

Nearby Nature

Naturalistic Playspaces For Children in City Parks

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**Nearby Nature: Naturalistic Playspaces for Children
In City Parks
Bringing Nature Back into Communities**

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Abstract

Studies have shown that nature enhance children's senses: smell, sight, sound, taste, and touch. Nature has also been found to help children with Attention Deficient Disorders and help with the different development stages of children. However, in today's society there seems to be very little time spent playing in "nearby" natural areas. This is a direct result of urban and suburban sprawl that has consumed these "nearby" natural areas. The City of Sacramento has addressed this issue by developing over 2,000 acres of parks at 210 separate sites within its boundaries. However most of these parks do not address the natural playspaces of these parks where most children are typically found. The playstructures are important to the physical development of children but they hardly help with the rest of the development stages. I identified four parks in the Sacramento region that have successfully incorporated numerous natural elements into the designated playspaces. I identified which elements were successful and which were not. Interviews with adults and children were conducted to identify where they played as children and where the children play today. Finally, observations were used to identify where the children played while at these natural playspaces.

Based on the background research I conducted, the park visits, and data collection, I found that the natural areas of these playspaces were underused. Natural barriers and perception of the planted areas being park aesthetics dissuaded the children from playing in them. I propose that educational, interperative, and interactive signs be used to educate and inform parents and children that it is ok to play in these natural areas, natural elements can enhance the childrens five senses, and help children develop into healthy teenagers and adults. In addition, the playspaces should be broken up using vegetation, molding materials such as sand and dirt, water features and topography as the boundaries to the different play areas so that they are given an opportunity to interact with nature.

Biographical Sketch



As I read articles about the direct effects nature has on children, I can't help but think back to my own childhood, growing up in Montana. I was born under the famous "Big Sky" of Montana. At an early age, I was introduced to the natural world where I lived along the banks of the Snake River in Idaho, among the blue mountains of Wyoming and finally rested in the lush valley floor of Lewistown, Montana. Lewistown is

where I really began to seek adventures in the wild on my own and grew into the person I have become today. I consider myself one of the lucky ones; my backyard opened up to a large open meadow and was surrounded by hills, cattails, wetlands, cottonwood trees, willows and a blue ribbon trout stream. I was given the freedom to explore these areas throughout my childhood. I went camping under the cottonwoods that made up my fort, watched wildlife from my hunting stand, fished in the blue-ribbon trout stream, and played for countless hours in the wild lands that made up my backyard. My parents introduced me to nature at an early age by going camping on our family vacations, fishing and hunting. I created forts among the cottonwoods, explored the meadows with my childhood friends, and camped with the coyotes on the hillsides. These childhood experiences have helped shaped who I am today and the passionate drive I have in becoming a Landscape Architect.



Dedication

To Madelyn Jon, my beautiful baby girl and your generation. Although you have just entered this world as I am finishing this project, you have inspired me to help bring nature to park playspaces in hopes of instilling a connection to nature and all that she can give to people! The natural world is a beautiful place and even greater place to grow up in. I hope by the time you can understand this report that city parks will have begun to blend nature with play areas as it is vital for a child to have this connection to nature. I love you Madelyn.

To my wife Megan, you have been there for me and supported me in all of my college decisions, even through the late nights at the studio and my ASLA involvement. You have definitely brought out the best in me and have always pushed me to do my best. You are my best friend. We thrive in nature together whether it is up on the ski hill, running along the beach, diving with seals or playing in the garden. I love you with all of my heart!



To my parents, Mom and Dad, you are the ones who introduced me to the natural world and gave me the freedom to explore the world through my backyard. I was able to build forts in the cottonwoods, camp up on the hillside, and play in the swamp; all below our house. You introduced me to camping, fishing, and hunting which has instilled the environmental stewardship that I cherish to this day! You nurtured me into the man I am now and I am grateful for that.

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I would like to thank Professor Mark Francis for pushing me to think outside the box of park playspace design.

I would like to thank Dennis Day and the Park Planning and Development Services department for the City of Sacramento. Dennis informed me of current standards for park playspace design and guided me through the practicality of developing parks within the City.

Table of Contents

NEARBY NATURE: NATURALISTIC PLAYSPACES FOR CHILDREN	II
IN CITY PARKS	II
ABSTRACT	II
BIOGRAPHICAL SKETCH	II
DEDICATION	III
ACKNOWLEDGMENTS	IV
SECTION 1: INTRODUCTION	1
SECTION 2: HISTORY OF TRADITIONAL PLAY AREAS IN PARKS	5
SECTION 3: WHY WE NEED “NEARBY NATURE” IN OUR PARKS	9
NATURE AND MENTAL-PHYSICAL HEALTH BENEFITS:	10
NATURE AND EDUCATIONAL BENEFITS: SCHOLASTIC & ENVIRONMENTAL STEWARDSHIP	13
NATURE AND CHILD DEVELOPMENT:	15
SECTION 4: METHODOLOGY & DATA COLLECTION	20
SECTION 5: ANALYSIS OF DATA COLLECTION, SITE OBSERVATIONS AND INTERVIEWS	30
SECTION 6: CONCLUSION	40
SECTION 7: WILD ROSE PARK: A CHILD’S NATURAL PLAYSPACE	45
NATURAL PLAYSPACE DESIGN GUIDELINES:	46
<i>Size:</i>	46
<i>Informational Signage:</i>	46
<i>Play Area Design Criteria:</i>	47
SECTION 8: REFERECES	59

Tables

TABLE 1. EXAMPLE ACTIVITY MATRIX	23
TABLE 2: SEVEN INTELLIGENCES MATRIX	25

Figures

<i>Photo 1. Example of a park playspace in William Land Park without natural elements.</i>	2
<i>Photo 2. Example of a typical park playspace with turf grass at Belle Coolledge Park.</i>	3
<i>Photo 3. A typical park playspace at Argonaut Park with only turf grass, engineered bark mulch, and a play structure.</i>	4
<i>Photo 4. Historic playspace area in New York City</i>	5
<i>Photo 5. 1908 playspace in a Boston Park</i>	6
<i>Photo 6. Young boy searching for bugs</i>	9
<i>Photo 7. Young boy counting fish and frogs in the pond</i>	10
<i>Photo 8. Children learning about the importance of keeping trash out of nature during a creek cleanup campaign</i>	13

<i>Photo 9. Children helping to replant native plants at a local park</i>	<i>14</i>
<i>Figure 1 Children helping replant a creek bank slope. In doing so they learned the importance of native plants in an ecosystem.....</i>	<i>14</i>
<i>Photo 10. Two young boys playing together in a creek.....</i>	<i>15</i>
<i>Photo 11. Children are learning about risk by climbing a rope ladder across a moat. .</i>	<i>17</i>
<i>Photo 12. This girl is using smell and sight; two of the five senses as she looks at and sniffs the day lilies.</i>	<i>18</i>
<i>Photo 13. Another young child using sight and smell; two of her five senses.</i>	<i>19</i>
<i>Photo 14. This is a good example of separation; planter at South Side Park that separates the picnic area from the playspace.</i>	<i>31</i>
<i>Photo 15. Possible child refuge (fort) at South Side Park. You can barely see the blue playground in the background.....</i>	<i>32</i>
<i>Photo 16. At Arroyo and Mace Park, a bio-swale dry creek bed separates the playspace from the natural area. A possible solution would be to put the play elements on both sides of the bio-swale thus, utilizing the bio-swale as a path to the elements.....</i>	<i>33</i>
<i>Photo 17. Pedestrian bridge connecting the natural area to the playspace.....</i>	<i>34</i>
<i>Photo 18. A council ring is a great way to incorporate topography into a playspace... </i>	<i>36</i>
<i>Photo 19. This is a very large dirt mound at Livermore Park in Folsom. The children loved this dirt hill.....</i>	<i>37</i>
<i>Photo 20. Large dirt hill where I observed six children playing.</i>	<i>37</i>
<i>Photo 21. Dirt hill used for playing and digging.....</i>	<i>41</i>
<i>Photo 22. Vegetative tunnel. Designers could use willow bushes to make "live" willow forts for children.</i>	<i>42</i>
<i>Photo 23. Interactive water feature.....</i>	<i>43</i>
<i>Figure 1. Wild Rose Park Master Plan.....</i>	<i>51</i>
<i>Figure 2. Wild Rose Park: Children's Natural Area</i>	<i>52</i>
<i>Figure 3. Concept Images for Children's Natural Area</i>	<i>53</i>
<i>Figure 4. Entrance to Children's Natural Area.....</i>	<i>54</i>
<i>Figure 5. View of bio-swale, public art, dirt mound, and climbing rocks.....</i>	<i>55</i>
<i>Figure 6. View of planting area and bio-swale from play structure.....</i>	<i>56</i>
<i>Figure 7. View of interactive water feature, bio-swale, public art sculptures, and council ring</i>	<i>57</i>
<i>Figure 8. Hand-rendering of children in sand play area.....</i>	<i>58</i>

Appendices

Appendix A – Site Analysis Matrices

SECTION 1: INTRODUCTION

“PLAYSPACES FOR CHILDREN OF ALL AGES NEED TO BE MORE THAN PLAYGROUNDS. THEY SHOULD BE “HABITATS” –PLACES WHERE CHILDREN CAN LIVE.” – MARY S. RIVKIN

Studies have shown that there is a strong relationship between the frequency of visits into nature as children and the amount of time a person spends in open space as adults. Children who do not visit open space have a low probability of visiting them as an adult (Not in BIB Thompson, et al 2008). In today’s society there seems to be very little time spent in nearby natural areas by children. This is the primary result of adult fear factors such as traffic, kidnapping, injury, ultraviolet rays and pollution. Consequently, many of today’s generation of children spend the majority of time playing indoors and watching T.V. Children under five seldom experience unsupervised outdoor play and even the five to ten year olds tend to be supervised when allowed outdoors (Rivkin, 2000).

Another reason children do not spend much time in nature is the increased participation in organized sports. From an early age, many children are put into rigorous schedules with organized sports, large amounts of homework, music, and other assorted lessons. It is hypothesized that the idea of involving children in organized activities at such an early age is that parents want their children to be smart at everything and promote development. However, introducing children to nature at an early age is one of the best things parents can do to help their children develop into healthy teenagers and young adults (Louv 2005). However, not everyone has the opportunity to take their children and go to the mountains,

coasts, or other natural areas, therefore designers need to bring them “nearby nature”. I believe that community and neighborhood parks are the best areas to help bring nature back into people’s hearts.

The City of Sacramento currently has over 2,000 acres of developed parks at 210 separate sites within its boundaries (City of Sacramento, 2007). In

addition, there are a number of new parks being designed and developed that will accommodate the large amount

of growth that is occurring throughout the city. These community and neighborhood parks enhance the quality of life for surrounding residents by

adding open green space for

people to enjoy. However, even with this growth and the addition of the new parks, there is still a lack of natural elements in most of the parks and play areas (Photo 1). While the parks do have trees, shrubs, turf, and some native grasses in planting areas, the grass is used for soccer or baseball, most trees are trimmed to keep people from climbing, and the shrubs and planting areas are perceived as the aesthetics of the park. The “playgrounds” typically have a catalog-picked play structure, fall material, and a concrete mow curb with little to no integration of natural elements and limited thought as to how children will actually interact in with the play structures. These structures tend to be bright in color with stairs, climbers, and platforms with slides and themes that typically guide the type of play that occurs. These parks are disconnected from the natural environment and



Photo 1. Example of a park playspace in William Land Park without natural

lack any designed integration with natural elements such as running water, boulders, rocks, sticks, logs, trees, plants, flowers, insects and animals.

Based on my background research, as well as observations while working with the City of Sacramento Department of Parks and Recreation, I believe that the current structure of the city's park play spaces do not provide adequate opportunities for children to interact with nature. I believe this situation has occurred due to several factors. The city's park maintenance staff has made it their priority to make the parks very low-maintenance and therefore resist maintaining park landscapes and features, which they cannot easily maintain, such as mowed turf (Photos 2 and 3). In addition, the park design team is understaffed and does not have the time or extra resources to create design solutions other than the typical playground structures. Finally, I believe that safety is an overarching concern and a contributing factor to the design of park play spaces and avoidance of new untested ideas.

