Landscapes of Play: Supporting Child Development

THESIS

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By

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Abstract

Playgrounds are designed to give children space to explore and develop into well-rounded individuals, yet a growing body of research in the fields of education, pediatrics, child psychology, architecture, and landscape architecture suggests that the current model of prefabricated playground design is woefully underperforming this expectation. There is an additional body of research that points to the developmental capabilities of nature-focused playscapes. This research shows that such playscapes outperform the dominant prefabricated playgrounds in aiding the child’s holistic cognitive, social, emotional and motor development. Landscape architects are perfectly situated to explore nature-based trends in playground design, as they are specifically trained to create dynamic outdoor environments for people. (Herrington, Lesmeister, Nicholls, & Stefiuk, 7 C's, n.a.) As more research points to the importance of play in nature to a child’s holistic development, playground design that integrates natural elements and the landscape will become ever more relevant. This paper reviews the history of playgrounds in North America, and the current criticisms of contemporary playground design. The focus is to show how this research can be synthesized into a design for a specific play setting in Columbus, Ohio.
Dedication

This work is dedicated to my mother and life-long Montessori educator Lorrie Hiatt.
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Chapter 1: Introduction

The purpose of this paper is to take a critical look at the dominant form of playground equipment known as prefabricated design and see how well it supported holistic child development. Holistic child development refers to developing the child’s social, emotional, cognitive, and motor skills. Play is an integral part of this early development in children. It is where they get their first chances at developing the skills so important to future academic success, and how they learn to be fully independent people. Through play children learn creative problem-solving, social engagement, organization, leadership, observation, cooperation, self-awareness, and self-regulation. Though in order to practice these skills, children require dynamic environments that offer challenge, invention, exploration, discovery, adventure, and above all manipulation (Burdette & Whitaker, 2005).

Unfortunately, the ubiquitous prefabricated playground equipment that dominates playgrounds in the United States is unable to fully meet these demands because they are overly prescriptive, static and unchallenging. The average American playground contains any combination of climbing, sliding, and swinging apparatuses held together with bridging and decking. While all of these elements are important features, they are limited to only challenging a child’s motor skill development. In addition to this narrow range of
challenges, playgrounds have been reduced to the most basic level of challenge so that the youngest of children can be served at the expense of the older child’s experience. This is due mostly out of fear that the younger children will hurt themselves if the equipment is not built for their accessibility level. This fear of injury, combined with America’s system of tort laws, has stripped playgrounds of everything that was once compelling and challenging (Sandseter, 2007). More importantly, these well-intentioned regulations have crippled innovation in the field. Playground design was once under the purview of the architect, landscape architect, and designer, and enjoyed a period of diverse innovation during the first 60 years of the 20th century. Yet now the field is dominated by large manufacturing companies who are driven by regulations and market forces to create ever safer products. Because of the industrial mass production of these playgrounds, they do not evoke any of the character inherent in environment, nor any of the qualities of the community within which they are placed. They become ambassadors of “no-where-ness.”

However, there are those who challenge the prefabricated model, asking if all this safety is necessary, and positing that it may even be detrimental to child development. Child psychologists and pediatric professionals are beginning to research the effects increased safety on the playground has had on child development. Some researchers are even beginning to question if children require risk as part of a healthy childhood (Burdette & Whitaker, 2005).
Others have pointed to the disparity between the high cost of prefabricated equipment and its anemic payoff. In her seminal 7C’s study, Susan Herrington found that from her sampling of day care centers over a five year period in Vancouver, B.C. that the traditional playground equipment went unused 87% of the time, while only 3% of the time did children use the equipment as intended for use (Herrington, Lesmeister, Nicholls, & Stefiuk, 7 C’s). Most prefabricated equipment can easily range from $40,000 - $400,000, which is a lot to pay for so little in return. Along with the monetary price, schools pay a high price in space when they purchase prefabricated playground equipment. In Ohio, according to State Revised Law 5101:2-12-14, every piece of equipment requires six feet of “dead fall” space that is clear of any obstructions, so that if a child falls they won’t hurt themselves. This is not a bad law to have and it makes sense, yet it does significantly limit the way children can use that space, limiting it to the manufacturers design alone, which we have already learned is used only 3% of the time.

Along with these criticisms, there is a growing activist effort in the United States, spearheaded by the journalist and author Richard Louv and his nonprofit, No Child Left Inside, inspired by Louv’s book *The Last Child in the Woods: Saving our Children from Nature-Deficit Disorder* According to Louv, “nature-deficit disorder” is a symptom of a complex web of social and technological factors that are affecting child development. The growing pandemic of childhood obesity, a rise in cases of ADD, ADHD, depression and general anxiety in children, can all, according to Louv, be attributed to a general shift
in parenting culture, a rise in media technology, and a lack of access to nature. American parents, educated by shock news and “Amber Alerts”, are fearful of what Louv calls the “bogeyman syndrome.” This fear, in combination with excessive amounts of media consumption and “helicopter parenting”, is helping to fuel “nature-deficit disorder” (Louv, 2008). Helicopter parenting is a colloquialism referring to parents who pay extremely close attention to their children experiences and problems, hovering over them as if they were a helicopter.

There is also a growing body of research exploring the ways nature may help to mitigate physiological and psychological problems in children. According to psychologist, Sebastiano Santostefano, “nature has the power to shape the psyche” and “playing outdoors, whether along a river or in an alleyway, is how a kid works through issues” (as cited in Louv, 2008 p.53) Other studies, such as the work by pediatrician Hillary L. Burdette, have shown that playground environments which encourage free play help children towards their holistic development, rather than isolating just their motor skills (Burdette & Whittaker, 2006) (Sandseter, 2007). In Susan Herrington’s work, she has explored how the elements of the garden and landscape can begin to re-shape the way we think about spaces for young children to play (Herrington, 1997).

This paper attempts to understand how schoolyards for preschools and kindergartens can better support holistic child development through better design. It takes
a critical look at the environments created by the prefabricated playground, and
challenges its dominance as the best solution. This paper examines contemporary views
in educational philosophy, playground history, and design criticism and research from the
fields of education, child psychology, pediatrics, architecture and landscape architecture.
It is organized into chapters focused on methodology, a brief history of playgrounds, a
literature review, an evidence based design and a conclusion. The contribution to the field
of landscape architecture is to synthesis this research into a model design a specific play
setting in Columbus, Ohio.

Terminology

**Playscapes** – In the context of this paper, playscapes refer to a play environment that is
geared toward supporting various layers of activity interchangeably, and designed
specifically for its context. It is used in contrast with the word playground, which in this
paper will be used to refer to the dominant prefabricated form of play environments.

**Free Play** – Unstructured play that allows the child’s imagination to shape the play
experience, often accompanied with loose objects such as sticks, leaves, rocks, tubes,
bowls, sheets, scarfs, etc.
**Outdoor Classroom** – Using the outdoors as an extension of the learning environment beyond just a space to run. The outdoor classroom is also a space where children can discover the changing seasons, animals, smells of plants, shadows, to name just a few examples.

**Holistic Development** – Developing the pantheon of skills required for a child to become an healthy individual. Includes cognitive, social, emotional and motor skills.
Chapter 2: Methodology

The research methodology employed in this work was based on three broad approaches. All three are based on a qualitative method of research that included a review of the literature surrounding playground design and child development, direct observation of a client, and two workshops working directly with the same client. The literature review began before undertaking the client project in order to allow the research to drive the design decisions. The real life client and playground involved in this work have allowed for this thesis to be a true interface between theory and practice (fig. 1).
Figure 1. Logic Model
Literature Review

The research began as an inquiry into how playgrounds are designed, specifically with regard to the regulatory restrictions placed on designers that might inhibit their ability to create compelling spaces for play and development. I conducted the literature review using research articles and criticism of contemporary playground design in the United States. These writings were taken from the professional fields of children’s education, child psychology, pediatrics, architecture, and landscape architecture, as well as from the writings of child advocates. The fields of child education, child psychology and pediatrics supplied theories of child development and play. Research from the perspectives of architects and landscape architects provided further data to support the above theories, while also positing what a child development-focused play environment might look like. The last section in the literature review acknowledges the growing body of work in other disciplines that collectively advocate for major changes in the way we view child development, spanning from how children are raised and other cultural norms, to what kind of environments are best for their positive development.

