theme crafted specifically for the theme park. In the same way that a movie studio limiting itself to only adapting books to film would miss out on numerous creative opportunities that come with crafting a story unique to the screen, a theme park could miss unique opportunities appropriate only to the theme park. Walt Disney did not design Disneyland (1955) to hold only IP-based attractions: at opening, only a third of attractions were based on IP, and even today Disneyland (1955) has a roughly 50% balance between original and IP-based attractions.

Dramatic Theme

While Manifestation Theme describes what the guest will see, Dramatic Theme describes how the guest will feel. Dramatic Theme shares the definition of theme used by other media like literature and

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234 (Esparza)
235 (Younger, 2010)
236 (Koenig, Mouse Under Glass: Secrets of Disney Animation and Theme Parks, 2001, p. 152)
Sightlines

Physical barriers can be placed between the guest and areas the designer does not want the guest to see, forcing their attention on the areas of interest. Sightlines are important in both land design and attraction design, the latter of which is supplemented by the sightline impositions of the ride vehicle. In some Omnimover rides, for example, guests sit in dome shaped vehicles which wrap around the viewer and create a window out into the attraction, blocking peripheral vision and confining the guest to looking where the vehicle directs them. As the vehicle moves both along its track and rotates left and right towards predetermined show scenes, the vehicle becomes a de facto camera, directing and limiting the guests view in specific ways. Guests cannot turn around to see the technical set-ups without leaving the vehicle.

Pointing

The most obvious form of directed viewing is the direct instruction through the writing technique of Pointing – literally, an employee or recorded spiel directing the guests to look in a certain direction. On the Jungle Cruise (Disneyland, 1955), the employees lines often begin with “If you look to your left...” or similar, while the Storybook Land Canals Boats (Disneyland, 1956) also feature a tour guide pointing out the dioramas along the riverbank. Again, this direct instruction can be used in two ways: to draw attention to something interesting, as in the examples above, or to draw attention away from something distracting. See Pointer Dialogue (page 120).

Cocktail Party

The Cocktail Party technique describes the inclusion of overlapping content within a scene, so that a guest is physically unable to see everything in the attraction on a single ride through. Designer X Atencio describes its origin during the design of Pirates of the Caribbean (Disneyland, 1967):

We went through the scene there was noise on all sides. I kind of apologized to Walt. You couldn’t seem to hear what was going on. “Oh hell,” he said, “it’s like when you go to a cocktail party. Tune in on this conversation. Tune in on that conversation. Every time they go through they’ll hear something different.”

The Cocktail Party technique might include more than one character talking or performing at one time, placing scenes on both sides of the track simultaneously (see Through, Not Past, page 509), giving the scenes enough content that it cannot all be seen in the amount of time it takes the ride vehicle to pass through the scene (see Rolling Dialogue, page 121), or even, in the case of Ratatouille: L’Aventure Toolement Toquée de Rémy (Walt Disney Studios, 2014) using screens so big that the guest’s field of vision cannot physically view the entirety of the experience simultaneously.

Visual Conflict

Visual conflict describes how in real world environments, no single design vision is able to harmonize the whole. On a shopping street, for example, every individual store will be designed to gain the attention of the passer-by, cumulatively building to a street of visual noise. Kevin Rafferty and Bruce Gordon explain:

The architectural evolution of most major cities is the result of a series of accidental layers, things building upon other things without thoughtful arrangement. In many instances, this creates a lack of order, which, in turn, creates visual conflict.

In a theme park, however, an entire street front, like Main Street, U.S.A. (Disneyland, 1955), can be designed to complement itself and produce something far more aesthetically pleasing. Every store is on the same team and instead of battling, can attune together to create the most pleasant, effective shopping experience as a whole. This is a key tool in heightened reality. Designers are able to eliminate conflict, make elements clear and unambiguous as they start from scratch rather than being required to work with buildings that may long be obsolete, and most importantly eliminate contradictions. Designer John Hench explains:

Most urban environments are basically chaotic places, as architectural and graphic information scream at the citizen for attention. This competition results in disharmonies and contradictions that serve to cancel each other. A journey down almost any urban street will quickly place the visitor into visual overload as all of the competing messages merge into a kind of information gridlock.

