SKATE PARKS: A GUIDE FOR LANDSCAPE ARCHITECTS AND PLANNERS

by

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Abstract

Much like designing golf courses, designing and building skateboard parks requires very specific knowledge. This knowledge is difficult to obtain without firsthand experience of the sport in question. An understanding of how design details such as alignment, layout, surface, proportion, and radii of the curved surfaces impact the skateboarder's experience is essential and, without it, a poor park will result.

Skateboarding is the fastest growing sport in the US, and new skate parks are being finished at a rate of about three per day. Cities and even small towns all across North America are committing themselves to embracing this sport and giving both younger and older participants a positive environment in which to enjoy it. In the interest of both the skateboarders who use them and the people that pay to have them built, it is imperative that these skate parks are built correctly.

Landscape architects will increasingly be called upon to help build these public parks in conjunction with skate park design/builders. At present, the relationship between landscape architects and skate park design/builders is often strained due to the gaps in knowledge between the two professions. This does not have to be the case. This thesis synthesizes information about skate parks into design guidelines for landscape architects. This information comes from:

1. A case study of the Kansas City Skate Plaza (a.k.a. Penn Valley Skate Park), involving skating of the park, video/photography, physical measurements, and site analysis.
2. Books, articles, movies, and websites concerning ethnography, landscape architecture, concrete construction methods, skate park and pool construction methods,landscape architecture for public spaces, and skateboarding/ skateboarding culture.
3. Interviews with landscape architects, skate park design/builders, and skateboarders.

The intent of this thesis is to help landscape architects familiarize themselves in preparation for working with the skate park design/builders.

Interactive Statement

This research on concrete public skate parks has been prepared in an enhanced visual format.

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Acknowledgements

I would like to thank Grindline, Dreamland, California Skateparks, SITE Design, Airspeed, Skate Parkitecture, Wormhoudt, and all the people involved in building these new concrete skate parks. They have improved my life, and the lives of others greatly. To John Fleschman, Jim Kacirek, Andy Brayman, Ricky Reyes, and the rest of the Bullets and Genesis crews....without you, skating the parks is lonely. I would also like to thank my father C.J. Poirier, who helped me build all those ramps when I was a kid. I thank the rest of my family: the Currans (for sending me to the Northwest!), the Poiriers, McEntires, Brunks, Dehans, Carsons, and the Nadals. Thank you to Professor Stephanie A. Rolley for helping me achieve this thesis. Stephanie, your creativity and tenacity helped make this project a highlight of my time at K-State. Thanks to Steve Alba for coming to the Kansas City Skate Plaza's grand opening in 2006!

Finally, a special thanks goes out to my cousin and good friend Blas Nadal, who was my guide and assistant during my research trip to Washington and Oregon.

"....over there, by the architectural salmon...."

Dedication

I dedicate this thesis to my mother, Brooke E. Poirier (1942-2007).
We miss you greatly. Thank you for all the love, hard work, and that birthday cake you bought me that had a picture of Christian Hosoi on it.

Preface

"Skaters by their very nature are urban guerillas: they make everyday use of the useless artifacts of burden, and employ the handiwork of the government/corporate structure in a thousand ways that the original architects could never dream of…."
-Craig Stecyk, Artist, Writer, Skater, and Surfer, 1976.

On a personal note, there are a couple of things that need to be said regarding skate parks. As a skateboarder of 15 years, I have to say that it is a wonderful thing to have these places to go and not have to worry about being harassed. I am very thankful for these amazing places to explore my skills and progress. This is not to say that I feel skateboarding should be confined to skate parks, however. Skateboarding in public should be legal everywhere, in the city, suburbs, or rural areas. Skateboarding is a viable form of alternative transportation, and a healthy way to release aggression and get some exercise. Skateboarding should never be banned from any public space. Freedom of movement is integral to our way of life as Americans; and, if rollerbladers and people on bicycles can go wherever they want, why not skateboarders?

It is up to the skateboarders to ask themselves whether or not what they are doing is defacing or otherwise destroying public or private property, and limit their activities if that is the case. With age, I have realized that my actions affect other people, and I don't cause damage to public spaces which are obviously meant to be left unmarred. I still skate down the street though, and love that feeling of freedom. I enjoy skate parks, but I am very proud to have spent my youth roaming free and searching for new spots to challenge myself with. That search, that challenge, the adaptation of a found obstacle not designed for skateboarding is what I hold in highest esteem. This is the original heritage of skateboarding that public skate parks can never replace. The search, the challenge, and the adaptation are what separate skateboarding from all other athletic endeavors. In the future, if it is no longer possible for skaters to approach the world with this mindset, skateboarding will not be skateboarding. It will be something else.

CHAPTER 1 - Introduction: Skate Parks, Past and Present

"Yeah, there are a lot of parks, but a lot more skaters too. There is so much demand. In Eugene (OR), they've got acres of baseball, soccer and football fields, and nobody uses them. Right next to those fields, there's our park at Bethel, an 8000 sq. foot skate park and it's always packed with kids. Tonight, it was a full moon and kids were there, crowding it. There's a huge demand and it's like that all over the country. There are still so few skate parks that it's not saturated yet, not by a long shot…."
-Geth Noble, Co-Owner, Lead Design, Construction Foreman, Airspeed Skate parks (Juice Magazine)

Research Intent

The intent of this thesis is to demonstrate the value of applying design principles from the profession of landscape architecture to concrete skate park design and to introduce non-skateboarding landscape architects to the current methods of concrete skate park construction considerations. Hopefully, this thesis will introduce landscape architects to the specialized knowledge that skate park design/build companies have to offer, and improve the dialogue between professions.

The sport of skateboarding has experienced four major periods of boom and bust since its first cultural introduction in the 60s. Though most thought the skateboard would go the way of the hula hoop, it has proven itself time and again and has evolved into an incredible expression of physical ability. As popularity of the sport grew, so did the wear and tear on the urban and suburban environments in which it was pursued. Damage to public and private property has encouraged local governments to build alternative facilities that would lessen the strain that skateboarding causes to the physical environment. As a result, skate parks have become a familiar aspect to public recreational facilities in many communities.

Some landscape architects and city engineers have sometimes been called to design skate parks for their local communities. Occasionally, they have lived up to the challenge; but more often than not, an unskateable and disappointing skate park has resulted. Temporary solutions such as concrete slabs with ramps placed on top often become permanent installations. Situations such as this are ugly, unsafe, and embarrassing to any design or planning profession. Concrete skate parks, designed carefully and built with insight into how skateboarding is performed, are the best answer to the demand for skateboarding facilities.

Concrete skate parks are a relatively new phenomenon. The first public skateboard park, named Surface World, opened in 1966 in Anaheim, California (Hirsch and Salinger 2005). Concrete construction and technologies have evolved quite a lot since then, and the parks of today are feats of technological genius. The individuals who design and create them are artists, and the dedication they apply to their craft is intense. Unlike most other building professionals, these designers often spend their own money to finish a park correctly when a client runs over budget. It is unacceptable by their standards and values to build a sub-standard park. It is not an exaggeration to say that this is not a profession for skate park design/builders, it is a calling and even a service they feel they must perform. Most of these design/builders have expressed intense dissatisfaction with the ability of landscape architects to recognize the importance of designers who are skateboarders being involved in the process of creating a park. This is a situation that might be improved by sharing research performed by skateboarders who also understand the nuances of landscape architecture.

Most landscape architects have been on the outside of the movement to build qual-

ity public skate parks despite their technical knowledge of the materials involved. The professional knowledge they have to share with the design/build profession, if properly engaged and utilized, can lead to very high quality skate park facilities. The best way to make this happen is to educate landscape architects on the sport, its culture, equipment, facilities, and outlook. The relationship between the two professions does not have to be antagonistic, and can benefit skaters and non-skaters when it is improved.

A Short History of Skate Parks

A skate park is defined as any place designated for the public to skateboard in or on. They can be private enterprises which charge admission, but most parks today are free of charge, and open to the general public. It is likely that people first conceived of the idea of a skate park from an amalgamation of ideas. Race cars have tracks, skiers have moguls, roller skaters have rinks.....it is only natural that someone would start creating recreation facilities for skateboarding.

Elementally, the first and foremost form emulated within concrete skate park design is that of the ocean wave. These liquid, transitional forms are the focus of skateboarding's most directly linked influential sport, that of surfing. As surfers began to roll around on the streets on their home made 2" x 4" skateboards in the 1950s and 1960s, they began to skate forms in the built environment that resembled ocean waves. Asphalt embankments, ditches, and finally empty pools became the new terrain. These forms in the built environment, never meant for skateboarding, became the templates for the earliest of skate park designs. By the 1970s, concrete transitional forms were being created, and skaters began to push their maneuvers into the air. By the 1980s, skateboarding associations such as ASPO (Association of Skate Park Owners) were holding large contests in their skate parks, and skateboarding was receiving media attention as a serious sport (Hirsch and Salinger 2005). As insurance rates rose and parks began to close, however, skateboarding experienced yet another bust. The pros and avid practitioners continued on the streets, on backyard ramps, and in illegal spots such as pools and ditches. By the end of the 1980s, the last of the original concrete parks, Upland, closed and was destroyed.

Around 1990, street skating had become the most popular aspect of the sport. The ramp rage of the 1980s was drying up, and the concrete skate parks of the 1970s were long gone. As more skaters began to hit the streets, damage to public and private property was also on the rise. Cities began to ban skating in downtown areas, and injury lawsuits became a persistent problem. During the early 1990s, the State of California passed Senate Bill 994, Chapter 409, that declared skateboarding a hazardous activity, limiting an individual's ability to sue due to a skating injury while on public property (Hirsch and Salinger 2005). The cost of liability insurance caused the closing of the skate parks of the 70s and 80s, but due to this law, public skate parks no longer required insurance. If a skater hurt themselves in a skate park that was sanctioned by a local government, the city would not be liable. Skate parks became an obvious solution to help alleviate property damage, and a new wave of skate park design/builders (most being skaters themselves) stepped in to fill the need.

Wally Holliday, one of the original skate park designer/builders of the 1970s and 1980s in California, began to create new parks for this resurgence of public skate parks. Meanwhile, in the Northwest, a partnership was formed by Mark "Monk" Hubbard and Mark "Red" Scott. These two skaters worked for the Parks and Recreation department of Lincoln City, Oregon. Both Monk and Red had construction experience with concrete. Red was instrumental in the creation of the

legendary (and unsanctioned/illegal) Burnside skate park of Seattle, Washington. Once these two partners determined there was a demand for new skate parks, they formed the companies Grindline and Dreamland. Often working as one company, these skate park design/builders began creating skate parks for the northwest and the west coast. The resulting parks were some of the most creative and well built as anyone had ever skated. After some time, Mark "Red" Scott focused on Dreamland. To this day, Grindline and Dreamland have a reputation for creating incredible skate parks, perhaps the best (Juice Magazine).

Eventually, other city governments throughout the Midwest and East Coast became aware of the potential of public skate parks, and began building parks as well. To fill the demand, SITE Design Group, Wormhoudt, Airspeed, Team Pain, and others joined the movement. Today, there are very few towns in America without some form of though many have not been designed or built by qualified skate park design/builders.

The Resurgence: The Story of Upland, an Original Park

The story of the Upland is unique, and instrumental in describing the resurgence of skate parks across the US. Upland was built during the first wave of concrete parks built in the 1970s, and rebuilt in the second wave of concrete skate park construction in 2007. The original Upland Skate park was influenced by a huge drain pipe in the California desert, nicknamed "Baldy" due to it's location in proximity to Mt. Baldy. This enormous pipe first began to be skated by local Badlands, California skaters in 1975. One of these skaters, Steve Alba, became known for his aggressive skating of its over-vertical walls. Steve and his brother Micke also skated abandoned pools wherever they could find them. When it became known that a local skate park was going to be built, Steve was top on the list of local skaters to consult as to the park's design. Inspired by the Baldy pipe and the various pools he had encountered, Steve sat down with Dan Hoffman and a lump of clay. Between them, they came up with the idea for a combination pool, or "combi," that was two pools connected with an elevated section (Hirsch and Salinger 2005). One side was square in shape, and the other was round.

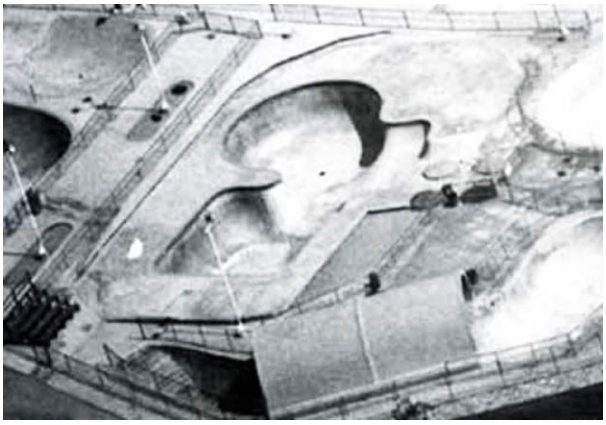


FIGURE 1.1: The original Upland Skate Park from the air (Salbaland).

The walls were to have a couple of vertical feet at least, and pool coping would finish the edges. A plan for the world's first fullpipe in a skate park was also to be implemented, and there were several other bowls to be built with connecting runs. All in all, when the park was finished in 1977, it was totally unique and light years ahead of anything else in the world. Steve, his brother Micke, Chris Miller, Lance Mountain and others cut their professional teeth in this skate park. In spots it was flawed, bumpy, rough, and very large and fast. As a result, the kids who learned to skate at Upland became some of the top professionals in the history of skateboarding. Unfortunately, the rising cost of insurance became a great burden on the Hoffman family that owned the park. After keeping the park open uninsured for 10 years, the Hoffmans finally conceded to shut it down in 1989, and it was bulldozed (Hirsch and Salinger 2005). Good ideas die hard, however, and as concrete parks began

to be built again many thought that rebuilding Upland would be appropriate. Steve Alba was again involved, and he sat down with skate park designers Purkiss-Rose. After the plans were complete, they were handed over to Wally Holliday's skate park construction company, California Skate parks. The new Upland Skate Park was finished in 2007, and a large crowd attending the opening. Veteran pros such as Steve Alba and Lance Mountain were in attendance, and a new generation of skaters were given a part of the Upland legend (Concrete Disciples).

FIGURE 1.2: The legendary Steve Alba, ripping the new Upland Skate Park (Salbaland).

Skate Parks Today, and in the Future

As the 1990s drew to a close, one of the most popular parks with a new generation of street skaters was that of the "skate plaza." Basically imitating urban architectural terrain, these street plazas are a literal interpretation of urban parks. The difference between them and the environments designed by landscape architects, however, was that all of the obstacles featured in them are designed to take the abuse of multiple board slides and grinds. Steel coping lined the edges of all obstacles, which were laid out in the plan to allow room for skaters to interact with them easily. Transitioned elements were not as common in these parks, as the type of skater who preferred them enjoyed technical footwork tricks on and off of rectilinear elements. The best known park of this type is the Rob Dyrdek Skate Plaza in Kettering, Ohio. Designed by pro skater and actor of "Rob and Big" fame, this park is Dyrdek's gift to his hometown.

FIGURE 1.3: The Kettering, Ohio, "street plaza" type skate park designed by SITE Design Inc.

More recently, the most popular type of skate park is the "flow" park where a skater can take one push, or drop in and hit most or all obstacles in one run. Flow parks include both transitional and skate type elements, and often feature some kind of innovative hybrid obstacles. The lines that skaters find in such skate parks are circular and8 patterns. In this way, they are similar to BMX tracks for dirt bikes. Two drawbacks to flow courses is that they implement obstacles that vary widely in height (creating blind spots), and there are multiple points of entry where skaters may have a hard time seeing someone else drop in until it is too late to avoid a collision. Skaters like flow parks, however, because they are very enjoyable to ride. Cities like them because integrating transitional elements like bowls into the street course is less expensive than building the two different types of terrain separately.

FIGURE 1.4: Orcas Island, Washington, by Grindline Skate Parks (Grindline Skate Parks).

Flow parks were born partly out of the creation of another specific type of skate park phenomenon, the D.I.Y. park (do it yourself). Burnside, in Portland, Oregon, is what many consider to be the first modern flow type of park. In the early 1990s, now the owner of Dreamland Skate parks, Mark "Red" Scott, and his friends began creating impromptu concrete forms on a derelict piece of property under the Burnside Bridge (Juice Magazine). Local skaters became enthusiastic about the idea, and pitched in time money and materials to add to it. Multiple obstacles, bowls, and huge concrete transitions followed and the skaters learned to finish concrete in a professional manner.

As construction continued, however, the city found out about it and attempted to shut things down. The skaters rallied and convinced the city through proper channels that they were creating an amenity for Portland. Prominent skateboard and design/build companies also lent a hand to support the cause and the local government agreed to recognize the skate park. Burnside became legitimate through the efforts of its dedicated local skating population.

During the same time, or soon after, other cities in the United States were experiencing the same phenomenon. When skating was banned in the urban core of Seattle and a primary downtown skate park closed, Seattle skaters began building under the Marginal Way Bridge. Though many of the forms were

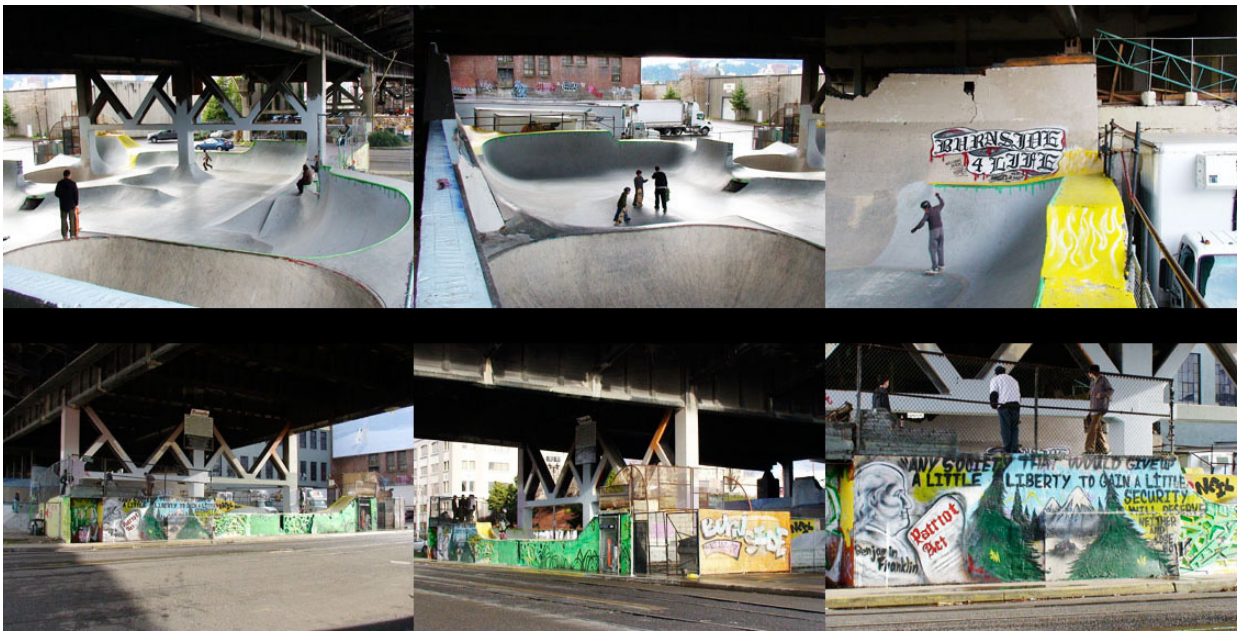


FIGURE 1.5: Burnside Skate Park (Blas Nadal).

crude and lumpy at first, the skater/builders here also learned to form concrete with skill. The resulting transitions and obstacles have become a favorite to many who have skated it. With the addition of pool coping, a beautiful portrait of Martin Luther King Jr., and occasional unexpected concrete additions, this skate park has become totally unique.

Being unique is what these D.I.Y. skate parks are best at, and Washington Street skate park in San Diego, CA, is no exception. Like Marginal Way in Seattle, Washington Street was built in response to the banning of skating in downtown San Diego. Built under the Washington Street Bridge, this park also incorporates custom decorative iron fences, and some of the best transitions built in such parks. The pool coping is huge and gritty, and the place can be quite a challenge for first-timers. One of the best things about the park is that it is a block from a train stop and very near downtown.

FIGURE 1.6: Washington Street Skate Park (Shermally).

One trend that has spread across all design disciplines in the past 10 years is that of environmentally responsible, or "green" building. The skate park of Gabriel, OR, is among the first to be built by the skate park design/build company Dreamland. It features many storm water best management practices, and is 10,000 square feet in size.

FIGURE 1.7: Marginal Way Skate Park.

FIGURE 1.8: Brook Run Skate Park, Dunwoody, GA, by SITE Design Group. (Colby Carter).

Another current emerging trend is that of skate park infrastructure. Rather than isolated, self-contained environments for skateboarding, these are networks of parks connected by pedestrian skate paths. Similar in concept to Olmsted's Emerald Necklace for Boston, these skate parks feature connecting paths that also feature smaller features of interest. In this case, the features of interest are small and simple obstacles design for skateboarding. The Seattle Citywide Park Plan is one proposal that is a leader in this approach towards skate parks. In such a system, the size of environments varies from a regional scale to a neighborhood scale. Regional skate parks are very large and feature every sort of transitional and street terrain, woven together in a flow park of high art. Smaller in size, but still large are the neighborhood skate parks, which feature a transitioned environment such as a bowl and some other street type obstacles. Smaller still are "skate spots," which could be just a halfpipe, or a bowl, or a street course with more than one obstacle. Finally, the smallest is the "skate dot," or a small skateable obstacle that is often designed to be sculptural in its form for aesthetic reasons. The paths that connect these varying skate environments themselves can often be interacted with as well, as they feature low curbs, banked walls, or curving lines that are a joy to skate (Whitley 2007, 78). The overriding goal for a citywide skate park plan is to create an infrastructure that includes skater citizens into the urban fabric, rather than treating them as outcasts or criminals and isolating them in a forgotten blighted piece of land.

FIGURE 1.9: A banked skate path in Stoke-On-Trent, England (Peter Whitley).

The last skate park trend to discuss is an idea for the future development of a current building material, that of foam. Based on ideas first implemented for highway foundations, a foam foundation skate park would lessen the cost of skate park construction. Instead of using backfill for the forms, consisting of gravel and soil, foam could be inserted to back the concrete forms. Apparently rigid, strong, and immune to water penetration, this type of foam could be the backbone of many future parks (Juice Magazine).

Why Do We Need Skateboard Parks?

Despite the struggle to obtain funding, design a park correctly, and have it built properly, there are many reasons why the whole process is worth it. A quality skate park can drastically lessen the negative aspects associated, often wrongly, with the pursuit of skateboarding. Skateboarding is the fastest growing sport in the Unite States, and several new skate parks are being finished daily. Cities and

even small towns all across North America are committing themselves to embracing this sport and giving both younger and older participants a positive environment in which to enjoy it (Skaters for Public Skate parks).

Injury Reduction:
Skaters will occasionally fall and hurt themselves. Just like any sport, skaters are less injury prone than most traditional sports when it comes to head injuries. In 2004, there were an estimated 18,743 head injuries suffered during skateboard accidents. Compared with 51,953 for football, and 63,234 for baseball. The worst kinds of skateboarding accidents involve automobiles (Whitley 2007, 102). As long as there is a right to freedom of movement in our country, skaters will be out where a traffic accident is a possibility. However, a quality skate park can attract the majority of the skating population of a given town to the skate park where there are no cars, and reduce the likelihood of this type of accident. Also, skaters, especially inexperienced ones, who are skating on rough and uneven terrain not designed for skating are more likely to injure themselves. A skate parks that feature smooth, well designed, skateboard friendly surfaces and obstacles that are easier to skate provide a safer environment for less experienced skaters.

Damage Control:
Skaters skating in urban and suburban areas are notoriously hard on the built environment. The chipping, scratching, denting, and pitting of outdoor amenities has even spawned a whole industry of edge protection within landscape architecture. Screw-on "skate stoppers" are have been installed in many downtown and semi-urban environments, much to the chagrin of landscape architects and architects who remember the unmarred, clean lines that the built environment used to have. It is a fact that the grinding and sliding maneuvers skaters inflict on benches, ledges, curbs, and rails, inflicts great damage. This is not because skaters are innate vandals and criminals, though the teenage angst that drives many of the younger ones does contribute some negative aggression. Skaters enjoy the tactile feeling of their trucks grinding along a concrete edge, or feeling their board come into positive contact with a marble bench. This sensation is much like a baseball bat smacking a ball out of a park, or slamming an opponent with a righteous tackle on the field. Real street skating will never go away, but the damage inflicted by the full contact nature of the pursuit can be lessened. Skaters can go to the skate park and grind the living daylights out of a specially designed picnic table with square, steel coping.

Tourism:
Skaters travel as far as their money will allow to visit a skate park with a good reputation. Skaters are natural adventurers, travelers, and connoisseurs of new experiences. Now that there are thousands of skate parks in the United States, many skaters 18 and older take extensive skate park touring trips all over the country, and beyond. Even younger skaters will borrow dad's car and hit every park in a hundred mile radius to experience new terrain. Although skaters are not thought to have the deepest pockets, but gasoline, food, lodging, entertainment can amount to substantial revenue. A town featuring a quality skate park can draw skaters to a community from a coast away or the next town.

Youth Outreach:
Skaters are often individuals who march to a different drummer. Not all but, many are people who did not fit in elsewhere and turned to skating because it has a natural, healthy aggression and creativity. Skaters are creative individuals, and their art, fashion, and music have always been on the cutting edge of popular culture. Instead of marginalizing the youth that participate in skateboarding and its culture, these people need to be included and encouraged. Skaters have always been

proud of their not-so-accepted status, but skate parks can include them into the community in a way that benefits everyone. When skaters have a place, they are often less inclined to participate in negative, even criminal behavior. Skateboarding is a relatively inexpensive sport, and in essence really only requires a skateboard. A $100 skateboard is within reach of many kids, while the costs associated with the equipment of many traditional sports may not be.

Recreation Facilities and Cost Reduction:
As mentioned before, skateboarding can cost much less than traditional sports in a number of ways. Though a quality, neighborhood sized skate park or skate spot can look expensive up front, the costs are mainly immediate. The maintenance costs required to keep a well-built concrete park are relatively minimal. Some concrete patching might need to be done, occasional graffiti removal might be necessary, but all in all a well-designed and built concrete park is essentially finished. Peter Whitley, in his 2007 "Public Skate park Development Guide", estimated that the current cost for building a concrete skate park is $40 per square foot. If one has a neighborhood skate park of 10,000 square feet, the cost as built will be $400, 000 with low ongoing maintenance costs. A baseball field might cost the same amount or more, but has much greater ongoing maintenance expenses.

Aesthetic:
Well designed and built concrete skate parks are inherently beautiful. Much like an Isamu Noguchi landscape sculpture, their smooth forms and the clean lines of the coping are similar to modern art. Skate park design/builders are artists that care about their craft as much as any design professional. Hours are spent troweling the concrete, and finishing it with the utmost care, so its blemish free surfaces can be ridden upon without so much as a whisper. These contemporary skate parks can be seen as public art. Why not treat them as such? They invite interaction, and reflection. This is an aspect where landscape architects can be especially helpful, as their sense of design and aesthetic can create public spaces of the utmost beauty.

Can't we just use moveable ramps?
In contrast, ramps made of wood, metal, plastic, and other materials, will eventually degrade. Water absorption, temperature changes, and steady impacts will cause these materials to warp and bend. This will cause the screws that hold such obstacles together to protrude, creating a highly dangerous situation for any skater that falls on them. Even steel ramps rust, and welds break through. The maintenance needed to alleviate such situations must be more frequent (if it is performed at all), and eventually the purchase of new obstacles becomes necessary. One must ask themselves, who does this benefit? The community? The skaters? Or the companies that produce such obstacles? In addition, the mobility of such obstacles that is often touted as the best justification for a prefab park, creates other questions. Why would skaters who use the park get bored of the current layout of obstacles? Wouldn't it have been better to build it right the first time, in a manner that wouldn't require the park's revision?

Skateboard Parks: Challenges Facing the Landscape Architect

The Lack of Information Oriented Towards Landscape Architects:
A 2007 literature search for information related specifically to skate parks revealed no sources to guide landscape architects through the design and construction of skate parks. Peter Whitley's "Public Skate park Development Guide" (available online at www.skatersforpublicskate parks.com) is an excellent source for planning, designing, funding, and building skate parks, but it is written for the skateboard community.

