

7Cs ON THE GROUND: process of design for an outdoor play space at a  
child care centre in Vancouver.

by

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BFA, The University of Victoria, 1995

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF

MASTER OF LANDSCAPE ARCHITECTURE

in

THE FACULTY OF GRADUATE STUDIES

(Landscape Architecture)

THE UNIVERSITY OF BRITISH COLUMBIA

January 2007

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## **Abstract**

This thesis attempts to describe the process and elements of design for the outdoor yard of a licensed group child care centre located on Vancouver Board of Parks property. It explores the case of a proactive, action research method applied to a design problem in the public realm. It proposes a course of action for the site researched in the study and to the process of designing outdoor environments for early childhood.

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## Prologue

Memories of one's play in childhood are a powerful tool to develop empathy with today's children. Participants in the research, when recalling their own childhood experiences, saw the need for our design criteria as the opportunities for play that were available to them are rare for today's children.

I grew up in a town called Saint-Lazare. It is a unique landscape in Southwestern Quebec, formed by the movements of glaciers. The colonizing pine forest was set over a rolling topography that contained fields of sand deposited during the Champlain sea period following the end of Wisconsin glaciation. This landscape is carried inside of me; it has helped make me what I am. The town is known as a horse breeder's community and once housed the Montreal Hunt. Therefore the preservation of forest trails has always been a value of old inhabitants. As a child I rode my bike on these trails, played in the sand pits, swam in the water in the sand quarries and spent most of my childhood outdoors. These memories cause me alarm when I compare them with the condition of childhood play today. They motivate me in design and action. As a father, I want my daughter to have the same opportunity to experience the *landscape* as I did.

Child care practitioners, as well, express a fondness for the landscapes of their youth (Workshop notes, 2004). Memory of these places can serve us to create better places for children and to consider them as full participants in our environments.

## **Acknowledgements**

Thanks to my thesis advisor and mentor, Susan Herrington, for your constant support, understanding, wealth of knowledge, clarity, motivation and dedication to this project and to children in general. Thank you for standing by me and helping me. Thank you to Kate Stefiuk, Chandra Lesmeister and Alison Maddaugh for enduring countless hours with me and helping me through these past 3 years and showing empathy and compassion constantly. Thanks also go to the faculty at the School of Architecture and Landscape Architecture-each of you have helped me along the way. Thank you to my mother who helped support me through my years at UBC. Thanks to Nuray, I know it took a long time to finish but I couldn't have done it without you, my love. To my beautiful daughter Pera, you have inspired me in ways that I could not have imagined during this period, thank you. To Russ and Liz, thank you for believing in our research. Thank you to Pam Best at Westcoast Child care resources for supporting us. Thanks to Mari Pighini for expanding my knowledge about child development and observing children. Finally, to the folks at the centre in this study, the children and educators, thank you for your enthusiasm.

## **1. Introduction**

My research examines the condition and quality of an outdoor play yard at a child care centre located on Vancouver parkland. The study operates in the greater context of a major collaborative research initiative known as the Consortium for Health, Intervention, Learning and Development (CHILD), a five year study of child development funded by the Social Sciences and Humanities Research Council of Canada. One of the mandates of CHILD was to address “the impact of community resources and characteristics on early child development”(CHILD, 2006). The scope of this study is limited to looking at the physical design of a child care centre’s outdoor play space and the potential of its affordances, the functionally significant parts of its environment(Gibson, 1977), in aiding or abetting the child’s development.

Recent studies show that Canadian children today are more obese due to physical inactivity (Tremblay & Wilms 2003). Other studies show that lack of affordances in children’s environments may be complicating neurological and social-emotional disorders (Loveland, 1991; Volden & Johnson 1999). Meanwhile, spaces and funding for child centred activities are dwindling. Children are increasingly under house arrest due to fears of child predators and fatal injuries from unsafe environments. Children simply don’t play as they did thirty years ago (Louv, 2005). The schedule and order of the child’s day has changed (Greenman, 1992). The result of these changes is that our understanding of what childhood is, our social construct of it, is being contested and jeopardized. The picture is bleak but there is still hope that our understanding of childhood as a time of wonder and discovery may still be salvaged. One of the forums for action is the landscape and its advocate is the landscape architect.