To create this harmony, elements such as color can be complimentary and build to a single color scheme, the architecture can share features, and the form can be balanced. John Hench continues:

We have City Hall, and of course the opera house, the fire department, and look, there is no jar, your eyes just flow through there. There’s a harmony, a definite relation there, the buildings know each other. They were produced by the same spirit. The fire department wasn’t designed by some guy who hated the guy who did the opera house. These buildings agree on the rules of the game. […] There’s a great deal of variety there, but they all have a harmony running through them, a single theme. They were considered as a unit, not as individual things.

Kinetics

Kinetics describes any form of visual movement used to make a scene, whether in a land or attraction, visually interesting to look at. In a manufactured environment, it is very easy for a location to become static and stale: movement in a scene makes a space feel alive.

Kinetics might include the activity of the guests through Spectatorship; the movement of trees and flags in the wind; flashing popcorn lights on the side of a building; Multilevelling that spreads activity across multiple elevations; waterfalls and fountains; a centrally positioned attraction like the Orbitron – Machines Volantes (Disneyland Paris, 1992); interweaving attractions visible to the pedestrian; and animatronics and other animated props. Consider the Submarine Lagoon at Disneyland (1955) which in one view once incorporated the movement of the Matterhorn Bobsleds (Disneyland, 1959), the Disneyland Monorail (Disneyland, 1959), the Skyway (Disneyland, 1956), the PeopleMover (Disneyland, 1967), the Submarine Voyage (Disneyland, 1959), and the Autopia (Disneyland, 1955), alongside

536 (Frost, 1999)
537 (Rafferty & Gordon, 1996, p. 84)
538 (Marling, Designing Disney’s Theme Parks: The Architecture of Reassurance, 1998, p. 82)
539 (Hass, 1978)
Situating Lands

One aspect of theme park layout lies in situating lands: deciding where in the park each land is located, both geographically and in relation to one-another, for which numerous considerations apply. With the entrance location often predefined, it is typical to place the primary land, or the land containing the park icon (and often both), opposite the entrance land, locating each subsequent land in relation to those. Operator Bill Sullivan explains the decision behind World Showcase's (Epcot, 1982) subland layout, incorporating both prominence and aesthetics:

It was a major concern we had: who would get the prominent spot? We put the U.S. in the center, because we were the host country. Mexico and Canada are our neighbors, so they were the entrance, as you walked in. Italy and Japan and Germany are all close to us, because that’s our American heritage. There was no science to that. It was just, “What do you think would look best? Okay, that’s where we’ll put it.” It worked.68

Lands need to be arranged in a way that makes transitions easy, but at the same time isolating each land and something distinct from the one next to it: while the transition areas should blend, the lands themselves should not. Designer Steve Kirk explains of Tokyo DisneySea (2001):

By choosing what goes where from a bubble diagram standpoint, I really wanted each neighbor to have a comfortably neighbor next to it as opposed to a little more arbitrary approach in some of the other parks.669

When reimagining the castle park design for Disneyland Paris (1992), Adventureland (Disneyland Paris, 1992) and Frontierland (Disneyland Paris, 1992) were swapped from their traditional locations. This was primarily done to ease transition zones: Main Street, U.S.A. (Disneyland Paris, 1992) and Frontierland (Disneyland Paris, 1992) were able to blend their American architecture, while Adventureland (Disneyland Paris, 1992) and Fantasyland (Disneyland Paris, 1992) were able to blend the manifestation theme of pirates between Pirates of the Caribbean (Disneyland Paris, 1992) and Peter Pan’s Flight (Disneyland Paris, 1992).