Specialized Knowledge and Competition:
Perhaps one of the reasons that specialized skate park literature does not exist for landscape architects is that skate park design/builders do not want the competition. These design/builders, most often skaters themselves, do not want to see non-skateboarding landscape architects building skate parks. That is understandable, seeing as a non-skateboarder will almost assuredly design a terrible park without help from an experienced skater. But what if landscape architects gained insight into the nuances of how to build a quality skateboard park? This might add insult to injury, as the landscape architect would be affecting the skate park designer/builder's livelihood, and creating a facility for skaters without a personal cultural interest in the place. In addition, a stigma may exist in the mind of a design/builder, who most often possesses specialized knowledge of the concrete and pool construction, gained from experience in the building trades. The perception that a landscape architect is more a creature of the design studio, a trade being attached to CAD and pens, as opposed to a trowel, may cloud the judgment of a design/builder. A landscape architect, whose skills lie in multiple spheres, often tends to become a project manager for a skate park project. Their job is made even more difficult because they have to mediate between the skate park design/builders, and the city officials themselves. Landscape architects in this sense truly stand to become interpreters.

FIGURE 1.10: Landscape architects become interpreters to both city governments and skate park design builders.

Poorly Designed Parks and Their Negative Legacy:
Faulty judgment can also come from the landscape architect. After successfully designing numerous public spaces and amenities in a variety of materials, a landscape architect may feel confident that they can design a facility for skateboarding without external guidance. As discussed earlier, this is a mistake, because someone who is not an experienced skateboarder cannot know what layouts for the park will be appropriate. They will not know what type of surface finish to implement; what radii curves are rideable; how much room a skater needs to maneuver; or what a skateboard is capable of. A set of stairs designed for walking is different from a set of stairs designed for sliding handrails. It has different dimensions, materials, and surface finishes. The negative influence of a badly designed skate park persists well into the future until that particular park has been closed or destroyed. It wastes money, angering even non-skating citizens; creates accidents and injuries; and, becomes an eyesore when it gets covered in graffiti. It also tells skaters that they don't really matter, further encouraging at-risk youth to drift into vagrancy and criminal behavior. These angry people will then just go back out to the street

and grind the handrails downtown again. No sensible landscape architect wants to have such a failed project associated with their name.

Communication Breakdown:
To be fair, even when a landscape architect reaches out to the skateboarding community and includes skaters into the design process, the result is often frustrating. Trying to design by committee is a challenge, and more so when the landscape architect is seeking input from younger folks who may not be articulate about what they want and need (Whitley 2007, 26). Distrust of authority is often present in young skaters, and this can cause younger skaters to clam up. Though it is still a good idea to include younger skaters in the design process, the best situation also involves experienced skaters who are adults. Adult skaters often have a broader perspective; are mentally more mature; and, have very defined ideas about what built details make a high quality skate park. They often can specify materials, angles, radii, finishes, and other considerations that make the job of a non-skating landscape architect much easier.

CHAPTER 2 - Background: Understanding Skateboarding

"Skateboarding is like playing the blues…. it's just three chords, but everyone does it differently."
-Skip Engblom, Skater, Actor, Surfboard Shaper

Intent

Developing design guidelines for skate parks requires an understanding of the sport as well as the design methods that can inform the guidelines. The following chapter summarizes the current fundamentals of skate park elements and skateboarding skills as well as their history. It concludes with an outline of the site and user analysis techniques and case study methodology appropriate to the study of skate parks.

Skateboarders: Beginners to Expert

Within the world of skateboarding, there are three categories of skill and experience level. These categories, recognized by all skaters, evolved out of sponsorship and contest situations created by skateboard companies and organizations. These categories are Amateur, Professional, and recently Legend, or Master. An easy way to relate the skill levels of these groups is to compare them roughly to college basketball and the NBA. Amateur skaters, like college players, are hustling to go the fastest and do the hardest tricks on any kind of terrain. They are trying very hard to gain attention and respect. Many professional skaters, like NBA professionals, can perform with precision and power anywhere. Rather than over-extending themselves on every trick, however, they tend to choose their battles and terrain. Legendary, or Master skaters are the professionals with enough ability and endurance to enjoy skating into their middle ages.

The categories of skill level are one method of measurement. This method may not be the best way to measure the difficulty of skate park terrain, however, because the range of skill level across all skateboarders needs to be considered more closely. A beginning skater needs areas within a skate park that will be safe and enjoyable for them. A small embankment, platform, or mellow transition is much better to learn on. A skateboarder who has developed perhaps half the skill to be a sponsored amateur may be very skilled indeed. There are also skateboarders who have enough skill to actually be sponsored as professionals within any given community, and are not due to their personal circumstances. When designing a skate park, one must consider the needs of kids who can barely turn, and grown men and women who can fly airs out of the deep end of the bowl.

Understanding the Elemental Forms of Skate parks

One can talk about the transitional forms and obstacles found within contemporary skate parks in a simplistic manner, but it is important to realize that these forms did not necessarily evolve in a linear fashion. Various built elements and movements within the sport of skateboarding have given birth to the forms of the obstacles over time. The forms of these obstacles, and the manner in which they were ridden by skaters in turn influenced new forms, refinements, and variations. Today, many of these forms are not simple, but blended with others to create terrain that will present a challenge for skaters for years to come. For the purposes of description, we will discuss these forms in their elemental state.

Transitional Forms:
A simple way to begin to understand concrete transitional forms is with the concept of a pipe. The starting point is what is a.....

FULL PIPE

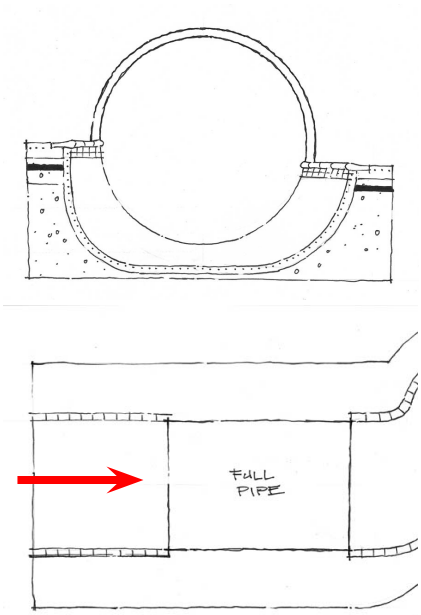


FIGURE 2.1: Fullpipe in section, A fullpipe in plan, combined with a halfpipe.

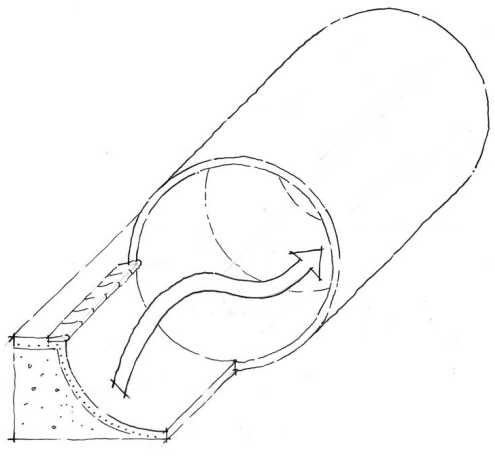


FIGURE 2.2: A fullpipe in perspective.

A full pipe is basically a pipe large enough in diameter for a human to skate back and forth in between its walls. First encountered by skateboarders when they began to explore drainage systems in California, Texas, and elsewhere, this form was soon implemented in the first concrete skate parks of the 1970s.

HALF PIPE

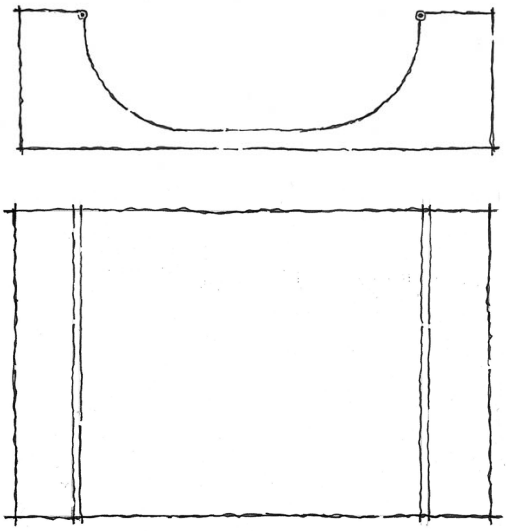


FIGURE 2.3: A halfpipe in elevation, and in plan.

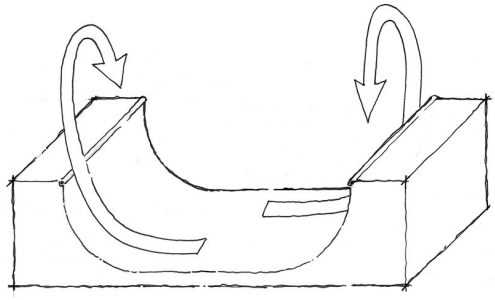


FIGURE 2.4: A halfpipe in perspective.

The form of a halfpipe is much like one had just taken a pipe and cut it in half lengthwise. As the design of the form became more refined, skaters added a flat platform in between the transitioned walls, known as “flat bottom.” This flat area gave skaters a little more time to readjust after a trick and get ready for the opposite wall. As the design of the half pipe was improved, deck were added to each side at the tops of the transitional walls, and other features were added to the transitions.

Often seen in the media during such events as the X-Games, the half pipe is the traditional arena for what is known as “vert” skating, or skating transitions that travel up to vertical. Though this type of skating was born out of concrete pools, then in concrete at skate parks, the wood or steel halfpipe became the preferred environment for contest organizers to host competitions. It is easily designed and built, and provides a convenient spectator layout due to its symmetrical design.

QUARTER PIPE

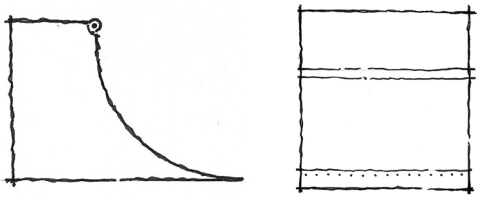


FIGURE 2.5: A quarte
rpipe in elevation, and a quarterpipe in plan.

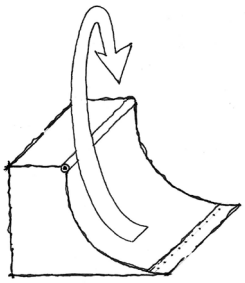


FIGURE 2.6: A quarterpipe in perspective.

The quarter pipe is exactly one half, of a half pipe (or one quarter of a full pipe). Quarter pipes are often built by skaters who do not have enough space or money to construct a larger ramp. Their transitions can go all the way up to a vertical face, but don’t necessarily have to. Often used as an obstacle to learn the basics of ramp skating on, quarter pipes often feature transitions with smaller radii than half pipes.

Over vertical forms: Clamshells and Capsules:

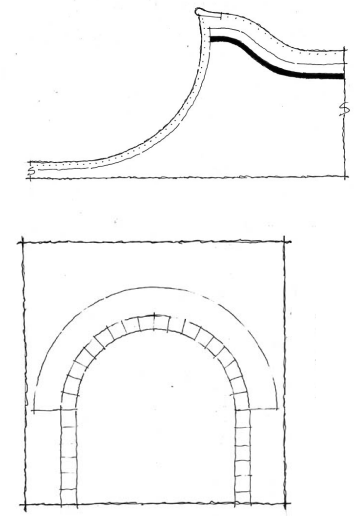


FIGURE 2.7: A clamshell in section, and in plan.

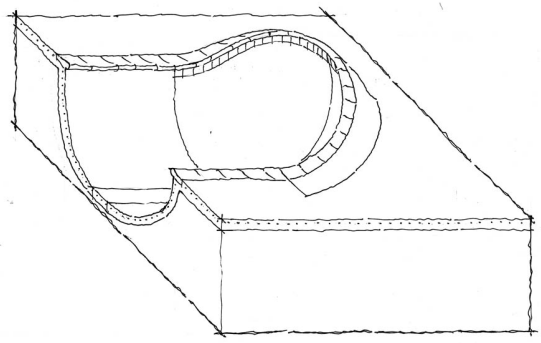


FIGURE 2.8: A clamshell in perspective.

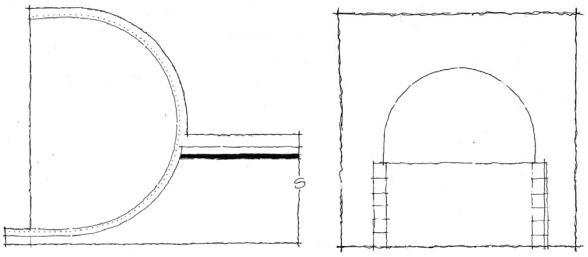


FIGURE 2.9: A capsule in section, and in plan.

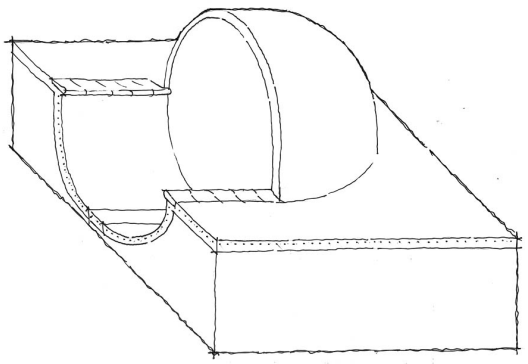


FIGURE 2.10: A capsule in perspective.

Technically, a full pipe can also be classified as an over-vertical form. Clam shells and capsules, however, are best thought of as pockets. Unlike a full pipe, they can't be traveled through, although Geth Noble of Airspeed Skate Parks has built some with small openings dubbed "sphinctors" (Juice Magazine). Because they are pockets of concrete, in a manner of speaking, it is possible to skate straight into them and travel upside down and ride out the opposite direction. A "capsule" is like a bowl turned on its side, and a "clamshell" is much like a bowl tilted about 25 degrees less.

Street Forms:

Though transitioned forms and embankments may also be found in a "street" type park, purely vertical and rectilinear forms tend to dominate. The obstacles one encounters on the street course of a skate park are almost literally translated from built elements and amenities that are found in the urban and suburban built environment. What is different, however, is that often details such as materials may change. On the city streets, skaters may use a marble bench as an obstacle. A skate park designer may specify that a bench be solid concrete with square, steel coping set into its edges for maximum durability. Landscape architects may look at street courses in skate parks and say, "Hey, I can do that! I have been designing streetscapes for years!" The catch is that the landscape architect who does not skate cannot understand, without a skater's input, how much space to design in between obstacles; critical alignments for a series of tricks (known as a line); or, exact dimensions that make particular tricks possible (Whitley 2007, 68). Common obstacle forms found in the street course of a park are: benches, steps, railing, curbs, ledges, embankments, platforms, bollards, and gaps (spaces between obstacles to do tricks over). Since the inception of street courses, there are some specialized terms for describing unique obstacles which incorporate two or more forms of these basic elements.

HUBBA

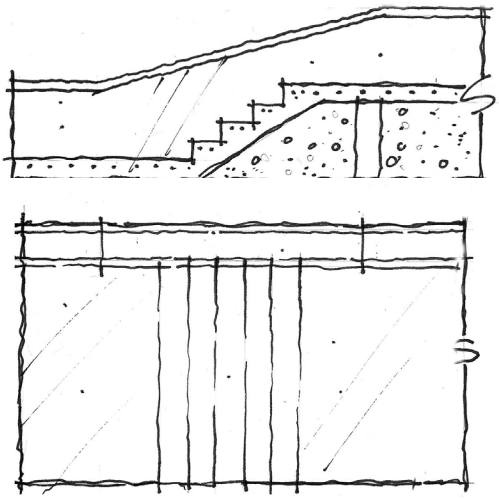


FIGURE 2.11: A hubba in section and in plan.

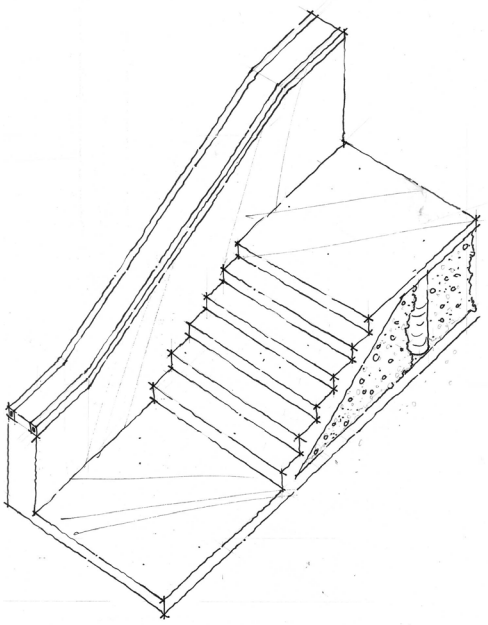


FIGURE 2.12: A hubba in perspective.

A "hubba" as a ledge, much like a low wall, that is usually around 1'-2' wide and has coping set into its edges. It is usually placed to one side of a higher platform that drops off to a lower platform. The hubba can remain at the same elevation in terms of its own height, or drop at an angle to a new height at the lower platform. Skaters tend to prefer sliding and grinding tricks on this type of obstacle.

PYRAMID

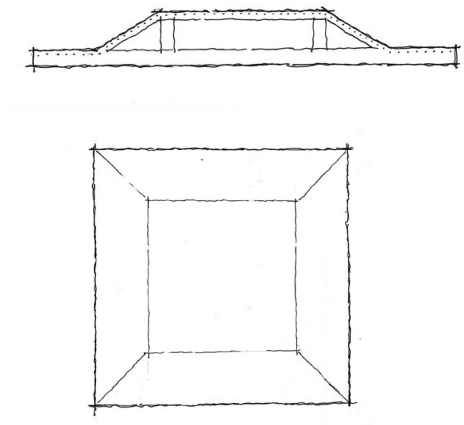


FIGURE 2.13: A pyramid in section, and plan.

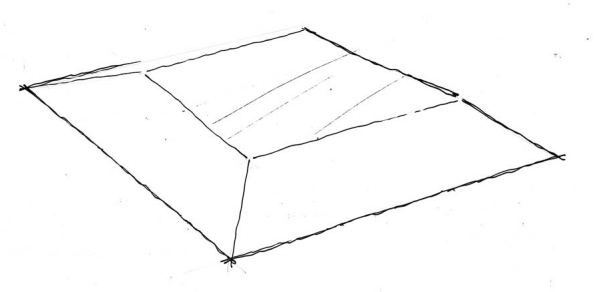


FIGURE 2.14: A pyramid in perspective.

A"pyramid" is not necessarily a pyramid. Imagine an elevated platform, about 2' higher than the surrounding flat surface. When embankments are added to all sides to give a run up to the platform, one has a pyramid. Pyramids often feature gaps between their embankments, or the addition of other elements such as steps, handrails, and hubbas. Skaters enjoy using the embankments to launch themselves over the pyramid, or up on to attached obstacles.

Other Essential Factors and Details:
One can have the most perfectly shaped transitions and creative forms, and still doom a skate park to under use by not implementing the following details with forethought.

Flat Bottom: In Relation to Transitions
The correct proportion of flat bottom to the height of the opposing transitional walls is very important. Too much flat slows a skater down and requires a skater to push, which is unacceptable in a bowl or transitioned situation. Too little flat bottom in a transitioned situation will make skating difficult as well, as it speeds up the time between opposing transitions and takes time away from the skater to prepare for his/her next move. In a bowl or in transitioned situations where skaters are interacting with opposing transitioned walls, skaters maintain speed not by pushing, but by "pumping." Pumping is performed by crouching at the top of the transitioned wall, and standing up while approaching the point where

the transition blends with the flat bottom. It can also be done in reverse, so that a skater crouches before the transition, then stands abruptly while beginning to transition up the wall on the opposite side.

Flat Bottom:
In Relation to the Street Course
On a street course, a general rule of thumb is that too much flat is better than too little. Skaters need time for a couple of pushes, at least, to gain the speed and correct foot placement for technical tricks. For example, a common mistake is to not include enough of a run up to a handrail on a stair set, rendering the rail and the stairs good for nothing except, ironically, walking up or down.

Surface: Concrete Type and Finish
To help visualize the level of finish and texture that both transitioned elements and street course elements should have, the best example may be that of a very smooth unpainted garage floor. The exact specification for this type of concrete finish has been specified by the American Society for Testing Materials, in their publication F2480-06 (WHITLEY 2007, 67). Check www.astm.org for more information. This level of finish is smooth enough for controlled slides, which are essential for controlling speed, but also grips well enough for the skater to feel secure when traveling at high speed. The concrete is slightly aerated, so it has very small pores. This allows the concrete to absorb moisture and dry very quickly. Any concrete with a broom finish (textured) is completely unacceptable because it does not allow the wheels to slide smoothly.

Surface: In Relation to Transitions

FIGURE 2.15: The surface of the bowl at the Kansas City Skate Plaza.

Another detail which really sets particular skate park design/build companies apart from amateur contractors is that of surface finishing. Though it is important in every area of the park, transitioned surfaces are require impeccable craftsmanship to finish correctly. When a transition has been shaped correctly, the concrete has been troweled and is free of slumping which causes “kinks” and flat spots (Whitley 2007, 126). Kinks or flat spots can easily unbalance a skater riding over the transition, and cause a fall.

Surface: In Relation to the Street Course

FIGURE 2.16: The surface of the street course at the Kansas City Skate Plaza.

Flat surfaces in a street course should be as smooth and even as possible. While there should be a very slight slope for drainage (even to a tolerance of .25%), the flatter the surface, the less a skater has to push to gain speed. Bumps or waves in flat areas can also imbalance skaters and cause accidents.

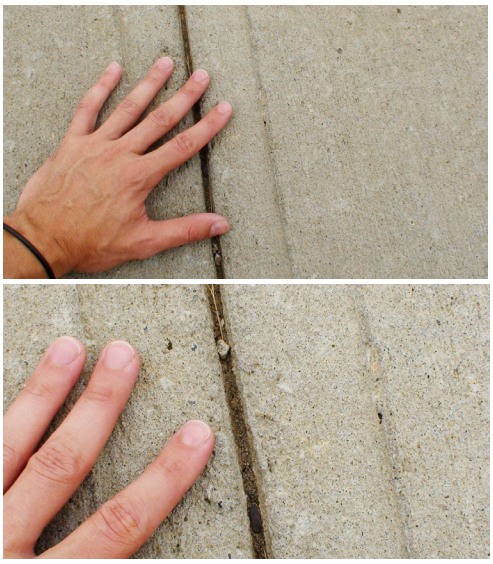


FIGURE 2.17: Broom finish in a skate park? No, no, no! and NO!

Surface: Construction Joints

Though not as small as they were in the early 1990s, skateboard wheels are still highly susceptible to large cracks and slight changes in elevation between riding surfaces. A change in elevation of 3/8" can be large enough to disrupt a skater when it is rolled over (Whitley 2007, 115). It is also important to place joints away from obstacles, not next to them. If a skater hits a joint at the bottom of a transition, it can jolt them off balance as they travel up the surface and make maneuvers very difficult or dangerously unsafe. This is one reason why prefabricated ramps, placed on top of a concrete slab, make for such a low quality skate park experience. The bottom of such ramps always have a plate made of steel or some similar stiff material that can take abuse. The problem is that the thickness of the material is enough to create a slight bump when the skater hits it. In contrast, a concrete transition will meld smoothly with the surface it sits upon. No bump, no jolt, just a smooth flowing transition.

Edge Treatment: Coping or No Coping?

The top edges of transitional forms or obstacles on a street course can be finished one of two ways, with coping or without it. Coping is a term borrowed from pool construction, coping being the edge of the pool. This edge is made up of separate blocks, and usually has a round bullnose shape that is set higher than the deck of the pool so that water drains away from the pool and not into it (Donegan and Short 2003,124). Since skaters began to skate pools, they have enjoyed grinding and sliding on coping because it is tactile. The feeling is satisfying in the same way as contact in other sports. When no coping is included at the top of a transition or on an obstacles edge, an even and rounded lip should occur. A sharp edge will result in chips and degradation, leading to a dangerously sharp edge.

There are three different types of coping: pool coping, round steel coping, and square steel coping appropriate for skate parks.

Coping: Round Steel Coping

FIGURE 2.18: Round steel coping in the bowl at the Kansas City Skate Plaza.

Round steel coping is made from steel pipe, 2 3/8" in though diameter. This type of coping occurs more often on transitioned features, it also occurs on some street obstacles. It is a good all purpose shape and size that allows for grinding and sliding with ease. It is easier for beginners to grind and slide on steel coping than pool coping due to its smaller diameter.

Coping: Pool Coping

FIGURE 2.19: Pool coping in the clamshell at the Kansas City Skate Plaza.

Pool coping is often set into skate park bowls and on halfpipes. Pool coping is usually not set in street obstacles. It is known for its larger size, up to 3" in diameter, and because it is cast in concrete, it has a gritty texture. This texture allows for a pronounced barking noise when a skater grinds it, which can be very satisfying in a tactile manner. Because of its pronounced diameter, skaters experience a bump when performing airs off of it. Instead of taking away control of a maneuver, this feeling helps skaters get a little more lift in their airs.

Coping: Square Steel Coping

FIGURE 2.20: Square steel coping set into a bench at the Kansas City Skate Plaza.

Square steel coping (also known as "angle iron") is roughly 2" x 2", and occurs on street obstacles, especially in ledges, the tops of walls, and on hubbas. Its square form keeps the edges of rectilinear obstacles such as benches and ledges square, while accepting abuse. It also allows skater's trucks to lock in a little easier when performing technical board flipping tricks into grinds. This type of coping is always seen in rectilinear forms, and not on transitional forms.

Setting coping is a precise task that must be done correctly. Pool coping, set onto the deck of the bowl or transitioned feature, hangs out over the transition the most of any type. This overhang could be as much as 1 ½"! A skater has to be wary and lean into grinds, and all tricks from lip tricks to airs are more difficult due to the protruding edge. This aspect of skating on pool coping reveals a skater's skill. Setting steel coping requires

making sure that it protrudes from the transition wall by about ¼" and sticks up from the top of the deck about ¼". The slight protruding bump on the deck will allow skater's trucks to lock into it for grinds and stall tricks. The reveal of properly set coping along the top of the transition wall should be a straight, even line. If the transition wall is uneven, or the coping set deeper in some places than others, the coping could catch wheels. If it sticks up too far on top of the lip, it could even rip trucks off of one's deck!

FIGURE 2.21: The steel mini ramp in Manhattan, Kansas, ate the author's back truck for lunch.

Square steel coping is always set flush to the top or the bottom of the obstacle edge. Primarily, this is to maintain a smooth, square edge that is in keeping with the rectilinear overall shape of the obstacle. It is also for a different feel, as variety is good within a skate park.

Equipment, Environment, Culture, and Form: An Integrated History of Skateboarding

How Skateboarding is Performed: The Experience of Skating Obstacles

There are six essential issues one must understand in order to design a skate park successfully, in terms of how skateboarders interact with their boards. These issues affect how a skater performs the act of skateboarding, how they move around and navigate, and why they interact with particular obstacles in a particular manner.

STANCE: CLICK ME!

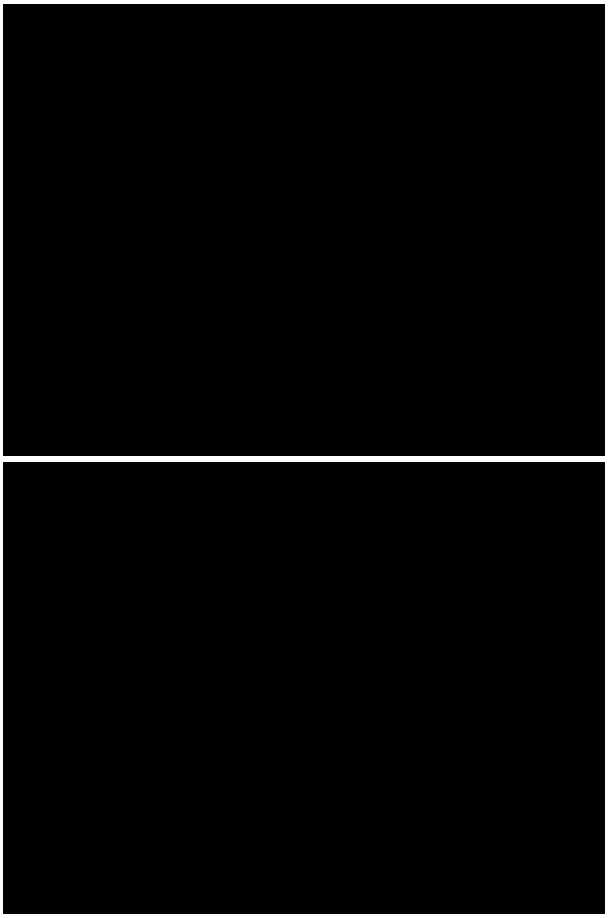


FIGURE 2.22: The author stands in a regular stance, and then in goofy stance.