Observation

In early 2011, the Columbus School for Girls (CSG) director of the Program for Young Children (PYC) contacted then Landscape Architecture Section Head at the Knowlton School of Architecture, Jane Amidon, to inquire if they could partner with a
student on a potential program design (fig 2). Their goal was to engage with a designer who could help design their playground in a way befitting their educational philosophy of Reggio Emilia. The Reggio Emilia approach believes in giving the child a great degree of independence in choosing what they focus on in school. CSG is a private, all-girls academy located in the city of Bexley, due east of downtown Columbus, Ohio. The school has roughly 40-50 girls enrolled in the PYC.
Figure 2. Client & Thesis Timeline
As part of this research, I was invited to observe the school and work with the faculty to get a better understanding of the students’ daily routine. The observations lasted for two weeks in late September 2011, daily from 7am – 12pm. Documentation took the form of daily journaling, observation drawing, and group drawing (fig. 3) with the teachers and students. As part of their educational system, the teachers record their daily activities, and thus were able to share their own observations as part of the documentation.
Figure 3. Group Drawing with Faculty and Students of the PYC
Workshops

Two workshops were organized to add validity and insight to the design process, in tandem with what was learned from the literature review. These workshops were based on the process planning session method developed by Nick Wates Associates (www.communityplanning.net). This method was used in both workshops as the basis for designing the agendas and activities. This method brings stakeholders together to introduce them to options and help in the design process through an external facilitator.

The purpose of the first workshop was to identify a set of goals for the new playground. This workshop consisted of faculty on the PYC playground committee, director of the PYC, a consulting engineer, and me, the designer, referred to collectively in this work as “the playground team”. The goals of the playground team were:

- Must support holistic child development by creating an outdoor classroom
- A space that changes over the seasons
- A multi-sensory experience
- Manipulable environment
- Encourage team work
- Reasonable risk
- Different types of spaces - active/quiet, open/closed, fast/slow, clean/messy etc.
These goals set the scope for the design and were the first steps in realizing a potential new environment that would support the development of social, emotional, cognitive and motor skills for these young students.

The second workshop was held in order to involve both parents and faculty, and receive their feedback on potential designs (fig. 4). Parents were introduced to the playground team, who proceeded to give a brief summary of the literature review helping to establish the case for an alternative approach to playground design. The team then gave a presentation of the potential designs, after which parents and faculty participated in a brief exercise called the “dot activity”.

Figure 4. Workshop #2 Preliminary Design Presentation to Parents and Faculty
Each individual was given green and red sticky dots to place next to items on the design presentation boards that they either agreed with (green dot) or had concerns about (red dot). When faculty members liked a design, but felt ambivalence over a specific portion, they’d place a red dot on top of a green dot. This activity helped to facilitate the proceeding group discussion, generating new design ideas and questions, and ensuring that the final design would be in concert with the needs of the school community. Lastly, parents who were unable to attend the workshop were invited to read and comment on the design presentation boards, which were left at PYC for the remainder of the week.

The second workshop was an equally important aspect of the design process. Involving the parents and faculty in the design process grounded the design to the needs of the client, and also fit it within the PYC’s practice of including the community into the school’s educational process. At the end of the presentation, consulting engineer and construction manager Amy Dutt gave a brief introduction to “community builds” by asking parents what skills and resources they might be able to supply in order to help realize PYC’s playground.

Preliminary Designs

Two preliminary designs were presented at the second workshop. Parents and faculty were encouraged to view these drawings as “early stage” plans, subject to change based on their input, further reinforcing the idea that they were to have an active role in
the ultimate design. This was also done to avoid what one professor at the KSA has referred to as “shopping”: the team didn’t want them to become wedded to any particular design, as the final design was still open to alteration and could potentially look very different from what was presented at the workshop.

As has been stated earlier in the paper, prefabricated playground equipment poses many drawbacks. The main arguments against buying prefabricated play equipment are as follows: pursuant to Ohio State Revised Law 5101:2-12-14 Sec. “I”, they require at least 6’ of “fall space”, which is space the client cannot spare; research has shown that catalogue prefabricated playground equipment goes unused 87% of the time (Herrington, Lesmeister, Nicholls, & Stefiuk, 7 C's); this equipment is extremely expensive for such a limited payoff; and lastly, a playground designed using the qualities of nature and landscape in tandem with structures can give children a wider range of play options for far less cost than prefabricated equipment. The goal of the new playground environment is to utilize the outdoors and play as an extension of the educational experience referred to as the “outdoor classroom”, rather than simply a space for children to expend their pent-up energy. As the literature review supports, play environments that include experiences for all five senses, loose materials, and elements of nature such as plants, habitat, seasons, and general ecology are more likely to lead to “free play” (Burdette & Whitaker, 2005) (Herrington, 2005) (Louv, 2008). Free play is an important component to holistic child development. It allows the child to manipulate her environment through
loose objects and open-ended environments that change. Loose objects can include natural elements such as leaves, sticks, grass, mud, berries, herbs, or man-made elements such as sheets, string, rope, balls, boards, etc. The reason for these components is that the child should be able to augment her space to create new types of play experiences. This type of play challenges and supports the child’s creative thinking, problem-solving, and social interactions. Both preliminary designs that were presented attempted to create spaces showing a high level of design intent, while at the same time not becoming too prescriptive. They strived to create a space that children would find compelling, malleable, and encouraging of free play.

Of the two designs presented, the first (fig. 5) used landform as a constant, organizing element across the playscape. Landform encompasses various forms including hills, ridges, valleys, mounds, piles and so forth. Unlike playground equipment that requires “fall space” as part of its safety requirements, landforms can challenge a child’s motor skills and balance, yet can also support a wider degree of activities (fig. 6). For instance, the low points between two ridges of a landform could act as a sandbox while the ridges of the landform give the child an opportunity to climb. Since the landform is made of soil, it can also be planted, adding sensory qualities and loose materials for the child to play with. This is precisely the dynamic quality that prefabricated equipment does not share with playscapes. Landform enables a multitude of combinations that traditional playground elements do not offer due to the fall space requirements.
Landform not only supports free play by allowing children to engage with loose materials, the combination of various elevations and plant materials can also create differing sensory experiences. Landforms could be used to create outdoor rooms where plant material becomes the walls, and where children experience sensations such as wind rustling through tall grasses, scents wafting off an herb plant, or where safe plant material can be tasted. These forms lend themselves to a much more inspiring interaction than do polyurethanes. The playground that currently exists at CSG is linear, with a straight path throughout, making the area feel small. As part of the first preliminary design, a zig-zag path was introduced to break up the space and make it feel larger. Such an element becomes especially pertinent to children since at their height a simple design feature such as this can really make their world feel bigger. The zig-zag path creates new patches for
herb gardens and living willow huts or tunnels. The tunnels give the girls the opportunity to hide and explore.