The park may desire or be forced to take advantage of natural elements pre-existing on the site. While Adventureland (Disneyland, 1955) was originally designed to be east of Main Street, U.S.A. (Disneyland, 1955), it was relocated to the west side when a line of eucalyptus trees, planted as a windbreak for the orange groves preceding the theme park, was recognized as a good backdrop for the Jungle Cruise (Disneyland, 1955). Lands may also share elements that necessitate their adjacency, or border elements relying on correlation to justify their inclusion. Adventure Isle (Shanghai Disneyland, 2016) and Treasure Cove (Shanghai Disneyland, 2016), for example, share a lagoon. Designer Marvin Davis explains how this applied to Disneyland (1955):

The different areas were shifted around in the plan, as our ideas changed. Because of its futuristic subject matter, Tomorrowland was first positioned as the final spoke on the left side, but then it would go in the way of the river in the western country so we moved it. It turned out that Frontierland and Adventureland had to be together because of the way they share that water system.

The use of water in Tomorrowland wasn’t as important. We knew we wanted the fantasy rides up at the end of Main Street once you go through the castle. Then the other lands just logically took their place.770

The experience types of each land should be distributed throughout the park, drawing with them their intended demographics. With the knowledge that most American guests will turn right at the decision point, the designers of Universal’s Islands of Adventure (1999) decided to locate their family-centric land, Seuss Landing (Universal’s Islands of Adventure, 1999), right of the entrance. Similarly, they realized teenagers would want to go off on their own at the first opportunity, and so positioned the teen-centric land, Marvel Super Hero Island (Universal’s Islands of Adventure, 1999), to the left of the entrance. The park was then able to alternate the land experiences by locating the comedic Toon Lagoon (Universal’s Islands of Adventure, 1999) between the more thrilling Marvel Super Hero Island (Universal’s Islands of Adventure, 1999) and Jurassic Park (Universal’s Islands of Adventure, 1999), and the serious Lost Continent (Universal’s Islands of Adventure, 1999) following Seuss Landing (Universal’s Islands of Adventure, 1999).

Combining all of these decisions, Steve Kirk overviews the process for locating the lands of Tokyo DisneySea (2001):

We started kind of a process of elimination. We knew that we wanted Mediterranean Harbor to have the largest, biggest, and deepest vista to the fortress under the volcano, and we knew that we were talking about sort of a central Mediterranean versus a western Mediterranean, Spanish, and Portuguese architecture, across the way, and then we kind of rationalized the volcano as Vesuvius or whatever. So we knew that would be at the prime entrance. We knew that we wanted a view of Tokyo Bay, which is a contemporary harbor with shipping and that kind of thing, the open ocean, and contemporary ships. American Waterfront and Cape Cod probably wanted to live there happiest because they would have a view over that ‘sea wall’ (which isn’t a sea wall), out over the ocean to open up the sky, to a vista, a long horizon. And so Port Discovery, because it was futuristic, that would have no problem looking out to Tokyo Bay. So those two wanted to have the long shots out to the ocean and the real horizon. The fantasy stuff, Arabian Coast and Mermaid Lagoon, wanted to be the most protected, so they would be inboard, and then Lost River Delta probably also wanted to be a little more claustrophobic and narrow, with maybe one long shot heading out to the bay past that bridge. And also the caldera in Mysterious Island was self-contained; it had its own views inside the caldera. So each one of those found a comfortable place to be, probably resonating off of who would be next to Tokyo Bay first.771

Berm

A berm is any form of barrier (though it historically refers to a raised earthen hill) surrounding a theme park or themed area, akin to a city wall. Berms were borrowed from movie studio design, where the hills restricted the outside world from being seen behind the backlot movie sets, and was first employed in the theme park at Disneyland (1955)

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68 (Koenig, Realityland: True Life Adventures at Walt Disney World, p. 186)
669 (Kirk S., Steve Kirk Interview 1)
770 (Janzen & Janzen, The E Ticket #28, p. 12)
771 (Kirk S., Steve Kirk Interview 2)
problematic thing is New England, which obviously does not have any tall mountains, so we changed the scale over there. The rockwork is much larger scale from that perspective, so hopefully it looks a little smaller from that side so it at least minimizes the contradiction of being in Cape Cod. Everything’s different from all three aspects, except the smoke.\textsuperscript{1031}