The way skaters stand on a board is determined by which foot is dominant for a given person. This most often is affected by whether or not they are left or right handed. Skaters who skate with their right foot forward are referred to as "goofy foot." This is not really as derogatory as it sounds. Half of the best pros in the world are goofy-footed. Skaters who skate with their left foot forward are considered "regular footed". Many skaters these days can ride and perform tricks with either foot forward. This is referred to as the ability to ride "switch," much like switch-hitting in baseball.

FRONTSIDE VS. BACKSIDE

Another crucial aspect to understand is whether or not a skater can perform a trick on a given obstacle either "frontside" or "backside." If a skater is going to go up a transition wall, turn, and come down again and, in doing so, turns so that his belly and his toes, face the top coping edge of the obstacle, the skater has turned "frontside." If the skater goes up, and turns so his rear end, and his or her heels face the top coping edge of the obstacle, the skater has turned "backside." This concept is exceptionally important, because if an obstacle is not designed or laid out correctly, it may be only possible to do tricks on it backside. Consider the fact that maybe only the regular footers can do their tricks on this obstacle. The designer has inadvertently made this expensive obstacle usable by only half the skaters it will see in its lifetime.

PUSHING: CLICK ME!

FIGURE 2.23: The author, with a regular stance, pushing across the flat.

Pushing is the way that skaters get going, or maintain speed while traveling across flat surfaces. There are two ways it can be done. "Normal" pushing is performed when a skater takes their back foot (trailing foot) off of the board and places it on the ground, and then pushes off on it and replaces the foot on the board. "Mongo" pushing is performed when a skater takes their front (or leading) foot off the board and places it on the ground, and then pushes off and replaces it on the board. Mongo pushing is considered bad form, and there is really only one pro skater in history, Bill Danforth, who was still respected despite his Mongo tendencies. In addition to the fact that this type of pushing creates a jerky, unstylish looking movement, it also requires more foot shuffling to get feet back into position for tricks.

CONTROLLING SPEED: CLICK ME!

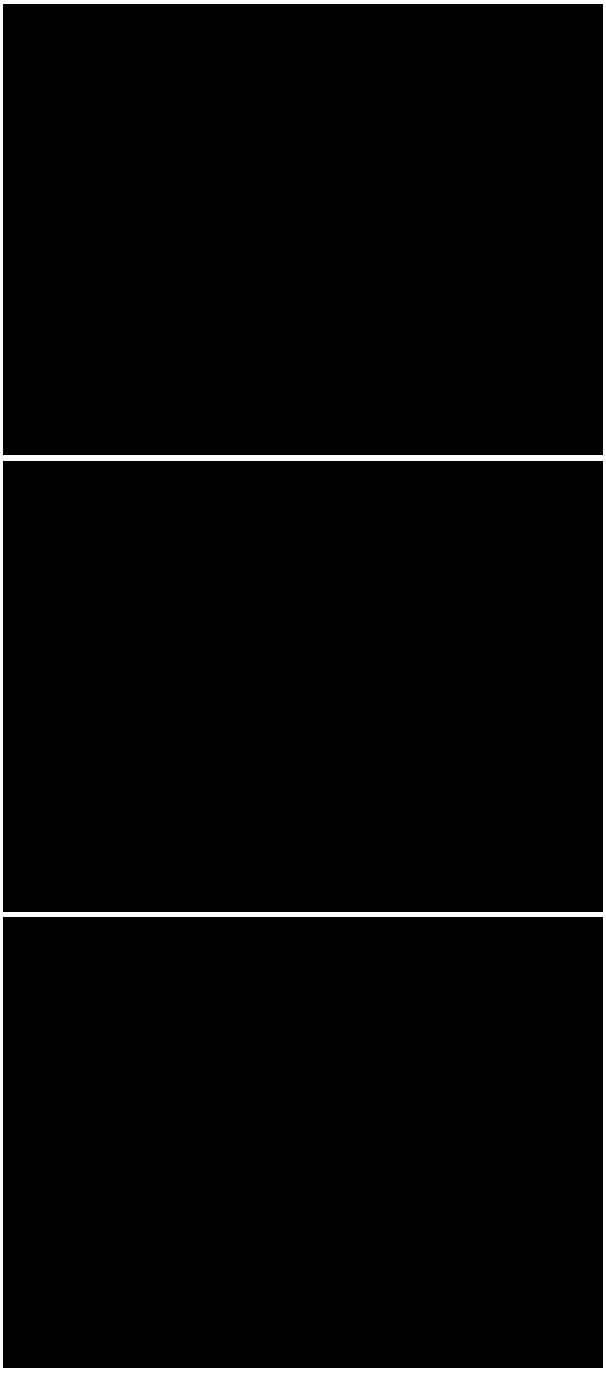


FIGURE 2.24: The author performs a controlled slide, a heel drag, and a toe drag.

The best way to control speed is by performing a controlled, sideways drifting slide known as a "powerslide" or just a "slide." The skater does this by traveling forward as normal, but if they are going too fast and in danger of losing control, they push the back end (tail end) of the board out to either their right or left side. At a good amount of speed, this will cause the skater's wheels to bite hard enough into the pavement to create friction, resulting in a loss of speed. As the skater completes the slide, the inertia of the skater will cause his or her board to right itself and continue traveling in a straight line again. Style is a big issue when performing slides. The movement is very similar to slides and turns performed by surfers and, if done correctly, is very graceful, as well as useful.

Another way to control speed is by heel dragging. The skater rotates his or her foot while sticking the heel off of the edge of the tail. The skater then presses on the tail and sticks the front end of the board up while draggin the heel. Toe dragging is a less common movement, but is usually performed when a skater is unsure if they are going to fast to do anything safely. The skater lifts their trailing foot (the tail end) and sticks it halfway off the board, while keeping it on the tail. The skater then tilts their foot so the toe of their shoe drags on the ground, creating a braking effect. Though one may see this at a skate park it will more likely be seen executed by a person riding down the street on a skateboard, with their arms around a twelve pack of beer, suffering from limited mobility.

TURNING

CLICK ME!

FIGURE 2.25: Ricky Reyes changes direction while moving by carving.

Turning is obviously essential to navigate one's way on a skateboard, whether interacting with obstacles or just cruising down the street. Turning can essentially be done in three ways, by kickturning, carving, or sliding. To kickturn, a skater has to apply pressure to the tail of their board with their trailing foot, and at the same time lift their front foot and turn their body in the direction they want to go. To carve, a skater applies more weight to one side of the board or other by leaning hard in one direction or the other. The trucks of the skater's board must be adjusted so that they are loose enough to pivot on their kingpin when weight, and therefore force, is applied. Of the two techniques, carving creates movements that are highly reminiscent of surfing, and it takes a lot of practice to do it well. Skaters who are adept at carving within bowls are considered stylish and skilled. Turning can also be performed on a transitional face wall by sliding. As a skater rides up the wall, they can unweight their back foot and push it to the side at the same time, while still maintaining contact with the board. The wheels will slide and change direction of the board, and the skater then rides down the transition.

GETTING ONTO and OFF OF OBSTACLES: CLICK ME!

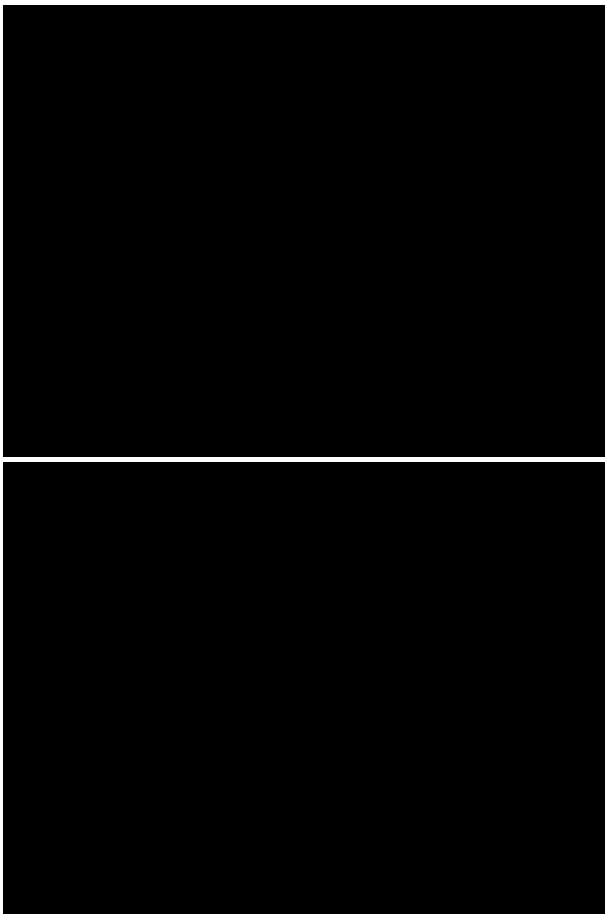


FIGURE 2.26: The author ollies up onto a ledge, and rides off of another one.

The easiest way to get onto or off of an obstacle is simply to ride up onto it, or lift the front end of the board and drop off of it while traveling forward. This is fine when there is a transition or an embankment involved, but if the obstacle in question is a curb, ledge, or bench, the skater has to "ollie" onto it. The ollie is a maneuver first invented by Allan Gelfand on transitions in 1977. It was adapted to flatland (and later streetstyle) by Rodney Mullen. To execute an ollie, a skater performs a complicated movement in two parts: First they crouch while standing on the board, then quickly smack the tail with their trailing foot with force upon the ground while leap-

ing in the air, and drag their leading foot up the board. This combination of movements actually pops the board about a foot in the air (if you're average), and even up to four feet depending upon the strength of the skater. With this essential skill, a skater can get onto, or even just fly over things in their path.

TRICKS or MANEUVERS: CLICK ME!

FIGURE 2.27: The author pops a backside no comply hard flip.

Skaters enjoy performing tricks because their execution is a combination of mental and physical challenges. Though the skater needs to be able to physically perform the move, they will never be able to do it if they cannot understand how to manipulate the board with their feet and the rest of their body. Learning how to perform a trick is actually largely mental, and akin to solving a puzzle. Basic tricks can be made up of one or two movements, like ollieing onto a curb and grinding it 50/50 (with both trucks) before riding off of it and away. Complex tricks are an entirely different issue. For example a skater who wants to perform an ollie to smith grind on a two foot ledge, then ollie off the ledge 180 degrees to land "fakie" (going backwards, trailing foot now facing forward) must complete the following:

1. Ride up to the ledge at a slight angle, not parallel, with a medium amount of speed.

2. Then pop their tail for the ollie that is high enough to place them over the edge of the ledge, and twist their body slightly so that their back truck (trailing foot) lands on the edge, and their front truck is dangling off of it, WHILE the underside of their board comes into contact with the edge of the ledge as well. Just getting into this position takes great skill (and a lot of bruises).

3. The skater must be pointing the toes of their front foot down so it keeps the front end of the board down, while maintaining their posture so they balance on the edge the ledge with their back truck and underside of the board sliding along it.

4. After the skater reaches the end of the obstacle or loses too much speed to maintain balance, they will simultaneously twist their shoulders and pop their tail on the edge of the ledge in the direction they want to go.

5. As they are turning in mid air, the skater is bringing his or her front foot up the board, to draw it up into an ollie.

6. Remaining over the top of the board the entire duration of the maneuver, the skater lands on the ground with all four wheels at once and is now riding backwards, away from the obstacle.

The painstaking maneuver just described is terribly complicated, and is probably considered relatively easy by most decently skilled skaters. Now just imagine if we had just described a 360 degree kickflip to frontslide board slide, to backside hurricane to fakie! Skateboarders tend to dislike people comparing their sport to martial arts, but the similarities are uncanny.

Siting the Skate park, and Siting Obstacles Within It

When one takes on the task of designing a skate park, it helps to perform a user analysis of existing successful skate parks. A solid understanding of case study methodology can also be quite useful. Within a case study, the following information must be obtained.

1. Location and Context:
The use of an obstacle can vary due to its location within the park, and how it is placed in relation to other obstacles around it. A beginning skater with tight trucks, and an awkward and stiff style may only be able to hit one obstacle before having to readjust foot position. A skilled skater with loose trucks, and a flowing style may be able to perform a trick on multiple obstacles, subtly adjusting foot placement very quickly to prepare for each one. When designing a park, an experienced skater should be involved in the design process the whole time, but this aspect is essential to assure a good layout that is usable to all skill levels.

2. Siting and Aspect:
The Skate park Itself: Deciding where to place the skate park on a given piece of land can greatly affect its success or failure. A number of design factors are dependent upon appropriate site selection including parking, community accessibility, and security.
Transitioned Obstacles: If there is a bowl, fullpipe, halfpipe, or combination transitional obstacle featured within the skate park, siting them correctly presents a number of challenges. Because bowls are basically large depressions in the earth, their tall transition walls will naturally create large areas of shade. During certain times of day, earlier in the morning, and when the sun gets low in the sky in the evening, certain transition walls can create a difficult contrast between the lit areas and shadow areas that makes it difficult for a skater to see. This is usually a minor annoyance, but if the bowl in question is sited in a skate park with an awning, or under a bridge, the contrast can be blinding and make skating the bowl during that time of day nearly impossible. If a fullpipe is a feature of the park, it might be a good idea to lay it out east to west, so that morning and night the interior of the pipe is receiving sunlight. A halfpipe should also be laid out east to west, as during some part of the day, and in all seasons, both transitions will be receiving sunlight. This is especially important in parts of the country that receive a lot of snow and ice precipitation. Dedicated skaters will skate whenever it is not wet, whatever the temperature. It will be easier for these dedicated skaters, however, if they don't have to chip ice from the halfpipe! Any kind of combination transitional obstacle, such as a large bowl with multiple features (aka flow park) is really just about impossible to site so that all transition walls will receive sunlight all the time. The best idea here is to analyze its shape, and ask how it can be sited so a large part of it could receive sunlight during the early morning and later evening hours.

One more important factor concerning the layout of bowls, and other large transitioned obstacles, is elevation. Not always, but most of the time, it is a good idea to situate these transitioned obstacles on a higher level than any street course elements. This is primarily to prevent skaters from unexpectedly flying from the street course into the bowl, while another unsuspecting skater is taking a run in it. This can also be an accidental situation, where a beginning skater loses control and falls into the bowl. Another reason placing the bowl, or transitional obstacle, at a higher elevation is a good idea is because a bowl these elements naturally have a greater change in elevation. Especially with bowls, the higher they are, the drier they will stay. All bowls

(that are built right), will have a drain at their lowest point, but if they are sited at the lowest point of the park, the subterranean groundwater might also build up against the backs of their transition walls and start compromising the backfill and concrete.

Street Obstacles: These particular features within a park are less of an issue to site when considering the sun's aspect. The reason is that they are usually not as tall as any transitioned features, and simple enough that they do not create shadows that are terribly difficult to skate with. Large pyramidal obstacles with multiple hubbas and ledges can be an exception, and in that case perhaps the designer should ask themselves how to situate it so that most of its surfaces will receive sunlight.

3. Layout: Distance Between Obstacles: This issue is basically one of judging the amount of flat bottom between obstacles. This is exceptionally difficult to obtain without the knowledge of an experienced skater who is fluent in many types of skating. One can design a skate park where all other details, from parking access all the way down to surface finish can be perfect, but if there is too much space or to little space in between the features it will be a failure.

The Skate park Itself: It is a luxury if a skater can walk into the park and have enough space to move about without getting in the way of anyone skating. This is not a necessity, but parks that have walkway areas, and spots where one can sit out of the way, are really quite enjoyable. This extra room creates spots where skaters and non-skaters can socialize, put on pads, or just rest a little.

Transitioned Obstacles: The amount of flat bottom to include in between transitioned walls will vary from design to design. Skate park design/builders really come into their own here, as the feel for how much flat in between transitions is an understanding through skating. People enjoy skating bowls, halfpipes, and similar transitioned features because they want the feeling of velocity combined with weightlessness. Simply put, they like going fast and feeling like they are flying! One cannot achieve or maintain speed in such a situation, however, if he or she has to push. Skaters prefer pumping on their way up or down the transition, to maintain speed. Too little flat bottom can also be negative. When a skater is riding up a transition wall, they are making all kinds of adjustments in body position, foot placement, and mental and chemical equilibrium. This may sound far fetched, but there are no talented transition skaters out there that have slow reflexes or inner ear problems. If there is too little flat between transitions in a given situation, this requires the skater to be constantly shifting every part of their body and mind. Their sense of kinesthesis, or where their body is in space at any given time, finds no chance to be sure of where it is. The result is a wild ride that only those with supernatural reflexes can handle, and to most the transitioned element in question will be a failure.

Street Obstacles: Fortunately, there is a rule of thumb for this category. Peter Whitley, of Skaters for Public Skate parks, recommends that too much flat is better than too little in this situation. The style of street skating, today in the 2000s, is more technical than it ever has been. Skaters who enjoy this style of skating are changing foot placement, and shifting their body weight to odd positions all the time. Often these skaters will attempt multiple tricks in a line, and each trick will require a differing foot placement. This is why skating is often compared to martial arts. To be able to make these multiple changes, skaters on a street course need more time in between obstacles. More space also benefits specific obstacles, such as handrails over steps. Such obstacles need a good amount of runway to get proper speed, and space on either side in order to make it approachable to skaters with differing stances. One or two pushes is a good amount

of speed for most low obstacles on a street course, about a foot or so high. Beyond a foot, or if a gap has been created in between obstacles for a skater to ollie or air over, there really should be enough room for three pushes, or a embankment to drop into and gain speed.

4. Speed Factors:
Both beginners and the experienced enjoy going fast. Going fast is not always desirable, however, when one is unskilled. Not only may the unskilled skater hurt themselves in a fall, but they often loose control of their board in a violent manner. Almost all skaters have been "sharked" by a board that has gotten loose from a skater who has fallen. The best idea for a skate park concerning the availability of velocity, is to create areas in which it is attainable, and areas in which it is not. What controls this is, as previously discussed, is the amount of room or flat in between elements, and whether or not there are any embankments or transitioned elements built into the design. It is a luxury to have a small area, where there is some flat and a low embankment or very mellow transition in one area of the skate park. This will naturally be a slow area, where beginners can learn, and more experienced skaters can warm up.

Transitioned Obstacles: Bowls, ramps, and transitioned elements of all sorts should always be designed to create and maintain speed. If an element is too high or too fast for a beginner to drop into, they can always slither down into the bowl and proceed cautiously. Beginners can kick around in a slow fashion in between runs of more experienced skaters, in order to gain experience themselves. If an expensive transitioned element is designed that is slow and cumbersome in order to keep beginners safe, however, the beginner will soon master it and curse the people that built it when they become bored.

Street Obstacles: Skaters interacting with street obstacles need speed in proportion to the length of the obstacle they are skating. This is not necessarily true in terms of the height of the obstacle. For example, if a skater wants to grind a low ledge that is 15 feet long and a foot high, they will need about twice that length at least to get in two pushes and attain the needed velocity. It should be explained that most skaters do not push from a dead stop. To gain speed quickly before getting their pushes in, skaters often hold their board by its nose in one hand, start running, and after a few steps throw their board on the ground while leaping upon it. The skater then quickly adjusts their foot position and gets in the required number of pushes, and then has to readjust foot placement for the maneuver they want to perform. As mentioned, a taller obstacle does not necessarily require a lot of speed. This is often the case in terms of handrails, which are usually 24"-30" tall in skate parks, and can be taller on the street. It is more difficult to perform a really high ollie when a skater is going very fast. The reason is that a deeper crouch (body position), more forceful tail snap with the back foot, and more pronounced front foot placement on the board is needed to perform and ollie over 2' tall from flat. The farther a skater has to crouch, and the lower their front foot has to be positioned on the board, the more off balance they will be.

5. Visibility: Site Lines and Blind Spots
Many skate park design/builders are now implementing designs for a unique type of skate park known as the "flow" park. This kind of concrete park blends both street and transition obstacles into one unified terrain that encourages skaters to develop skills for both types of environments. In the visual form, they often resemble a motor cross, or BMX track made out of concrete. There is often a complex bowl, with many unique features, which is ringed by a banked track which also features various obstacles. This is a grossly simplified description, but this basic concept can

take form in a variety of ways. Skilled skaters enjoy this type of park, because it allows them to "flow" around the park, hitting nearly every obstacle, and rarely have to push. City governments like to build these parks because they place a number of features into a smaller space, thus saving land and money on concrete square footage costs.

There is a drawback to skate parks of this ilk, however, and that is that they are more difficult to navigate for the unexperienced, especially when they are crowded. Because this type of park has taller elements such as quarterpipes or "tombstones" (extentions of the transition's vertical face), these elements can hide other skaters from each other. This means that one skater could be cruising through the park, merrily flying off this and that obstacle, when an unsuspecting kid drops in from another section without being seen. The inexperienced kid has no idea how to get out of the way when the faster, older, heavier guy flies around the corner. The skaters end up having a collision because they could not see one another. William Whyte estimated that people are such good navigators that they can change direction in fractions of a second (Whyte 1980), but when one is rolling quickly on a skateboard, that reaction time has to happen much quicker. This kind of situation is also more likely to happen because a flow park has multiple points of entry, where one can drop in, and visibility is only good on the upper deck, or the encircling track that looks into the bowl. Skate parks like this are a lot of fun for experienced skaters who know what they are doing. Older, more experienced skaters seem to observe an unwritten rule that only one skater should drop into a bowl at once. This rule was passed on by skaters older that they learned from, or by knocking a tooth out or breaking some bones in a collision.

Flow parks are not a bad idea, and they can be some of the best parks out there. One may think that a good idea would be to just design all obstacles to be low in height, thereby decreasing the velocity of skaters and increasing visibility. This unfortunately is a myth, and really is just a lazy way of creating a boring park that skaters will outgrow the day it opens. As with other recreational facilities, architecture, and anything we make, good thought and hard work must be put into designing skate parks. One must be careful to consider visibility in every area of the park, and eliminate any totally blind curves if possible.

User Analysis

In the landmark film, "The Social Life of Small Urban Spaces", (1980) William H. Whyte documented his case study of several small urban parks throughout the US. Whyte sought to answer the question, "What makes some small urban parks successful, while others were not?" In order to answer this question, Whyte assembled a small team of social ethnographers to film, photo, survey, and perform mapping studies of several prominent urban parks. These documentary social science methods were revolutionary at the time, and they helped Whyte and his team to discover through scientific method (as opposed to theoretical conjecture) why it was that people preferred certain urban outdoor locations more than others.

Whyte's methods provide the fundamental skills for recording how people use space. Anonymous filming, anonymous observation and documentation, direct filming/photography and observation, photography, movement mapping, gender comparisons, age comparisons, sketching, the study of adaptive usage, human choreography, and head counts are all user analysis methods pioneered by Whyte that can be applied to analysis of skate parks.

Case Study Framework: Methods Defined by Mark Francis

Performing a case study requires a thorough investigation of the place, or space, to be analyzed. In his paper, "A Case Study Method for Landscape Architecture," written in 1997, Mark Francis defined a framework of questions for landscape architects to ask when investigating a place. Francis, a professor at the University of California, Davis, primarily is interested in use and meaning of the built and natural environments. In his abstract, Professor Francis states that the use of case studies in the education of landscape architecture are quite valuable, and can serve as a method to test the validity of certain projects. This particular framework of questions covers background information that is necessary in order to understand how and why a public outdoor environment came into being. These questions, which are essentially an inventory of facts (much like the inventory of a site analysis), cover basic information such as the year a project was built, the designer of the project, and the intention for the program of the place.

CHAPTER 3 - Methodology

"Movement is the ultimate test of a design…." -William H. Whyte (Whyte 1980).

In order to better understand skate parks, their design, construction, and function, a case study was performed of the Kansas City Skate Plaza, in Kansas City Missouri. Four methods were utilized to gather the information needed. First, an site inventory and site analysis was performed at the skate park over a period of a seven month period, from January 2008 to July 2008. While this information was being gathered, another two categories of data were being collected simultaneously; user observations via video and photography equipment, and a user survey. Fourth, a case study framework based on the methods of Mark Francis was utilized to document background information obtained from the skate park's designers, builders, and Kansas City's Park and Recreation Department.

Site Inventory and Analysis

The particular methods used for collecting data for this portion of the study are familiar to most within the discipline of landscape architecture. These methods were learned by the principal investigator, Desmond Poirier, from Professors Tim Keane, Lorn Clement and others during his education in the Landscape Architecture Master's program at Kansas State University. Known collectively as "site analysis," these techniques actually fall into two categories, that of "Inventory," and that of "Analysis." In order for a Site Analysis to be performed correctly, the investigator must first collect the data (the Inventory) by getting out on the site and use their senses to gain information. In this case, the principal investigator traveled to the Kansas City Skate Plaza weekly or bi-weekly, and used three pieces of equipment; a notepad and pen, and a video camera with built in camera function. Technically, the Analysis phase of this two-fold process was not implemented until later in the study, when the principal investigator used the Inventory data to develop design guidelines for skate park construction. Through observation and documentation, the principal investigator was able to discern the following during the Inventory phase of the investigation: a general inventory related to the park site itself (Penn Valley Park), and an inventory of the physical features within the skate park (the Kansas City Skate Plaza).

User Analysis: General Use of the Skate Park

Because the Kansas City Skate Plaza is essentially an outdoor, urban, public space, the methods that Whyte employed in his study were appropriate for adapting to the study of a skate park. Anonymous filming, anonymous observation and documentation, direct filming/photography and observation, photography, movement mapping, gender comparisons, age comparisons, sketching, the study of adaptive usage, human choreography, and head counts were all employed. These methods were used in the study of the skate park to gather information that could aid in the understanding of how this particular public skate park was used and perceived by the skaters that spent their time there.

Anonymous Filming:

In order to film in an anonymous fashion, the principal investigator of this study set up a camera from the top of the parking structure used by the condominium adjacent to the Kansas City Skate Plaza, and used the zoom feature on the camcorder. A wide angle lens was used on the camera, which was set upon a tripod. Because the parking garage was perhaps two hundred feet away, the principal investigator could remain unseen while taking the footage, and thereby not influence the

people being filmed. Footage of skaters, and non-skaters of all ages, racial ethnicities, and gender was recorded and reviewed.

Anonymous Observation and Documentation:
While taking anonymous footage, the investigator also took notes and made diagrammatic sketches of observations while viewing the park. Details such as modes of social interaction, movement patterns, styles of dress, ethnicity, gender, and activities other than skateboarding were recorded and reviewed.

Direct Filming/Photography and Observation:
Because the investigator Desmond Poirier is a skater himself, he was able to skate amongst the people he was studying at the skate park, film, photograph, observe, and document their activities. The skaters and non-skaters the investigator documented undoubtedly had their behavior affected by knowing they were being filmed and photographed, but occasionally it was possible to film details and moments of interaction unheeded by the subjects. Because this was done from within the skate park, instead from atop the parking garage, a richer amount of specific data was able to be obtained.

Movement Mapping:
Movement mapping of the Kansas City Skate Plaza was primarily performed through using observation, a map in plan of the skate park, and the firsthand experience of the investigator. The investigator skated all areas of the park, skating all obstacles from any direction possible, and recorded these "lines" of movement to understand how the skate park could be fully utilized. In order to account for the possibility that the investigator wasn't missing any possible movement patterns, footage was taken of multiple local and skilled skaters who could interact with any obstacle from any direction with great familiarity.

Gender Comparisons:
The study of gender in relation to skate parks was not touched upon in depth for this study. What was noted was whether or not the Kansas City Skate Plaza had a minority, equality, or predominance of any one particular gender, and whether or not this fluctuated.

Age Comparison:
The documentation of the age of the skate park's users was employed to understand whether or not there was a lack of any one range. This data was also used to determine if any minority, equality, or predominance existed within particular age brackets.

Sketching:
Sketching within the Kansas City Skate Plaza was performed primarily to help the investigator understand the forms and construction details of the skate park and its features. No particular tools were used, just pens, pencils, and paper. Sometimes sketching was performed from photographs of the skate park taken by the investigator, due to inclement weather.

The Study of Adaptive Usage:
Skaters are notorious form finding new and creative ways to skate in or on any physical object. For this particular study, the investigator took note whenever skaters brought a found object into the skate park. Such introduced object are often placed upon existing obstacles within a skate park to invent more challenging maneuvers upon.

Human Choreography:
Closely related to the study of traffic patterns within a given space, the study of human choreography is how humans move through a space and adjust their movements in order to interact with, coexist with, or avoid collision. A public skate park is a highly social place,

and skaters have their own means of direct and indirect communication toward their own kinds and non-skaters. Within a positive skate park environment, a skater will also tend to adjust his/her respective movement patterns to cooperate with other skaters who are using the same area within the park at the same time. Details of these phenomena were recorded through general observation while skating the Kansas City Skate Plaza.