The second design (fig. 7) presented similar choices, but in a much more curvilinear form. The zig-zag was smoothed into a curved path with a roundabout in the middle surrounding a planted earthen mound. The path was textured for new tactile and auditory experiences. As the girls walk or ride over the bumps on tricycles, the textures create “rattling” sounds and a jumpy sensation. In the bends of the path, large sand areas were included, each with their own landforms for climbing and prospecting. Balancing beams and inlaid wood beams were placed throughout the design to give children opportunities for new ways of moving through the space. Two sculptural post gardens were included, one at the south entrance and one at the north end of the playground. The southern garden was a series of vertical posts situated between two old growth Austrian pines and one old oak. The series of vertical poles mimic the repetition of a forest, and give the girls a space to explore and hide. The garden to the north takes advantage of the sunny nature of the spot and acts as a sun-dial which changes with the seasons.
Figure 7. Design Iteration #2
Workshop Feedback

Parent and faculty response to the designs were overwhelmingly positive and a lively discussion followed. Some of the ideas and points that were picked up on were:

- The girls are involved in the creation and building
- There are lots of loose objects for the girls to manipulate
- Teacher lines of site continue to be considered, yet still allowing for 'hidey-holes' or 'chat-shacks'
- Water management and water play
- Sound/music and art area or elements
- Keep the veggie garden and possibly some cement as a patio/mud-room area
- Have a meaningful hands-on project for the community, like building a mud-boot rack
- Allow the post sun-dial area to also function as a gathering area. Include a fall zone area if the posts may be used for balancing or climbing
- Outdoor tool/material storage and seating
Chapter 3: Brief History

When one talks of playgrounds, they generally are referring to the formal playgrounds that can be found in public parks, elementary schools, preschools, or kindergartens. According to Joe L. Frost in his book *Play and Playscapes* (1992), what defines them “…differ(s) substantially from one another in provisions for materials and equipment, layout of the environment, play supervision or leadership, provisions for safety and child development and in philosophy” (p.111). Of course, this does not include the pantheon of “informal” space that children otherwise explore, such as forested areas, meadows, or beaches. Such informal spaces may factor into this paper, however, we will primarily be focused on the school playground as it has related to child development over the years. The evolution of playground design did not take on a singular path, but rather, many paths often running concurrently with each other. In order to understand how the playground in North America came into being, we must take a look at the philosophical, institutional, and cultural developments in the western world over the past 200 years.

Developments such as Jean-Jacques Rousseau’s (1712 - 1778) radical ideas on child development claimed that children should self-realize their own education through interaction with the natural environment. His ideas laid the foundation for future pedagogues and educational philosophers to develop new teaching methods, specifically
when it came to young children. This educational path saw such thinkers as Johann Heinrich Pestalozzi (1746 - 1827) and Freiderich Froebel (1782 - 1852) build upon Rousseau’s ideas. Pestalozzi was the first educator to develop a teaching methodology based on the child self-directed education philosophy. Froebel, creator of the kindergarten, combined school work and play as part of a holistic educational philosophy in his school curriculum. Froebel’s first kindergarten was started in Germany in 1837 and used nature as the playground. According to Joe L. Frost in his book *Play and Playscapes*, Froebel believed that play was more important than formal education, because in play the child thinks for herself, while formal education conveys someone else’s message (Frost, p.115) These new educational theories understood the importance of play to a child’s holistic development, and they recognized that the school environment was key to its success, yet they did not have the formal design language to interpret their philosophies into playground designs, thus, nature took on the role of the playground. Contemporary schools based in the theories of Maria Montessori or Reggio Emelia are inheritors of these educational philosophies of Rousseau, Pestalozzi, and Froebel, yet these types of schools have yet to come to a design consensus on playgrounds. More often than not, they comprise the same ineffectual prefabricated designs.

Institutional and industrial forces were also at work during the 18th, 19th, and 20th centuries, which drove the ascension of the playground. In contrast to the educational
path, the institutional path was a reaction to the industrial revolution and city living. One such major cultural influence can be found in the Victorian era’s penchant for moral living through physical fitness. This led to the advent of the outdoor gymnasium, first developed in Germany, before reaching the shores of Massachusetts in the late 19th century. This fixation on civilian betterment through physical fitness was a reaction to the growing problems of industrialization in cities. Factories were drawing workers in greater numbers, creating a strain on space as well as on atmosphere. Workers’ children were suffering ailments associated with the smog and uncleanness of the city, which led to the needs for social reforms. Much of this social reform started with charity groups who were calling for public money to fund public play spaces, though it took some time to take hold. According to Barbara E. Hendricks in her book *Designing for Play*, it was not until the discovery that young men from the cities were unable to pass basic military physical exams did change take hold. According to her, the need for military manpower galvanized the political will, which lead to the public programs that set the foundation for creating spaces where children could improve their health through play. Yet, in contrast with the education path that was discussed earlier, the institutionalization of playgrounds was a concern over utilitarian needs and not one of design or education (Hendricks, 2011). These early outdoor gymnasiums, with their balancing bars and climbing apparatuses were the forbearers of the modern day prefabricated playground (Frost, 1992).
Playgrounds continued to gain support in major cities across the United States throughout the turn of the century. By 1905, according to Frost, “35 American cities had established supervised playgrounds” and Chicago had spent $5,000,000 alone on 10 small recreational parks. (Frost, p.122) Because of this popularity it became necessary to create a regulatory body that could effectively implement and control municipal recreation. This led to the creation of the first national Playground Association of America (PAA) in 1907, and included 27 members from 10 cities. The organization fueled a surge in playground development as the number of playgrounds in cities with more than 5,000 residents jumped from 90 in 1907 to 336 by the end of 1909. As time wore on, the focus of the PAA shifted away from children’s playgrounds to the broader fields of recreation based on public demands. The organization changed its name to include *recreation* and became the Playground and Recreation Association of America (PRAA) in 1910. Vicissitudes in American foreign affairs and economy between World War I and the Great Depression put pressure on the PRAA to continue its shift away from playgrounds and toward offering recreational opportunities for citizens with greater leisure time. The association finally changed its name to the National Recreation Association in 1930, removing the word playground entirely. (Frost, 1992).

While the institutional path to playground design was well established by the 1930’s, young designers, architects, landscape architects, and artists were challenging the status quo and developing the playgrounds cultural path. In Europe, a landscape architect
by the name of C. Th. Sørensen (1893 - 1979) had developed a new type of playground called the “adventure playground” which was an amazing feat of ingenuity. In spite of the German occupation of Copenhagen, Denmark during WWII, Sørensen gathered bits and pieces of masonry, carpentry tools, wood, shovels, hammers and nails deemed unworthy of the war effort. He was able to set aside spaces where children could come and build whatever they pleased over a period of days. A supervisor would help facilitate the activities if need be, but was there mainly as an observer (Solomon, 2005). This is very close in spirit to what Froebel advocated for when he talked about the importance of letting the child direct her play. Sørensen had stumbled upon the first playground designed for free play.

According to Susan G. Solomon in her book American Playgrounds, the adventure playground became (counterintuitively) one of the safest facilities available to children following WWII (Solomon, p.13). Its popularity with children was due in large part to the perceived danger and risk associated with tools and building. According to the research of psychologist Ellen Sandseter, children seek out risky play and there are benefits when children are exposed to risk-taking because they “learn risk assessment and how to master risk situations” (Sandseter, 2007). This appears to have also been true with Sørensen’s adventure playgrounds.
The adventure playground enjoyed success throughout Europe in the post-war years. One of the major proponents of adventure playgrounds was the horticulturalist and child activist Lady Allen of Hurtwood (1897-1976) whose writings are still held in high regard by those involved in the continuing development of playgrounds. She was able to successfully establish adventure playgrounds in the British Isles, yet she had trouble convincing Americans of their worth (Solomon, 2005). Post-WWII America had become an economic and cultural powerhouse, and this would define a distinctly American playground.

Two things would set the stage for the development of the prefabricated playground in America: the post-war economic engine which was ready to churn out consumer goods, and the Modern Art movement fueled by the patronage of the Museum of Modern Art in New York. Modernity in the arts and architecture was influenced by the advent of new manufacturing techniques and synthetics which allowed practitioners to experiment with expressive forms. Isamu Noguchi (1904-1988), an American-born sculptor raised in Japan until his teenage years, had already been experimenting on his own with creating sculptural playgrounds. He was particularly interested in shaping the land to create landforms devoid of any discernible equipment. He did design equipment too, such as slides and climbing apparatuses, though they too were in abstracted forms.
During the 1950s, a playground equipment manufacturer named Creative Playthings began working with abstract sculptures in playground design. Emblematic of the Creative Playthings style was the work of a Dane named Egon Møller-Nielson (1915-1959), who created curved abstract concrete sculptures. In 1954, teaming up with Parents’ Magazine and the Museum of Modern Art, Creative Playthings hosted a playground design competition called the “Play Sculpture Competition.” Creative Playthings would manufacture the winning design at a large scale, and the Museum of Modern Art would retain ownership over the designs. As Susan G. Solomon states, because of the backing from a cultural heavyweight such as the Museum of Modern Art, this competition helped to “wed play concepts to the general art world” (Solomon, p.31). This led to a period of abstraction in playground equipment, and helped to combine avant-garde playground design with mass production.