The child care centre is an increasingly important location in early childhood, being the place where most waking hours are spent and therefore, where a significant portion of the child’s development will occur. The child’s first experiences outdoors, away from their primary caregiver, will take place in the outside yard of the child care centre. In the city of Vancouver, it is increasingly the Landscape Architect who is responsible for the design

of these spaces. Outside Criteria is a 5 year study funded through the Consortium for Health, Intervention, Learning and Development (CHILD). The guiding research questions of the study asked the following 2 questions:

Which outdoor physical factors contribute to early childhood development and quality play at child care centres?

To what degree do these factors currently exist at the centres under study?

After a careful analysis of sixteen centres in the city's jurisdiction, it was found that designs were often not adequately addressing the developmental needs of the child. Although Innovative designs have been proposed in order to begin a "new conceptualization of the landscape of play" (Herrington, 1997), implementation of these landscape concepts are mostly limited to laboratory schools attached to institutions such as universities and hospitals. Herrington identifies this fact and suggests that adjustments in the design attitude may be required to work in the public realm (Herrington 1997).

Recent studies found that environments that invite a wide range of complex interactions and prolonged engagement are beneficial to child development (Kytta 2003, Herrington & Lesmeister, 2006). The strength of these findings suggest that it is the public realm, rather than just the design professions, that need adjustment in their planning and attitude toward new design concepts for children's landscapes. Accommodating adult desires while sacrificing the needs of children should no longer be acceptable to the profession of landscape architecture. I realize that these suggestions are value laden. However, in the balance is the child population's health and well being as well as our conception of childhood and its place in society.

The image of the child in society too often is one of a child that is impressionable, vulnerable and weak. Our design culture responds in kind, removing all risk and asking children to not test their abilities. The current environments available reflect adult fears. This fear stems from concern for their child and a public professional's fear of litigation.

Overall, these fears tend to compromise the quality of experience for the child. Consequently, we can imagine the child as rich in potential, strong, competent and powerful (Fraser, 2003). This will require a new design language with this new hypothetical child in mind. In the context of child care in a public park, it will require reconsideration of the status of children in public space.

The problem is evident in the literature; the literature linking specific design elements in early childhood play environments with the developmental domains is sparse. Then to supplement this difficult condition is the fact that there is a gap in the literature when it comes to designing in the *public* realm for early childhood outside of the University lab school model. Therefore, the body of evidence which can advocate change is still being developed and tested. This study forms part of that body of exploration. The problem in the literature is due to a lack of interdisciplinary research. Studies that could serve to link developments in a diversity of fields such as child development, playwork, child care practice, architecture, environmental psychology, planning and landscape architecture are rare. Literature on child development is certainly not lacking. The literature concerning the role of play and the influence of the environment in development are well explored and are a tool to integrate disparate studies and to provide a rationale for the importance of outdoor play in early childhood. The literature in the planning and design field is, by contrast, quite weak in its design advocacy for the child's early development. This deficiency in the literature makes it difficult for park and city planners to understand what is at stake. Landscape architects suffer from this deficiency in the literature as well.

Landscape Architects are primarily concerned with the practice of creating and designing places. In the context of a child care centre the role of designer is shared with the children and their caregivers. All require a sense of clarity of the decision making process for the outdoor spaces adjacent to the child care centre. Landscape architects require a new skill set that allows them to perceive the design of play environments through the lens of childhood development. This will help them produce dynamic yards that reflect strong and capable children. The work and research of Outside Criteria encourages landscape architects to think about the long term effects of the designs they propose for

children and to design from a child-centred perspective. When landscape architects embrace the perspective of the child in design, they make a positive step toward helping young children develop in healthy ways and engage the world around them.

The approach is, as mentioned before, value laden. It argues for the freedom of choice for parents to be able to earn a living, determine their destinies and develop themselves without having to worry that their children are suffering due to their decisions. It assumes that publicly funded child care is a vehicle to achieve a more functional society, one that embraces equality among sexes. This particular study makes the argument that all children deserve quality outdoor experiences regardless of socioeconomic position and location. This study also implies that organic environments, full of malleable elements and living matter, are ideal, and perhaps necessary, environments for early childhood. These values are advocated through process and design and arise through engagement with the participants and the recursive nature of the research model. They embrace the ideals of proactive practice as defined by Francis (1999), which asks designers to go beyond the boundaries of the traditional culture of practice and engage the community with a vision for the way that things could be rather than just settling for the status quo.



## **2. Intent**

The purpose of this study is to describe the process of design for the outdoor yard of a licensed group child care centre located on Vancouver Board of Parks property. It employs an action research approach that results in an ideal design scheme for the centre and its twenty-two children. The intent was to clarify the planning and design process, explain a method for spatial analysis and propose novel design solutions.