Head Counts:
In order to judge the capacity of the Kansas City Skate Plaza, the investigator simply counted the number of people certain areas of the skate park when it seemed congested, and conflicts started to occur due to conflicting patterns of movement throughout the skate park. Identifying the maximum capacity of a skate park is necessary to keep collision accidents to a minimum.

User Analysis: Specific Skaters' Experiences

As previously mentioned, designing a skate park requires the input of experienced skaters. If there is no such input, chances are the resulting park will be a failure. In the case of the analysis of the Kansas City Skate Plaza, the investigator was curious to find out why most skaters considered this skate park to be successful. In order to conduct a thorough investigation, it was necessary to gather a team of experienced, local skaters who frequented the Kansas City Skate Plaza to assist with the analysis. The team consisted of Ricky Reyes (age 34), Andy Brayman (age 36), Jim Kacirek (age 42), and Desmond Poirier (age 32). All of these individuals have been skating for fifteen years or more, and have skated numerous skate parks all over the country. In order to gather the reactions, opinions, and document the involvement of these skaters, the investigator employed a variety of information gathering techniques.
Skating: Actually skating a skate park is the best way to out what works and what does not in a given design. A certain skate park may look awfully good on a pleasantly rendered plan, but if it is barely or completely unskateable, it is just a waste of time and money.

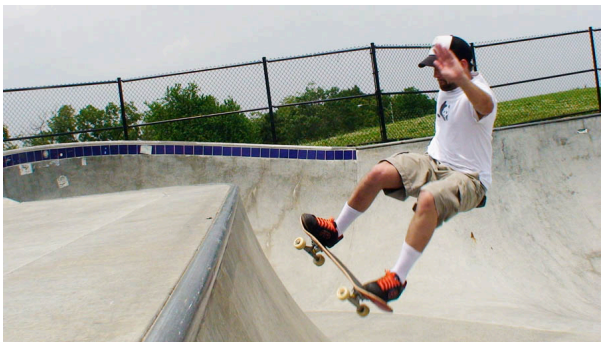


FIGURE 3.1: The author skates the bowl at Penn Valley (Cody Hodge).

Filming:
Footage taken by the investigator is meant to illustrate how certain parts of the skate park functioned well, or did not.
Surveys:
After the skaters all had an opportunity to skate the park and be filmed, the investigator presented each of them with a series of written questions. These questions were meant to fully elucidate nuances between fact and opinion regarding how these skaters interacted with and perceived the skate park. Questions regarding obstacle preference, issues of materials, construction, social interaction, equipment, and other details of their lives were presented. The survey questions were designed so as to procure objective opinion, and not "lead" or bait answers expected by the investigator. To supplement these surveys, short, informal video interviews with the subjects were also performed.

Case Study Framework: Methods Defined by Mark Francis

All of the information collected in the site inventory/analysis and user analysis is presented in a case study. The framework outlined by Mark Francis provides the organization for presenting a detailed description of the Kansas City Skate Plaza and its users.

CHAPTER 4: Kansas City Skate Plaza Case Study

The Kansas City Skate Plaza was built in order to help alleviate damage being caused to public and private property, mostly in the downtown area of Kansas City. The skate park is located in Penn Valley Park, just north of 31st Street, on Penn Drive. Designed in 2005, construction was completed in April of 2006. The total cost for construction of the park was approximately $371,000. Designed by SITE Design Group, and built by California Skate Parks, the whole project was managed by the City landscape architect for Kansas City, Dennis McCollum. There was no alternative concept developed for the park, as its program is strictly functional. It is maintained officially by Kansas City's Parks and Recreation Department, and unofficially by many of the older skaters who frequent the park.

The skate park itself is located on the highest point of the west section of the park. It's size is approximately 10, 400 square feet, and it is the only high quality concrete skate park in Kansas City's midtown/downtown area. Penn Valley Park is actually much larger than some might think, and is estimated to be 176 acres in size. Zoned as public parkland, it was first developed in 1904 on land that featured a section of the Santa Fe Trail. The park also features walking trails, a fishing pond, the Kansas City Fire Memorial, and the Kansas City Scout Statue, sited on the historic scenic overlook where Lewis and Clark first glimpsed the Missouri River.

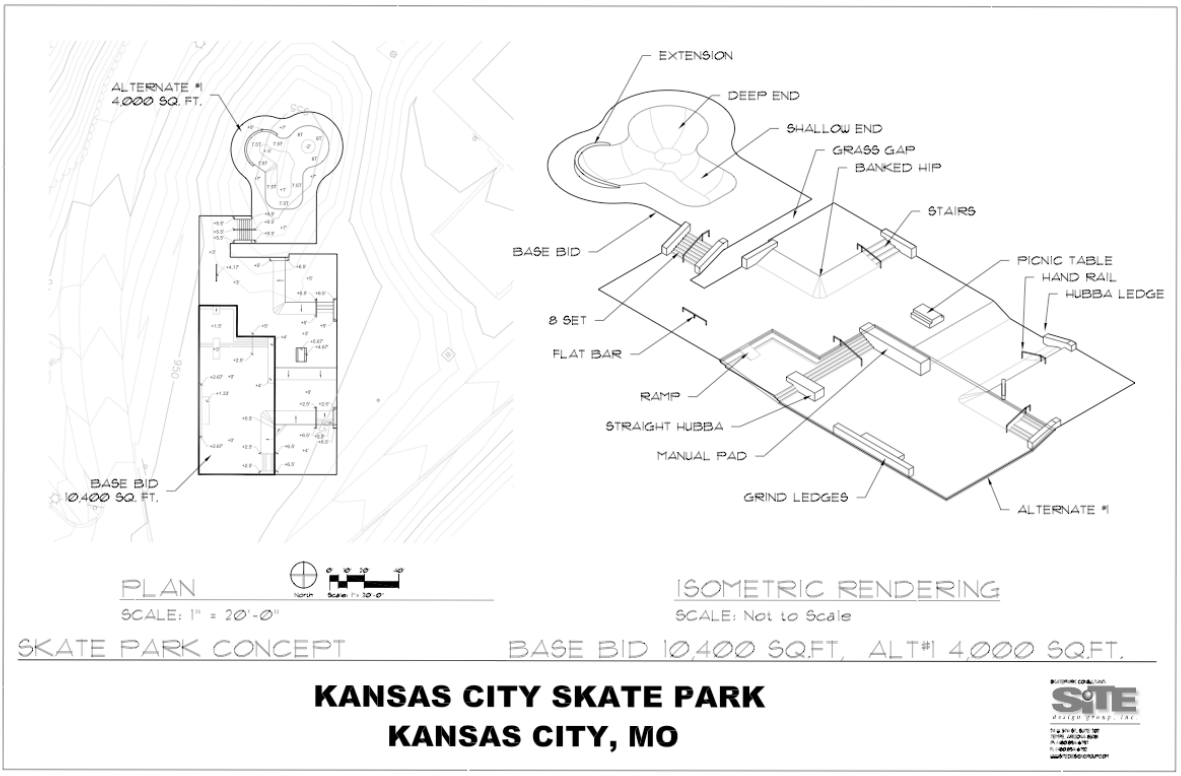


FIGURE 4.1: Final Design Concept for the Kansas City Skate Plaza (SITE Design Group).

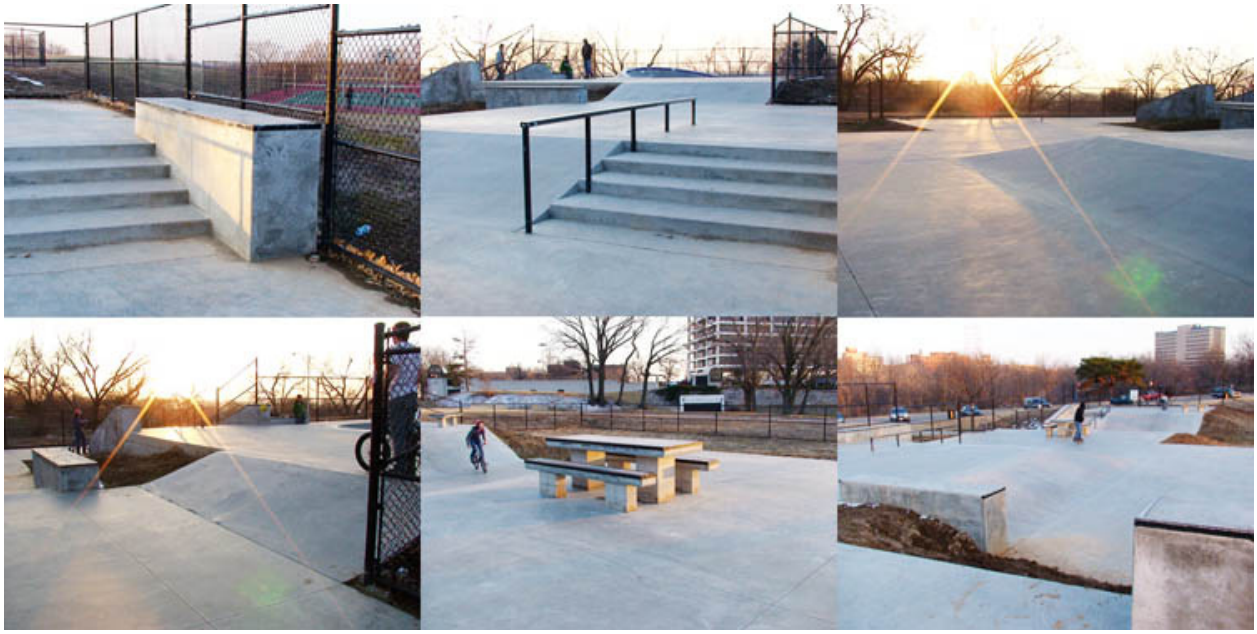


FIGURE 4.2: The street course of the Kansas City Skate Plaza and its various obstacles.

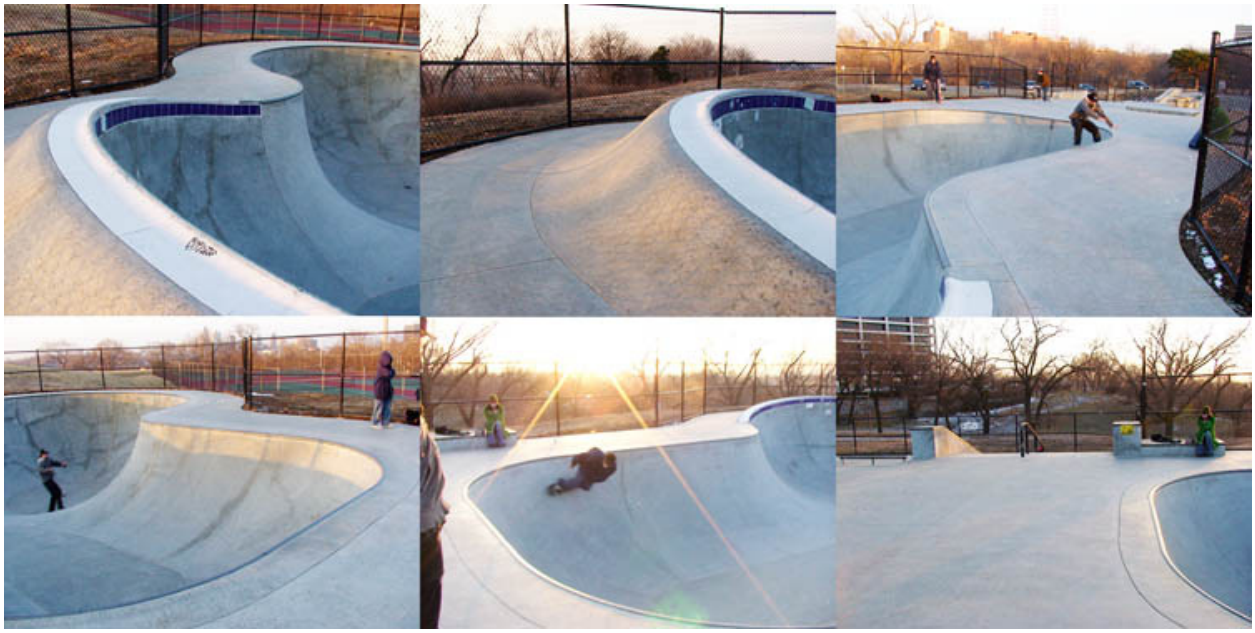


FIGURE 4.3: The bowl area of the Kansas City Skate Plaza.

FIGURE 4.4: Details and views of Penn Valley Park, the home of the Kansas City Skate Plaza.

Site Inventory and Analysis

Inventory

Slope:
The slope of the skate park varies dramatically within the area of Penn Valley Park that the skate park is situated in. The skate park itself, due to the nature of being a recreation area for skateboarding, has multiple sloping surfaces, connected by flat areas. Listing the slope of each embankment or transitioned surface would not be very useful, so it might be better to speak in terms of the terrain that was chosen for the site. The site itself is a three sided ridge. Land sloping away from the ridge on the west side has a slope between 5-7%. The land sloping away from the ridge on the north side has a slope of 5-7%, and the land sloping away from the ridge to the east side has a more pronounced slope, that of 10-12%. These measurements are a rough estimate based on a length of twenty feet measured with a tape, then the change in elevation was estimated by eye.

Aspect:
The skate park receives less sunlight during the middle hours of the day, during the winter, due to the nearby condo building on the south side of the site. The condo building is about twenty stories tall, and blocks the sun directly when the sun is at a lower angle in the sky due to the season. The skate park itself is laid out roughly north to south, with the street course being on the south end, and the bowl being on the north end. Prevailing Winds are from the west. This undoubtedly brings some smog and pollution from Southwest Trafficway and the West Side industrial district (which lay west of the park), but the air seems clean and the breezes keep the site cool.

Climate:
The climate is Midwestern Temperate, with cold winters and hot summers. There is a rainy season in April.

Flora and Fauna:
Turf grass is the predominant plant on the ridge where the skate park is sited. There are no other forms of vegetation adjacent to the

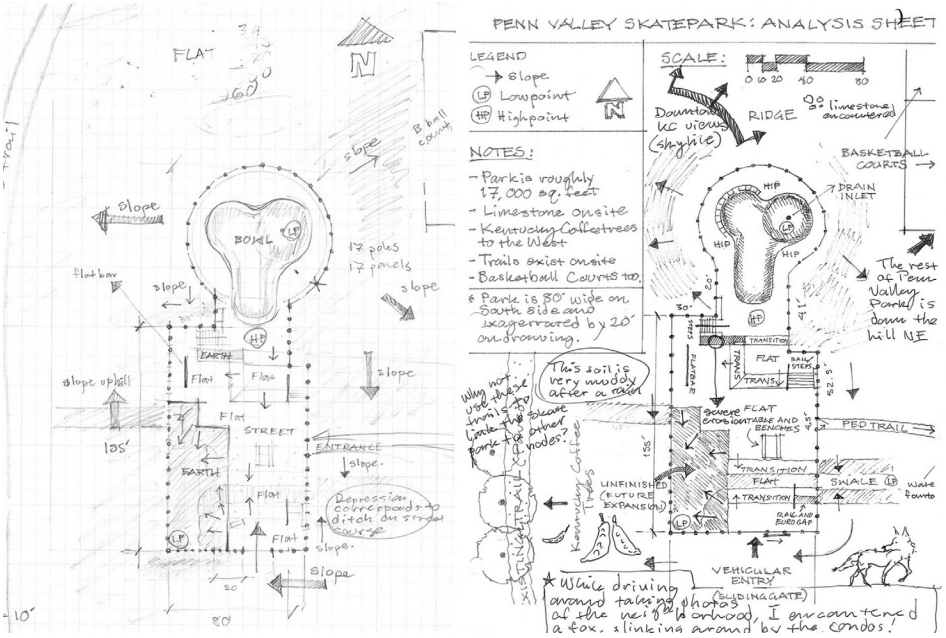


FIGURE 4.5: Onsite inventory maps noting dimensions, observations, and other diagrammatic information.

park. Approximately 100 feet away from the edges of the skate park, on the west and east sides, dense woody growth is present. Oak, Maple, Honey Locust, and Sycamore trees seem to predominate. Poison ivy is present also. The animals that have been observed living in and around the park are geese, red tail hawks, squirrels, feral cats, stray dogs, and even foxes.

FIGURE 4.6: The elusive Penn Valley fox!

Views from the Site:

While situated within the skate park, the views to the southeast are of two low rise business buildings situated on 31st Street, in Kansas City. More to the southwest, the view is massively dominated by the previously mentioned twenty story condo building, which is of a derivative modern style from the 1970s. The view directly to the west is dominated by woody trees with canopies 40-50 feet, and beyond those trees, the transmission tower for Channel 4 extends into the clouds. To the north of the skate park, the view is of the wooded residential hills that comprise of Kansas City's upper west side. To the northeast of the skate park, Kansas City's downtown skyline can be seen. The spires of Bartle Hall, the historic Power and Light Building, and the AT&T building are quite visible. Due east of the skate park, the view comprises of woody tress with canopies of 40-50 feet. Beyond these trees, the transmission tower for KCPT extends well into the sky. All in all, the views are favorable in any direction, and lend a spacious open air feeling to the park which is

quite amenable.

Access:
In terms of access, this skate park is quite challenged. One gets to the park by turning north onto Penn Drive, from 31st street. Within 40 feet of the beginning of Penn Drive (which starts at 31st Street), one encounters the entrance to Kansas City's Firefighter's Memorial Park, and another street (also named Penn Drive) which encircles Penn Valley Park's fishing pond below and to the east. The pond's street, and Penn Drive, are the only two ways to get in or out of the park. Penn Drive travels another 100 feet, however, before it even gets to the skate park, and ends abruptly one hundred feet beyond that with a steel road barrier, and steep incline. Travelling north on Penn Drive, the skate park is on one's left (west), and there is a dense wall of woody trees to the right (east). People of various criminal stripes, from drug dealers to prostitutes operate in this area. They are easily spotted, as they park their cars backwards in the parking lot stalls to advertise their presence. Because Penn Drive has no outlet, or connecting street at its north end, policeman cannot help but enter the park from the south side. Because Penn Drive is a straight street, running due south to north, it gives criminals an opportunity to easily spot patrolling cops, who will only come from the south. This allows criminals time to stop whatever they are doing, and flee or hide, leaving the situation unchanged.

Community:
The Kansas City Skate Plaza is very isolated from the rest of the city. Because it is up on top of a three sided ridge, and surrounded on two sides by dense woody trees, the only way into it is from Penn Drive to the south. Beyond the skate park, to the north, the topography drops drastically, and is met with highways. The only nearby store, within a mile's walking distance, is a Quicktrip. This Quicktrip is located at the bottom of 31st Street, which itself is very steep and has no sidewalk on either side, and not much of a shoulder to walk on. The condo on the south side of the park is not very populated at the moment, and people who live there do not drop by to watch. The community that the skate park does have are several groups of regular skaters that enjoy skating with each other. There are two discernable, organized groups who frequent the park on a regular basis. These group are the Genesis Skateboarding Team, which are comprised of many men over the age of 30, and the Bullets Skateboarding Team, whose members tend to be younger. These are loose affiliations, and not really teams per se, but more like groups of individuals who meet to skate, eat, and drink with each other. Their presence does form a sense of community at the park, as they often cooperate to throw what are called "bowl bashes." The bowl bash is just like a large BBQ party at the skate park, where soft drinks, hot dogs, and loud music played from boom boxes create a festive scene. The atmosphere is decidedly friendly, even to outsiders and non-skaters, and the skaters of these teams work together to take care of their hometown skate park.

Amenities:
Amenities are rather few and far between at the Kansas City Skateboard Plaza. Though amenities tend not to be one of the first reasons why skaters really enjoy a skate park, the presence of well-conceived amenities is definitely a plus. The bathroom at this skate park is a lonely port-a-potty, located by the street on the south side of the park, located about twenty feet from the skate park. Skaters tend not to use this if they do not have to, as many homeless people, drug users, and prostitutes use it for various messy activities. Skaters instead usually travel to the woods on the west and east sides of the park. There is a

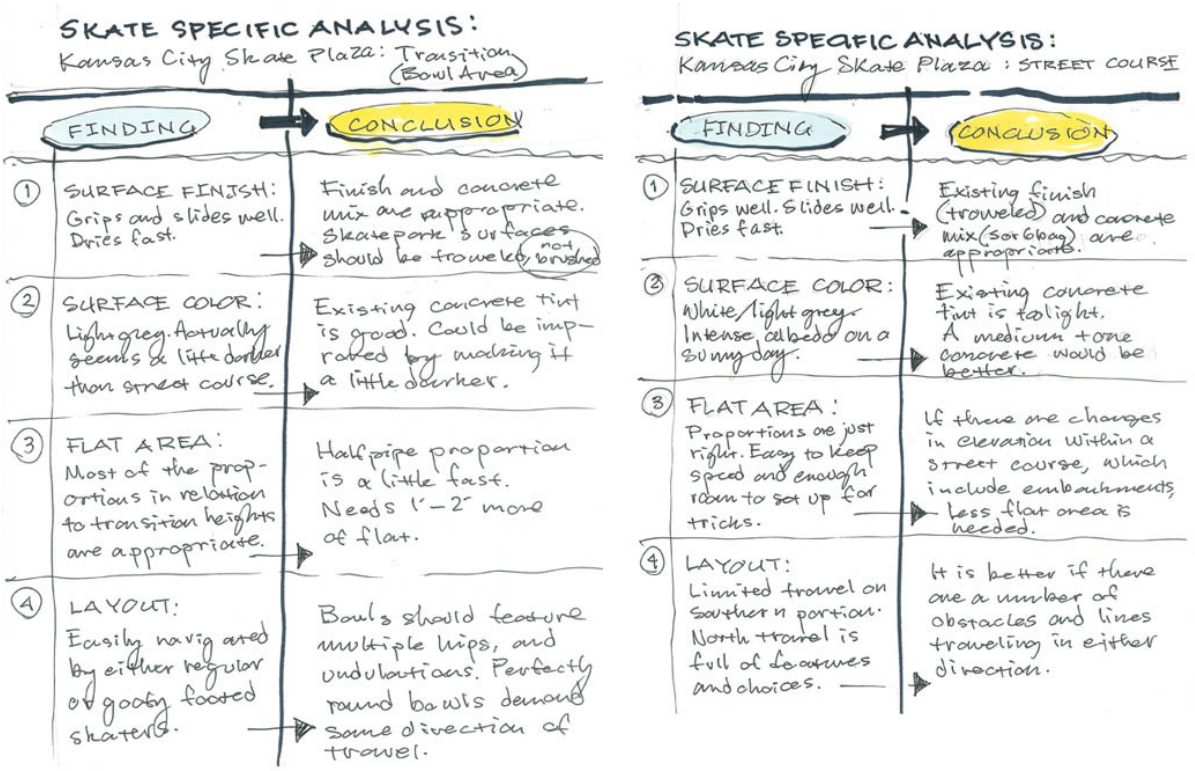


FIGURE 4.7: An example of analysis charts, based on observation, inventory, and participant input.

water fountain on the east side, right next to the parking spots, and about 30 feet from the fence of the skate park. This fountain is also avoided for similar reasons, as people tend to wash feet, clothes, and other things in its basin. Again, skaters tend to avoid it, and they often bring bottled water. A solitary trash receptacle is really the only other amenity present, and this receptacle is fixed to the ground, twenty feet from the skate park's fence. Parks and Recreational workers have had difficulties with skaters appropriating these receptacles. The skaters would perform maneuvers over the cans and onto them, and the abuse destroyed them quickly.

Adjacent land use:
As mentioned before, to the south of the skate park is a condo building, which seems relatively uninhabited. To the west, the park is bordered by woody trees, then Southwest Trafficway. To the north, there are highways, and a number of light industrial and commercial complexes that form the Westside and Crossroads District of Kansas City. To the east, the park is bordered by woody trees, and beyond those, the fishing pond of Penn Valley Park is situated at the bottom of the hill. Within the same park, just twenty feet east of the skate park, there are tennis courts that have a double function as basketball courts. Perhaps one hundred feet north of the skate park is a statue of the Native American Scout, which is placed on the overlook that Lewis and Clark were supposed to have used to first view the Missouri River. Parking for the skate park and tennis courts is located on Penn Drive, bordering the facilities on the east. There are roughly 42 spaces measuring approximately 10' x 20'.

Soils: Soils were estimated to be a clayey loam. This estimation was based on a touch

test learned from Professor Tim Keane at Kansas State University.

Stone:
Any small bits of stone observed at the site of the park appeared to be limestone, and was a light beige in color.

Analysis

The site that the Kansas City Skate Plaza is situated in is a unique space. The character of the land, which is a three sided ridge overlooking the downtown of Kansas City, is a location that results in a unique sense of place. It is curious that it seems ignored, even undervalued by the city itself. It feels abandoned because there is only one street, Penn Drive, that travels into the park. That street is the only way to drive into or out of the park, which isolates it even further. Even when hot, the weather is often pleasant due to a light breeze that is almost always present, and the views at sunrise and sunset can be breathtaking. Because there are thick stands of trees on both the east and west side of the park, one feels as if the park itself is a large outdoor room. With the tall condo building to one's back, the view of the city to the north and east, and the city's upper west side directly north, it is indeed a pleasant place to have a park. It is a location with a lot of potential, but correcting some aspects of its design and infrastructure could enhance the overall park greatly.

1. ASPECT and SUN EXPOSURE: Due to the exposed nature of the site, there is only shade on the fringes of the west and east sides, which is created by thick stands of trees. There are no trees near enough to the skate park to cast any shadows upon it, and there are no shade structures. In the early morning, and late evening, there are extreme contrasting shadows created in the skate park's bowl, due to the skate park's siting out in the middle of the park.

2. SITE AESTHETICS: Due to the park's location in an urban environment, there is a local culture that sometimes creates graffiti on the skate park's surfaces. This is less common today than even just a year ago, due to a zero tolerance policy implemented by Kansas City's Parks and Recreation Department. As soon as graffiti appears, Parks and Recreation staff power spray it off. Older skaters actively, and often vociferously, discourage younger skaters from spray painting in the park. This is because the paint has to be sprayed off with a power washer, and this process usually affects the surface of the concrete by making it rougher. In terms of a visual identity for the skate park, and most of the larger park itself, there really is no visual identity. There is no signage with a central visual theme, and the only elements that really tie any of the parts of the park together are some limestone walls.

3. COMMUNITY CONNECTION:
The part of Penn Valley Park that the skate park is situated in is isolated from the rest of the city. Because there is one street into the park, and the land itself is a three sided ridge, most people don't wander in or stroll by without a specific purpose. There are very few casual observers who are not already in the park for criminal purposes. A condo building does exist just behind the skate park, but it is apparently a struggling development, as it does not have many residents. There are no convenient retail or food establishments within a quarter of a mile, and the police do not make there presence known to often.

4. SAFETY / SECURITY: As mentioned above, there is a decidedly criminal element that is almost always present next to the skate park. Drug dealers, prostitutes, and random vagrants are almost always present. This is

because this particular piece of Penn Valley Park is located at the end of a dead end street. The police can be spotted easily (when they are around, which is not much) as there is a straight line of site from the dead end all the way to Penn Drive's intersection with 31st Street. There are no lights in the park at night, and there is a tall fence around the skate park, which can hinder a quick exit in emergencies.

5. SHADE: There are no trees near the skate park. This is probably due to the fact that trees often shed branches, fruit, leaves, and nuts that can create a safety hazard within the skate park. There are also no built shade structures that might alleviate direct sun during the day, creating a very hot and bright environment within the park on summer days.
-no shade, very hot and bright during warmer months.

6. SEATING: There are no benches, chairs, or seat walls, anywhere in this part of the park.

7. ACCESSIBILITY: If someone who uses a wheelchair wishes to visit, they must arrive by automobile, as there is no sidewalk that travels all the way into the park from 31st Street. There are some handicap ramps to access the sidewalk adjacent to the skate park, but someone nearly always parks in front of these.

8. WATER: There is only one water fountain in this part of the park, and it is always polluted with some kind of artifact left by a vagrant. People routinely use it for washing hands, feet, and other things.

9. BATHROOMS: Bathrooms are non-existent, and the closest alternative is a Johnny on the spot that sometimes gets taken away by the Parks and Recreation Department for months at a time. People also use the surrounding trees on the edges of the park for relieving themselves, but this is dangerous as the various criminal types also use this cover to do what they do.

10. LIGHTS: There are no lights in the park. The only light during the night comes from the condo building on the south end.
11. PARKING: Perhaps another reason why so many criminal types come up to this part of Penn Valley park is that it has at least 42 dedicated parking spots. Though there are also two tennis courts in the park besides the skate park, this seems a little excessive. The street is also wide enough that people can park all the way down the length of Penn Drive, which is about a quarter of a mile until the dead end.