These combined factors seem to limit the opportunities of designing a park playground that maybe more appealing to children and integrate natural elements into the



Photo 2. Example of a typical park playspace with turf grass at Belle Coolledge Park.

new park and playspace designs. Nature/educational quotes at the end of each section

The purpose of this project was to examine why it is important for children to have interactions with nature and how we can create nearby nature in our city parks for children who do not have the opportunity to leave the city and travel to the mountains, rivers or beaches. This project will provide a template for that the City of Sacramento’s Department of Parks and Recreation can use to design more innovative, creative, and natural park playspaces. I will be using Wild Rose Park, a newly proposed park currently being design by the City’s Park Landscape Architecture team, in North Natomas, as the bases for an all-exclusive



Photo 3. A typical park playspace at Argonaut Park with only turf grass, engineered bark mulch, and a play

imagination. I use the term “playspaces” to discuss the designs I propose throughout this paper. The results of this project will provide design ideas for future and existing parks that may be undergoing the master plan process or renovation to create more naturalistic play spaces for children within the city.

natural
playspace.
Since the term
“playground”
almost instantly
creates images
of playground
structures in
ones

SECTION 2: HISTORY OF TRADITIONAL PLAY AREAS IN PARKS

“IN GENERAL, ADULTS ARE FAR TOO FIXED ON PLAYGROUND EQUIPMENT AS BEING THE PLAYGROUND.” –BARBARA E. HENDRICKS

“CHILDREN LIVE IN THE HERE AND NOW.” –BARBARA E. HENDRICKS

The first supervised public playground to appear in the U.S. was the Sand Gardens in Boston in 1886. Shortly afterwards, in 1889, the Charlesbank Gymnasium opened in Boston and became the first public, free, equipped outdoor playground. New York City’s first playground opened the following year in 1890 by University Settlement (Photo 4).



Photo 4. Historic playspace area in New York City

These playgrounds resulted from demands to prevent crime, build character, and provide exercise space. The idea behind crime prevention was that more people would be outside with their children thus making a greater presence to deter crime from being committed (Anderson, 2006).

Playgrounds became more widespread during the Progressive Reform Movement of the early 1900’s when the widespread belief developed that play was child’s work. By 1905, 35 American cities had supervised playgrounds and the City of Chicago spent \$5 million on ten new playgrounds (Anderson, 2006).

In addition to this movement, it was thought that physical activity, especially muscle control, had a moral dimension that would ultimately create a better person (Solomon 2005). Consequently, the incorporation of playgrounds into park settings began to rise. These playgrounds were identified with individual neighborhoods and were defined by a sand pit and the gymnasium, an early climbing apparatus. The idea of the sandbox came from Germany and the



Photo 5. 1908 playspace in a Boston Park

climbing equipment came from the Young Men's Christian Association (YMCA) movement of the mid-nineteenth century (Solomon 2005). Before World War I, the typical American playground consisted of swings, sandboxes, and seesaws (Photo 5). These were typically placed on hard surfaces, such as asphalt, and surround by fencing (Solomon 2005). However, placing the playgrounds on these hard surfaces ultimately led to the concern regarding the safety of playgrounds. New York City started removing gymnasiums from their parks because they were considered too dangerous (Solomon 2005). As safety guidelines started playing a major role in playground design, new ideas that playgrounds should be separated into age appropriate areas began to rise.

Landscape architects, Garrett Eckbo, Daniel Kiley and James Rose began to pay attention to young children and teenagers by providing formal playground settings (Solomon 2005). They urged the creation of play areas for preschoolers and separate areas for six to fifteen-year-olds. Their views reflected the Modernism Movement that had taken place in the early 1920's in France and Germany. This led to the creation of adventure playgrounds or "junk playgrounds" that originated during the German occupation of Denmark (Solomon 2005). These adventure play areas were based on the idea that in an enclosed area (approximately one acre), if children were given useless fragments of wood, metal, or masonry blocks, they would build what ever they wanted. Children saw these places as forbidden play areas because they could play with and build things with grown-up items. This was a hard sell in America because the U.S. had already begun limiting playground design due to safety concerns (Solomon 2005). Nonetheless, these adventure playgrounds began appearing in the US. They were not quite like their European counterparts of loose wood materials and other found objects but rather consisted of steel monkey bars with larger wood pieces as fences and platforms with metal slides.

Today, most of the adventure and tot lot play structures are made of powder-coated or plastic-coated steel or are made of molded plastics. These play structures are great for children's physical growth allowing them opportunity to run, hang, climb, and jump on the structures. They come in a variety of colors and are able to mimic natural elements such as rocks and logs. In addition, many of these play structures are made of fire resistant materials compared to the original wooden fort play structures, logs, tires, and other man-made elements.

However, these play structures can be expensive with ranging in cost from \$25,000 - \$100,000 structure including installation and materials, while the cost would be minimal for a large area to be formed and graded with added natural elements. For example, the image above shows the difference between what \$70,000 dollars can for playground structures and what the same amount of money can do for a natural play area. Natural Play Design, a playspace design firm on the east coast, was able to create a natural play area in a 21,000 square foot area with over 70 different play features. The \$70,000 that went towards the play structures only filled 4,200 square feet with 21 items.

SECTION 3: WHY WE NEED “NEARBY NATURE” IN OUR PARKS

“Those who contemplate the beauty of the earth find reserves of strength that will endure as long as life lasts.” –Rachel Carson

Many of today’s parents think that typical landscape elements in parks such as shrubs and trees, are park aesthetics and consider them “off limits” to the children.

However, direct exposure to nature such



Photo 6. Young boy searching for bugs.

as playing in streams, shrubs, perennial gardens, or trees can provide a child with countless hours of imaginative play, mental and physical growth, and educational experiences that are needed for a child to develop into a healthy adult (Photo 6) (Louv, 2005).

As described previously, current playgrounds in parks typically have playground structures, fall material such as engineered bark mulch, sand, or rubber mats, and concrete mow curbs. These elements are great for creating physical growth in children; however, that is about the only development process that they affect. In contrast, there are numerous benefits to integrating nature within the play areas of parks. First, nature has been shown to have a strong

positive affect on children with Attention Deficient Disorder and other related mental illnesses (Louv, 2005). Additionally, nature can also help children succeed in school and instill a sense of environmental stewardship at an early age. Third, natural elements help children develop their five senses: sight, smell, touch, listening, and taste. Furthermore, nature can help with the overall development of children; helping them to grow into healthy teenagers by giving them the freedom to build, create their own games, explore, and find out who they are in this world. Finally, nearby natural elements in parks can help children reconnect with nature without having to travel to mountains, lakes, or the ocean.

NATURE AND MENTAL-PHYSICAL HEALTH BENEFITS:

*“Digging in the soil has a curative effect on the mentally ill.”
–Dr. Benjamin Rush (a signer of the American Declaration of Independence)*

Frederick Law Olmsted argued that creating Central Park in New York City would give people nature to get away from the “evils of the City” (Photo 7).



Photo 7. Young boy counting fish and frogs in the pond.

He foresaw that people’s health relied on being within close proximity to nature; they needed to interact with nature to maintain their sanity from the urban chaos that is associated with city life.

However, most of today's city parks and play areas do not contain the "wild areas" that Central Park has. Even though Central Park is much larger than the average city park, with creative design, landscape architects can incorporate natural elements into parks, with play spaces of any size. These natural play areas are particularly important for young children with mental disorders such as Attention-Hyperactivity Deficit Disorder (ADHD), Attention Deficit Disorder (ADD), and Autism. They also have positive effects on children's self discipline, scholastic studies, and environmental stewardship.

There have been numerous studies that relate nature and its positive effects on children with different neurological disorders (Gill 2005). Richard Louv (2005) states that nearly eight million children in the U.S alone suffer from mental disorders and ADD and ADHD are the more prevalent disorders. Children with these disorders tend to suffer from restlessness, have trouble paying attention, listening and can even be aggressive. This disorder affects the children well into their teenage and adult lives. However, studies suggest that nature is useful as a therapy for ADD and ADHD in conjunction with medication or when appropriate without medication (Louv 2005). Louv further states that some physicians recommend parents take their children outside to have more interactions with nature. These studies show that children are naturally drawn to nature and therefore better retain their attention functions (Louv 2005). Nature is very engaging which makes it easy for the children to focus and concentrate because they do not have to force themselves to concentrate as they are intrigued by nature. Studies at the University of Illinois on children with ADHD have shown that not only do outdoor spaces such as parks foster creative play, improve

interactions with adults, they also relieve the symptoms of this disorder (Gill 2005).

The University of Illinois conducted another study that explores the Attention Restoration Theory. This theory proposes that natural environments can assist people with attention functions (Fayer, et al 2001). This study consisted of creating a questionnaire for adults rating the severities of ADD and ADHD in children from before they took their kids to green spaces for a week, and then how they were after they visited green spaces. They also asked the parents to rate the following categories; Green (e.g., fishing, soccer), Ambiguous (rollerblading, playing outside), and Not Green, (video games, TV) as best or worst for their children's symptoms of ADD and ADHD (Fayer, et al 2001). These results show that there is a correlation to children with these disorders and their interaction with nature. It concludes that the greener (outdoor space such as parks) the space was, the more affect it had on the children with ADD or ADHD finding that the children were better able to concentrate on school work or task that was assigned to them by their parent or teacher (Fayer et al 2001). These natural spaces have an effect on children without ADD or ADHD as well.

NATURE AND EDUCATIONAL BENEFITS: SCHOLASTIC & ENVIRONMENTAL STEWARDSHIP

"IF WE WANT CHILDREN TO FLOURISH, TO BECOME TRULY EMPOWERED, THEN LET US ALLOW THEM TO LOVE THE EARTH BEFORE WE ASK THEM TO SAVE IT. PERHAPS THIS IS WHAT THOREAU HAD IN MIND WHEN HE SAID, "THE MORE SLOWLY TREES GROW AT FIRST, THE SOUNDER THEY ARE AT THE CORE, AND I THINK THE SAME IS TRUE OF HUMAN BEINGS." -DAVID SOBEL, BEYOND ECOPHOBIO

According to Devereux,

children are naturally inquisitive and it is hard for them to concentrate when they are in classrooms all day long.

People often blame the school systems when their children are not doing well in school (Devereaux

1991). However, the research shows

that one reason why children may lack concentration skills may be related to children and their disconnection from nature. There are many attractions for children to stay indoors when they are not in school such as television, video games and computers (Rivkin, 2000). These activities do not help children's ability to hold their attention. For example, when kids are playing video game, they are focusing very hard on accomplishing a task in the game. However, this type of concentration is considered a forced concentration (Devereaux 1991). In contrast to these indoor activities, nature has a profound effect on children and their ability to increase their attention span and to focus on school subject



Photo 8. Children learning about the importance of keeping trash out of nature during a creek cleanup campaign.

materials that are science and math based. Nature is ever-changing meaning that it is constantly growing and forming new shapes, smells, colors, sounds, flowing, raining, and dying (Photo 8). These changing actions within nature draw on children's inherent interests and easily hold their attention. Schools are starting to incorporate natural elements into their school grounds because they have recognized the benefits that nature have on children.

Environmental education needs to start at an early age, as they will be the stewards of nature after our generation (Photo 9). Studies have shown that at



Photo 9. Children helping to replant native plants at a local park.

childhood, there is a strong urge to explore the natural world and try to understand it (Lolly Tai, et al 2006). Countless studies support the theory that children thrive in areas with diverse natural elements as their tools, and their cognitive and social development is enriched by such imaginative and unrestricted play (Devereaux 1991). As stated earlier, studies have shown a direct correlation

between adults who spend time in nature now, their childhood experiences and adults who spend little to no time in nature. The results of the study show that the adults who had positive interaction and numerous outings in nature as children show a greater appreciation and respect for the natural world (Thompson, et al 2008). They tend to be proactive in environmental volunteer work, environmental education and advocates to list a few. Children who grow up playing in the

natural spaces in a variety of settings are learning about it become adults who will seek to preserve and improve the outdoors for themselves and others. These children and adults will be concerned with pollution, animals and plants in growing decline, and other environmental issues (Miller, 1972). Through extended opportunities in nearby and well-designed natural playspaces, children will come to establish a relationship with nature. They will realize their role in the natural spectrum of the environment.

NATURE AND CHILD DEVELOPMENT:

"ONLY AS A CHILD'S AWARENESS AND REVERENCE FOR THE WHOLENESS OF LIFE ARE DEVELOPED CAN HIS HUMANITY TO HIS OWN KIND REACH ITS FULL DEVELOPMENT." - RACHEL CARSON, *EDGE OF THE SEA*

Studies have found that play is essential for all children to develop healthy, socially, mentally and physically (Moore, 2007). Every place a child visits, including park

playspaces, is an opportunity for growth, a chance to learn about the world and discover them self (Photo 10). Children rely on their community and neighborhood parks to interact with nature. Furthermore,

additional studies comparing children in urban environments with little to no



Photo 10. Two young boys playing together in a creek.

access to parks and children in urban and rural environments who are exposed to parks and nature frequently have concluded that children who live near natural environments tend to have more self-discipline and longer attention spans (Fayer, et al 2001). Consequently, it has been concluded that parks and other environments that provide exposure to nature are ideal places for children to grow through the processes of exploration and discovery.