### **2.1 Research Questions**

The guiding question of the Outdoor Criteria study asks “what are the outdoor physical factors to early childhood development and quality play at child care centres, and to what degree do these factors currently exist at the centres under study?”(Herrington, et al, 2005). The answers gathered from this question form a strong basis for analysis and signal areas for improvement in the design of the outdoor play space. The ultimate outcome of this initial data gathering was an analytical tool known as the Seven C’s (Herrington and Lesmeister, 2006).

From the initial gathering of data, it became apparent that character and context of a child care centre were important factors in the degree to which a centre implemented designs which encourage quality play. The reason for the discrepancy between the design and planning of laboratory schools in the study compared the process of those located outside the University context gave rise to two major questions:

1. What are the obstacles in the planning process that make it difficult to implement designs that enhance children’s development?
2. What can we do to address the situation and remove the identified obstacles?

Through the process of exploring these questions a third question emerged. Given that the design problem could not successfully be addressed in physical form in the short term, what would be the ideal form of this landscape if current obstacles were non-existent? This third question offered respite and allowed a conclusion that was more forward looking and long term than the parameters of the current design climate for early childhood. The ideal case is a goal to reach toward and offers an example to designers and other stakeholders who wish to engage practice which will create better environments for children. It reminds the designer to ask not only *what is possible at the present time?* but also *what could be possible in the long term?*

## **2.2 Definition of terms**

**Parks:** The capitalized Parks in this paper when appearing at midsentence refers to the Vancouver Board of Parks and Recreation.

**Quality in Play:** Play which supports the child's development and which supports long and repeated engagement with the environment.

**Outside Criteria:** A 5 year multidisciplinary study of outdoor play spaces at child care centres in Vancouver. It is located at the School of Architecture and Landscape Architecture and headed by associate professor Susan Herrington. The study is funded through CHILD.

**CHILD:** The Consortium for Health, Intervention, Learning and Development. The Consortium is made up of ten studies from different disciplines, of which Outside Criteria is one. It is an interdisciplinary study of the condition of early childhood in British Columbia. CHILD is a major collaborative research initiative (MCRI) funded through the Social Sciences and Humanities Research Council of Canada (SSHRCC).

**HELP:** The Human Early Learning Partnership. It is a network of faculty, researchers and graduate students engaged in an interdisciplinary research partnership that is concerned with creating knowledge about early childhood development and applying it in the community through partnerships.

**Design Committee:** The Design Committee referred to in this document is the gathering of different stakeholders who determine the outcome of the physical facilities of a daycare centre.

**Tactile vegetation:** A term coined by the author to refer to vegetation that can be touched by a child rather than merely seen and looked at. Tactile vegetation implies the child can interact with the vegetation in a number of different ways. For the purposes of this paper, tactile vegetation does not apply to cut lawns because the maintenance involved (cutting regularly) usually removes affordances for manipulative play. Its ability to incorporate change and chance are thus impeded.

**Seven C's :** A criteria that links the physical conditions of outdoor play environments with what we know about the development of young children. The Criteria are the major research findings of Outside Criteria. The criteria are broken into categories: character, context, connectivity, change, chance, clarity, and challenge.

**Subspaces:** Subspaces are identifiable units of space that are differentiated from the larger surrounding space. Rooms in a house are subspaces of the house. Likewise, outdoor rooms are subspaces of a larger yard.

**Subspace definition:** The process by which subspaces are defined by spatial cues such as vertical planes, ground planes, and ceilings.

**Infancy:** In child care provision in B.C. an infant is considered to be 0-18 months. The end of infancy is usually heralded by the ability to walk relatively well and without supervision.

**Toddlerhood:** In child care provision, a toddler is roughly 18 months to 36 months old. The end of toddlerhood is marked by such milestones as improved language and increasing mobility.

**Preschooler:** In child care provision a child aged 36 months to 5 years old. As the name implies the child is not yet of school age. This is the stage in development where language acquisition is much accelerated.

### 2.2.1 Definition of the Seven C's

The seven Cs link physical conditions of outdoor play environments with what is known about the development of young children. Each C builds upon another to define key elements that should be considered in a design. The C's are summarized here:

#### *Character*

This refers to the overall feel and design intent of the outdoor play space.

#### *Context*

This refers to the small world of the play space itself, the larger landscape that surrounds the centre, and how they interact with each other.

#### *Connectivity*

Indicates the physical, visual, and cognitive connectivity of the play space itself.

#### *Change*

Involves the range of differently sized spaces designed in the play area and how the whole play space changes over time.