11. NEARBY FOOD / GAS OPPORTUNITIES: The nearest place to get food from this section of Penn Valley Park is Brown's, an Irish Pub a quarter of a mile away. Besides Brown's, there is a Quiktrip that is approximately half of a mile away. Getting to the Quiktrip by foot is not impossible, but inconvenient as there is no sidewalk traveling west down 31st Street. Quiktrip is the only gas station nearby.

12. GENDER: Though there are a number of women who frequent Penn Valley Park, looking for work of an illegal nature, there are very few female skateboarders. Most of the time, the skate park is filled with an entirely male population.

13. AGE: The people who use Penn Valley Park for illegal activities all seem to be in their twenties and older. A majority of the skaters who use the skate park are in their teens. There is, however, a regular element of older skaters that frequent the Kansas City Skate Plaza, as they enjoy skating the bowl. "Older" pertains to skaters past 30 years old.

14. ADAPTIVE USAGE: In terms of the non-skating population that use this part of Penn

Valley Park, the only feature that is used in a way unintended by the City is the Johnny on the spot. The various vagrants of the park use it for drug ingestion, sex, and other things. Within the skate park, skaters have been known to bring trashcans, plastic jersey barriers, homemade slide rails, and pieces of wood into the skate park. Skaters enjoy placing these injects on top of existing built obstacles in order to create a new and challenging situation.

Skate park Inventory and Analysis

Inventory:
The Kansas City Skate Plaza is a concrete skate park. There are no prefabricated ramps or obstacles of any kind, and the only other visible materials a steel and some soil. The dominant features within the skate park are the obstacles themselves, used by the skaters to interact with and enjoy. The skate park is divided up into two distinct areas, the street area and the bowl area. The street area has a variety of obstacles that are designed metaphors for obstacles encountered on city street, and are connected by large and small embankments that serve as inclines to gain velocity upon. The bowl area, higher in elevation than the street area, is connected to it by a small embankment, or concrete ramp, that allows skaters to skate across the top deck of the bowl and down into the street course. The obstacles to be encountered in both areas are as follows:

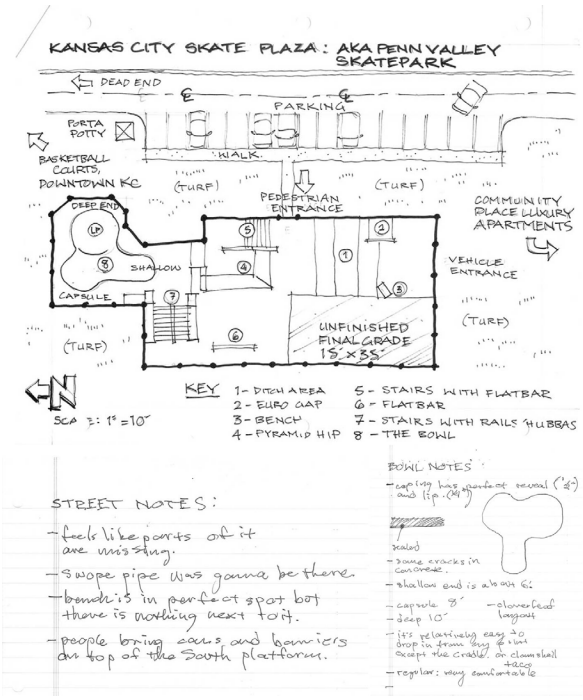


FIGURE 4.8: Early diagrammatic explorations noting features, locations, and flaws of the skate park.

Street Area:
- 1' tall square slide bar.
- two stair sets with an angled rail and a flat rail.
- hubbas (ledges) on both stair sets.
- a grass gap, or grassy area in between two areas of concrete).
- pyramid with a hip (connecting embankments) and hubbas.
- concrete picnic table.
- unequal sided ditch (two opposing embankments) with eurogap (a gap between an embankment and a higher concrete platform) and a rail.
- concrete bench.

Bowl Area:
- The bowl is a cloverleaf shaped bowl (essentially an empty swimming pool built for skateboarding, with three radiating bowl areas connected by a flat area that changes in elevation).
- three hips (connected transition walls).
- steel coping (steel pipe integrated into the edge of the top deck).
- cement pool coping in cradle (the cradle being an area of over vertical extension).
- vert deep end, 10' tall (one bowl with tran-

sition face walls that travel up to a vertical surface).
- over-vert 8' cradle.
- shallow end 6' halfpipe (area of opposing transition walls which skaters skate back and forth in).
- 2' waterfall into deep end (an area where the flat bottom of the pool lowers 2' in elevation to create an embankment to gain speed on).

User Inventory

Gender Comparisons:
From what one might view at the Kansas City Skate Plaza, skateboarding seems to be overwhelmingly male pursuit. It was not rare for several weeks, or a month to go by without the sight of a female skating at the park. Females were often present, but were usually moms, girlfriends, or friends of males skating at the park.

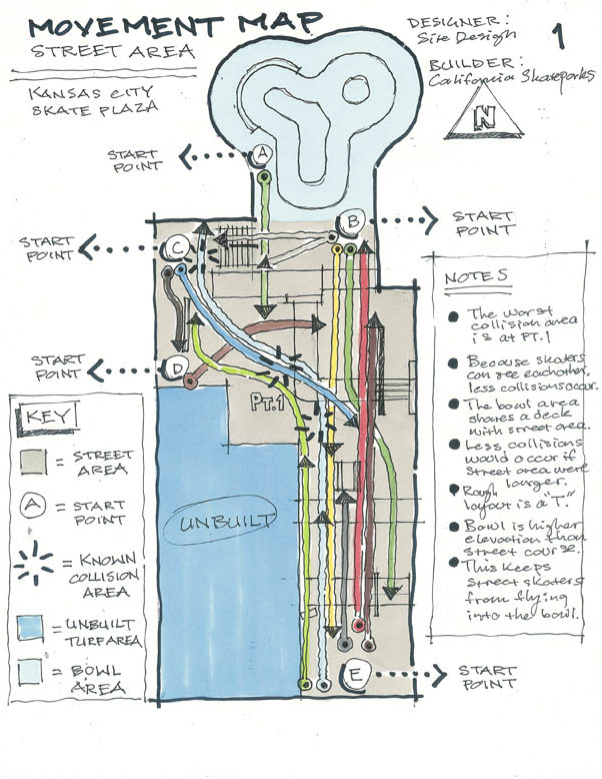
Age Comparison:
Teenagers seemed to comprise of most of the skaters observed at the Kansas City Skate Plaza. An adult presence was less obvious, but definitely a part of the skate park. Upon visiting the skate park, two adult skateboarding groups became known. These loosely organized groups, the Genesis crew and the Bullets crew were comprised of a few teen members, many adults, and a fair number of skaters in their 40s. These specialized social groups are made up of individuals who enjoy the social aspect of skating with each other, especially the older skaters. The teenagers in the park often scoff at these older skaters, but seem to warm to them when they notice that they are highly skilled in the bowl.

Human Choreography:
In William H. Whyte's video, "The Social Life of Small Urban Spaces," many observations were made about human behavior in public. When in a public social situation, humans perform what Whyte called, "reciprocal moves" and "pleasant social rituals." Actions such as hand movements, body language, and gesture mimicry are a part of what people do when interacting with each other or simply sharing the same social space. In the case study for the Kansas City Skate Plaza, similar situations arose which paralleled Whyte's observations. As filmed and recorded by the investigator during research trips to the skate park, skaters often displayed reciprocal moves and pleasant social rituals and as well. The street course area, the most urban in spirit and architecture within the skate park, is the scene of much of this behavior. The manner in which skaters self-police their own traffic in crowded situations is usually through gesture.

Because the street course itself is roughly 200 feet in length, skaters find it difficult to communicate through vocal means. However, the north side of the street course is higher in elevation, allowing skaters to see each other on opposite ends of the course. One such reciprocal gesture that skaters participate in is the act of giving someone a turn. As skaters tend to take turns traveling in one direction across the park, then the other, sometimes skaters moving towards each other face a peaceful conflict. One skater must yield way to the other if they are traveling towards each other at the same time, or there might be a collision. If there are two or more skaters, facing each other on opposite sides, one skater might gesture towards the other with a hand indicating, "take your run, it's all yours." The receiving skater will wave a hand in thanks, and take their turn. This ritual is often seen as a kind of respect, and is shown from one skater to another especially where a higher skill level is recognized.

There is a cost for this act of respect, however, in that the skater that first received the gesture must later sacrifice a turn to the initial skater that gave first. To not reciprocate same courtesy to the initial skater is considered very bad form, and is the mark of a twit.

Movement Mapping:



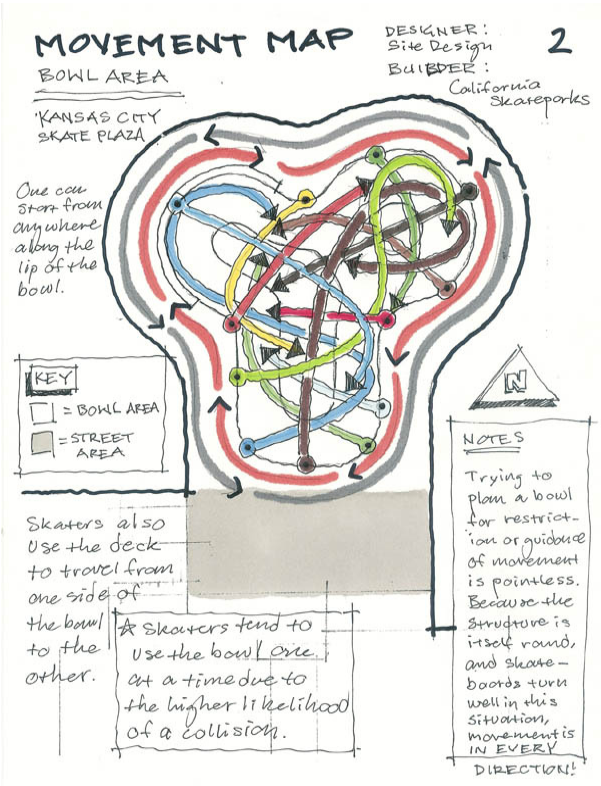


FIGURE 4.9: Movement and maneuver analysis maps for the street area and the bowl area.

In terms of pleasant social rituals, skaters have quite a few they observe in the bowl area of the Kansas City Skate Plaza. Typically it is considered the correct thing to have only one skater in the bowl at a time. This is as much an issue of safety rather than anything else, but it is also out of respect for another skater. If a skater ends their run or they fall and they are still in the bowl, it is considered respectful not to drop in and take a run while that skater is still climbing out of the bowl. If one does drop in too soon, this shows a lack of concern for that other skater's well-being. This is especially true if one drops into the bowl while another skater is still engaged in their run. This is an ultimate act of disrespect, and usually ends in a heated argument.

One other phenomenon that Whyte identified while filming people using popular public spaces, is their ability to sense overcrowding. As Whyte put it, "Capacity is self-leveling" (Whyte 1980). During the case study of the Kansas City Skate Plaza, overcrowding was rarely witnessed, perhaps maybe twice. It is true, however, that skaters seemed to sense when there were too many people in one spot. On the street course, skaters began to leave after collisions started occurring. Collisions occurred more often during overcrowding for two reasons:

1. There were too many people in one area.
2. When skaters looked across from there platform to the opposing platform facing them, it was difficult to see and communicate with individuals on the opposite side. All the skater could see was a large mass of people, and a hand gesture or nod of the head was harder to discern.

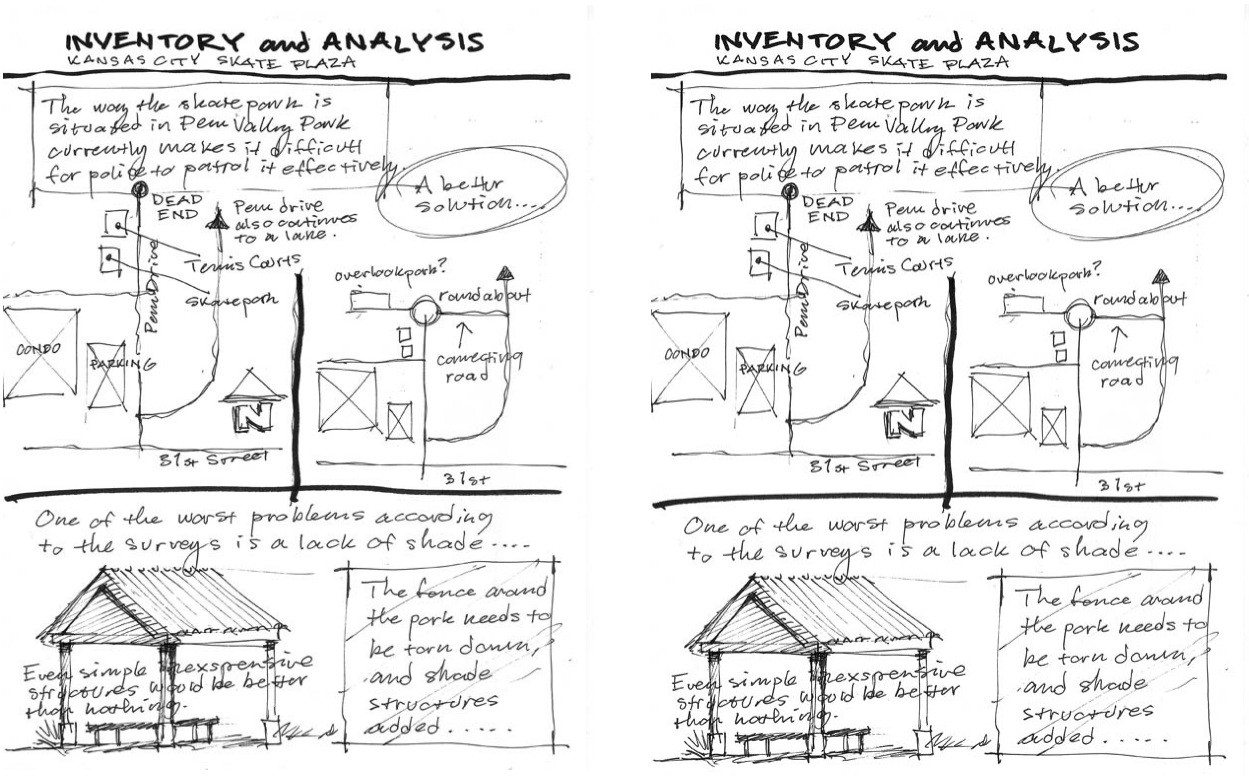


FIGURE 4.10: Analysis notes and sketches made after inventory.

During these rare times where the street course was overflowing, only the bravest individuals continued their intense activity. Slower and smaller individuals left the park for another day.

In the bowl area of the Kansas City Skate Plaza, strangely, the opposite situation manifested itself. Because of the unspoken rule that only one person rides the bowl at once, overcrowding was more tolerated, and often the skaters seemed to enjoy themselves more when many people were present. The skaters participating in large group sessions seemed to feed off of each other's energy, and encourage each other to put forth more effort. All in all, the bowl area seemed to be more of a social pursuit than the individual pursuit of the street area. When a skater was aware that many people were watching him or her in the bowl, they were noticeably more aggressive in their actions and maneuvers. Sometimes, when sessions were really full of energy and enthusiastic, 3-4 skaters would even agree to play a sort of "follow the leader" game in the bowl. The first skater would drop in, the second close behind, and the third, and so on. As the leader in this train of skaters would ride in, over, and around various areas in the bowl, the others would follow close behind, seemingly enjoying the excitement of the risk of a pileup if someone made a mistake. Because successfully following through with a game like this requires a very high skill level from all participants, this social ritual is rarely performed.

User Analysis:

Ricky Reyes, Andy Brayman, Jim Kacirek, and the investigator of this thesis, Desmond Poirier analyzed the Kansas City Skate Plaza in depth in a variety of ways. Through skating the park, filming their efforts, filming interviews, and filling out surveys containing questions related to the park, a number of facts were discovered about the skate park and its features. The following, skate specific issues were identified and investigated by these participants.

1. SURFACE FINISH: In both the street course, and the bowl area, the surface finish was considered quite good. During periods of precipitation, the concrete absorbs water quickly due to its perforated nature. It was probably mixed with air entrainment, which allowed it to dry with very small holes created by escape air bubbles. Though this creates a very strong, durable, smooth surface, it also allows the concrete to absorb water and dry quickly. The surface is ideal for high speed slides and grips urethane wheels well in high velocity situations. The only area this surface seemed to be challenged is where a large amount of graffiti had been sprayed on a transition wall in the bowl. This wall, located on the north side of the deep end of the bowl, received an amateurish graffiti piece in the summer of 2007. This piece was quickly power sprayed by the Kansas City Park's and Recreation Department, but the paint was so thick that they had to use a corrosive treatment on it before. Unfortunately, this treatment seemed to slightly scour the finish of the transition wall, making it rougher and more prone to causing abrasion injuries.

2. SURFACE COLOR: The surface color of the concrete in the street course is a very light grey, almost white color. During the summer, the light reflecting off of this surface has an extreme glare, and the skate park itself gets quite hot. From perhaps 11am to 6pm, it can be intolerable if the temperature is above 90 degrees Fahrenheit. The surrounding deck of the bowl has the same color and degree of albedo intensity, but the inside transition walls and flat areas of the bowl are slightly darker. Whether this is from a different concrete mixing method or tint is not known. The result, however, is that the glare on the inside of the

bowl is less than that of the street course.

3.FLAT AREA: Within the street course, the proportion of flat area in relation to the obstacles is mostly good. There are some spots where there is not enough, however. On the east side of the park, there is a small set of stairs connected to a hubba and a low, flat grind rail. There is only perhaps 15 feet of flat to the north of the stairs where one might start from to ollie them. This is not enough room. The only other awkward spot is due to a budget restriction in the park's construction. The designers of the skate park, SITE Design Group, had planned for another 5,000 square feet on the west side of the park that was not built due to lack of funds from the City. A low slide rail was placed on the northwest side of the park in anticipation of this unbuilt portion being constructed. The west side was omitted from the plan, but the low rail was not. The result was a low rail placed in a part of the skate park where skaters have to make a very hard turn, coming from other parts of the park, in order to be able to interact with the rail. In the bowl area, the amount of flat area in proportion to the transition height and radii is just about right. The only spot where the relationship is a little off is in the shallow end of the bowl, where there could stand to be 1-2' more feet of flat. It's present relationship, where there is perhaps 8 feet of flat, and 6 foot tall transitions makes it a tad bit fast and hard to react to quickly enough for complex maneuvers unless the skater is very skilled.

4. LAYOUT: This skate park is laid out in roughly a south to north manner with one exception, an addition to the street course of the west side. The result is a park that looks, in plan, a bit like the letter "T". The bowl area is on the northernmost end, and the southern most end features a concrete ditch formed by two opposing embankments. The street course is easily maneuverable and a number of its features can be hit in one line. There are some features, however, that are a tad awkward due to the previously mentioned lack of flat in some areas, such as the west side flat bar and the east side short stair set. Another odd arrangement is a low bench which is situated on the south west portion of the street area atop a tall embankment. This bench is twisted at about 20 degrees in relation to the lip of the tall embankment. This was included by the designers so a skater could ollie and slide or grind on the bench, but the west side portion of the park was not built, so a skater doing such a thing now has only a grass embankment to roll away on after completing such a maneuver. The layout of the bowl area is very good, as the bowl itself is in a cloverleaf shape that provides a number of hips and points to drop in. Skaters with either a regular or goofy foot stance are very comfortable skating it. There is plenty of flat deck surrounding the bowl, and this creates room for roll-in tricks in multiple spots, and even spots for spectators. The top deck of the bowl is connected to the top of the street course, so it is possible to roll away from the bowl area and down into the street course. The elevated position of this deck allows skaters to take a ride down a series of 3 downhill embankments which ends in a launch out of a ditch, and is one of the park's best features.

5. TRAFFIC PATTERNS and SITE LINES: Due to the somewhat linear layout of the street course, running south to north, traffic patterns are relatively predictable. The northernmost side of the street course is the deck that is shared with the bowl. This is the highest point in the park, and one can see other skaters in any other part of the park from this vantage point. This is a great feature, as those on the south side of the park also have no trouble seeing skaters atop the highest point. On the street course, skaters tend to take turns going from south to north, then north to south. This

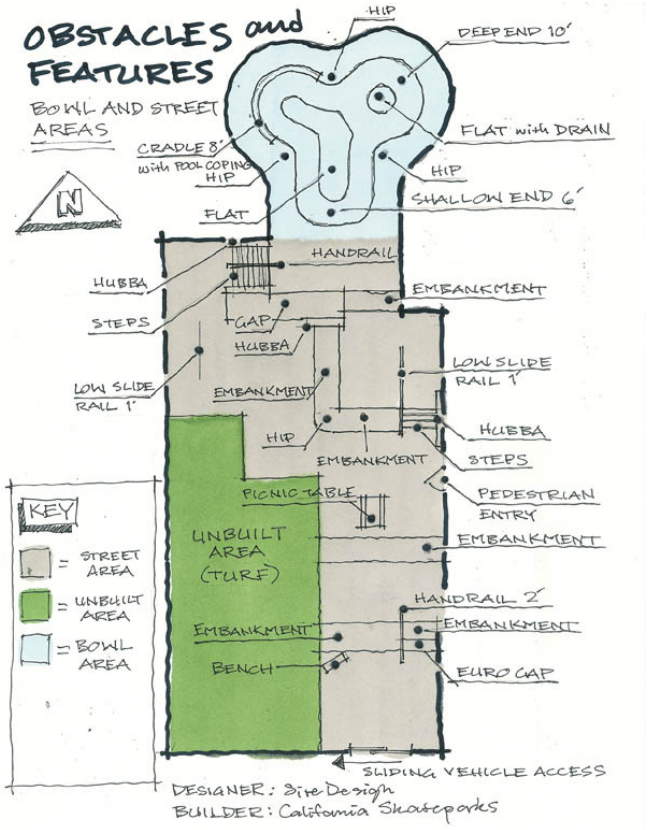
is done as a group, one skater shortly behind another. With more than 10 skaters on each side, this tends to get a little crowded, though as many as 15 per side still functions. The whole situation gets more complicated when there is also a group of skaters on the west side of the street course, who are traveling from northwest to the southern side of the park. It is in this instance that conflict occurs between skaters riding in opposite directions, and an unintended (and sometimes intended) game of "chicken" ensues. Because everyone can see each other in any part of the street course, however, collisions rarely occur. In the bowl area, skaters (especially older ones) tend to respect an unwritten rule that states only one skater shall skate the bowl at a time. Because one moves so fast in the bowl, do to riding up and down multiple transition walls, reaction time can be decreased almost to nothing. The only time more than one skater enters the bowl is when a game of follow the leader is played, and a train of three or more skaters drop in one right after the other, each trying to do what the skater in front of them just did. Such games are enjoyed due mostly to their propensity to end in a entertaining pileup, and are not recommended for the fragile. The bowl's layout is excellent for maintaining order in terms of who skates when and preventing collisions. The bowl is small enough that two people can have a conversation on opposing sides, and each skater can see the other from any side of it.

6. EDGES AND COPING: Almost every rectilinear edge in the street course features 2" x 2", square steel coping. The only edge that does not is the top edge of a euro gap, or gap inset into an embankment wall, at the top of the south wall of the ditch embankment. As to be expected, this edge has been beaten to smithereens. Chipping and cracking are evident, and the edge will have to be repaired in the near future to prevent further degradation. That particular edge was not laid out in a manner or orientation that would lend itself to grinding or sliding tricks, so it is understandable that no on thought to lay coping into it, but doing so would have prevented the damage. Because skaters travel south into the ditch, then begin up the south wall of the ditch and encounter the euro gap, they are required to ollie over the gap and land on the top flat deck of the southernmost portion of the park. Some are not quick and powerful enough to clear the gap, and they smash the kingpins (adjustment nut) of their trucks into that edge while traveling very fast. The result is chipped concrete and sometimes a chipped tooth.

In the bowl area, there are two different types of coping: round 2 3/8" steel coping, and pool coping on the lip of the over vertical cradle, located on the northwestern side of the cloverleaf shape. Both kinds of coping are set perfectly. The round steel coping protrudes slightly from the transition surface wall slightly, enabling skaters to "pop" off of it for certain tricks, and sticks up from the deck surface slightly. The ¼" protrubence from the deck surface allows skaters to "lock" into it when performing grind maneuvers. The pool coping protrudes from the surface of the transition wall even more, perhaps ½-3/4", and this is desirable, as pool coping has historically been more pronounced within actual swimming pools. Because it is larger in diameter and sticks out further than steel coping, it takes more finesse and force to interact with, and therefore those who can handle it are considered to have more skill. The pool coping within the bowl is set atop a slightly over vertical transition known as the cradle. It is set in individual blocks about a foot wide, just as the lip of a pool would be, and even has a row of tiles below it to complete the pool aesthetic. These coping blocks make a satisfying barking noise when engaged in a grind, and are a favorite feature of local skaters.

7 TRANSITION RADII: The only true transitions in the whole park are found in the bowl itself. The bowl is actually made up of three different bowls connected together in an overlapping cloverleaf fashion, and there are three different transition wall heights. The south side of the bowl is the shallow end. The shallow end features opposing transitions that are six feet tall, and it resembles a concrete halfpipe that has rounded corners on its south end. The northwest side of the bowl is an over vertical clamshell, and it is eight feet tall. The northeast side of the bowl has a ten foot transition wall that features about a foot of true vertical. Each of these transition walls have a radii that is quite skateable in relation to the amount of flat bottom between them. The only area that could be considered flawed in all of the radii is a flat spot on the curve of the hip transition between the clamshell and the deep end. Perhaps the concrete slumped here, or not enough care was taken in finishing the surface of this hip. Luckily, this flaw just robs speed of a skater riding over it, rather than disturbing them into a spill. The other transitions within the bowl are finished smoothly and gracefully, allowing for a very quick ride.

8. OBSTACLE VARIETY and PROPORTION: Overall, the Kansas City Skate Plaza has a good number of obstacles for a wide variety of ability levels. Variety and proportion should be considered together when speaking of obstacles, because the factor that seems to most often be related to skill level of a given skater is that of height. The taller an obstacle is, the greater the skill seemingly needed by a skater to inter-



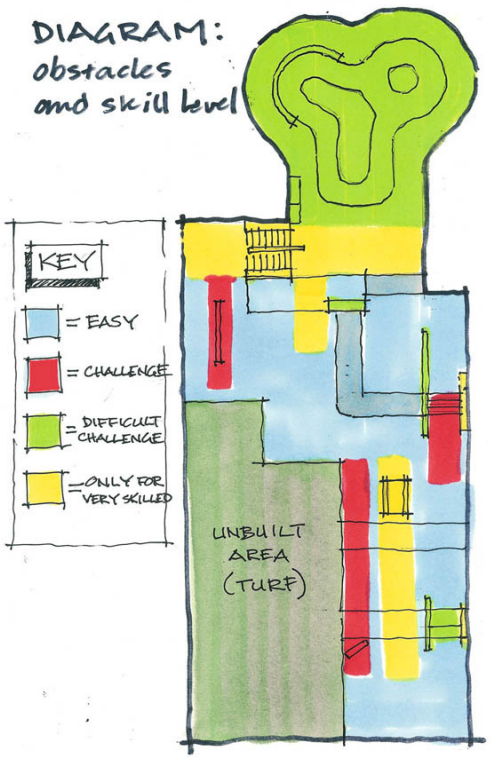


FIGURE 4.11: The features and obstacles of the Kansas City Skate Plaza, and a diagram relating obstacle interaction to skill level.

act with it. This is not always the case, but it is mostly true in the case of the Kansas City Skate Plaza. Within this particular skate park, there are a number of obstacles anywhere from 1.5' tall to 6' tall. Because there are some mellow embankments about 2' in height, with a low angle of perhaps 25 degrees, these areas make perfect learning spots for skaters new to the sport. Embankments are often how skaters first learn to interact with changes in elevation and angle, and are a good addition to any skate park.

In the Kansas City Skate Plaza, there are handrails, steps, gaps, hubbas, a pyramid, ledges, a bowl, and benches. The only feature that the park is a curb height (6") edge that skaters can learn basic grind tricks upon. When one first begins to skate, they aren't always immediately able to ollie up onto a 1'-1.5' tall railing and learn their grind and board slide tricks. For these skaters, it is a good idea to feature a curb height element that can even be "slappied," or ridden up onto in a carve-like movement from a line parallel to the curb. Even skaters with a fair amount of skill enjoy this kind of feature. Other than this consideration, the skate park has a good variety of elements that can entertain both beginning and experienced skaters.