The human race has been hunter and gatherers far longer than we have been “civilized.” This inherited or as some suggest, genetic behavior is thought to be what drives toddlers to dig for worms in wet soil or children to build forts with pine bows or palm fronds. These natural elements can easily be manipulated such as building a dam with dirt, forming sand with water into balls or building a tepee with sticks (Nebelong, 2004). At one of the park playspaces I visited, I observed two little girls playing in the sand. They working together using their imaginations, natural instinct and natural tools such as grasses and twigs to build a make-believe fire for their dolls. This behavior is helping the children develop their communication and social skills. These natural areas are ideal environments for children to explore and discover. Children learn socialization skills through play. Through play, children learn about, and grow to understand other people. Peggy Miller (1972) states that children need to “satisfy their activity urge”. Nature is like a neutral area for children. They tend to create more make believe games and work together more than when playing at the typical playground structures. Studies have found that children use play equipment to establish a physical dominance over other children. This can hinder a child’s social development (Taylor A. Fayer,et al 2001). Through activities in creative outdoor

playspaces, they can satisfy this urge in constructive, socially acceptable, and beneficial ways. If there are not opportunities provided, antisocial behavior will be practiced and learned as a means in which to satisfy this activity urge (Miller, 1972). When children discover something new and work together with other children conduct a task, it builds confidence and self-esteem (Gill, 2005). In addition, nature helps children learn risk management. As Lady Allen of Hurtwood once said,

“BETTER A BROKEN ARM THAN A BROKEN SPIRIT.”

Through search and discover play sessions, children also learn how to manage risks for themselves (Photo 11). The natural areas can be unpredictable to young children.

By allowing a child to experience small risks and challenges, they begin to make decisions related to

the risks. This is a major child



Photo 11. Children are learning about risk by climbing a rope ladder across a moat.

development step because they learn risk management and gain a better sense of logical reasoning to different consequences related to taking risks (Nebelong, 2004). In contrast, manufactured play elements do not help the growth and development with children other than with their physical growth. Helle Nebelong

commented on the theory, provided below and relates risk acknowledgement to growth and development and the lack of the opportunities in the traditional play equipment.

“I am convinced that standardized play equipment is dangerous. When the distance between all the rungs on the climbing net or the ladder is exactly the same, the child has no need to concentrate on where he puts his feet. This lesson cannot be carried over into all of the knobby and asymmetrical forms with which one is confronted throughout life.”
-Helle Nebelong (2004).

Through the incorporation of natural elements we can successfully integrate opportunities to include risk taking. As it is important to include these risk opportunities, the designer still needs to be aware of creating dangerous situations that could harm children (Louv 2005). As children began to take risks through play, they begin to build their self-esteem. Furthermore, children develop their five senses through the interaction with nature.

Nature comes in all different colors, smells, textures, sounds, and tastes. Children begin developing their five senses (sight, smell, taste, touch, and sound) as soon as they have entered into this world. Nature offers the children

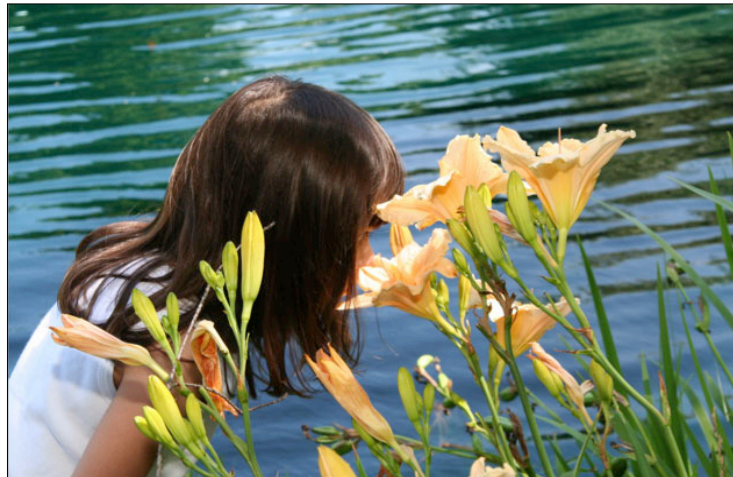


Photo 12. This girl is using smell and sight; two of the five senses as she looks at and sniffs the day lilies.

many opportunities to enhance these senses (Lolly Tai, et al 2006). Plants alone have an affect on children's, sight, smell, touch, and taste where as playground equipment mainly affects sight (Photos 12 and 13). They can be brightly colored, and have some texture, however, these colors do not change with the seasons such as plants or make noises such as birds. Water creates a soothing sound that naturally draws children as well as adults. Natural elements come in an infinite amount of textures, smells, and colors such as Lamb's Ear, a pungent female Ginkgo biloba tree, or an iridescent colored humming bird. Playground materials have a very limited amount of textures and colors compared to the natural environment. Exposing children to nature at an early age helps stimulate their senses, which is vital for them to grow and develop into healthy adults.



Photo 13. Another young child using sight and smell; two of her five senses.

SECTION 4: METHODOLOGY & DATA COLLECTION

"AS A CHILD, ONE HAS THAT MAGICAL CAPACITY TO MOVE AMONG THE MANY ERAS OF THE EARTH; TO SEE THE LAND AS AN ANIMAL DOES; TO EXPERIENCE THE SKY FROM THE PERSPECTIVE OF A FLOWER OR A BEE; TO FEEL THE EARTH QUIVER AND BREATHE BENEATH US; TO KNOW A HUNDRED DIFFERENT SMELLS OF MUD AND LISTEN UNSELFCONSCIOUSLY TO THE SOUGHING OF THE TREES." -VALERIE ANDREWS A PASSION FOR THIS EARTH

In order to identify existing ideal natural playspaces and gather ideas to create more natural playspaces, I conducted case studies of four city park playspaces: including observing parents with their children and children playing without their parents, site element data park playspaces, and interviews of adults, children, and professionals to address the following research questions:

- A. *Why are having experiences in nature important for the health of children?*
- B. *What elements make up a natural playspace?*
- C. *How do we integrate nature back into the park playground landscape?*

To help focus my research and guide my approach I developed the following definitions.

Natural element: An object that comes from nature and is not man made such as rocks, flowers, water, dirt, and sand.

Playgrounds: Designated areas for play that have synthetic materials such as manufactured play equipment, swings, ladders, platforms, and slides.

Adventure Play Structures: Are play structures that have platforms four feet and higher with multiple slides, climbers and upper body strength exercises such as monkey bars. These are typically geared towards children who are five to twelve years old.

Tot-Lot Structures: Play structures that have typically have platforms four feet and lower with one to two slides, stairs and a climber. These are typically geared towards children who are two to five years old.

Natural playspaces: Play areas that integrate a combination of natural materials and topographical features with indigenous plant species to create complex play areas that fascinate and teach children about the natural world through interaction and play.

I used these to identify examples of natural playspaces within city parks to use as case studies that I would draw from these to incorporate into my park and natural playspace design. I researched numerous prominent designers of natural playgrounds such as Robin Moore, Helle Nebelong, Children and Nature Network, and the White Hutchinson Leisure & Learning Group. I prepared a list of natural elements that a naturalistic playspace should contain to be considered natural. Through my research, I determined that the park playspaces had to meet six of the eight criteria to be considered natural. These elements are listed below.

1. **Minimal 15 Different Species of Plants:** Combination of trees, shrubs, grasses and groundcovers but not including the large typical park boarder trees or turf grasses within 50' of the playspace area.
2. **Water Feature:** (preferably natural such as a pond or stream) but will except a water fountain, drinking fountains, water hand pump (that is accessible to children to fill water containers for play). The drinking and water fountains need to be within 50 feet of the designated playspace.
3. **Natural Molding Materials:** Including, but not limited to, dirt, sand.
4. **Natural Tools:** Fruit and nuts from trees, fallen branches, pebbles, leaves (small and large).
5. **Topography:** Hills or mounds that are high enough to run up or roll down, play hide-and-seek, with a slope greater than 15 percent.
6. **Refuge:** Anything that can be used as a fort, base or for solitude. Examples are groups of bushes, bamboo groves, willow tree forts, or an artificial cave.

7. Habitat Opportunities: Small enough for bugs and worms and or large enough for large birds such was waterfowl.

8. Climbing materials: This includes but is not limited to boulders (real or faux), tree trunks, and small trees. The rocks can be real or faux because of the high cost of large (8-foot x 10-foot) natural boulders.

After a thorough search of parks in Sacramento and the surrounding communities, I located four parks that meet the criteria of having a naturalistic playspace.

These parks are South Side Park in Sacramento, Arroyo Park and Mace Community Park in Davis, and Livermore Park in Folsom. Due to time constraints, I was not able to visit the parks at the most opportune times such as before lunch and just after lunch. I visited most of the parks between the hours of 2 PM and 5 PM.

Finally, prior to visiting the parks, I formulated interview questions for adults and children and observed children and their parents' interaction within the playspace setting. I adopted the concept of an Activity Matrix (McGuire, 2006) that EDAW Fort Collins created to select park playspaces that I felt represented ideal natural play areas and interpreted it as shown below. The matrix shown below is how I interpreted the Activity Matrix. It is an example for the South Side Park playspace in Sacramento, California. I used the matrix to catalog elements in the park playspaces; determined whether they were manufactured or natural, and then I matched them with the five senses: sight, sound, smell, touch, and taste. This allowed me to see the relationship between the natural elements and the different senses that children use. Below is an example of activity matrix I created after reviewing EDA's activity matrix (Table 1). It was used to identify

park elements and their relationship to the five senses (sight, sound, smell, touch and taste) in the different parks.

Table 1. Example Activity Matrix

5 BIOLOGICAL SENSES

Column1	5 BIOLOGICAL SENSES	ARTIFICIAL	NATURAL	SIGHT	SOUND	SMELL	TOUCH	TASTE
	PARK PLAYGROUND							
	ELEMENTS							
1	Space Theme Tot Lot	X		X				
2	Merry-go-round	X		X			X	
3	Orange Climbing/hiding Block	X		X			X	
4	Sand Diggers	X		X				
5	High Variety of Plants		X	X		X	X	
6	Space Theme Adventure Structure	X		X				
7	Sand for Digging		X				X	
8	Drinking Fountain	X		X				X
9	Pond (fenced off, can fish, no access)		X	X	X	X		
10	Climbing Wall @ 8' high	X		X				
11	Sound Phone Device	X			X			
12	Raised Steps	X		X				
13	Music xylephone (Adventure Struct.)	X			X		X	
14	Tix-Tac-Toe (Adventure Structure)	X		X			X	
15	Trees		X	X	X	X	X	
16	Swing set/regular & young child	X					X	

The result of this matrix was very effective as the matrix shows the sensory elements and their relationship with each element of the playspace. For example, there are a high variety of plants at Southside Park. On the matrix, the plants match with each of the senses; sight, sound, smell, touch, and taste. Rocks can affect touch and sight while musical instruments relate to sight, hearing and touch. In addition to the Activity Matrix, I attempted to create another matrix based on research of Howard Gardner, a professor at Harvard University.

He developed the theory of multiple intelligences in 1983 (Lolly Tai, et al 2006, Louv, 2005 ,Taylor A. Fayer, 2001). This theory was based on that I.Q. tests was too limited and proposed these intelligences to account for a broader range of intelligence (Louv, 2005). I created the matrix shown below to try and identify the natural elements and the different intelligences they related too. The goal was to identify a correlation between the intelligences and natural elements and then use them in the playspace template. The seven intelligences are: linguistic (“word smart”); logical-mathematical intelligence (“number-reasoning smart”); spatial (“picture smart”); bodily kinesthetic (“body smart”); musical intelligence (“music smart”); interpersonal (“people smart”); and intrapersonal intelligence (“self smart”). After further research, I found that Professor Gardner has also added an eight intelligence, naturalist intelligence (“nature smart”). He states that examples of this are Charles Darwin, John Muir and Rachel Carlson (Louv, 2005). During the data collection, I only had the seven listed intelligences and therefore would include this in any further research. The table below is an insert from one of my data collections where I attempted to relate the playspace

Table 2: Seven Intelligences matrix

7 Intelligences

	Park Play Space Element	Linguistic	Logical/ Mathematical	Musical	BODILY KINES-THETIC	Spatial	INTER-PERSONAL	INTRA-PERSONAL
1	Space Theme Tot Lot		X	X	X	X	X	
2	Merry-go-round	X			X		X	
3	Orange Climbing/ hiding Block				X	X		X
4	Sand Diggers	X			X			
5	High Variety of Plants		X			X		X
6	Space Theme Adventure Structure	X	X		X			
7	Sand for Digging				X	X		X
8	Drinking Fountain							
9	Pond (fenced off, can fish, no access)					X	X	
10	Climbing Wall @ 8' high		X		X			X
11	Sound Phone Device	X	X					
12	Raised Steps		X		X			
13	Music xylophone (Adventure Struct.)			X				
14	Tic-Tac Toe		X		X			

elements to the different intelligences, however I found it difficult to relate them. I have decided to omit this table from my conclusions but I will keep it in my data collection in case the next person would like to research these intelligences further.