Though this competition helped to publicize the need for quality design in children’s playgrounds, it may have also lead to the dominance of prefabricated playground designs over other forms of playscapes. Essentially the abstract designs were fixed, and resistant to change, movement or action by the children (Frost, 1992). The 1950s art world was focused on sculptural abstraction and easy modular construction, therefore with the MoMA collaboration with Creative Playthings quite possibly laid the foundation for the prefabricated playgrounds for the following decades. What started as
an experiment in avant-garde design has become too ubiquitous and overproduced to retain much of its original appeal.

The decades preceding the 1950s have seen several distinct eras in playground design. According to Frost in *Play and Playscapes* two of these eras can be summed up as the Novelty Era (1950s – 1960s) and the Modern Era (1970s – 1980s) (Frost, p.126 - 129). Since the publishing of *Play and Playscapes* in 1992, one more era has emerged, with a possible fourth, yet it may be too soon to make a clear distinction. The next era in playground design after the Modern Era can be summarized as the Safety Era (1980s – 1990s), and the likely fourth era is the Nature Revival Era (2000s). During the Novelty Era, many playgrounds replicated popular themes including westerns, nautical, and outer space. A “Dennis the Menace” playground was even built in Monterey, California in the late 1950s (Frost, 1992). During Modern Era of the 1970s and 1980s, wood had begun to replace concrete as the dominant material on the playground. The 1980s saw manufacturers using powder-coated metals and space-age plastics that lent color to the playground and reduced the likelihood of certain safety concerns, such as burns from heated metal (Frost, 1992). The 1990s would continue the trajectory started during the 1980s with synthetic plastic equipment, and would see an increase in safety concerns from the public. During the course of the last decade, a reaction against pre-form plastics in the playground and a return to rustic play design that champions natural and reclaimed elements from nature has become exceedingly more common place, hence the possibility
of a present Natural Revival Era. This is especially true in Germany, where the city of Berlin has embraced the messy ecology of weeds growing through cracks, and repurposing tree trunks to use as climbing features (UK, 2012). Though vestiges of each era persisted into the era that followed; modern prefabricated playgrounds still hold true to many of the forms that developed over the past half century, including abstraction from the 1950s, as well as the post and decking of the 1970s and 1980s. The difference, however, is that these forms have evolved with changes in materials technology and regulations. The return to naturalism may be the most recent trend and will be reviewed later in this paper.

Changes in educational philosophy recognized free play as one of the most important aspects of childhood education and development. It took time for these philosophies to influence playground design, yet educators such as Freidrich Froebel recognized the benefit of letting children play in nature and for a time, nature was the first kindergarten playground. Already at this early stage, Froebel recognized that children benefited from environments that allowed them the freedom to change and shape their experiences. At the same time as these educational changes, the Industrial Revolution had made healthy living in cities untenable and led to social reforms, creating new public spaces for children to exercise. Since early public playgrounds were developed out of a utilitarian need to improve the health of children dwelling in cities, their designs did not focus on holistic development. After the devastation of WWII,
many Europeans began to rethink the importance of raising socially healthy children, and resurrected many of Rousseau and Froebel’s ideas on free play for their playgrounds. America, was entering the post-war era as an economic and cultural powerhouse. Artist who had fled the war and moved to the United States were influencing many areas of the avant-garde after the war, including playground design. The wedding of America’s industrial strength with its artistic ingenuity helped to lay the groundwork for the prefabricated playground form. Ever-changing technical advances in materials, as well as concerns over child safety continued to mold the American playground into an ever more simple generality. Criticism of the history of playground design has led to new creative tide that may yet reshape playgrounds to come. (fig. 8)
Figure 8. Brief Timeline of Playgrounds in America
Chapter 4: Literature Review

Despite this rich and varied history that led to the development of playgrounds, the current playground in nearly every suburb, town and city in the United States adheres to one very particular formula. As Thomas Burton wrote in his 1976 book, *Making Man’s Environment: Leisure*, “The facilities on urban playgrounds across the nation are repeated ad nauseam—swings, slides, sandpits, merry-go-rounds and baseball diamonds” (as cited in Hendricks, 2011). The homogeneity of modern playground design denies children the varied playscapes that take their development needs, as well as the surrounding cultural and community context, into consideration. This is not a question of aesthetics, but rather a critical look at whether the traditional playground encourages a child’s imagination, cognitive, emotional, social skills, and motor skills. Design researchers and critics such as Susan Herrington, Mark Dudek, Barbara E. Hendricks, and Richard Louv have all questioned the modern playground from the perspective of landscape architecture, architecture, design, and child activism respectively.

Susan Herrington

Susan Herrington is a professor of Landscape Architecture at the University of British Columbia in Vancouver, BC, and has written extensively on playgrounds from the perspective of the landscape architecture field. Her five-year study of playgrounds in the Vancouver area culminated in the publication “7 Cs: An Informational Guide to Outdoor
Play Spaces”, written by the “Outside Criteria” team: Susan Herrington, Chandra Lesmeister, Jamie Nicholls and Kate Stefiuk. This study focused on sixteen childcare centers, located throughout the city, selected based on their socioeconomic status. The study focused on children aged 2 to 5, because of the critical developmental stage of this age group. The team studied the size of the outdoor play spaces, where children played in these spaces, types of play observed in different environments, what staff and children enjoyed about their current outdoor play spaces, presence of living things in the environment, and the amount of manipulable materials in the outdoor play environment. (Herrington, Lesmeister, Nicholls, & Stefiuk, 7 C's) Samples were taken from video clips documenting the children’s use of their play environments, and the team found that 87% of the time, the expensive prefabricated play equipment was unoccupied. The remaining 13% of the time broke down to: “used loose parts together with the structure 5% of the time; played underneath 4% of the time; used it as intended 3% of the time; and used it for prospect 1% of the time” (Herrington, Lesmeister, Nicholls, & Stefiuk, 7 C's). The study concluded that “more attention should be paid to the whole environment” instead of on just the fixed play equipment, because it was so rarely used. Focusing on dynamic elements of the playground can create environments that support holistic child development. Dynamic elements can include day-lighting water as a learning amenity, rather than piping it underground, leaving patches of grass to grow, building landforms for climbing, and using fallen leaves as play objects. They also concluded that “this finding is particularly applicable to landscape architects because they are specifically
trained to design outdoor environments for people.” (Herrington, Lesmeister, Nicholls, & Stefiuk, 7 C's). In addition to her work with the Outside Criteria team, Herrington has explored playground design through the language of landscape architecture.

Herrington’s previous investigations have been concerned with environment for kindergarten-age children, both in school and nursery settings. In her essay “The Received View of Play and the Subculture of Infants”, she begins to question what “outdoor play apparatuses really offer children,” especially in the growing “corporate, commercial and institutional settings” of child care, and posits that landscape, rather than the common play artifact, is better suited for child development, rather than the common play artifact. She refers to her alternative landscape strategy as the Infant Garden, in which the dynamic elements of landscape are always in flux, opening up the possibilities for holistic child development. Her underlying goal is to develop spaces for children that support their social, emotional, cognitive and physical development (Herrington, 1997).

Herrington’s argument begins with the criticism that environments for young children lack cultural interpretation, and instead promulgate a standard which is static in performance. The received view of outdoor play, according to Herrington, is one which prioritizes the prefabricated object on a piece of land, where the land acts only as the ground upon which the object sits, nothing more. These spaces have no reference to the
sites or cultures in which they reside, and instead are simply mass produced and meant to be implemented anywhere, thus referring to nowhere.

Herrington reiterates the history of playground design, noting the cultural goals of safety, morality, and physical fitness as the dominating factors which have guided the development of playgrounds in North America, beginning with the Victorian Era reforms. She also notes the philosophical reach of the ideas of Rousseau and the Enlightenment, since over a hundred years later these Victorian reformers were still speaking of the need for, as Cavallo states “…loyal as well as more efficient citizens” (as cited in Herrington, 1997) This was in turn interpreted into the need to alter the course of the “…physical deterioration of urban youth” which “…was a visible sign of failure for the newly emerging industrial society” (Herrington, 1997). According to Frost, this focus on physical fitness over all other forms of a child’s development still continues to this day (Frost, 1989).