In the Magic Kingdom (1971), the designers desired to use a tall South Seas pagoda as a wienie for \textit{Tropical Serenade} (Magic Kingdom, 1971), which would become \textit{Walt Disney’s Enchanted Tiki Room} (Magic Kingdom, 2011). The visibility of the tower in the adjacent Frontierland (Magic Kingdom, 1971) led to the use of correlation through décor, as designer Alex Wright explains:

The finials on the roof of \textit{The Enchanted Tiki Room} tell a great story about dealing with visual intrusion. The building resides entirely within Adventureland, so the South Pacific styling is appropriate. The rooftop, however, is visible from Frontierland, so a choice was made. An Asian water buffalo was used as the basic for the sculpture, with the intention that from Frontierland the figures would look enough like Western longhorn so that they would not cause a visual intrusion and spoil the view—or the story—from that side.\textsuperscript{1032}

Other objects can be used to influence how a guest interprets the correlated element. In the bazaar area of Adventureland (Magic Kingdom, 1971), a handful of wooden and brick spires and chimneys can be seen rising from one of the building roofs. Their presence seems entirely decorative, until you realize one of the spires is the tip of Cinderella Castle, no longer a visual intrusion by virtue of camouflaging it in with the rooftop.\textsuperscript{1033}

The inverse of correlation is to purposefully design elements that stand out from multiple locations. In Disneyland Paris (1992), for example, the height of the castle is allowed to be seen from other lands to act as an orientation point, consistent with the central conceit of the castle park. The castle is kept deliberately jarring for this reason.

\section*{Icons}

Icons describe any large, visually interesting set piece within a land, often not traditional architecture, given the term because of its ability to represent the themed area it appears in. Examples include Skull Rock in Adventureland (Disneyland Paris, 1992), Monstro the Whale in Fantasyland (Disneyland, 1955), Hogwarts Castle in The Wizarding World of Harry Potter – Hogsmeade (Universal’s Islands of Adventure, 2010), and The Marmaliser in X Sector (Alton Towers, 1998).

Icons are typically used as wienies because they are so visually distinctive, but icons are not necessarily wienies. The Earffel Tower is an icon of Disney’s Hollywood Studios (1989), for example, but being located on the backlot is not used as a wienie from within the park. Grizzly Peak at Disney California Adventure (2001) is similarly an icon, but by virtue of its location is not a wienie.

These elements are important because, not only are they interesting by being different from the everyday, but also because, more often than not, people simply do not remember buildings. Consider the buildings along Hollywood Boulevard (Disney’s Hollywood Studios, 1989): not many of those buildings will be likely to stick in your mind, but the Chinese Theater will. In understanding that if everything is special nothing is special, not everything should be an icon: a land needs traditional buildings to make up its bulk, but if laced amongst these are icons that not only represent the land and park, but promote movement, aid orientation, and most importantly excite the guest, all the better. Designer Eddie Sotto recounts this concept being imparted to him from designer Tony Baxter:

People remember ‘things’ or iconic objects more than architecture. So you always want to do the ‘Pirate Ship’, the ‘Rocket’ or the ‘Mountain’ and not the building. Simply obvious, but in a big way ignored by architects. Frank Gehry now makes his buildings into ‘things’ by making them sculptures, just as Gaudi did in Barcelona. The Eiffel Tower is one of those ‘things’, it iconically separates itself in your mind from the city, you will fly to see it, and it’s still there! A simple truth.\textsuperscript{1034}

Common elements for icons are listed in Table 8.8.


\begin{table}[h]
\centering
\begin{tabular}{|l|l|l|}
\hline
Attractions & Hotels & Stately Homes \\
\hline
Bell Towers & Lighthouses & Static Vehicles (Rocket Ships, Pirate Ships, Riverboats etc.) \\
\hline
Carousels & Mountains & Statues \\
\hline
Castles & Observation Towers & Theaters \\
\hline
Clock Towers & Pyramids & Towers \\
\hline
Ferris Wheels & Roller Coasters & Train Stations \\
\hline
Flag Poles & Sculptures & Treehouses \\
\hline
Fountains & Shapes (Geodesic Dome, etc.) & Trees \\
\hline
Gates & Signs & Marquees & Water Towers \\
\hline
\end{tabular}
\caption{Table 8.8 Icon Archetypes}
\end{table}