CHAPTER 5: Skate Park Guidelines

"What was good twenty years ago will be good twenty years from now….there is a standard for pools, handrails….these standards should be fixed."
-Lance Mountain,Veteran Professional Skater (Hirsch and Salinger 2005).

This chapter is meant to provide the landscape architect, or anyone else involved in the design and construction of a skate park, with information that will allow one to make informed decisions during the process. Though the intent of this study is to be thorough and accurate, it is by no means the first or last word concerning the design and construction of concrete skate parks. It should be noted that concrete is being promoted as the favored material for skate parks by this study. In light of present technology and techniques, it is simply the material that will result in the highest quality skating surface, and last through the years. It is also highly recommended that anyone involved in the design and construction of a skate park consult professional skate park design/builders. There is a list of creative, competent, dedicated skate park design/builders in the appendix this thesis. There are a number of factors that determine whether or not a skate park will be designed and built to a high level of quality. Based upon the information gathered from a literature review; interviews with landscape architects, skate park design/builders, skateboarders, and city officials involved with skate park design and construction; and in the case study of the Kansas City Skate Plaza (Chapter 4) two categories of guidelines have been developed in conjunction with this thesis:

1. General Site Guidelines for Skate parks.
2. Skate Specific Guidelines for Skate parks.

The General Site Guidelines are directed to skate park design/builders who historically have not had the opportunity to consider the context outside of the skate park they have designed, due to constraints of time, money, or both. The Skate Specific Guidelines are concerned with the area, obstacles, features, and surfaces that skaters skate on directly. These guidelines are directed primarily to landscape architects and other design professionals who historically have not had the skate-specific knowledge to design these features correctly. Both sets of guidelines aim to better inform both parties, in order to create skate parks that are excellent skateboarding environments that connect with their community and become a positive amenity for their locality.

Bathrooms

Another bone of hygienic contention is that of public bathrooms. We all need to use them from time to time. If bathrooms are not provided, even just portable johns, people will go wherever they have too. Like other recreational facilities, skaters are at skate parks for hours at a time. If there is no convenience store or other facility that can be used, then the whole park is fair game. Portable johns are often preferred in urban environments because they can be easily replaced, cleaned, and sited anywhere they are needed. When they are placed in the open, it can be more difficult for criminals to ambush people.

FIGURES 5.1 and 5.2: Portable bathrooms in urban areas are preferred for a variety of reasons.

Community Connection

One mistake landscape architects, engineers, and city planners constantly repeat is to isolate a skate park in a forgotten corner of the community. These unwanted locations are challenged in terms of accessibility, and are often havens for criminal activity.

A public skate park is not just a place for skateboarders, it can be an amenity for the whole city. If placed in a downtown area, or a major thoroughfare where non-skating onlookers can watch people skate, it can create a real attraction. If there is both pedestrian access and parking, retail, convenience, and eating establishments could benefit from the increased traffic. Regardless of any retail amenities, the best way to integrate skateboarding culture into the urban fabric is by providing pedestrian sidewalks, more than one automobile entrance into the park site, and placing a bus stop nearby. These features will give the park increased visibility and interaction with the local community, and also assist skaters with little or no income to access the skate park.

FIGURE 5.3: The closest food opportunity to the Kansas City Skate Plaza is 1/2 a mile away.

FIGURE 5.4: The Quiktrip is at the bottom of 31st Street, which has no sidewalks, and is busy with high speed traffic.

FIGURE 5.5: Just 200 feet from the Kansas City Skate Plaza, there is a view of downtown Kansas City so pleasing that artists come to paint it. Why not connect the skate park to the rest of this beautiful city?

Lights

The addition of lights greatly increases the usable hours of a skate park in a given day. If a skate park is built, and has problems with overcrowding, lights can also help the situation by making the skate park available at times other than peak periods. Lights can also help make the skate park safer by increasing visibility for skaters entering and leaving the park at night, and allowing law enforcement to see into the park better.

FIGURE 5.6: Large flood lights set on a timer can help maximize skating time at the park for skaters who work during the day.

FIGURE 5.7: Any facility that is open at night should also have lighted pathways back to the parking area.

FIGURE 5.8: Placing the light fixture next to a popular obstacle is a good idea.

FIGURE 5.9: The Pleasant Valley skate park in Missouri has some problems, but lighting is not one of them.

Material Details and Amenities

Skate parks tend to be strictly utilitarian in appearance, maybe that's okay because their main function is to be a place to skateboard. If one wants to design a really successful skate park that attracts and holds the interest of skaters, certain amenities can be added that will heighten the user's experience of the place. In fact, *place* is the key word in this situation. There are many ways to make a particular park into a unique experience. Landscape architects use special paving, public art, creature comforts such as eating areas, and provide necessary amenities such as trash receptacles to create a successful public space. Paving that is not in a skating area can be brick, tile, and other materials. A sculpture area can provide a practicing artist the opportunity to exhibit work. Art is especially popular in skate park if it is skateable itself.

FIGURE 5.10: In non-skating areas, a simple paving detail such as the addition of brick can create interesting textures.

Figure 5.11: Any public space creates an opportunity for art, such as this sculpture at the Kansas City Cancer Survivor's Park.

FIGURE 5.12: In this case, it's okay to talk trash.

FIGURE 5.13: Let's not forget that skaters like to throw something on the barbeque!

Parking, and Alternatives

Just like any other recreational facility, it is thought best to create plenty of parking for a skate park. In America, this might be considered to be one parking spot per skater at the park's maximum capacity. Not all countries have as many cars as we do, however, and it is a good idea to encourage environmental sustainability through helping people reach the skate park through other means. Creating park access through walking trails and a nearby bus stop could lessen the amount of parking spaces needed, and contribute to the local alternative transportation infrastructure.

FIGURE 5.14: Penn Drive, the entry road for the Kansas City Skate Plaza, looking north.

FIGURE 5.15: Bicycle parking at the Ballard Bowl skate park, Seattle Washington.

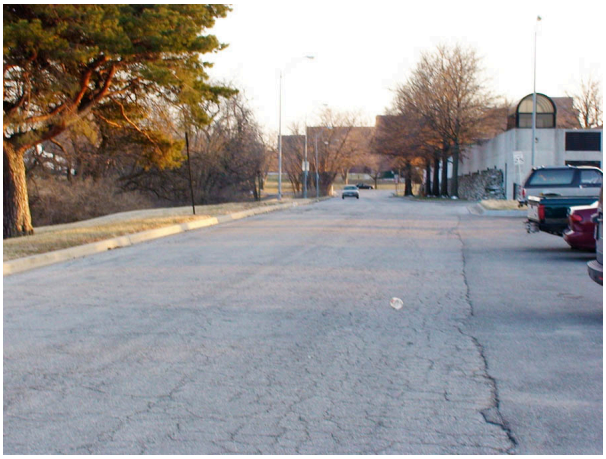


FIGURE 5.16: Penn Drive, looking south. There are roughly 42 dedicated parking spots. There is also abundant parallel parking. Is it needed?

FIGURE 5.17: The bus stop on 31st Street in Kansas City provides transportation to the Kansas City Skate Plaza (just behind the tall building).

Safety and Security

Placing a skate park, or any recreational facility in an isolated environment that has limited accessibility will lead to trouble. Having a skate park site where passers by, especially patrolling policemen can see inside from their cars, will greatly reduce criminal activity. Multiple entrances and exits to and from the skate park are also highly suggested. Tall fences can create real complications in these situations, and there really is no reason for them. Anybody can get into a skate park, fence or not, if they want to bad enough. Smaller children and teens can't run away if a bad character traps them there. Dogs can also be a problem in this manner, and if an aggressive one traps someone in the park the situation can become tragic quickly. Another suggestion to make a skate park safer is the addition of lights. Lights can also make a park safer at night, and keep muggers from lurking nearby the park.

FIGURE 5.18, 5.19, AND 5.20: Rules for the skate park, unnecessary fencing, and a wheelchair accessible

FIGURE 5.21: One of the biggest problems at the Kansas City Skate Plaza is the single vehicular entry, and dead end at the end of the park. This area is a known hangout for prostitutes and drug dealers, during all times of day and night. People advertising their presence park backwards in the parking spaces, like the Mini above.

Seating

Another feature that is often ignored by skate park design/builders is a place for people to sit, that is out of the way of people skating. Plenty of families take their kids to the park, and have no desire to be seating on one of the obstacle ledges where a skateboard might fly into their teeth. A double solution for this issue and that of community connection has been presented by Peter Whitley in his book, "The Public Skate park Development Guide". A perimeter seat wall surrounding the skate park, set behind and perhaps ten feet away from all obstacles can create a usable spot for people to perch. Additional benches behind the seat wall could give the elderly and other slow moving, well meaning folk a sequestered spot that is protected by the seat wall. Another solution is to encircle the park with a 3-4 foot fence that people can see through, and place seating behind it.

FIGURE 5.22: The Glenhaven, Oregon skate park by Dreamland Skate parks. This is a creative combination of an obstacle that is also a seat wall.

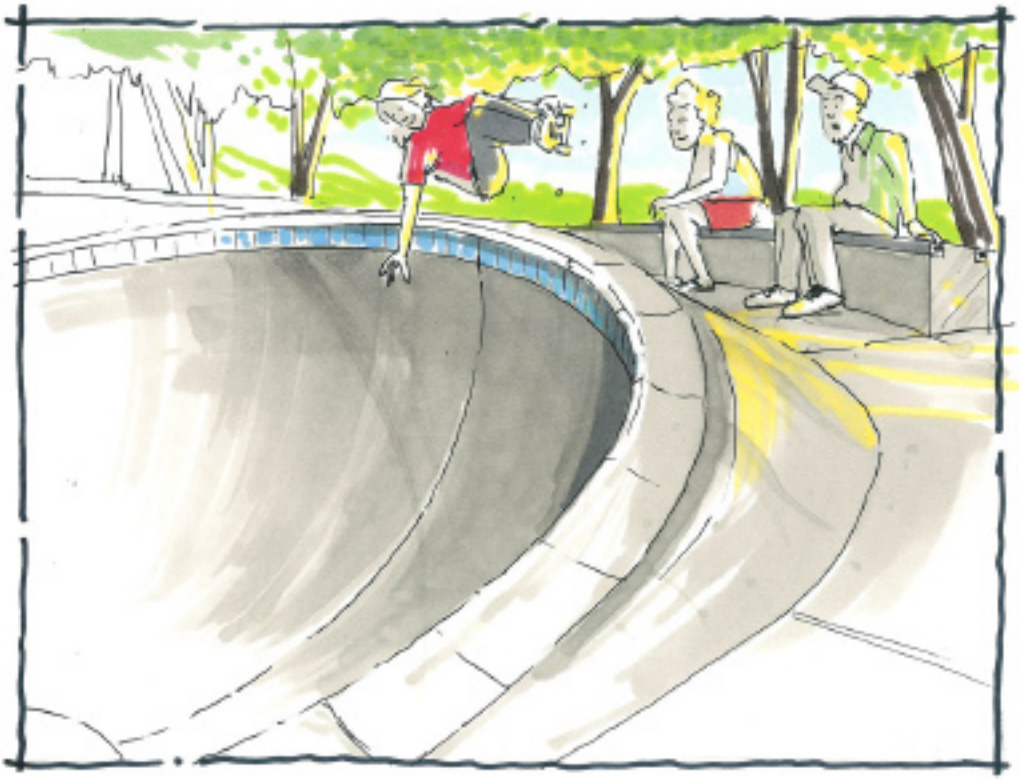


FIGURE 5.23: Transitioned areas are especially popular places to watch skaters do their thing.

Shade

This is a feature that is often overlooked by skate park design/builders. This is usually because they might want to use their budget to create the best skating surface. This is to be expected, but some of the best skate parks built in California and Arizona are intolerable during the day due to lack of shade. Steel awning structures, wood shelters, and tensile fabric membranes can have a huge impact on the comfortable temperature range within a skate park. In addition to reducing the temperature, shade structures also reduce albedo and glare within a park. Having a perfect skate park that can only be skated for maybe 10 hours in a given day is a tremendous waste, and even an inexpensive, humble structure to block the sun would be welcome.

FIGURE 5.24: At the Kansas City Skate Plaza, the nearest shady spot is 100 feet from the skate park!

FIGURE 5.25: Even a simple pergola could be covered with vines or inexpensive latticework.

FIGURE 5.26: In a reflective environment, a small structure can provide shade for people resting, putting on pads, or watching one's kids.

Site Aesthetics

VISUAL IDENTITY:

Adding other visual features to the site of a skate park is a luxury. An identity created with local history, architecture, or ethnic culture can make a park memorable. Signage, decorative seat walls, fountains, shelters, creative paving, trees, plants, and other amenities can create an outstanding public environment. Graffiti may become an issue at any skate park. Well planned and painstakingly created graffiti is an art form, and has a place in contemporary culture. Many skaters feel, however, that the beautifully finished riding surface of a skate park is not the venue for large pieces. Paint on top of concrete makes it slippery, and the gracefully curving forms do not need paint to be beautiful. The rectilinear forms and surrounding walls and ledges can be a better spot for such art.

FIGURES 5.27 and 5.28: Kansas City cultural landmarks that could contribute to a site's visual identity.

COPING with GRAFFITI:

If uninvited, ugly or profane graffiti occurs within a skate park, a quick removal by the local parks and recreation department has proven the best way to deal with it (Whitley, 92). If an artist knows that expensive paint and a fair amount of time will get washed off within a couple of days, they might choose a different location to ply their trade. Graffiti removal must be carefully done, however, because power washing concrete can easily degrade the surface. A combined use of a non-harmful liquid treatment and light washing may be a better solution.

FIGURES 5.29 and 5.30: Graffiti incorporated into Glenhaven skate park signage, and a different conceptual approach for the Kansas City Skate Plaza.

Water

A common amenity featured at many skate parks is that of a water fountain. In suburban areas where the hygienically-minded populace generally behaves itself, a water fountain is an acceptable solution for quenching thirst. In an urban environment, however, especially if the park has a criminal presence, a water fountain is a source of germs, pathogens, and other unmentionables. Not having access to some things many of us take for granted, such showers, homeless people often make do with what they can and end up using the fountains. A better solution in such areas that can give the homeless washing options, and provide drinking water, is to install a spigot. Skaters can bring their own containers and get water without having to drink from a tray decorated with a discarded sock.

FIGURE 5.31: At the Kansas City Skate Plaza, the water fountain is awkwardly sited.

FIGURE 5.32: Erosion is occurring on the south side, as skaters ride directly from the path down the grass.

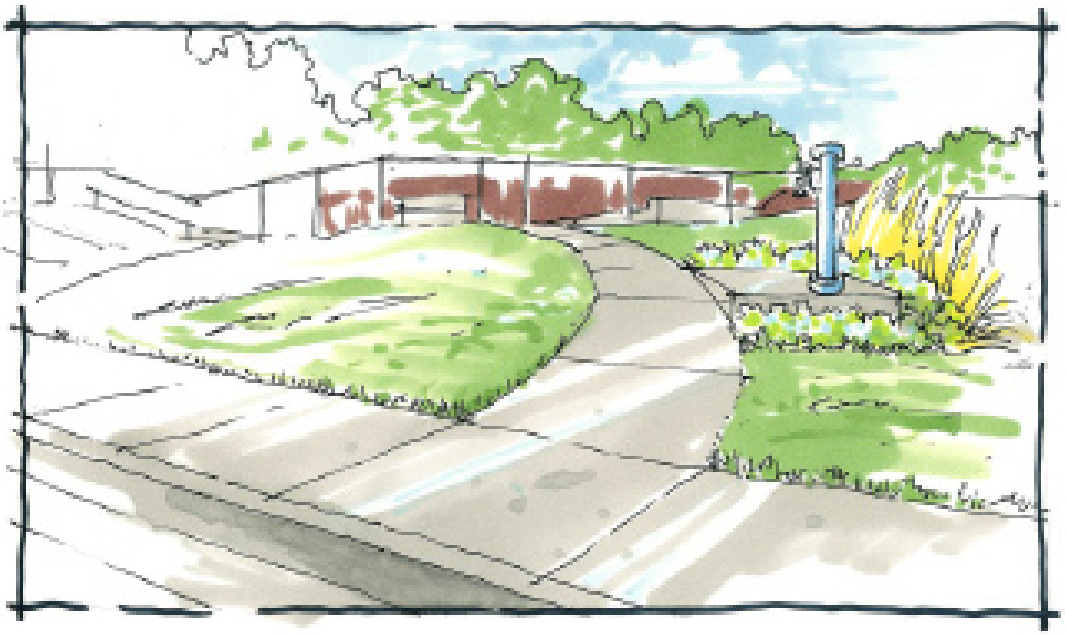


FIGURE 5.33: Why not site a spigot next to some plantings? The runoff can support a small oasis.

Concrete

There is currently no other material that is as durable, rideable, workable, or beautiful as concrete. After it has cured, concrete has legendary strength which accepts abuse without showing wear for a very long time. Some joints and edges may show chipping sooner, but can be easily and inexpensively patched. When finished correctly, concrete is a perfect match for both the urethane wheels of a skateboard, the wood of the board itself, and the aluminum of the skateboard axles, or trucks. Skateboard wheels are specially formulated out of urethane that will grip concrete well when it is needed, and break into a controlled slide when forced by the skater. The laminated plywood of a skateboard deck can slide well along its edges when a skater performs a board slide, and concrete pool coping grips enough for certain tricks when it is needed. As far as the design/builder is concerned, concrete is an excellent material because its fluidity, and therefore its ability to be worked into all kinds of curving forms. It can also be adjusted by changing the ratios of its contents. More water or air can be introduced for a desired effect, and can even make it possible for concrete to be worked upside down.

FIGURE 5.34: The surface texture of well-finished concrete is perfect for urethane wheels.

FIGURE 5.35: Concrete can be damaged at its edges, but can also be inexpensively patched.

FIGURE 5.36: A bowl at the Glenhaven, Oregon skate park by Dreamland Skate parks. This is as good as it gets.

FIGURE 5.37: Though not quite as good as Glenhaven, the deep end at the Kansas City Skate Plaza (SITE Design and California Skate parks), is beautiful.

Flat Area

STREET AREA:

From a dead stop, an average skater needs about thirty feet at least to get going and position themselves before encountering most obstacles. Stair sets, ledges, handrails, and hubbas are usually ollied onto or over. The skater, holding the board by the nose with his or her leading hand, will run and drop the board on the ground while jumping aboard with the feet. If their is an opportunity for a push or two, the skater will push, and then position his or her feet properly for the trick to be performed. These movements take place in a remarkably small time, as little as a second. The more flat area a skater has before the maneuver, however, the more time they will have to gain speed then adjust. If the skate park is to be suited to beginners as well as advanced skaters, plenty of room should be provided before each obstacle.

RUN AND DROP: CLICK ME!

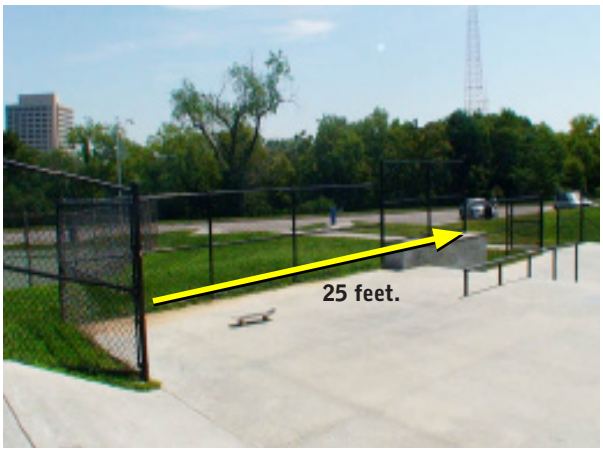


FIGURE 5.38: An example of a run up to a stair set that has too little flat area (about 25'), and the technique of run and drop within the street area.

FIGURE 5.39: An example of a run up to a stair set that has too little flat area (about 25'), and the technique of run and drop within the street area.

TRANSITIONED AREAS:

Skaters enjoy transitioned areas because of a feeling of speed, and if there is too much flat, the area in question will be considered slow and a failure. In a transitioned environment such as a bowl, skaters may prefer an amount of flat that is equal to the height of the transition walls, or even less. Such proportions will be create maximum velocity. In a situation such as a halfpipe, skaters will skate back and forth between transition walls. Maneuvers may be more technical in a halfpipe area, and more time for foot placement and readjustment will be appreciated. An amount of flat that is roughly 1/3 longer than the height of the transitions will be acceptable.

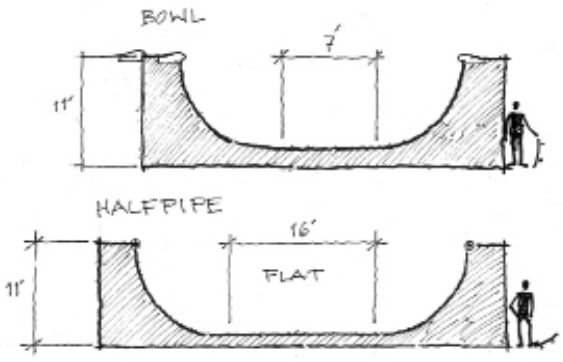


FIGURE 5.40: Less flat within a bowl will make it quicker, more flat in a halfpipe situation gives more time to adjust between technical tricks.

Site Lines

STREET AREA:

In both street and transitioned areas, a skate park should have clear lines of sight from every point to the others where a skater might start a run. In a street area, this might mean that skaters on one side could see through or across all obstacles to opposing ends of the park, so they can make a decision about who will start a run at a given time. Skaters communicate non-verbally, with nods of the head or hand gestures as to whether they will go, or they want someone else to take their turn. If they can not see one another, it is anyone's guess who will come around the corner or across an obstacle and cause a collision. This doesn't necessarily mean obstacles have to be low in height, just that they should be placed in relation to others so that skaters can see each other.

FIGURE 5.41: Creating a high point for a street course helps all skaters see each

TRANSITIONED AREAS:

In a transitioned or bowl area, site lines are less of an issue as long as skaters can see each other from across the bowl before they drop in. A self-contained bowl might be 30 feet across, a distance people can hear one another over easily, and determine who intends to take a run. In contrast, a complicated flow park with multiple pockets, bowls, tall obstacles, and extensions might be 100 feet across and have features that vary as much as 20 feet in height. Traffic patterns in such parks are present, but often harder to identify. Usually skaters just prefer to take their turn in these transitioned environments one at a time, but when a park gets crowded, there may be multiple people taking runs at once.

FIGURE 5.42: A self-contained bowl provides a safe situation where skaters can communicate easily.

Surface Color

STREET and TRANSITIONED AREAS:
A number of excellent skate parks have been constructed using concrete of a light grey color, but these parks have a very high albedo factor. Albedo, or the amount of light reflected off of a surface, can be a big problem in concrete skate parks. Because many skate parks have large expanses of paved areas, which are not broken up by plantings or shade structures, the light reflecting off of the surface can be quite intense. This unwanted reflected light can make skating very uncomfortable, both because glare hinders sight, and because heat radiates intensely back from the surface.

FIGURE 5.43: The light grey, almost white color at Kansas City Skate Plaza can be unbearable during the summer.

A recommendation is to specify a tint for the concrete that is a medium contrast tone such as brown, a medium grey, beige, or even dark yellow and orange. Such tints are light enough to allow skaters to still see the surface of obstacles, and read the surface by the shadows that fall upon them, but do not reflect light and heat so readily.

It is also important not to use a tint that is too dark, however. When a skating surface is a dark shade, it is often hard to read it. This is especially true for transitioned surfaces. It helps skaters to be able to see how a surface curves, twists, flattens, or otherwise changes by reading how shadows fall upon it. This quality of making a surface “readable” is why some skaters dislike having graffiti or mural art painted onto obstacles and transitions.

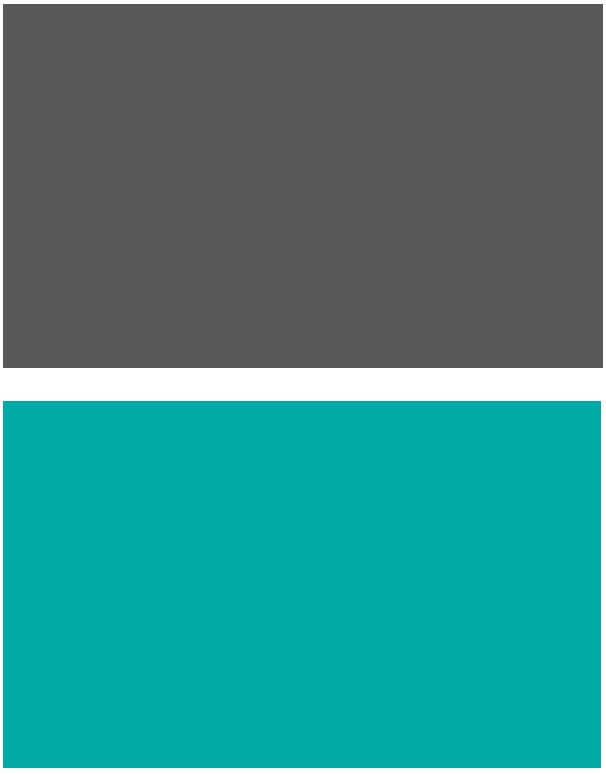
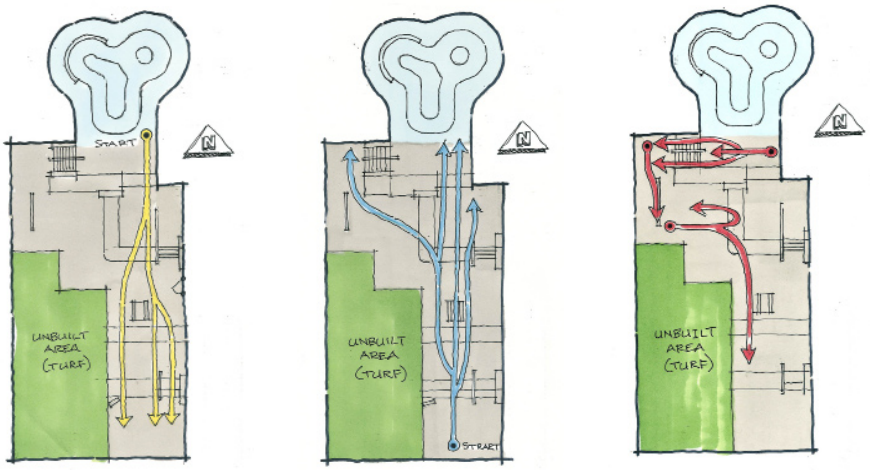


FIGURE 5.44: The dark grey tint at the top is too dark to easily read surface features upon. The medium blue tint just above, however, is just about right and would be a pleasing color.

FIGURE 5.45: Other suggested colors that are of a medium contrast in their tint.

Traffic Patterns

STREET AREA:
In a street area, the designer of a skate park has to think of what areas a skater will start their run from. These areas will be the ends and edges of the skate park. When a skate park has more than a small amount of skaters in it, skater will often gather on opposing ends of the park. After a majority of one group has taken a run across the park, the skaters on the receiving end will leave that area and ride in the opposite direction. This keeps one area from becoming too crowded.

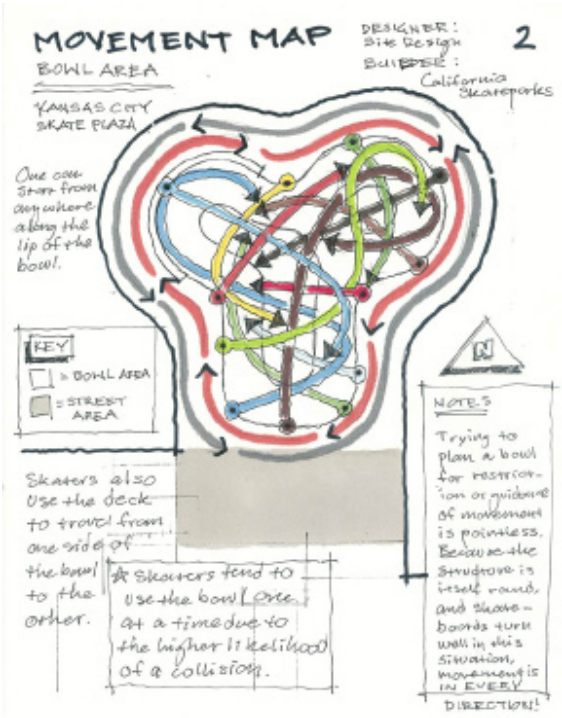


DOMINANT **SECONDARY** **TERTIARY**

FIGURE 5.46:
The diagrams to the left show the dominant, secondary, and tertiary traffic patterns at the Kansas City Skate Plaza. The dominant traffic pattern is that which skaters prefer to skate with when they have a choice, as it has the longest and highest velocity run. The secondary flow provides the second best, and the tertiary are for single tricks.