The overriding interest in safety and fitness helped to establish the dominance of playground equipment as the solution to industrialization’s negative impacts on child health. However, Herrington argues that these prefabricated objects resist a child’s need to explore, manipulate, and absorb their environments. Traditional playground equipment combats the forces of nature with molded polyethylene, polycarbonate sheets, and galvanized steel coated in baked-on polyester. Herrington says these materials “…illicit
nothing unique about the outdoors. In fact, these materials and forms could clearly be experienced indoors” (Herrington, 1997). She contrasts the static architectonic qualities of prefab play artifacts with the dynamic qualities inherent in landscape, illustrating what she calls a deficiency in the standard model for playgrounds. Herrington (1997) writes:

“More than equipment design, architecture, or any other construct, it is landscape that can most vividly engage play. Like play, landscape is open-ended and intrinsic, and because of all its shades of the meaning, it can speak to the physical, emotional, social and intellectual growth of a developing child.” (p.151)

The Infant Garden at the University of California was her first project to implement these new concepts of landscape integration. In conjunction with UC’s Child and Family Study Center and the Department of Applied Behavioral Sciences, the project proved to be a collaborative and interdisciplinary approach to playground design. As Herrington says, it is “collaboration between the sciences of human development and the theories of experience, order, harmony, sacredness, and place found in landscape theory” (Herrington, 1997). The goals of the project were to support sensorimotor and socio-emotional development through spontaneous exploration. This was done through plant selection, sculpted terrain, a focus on material qualities, and sensitivity to the effects of
sun and wind. Careful attention was paid to how the team handled private and semi-private spaces, creating visual access for teachers or parents to keep a watchful eye.

The theoretical model of the Infant Garden determined that integrating landscape elements encourages more varied types of activities within the play yard. This greater assortment of activities, particularly the increase in activity frequency, seems to support the theory that natural elements combined with traditional equipment give the child more opportunities for development. One of the largest implications that came out of the Infant Garden was how plant material can support a variety of experiences, and at a fraction of the price of traditional play structures (Herrington, 2005, p. 221)

Herrington has continued to develop her practice, designing other playgrounds, such as the Yard to Garden at the Child Development Laboratory at Iowa State. These projects allowed Herrington to address issues and opportunities that arose from previous efforts. While each of these projects generated new insights into the possibilities of future playground design, it was the 13-acres competition that she organized in 2000, which brought in designers from around world to “…explore the schoolyard as an untapped site for ecological rejuvenation and environmental education” (Herrington, 2005, p. 230).

The sites chosen for this competition were two schoolyards, each roughly 13-acres, in the district of East Clayton, British Columbia, Canada. The competition criteria called
for designers to explore the potential of ecological systems as educational and community resources. They were also encouraged to use landscape materials (such as earth, water, wind, walks, etc.) as resources for play and learning. The questions posed by the competition were:

1. How can conventional thinking be changed about schoolyards/parks?
2. How can multiple public programs be folded into the design?
3. How can landscapes support learning and imaginative play?
4. How can natural systems be used as a tool for learning?

(Herrington, 2005, p. 233-4).

The jury received over 258 entries from around the globe. Many of the entrants created proposals that used the changing character of landscapes to allow for multiple forms of experience to occur, both for children and the community. The winning proposal by Nicholas Gilsoul proposed the use of community gardens to teach children about water, food, and land life cycles. The design called for meadows to be planted on the roof of the school building, allowing any seeds that blew off the building to take root downwind. The community gardens would be downwind from this location, so if a garden went fallow for a season, it would still collect meadow seeds, leading to a landscape that would be in constant flux. This too, would give young children to the opportunity to experience the process of seasonal nature.
Other proposals included a system of ditches running through one site. When combined with loose, manipulable objects, such as large wooden members and canopy fabric, these ditches allowed the children to manipulate their environment. One example of that manipulation was how the ditches enabled children to have creative control over the direction of stormwater flow. Many of the proposals called for schemes that would attract wildlife, while others fostered some food production. All of the proposals preferred ways that allowed the children to take on an active role in manipulation of the environment, creating new activities to support explorative discovery in nature. (Herrington, 2005, p. 236-43).

Overall, the work of Susan Herrington has contributed immensely to playground design that accounts for landscape elements and child development. Over the past two decades, she has helped to push the discussion several steps forward, and her research has opened up opportunities for more compelling playground design supporting the child’s emotional, social, cognitive and motor skill development.

Mark Dudek

Mark Dudek is an architect and critic who has written about the architecture of educational environments. A contemporary of Herrington, Dudek has collaborated with her on research, and served as a judge during Herrington’s 13 Acres competition. While Dudek’s work deals primarily with the architecture of preschools, he does address some
key points when designing spaces for education institutions, such as a need to understand educational philosophies of the school and the need to be in tune with the experiences of the child.

According to Dudek, schools can be broken down into two main environments: the interior school environment (architecture) and the exterior school environment (landscape architecture). How the interstitial space is handled between the two is increasingly important for the designer who must stitch together the daily educational program of the school with that of its physical structures. For instance, a classroom may incorporate its adjacent outdoor patio into their indoor activities. The daily procession moving through spaces is just as important as the spaces in which the classes are held, so facilitating their flow must be addressed on equal footing. Yet according to Dudek, more often than not, educators and designers miscommunicate their agendas, and in so doing lose the opportunity to create spaces which reflect the schools educational philosophies. In the introduction to his book *Kindergarten Architecture*, Dudek illustrates a misconnection between rhetoric and practice when he notes: “Educationalists frequently make reference to the environment and its importance to preschool educational curricula, but seldom touch upon the architectural agenda in any significant detail” (Dudek, 2000, p. xi)
A common theme shared among Herrington, Hendricks and Dudek is sensitivity to the needs of children. They stress that our adult conceptions of space must not influence the way we design children’s spaces. In his book *Children Spaces*, Dudek says that “Most important is the recognition that children need to be observed and listened to in order for their priorities to be understood within a complex urban environment.” (Dudek 2005, p.vii) Hendricks (2001) echoes this idea nicely:

“Play area design should be executed with humility, recognizing that we adults are but tourists in the land of children; we are not experts in their culture and their ways. Childhood experts are experts in an adult definition of childhood—not in life as experienced by children” (p.6)

**Barbara E. Hendricks & Nature Playgrounds**

There is a current trend in playground design to build playgrounds which mimic elements of nature, yet are not “natural” in reality. They use simple finished wood, stone, sand, and earth as their building materials as opposed to synthetic plastics. It champions a revival of rustic craft traditions and a limited earthy color palette. Its basis is in the environmental movement, as well as a concept that nature is the most pure environment for children. While by no means a new idea, this trend has taken on a newfound popularity, especially in northern European countries. Yet Hendricks is critical of the
natural playground trend because of what she sees as good intentions leading to possible poor solutions. (Hendricks, 2011)

Hendricks blames the movement for being neo-romantic, stating, “In terms of spatial design, these places clearly show the hand of amateur play designers who emphasize adult values of economy and use of rustic and found materials that have some connection with adult ideas of romantic nature. Design and creation of playfulness are missing” (Hendricks, 2011, p. 195). She is stating that this movement has much more to do with a set of adult beliefs than it does an established set of scientifically founded principles. The implication Hendricks sees is that children do not deserve well-made spaces for play. This may or may not be true, but it is worth noting when designing playgrounds that include nature as part of their program. Susan Herrington has voiced similar concerns in her own research, referring to these forms of design as “nostalgic typologies of nature” and says that instead of attempting to look “natural”, playground designers should aim for “conscious forms and infant-scaled spaces” (Herrington, 1997, p. 153). Herrington has shown in her own research the power that plants and natural elements can have to support holistic child development. The concern is not with nature itself, but rather a reinterpretation of nature that becomes thematic.