Next, I went through an interview process with the parents and children. The interviews always started with the parents. Upon entering the designated playspace, I approached the first set of parents/guardians and introduced myself as a senior in the landscape architecture program at the University of California Davis. I then showed them my official letter (Appendix A) stating what my research is about and the methods in which I am gathering data. This helped to gain their trust and to let them know that I am not a threat to their child. This was important because of the association of white, mid-twenties single male in or around playspace-observing children representing the child molester or kidnapper. The questions I formulated asked parents and their children about their experiences in nature. I realized early that when asked certain questions, children could really only tell me what they have experienced while they are playing at parks without asking biased questions. I only asked them what they like to do outside and what kind of objects make up their favorite playspaces outside and not show them pictures of natural elements as I wanted to see if there was a disconnection with nature and being outside. If I was to ask them if they wanted more natural elements in park playspaces, then I could have shown them images and I am sure that they would say yes. However, I wanted to figure out what they

liked to do and where they liked to play outside to gain a better understanding of what to incorporate into the playspace design.

As I stated earlier in this report, adults who visit nature and teach their kids about nature more than likely resulted from having an intimate experience while growing up with nature. They feel that it is important to them that they visit nature and to also teach their children about nature. I formulated specific questions to help the parents recall their childhood and where they used to play as children and more subconsciously, for the parents to think about their children and their experiences with or in nature. In addition to learning about the parents past, I wanted to know what would have to happen for them to interrupt a child's playtime. For example, children fighting, dinnertime, or an injury occurred would be a reason why a parent would stop playtime. This is important because it relates to how parents watch or supervise their children while at the park. Safety is a major issue with playspace design and should be considered throughout the design process. I asked the parents if there was a park element that they would like to see more around the playspace that would make them feel comfortable to let their child have uninterrupted playtime. Finally, I wanted to know how much the playspace was used. I asked the parents how often they brought their children to the park and what times of the day they came. Below are the questions that were created for the parents/guardians.

Questions Developed for the interview:

- 1 Where did you play outside when you were a kid?**
- 2 What was your favorite game to play outside?**
- 3 Where was your favorite place to play outside?**
- 4 What are the elements that made up that favorite place?**
- 5 When did you interrupt playtime?**
- 6 What would you want in a design to allow your child to play without interruption?**
- 7 What kind of element could be used to allow your child to have uninterrupted playtime while at a park?**
- 8 How often do you visit a park a day? Week? Month?**
- 9 What times during the day do you visit the park during the fall? Winter? Spring? Summer?**

The questions for the children were different. I wanted to understand what they have been exposed to, where they liked to play outside and if they could tell me what items made up their favorite places to play outside. These questions are:

- 1. What do you like to do outside?**
- 2. Where do you like to play?**
- 3. Can you draw a map of your favorite place to play outside?**
- 4. What kind of things makes up your favorite place to play when outside?**
- 5. Where would you hide outside if you are playing hide and seek from Mommy and Daddy?**

These questions were asked with the parents permission and with them sitting next to their children. At times, there was a little influence on the answers to the questions from the parents. I anticipated this as I knew that I would not be able to ask the children questions privately. In addition to the questions, I observed the children and their families in the park playspaces.

The goals of these observations were to determine where children were playing and what their parents were doing in the designated park playspaces. I was curious to see if the children were playing in the natural areas as well as on the playground equipment. I was looking for what kind of play the kids were

doing such as make believe, running around (tag), or simple exploring the playspace. At the same time, I was conducting site analyses of the playspace; determining where the natural and synthetic elements were located, what their functions were, and to see if there was any correlation between the other three park playspace elements that helped make them successful.

SECTION 5: ANALYSIS OF DATA COLLECTION, SITE OBSERVATIONS and INTERVIEWS

***"OUR TASK MUST BE TO FREE OURSELVES BY WIDENING
OUR CIRCLE OF COMPASSION TO EMBRACE ALL LIVING
CREATURES AND THE WHOLE OF NATURE IN ITS
BEAUTY." —ALBERT EINSTEIN***

***“THE GREATEST PHYSICAL JOY AVAILABLE TO A MORTAL
(OVER THE YEARS AND ALL THINGS CONSIDERED) IS TO
SLOP ABOUT WITH WATER AND TO STAY WITHIN SIGHT
OF IT AT ALL TIMES.” —HENRY MITCHELL***

Within this section I will discuss the data I collected from the four different parks that I visited. As described previously, this data consists of the site’s natural and man-made elements and site analysis, observations of children and parents using the spaces, and interviews with some parents and children. After I visited the parks and cataloged each of their natural elements, I compared and contrasted all of the park’s natural elements, and if there was any duplication of natural elements. Then I identified which elements I considered successful in each park and which were unsuccessful.

All four of the parks I visited contained at least six of the required criteria to consider the park playspaces natural playspaces. The most common natural elements in these parks included a large variety of shrubs and trees, dirt paths (mainly decomposed granite), small boulders, sand, and a water source (mainly drinking fountains). Species of plants commonly found at these parks included Day Lilies (*Lilium sp*), Lamb’s Ear (*Stachys byzantine*) Rosemary (*Rosmarinus officinalus*), Fountain grasses (*Pennisetum setaceum ‘Rubrum’* and *Pennisetum ssp.*), Butterfly Fountain (*Gaura lindheimeri*), Manzanita (*Arctostaphylos*

denisflora), Azaleas (*Rhododendron ssp*), New Zealand Flax (*Phormium tenax*), Blue Fescue (*Festuca glauca*), Deer Grass (*Muhlenbergia rigens*), Mexican Feather Grass (*Nassella tenuissima*), Sedges (*Carex ssp.*), Dutch Iris ‘White



Photo 14. This is a good example of separation; planter at South Side Park that separates the picnic area from the playspace.

Wedgwood’ (*Iridaceae ssp*), Mexican Sage (*Salvia leucantha*), Ginkgo trees (*Ginkgo biloba*), Cottonwoods (*Populus fremontii*), Japanese Maple (*Acer palmatum*), California Sycamore

(*Plantanus racemosa*), and Redwood trees (*Sequia sempervinus*). These plants are appropriate for these parks. They are hardy plants that can withstand children running back and forth playing. They are not toxic and provide a variety of textures, smells, colors, and tastes that children can interact with which would enliven their senses (Moore, 1993). An appropriate book to read about a variety of plants is Robin Moore’s book, *Plants for Play*. It goes into great detail about appropriate plants to use in play areas and their play values. The most common synthetic element within the four parks was a playground structure which typically included sand diggers, sand molding tables, a climbing wall, and swings (for both toddlers and older children).

Of the four parks I studied, South Side Park was the only one that integrated plants throughout the interior space of the designated play area (Photo 14). The plants at this park are used to define the boundary of the playspaces

such as the adventure play area and the tot-lot play area. The placement of these plants throughout the play area provides an opportunity for the children to use all of their senses as they can walk around and play in or with the plants, touch and smell them and observe bugs or birds in them without leaving the designated play space. I also noticed at the main entrance to the playspace, there is a secluded area that looked like children had been playing in it. I crawled into it and could



Photo 15. Possible child refuge (fort) at South Side Park. You can barely see the blue playground in the background.

see out but was partially hidden from people on the outside (Photo 15). I noted this a potential cover/fort area and could be replicated in future parks. Therefore, I expected that I would be more likely to observe children playing in this area and among the plants when I visited the park. However, during my observations, children were playing mainly on the playspace equipment and seemed to be content. They were running back and

forth and around the different structures and not among the vegetated area. I did observe a couple of children playing at the edge of the planters but none of the children actually entered the planting areas. Therefore, it appears that the natural areas within the playspace are not being utilized as a natural play setting. It is important to document for this park that there was far more playground equipment than any of the other parks I visited. This high variety of play equipment may draw the attention of the children more than the vegetation does.

Another natural feature of South Side Park is a large duck and fishpond located adjacent to the play area. The pond is approximately one acre in size with an island in the middle. There is a four-foot decorative fence surrounding the entire pond. The only place for children to physically interact with the pond is from a number of piers where they are allowed to fish. These piers provide a good use of the park’s water feature. The signs located near the fishing piers inform people that fishing is allowed and teach children about the varieties of fish in the pond as well as the different species of ducks and geese that swim in the pond. I found that the placement of these signs helped make the pond and the



Photo 16. At Arroyo and Mace Park, a bio-swale dry creek bed separates the playspace from the natural area. A possible solution would be to put the play elements on both sides of the bio-swale thus, utilizing the bio-swale as a path to the elements.

piers more accessible to the children because they provided parents and children with “permission” to interact with this natural play space. In the same regard, I would suggest

that the City parks that incorporate plants within the designated playspace boundaries include signage that suggests children play in the planted areas,

thereby giving them “permission” to search and discover bugs and flowers, hide among the vegetation, and touch, feel, and smell the plants.

In contrast to South Side Park, natural elements in the three other parks I observed were designed to be physically separate from the designated play areas. Mace Ranch and Arroyo Park have large natural areas next to the playspaces but a bio-swale/dry creek bed separates these areas from the playspaces (Photo 17). Livermore Park has the least amount of vegetation around its playspace with only a couple of plants, mainly oak trees, surrounding the perimeter of the park playspace.

At Mace Regional Park and Arroyo Park, the playspaces are located next to the natural areas separated by a bio-swale/dry creek bed (Photo 16). In both of

these natural areas, there are a high variety of plants, natural tools, and trails that provide excellent opportunities to interact with nature. The ground in these areas was covered in leaves, twigs, acorns



Photo 17. Pedestrian bridge connecting the natural area to the playspace.

and soil. By leaving the twigs and leaves alone, the amount of upkeep required to maintain these natural area diminishes while creating habitat for insects and birds, which in turn attracts children to discover and watch them. There is a sense of untouched wildness to these areas. Children can dig and look for bugs, build forts

with the fallen branches and explore and discover the site. However, I did not observe any children using these natural areas in these ways. Instead, I observed all of the children playing on the play equipment or in the sandbox. This could be because I was not visiting the parks at the most opportune times of the day. To validate this finding, I would visit these areas during the summer months and around the times before lunch or just after lunch. There were two little girls that were playing in the sand box with twigs and flowers but they were on the same side of the bio-swale as the play equipment. In addition, there was a group of young boys playing tag on the play equipment. The picnic tables where the adults typically sat were even further away from the natural area. Interviews with the adults informed me that they wish benches were located throughout the natural area because there was a great deal of shade and they could observe birds more. Consequently, I found that these natural areas were under utilized, the same as at South Side Park. I don't assume that no children use the natural areas but after speaking to the adults and observing the children at the park, I found that visitors to the park perceived the bio-swales to be a natural barrier to the natural areas and natural boundary of the space allowed for children to play, thus making them unsuccessful. It seems that the adults need to be encouraged to inform their children that the natural area is open for play too. In addition to the natural areas, these parks incorporated topographical changes in the landscape that the children view the play area from above, hide behind, climb up, or slide down.

Topography is an important element in playspaces because it allows children to survey the terrain from a high point. They can identify where they are in the landscape thus creating sense of location (Dannenmaier, 1998). In addition

to the bio-swale, Mace Regional Park contains three hills located varying distances from the playspace (directly adjacent, 50 yards away, and 200 yards away). The hill located 50 yards from the play space is a council ring (Photo 18).

A council ring is the gathering space that is surround by an earthen berm. The main entrance to the council ring uses a retaining wall to hold up the hill. The hill is approximately forty feet wide and three feet tall. This hill provides children the opportunity to explore elevation change while maintaining



Photo 18. A council ring is a great way to incorporate topography into a playspace.

safety, as there is little distance to fall and get hurt. Both the hill located adjacent to the play area and the council ring were being used as play areas by children



Photo 19. This is a very large dirt mound at Livermore Park in Folsom. The children loved this dirt hill.

when I visited the park and therefore appeared to be successful natural play areas. The hill 200 yards from the play area appeared too far away to provide a desirable location for the children to interact. Livermore

Park contains a very unique large dirt hill approximately twelve feet high with

steep slopes (Photo 19). The existing large dirt hill was included in the design of the play area because Valley Live Oak trees were growing out of the hill and they could not be removed due to a city ordinance. According to the designer of the park, the hill became an integral part of the playspace and that he located the play structures and play area to be placed next to the hill. My observations of the area proved this to be true. There were six children ranging in age from three years old to eleven years old running up and down the hill and back and forth to the play structures. Another child was playing on the hill with his toy truck driving over the “mountains.” This hill provided many different opportunities for child development that the typical playground cannot. The size of the hill helps children develop physically because the hill is hard to climb up and down. They have to use all of their muscles as well as control their balance when they are going up the hill and playing around it (Photo 20). Furthermore, children can climb on the trees that are located in the hillside because the tree trunks and limbs are located close to

the ground. There were also little areas on this hill that provided secluded spots that the children could hide in and watch the surrounds. These are



Photo 20. Large dirt hill where I observed six children playing.

refuges for children. A common activity done by children is creating caves, forts,

and homes from found materials. The little hiding spaces are large enough for a couple of children to hide and play in (Dannenmaier, 1998). As children are hiding and playing together, this element provides children with the opportunity to build their communication and social skills.