### *Chance*

Involves an occasion to allow something to be done; an opportunity for the child to create, manipulate, and leave an impression on the play space.

### *Clarity*

Combines physical legibility and perceptual imageability of the play space.

### *Challenge*

Refers to the physical and cognitive encounters that a play space provides.

## **2.3 Limitations**

The Outside Criteria study was limited by geographical boundaries of the City of Vancouver. My research addressed a centre located in a park and is one of two located on parkland that were *included in the study*. Therefore, whether it is representative of the type or not is a matter of conjecture and suitable for further study at a later time. This study makes the assumption that it is representative for its type due to a similar administrative culture (Vancouver Board of Parks and City of Vancouver Department of Social Planning) and founding date (all centres located in parks originated during the 1970s). The study is also limited by the fact that it looks at provincially regulated spaces for children enrolled in group child care rather than recreational programs for children in parks.

The children in the study ranged from 18 months to 5 years, the age groups specified in the centre's license. Therefore, the developmental frameworks presented here apply to children between these ages. The children's parents were not included in the study, nor were the children interviewed. Therefore, the personalities cultures and abilities of *individual* children were not included for consideration in this study. It was not within the scope of this project to examine the social ecology of each child to determine community influence on his or her behaviour, although it may be worthy of further study.

The study also focuses specifically on Provincially licensed and regulated group care facilities for children 18 months to 5 years rather than any other care arrangements. It was not within the scope of the study to propose or look deeply into a realignment of the infrastructure of the care of children. There are minor suggestion in section five, the action agenda, which outline directions to changing institutional attitudes to favour children but a comprehensive overhaul of the system is not found within these pages.

## 2.4 Significance of Study

As the infrastructure of public care for early childhood is lacking stability and vulnerable to political whim it is imperative that research benefit the primary stakeholders, namely the children and caregivers, by advocating for quality environments. Adding transparency to the process of design and including the primary stakeholders as participants can have a positive effect on the end product of a design. The significance of this study is to show designers methods by which they can realize child-centred designs that reflect the child's development and play needs.

Politicians in the early 1970s made wise decisions to take child care out of church basements in order to give them a more public profile greater visibility. In 1973 the Honourable Norman Levi, BC Minister of Human Resources, had the following to say about the locations of child care:

Now we are finding, certainly in the Vancouver area, that we have to have a concern about space and buildings. *We have to find places to put the children.* We're having discussions with the Vancouver School Board about using some of the classrooms that are empty. Nevertheless, the problem of space in respect to day care is *going to be a serious one* and we are undertaking some studies in respect to modular units and the use of trailers. The one thing that I personally feel about the day-care situation in respect to young children is that *we do not want to be using basements of churches and other buildings which tend to make our children invisible.* We certainly

need to get into some kind of reasonable unit in which children can play and interact with one another. (Hansard 1973)

It is both bewildering and upsetting how the above statement, from more than thirty years ago, carries a contemporary resonance. Parks were chosen as a location for child care during this period to allow children to be visible in the public realm, to include them in the greater society. Parks reluctantly entered into an agreement with the Province to locate child care centres upon its lands (Board of Parks, archival correspondences, 1973, 1974). This was an unfortunate institutional position on the issue. Children in parks add vibrancy and life to the social tableaux of these public green spaces. Parks should be the natural location for child care centres because they offer opportunities to “reach out and be close to nature” (Oberlander 1970). They offer real connections to the greater community in a relaxed and safe setting. This study argues for the continuation of child care in parks and calls for full realization of the context of the park in the design of the outdoor spaces.

Establishing the importance of context for daycare, we turn to the issue of *character*. The setting of child care in the park is a good start but not an end in itself. The choice and quality of the materials and the organization of spaces in the yard will determine the character of the yard and thus the *overall feel of the space* (Herrington & Lesmeister, 2006). The designer benefits from contemplating the character of the outdoors and the interaction of elements in defining the outdoor play space. Character is also an expression of values in design form and this study serves the designer in making transparent the discovery of those values during the design process.

## **2.5 Description of Site**

### **2.5.1 Site Context**

The study site is located on a hillside which sits in the larger system of an embankment running East West along the South shore of Lost Lagoon. Storm water runoff flows from

this embankment into Lost Lagoon. To the North of the study site lies Lost Lagoon and the forests of Stanley Park. To the South is the urban grid of the West End neighbourhood. The study site straddles these two systems. The house, which is used by the child care, sits at the South-Central end of the site. To the South of the house, running the length of the street, is an artificial embankment (most likely installed in the early 1960s with the arrival of high rise towers in the area). The play area is situated to the North of the house and faces the lagoon. The site is Triangular, with its points facing North-East, South-East and South-West. However, site boundaries are not precisely angular, but rather curving and given shape by large specimen trees on the site.