According to Hendricks, the nature playground also rejects key components of culture. As she writes, “Culture is seen to be the antithesis of nature and objects created
by culture are rejected unless they have some appearance of rusticity or a primitive handcraft” (Hendricks, 2011, p. 196). Jean-Jacques Rousseau, in his novela, *Émile*, was the first to suggest that children should be separated from the “corrupting influence of culture” and be educated in the “purity of nature”. Though other pedagogues, such as John Dewey, built upon Rousseau’s educational philosophies, they rejected these particular ideas and believed the child was a composite of his psychological and sociological self. According to Madonna Murphy in *The History and Philosophy of Education*, Dewey states that “The only true education comes from the stimulation of the child’s powers by the demands of the social situations in which he finds himself” (as cited in Murphy, 2006, p.333). The nature playground alone diminishes the child’s opportunities for social, emotional, and cognitive development because it dismisses the importance of including cultural elements into their design. Although Herrington’s own work has been critical of the traditional manufacturer-based play equipment in playgrounds, and has focused on landscape as an underutilized component for edifying environments, she has not outright rejected all forms of cultural inclusion. Rather, her work has augmented and not replaced the traditional forms.

The same scrutiny that needs to be applied to the market-driven, prefabricated catalogue designs and boutique architectural playgrounds must also be applied to the nature playground movement. It would be a mistake to assume that the argument against nature playgrounds is an argument against including nature in the playground. This is not
the case; rather, the criticism is aimed at the argument that \textit{naturalness} is the best aesthetic for playground design. Hendricks has contested this implies a romantic sensibility based on an adult conception of “nature” or “wilderness.” As Hendricks puts it “…nature has many different disguises, but we accept the fact that nature is a cultural invention, and that our culture forms our attitudes toward nature” (Hendricks, 2011, p. 189). Are the colonizing plants that find their own way between the cracks of an abandoned factory less \textit{natural} than a forest’s edge planted by a landscaping company in a randomized order? It must be recognized that nature and culture are intertwined. This holds true when designing playgrounds that include the dynamic qualities of nature, yet retain our cultural fingerprint.

\textbf{Safety Standards, Litigation & Design}

Safety standards and more importantly the litigations they help facilitate, play a very large part in how both private and public institutions choose designs for their playgrounds. Safety Standards have a profound influence in part due to fear of potential litigation should a child become injured on the playground. Due to a slew of litigations during the 1980s over accidents on playgrounds, manufacturers have become much more willing to adhere to strict standards when creating play equipment, including those set forth by the U.S. Consumer Products Safety Commission (CPSC \url{http://www.cpsc.gov/}), the American Society of Testing and Materials (ASTM \url{http://www.astm.org/}) and the International Playground Equipment Manufacturers Association (IPEMA \url{http://www.ipema.org/}). Only sixteen states in the United States have passed laws
adopting all or parts of the CPSC or ASTM. They include Arkansas, California, Connecticut, Florida, Illinois, Michigan, New Jersey, North Carolina, Oklahoma, Oregon, Rhode Island, Tennessee, Texas, Utah, Virginia, and Wyoming (NPPS, 2012). Because manufacturers have had to comply with these regulations in order to maintain competitiveness in the market, they have learned to turn them into a marketing boon for their products. Schools and communities are afraid of the litigation costs should a child injure themselves on a piece of equipment that is custom designed. Large manufacturing companies have the legal and financial backing to absorb the risk of litigation. This is very appealing to the customers and has helped to propel the large manufacturer’s dominance over the market and push designers out of the system.

Playground standards are very important in maintaining a level of safety for all children. There should be regulations on how equipment is constructed and placed to make sure a child does not get injured by colliding with other kids or getting stuck or pinched in equipment. Nor should equipment that is known to pose serious threats to life be tolerated. Yet landscape architects should challenge code if it no longer supports the community’s health, safety, or welfare.

Much of the regulations on playgrounds have to do with fall space, surface materials, and choking hazards. Ohio State Law 5101:2-12-14 regulates all of the outdoor play requirements for licensed day care centers, which applies to kindergartens and
preschools. Equipment designed for climbing, swinging, or sliding that is over 12 inches in height needs an appropriate fall zone of loose material (depth based on equipment height). The fall zone is required to extend 6 feet in all directions from the point of furthest extension, and if there are 2 stationary pieces of equipment, the fall zone between them is 9 feet. In a small schoolyard, this can take up precious realty space on the playground for a few pieces of equipment.

Regulations such as these have been a very important consideration for the design portion of this thesis. The current playground at CSG contains two pieces of existing play equipment, a tire swing and monkey bars, which take up roughly 1/3 of the space. Rather than a constraint, this has proven to be one of the strongest guiding arguments for using the rest of the 2/3 in a much more concerted manner. This will be explored in more detail in the 5th chapter: Evidence based design.

Richard Louv & Parent Culture

In addition to regulations, parental influence has had a tremendous effect on how spaces are designed for children. Here in the United States, the author and activist Richard Louv has criticized our parent culture as debilitated by a fear that he refers to as the “Boogeyman Syndrome”. Such fears have grown exponentially in the past three decades, fed by hyperbolic statements coming from local newscasters with tales of pedophilia in the park and razor blades in Halloween candy. Louv also points to our car-oriented culture as having kept children from playing out in the streets (the traditional
playscape of the past). Instead, children play in the home, where electronics have replaced nature. As Louv argues, restricting a child’s access to the beneficial and edifying qualities associated with nature stifles her development. (Louv, 2008) These two points can pose serious barriers to a designer, especially one who works in the US.

Yet there are many studies which show that play environments that both stimulate the child’s mind and body through unstructured free play, and give them access to nature, are vital for their healthy development. These statements are substantiated by such studies as Kenneth R. Ginsburg’s MD, MSEd, “The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds” for the American Society of Pediatrics (Ginsburg), Hilary L. Burdette MD, M, and Robert C. Whitaker MD, MPH, article for the American Medical Association “Resurrecting Free Play in Young Children” (Burdette & Whitaker) as well as the work by such researchers as Richard R. Kellert, Ph.D., at Yale University in “Building for Life: Designing and Understanding the Human-Nature Connection” (Kellert).

Each one of these authors has addressed concerns over playground design, and has given advice to designers on creating playscapes for holistic child development. Susan Herrington has argued for the presence of living things, sculpted terrain, attention to material qualities, and sensitivity in micro-climates in the play yard. Her design research has shown these elements to encourage more varied types of play at higher
frequency. Research done by Hilary L. Burdette (MD, M) and Robert C. Whitikar (MD, MPH) also show the correlation between free play and holistic child development. Mark Dudek, along with Herrington, stresses that children must be observed and listened to in order to fully understand their spatial needs. This includes an awareness of their daily school patterns, and how both interior and exterior spaces affect that pattern. Barbara E. Hendricks cautions against undue sentimentality toward idolizing purity and naturalness in playground materials. She challenges designers to be conscious of the line between the performative qualities of nature vs. thematic nature playgrounds. Finally, a brief look at safety culture reveals the need for an open discourse over the appropriate levels of regulation and parental control. The questions for this discourse include: when does physical safety trump emotional development and how much risk is appropriate?

There was a gap in the literature review did not address how educational philosophy influences the physical designs of the schoolyard? Mark Dudek addresses the need to make connections between the two but does not suggest a set of design criteria. A major component of this thesis is the client interaction and this thesis contribution to the field of landscape architecture is to show how an educational philosophy of child driven education translates into a design environment.
Chapter 5: Evidence Based Design

The purpose of this paper is to show how the literature review and the client interaction can be synthesized in order to inform the final design. The literature review set the general guidelines that were needed to begin preliminary designs. Two weeks of observation at the Columbus School for Girls Program for Young Children in late September 2011 grounded these design guidelines in the requirements and needs of the client. Interaction with the client continued over email discussions with the faculty throughout the thesis process. Finally, two workshops were organized as part of the design process. The first workshop (3/6/2012) set the goals for the playground to meet and the second workshop (5/1/2012) presented two preliminary designs to the parents and faculty for feedback.