TRANSITIONED AREAS:
In a transitioned area or bowl, a similar, but slightly different method of traffic flow ensues. Most skaters observe a "one at a time" rule in a bowl. A skater will drop in and follow a line of tricks until they tire or fall. Because bowls can be entered and navigated anywhere along their edges, the dominant traffic pattern starts from the spot where it is easiest to drop into the bowl from. Because every surface, including the top decks) are rideable, traffic direction and change are endless.

CARVING IN THE BOWL: CLICK ME!



FIGURES 5.47 and 5.48: Ricky Reyes skates a bowl, a traffic pattern diagram for that specific bowl.

Transition Radii

Transition walls (curved walls) can occur within the street course, or within a dedicated transition area such as a bowl. Transitions are historically some of the most difficult features to design and build correctly for a number of reasons. To create a smooth flowing arc in concrete, that is not bumpy or kinked is a challenge. Different radii, or measurement of half of a circle from the center, are desired by skaters in different situations. A ten foot radii may not be appropriate for a quarterpipe in an area where one can not get enough speed to travel to the top of it. Likewise, a two foot radii may not be appropriate for a bowl that is intended for beginner skaters, as tight transitions require more skill and experience.

Whether concentrated in a bowl area, or spread out through a street course in the form of quarterpipes, transition walls of varying heights are an excellent addition to a skate park. Any transition walls that continue up towards a vertical face (or "vert") will be comfortable with a 9.5' radius, and however much vertical face one wishes to add. Smaller radii are more of a challenge for skaters when combined with a vertical face, but are often a welcomed challenge. Transtions should also be included which do not have a vertical face, as these are good elements for skaters of all skill levels to learn upon.

Varying transition sizes are also desired in bowl areas, but they must be blended together with hips and waterfalls. Hips are the locations where the transition wall changes direction, and the concrete smoothly curves to meet the new alignment of a different transition wall. Waterfalls are like small ramps that lead the flat bottom down to a lower elevation to increase the depth of one area of the bowl. Transition walls, hips, and waterfalls all must be blended together smoothly. Skate park design/builders use trowels to painstakingly form the surface walls of these elements as perfectly as they can manage.

FIGURE 5.49: Glenhaven skate park, Oregon, by Dreamland Skate parks. Both the transitions within the street area and the bowls are nearly flawless.

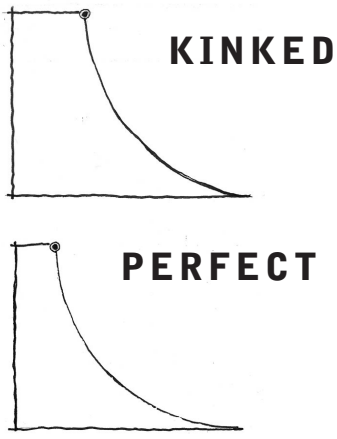


FIGURE 5.50: Transitions with kinks will be considered a failure, and may lead to injuries.

Variety and Proportion

STREET AREA:

When considering the design of a street course, there should be a variety of different obstacles. If the skate park features obstacles of different heights and shapes, the park will be that much more challenging to skaters of all levels. A beginner may not be able to grind down a handrail, and a park full of them will be no fun for most skaters. There are also very experienced skaters who may enjoy skating a ditch-like set of embankments, who don't have the more contemporary skill set needed to perform grinding tricks on a series of ledges. It is a good idea to differ adjacent obstacles in height, as skaters often enjoy the challenge of performing a trick from low to high or vice versa.

FIGURE 5.51: Glenhaven, Oregon skate park by Dreamland Skate parks. This street area has numerous unusual features to challenge all skill levels.

TRANSITIONED AREAS:

In the design of a bowl, or transitioned area, extra features are less important as the transitions and coping themselves are the main attraction. If the money and time is available, however, special details can be added to bowls that make them one of a kind. Extensions, or a segment of transition wall that travels past the lip of the rest of the wall, can continue a transition into several feet of vertical wall. Other over-vertical elements such as capsules, clamshells, fullpipes, and escalators can make a design that much more interesting. If the budget is available, there is every reason in the world to be as creative as possible. Concrete is a highly adaptable material, and it can even be sprayed upside down!

FIGURE 5.52: Gelnhaven, Oregon skate park by Dreamland Skate parks. The additional transitional elements such as extensions, double hips, spines, and faux pool elements make this skate park a must-visit.

Edges and Coping

STREET AREA:
In street areas, the edges of rectilinear elements feature square coping, also known as angle iron. Whereas round coping is preferred on transitioned elements, because skaters enjoy the "pop" off of it, square coping should be perfectly flush. Rectilinear street elements, such as ledges and hubbas, are ollied up onto instead of ridden onto. When a skater lands on top of one of these rectilinear obstacles, it is more desirable to land square on top of it with one or both trucks. This stable position allows for an easier platform from which to perform technical, board-flipping street tricks off of.

FIGURE 5.53 and 5.54: Square coping should be used on street obstacles.

TRANSITIONED AREAS:
Coping should be installed on all sharp edges. The reveal on the transition face wall should be an even 1/4", and the surface of the face wall directly beneath it should not be bumpy or rippled. The coping should be elevated above the deck of the transitioned element by 1/4"-3/8". Round steel coping, 2 3/8" in diameter, or concrete pool block coping is preferred for such applications. Concrete pool coping is sold at pool construction supply stores, or can be made from molds. This kind of coping has a different feel to it, as it tends to be larger in diameter, and has a distinctly more abrasive texture. Bull nose in profile, pool coping sticks out further from the face of the transition, and above the deck. The amount of reveal and rise above the deck vary, but it can be as much as 1" in either case.

SMITH GRIND: CLICK ME!

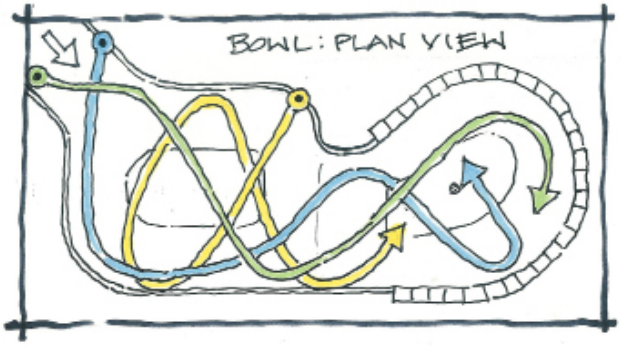
FIGURE 5.55 and 5.56: Round steel coping. Andy Brayman grinding poured concrete pool coping.

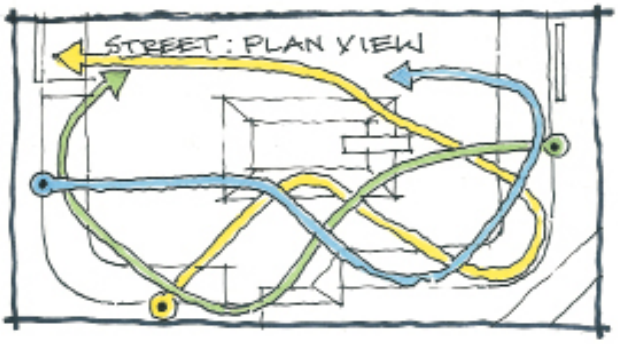
Layout and Orientation

LAYOUT:

The layout of both street courses and transitioned elements and areas should be such that more than one obstacle or feature can be hit in one run. In a street area, a designer can include pyramid elements in a central position, or transitioned or banked obstacles at edges and in corners in order to give skaters the ability to change direction. The main technological component to consider when thinking about distances and locations of obstacles is a skateboard's trucks, or axles. If a skater can not quickly adjust to a given layout, that layout will be unsuccessful.

It is also undesirable to have only runs that travel in a straight line. A skate park laid out in such a manner will quickly bore skaters and be abandoned.





FIGURES 5.57 and 5.58: Satisfactory layouts for skate parks create multiple lines, and opportunities for changing direction.

ORIENTATION:

How a skate park is situated in terms of cardinal direction, and how that affects the micro climate is an issue that can really help or hurt a given design. If a halfpipe is laid out from east to west, the sun can help melt ice and snow during the winter. If it is laid out from north to south, ice and snow will be trapped in shadow on the south side of the halfpipe. It can be difficult to design with the aspect of the sun in mind, for many contemporary parks are not just made of half pipes, and feature numerous multi-faceted obstacles. It is best to pay attention to other natural and built features adjacent to the skate park, and ask whether any of the shadows they cast create an advantage of shade, or a disadvantage of under exposure.

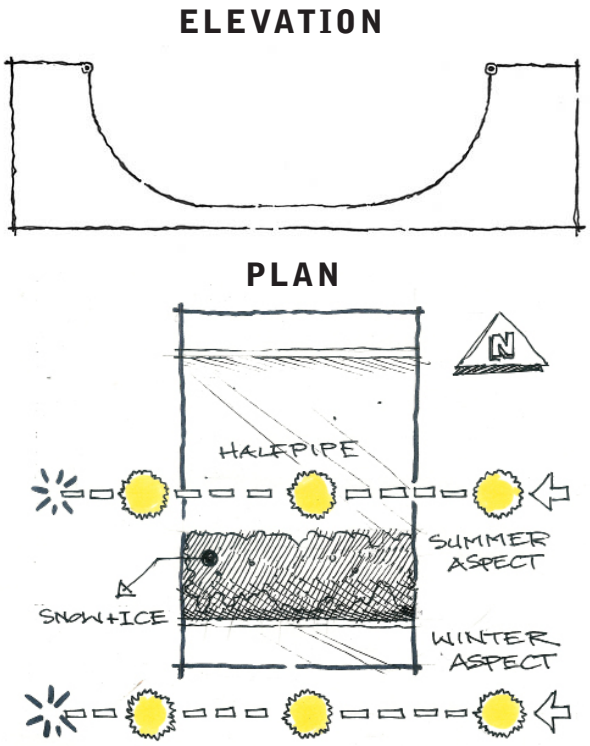


FIGURE 5.59: A halfpipe laid out north to south will shield snow from the sun during the winter.

Surface Finish and Joints

SURFACE FINISH:

All surfaces within the entire skate park should be finished in a manner that is smooth, not slick, and semi-permeable. This type of finished is known as a “troweled” finish. The ASTM (www.astm.org) has a specification for the concrete surface finish of in-ground skate parks in the publication F2480-06 (Whitley 2007, 67). A broom finish is never acceptable within the skating area. In the street area, flat surfaces will have the slightest pitch to drain water, but that grade will remain constant until it reaches the drain or runoff point. The smoother the surface, and the more continuous the arcs of the radii are, the faster a skater can travel with less effort. If there is a kink or bump, it can make the transition unpleasant to ride and even impossible to perform maneuvers upon.

FIGURES 5.60 and 5.61: The correct troweled finish of skate park concrete, and an incorrect sidewalk broom finish.

CONSTRUCTION JOINTS:

Joints added to the concrete to control cracking need to be placed mindfully. In a street area, placing a joint five feet from a low ledge can cause a bump right when a skater needs it the least. The skater can easily get thrown off balance and have difficulty in ollieing onto the ledge. In a transitioned area, doing something wacky such as placing a horizontal joint in the middle of a transition face wall can make lip tricks impossible, and cause hang ups that lead to injurious spills. The width of the joint sawn into the concrete can also be an issue. A ¼” gap can be wide enough to cause problems, especially if there is also a change in elevation between slabs. A sawn joint 1/8” wide should be adequate to control cracking, and is easily rolled over by skateboard wheels.

SLIDE: CLICK ME!

FIGURES 5.62 and 5.63: A correct 1/8“ sawn concrete joint, and the author using the surface for controlled

Conclusion

"….the outlawing of skateboarding on the city streets has been here since the early 90s. These kids have been getting tickets left and right. All I'm saying is 'give em a place to ride. It's like you've got tennis players, you got tennis courts, you got skateboarders, you need skateboard parks. It's a pretty simple thing. As long as they build good parks, it's alright."
-Veteran professional skateboarder, skatepark design/builder, and contest organizer Dave Duncan.

If there is one thing for certain, it is that skateboarding will never die as hard as it has in the past. From the X-Games, to the Olympics, and Tony Hawk on your cereal box, skateboarding surrounds us in popular culture. Now that skating has inserted itself into mainstream society, for the good and for the bad, it has reached a new level of recognition. As more high quality public facilities are built for this pursuit, this recognition can only grow and send the roots of skateboarding into the fabric of our society. Thousands more skate parks will be built in the not so distant future, but there remains a question: Will these new skate parks help our society or harm it?

As newly emerging building professionals, contractors, marketing specialists, and manufacturers hop on the bandwagon to cash in on what some see as the new skate park craze, many of these folks are asking, "what can skateboarding, and skate parks in particular do for me?" There is a saying in the skateboarding community that has a different view, namely: "What can you do for skateboarding?" Hopefully this will become the mantra of the landscape architects, skate park design/builders, and skaters during this time of growth and innovation. Skateboarding is a tremendously positive activity, physically and creatively. Now more than ever, people who become involved in this recent resurgence of building skate parks have an opportunity to build quality skate parks, and bring the positive aspects of skateboarding's culture into our communities. As participants in this culture, which includes not only skaters but all who support them, we have influence over the future of skateboarding and it future character.

If we as participants fail to demand excellence in concept, design, and execution of these skate parks, our communities stand to lose. We will lose money on badly built parks, and opportunities to give our youth a positive, affordable physical activity. Some may see skateboarding as destructive because of its wear and tear on the built environment, but it is important to remember something: that is only one facet of the pursuit of skateboarding. Perhaps the reason why some feel compelled to destroy is because they have no place within society. They have no location to go to connect to their identity, and push the bounds of their physical and mental potential. Could this be one reason why so many kids lose themselves in video games for hours? Skateboarding, and skate parks can give people an avenue of expression that creates an identity and a place for those who need it most.

As landscape architects, skate park design/builders, and citizens within local governments, there is tremendous dissent regarding how these places should be created. Because of the differences in the worldview and professional scope between all these people vary so greatly, it is difficult to figure out where to put these skate parks, let alone what material specifications and construction tolerances they should feature. Landscape architects fuss over pedestrian circulation around the park, skate park design/builders obsess over concrete finish and transition radii, and city officials bicker about where all the money's going to come from. What is also true is that each one of these professionals has something to give to skateboarding. Landscape architects understand systems and the broader implication

of a site's role in the built environment. Skate park design/builders can create terrain that is so beautiful, non-skaters see it as sculpture. City officials make dreams come true in the real world by approving projects that benefit society. All of these professionals can work together to give to skate parks to skateboarding, and in return, skateboarding will give to our communities. If we don't give our efforts in the right way, if we give our money to playground equipment manufacturers and contractors who have never stepped on a skateboard, the world will still go on. Skate parks will still be built. These skate parks, however, will be very poor in quality, and often unsafe. They are not an investment in our communities, they are a waste of time, money, and land. Skaters will go back to skating our public amenities, and damaging our streetscape. A tremendous opportunity will be lost to give the positive, vibrant culture of skateboarding a place in our future.

Concrete skate parks are functional art. They are the built product of a physical pursuit that has its own equipment, history, art, music, and mindset. Skate parks are the extension of this mindset which has found its physical form in the built environment, and it comes from the broader heritage of our civilization. If landscape architects and skate park design/builders can work with each other, skateboarding, and skate parks, can enhance our neighborhoods for the better. It is time to give a place to skateboarding and its participants, and do so in a manner of great care and support.

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APPENDIX A – The History of Skate Parks

A Closer Look

During its 40 odd years as a recreational facility type, the concrete skate park has changed drastically. The first wave in concrete park building yielded a number of parks that were "pay to play" facilities that were often coupled with other activities, such as go-kart racing and video game arcades. These parks were clearly youth-oriented places that many expected to be a passing fad (Hirsch and Salinger 2005).

The First Public Skate Park in California: Surface World

The very first paved skate park in the world was built in 1966, in Anaheim, California. Named "Surface World", it was literally that.....just a collection of flat surfaces (Hirsch and Salinger 2005)! Skateboarding at the time was focused on "freestyle", or technical footwork and gymnastic tricks that were best performed in an open, flat area. It was soon clear, however, that skaters were taking skateboarding beyond the bounds of what people thought was previously possible on a skateboard. As it became further removed from surfing, skating became less studied and developed more of its own attitude. As the parks got better and skateboarding equipment technology improved, the sport grew roots that would prove to last through multiple droughts of popular opinion.

The First Concrete Skate Park in California: Carlsbad Skate Park:

Taking its cue from ocean waves, urban embankments, and possibly ski moguls and dirt bike tracks, Carlsbad Skate Park was built in 1976. The very first concrete skate park to feature concrete transitions and curved forms, Carlsbad became a catalyst and inspiration for skate park design/builders to experiment with new forms in concrete (Hirsch and Salinger 2005). The waves, moguls, sluices, and quirky bumps were just a clue of what was to come.

Mount Baldy Pipeline- First Sessions 1975-1977:

As some skaters were learning their moves at Carlsbad, others were continuing to seek out adventure in unexperienced terrain. Steve Alba and his brother Micke became part of a crew of skaters who frequented "Baldy", the huge drainage pipe in the desert of Badlands, California. The "Glory Hole", a section of pipe some 40' in diameter, became the ultimate challenge for this group of skaters. Baldy is still sessioned to this day, though it is now a federal offense since the passing of the Patriot Act. Traveling past vertical on the pipes rough, curved walls, Baldy's visitors learned skills for what was to be the most incredible park to date (and some say of all time), Upland Skate park (Hirsch and Salinger 2005).

Upland Skate Park- The Last of its Breed (R.I.P. 1989)

The large diameter pipe, the "Glory Hole", of Baldy directly influenced the world's first fullpipe in a skate park. For the Upland skate park, the full pipe, a huge "combi" pool with a round bowl and a square bowl, smaller bowls and connecting runs, were designed by Steve Alba and Dan Hoffman. Next to Carlsbad, Upland looked like a monster. The skaters that worked up the courage to drop into its enormous bowls with 2'-3' of vertical wall, and grind on its pringle can sized coping became a new breed of skateboarder. Pushing themselves ever higher, skaters here perfected aerial maneuvers higher and higher and changed the sport forever (Hirsch and Salinger 2005).

APPENDIX B – Skate Park Design/Build: A Focus On Grindline and Dreamland

The two people who started these companies have interesting backgrounds. Mark "Monk" Hubbard was kicked out of his house at 18. He decided from there to skate as many of America's legendary skate spots as he could. Having no money, Mark subsisted on government welfare checks and hopped trains to get from city to city. "Monk" eventually met Mark "Red" Scott, and they began to work for the parks and recreation department of Lincoln City, Oregon. "Red" worked with other Portland, Oregon, locals to build the legendary D.I.Y. skate park, "Burnside". He and the local crew started creating cement forms under a bridge in a drug infested part of town. The park became popular quickly, and helped to push other illegal activities out of the area. The City tried to shut it down, but with vigorous local campaigning and the support of some skateboarding companies, the park was finally recognized and made legal. Because of this, Burnside skate park is called by many the "granddaddy" of all contemporary skate parks. It has been referenced time and again as an example of a flow park, where multiple lines and unusual features create a unique place to skate, and an example of what skaters can accomplish if they get organized (Juice Magazine).

One of the primary builders of Burnside, Red, began to build parks with Monk in the early 1990s. Because both had backgrounds in concrete and pool construction, they were able to pioneer many of the unique forms one sees in skate parks today. The innovation and dedication they brought to their craft is legendary. Their ability to adapt new forms from existing plans, willingness to spend their own money if they felt the park would benefit, and ability to skate the environments they created set them apart from other design/builders. Originally, the origin of the two different names of their enterprise, Grindline and Dreamland, was the result of their inability to buy the "Dreamland" domain on the net. Completed in the late 1990s, the Orcas Island skate park in Washington was the last skate park built under this partnership. Since then, Monk has led Grindline and Red has led Dreamland. To this day, both remain the most revered skate park design/builders in the world.

APPENDIX C – The Evolution of Skateboarding and it's Equipment

The following examples were referenced from the Skull Skates Online Skateboard Museum, http://skullskates.com/history/on-line-skateboard-museum/, who generously agreed to allow them to be used in this thesis. These contraptions and skateboards represent major turning points in the time of skateboarding technology.

1920s: Contrary to popular opinion that skateboards were born in the fifties, they are actually related to sports equipment with origins in the twenties! Pictured below is a cross country ski for dry ground. Often sold with poles, these foot sleds were made of stamped metal and wheels that were similar to the ones found on pedal cars for kids. There was no way to steer these, and they featured a heel cup and a metal toe clip.

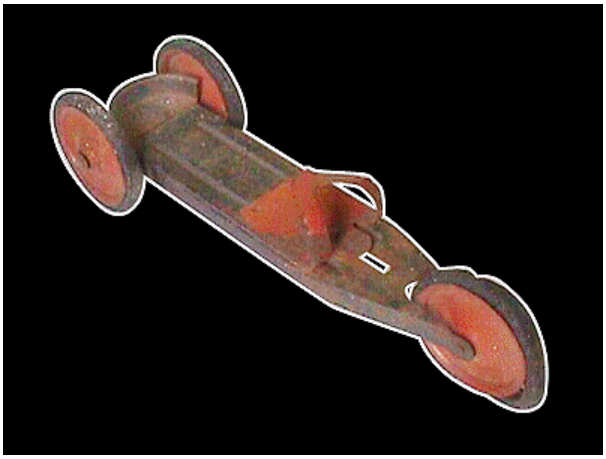

FIGURE A.1: Cross country ground ski

1930s: This odd looking device allowed the user to detach the handle and ride down the street without it. Shaped like some strange spaceship, it featured roller skate style wheels and could not be turned. The stamped metal deck was 6.5" x 13" wide, and offered a very rough ride.

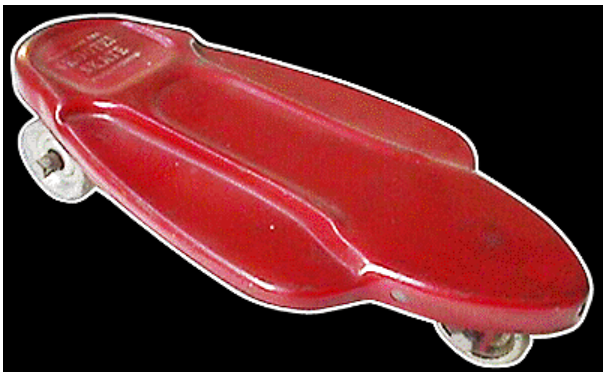

FIGURE A.2: 1930s scooter.

1950s: Introducing: The skateboard! This homebuilt Neanderthal stick was made of a hardware store 2" x 4" with roller skate wheels, cut from the boots, and nailed on. This particular board certainly made for a rough ride, and steering still was non-existent. Made for surfing the streets when the waves were down in the ocean, this board taught early skaters the basics of merely staying on board, so to speak.

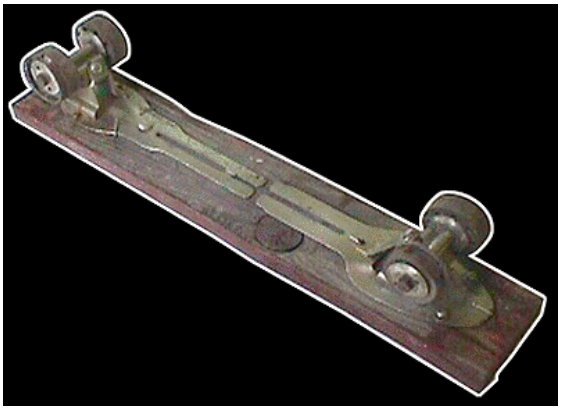

FIGURE A.3: 1950s homemade skateboard.

1960s: The 60s were the first time in history that skateboards were mass-produced. This particular model, a "Roller Derby #10", still did not have adjustable trucks that could turn, and still had steel roller skate style wheels. It measured 4.5" x 19".

FIGURE A.4: 1960s manufactured skateboard.

1970s: By the time the 70s rolled around, many advances had been made in terms of skateboard technology. The first adjustable, turning truck was introduced by the skateboard manufacturer Makaha. Frank Nasworthy had also adapted urethane formulations from roller skate wheels and applied them to a new design. Because boards could now be turned and the wheels gripped better, people began to ride in empty swimming pools and skate parks. Skaters became more aggressive and technical, and the skateboards grew in size to accommodate new riding techniques. Shown below is a Lonnie Toft pro model by the manufacturer Sims. Lonnie was a skilled transition rider, and the board was wide and short to excel in this type of terrain. Known as "pigs", these wider boards were an advent of things to come. Featuring the wide "Lazer" trucks, the first ones designed for grinding, the board also featured grippy Kryptonics wheels.

FIGURE A.5: 1970s Lonnie Toft "pig" by Sims.

1980s: During this time in history, transition ("vert" skating) was the focus of the manufacturers and the market. Tommy Guerrero was a street skating pioneer who helped lead the change from transition dominance to street popularity into the 90s. 9.75" wide x 29.75" long, Tommy's pro model shows the refinement from a "pig", to a modern, shaped deck.

FIGURE A.6: 1980s Tommy Geurrero pro model by Powell and Peralta.

1990s: By this time, street skating had become the most popular aspect of the sport, and skating had lost the booming popularity it had in the 80s. In response to the more technical board flipping tricks that became the new frontier for a skater's ability, the boards became longer, skinnier, and grew noses longer than the tails.

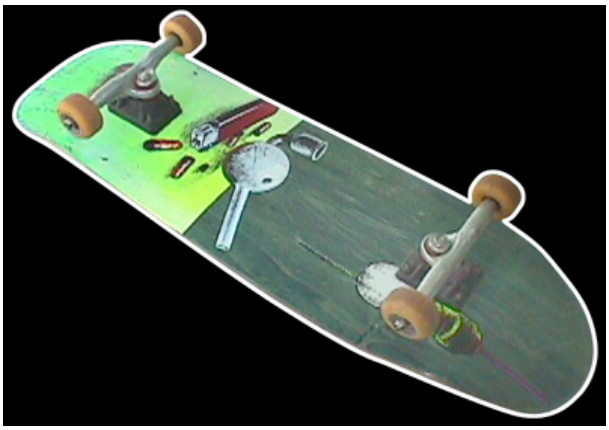

FIGURE A.7: 1990s Natas Kaupas pro model by 101.

2000s: The new millennium has finally rolled around, and the current skateboard is an interesting mix of many technologies and movements. Today's board is an all-around terrain machine that can excel in pretty much any environment. Skaters today tend to be into all types of skating, and many perform very technical tricks that require the ability to maneuver forward or backward. As a result, the average board today is a popsicle stick shape that has a symmetrical nose and tail.

FIGURE A.8: 2000s skateboard by Blind.

APPENDIX D – Operational Definitions

AIR- When a skater rides up to the top of a transition and flies above the lip of it, grabbing the edge of the board and turning in mid air to land on the transition again and ride down it.

BACKSIDE- Any trick performed with the heels of the skater pointing towards the obstacle being skated.

BAIL- Falling, aborting a trick mid-maneuver when it becomes apparent that the trick will not be accomplished.

BEARINGS- There are two precision bearings that are inserted into each wheel before bolting the wheel to the truck.

BOWL- Literally, a swimming pool-like element within a skate park, designed and built specifically for skateboarding.

CAPSULE- Found in skate parks, a rounded corner of transition that's like a bowl set on its side. A true capsule goes from flat bottom, to transition and vertical, over vertical and all the way up to a surface that is parallel with the flat bottom.

CARVE- When a skater rolls up a transition and leans into the turn without lifting the front end of the board, as in a kickturn. This is a deceptively difficult thing to learn, and is the true mark of an accomplished bowl rider.

CLAM SHELL- A type of transitional area within a skate park that has an over-vertical face. A clam shell is like a bowl tilted on its side about 20 degrees, and open on one end so a skater can ride into it and carve around in it.

COPING- The circular metal pipe, concrete lip, or steel square tube that is inserted along the "lip", or the top of the transition.

CURB- Parking curbs and sidewalk curbs witnessed the birth of many street skating tricks. Skaters would practice the "lip tricks" they usually performed on transitions in skate parks on city curbs, especially painted ones which were slick. Many sliding and grinding tricks were invented this way, most notably the "slappie" (a double truck, or "50-50" grind where a skater uses brute force to ride onto the curb and grind it).

DECK- Another name for the actual plank of the skateboard, sans trucks and wheels.

DROP IN- To "drop in", a skater sets the tail of his/her board on the coping (or "lip"0 at the top of the transition. Steadying the board with one foot, the skater then puts the other foot onto the top of the board and performs a controlled fall into the transition. Once the wheel make contact with the transition surface, the skater rides down and into the flat bottom.