\textsuperscript{1031} [Kirk S., Steve Kirk Interview 1]
\textsuperscript{1032} [Wright, The Imagineering Field Guide to the Magic Kingdom at Walt Disney World, 2005, p. 45]
\textsuperscript{1033} [Nolte F., Adventures in Master Planning #3, 2007]
\textsuperscript{1034} [Sotto, Eddie Sotto’s Take on the Current State of the Parks Part II, 2011, p. 238]
\textsuperscript{1035} [Morris T., 2013]
moment, allowing the ride vehicle to thread the gap. Examples include *Raptor* (Gardaland, 2011), *The Swarm* (Thorpe Park, 2012), and *Furius Baco* (PortAventura, 2007).

### VR Coaster

A Virtual Reality Coaster can be considered a fusion of a simulator and roller coaster, enclosing the rider within a video screen bubble or giving the guest a virtual reality headset aboard a roller coaster ride vehicle which then plays a video synchronized to the G-Forces produced by the real roller coaster. The primary difficulty arises from synchronizing the video with the roller coaster dynamics, typically resulting in guest nausea where they contradict. Examples include *Galaxie Express* (Space Center Bremen, 2003), *Alpenexpress VR-Ride* (Europa-Park, 2015), and *Galactico* (Alton Towers, 2016).

### Roller Coaster Design

Designer John Wardley introduces roller coaster design:

Think of a ride on a roller coaster as a journey through an adventure. It must have variation – not just its ups and downs, but also its surprises and shocks, its gentle scenic sections to full you into a false sense of security, and its wild mean parts to scare the pants off you.1317

The roller coaster’s strength is in its versatility, and a designer should endeavor to employ Rationing in order to design significantly different experiences on each of the multiple coasters that will typically fill up a theme park. While *Big Thunder Mountain Railroad* (Disneyland, 1979) is rickety, *Space Mountain* (Disneyland, 1977) is smooth; where *Dragon Challenge* (Universal’s Islands of Adventure, 2010) is intense, *Flight of the Hippogriff* (Universal’s Islands of Adventure, 2010) is tame; and thematically at Alton Towers (1980), John Wardley explains:

Right from the start, we decided that just as *Nemesis* was the ‘villain’, so *Air* would be the ‘hero’.1318

Designer John Allen explains:

You don’t need a degree in engineering to design roller coasters... you need a degree in psychology.1319

### Theme

The biggest issue for roller coasters in theme parks is dealing with the visibility of the ride system, particularly in immersive parks which aim to be diegetic. With the most dominant feature of a roller coaster being its track and the structure that supports it, theme parks need to find ways to hide, disguise, or diegetically explain the track’s presence. Coasters will typically be in one of three forms depending on their design:

**Exterior Structure** roller coasters are those rides which are built around another structure, such as a mountain, temple, hills, building, or other element, allowing the roller coaster supports to be hidden by the structure. Examples include *Casey Jr. Le Petit Train du Cirque* (Disneyland Paris, 1994) built around landscaped hills, *Big Thunder Mountain Railroad* (Disneyland, 1979) based around an artificial rockwork mountain, and *Raging Spirits* (Tokyo DisneySea, 2005) built around the scaffolding of a temple under archaeological excavation. It should be recognized, however, that this can quickly get expensive, with Joe Rohde explaining of *Expedition Everest: Legend of the Forbidden Mountain* (Disney’s Animal Kingdom, 2006):

When a coaster goes really fast, it’s chewing up a lot of land really fast. And unlike a place that would just throw up coaster track and let you see it, we’re not doing that. This all has to be beautiful. It all has to look like the Himalayas.1320

**Interior Structure** roller coasters are those built indoors so that the structure is hidden away, typically in the dark with the attraction often being themed to space, underwater, or underground. Where this approach is taken, it is important the designer recognizes that just darkness will produce a roller coaster little different to any other dark coaster, making it even more important to establish Mental Real Estate through such things as show scenes, music, coaster design, ride experience, station, queue, preshow, postshow, and exterior design. Examples include *Space Mountain* (Magic Kingdom, 1975), *Crush’s Coaster* (Walt Disney Studios, 2007) and *Vogel Rok* (Efeling, 1998).