Design criteria were established based on the “7C’s” report by Susan Herrington, Chandra Lesmeister, Jamie Nicholls, and Kate Stefiuk, and were corroborated by research papers in the literature review. The criteria established that the playscape should include elements the child can manipulate, contain living things, be sensitive to climate, be designed to the scale of the child, and include areas for play in groups or alone. The playscape should encourage the child’s imagination to shape the play experience. Each
one of these guiding principles helps to create an environment that supports free play, a key component to the outdoor classroom and holistic child development.

The next stage of the project was observing the school in order to get better acquainted with their educational philosophies and daily routine, and to observe how the children use their environment. This took place over a two week period, five days a week during normal school hours (7am-3pm). Observation began in the morning at 7 a.m. and would either go till lunchtime at noon, or until 3 o’clock. I was invited to observe both classes and recess. There are three classrooms and a large communal studio space in the PYC building where the kindergarten age children go to school. The classes are broken into age groupings of a 3-4 year old class, a 4-5 year old class, and a 5-6 year old class. Not all of the students stay for the whole day, with at least a quarter leaving around lunch time, while the remaining students stay until around three o’clock. As part of the Reggio Emilia educational philosophy, the faculty is constantly documenting what happens in their classrooms as well as what the children say or do. One faculty member recounted to me what one of her students has said to her about her feelings about playing outside. She said “when I’m playing inside I don’t like to play alone, but when I’m outside it’s different, I don’t need anyone else, I like being by myself, there is a lot to do.” Informal discussions with the faculty occurred often, and group drawing activities with the classes helped to establish how both teachers and students viewed their school.
In March of 2012, the first workshop was scheduled to set goals for the new playground. This was a closed meeting between the faculty and the playground committee. The leaders of the playground committee included the PYC director Christie W. Stover, playground liaison Kasey Neer, me, the designer, and supervising engineer Amy Dutt. Several other faculty members were present along with the playground committee. The goals that were established by the playground committee were:

- Multi-sensory experiences (sound, smell, touch, sight, and taste)
- Encourage teamwork
- Manageable level of risk
- Manipulable space
- Changing environment
- Grounds for Learning
- Encourage Messy Play
- Maintenance of playscape extension of education
- Grounds for learning

This workshop, along with the design criteria established in the literature review and the observation of the school’s educational model, allowed for two preliminary design iterations to be created for the second workshop.
Design one used landform as a constant, organizing element across the playscape. Landform encompasses various forms including hills, ridges, valleys, mounds, and piles. Unlike playground equipment that requires “fall space” as part of its safety requirements, landforms can challenge a child’s motor skills and balance, yet can also support a wider degree of activities. The existing straight walkway is removed to create a zig-zag pathway that makes the space feel larger than it does in its current condition (fig. 9).

Figure 9. Existing Site Analysis
The second design presented similar choices, but in a much more curvilinear form. The zig-zag was smoothed into a curved path with a roundabout in the middle surrounding a planted earthen mound. The path was textured for new tactile and auditory experiences. In the bends of the path, large sand areas were included, each with their own landforms for climbing and prospecting. Two sculpture gardens were designed to abstractly replicate the feel of being in a forest with a series of vertical posts, one at the south entrance and one at the north end of the playground. The garden to the north takes advantage of the sunny nature of the spot and acts as a sun-dial (fig. 10) which changes with the seasons. Both designs share similar strategies by using landform paths and vegetation to create new spaces.

Figure 10. Sketch of Sun Dial
The second workshop was an opportunity to get feedback on the preliminary designs from the teachers and the parents of the PYC. The agenda for the workshop (see appendix A) gave a brief introduction of the playground committee and design team, a brief overview of the research and goals from workshop one, and a presentation of the preliminary designs. Parents and faculty were reminded that the two designs were works in process and would change based on their feedback. A discussion was guided around an activity called dot play (fig. 11) which had parents and faculty put green dots next to elements of the design they appreciated and red dots next to elements that they had concerns or objections over.
Whatever elements had the most dots became the focus of the group discussions. The presentation boards were left with the school so that parents who did not have the time to attend the second workshop could leave their own comments. Some of their comments included:

- Don’t get too cluttered, leave some open space
- Incorporate water as part of the elements in the landforms
- What should the landforms be made of? Earth, wood construction, piles of loose materials?
• The willow tunnel and sun dial elements were well received by all
• Concerns that the chalkboard would create a new barrier
• Flexible elements that can move throughout the playground
• Pleasant natural seating area for teachers and students to relax and observe others
• Movable furniture
• Gardens – vegetable and floral
• Children should have places where they can feel like they are hiding but still be visible by the teachers

The general consensus was that participants were excited about the direction of these designs, and voiced only minor concerns. The evident favorite was design one, with the zig-zag path, but elements from the second design were also very popular, including the sundial and the vertical pole sculpture. Yet, even these two popular elements were challenged for being too static and required reassessment in the design. Some of the faculty had an interesting idea that the vertical pole gardens should move, allowing the students to reorganize the space into new environments. This is a prime example of how the second workshop has helped to refine the final design.

The final design will incorporate elements of the two iterations and will be tempered by the ideas expressed by the PYC community. The final design will include a number of elements gleaned from both the literature review and the workshops:
landforms, meandering paths, edible gardens, seasonal plants, textured paths, water collection, living willow tunnels, loose natural materials, messy space, moveable furniture, sound elements, performance space, exposed space and hiding space. Each one of these design elements looks to give the playground unified design intent while at the same time setting the stage for the children to alter the space. Part of the design program will include recommendations for community builds and possible manufactured loose materials to include in the use of the playground. There is a meeting point between design intention and daily school use when it comes to deciding what kinds of loose elements to include in the playscape. The design will establish which natural loose elements will be available in the playscape, such as types of plants that will supply leaves, twigs, flowers, fruit, or seeds for the children to play with and explore. The school will decide what forms of manufactured elements they allow the children to play with such as ropes, scarves, or recycled materials.

Upon completion, the final design will be unveiled to the school and families at their end of the year picnic on May 31st, 2012. After the 31st the design, will then go into the early stages of approval by the engineer, Amy Dutt, and the school’s licensing board. Amy Dutt is a licensed engineer who also owns the non-profit, Urban Wild, which designs and organizes playground community-builds as part of their services. She will organize the parents based on their abilities to support the construction, as well as hire
professional contractors. The playground is scheduled for installation over the 2012 summer season.
Conclusion

The purpose of this paper has been to establish design criteria for the development of playscapes in preschool and kindergarten school settings that support holistic child development. Holistic child development has been defined as encompassing a child’s cognitive, social, emotional, and motor development. This work has taken a critical look at the play environments created by prefabricated playgrounds, and has challenged its dominance as the best solution. This paper has examined the contemporary views of educational philosophy, playground history, design criticism, and research from the fields of education, child psychology, pediatrics, architecture, and landscape architecture. Along with the literature review, qualitative observation and interaction with a client supplied the opportunity to synthesize the concepts established in the literature review with the needs of a specific play setting.

The literature review established that play is an essential key to developing the skills children required to become confident individuals. Skills such as an emotional awareness of one’s self and others, creative problem solving, social organization, conflict management, gross motor skills, spatial acuity, and a sense of place in the greater environment. The literature also establishes that children require different forms of play
in order to exercise the full breadth of development and that the play environment that they are exposed to will dictate the types of play possible. Educational Philosophers such as Rousseau, Pestalozzi and Froebel were ahead of their time in making this connection between the educational environment and how children learn. The work of Susan Herrington and Hilary L. Burdette has established that environments which foster unstructured free play encourage more varied types of play at higher frequencies, and that both help to further support holistic child development. (Herrington, 2005) (Burdette & Whittaker, 2006)

Design principles for playscapes were also established through the literature review. The principles are a general road map and open to design interpretation based on the local context of each playscape. Designing playgrounds for holistic child development should include:

- Unified character and clarity of design - Creates a harmonious connection between indoors outdoors, and throughout the playscape
- Encourage Free Play with malleable spaces and objects where the child controls the play experience
- Engage with all five senses – sound, sight, smell, touch, and taste
- Design for context – reflect community culture through design
• Outdoor classroom - The design should become an extension of the schools educational goals

• Change – A range of spaces for the child to explore as well material which changes with time

• Challenge that includes a level of risk without becoming hazardous

Though the client offered the opportunity to apply these design principles to a specific site, it is not without its own constraints to the work. Would the design have changed if the site was purely theoretical? What would the design outcome have been if the clients were child psychologists studying play, rather than educators needing a playground? Another constraint was that the Columbus School for Girls is a private institute with the flexibility, funding and control over their facilities to test out new practices, unlike a public institution. Therefore the question is, how would this evidence-based design change if it were applied to a public school or public park? Lastly, future research should address how playscapes, manipulability, free play, and holistic child development would change in a public setting.