Another unique element at Livermore Park is an interactive water feature designed in conjunction with an artificial creek. However, due to the time of the park visits, the interactive water feature at Livermore Park was closed for the winter and cannot be analyzed. However, the artificial creek feature looks like it would work well with the large water feature. Children may associate it as being a miniature creek that they can play in. However further analysis and interviews would have to be conducted to verify this. Adding vegetation to the artificial creek could make it look more naturalistic and increase the play value of playing in an artificial creek. It is made of concrete and stones and is only three feet wide with no vegetation around. Because it is part of a water feature, I would still consider it an important element in the park playspace.

The goals of the interview portion of the research project were to identify any similarities of where parents played outside when they were growing up and where children like to play outside today. I realized early on that the children were only able to identify what they have experienced at an early age whereas the parents could reflect more on the different memories and elaborate on those. The majority of the parents used to play mainly in their back yards, city parks, agricultural fields, rivers, and neighborhood streets. One parent said that they used to travel to Alaska to fish and go camping. She really enjoyed that. I asked her if she takes her children camping and she said there isn't enough time in the

week with all of the children’s sporting events. A majority of the elements that made up their favorite outdoor playspaces were trees to climb on, swings and merry-go-rounds in parks, bush patches for forts, and water. I also asked parents what element would help them feel comfortable to allow their children to have uninterrupted play time and the majority of them said they wanted a fence surrounding the playspace and a clear site of view. One parent commented that it was her duty to watch her child and walk with her wherever she went. When

“AS HER MOTHER, IT IS MY JOB TO WATCH HER AND FOLLOW HER AROUND. YOU COULD TAKE OUT THIS LARGE DIRT MOUND SO I COULD SEE THE ENTIRE PLAYGROUND BUT THEN THE CHILDREN WOULD BE SAD; THEY PLAY ON IT MORE THAN ON THE PLAY STRUCTURES.” – MOTHER OF CHILD AT LIVERMORE PARK.

I talked to children, the outdoor spaces they liked were the ones they were playing in at the moment of time. They do not dwell or think about the places in the past but more of what they are doing in the here and now. They enjoyed playing basketball, playing on the swings and merry-go-round, the dirt hill at Livermore Park in Folsom and the dirt spiral at Mace Regional Park in Davis. The children also liked to climb hills and go down slides. I used these answers in the Wild Rose Park Natural Playspace design by incorporating topography, interactive water feature and climbing boulders.

SECTION 6: CONCLUSION

“IF A CHILD IS TO KEEP ALIVE HIS INBORN SENSE OF WONDER, HE NEEDS THE COMPANIONSHIP OF AT LEAST ONE ADULT WHO CAN SHARE IT, REDISCOVERING WITH HIM THE JOY, EXCITEMENT AND MYSTERY OF THE WORLD WE LIVE IN.” -RACHEL CARSON

As cities continue to sprawl, vast amounts of natural areas begin to disappear as well as our interaction with nature. Today’s generation of children are spending more time indoors watching TV, playing video games, participating in organized sports and less time in nature. Parents rely on their community and neighborhood parks to as places for their children to interact with nature. Nearby nature is integral to the development of children because every place a child visits, including park playspaces, are opportunities for growth, a chance to learn about the world and discover themselves. Cities can help increase children’s interaction with nature by creating more regional, community, and neighborhood parks that have a greater number of natural elements in them in addition to the typical park plant palette and playspaces. Furthermore, cities need to go one step further and design more naturalistic playspaces in the parks because of the benefits that nature provide for children when visiting parks in conjunction to the use of play structures.

Four parks in the greater Sacramento area have achieved this natural design successfulness. As described above, the elements of the playspaces for these parks can be used as templates themselves as well as combining the elements for use in future parks. These elements included but not limited to a high variety of

plant species (15 or more), boulders, combination sand and water playspaces, topography, refuge, climbing materials, and natural tools. They also included unique elements such as bio-swales, a large dirt mound and council rings (Photo 21). These natural elements provide vast opportunities for children to enhance

their senses, alleviate the side effects of ADD and ADHD, and assist with child development. However, I found that without interpretative or interactive signage, these natural playspaces were underutilized as natural playspaces. The bio-



Photo 21. Dirt hill used for playing and digging.

natural swales/dry creek beds were

perceived as natural barriers. Although only South Side Park had plantings within the playspace, parents seem to think that they were park aesthetics and not areas for play. This can be remedied with proper signage that is aesthetically appealing too.

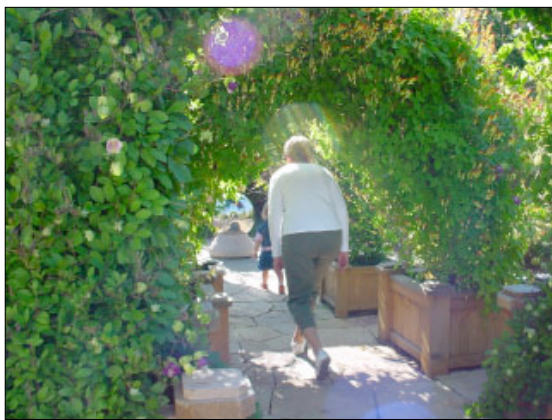


Photo 22. Vegetative tunnel. Designers could use willow bushes to make "live" willow forts for children.

Interpretative signs and the separation of playspaces with natural elements can be minor changes to a playspace design that will enhance the over all experience for children. All too often parents think that planted areas are for park aesthetics

only and do not allow their children to play in them. The natural playspaces are great areas for children to learn in as they dig in the dirt, watch butterflies land on the flowers and birds darting in and out of the shrubs. South Side Park in Sacramento does an excellent job of integrating plants throughout the playspace. The interpretative signs would include educational material for the children but will also be used to educate the parents and guardians of the children. The signs will explain that it is ok for the children to play in the natural areas. They will also educate them about all of the benefits nature has for children. The children need to be informed as well. There can be interactive signs that tell the children to “look under these rocks. What do you see” or “What does this plant smell like, taste, or feel like.” Another solution would be to integrate the natural playspace with the playground equipment. Playspace location is an integral part of the design process. Three of the four park playspaces are placed next to the natural areas, (Arroyo Park, Mace Regional Park, and Livermore Park), while South Side Park includes vegetation throughout the playground.

The playspaces should be integrated throughout the natural area. For example, the bio-swale can be used as a path that leads from one play feature to another. The two to five year old playspaces can be located closest to the shaded picnic tables while leaving room to create a small plant boundary to allow the children to feel they are in their own (world) playspace. The large adventure playspace should be placed farthest away as these elements are typically geared towards children from five years old to twelve. Plant islands are a great way to separate different play zones. Current designs place plants on the outside of the play areas while they should be included in the middle, along the edges, and

throughout. Meandering paths can lead the children through the different gardens as they search out and explore their way to the next playspace (Photo 22). These gardens can be a mixture of themes such as the “Time Telling Garden” which uses plants to tell the different times of the day, Plants used for cooking, or water friendly plants. The gardens can be designed in textures and colors too. To assist maintenance crews, I would plant large groups of plants. These are easier to maintain than a bunch of separate small clumps of plants. This draws the children through the natural areas. They can stop and smell the fragrant roses, pet the soft lambs ear, or hide in the willow tree fort. Robin Moore’s book “Designing with Plants (2005)” is a useful resource for plants that can be used throughout the playspaces as well as plants that should not be used due to their toxicity to children. There should be primary paths that get to each space while secondary paths can act as secret corridors in between these playspaces (Moore, 2005).

Finally, natural playspace designs should include topography, elements of natural tools and water features. These elements add to the play value of the space as children are naturally drawn to hills for site advantages. Natural tools allow the children to use their imaginations to create games and build homes (forts). Although water features are hard to implement in city parks, there should be some source of water for children to use with sand or dirt (Photo 23). This can be done with placing drinking fountains in mystical “water

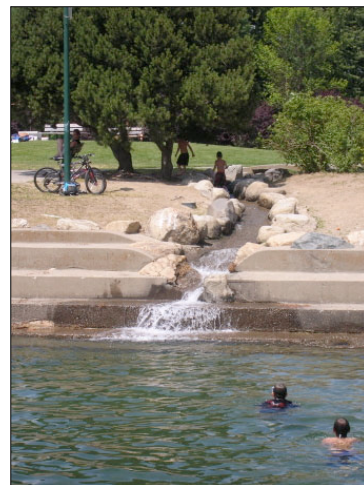


Photo 23. Interactive water feature

wells” or water pumps that require the children to pump the water to use it and then is shut off when not in use.

Through researching the benefits that nature provide for children by enhancing the five senses, helping children cope with mental disorders, and the benefits of overall child development. These ideas will help create playspace landscapes that stimulate children’s senses and to help them grow mentally, physically, socially and healthily while playing. By determining the natural elements that have worked in the four parks I studied, the City of Sacramento’s Department of Parks and Recreation can begin incorporating these natural playspace ideas into their master plans for new parks. This project will provide landscape architects with a set of natural playspace templates they can use in the design of future playgrounds, specifically focusing on the inclusion of natural elements into the playspace designs and interpretative, education, and interactive signage. These new techniques will assist the designers with their thought processes and assist them with developing more creative designs that may or may not include manufactured structures. The design template will help evoke a more creative thought process during the planning of city parks. By rejuvenating the design process, parks can have more interactive natural play areas, once again sparking and maintaining children’s interest of playing in, around and on them.

SECTION 7: WILD ROSE PARK: A CHILD'S NATURAL PLAYSPACE

The final portion of this project includes the design of a natural park playspace in a new park for the City of Sacramento, Wild Rose Park. The goal for this design creates a more naturalistic playspace for children giving them “nearby nature”. This project pushes the city to move beyond their minimal standards of play structures and design more natural and creative playspaces in our cities parks creating nearby nature for communities. The City of Sacramento’s Department of Parks and Recreation landscape architects will be able to draw from this design, different ideas for future park playspaces regardless of the size of the play area. The city will be able to use this design as a template for possible solutions to future design challenges regarding natural playspace design.

This park is located in North Natomas, a neighborhood in northern Sacramento off Interstate 5. The park is approximately 9.6 acres, designating it a neighborhood park. Refer to Figure 1 for the location, park design and proposed park elements. The City of Sacramento’s typical guidelines call for playspaces to be a minimal 3,500 square feet for Tot-Lot playspaces and 5,000 square feet for Adventure play areas (City of Sacramento, 2007). The natural playspace design for Wild Rose Park is approximately 27,500 square feet, surpassing the minimal requirements for a park play area.

Based on my research and observations, I have developed a program for the natural play area for Wild Rose Park that incorporates my natural playspace design guidelines listed below. This park playspace incorporates a variety of

ideas that can be scaled down to use in smaller park playspaces. Figure 2 shows in a detailed plan view of what the natural playspace looks like. There are twenty different elements within the playspace. Figure 3 is a concept board that shows images of what certain elements may look like in a playspace setting. Figure 4 is a rendering that shows what the main entrance to the playspace would look like. The stone entrance is approximately four feet high making the average sized adult bend down to enter. This gives the children a sense that this is their space. Figure 5 is a rendering of the bio-swale, dirt play mound, and art sculpture piece. Figure 6 is a rendering showing children playing along the bio-swale with a variety of native plants separating them from the play structure. Figure 7 is a view of the interactive water feature, bio-swale, public art sculptures and council ring. These graphics are provided to give the designers ideas that they can add to or draw from for future playspace elements.

Natural Playspace Design Guidelines:

Size:

1. If incorporating play structures into the design, the Tot Lot and Adventure Play areas should be large enough to integrate vegetation within the concrete play curb. (Similar to South Side Park in Sacramento). The plants will create a natural barrier between the two play spaces while giving the children the opportunity to interact with the plants.
2. If not incorporating play structures into the design, the designer should provide ample room for different sensory gardens, public art, and natural plantings. Try to integrate storm water runoff designs such as bio-swailes and or rain gardens to educate children about ground water recharge and natural filtration for water.
3. Refer to City of Sacramento's Guidelines for Sustainable Park designs.

Informational Signage:

1. When designing any natural areas within the designated playspace that is intended for children to use; walk around in; or play with including but not limited to playspace planters or native planting zones include:

- a. **Interpretative Signage:** Helps educate parents that it is ok for their children to play in the planting areas and natural planting zones. These signs also inform them of the benefits that nature have for children.
- b. **Interactive Signage:** These signs tell children to explore, dig, find, and use their five senses –sight - sound - smell – taste - Touch to interact with nature. Examples can be but are not limited to: look under rocks for “Critters”, “Smell the Roses”, “What does Lamb’s Ear feel like?”, “What color are the birds?”