**Free Standing,** or Iron Ride, roller coasters are those in which the support structure is left visible, often with a Themed to Amusement Parks justification. Examples include *California Screamin’* (Disney California Adventure, 2001) and *Gadget’s Go Coaster* (Disneyland, 1993) although even in these cases there is a level of theming: *California Screamin’* (Disney California Adventure, 2001) is a steel roller coaster made to look like a wooden roller coaster through the addition of structurally unnecessary support crossbeams, while *Gadget’s Go Coaster* (Disneyland, 1993) has its supports made to look like building blocks. Eddie Sotto explains:

Coasters really don’t theme too well. *California Screamin’* works as its theme is that it is a coaster from the past and nothing more. So Disney gets a free pass there. They tried it with *Rock n’ Roller Coaster* and *Space Mountain* in Paris, both with loops and they are intense by Disney standards, but there is a difference. They were indoors and the tracks were hidden.1321

Where the track is not hidden away by darkness as in *Rock n’ Roller Coaster Starring Aerosmith* (Disney’s Hollywood Studios, 1999) the roller coaster track needs to be justified in immersive parks. This is one of the primary reasons for the Runaway Mine Train archetype, with additional explanations being found in Table 9.9.

Other styles of theme park design will approach roller coasters in different ways, however, with every other style happy to showcase the attraction as a roller coaster rather than trying to disguise it. Associative theme parks will simply construct a (typically off-the-shelf) roller coaster and theme it simply by surrounding it with thematic props, a color scheme, or a name. Metaphoric roller coasters will attempt to use the roller coaster experience to metaphorically recreate an experience, as with *Mantor’s* (SeaWorld Orlando, 2009) smooth and sweeping motions, and *Hollywood Dream – The Ride* (Universal Studio Japan, 2007) which proposes to recreate the feel of being a Hollywood star. Themed Amusement parks use visible roller coasters to create a brand image, as with *Saw: The Ride* (Thorpe Park, 2009) and *Air* (Alton Towers, 2002), where the presence of a roller coaster is unnatural, but serves as a transport through a story.

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1317 (Sawyer, Roller Coaster Tycoon User Manual)
1318 (TT, 2010)
1319 (Young & Riley, p. 245)
1320 (Goldman, 2006)
1321 (Sotto, Eddie Sotto’s Take on the Current State of the Parks Part I, 2009, p. 340)
<table>
<thead>
<tr>
<th>Air Diver</th>
<th>Balloon Race</th>
<th>Bayern Kurve</th>
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<tbody>
<tr>
<td><img src="image" alt="Air Diver" /></td>
<td><em>Balloon Race</em> (PortAventura, 1995), <em>Blowfish Balloon Race</em> (Tokyo DisneySea, 2001), <em>Flik’s Flyers</em> (Disney California Adventure, 2002)</td>
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<tr>
<th>Booster</th>
<th>Bouncer</th>
<th>Breakdance</th>
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<td><img src="image" alt="Booster" /></td>
<td><em>Bouncer</em> (Flip, Hurricane, Swingaround)</td>
<td><em>Breakdance</em> (Remix, Rodeo) <em>Crazy Barrels</em> (PortAventura, 1995)</td>
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<tr>
<th>Bumper Cars</th>
<th>Carousel</th>
<th>Chaos</th>
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<td><img src="image" alt="Bumper Cars" /></td>
<td><em>Carousel</em> (Double Carousel) <em>King Arthur Carousel</em> (Disneyland, 1955), <em>King Julien’s Beach Party-Go-Round</em> (Universal Studios Singapore, 2010)</td>
<td><img src="image" alt="Chaos" /></td>
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*Bumper Cars* *(Dodgems)*
*Wheeler Dealer Bumper Cars* (Knott’s Berry Farm, 1975), *Tuck and Roll’s Drive ‘Em Buggies* (Disney California Adventure, 2002)