The importance of reshaping the way we think about playground design speaks to the very foundation of the child’s success as she grows older. By fostering the best play experience we can offer we, we establish for the child the environment where her education becomes manifest through her play experience. It sets the stage for her future
success in academics, social interaction, physical health, and awareness of the environment. Designing environments for play must encompass more than the traditional playground penchant for utility and expand the child’s opportunity for self-discovery.
Bibliography


Herrington, S., Lesmeister, C., Nicholls, J., & Stefiuk, K. (n.a.). 7 C’s. CHILD: Consortium for Health, Intervention, Learning and Development.


Appendix A: Client Observation and Workshop Documentation
Figure 12. Group Drawing with faculty and students of the PYC
Hello playground team,

After my recent meeting with my thesis committee and my phone conference with Amy this morning, we have put together a framework for moving forward. My thesis committee recommended to alter the one workshop into two smaller workshops with two specific goals which I’ll explain below. What I need to do this week is write up an agenda for our two workshops and give you guys a calendar that lays out major dates in the design process from concept to construction.

**Roles**

Kirk - Designer & Workshop Coordinator

Amy - Technical Adviser to Kirk and Construction Manager

Kasey - Teachers Playground Committee Lead

**Workshops**

**Workshop #1**
March 8th

- A brief workshop with parents, Christie, Kasey, Amy and Kirk. This time should be used to finalize goals and objectives for the playground with a focus on child development (similar to the topics covered in Kasey’s prezi, which is fantastic by the way!)
- Kirk will work with Thesis committee to draft up an Agenda for the Workshop
- Kirk Writes up a report on the design program to be delivered to CSG and Parents by the end of CSG’s Spring Break
- Total time of Workshop 45 min. - 1 hour

http://prezi.com/q4ummbm7nj0/playground-presentation/

A meeting between Christie, Kasey, Amy and myself should be scheduled sometime after the first workshop to discuss Design Calender and Design Program.

**Workshop #2**
Mid April TBD

- The purpose of this workshop will be for the parents to review and comment on the designs which Kirk will provide.
- This gives the parents and CSG the opportunity to have their voices heard during the design process and

Figure 13. Email Establishing Playground Committee Roles and Responsibilities
5/23/12

To make sure goals set out in the previous workshop are being met

- Kirk will work with Thesis committee to draft up an Agenda for the Workshop.
- Total time of Workshop: 1-2 hours

Christie, how many parents do you expect to show up to the workshops? My thesis advisor’s suggested selecting just a small diverse group of parents for the first workshop and bring in all of the parents for the second to streamline the objectives phase. What do you think?

**Deliverables**

**Workshop Agendas**

- I will work on these with my design committee and present them to CSG for approval before workshops

**Design Calendar**

- Calendar explaining major deadlines in the design process
- Due Last week of March

**Final Design**

- Due end of April beginning of May - TBD

I believe that these are the major elements decided upon up to this date. Amy, please let me know if I have missed anything. Everyone, please let me know if there are any conflicts of interest or questions. I’ll work hard with everyone to make sure all of our needs are met.

Best,

Kirk

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https://mail.google.com/mail/u/1?ik=ef89a93d51&view=pt&q= agendas&q= true&search=query&es...
Columbus School for Girls:
PYC Playground Workshop #1

- Intro
  - Christie Stover (PYC Director) briefly introduce the team
    - Kasey Neer, Kirk Hiatt, and Amy Dutt
  - Kirk’s introduction (5-6 slides)
    - Present current research & Philosophies on child development
    - Bottom Line – Child Development
    - Present a few innovative playgrounds
    - Talk about the pantheon of play spaces
      - Mountains & Forests
      - Beach
      - Sidewalk
      - Water park
      - Museums
      - Playgrounds
      - Etc.?
    - But what goals should PYC’s Playground meet?
  - Introduce the goal of the workshop
    - Working together to decide upon a list of goals for the new playground (not objectives)
      - “What do you want this playground to be?”
      - We are looking for goals that support Child Development
        - Sensory
        - Intellectual
        - Intuitive
        - Emotional
        - Motor
        - Age appropriate

- Think Pair Share (15 Min)
  - Break out into groups of 4-5 parents
    - 15 minutes to list goals that the playground should meet
    - Elect one parent to report their findings
    - Tape up lists at front of room so all can see

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o Dot Play (15 Min)
  ▪ Each parent gets a set of dots to stick next to goals they agree or disagree with.
  ▪ *(Blue - Strongly Agree, Green – Somewhat Agree, Disagree, Orange – Strongly Disagree)*

o Revisit – “Have we missed anything?”
  ▪ Gives parents and teachers one more chance to add goals

• Closing
  o Thanks the parents for their input and tell them about Workshop #2
    ▪ Workshop #2 will give parents the opportunity to voice their criticisms of the early design proposals (Mid-Late April)

Figure 15. Workshop #1 Agenda
Columbus School for Girls:
PYC Playground Parents Workshop #2

The objectives of this workshop is to introduce the parents to the design committee, goals for the playground, designs in process, and to receive their input to the designs closing with a brief presentation on the next phase of development.

- Intro
  - Christie Stover (PYC Director) brief opening & introduction
  - (5Min)
    - Introduce Kasey Neer, Kirk Hiatt, and Amy Dutt
  - Kirk’s introduction to project (5-6 slides) (15 - 20min)
    - Present current research on child development
      - DESIGN PROCESS (remind parents this is a process – not a final design yet)
      - Discuss PYC GOALS (Brief Outline)
      - RESEARCH informs DESIGN (supports goals)
        - Our Bottom Line – Child Development
          - Social, emotional, cognitive, & physical
        - What does the research say?
          - The outdoor classroom
          - Child Manipulating the environment
          - Engaging the senses
          - Ecology, plants, habitat, seasons, change
          - Spatial qualities and what they do
            - Quiet spaces, sheltered, active, loud, fast, slow, exploration, etc.
      - DESIGN CONCEPTS and PRECEDENT images
        - Introduce the goal of the workshop
        - Reactions from parents about the design in progress
        - Explain dots and stickies workshop
  - Dot Play (20 Min)
    - Each parent gets a set of dots to stick next to designs on the board they agree or disagree with.
    - (Blue - Strongly Agree  Green – Somewhat Agree, Disagree Orange – Strongly Disagree)
  - Discussion (30min)
- Gives parents the chance to address concerns and opportunities

- Closing (20 min)
  - Thanks the parents for their input and tell them about the next steps in the process
    - Final Design presentation on May 31st
    - Amy Dutt introduces the community involvement

**TOTAL TIME – 1 hour & 30 minutes**

Figure 16 Workshop #2 Agenda
Figure 17. Parent Design Feedback on Sticky Notes
Figure 18 Parent Design Feedback on Sticky Notes (detail)
Appendix B: Site Analysis and Preliminary Design Process
Figure 19. Site Plan - Construction Limits and Existing Conditions
Figure 20. Character Analysis 1
Figure 21. Character Analysis 2
Figure 22. Character Analysis 3

playground edging – balance practice
Figure 23. Character Analysis 4
Figure 24. Character Analysis 5
opportunity to harness site hydrology

Figure 25. Character Analysis 6
Figure 26. Character Analysis 7
Figure 27. Character Analysis 8
Figure 28 Character Analysis 9
Figure 30. Site Shadow Study Throughout the Year
Figure 31. Landform Study Models Using Sand and Paper
Figure 32. Design One Presentation Board for Workshop #2 Parent/Teacher Feedback
Figure 33. Design Two Presentation Board for Workshop #2 Parent/Teacher Feedback