Play Area Design Criteria:

1. **Minimal 15 Different Species of Plants:** Combination of trees, shrubs, grasses and groundcovers but not including the large typical park boarder trees or turf grasses within the playspace area. These plants shall extend beyond fifty feet (50’) of the playspace.
2. **Water Feature:** Will preferably be natural such as a pond or stream. However due to monetary constraints, water fountain, drinking fountains, water hand pump (that is accessible to children to fill water containers for play) would be acceptable. The drinking and water fountains need to be within 50’ of the designated playspace. If using water fountains, use fountains that allow for buckets to be filled from a valve.
3. **Natural Molding Materials:** Create areas that include but are not limited to dirt and or sand that children can use to mold with. Locate a water source next to this area.
4. **Natural Tools:** Incorporate plants that are non-toxic that produce Fruit and nuts from trees, fallen branches, pebbles, and leaves (small and large). These are great tools for children to use, dig and play with.
5. **Topography:** Hills or mounds those are high enough that children can run up or roll down, play hide-and-seek, with a slope greater than 15% but less than 30% if higher than four feet. If the hill is less than 3 feet, then it is ok to go to 30 %. Examples include the Dirt hill at Livermore Park in Folsom and council rings.
6. **Refuge:** Anything that can be used for solitude such as a fort or base. Examples are groups of bushes, bamboo groves, willow tree forts, or an artificial cave in a hill such as using a concrete storm culvert.
7. **Habitat Opportunities:** Not every park can have a pond for waterfowl, but the designer should create bird habitat and opportunities for children to dig in healthy soil for insects. The habitat shall be small enough for bugs and worms and or large enough to include large birds such as waterfowl.

8. **Climbing materials:** These include but are not limited to boulders (real for faux), tree trunks, and small trees. The rocks can be real or faux because of the high cost of large natural boulders.

A sample template for Wild Rose Park is provided in the following figures and includes:

A. Butterfly Mound: This is a mounded hill with a retaining wall that children can climb on and walk through looking for butterflies. The mound is planted with a variety of plants that attract butterflies (Figure 4).

B. 2-5 Year old playspace (Tot-Lot): This area has a small play structure that incorporates grass on one side for children to fall on as they learn to walk and on the other side are native grass plantings that offer different textures for them to play with.

C. Grassy Hills: This area is for small children to play on grassy hills. Studies have shown that children like to climb up hills and roll down them. These hills are only two –three feet high serving 0-5 year old children.

D. Council Ring: This provides as an outdoor learning area for children, mounding for children to play on, and a refuge for children. It is only three feet high with slightly steeper hills at 30 percent.

E. ADA Accessible Sand playspace: This allows for handicapped children access to the sand area. It also allows for young children between the ages of 0-3 years of age to crawl-walk out of the sand play area on their own.

F. Interactive Water Feature: This is located on a small mound that utilizes a hand pump that children have to pump in order to get access to water. The water flows down a man made creek bed into the bio-swale and nearby sand play area. This gives the children opportunities to play mold sand or dirt (Figure 7).

G. 5-12 Year-Old Playspace: This area includes an adventure playspace. Surrounding the playspace are native grass plantings and riparian habitat plantings such as willows. These planters create a separate and opportunities for children to play in the planting areas and the play structure.

H. Native Grasses: This is a planting area that uses California native bunch grasses such as Deer Grass (*Muhlenbergia rigens*), and Purple Needle Grass (*Stipa spp.*)

I. Bridge: (2x) Pedestrian bridge over the bio-swale.

J. Sierra Mountain Climbing Boulders: These are fake concrete rock boulders that give children climbing opportunities. The cost varies between fake rocks and real rocks. Real boulders are typically harder to climb whereas Fake rocks have better climbing grips and can still be a challenge to climb up. They represent the Sierra Mountain Range.

K. Dirt Play Hill: This is a seven foot high plan dirt hill with boulders acting as a retaining wall. This hill gives the children freedom to climb, dig, and make up their own games. Look at the images in above that show a much larger hill in place at Livemore Park in Folsom (Figure 5).

L. Living Willow Hut: This provides a refuge for children utilizing live plants to create a “home” or “Fort” for children drawing on the natural instincts to build places of refuge.

M. Bio-Swale / Dry Creek bed: This feature primarily transports storm water off of the park site to the nearby drainage. It also can act as a trail to different locations in the playspace, insect exploration, and habitat for wildlife. It is important to locate playspace elements on both sides of a feature like this so that it is not perceived as a natural barrier (Figures 5, 6, 7, and 8).

N. Redwood Forest: Redwood grove that portrays a sense of mountainous presence.

O. Interactive Fish Art Sculpture: These are metal sculptures of native fish in the Central Valley. They may be designed as a feature that children can learn from but also climb on and play around with (Figure 5 and 7).

P. California Native Plants: These are California native planting zones that can teach children about their uses, scientific names. They are for enhancing children’s senses too. Plant shrubs and perennials those are not toxic. Refer to Robin Moore’s book “Plants for Play” (2005) for an extensive list of plants for designing.

Q. Riparian Plants: These are California native plants that are typically found along river systems. They are great for building forts and for natural tools such as willow plants and Oregon Ash trees.

R. Main Picnic Area: This area contains two picnic tables and is covered by a shade structure.

S. Main Entrance: This is the Main entrance to the natural play area. It would be an entrance made of stone that has a small entrance that children can walk under but parents would have to bend over to walk under (Figure 4).

T. Secondary Entrance: These two entrances use arbors as the gates to the playspace.

U. Large Native Plant Groupings: These areas are not programmed and are left open to create a wild and naturalistic place. Plant large groupings of low to mid story plants such as Ceanothus ‘Joyce Coulter’, Coyote Bush, Native bunch grasses, small trees, bamboo groves (with root barrier).



Legend of Possible Items:

- A. Park Entrance Sign.
- B. Existing Bike Path.
- C. Main Picnic Area with:
- D. Youth Baseball (60' Baseline)
- E. Walking/ Jogging Path, Decomposed Granite, approximately 1/2 mile long and 4' wide.
- F. Existing Drainage Channel.
- G. Community Garden with storage shed and compost areas.
- H. Adult Basketball-Full Court (50' x 84').
- I. Skate Board Park (45' x 85').
- J. 2x Youth Basketball -Half Court (45' x 85').
- K. Buffer Planting Area.
- L. .65 acre Natural Play area.
- M. 4 Parcourse Fitness Stations.
- N. 2 Stall Bathroom.
- O. Proposed Labyrinth.
- P. Decerative Planting areas.
- Q. Secondary Picnic Area.
- R. Open Space for Passive Recreation.
- S. Footbrdige Connecting Wild Rose Park to Red Bud Park.
- T. (2x) Bocce Ball Courts & (2x) Horseshoe Pits.
- U. Proposed additional community gardens.

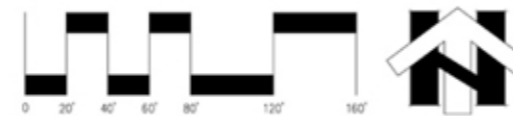
WILD ROSE PARK: MASTER PLAN

CITY OF SACRAMENTO

Landscape Architect: Steven Giguere

Designed by: Josh Schwartz

Figure 1: Wild Rose Park Master Plan

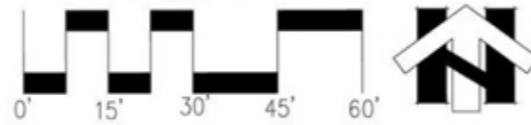


HAMPTON FALLS WAY



NATURA PLAYSPACE ELEMENTS:

- A. Butterfly Mound
- B. 2-5 Year old play area
- C. Grassy hills
- D. Council Ring
- E. ADA Accessible Sand molding area
- F. Interactive Water Feature/ Water Hand Pump
- G. 5-12 Year old play area
- H. Native Grasses
- I. Bridge
- J. Sierra Mountain Climbing Boulders
- K. Dirt Play Hill
- L. Willow Hut
- M. Bio-Swale/ Dry Creekbed
- N. Redwood Forest
- O. Interactive Fish Art Sculpture
- P. Native Plants
- Q. Riparian Plants
- R. Main Picnic Area
- S. Main Entrance
- T. Secondary Entrance
- U. Large Native Plant Groupings



WILD ROSE PARK: CHILDREN'S NATURAL AREA

CITY OF SACRAMENTO
 Landscape Architect: Steven Giguere
 Designed by: Josh Schwartz

Figure 2: Wild Rose Park: Children's Natural Area

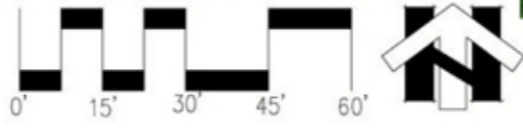
HAMPTON FALLS WAY



NATURA PLAYSPACE

ELEMENTS:

- A. Butterfly Mound
- B. 2-5 Year old play area
- C. Grassy hills
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- E. ADA Accessible Sand molding area
- F. Interactive Water Feature/ Water Hand Pump
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- O. Interactive Fish Art Sculpture
- P. Native Plants
- Q. Riparian Plants
- R. Main Picnic Area
- S. Main Entrance
- T. Secondary Entrance
- U. Large Native Plant Groupings



WILD ROSE PARK: CHILDREN'S NATURAL AREA

CITY OF SACRAMENTO
 Landscape Architect: Steven Giguere
 Designed by: Josh Schwartz



Figure 3: Concept Images for Children's Natural Area



Figure 4: Entrance to Children's Natural Play Area.

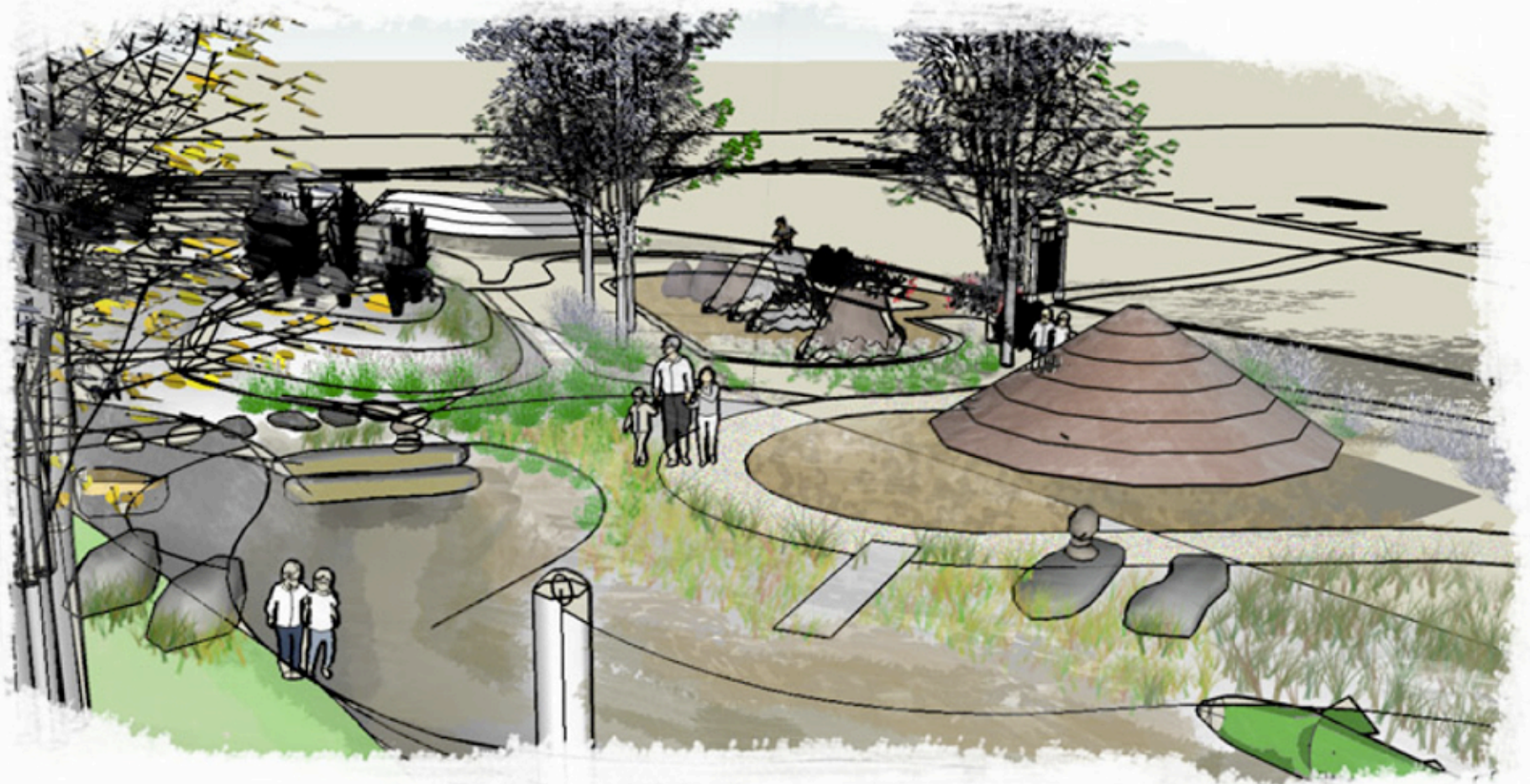


Figure 5: View of Bio-swale, Public Art (Fish Sculpture), Dirt mound and Climbing Rocks.