FREESTYLE- A style of skateboarding, more popular during the late 1970s and throughout the 80s, which involves performing maneuvers on flat ground. Mastered by skaters such as Steve Rocco, Rodney Mullen, Per Welinder, Kevin Harris, Primo Desidiro, and Pierre Andre, freestyle involved tricks that were heavily dependent on footwork and gymnastic, powerful moves. After losing popularity as the 80s came to a close, freestyle went underground, but has recently resurfaced and developed its own scene once again.

FRONTSIDE- Any trick performed with the toes of the skater pointing towards the obstacle being skated.

FULL LOOP- When a skater gains enough speed to go completely upside down in a full pipe, or specially built structure.

FULL PIPE- Modelled after huge storm

water pipes found in remote areas (often 30' high), that skaters began to skate in as transition skating became popular in the early 1970s. Today, full pipes are often included in skate parks, and are used to connect two bowls.

GRIND- When a skater rides the edge of any object with his/her trucks. This maneuver makes a distinctive barking, or scraping sound, hence the name "grind".

GRIP TAPE- The granular, grippy surface on top of skateboards. Grip tape usually comes in long rolls that are 9" wide. One rolls the appropriate length (about 32" long), cuts it, takes off the backing to expose the adhesive undersurface of the grip tape. The tape is then laid onto the boar, and it affixes itself. The person applying it then cuts around the edge of the skateboard deck and throws out the extra tape.

HALF PIPE- Best explained as a full pipe cut in half longitudinally. Often, however, half pipes are made out of wood, and include more flat bottom, rather than being a perfect half circle. The evolution of wood halfpipe ramps led to the masterful vertical skateboarding of the mid eighties. On these ramps, professional skateboarders such as Mike McGill began pushing limits with aerial maneuvers such as the "McTwist" (a 540 degree turn combined with a front flip).

HIP- A rounded corner between two transitional walls within a bowl that skaters ride up and down to gain speed.

HUBBA- Found in skate parks, a hubba is a wall perhaps a little lower than waist high that starts at the top of a set of steps. The hubba's top surface is parallel with the ground at the top of the set, then changes angle to follow the steps, and travels all the way down to the bottom of the set. Popular for sliding and grinding tricks.

LINE- A line is a particular path that a skater travels over a given section of terrain. Sometimes the term is used to describe a sequence of tricks that a skater performs in a row.

LIP TRICK- Any trick such as grinds, board slides (where the deck makes contact with the edge of the obstacle), or any other technical maneuvers where a skater of part of his equipment touches the coping (or "lip").

NEW SCHOOL- Any skateboard related style, product, or skater produced after 1990.

OLD SCHOOL- Any skateboarding related style, product, or skater produced before 1985.

OLLIE- When a skater rolls up a transition and flies above the lip of it but does not grab the board, instead guiding it with his/her feet. The skater turns in mid air and lands on the transition, riding down it. Invented by Alan Gelfand in 1976. The flat ground ollie technique was invented by Rodney Mullen shortly after.

PUMPING- This is the manner in which skaters create and maintain speed on a transitional surface. While approaching the transition, the skater is crouched slightly. Upon reaching the transition, the skater stands up and this movement drives them up the curved face of the transition. After performing their maneuver at the top of the transition wall, the skater can also pump on the way down. Traveling down the transition, the skater must change from a more or less crouched position into a standing one towards the bottom. This movement gives the skater a burst of speed.

QUARTER PIPE- One side of a half pipe by itself. Used to learn transition ramp tricks in smaller, more confined spaces.

RUN- Taking a "run" is akin to taking one's turn over a given section of terrain.

SKATEBOARD- a shaped, usually wooden plank roughly 8" wide by 32" long which has attached "trucks" (2 axels) and urethane wheels (4 qty.)

SKATEPARK- A destination, whether concrete, wood, or of composite material with obstacles for skaters to interact with. Can be public and free admission or a "pay to play" park.

TRANSITION- A curved wall like a wave that become almost or completely vertical. Forms the curved walls of ramps and bowls. A bowl is a continuous transition that travels completely around in a circle.

TRUCKS- The axels of a skateboard. They are attached to the "deck" (the skateboard) with 4 nuts and bolts (per truck). The wheels are bolted on to the truck with a nut.

SLAPPY- A type of grind usually performed on a low curb. A skater skates towards the curbs, almost parallel but at a slight angle. In a carving motion, the skater leans away from the curb and pumps both of their trucks up onto the curb, assuming a grind position (50/50). The skater grinds until satisfied, and turns or ollies off of the curb.

SLIDE- When a skater forces his board into a sideways drift on a flat surface or transition. This movement, though seemingly out of control, is the opposite. It is used by skaters to get rid of excess speed, and its method of execution, if done well, is considered good style, or form.

SNAKE RUN- More popular in early 70s and 80s parks, but still existent today. Two opposing concrete transitions that travel a lengthy distance, more than 25 feet. Each opposing transition wall (usually not vertical), snakes back and forth in plan view. This type of concrete "sluice" allows a skater to lean into turns ("carving") in a meditative and relaxed motion all the way down the length of the run.

SNAKING- When a skater, either mischievously or maliciously or indifferently, steals your turn by dropping in immediately before you were going to take a run.

SWITCH- Made popular during the advent of the new school movement in skating, riding switch is the ability to do a trick either forwards or backwards. Not to be confused with doing a trick "fakie", which just means doing one trick riding backwards. Accomplished switch stance riders can do every trick with the left or right foot forwards. This is a masterful accomplishment attained by only the best of skaters.

URETHANE- The compound used in skateboard wheels. The wheels are highly engineered to endure friction, heat, and extreme pressure. The profile of a skateboard wheel varies according to its application (street, vertical, slalom, downhill etc.) Urethane wheels for skateboards were adapted from roller-skate wheels by Frank Nasworthy in 1972.

VERT- Vert is short for "vertical", which is used to describe the top part of a transition wall that has traveled up the arc into a wall that is perpendicular to the ground plane.

WATERFALL- A waterfall is a curved embankment which serves as a ramp linking to sections of flat bottom together within a bowl.

APPENDIX E – Influences on Skateboarding: People, Technology, and Culture

"The photos really translated the velocity of the move, the way you guys were living…..they said way more than "here's a guy on a skateboard….they showed a lifestyle, they showed an attitude, they showed….a code."
-Henry Rollins, Musician and Writer (Peralta 2001).

George Freeth:
In 1907, the Irish-Hawaiian and water sportsman George Freeth surfed the waves in California for the first time. Sponsored by the Redondo-Los Angeles Railway, Freeth wowed crowds in southern California at expositions with his primitive surfboard made with three planks of wood, held together by cross-brace boards attached across the width of the board. Polynesians and other indigenous tribes had been surfing for many years before this, but Freeth was the first man of european descent to be promoted as a "surfer" (Surf Museum).

FIGURE A.9: George Freeth, the first surfer in the California circa 1907 (Surf Museum).

Scooters:
The wheels of early scooters were similar to, or the same as metal roller skate wheels, and the handle attached to the riding platform did not turn to allow a change in direction. The wheels were connected to a fixed axle, called a "truck", after the axles found on railroad cars. Scooter technology did not change much through World War II, except that many scooters eventually featured a handle/axle arrangement that could turn, allowing the rider to change direction while moving (Skull Skates).

Early Skateboards:
Early skateboards, in their purest form, were ridden when the surf was down and boredom had set in. The early skaters took inspiration from the shapes of 60s surfboards, and began to shape their wood planks in inventive ways. It wasn't long until people began to capitalize on this new creative, recreational activity, and the first mass-produced skateboards were being made in California by companies such as Hobie and Makaha (Skull Skates).

Larry Bertleman:
A major influence for the Dogtown skaters at this time was a surfer named Larry Bertleman. Larry had a very specific, aggressive style that skaters sought to emulate on the paved embankments (Peralta 2001). Moves such as "cutbacks", a surfing term for a very quick turn on the wave, were now possible on a skateboard due to the properties of the new urethane wheels. The manner in which these turns were performed, their "style", became an essential aspect of how one was judged for their skating.

Dogtown and Z-Boys:
Tony Alva and his peers, popularly referred to as the "Z-Boys" of Dogtown were also instrumental in changing the cultural face of skateboarding. The manner in which they created, presented, and lived their culture divorced

skateboarding from the kiddie market sector of toy companies and hokey kitsch media. Their attitude towards skating was no longer a laid-back, cruising approach embodied by clean cut well tanned surfer hunks. Though surfers themselves, the Z-Boys were locals to the tough Venice Beach area of Southern California. The influence of the streets came across in their rebellious personality, the aggressive way they skated, and the visually arresting art they made. The type of skaters that identified with the Z-Boys enjoyed searching for new places to skate, and new obstacles to conquer. The outlaw, tough, dangerous personality that skateboarding retains to this day, to a certain extent, is the result of the cultural impact of this Venice Beach scene (Peralta 2001).

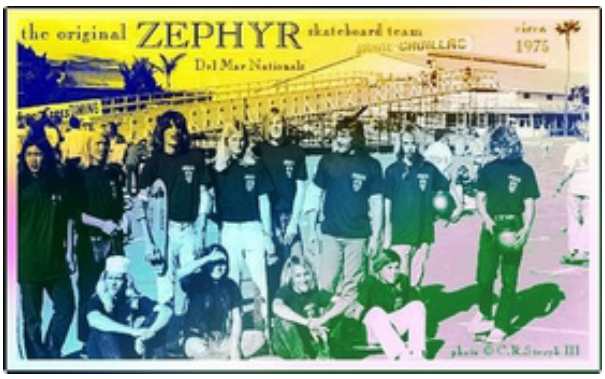

FIGURE A.10: The Zephyr Surf Shop Team, the Z-Boys of Dogtown circa 1975 (Skull Skates).

Tony Alva and Stacy Peralta:
These two skaters, in particular, did quite a bit to popularize skateboarding. During the late 70s, Tony Stacy were often both vying for the first place in the top contests of that time. Both were featured in numerous commercials and films, and both traveled the world to perform demos and promote the sport. Both skaters went on to develop their own skateboard manufacturing companies, Alva Skates and Powell and Peralta (Peralta 2001).

Tony Alva and the Frontside Air:
Tony and his friends, the Z-Boys, had been sessioning a pool at the house of a friend dying of cancer. This pool, dubbed the "Dog Bowl" was so named because of the multiple dogs present on the property. The Dog Bowl became the stage for one of the most important developments in skateboarding: the frontside air. Tony had been riding up the transition and hitting the top with as much speed as he could. Apparently, he started grabbing his board and ended up popping out of the top, turning around, and riding back down the transition (Peralta 2001). The development of this aerial maneuver would later lead to aerial tricks that climbed higher and higher as the ramp and concrete terrain grew in size.

Alan Gelfand, Rodney Mullen, and the Ollie:
Alan Gelfand, whose nickname was "Ollie", is credited with performing the first no-hands aerial on concrete transitions in 1977. Stacy Peralta, who was assembling a team for his partnership with George Powell, heard of a young skater who was performing this maneuver, and traveled to witness Alan's trick first hand. Alan would ride up the transition, lift his front foot as he rode over the lip, and guide the board through a turn in mid-air with only his feet. Stacy, upon witnessing this historic development, was impressed and signed him onto the Powell and Peralta team. Oddly enough, another young skater that Stacy signed on to the team, perfected this move on flatland in a different manner. Rodney Mullen, a rising young freestyle (flatland) skating prodigy, learned how to smack his tail on the ground and leap with the board. Rodney was eventually able to propel himself up to three feet in the air with this technique. The flatland ollie opened up the whole series of technical tricks that would later become streetstyle. Skaters could now use this flatland ollie to pop up onto obstacles in a controlled leap. The ma-

neuvers perfected by Alan Gelfan and Rodney Mullen had changed the face of skateboarding in an incredible way.

Skating and Popular Visual Culture:
Various aspects of skateboarding's popular culture, such as music, style of dress, and attitudes, are related to four major periods of skateboarding's popularity with the American public. When skateboarding began to emerge as a sport parallel to surfing during the late 1950s and early 1960s, the music was the Beach Boys, and fashion reflected the clean cut surfing lifestyle of the time (Peralta 2001). Skating then experienced its first death circa the late 60s, and only the most avid enthusiasts still practiced it. During the early seventies, skateboarding became relatively popular again as competitions began to be held by skateboarding manufacturing companies. Athletic, gymnastic styles were popular, and pro skaters such as Torger Johnson entertained crowds with moves such as handstands on boards and multiple spinning 360s. The Z-Boys, or Zephyr surf and skateboarding team, from Venice, California, then gave skateboarding the tough bad boy/girl image. Comprised of mostly men and one woman, Peggy Oki. These skater, who rode for the Zephyr Team, skated in a fluid and savagely graceful manner that changed the gymnastic paradigm in place at the time. Wearing torn jeans and their standard issue navy blue Zephyr Team shirts, these skaters intimidated the competition and defined new ways to approach skateboarding. The Zephyr team even influenced others skaters in the Midwest and on the east coast through coverage in magazines. Craig Stecyk, one of the founders of the Zephyr shop, was a catalyst for the new art and fashion that would make skateboarding so incredibly popular in the 1980s (Peralta 2001).

Craig Stecyk's art, photographs, and articles were published in numerous skateboarding magazines in the 1970s. His now famous series of articles on the Dogtown movement showed skaters all over the US that skateboarding culture was changing. It was now apart from the mainstream, and wholely its own. Often documenting Venice locals such as Tony Alva, Jay Adams, and Skip Pronier in their urban environment, Craig was adamant about also showing the neighborhood's Hispanic roots in gang culture. The visual language of spray painted graffiti, cholo fashion, and urban dereliction was appropriated to communicate a way of life to skaters reading the magazines (Peralta 2001).

"You're reading this 3000 miles away in a town that has snow, so we're living through it vicariously, and we would live for that magazine….it was our radio station, because you're not seeing any of these people move….you're just seeing these photos in the magazines…."
-Henry Rollins, Musician and Writer (Peralta 2001).

Skate Park Design and the Affect on Skateboard Technology:
During this time, the construction of skate parks began to boom and dozens were built all over California. One of the most famous, the Upland Pipeline of Upland, California, featured the first ever built fullpipe. As skaters began to go faster on the concrete transitions, the skateboard itself began to evolve to allow riding at greater speeds more stable. The deck itself became wider, up to 10", while the length remained close to 28"-30". This resulted in stubby looking skateboards, which became nicknamed "pigs". The technology for skateboard trucks improved, and as they became wider to fit these new pig boards, their geometry was redesigned to improve turning abilities. Skateboarders were now better armed than ever to ride aggressively in backyard pools, ramps, and the newly built skate parks.

Powell and Peralta, and the Bones Brigade: During the early 80s, skating hit a brief period of bust which reduced the size of the skateboarding industry. Some smaller companies hung on, but only stalwarts such as Sims (the oldest), Powell and Peralta (the most popular), and Alva Skates (the toughest) really thrived. Tony Alva continued the bad boy imagery to propel his company forward, and Sims relied on tradition to see it through. Powell and Peralta, led by the world champion and former Zephyr skater Stacy Peralta really came to the fore during this era.

With the help of George Powell, Stacy assembled a skate team of some of the most influential talents of the eighties and early nineties. This company was responsible for nurturing such greats as Tony Hawk, Mike McGill, Lance Mountain, and Steve Caballero, but it was also hugely influential in terms of visual skateboard culture of the eighties. Stacy recruited Craig Stecyk, of Dogtown fame, as the art director to continue the visual tradition born out of Venice. Street graffiti from local gangs, tattoos, and hotrods found an iconic expression in the graphic art of this company (Peralta 2001). Also working for Powell Peralta, the amazing illustrator VC Johnson worked with Stecyk to create the most influential imagery in skateboarding, ever. The graphic designs for Powell and Peralta's advertisements, t-shirts, stickers, videos, and other products became so popular that even non-skaters collected it. This collective visual imagery was encouraged and flaunted by Powell and Peralta's pro skateboard team. Nicknamed the "Bones Brigade", these individuals propelled the skill level of skateboarding to amazing new heights. On ramps, in pools, and on the street, their creative approach was documented in three ground breaking videos directed and produced by Stacy Peralta: The Bones Brigade Video Show (1981), Future Primitive (1985), and the Search for Animal Chin (1988). In these videos, Stacy skillfully presented the Brigade's talents in skateboarding, and the visual culture that he, and Stecyk, and Johnson had distilled.

FIGURE A.11: Bones Brigade videos, Powell and Peralta, 1981, 1985, and 1988 (Concrete Disciples).

Thrasher Magazine, Punk, and the Outlaw Spirit:
Punk rock and hardcore music had ignited in America's underground during the early eighties, and its influence was undeniable on many aspects of skateboarding's overall overall culture. Bands such as Black Flag, Suicidal Tendencies, the Circle Jerks, JFA, Agent Orange, McRad, and the Faction all had ties to skateboarding. These bands all had members who skated, and the raw energy of this music could be found blasting from boom boxes during many skate sessions. The skateboarding magazine, Thrasher, whose slogan was (and is) "Skate and Destroy", was heavily influenced by punk rock, and anything else considered deviant and dangerous.

FIGURE A.12: Thrasher Magazine, early 1980s (Thrasher).

Born on the rough streets of San Francisco, this underdog magazine created a stage for lesser known manufacturing companies such as Zorlac, Skull Skates (based in Vancouver), and Schmitt Stix. Thrasher magazine was created to pay homage to the outlaw spirit in skateboarding, the attitude of hunting down spots to skate and paying dues in flesh and blood. If there was a reckless, boundary-pushing, or avante garde phenomenon in skateboarding, it was documented in Thrasher. Later in the 1980s and early 90s, this magazine paved the way for the greatest revolution in skateboarding since pools were drained: the bust of vert skating, and the rise of street skating as a new art form.

Hip Hop, Rap, and Street Skating:
Thrasher Magazine was providing a window into the various movements of skateboarding culture from day one. As the tricks became ever more technical and unbelievable, art, music and fashion also changed with the rest of the world. Everything about a skater's worldview shifted. During the late 80s and early 90s, hip hop music really attached itself to popular culture and finally had found widespread acceptance in homes of all ethnic backgrounds. Skaters who considered themselves "street" skaters really took hip hop's tough, anti-authoritarian, uncompromising attitude and ran with it. Skaters who previously sported cut up t-shirts and leather jackets adopted baggy jeans, t-shirts, and backwards baseball caps. Skateboards became longer and developed a large nose for more technical tricks. Wheels became ridiculously small in order to shave weight off the board for flipping, but also just because it lended a trendy look. Sometimes the wheels were so small they became almost a covering barely larger than the bearing. Skaters were performing highly complex tricks, but often at low speeds due to these wheels.

The Culture of Skateboarding:
As the nineties came to a close, the wheels began to grow larger again, and the baggy pants were replaced by tight jeans. The boards were refined to the point that they looked like popsicle sticks with upturned ends, and became skinnier to allow for easier flipping. Punk music, which had never really gone away, melded itself with Emo and indie rock, and settled in next to hip hop culture. An amalgamation in between very distinct cultures from different eras began to form. If there is any group of people who are open minded enough to adapt to anything, it is skateboarders. There are always exceptions, but on a whole, skaters seem to have developed their own school….which is no school. Today, skaters listen to all kinds of music. They skate all kinds of terrain, from the streets, to ramps, to parks, and spots they find in the middle of the desert. Some skaters have even brought back boards with a shape to them, and prefer riding something that looks different. Some might prefer a leather jacket to a baseball cap, others might try to look clean cut and athletic. The one factor that all skaters respect, however, is ability. If one can perform complex tricks, at high speeds, on any terrain, they will be accepted and respected. The prevailing attitude in skateboarding culture is

not about punk vs. hip hop, technical tricks vs. big airs in bowls, it is about skill applied with confidence and force. It's not about rules, it's not about the school. Hip hop, rock and roll, punk, and other forms of music embrace this attitude, and that's why skaters are all of these things. This is why skaters are so adaptable, and also impossible to contain.

Rodney Mullen:
While he developed the flat ground ollie, Rodney mastered technical footwork tricks during the 80s in a manner not seen before or since. Though he had been around since the 70s, Rodney won 34 out of 35 professional contests he entered in a span of ten years. Largely known as the father of most technical street-related footwork today, Rodney's list of invented tricks is larger than anyone's in skateboarding history. As the popularity of freestyle waned along with vert skating, Rodney adopted street skating and enjoyed a rebirth in his career.

FIGURE A.13: Rodney Mullen, mid 1980s. (Lynn Cooper).

APPENDIX F – Anatomy of a Skateboard

It is important for one to understand what a skateboard is made of, and how it functions, if one is to design skate parks. By the mid 70s, the a very rustic version of the skateboard as we have come to know it had been developed. Even when it was unrefined, the skateboard was more complex than most would believe. Here is a quick anatomy of the skateboard as it is today:

1. THE WHEELS:
Made of the petroleum product urethane, and shaped differently for multiple purposes. Some shapes are for speed, some for lightness, others for the ability to ride rough pavement. The durometer is the hardness (or resiliency) of the wheel, and ranges from about 65a (softest)-101a (hardest). The height of a wheel is measured in millimeters, and ranges from about 50mm (for technical tricks) to 70mm (for high speed downhill and cruising).

FIGURE A.14: Urethane wheels.

2. STEEL BEARINGS:
Housed in a round steel hub, which are inserted into the axle hole of a wheel on either side (2 hubs per wheel, which contain the bearings inside).

FIGURE A.15: Steel bearings.

3. TRUCKS:
Trucks are essentially axles. Trucks are attached to the board with nuts and bolts called mounting hardware. The trucks contain an axel to which wheels are attached with a nut. The part of the truck that attaches to the board is called a base plate. Between the axle and the base plate is a pivotal arrangement comprised of a kingpin (long bolt that places pressure against the base plate), and the bushings, which are plastic washers that allow the whole assembly to flex laterally, allowing the skater to lean into a turn. All of this is held together by a nut that is tightened to make the flexing action stiff or loosened to make it….you guessed it, LOOSE!

FIGURE A.16: Aluminum skateboard truck.

5. RISERS: Risers are rubber or plastic pads that are placed in between the base plate of the trucks and the deck before bolting the whole arrangement together. Risers serve two purposes, the first being to create distance between the wheels and the deck to keep them from rubbing. The second purpose is to absorb a little shock from hard landings. Most skaters these days, unless they ride taller wheels, do not use risers to shave some weight off of their boards for technical, board-flipping tricks.

FIGURE A.17: ¼" rubber risers.

6. THE DECK: The deck is the actual skateboard plank. Most often formed out of birch or maple plywood, the plywood is steamed in a mold to create the upturned kicktail, nose, and concave (see operational definitions). Today, most decks look like a popsicle stick with upturned ends, and average 32" long by 8" wide. Some older skaters prefer to have a board with a shape, which gives it character that is aesthetically pleasing. The nose and tail are usually about 6" long each, and the wheelbase (or space between trucks) is about 14". Newer decks, which are symmetrical, or almost symmetrical in shape, allow a skateboarder to ride forwards or backwards and perform tricks from any angle.

FIGURE A.18: A deck in early 90s "square-tail" style by Old Man Army, with discernable nose and squared off tail.

6. MOUNTING HARDWARE: Mounting hardware is literally the nuts and bolts of the board. Similar, but not exactly the same to regular hardware store hardware, these nuts and bolts often have acrylic polymers embedded in them that keep them from un-tightening easily (sometimes known as a "locknut"). There are 4 nuts and bolts per truck, and two washers and one nut per wheel.

FIGURE A.19: Mounting hardware.

7. GRIP TAPE: Grip tape is basically what the name implies. Like sand paper with a sticky backing, grip tape is cut as sheets from long rolls (about 20' long and 9" wide). To apply, the person assembling the board rolls out a 32" length and cuts it with scissors. The backing is then removed and the grip tape applied to the top (sunny side up) of the deck. Because it is rectangular, and the board has a shape, the person then cuts the edges off with a sharp utility knife following the edge of the deck.

FIGURE A.20: Grip tape.

FIGURE A.21: Assembled Board.

The author's current board: A Steve Alba pro model by Factory Skates. It features 62mm (height) OJ III wheels, Reds bearings, and Independent 149mm (the length of the axle) trucks. Skaters new to the sport often by a "complete" board, which comes already assembled with components chosen by the skate

shop selling it. More experienced skaters choose their own wheels, trucks, bearings etc. due to the needs of the terrain they skate and personal preference.

APPENDIX G – Building a Skate Park From Start to Finish

This section touches briefly upon the process behind initiating, planning, designing and constructing a skate park. Based on the description of such an initiative in the "Public Skate park Development Guide" by Peter Whitley, it is mean to give a general overview. It by no means includes the whole process, and just serves to familiarize the landscape architect with the way skate parks come into being.

The very first thing that happens is that someone says, whether it be a skater or a non-skating citizen, "We need a skate park!" A few scratched handrails usually gives rise to this idea. Next thing you know, this skater/s or citizen goes to the city hall to speak with someone about local government approval. They would then be told to perhaps get a list of petitioned names of skaters and/or their parents. If enough interest is found, the City may say, "Okay great, but we don't have the money for that." If this is the case, the skaters and other citizens may have to raise funds through a variety of ways. Raising money can be done through t-shirt sales, carwashes, donations from youth oriented non-profits, concerts, and other means. There are even groups such as the Tony Hawk Foundation, run by the legendary professional skateboarder Tony Hawk, which will help match funds raised by interested citizens. Once an organized group is actively meeting, holding events, and raising money, they can form a recognized group and receive more support from the local city government. The City may then ask the group to put a proposal together which includes a bid from a skate park design/builder. The group will then contact the design/builder, and give them a rough idea of what the skaters want out of their skate park. The skate park design/builder can put together an original design and cost estimate, and the citizens can raise the rest of the money needed. Skate park design/builders usually use 3D architectural software such as Rhino, along with CAD to design the park in question. Once the money is raised and the design/build company has their first payment, a semi-final design will be produced. This may be the actual design that the citizens want to see built, but this design still needs to be approved by the city. The City Landscape Architect or Engineer has to review the plans to check for code compliance and proper construction details, then stamp the plans for official approval. Once the plans receive the go-ahead, the skate park designer/builders will probably require another payment, then construction can begin.

When beginning construction, the skate park design/builders (sometimes the groups are separate) first have to clear the site. With backhoes, bobcats, and other machinery, they tear out stumps, roots, and rocks, and perform the initial grading. They will mark off the site with stakes to layout construction limits, and erect erosion control fences. Areas for bowls will be dug with backhoes, then with pickaxes and other hand tools to exacting specifications (just as in pool construction). After the soil is shaped to the correct tolerance (usually about six inches less than the finished surface), and rebar placed for the forms, the flat areas of the bowls and street course are poured. It can take up to two weeks for this to harden under proper curing conditions (Donegan and Short 2003, 122). These flat areas can then be used to work from, and the builders can extend scaffolding from them to get ready for applying the concrete. The builders shoot concrete from a hose ("shotcrete", sometime "gunite") onto the rebar framed walls. The art of the process really begins here, as the

builders shape the concrete with hand trowels, as they stand on the improvised scaffolding. Making sure the surface is free of kinks, bumps, or blemishes, the process is painstaking and requires masterful concrete technique. With present day technology, this is the best manner in which to create a high quality surface, and the result is worth it. The smoother the surface is, the faster it will be, and less likely to cause abrasive injury. After the surface is finished, then the deck, or top platform of the bowl, can be poured. Other finishing touches are added, such as pool coping and tile, and a two week curing period begins from the date the last concrete is poured (Donegan and Short 2003, 122). After that two weeks is up, the skate park design/builders will skate it themselves, or have other people over to try the new park out. If thoroughly satisfied, the design/builders will hand it over to the city and its citizens for a grand opening.

FIGURE A.22: Legendary professional skateboarder Steve Alba lofts a frontside slob air at the grand opening of the Kansas City Skate Plaza in 2006 (Genesis Skateboarding).

APPENDIX H – For More Information

Skaters for Public Skate Parks:
www.skateparks.org

Grindline Skate Parks: www.grindline.com

Dreamland Skate Parks:
www.dreamlandskateparks.com

Skate Parkitecture:
www.skateparkdesign.com

Airspeed Skate Parks:
www.airspeedskateparks.com

California Skate Parks:
www.skatedesign.com

SITE Design Group:
www.sitedesigngroup.com

Wormhoudt Skate Parks:
www.skateparks.com

Genesis Skateboards:
www.genesisskateboarding.com

The Tony Hawk Foundation:
www.tonyhawkfoundation.org

Concrete Disciples:
www.concretedisciples.com

Thrasher Magazine:
www.thrashermagazine.com

Old Man Army:
www.oldmanarmy.com