Figure 6: View of planting area and bio-swale from play structure.



Figure 7: View of Interactive water feature, bio-swale, public art sculptures, and council ring.



Figure 8: Hand rendering of children in sand play area

SECTION 8: REFERECES

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Appendix A – Site Analyses Matrices

Park Playground Site Analysis

Park Name: Acroyo Park, Davis, CA

Date: 11/19/07

Time: 2:50pm - 3:50pm

Goal of Site Visit

Natural Park Playground Elements

YES NO

Elements

- ✓ 10 Different species of plants: (not including typical park border trees or grass) Provides constant stimulation w/ 50' of playground area
- ✓ Water feature: Preferably natural (pond, stream,) - dry creek bed Potential water feature - winter rains
- ✓ Will accept: Water Fountain, Drinking Fountain, Water Hand Pump (can still be used by kids by filling up water buckets)
- ✓ Natural molding materials: Dirt, sand, decomposed gravel
- ✓ Natural Tools: Fruit from trees, small fallen branches
- ✓ Topography: Hills or mounds high enough to run up or roll down, play hide-&-seek
- ✓ Enclosures: anything that can be used for a fort, or base, or shelter; Example: bushes, covered trellis, groups of bushes
- ✓ Habitat Opportunities: small enough for beetles and large enough for waterfowl / upland birds

5 BIOLOGICAL SENSES

Column	5 BIOLOGICAL SENSES PARK PLAYGROUND ELEMENTS	ARTIFICIAL	NATURAL	SIGHT	SOUND	SMELL	TOUCH	TASTE
1	Nature Feat./De		✓	✓		✓	✓	✓
2	Artistic Picnic Area	✓		✓		✓	✓	
3	Big Creek Draining Channel		✓	✓	✓	✓	✓	✓
4	Lots of plants		✓	✓		✓	✓	
5	Sandbox w/ large boulders	✓	✓	✓		✓	✓	
6	Climbing Wall	✓		✓		✓	✓	
7	Sandbox Digger	✓		✓		✓	✓	
8	Tot Swings	✓		✓		✓	✓	
9	Tot 1st Structure/BM	✓		✓		✓	✓	
10	Tic Tac Toe	✓		✓		✓	✓	
11	Large Boulders		✓	✓		✓	✓	✓
12	Wood Benches	✓					✓	
13	Artistic Benches	✓					✓	
14	Adventure Play area	✓		✓			✓	
15								

B.M. Bark Munk

Arcosgo Park

7 INTELLIGENCES

PARK PLAYGROUND ELEMENTS	LINGUISTIC	LOGICAL/MATHEMATICAL	MUSICAL	BODILY KINESTHETIC	SPATIAL	INTERPERSONAL	INTRAPERSONAL
1 Nature trail/DG.							
2 Artistic Picnic Area							
3 Bird-Sook - Dry Creek Drivng							
4 High arctic of plants							
5 Sand box w/ boulders							
6 Climbing wall							
7 Sand box digger							
8 Tot Swings							
9 Tot Lot Structure							
10 Tire Tac Toe Box							
11 Large Boulders							
12 Wood Benches							
13 Art, Ficin 1 Benches							
14 Adventure Play Area							
15							

SITE OBSERVATIONS: Rosemary, Rock Rose, Society Garlic, Flax, Chinese Pistache, oak trees, Iceberg Rose, Ginkgo, Willow trees
 Dawn-gloss, Dog W/ly, Sycamore, Snow pine - 2 shrubs, redwood trees, Currant, Redwood trees, 5+ other trees/bush

Mother - Daughter playing ~~catch~~ catch w/ Football

No educational signs or "Come explore our signs" to let them know. It is ok to play here.

No signs ~~sign~~ sign right in middle of group seating. Does nature close by auto noticeably seem
 Biplane to build fires. / Young Male Swing + talking on phone / Group of kids playing Soccer
 17-19 approx.

Adventure Play: 9' x 3 slides not handicapped accessible - Black, Blue, red yellow
 People walking dogs
 Lots of birds
 Tot Lot: Blue, red yellow
 many paths in out + around
 B. the trail connect ion.
 purple California Fuchsia
 cost + paper
 not handmade

Starting to realize their isn't anything storing for children to not handmade

Arroyo Park

QUESTIONS:

ADULTS:

1. Where did you play outside when you were a kid? ring place / huge backyard/fence; Parks street

2. What was your favorite game to play outside? roller skating / soccer

3. Where was your favorite place to play outside? Parks - why - more kids to play w/

4. What are the elements that made up that favorite place? large open space - trees, play structure water to drink

5. When would you interrupt per time? Time moving on to another activity

6. What would you want in a design to allow your child to play with out interruption? visibility - younger children has entry/exit points

7. What kind of element could be used to allow your child to have uninterrupted play time while at school?

8. How often do you visit a park a day? week? 3 A Month? 12

9. What times during the day do you visit the park during the Fall? Winter? Spring? Summer? Afternoon for all seasons

KIDS:

1. What do you like to do outside? Soccer / football - structures - basketball

2. Where do you like to play? back yard - run around

3. Can you draw a map of your favorite place to play outside? Did not want to draw

4. What kind of things make up your favorite place to play when outside? Park play structures - grass - Basketball courts

5. Where would you hide outside if you are playing hide and seek from Mommy and Daddy? Under a bush

good condition

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Park Playground Site Analysis

Park Name: Lyvermore Park

Date: 12-1-07

Time: 3 pm

Goal of Site Visit

Natural Park Playground YES NO

ELEMENTS

- Boulders
- 10 Different species of plants: (not including typical park border-trees or grass) Provides constant stimulation
- w/ 50 of playground area
- Water feature: Preferably natural (pond, stream,) water jets but about 100 yards from play area. Interactive water feature
- Will accept: Water Fountain, Drinking Fountain, Water Hand Pump (can still be used by kids by filling up water buckets)
- Natural molding materials: Dirt, sand, decomposed gravel
- Natural Tools: Fruit from trees (small fallen branches)
- Topography: Hills or mounds high enough to run up or roll down, play hide-a-seek
- Enclosures: anything that can be used for a fort, or base, or solitued; Example: bushes, covered trellis, groups of bushes
- Habitat Opportunities: small enough for beetles and large enough for waterfowl.

5 BIOLOGICAL SENSES

Column 1	5 BIOLOGICAL SENSES PARK PLAYGROUND ELEMENTS	ARTIFICIAL	NATURAL	SIGHT	SOUND	SMELL	TOUCH	TASTE
1	Boulders		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2	Large Dirt Hill		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3	Adventure play	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4	Climbable trees		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5	Metal Belemen Bean	<input checked="" type="checkbox"/>						
6	Metal Steps	<input checked="" type="checkbox"/>						
7	Large Sand / <u>no digging</u>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
8	4 valley ball pits/sand		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
9	Drinking Fountain	<input checked="" type="checkbox"/>						
10	Large Play Sand area / <u>knicks</u>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
11	No vegetation other		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
12	then Oak trees and							
13	Turf grass							
14								
15								

7 INTELLIGENCES

w/ fence Key Braggs: one way in or out.

PARK PLAYGROUND ELEMENTS	LINGUISTIC	LOGICAL/MATHEMATICAL	MUSICAL	BODILY KINESTHETIC	SPATIAL	INTERPERSONAL	INTRAPERSONAL
1 Boulders							
2 Long Dirt Hill							
3 Adventure Play							
4 Climbable trees							
5 Metal Balance beam							
6 Metal Steps							
7 Large Sand area/No digging toys							
8 (4x) Volleyball nets							
9 Drinking Fountain							
10 Large Play Sand area							
11 Low Vertical Plats							
12							
13							
14							
15							

SITE OBSERVATIONS: Large Excess Dirt Hill w/ well used tracks on hill. ~~lots of~~ Kids (5x) running around. Boy 6 yr estimate

- Girl playing + just talking on + around a tree. Mom + Dad chasing daughter around the adjacent play. (Teg)

- 2 boys (5-10 yrs. estimate) running back + forth on Dirt Hill, throwing rocks + stick they are just walking around + not necessarily playing anything.

- 3 boys (6-9 yrs) digging in sand (volleyball courts).

3 boys playing legs about playing w/ toy truck on hill

. Mom following her kid all around hill. Helping her into trees to climb; I think she is also tracking her about the tree bark

this hill is very well used!

very chilly out

Livermore Park

1st Colson Park

Dougs Phone #

JEFF

QUESTIONS:

ADULTS:

1. Where did you play outside when you were a kid? Park in Circle K behind park. actual section

2. What was your favorite game to play outside? Hieb & seek

3. Where was your favorite place to play outside? Big red creek, kids trail

4. What are the elements that make up that favorite place? Cedar trees, 7115 canyon floor oak trees, young thick grasses - canyon pool

5. When would you interrupt play time? When you had to go to work

6. What would you want as a design to allow your child to play with out interruptions? no other people

7. What kind of event could be used to allow your child to have uninterrupted play time while at a park? Fishing

8. How often do you visit a park a day? week 1x a month 4x

9. What times during the day do you visit the park during the Fall? with grandma

10. What times during the day do you visit the park during the Winter? with grandma

11. What times during the day do you visit the park during the Spring? early day or evening

12. What times during the day do you visit the park during the Summer? early day or evening

13. What times during the day do you visit the park during the Autumn? with grandma

14. What times during the day do you visit the park during the Year? with grandma

15. What times during the day do you visit the park during the Month? with grandma

16. What times during the day do you visit the park during the Week? with grandma

17. What times during the day do you visit the park during the Day? with grandma

18. What times during the day do you visit the park during the Hour? with grandma

19. What times during the day do you visit the park during the Minute? with grandma

20. What times during the day do you visit the park during the Second? with grandma

21. What times during the day do you visit the park during the Millisecond? with grandma

22. What times during the day do you visit the park during the Microsecond? with grandma

23. What times during the day do you visit the park during the Nanosecond? with grandma

24. What times during the day do you visit the park during the Picosecond? with grandma

25. What times during the day do you visit the park during the Femtosecond? with grandma

26. What times during the day do you visit the park during the Attosecond? with grandma

27. What times during the day do you visit the park during the Zeptosecond? with grandma

28. What times during the day do you visit the park during the Yoctosecond? with grandma

29. What times during the day do you visit the park during the Xzeptosecond? with grandma

30. What times during the day do you visit the park during the Yzeptosecond? with grandma

31. What times during the day do you visit the park during the Zzeptosecond? with grandma

32. What times during the day do you visit the park during the Jzeptosecond? with grandma

33. What times during the day do you visit the park during the Izeptosecond? with grandma

34. What times during the day do you visit the park during the Hzeptosecond? with grandma

35. What times during the day do you visit the park during the Qzeptosecond? with grandma

36. What times during the day do you visit the park during the Ozeptosecond? with grandma

37. What times during the day do you visit the park during the Tzeptosecond? with grandma

38. What times during the day do you visit the park during the Dzeptosecond? with grandma

39. What times during the day do you visit the park during the Nzeptosecond? with grandma

limby
play ground
behind hill

KIDS:

1. What do you like to do outside? Jordan play dog

2. Where do you like to play? side bike topless, back yard w/dogs

3. Can you draw a map of your favorite place to play outside? Big mountains stream - dirt hill, can up & down sides - stars

4. What kind of things make up your favorite place to play when outside? up in a tree w/ lots of benches.

5. Where would you hide outside if you are playing hide and seek from Mommy and Daddy? up in a tree w/ lots of benches.

Name: JEFF JOHNSON
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Address: 3150 S. Folsom Ct. Folsom CA

Name: _____
Email: _____
Address: _____

Name: _____
Email: _____
Address: _____

Name: _____
Email: _____
Address: _____

CHILDREN: 2
Age: 9
Sex: Male / Female

CHILDREN: _____
Age: _____
Sex: _____

CHILDREN: _____
Age: _____
Sex: _____

CHILDREN: _____
Age: _____
Sex: _____

Name: _____
Email: _____
Address: _____

Name: _____
Email: _____
Address: _____

Name: _____
Email: _____
Address: _____

Name: _____
Email: _____
Address: _____

CHILDREN: _____
Age: _____
Sex: _____

CHILDREN: _____
Age: _____
Sex: _____

CHILDREN: _____
Age: _____
Sex: _____

CHILDREN: _____
Age: _____
Sex: _____

Park Hydroponic Site Analysis

Park Name: *Mace Regional Park*

Date: *1/26/07*

Time: *3:10pm*

Goal of Site Visit

Natural Park Playground Elements

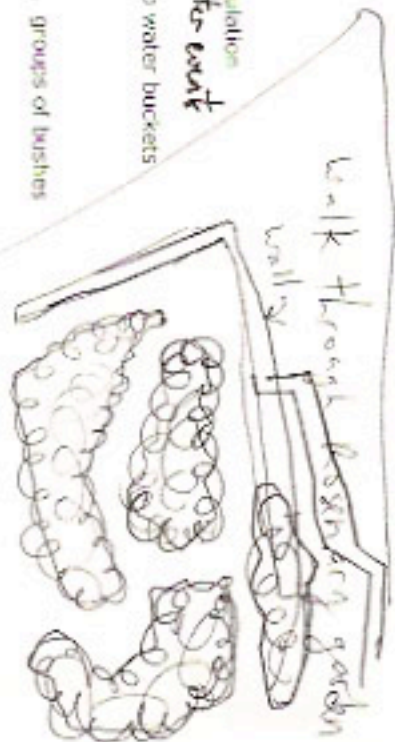
YES NO

*Black Willow
Narrow leaf
Bridford Pear*

Redwood tree forests



10 Different species of Plants: (Not including typical park border trees or grass) Provides constant stimulation w/ 50' of playground area
 Water feature: Preferably natural (pond, stream,) *surface Or creek bed For High Spaw water event*
 Will accept: Water Fountain, Drinking Fountain, Water Hand Pump (can still be used by kids by filling up water buckets)
 Natural molding materials: Dirt, sand, decomposed gravel
 Natural Tools: Fruit from trees, small fallen branches
 Topography: Hills or mounds high enough to run up or roll down, play hide-&-seek
 Enclosures: anything that can be used for a fort, or base, or sheltered; Example: bushes, covered trellis, groups of bushes
 Habitat Opportunities: small enough for beetles and large enough for waterfowl.



5 BIOLOGICAL SENSES

Column	5 BIOLOGICAL SENSES PARK PLAYGROUND ELEMENTS	ARTIFICIAL	NATURAL	SIGHT	SOUND	SMELL	TOUCH	TASTE
1	<i>4' x 4' Yellow Blue Top Lot</i>	X					✓	
2	<i>Chain up bars</i>	X					✓	
3	<i>Blue Curved Climbing ladder</i>	X					✓	
4	<i>Sand pit w/ large Play pit</i>		X		✓		✓	
5	<i>Trees w/ overhanging branch debris</i>			✓		✓	✓	
6	<i>Tree Swing</i>	X					✓	
7	<i>Very tall play structure - spiral ladder</i>	X					✓	
8	<i>Brick retaining wall</i>	X					✓	
9	<i>Swing set</i>	X					✓	
10	<i>Water fountain (spray)</i>	X	X	✓		✓	✓	
11	<i>Dioscorea</i>		X	✓		✓	✓	
12	<i>High variety of Native Plants</i>	X	X	✓		✓	✓	✓
13								
14	<i>Council Ring</i>							
15								

*Adventure
Play
area*

*Adventure
Play
area*

7 INTELLIGENCES

PARK PLAYGROUND ELEMENTS	LINGUISTIC	LOGICAL/MATHEMATICAL	MUSICAL	BODILY KINESTHETIC	SPATIAL	INTERPERSONAL	INTRAPERSONAL
1 Red 'gutter', blue Tot lot slide + 2 stairs							
2 Chinning bars							
3 Blue Sundry climbing							
4 Sand box w/ heavy play pit							
5 Trees w/ numerous branches							
6 Tree swing							
7 Very tall play structure							
8 Brick retaining wall							
9 Swing set							
10 Drinking Fountain							
11 Bio-sloake							
12 High variety of plants.							
13							
14 Council Ring							
15							

SITE OBSERVATIONS: 1st. Noticed no kids playing then saw 3 yr. older female ~~that~~ ~~with~~ ~~the~~ ~~resorce~~ girl went straight to Monkey bars. Boy sat on top + ate chips. Next to Dip-A-Ride, there is a ~~separate~~ ~~park~~ ~~with~~ ~~deck~~ rabbits running around - Skating Rabbit, lot of Mag-pies foraging. Burrowing Owls too! Squirrel's fun on bike. Dog park w/ scullop paving + Boulder set to fence. Down grass. Willow, cat, cactus, Mellow bush

Play Area for left side. Deer grass, Redwood tree, Coniferous Oaks variety. Both brush red Topographic change. w/ brick walls. Very open space. Quack oak lots of birds flying around. Big paths everywhere, very creek bed. Park. Dotted bushes, Satchler + Poyser's Poppy. Two ~~go~~ ~~to~~ ~~the~~ ~~girls~~ ~~playing~~ ~~in~~ ~~sand~~ ~~w/~~ ~~flowers~~ ~~from~~ ~~both~~ ~~brush~~ ~~&~~ ~~sticks~~. Old man using a ~~at~~ ~~retaining~~ ~~wall~~ ~~for~~ ~~exercise~~. Adventure play area. Large sand playing area.

Station
Stadium
California
Red Berry
Council
Ring
More?

At tot lot: which is very far away (300 yds away) & 2 little action boys chasing each other down slide fun back up slide. Then a class came out the 4th & 2 Adults watching 1st boys headed over to Spinal dirt area to play

Class: 5 boys ^{2 girls} playing tetherball; 4 girls jumping rope 2 girls & 2 boys playing on ~~the~~ tot lot.

No one seems allowed to lead over to Natural area. After school program.

Holly: Supervisor

* Are not allowed to go to natural area (supervision)

Parents coming & going
- Allowed to go in grass area for organized play.

outside - tether ball, jump rope,

Parents: Didn't like kids ~~seem~~ getting dirty! stopped letting them play in dirt

ASP. enrichment: English, math & Spanish.

Holly Keck - Nalley

Davis Kids Klub - Access

Holly. Keck @ Comcast.net

Mae Rankle

QUESTIONS:

ADULTS:

1. Where did you play outside when you were a kid? in garden

2. What was your favorite game to play outside? jump rope

3. Where was your favorite place to play outside? under the tree

4. What are the elements that make up that favorite place? shades

5. When would you interrupt play time? times

6. What would you want in a design to allow your child to play with out interruption? fences

7. What kind of event could be used to allow your child to have uninterrupted play time while at a park? fences

8. How often do you visit a park a day? 3 times a week? a month?

9. What times during the day do you visit the park during the fall? winter? spring? summer? after school morning

KIDS:

1. What do you like to do outside? play pretend camp fire w/ rocks & sticks

2. Where do you like to play? Rocks & sand

3. Can you draw a map of your favorite place to play outside?

4. What kind of things make up your favorite place to play when outside? rocks & sticks

5. Where would you hide outside if you are playing hide and seek from Mommy and Daddy? Behind tree

Name: Stella Lewis
Email: sidan@comcast.net
Address:

Name: Email: Address:

Name: Email: Address:

Name: Email: Address:

CHILDREN:

Age: 7
Sex: M

CHILDREN:
Age: Sex:

CHILDREN:
Age: Sex:

CHILDREN:
Age: Sex:

CHILDREN:
Age: Sex:

Name: Email: Address:

Name: Email: Address:

Name: Email: Address:

Name: Email: Address:

Name: Email: Address:

CHILDREN:

Age: 5
Sex: F

CHILDREN:
Age: Sex:

CHILDREN:
Age: Sex:

CHILDREN:
Age: Sex:

CHILDREN:
Age: Sex:

1. School Friends, Susan
2. Tag
3. Front yard
4. pond, bird kill rocks
8. 5 days

1. Drive ways Anita
2. Jump rope
3. Front yard
4. Forest lawn
5. 3 classes
8. 0-3

QUESTIONS:

ADULTS:

1. Where do you play outside when you were a kid?

2. What was your favorite game to play outside?

3. Where was your favorite place to play outside?

4. What are the elements that made up that favorite place?

5. When would you interrupt play time? / class work, conflict taking etc Direct line or sign

6. What would you want in a design to allow your child to play with out interruptions? Enclosure / Age of child appropriate / Bunks do not cut it.

7. What kind of element could be used to allow your child to have uninterrupted play time while at a park?

8. How often do you visit a park a day? week? 2-5 A Month? 10-20

9. What times during the day do you visit the park during the Fall? winter? Spring? Summer? After school / Before Dinner

KIDS:

1. What do you like to do outside?

2. Where do you like to play?

3. Can you draw a map of your favorite place to play outside?

4. What kind of things make up your favorite place to play when outside?

5. Where would you hide outside if you are playing hide and seek from Mommy and Daddy?

weekends grandpa-10 on / Mon / noon

Name: Suzanna Kimm
 Email: SKimm@3IS@aol.com
 Address:

Name: _____
 Email: _____
 Address: _____

Name: _____
 Email: _____
 Address: _____

CHILDREN:
 Age: M N's
 Sex: S
 Name: Anna Lopez
 Email: _____
 Address: Antes 333@soffcom.net

CHILDREN:
 Age: _____
 Sex: _____
 Name: _____
 Email: _____
 Address: _____

CHILDREN:
 Age: _____
 Sex: _____
 Name: _____
 Email: _____
 Address: _____

CHILDREN:
 Age: 6 4
 Sex: m f

CHILDREN:
 Age: _____
 Sex: _____

CHILDREN:
 Age: _____
 Sex: _____

Mace Park Interview

Park Playground Site Analysis

PARK NAME: South Side Park

DATE: 11-12-07

TIME: 8:15pm

GOAL OF SITE VISIT

NATURAL PARK PLAYGROUND YES NO

ELEMENTS

✓ Boulder

✓ Different species of plants: (Not including typical park border trees or grass) Provides constant stimulation w/ 50' of playground area

Water feature: Preferably natural (pond, stream,) *Large Pond*

Will accept: Water Fountain, Drinking Fountain, Water Hand Pump (can still be used by kids by filling up water buckets

Natural nodding materials: Dirt, sand, decomposed gravel

Natural Tools: Fruit from trees, small fallen branches

Topography: Hills or mounds high enough to run up or roll down, play hide-a-seek - *No but tall play structures*

Enclosures: anything that can be used for a fort, or base, or solitued. Example: bushes, covered trellis, groups of bushes

Habitat Opportunities: small enough for beetles and large enough for waterfowl.

of Adults @ park
of Children ages 0-5
5-12

5 BIOLOGICAL SENSES

Column 1	5 BIOLOGICAL SENSES PARK PLAYGROUND ELEMENTS	ARTIFICIAL	NATURAL	SIGHT	SOUND	SMELL	TOUCH	TASTE
1	Space flaws for lot	✓		✓			✓	
2	Mossy garden	✓		✓			✓	
3	Orange climbing kid: stairs	✓		✓			✓	
4	Sand Diggers	✓	✓	✓				
5	High Variety of Plants		✓	✓		✓	✓	
6	Space theme Adaptive Play	✓		✓				
7	Sand for digging		✓	✓			✓	
8	Drinking Fountain	✓		✓				✓
9	Pond (Sandstone, no water)		✓	✓		✓		
10	Climbing wall @ 8' high	✓		✓				
11	Sand phone device	✓		✓				
12	Raised steps	✓		✓				
13	Music xylophone	✓		✓			✓	
14	Tix track toe	✓		✓			✓	
15	trees		✓	✓		✓	✓	

note of Ducks

7 INTELLIGENCES

PARK PLAYGROUND ELEMENTS	LINGUISTIC	LOGICAL / MATHEMATICAL	MUSICAL	BODILY KINESTHETIC	SPATIAL	INTERPERSONAL	INTRAPERSONAL
	1 Space Theme, Tree Forest		✓	✓	✓	✓	✓
2 Merry go round	✓			✓	✓	✓	
3 Merry Climbing Riding				✓	✓		✓
4 Sand Diggers	✓				✓		✓
5 High variety of plants		✓			✓		✓
6 Space Theme play	✓	✓		✓			
7 Sand for digging		✓		✓	✓		✓
8 Drinking Fountain							
9 Pond (Fenced off)					✓		✓
10 Climbing Wall							
11 Merry Gopher	✓	✓					
12 Raised Steps		✓		✓			
13 Music Xylophone			✓	✓			
14 Tree Face Tree		✓		✓	✓		
15 Trees				✓	✓		✓

SITE OBSERVATIONS: Many different plants, Dog Lilies, Lowland Flax, Mexican Feather grass, California Sycamore, Sage, Ginkgo trees, Anoles, Allspice, White Dog, Maple. Large amounts of natural area but kids seem to be playing more on playground structures. Group of 9-10 girls talking on Merry go round = skate boarding over things. They seem to be talking to each other, texting. Dad playing w/ kids on circular merry Gopher. Kids rolling around on rubber material. People even playing during night time. There were secluded areas that one could create a Natural Fort.