### 2.5.2 Site History

It is useful to locate the study site in a continuum to realize the poetry of the landscape, the shared ideas and dynamism of child care founders and the place of current participants in an evolving history. Such explorations tend to help make sense of where we have been and where we can move from here.

Pauline Johnson, a poet of Mohawk and English lineage, spent the final four years of her life in Vancouver (1909-1913). She was a resident of the West End and spent time canoeing in Coal Harbour and the tidal flats that would later become Lost Lagoon, so named in her honour. She wrote this poem of the "Lagoon":

IT is dusk on the Lost Lagoon,  
And we two dreaming the dusk away,  
Beneath the drift of a twilight grey,  
Beneath the drowse of an ending day,  
And the curve of a golden moon.

It is dark in the Lost Lagoon,  
And gone are the depths of haunting blue,  
The grouping gulls, and the old canoe,  
The singing firs, and the dusk and--you,  
And gone is the golden moon.

O! lure of the Lost Lagoon,



I dream to-night that my paddle blurs  
The purple shade where the seaweed stirs,  
I hear the call of the singing firs  
In the hush of the golden moon.  
(Johnson, 1911)

Johnson's poem alludes to the natural history of the site, that of a tidal mudflat. It was considered a "lost" lagoon because low tide made canoeing in the area impossible. The natural history of the site indicates that it was a runoff basin that let into the Burrard inlet. The area was originally tidal mudflats and the tide would bring in waters up to the perimeter of the present site. The area was completely forested, most likely a climax Douglas fir with associations typical of coastal lowland in the region. First Nations are believed to have used the area extensively. A large midden was found in Stanley Park composed of broken shells and subsequently used for the surfacing of the park's first street(Steele,1993).

The present child care building is a class B heritage house built in the vernacular Edwardian style of the time. It was built on this lot by Sophie and Cecil Merritt in 1905 and served as their residence. In 1910 the southern shore of Coal basin (where the site is located) was incorporated into the park. There were originally many houses located on the south shore of what is now an artificial freshwater lake, they were all moved or demolished between 1913 and 1916, with the exception of the house that now houses the study site (Steele, 1993). Aileen Campbell, a journalist for The Province, in 1974 wrote an article in the May 16th Lifestyles section of the paper that described the history of the inhabitants of the house (Campbell, 1974). Cecil Sr. died in the First World War at Ypres. The Merritt family moved to Shaughnessy in 1912 and the following year they sold the house to the Board of Parks and Recreation (Campbell, 1974). It became the park superintendant's family residence until 1973. The original site also had a barn situated to the east of the main house that was demolished sometime after 1932, the last known photo documentation where this building appears.

The house evokes strong memories from those who spent their childhood there. Elizabeth Merritt, Cecil Sr.'s granddaughter, relates that her father used to tell her of how he would take his canoe from the back yard and set off into the "lagoon" when the tides were high (Merritt, personal communication, 2005). Wilfrid Wooton the son of a park superintendent who lived there after the Merritts said of the location "you couldn't ask for a nicer place to grow up in-it was a treat." The residence on the site housed three different families over the period of 69 years. He recalled swimming in the tidal waters of the inlet (Campbell 1974). Wooton described the park as a thousand acre playground for him and his friends (Campbell 1974). The Merritt family maintained a friendship with the Wooton family. Cecil Merritt Jr. remembered as a boy collecting salmonberries by the thousands in the park in order for Mrs. Wooton to make salmonberry pies (Campbell 1974). His sister recalls play there "It (the park) was our own front yard... We had all our adventures, forts in the park, it was like living a story." Alfred Wooton was the first Parks superintendent to live in the house. Among his interventions in the landscape were a Laurel hedge delineating the perimeter of the property and acting as a screen for privacy as well as a fruit and vegetable garden. The Wootons moved from the residence in 1947. The next occupants were park superintendent Stuart Lefaux and his family. The Lefaux family occupied the house until the 1973 when it was decided by Commissioners Wainborn and Puil that the house should be demolished and the area to be returned to public use. This was not to occur because the house would eventually be chosen to house a child care centre in 1974.

The fate of this precinct may have taken quite a different and grandiose turn had the economy not conspired against it. After the sale of the house to the Board of Parks and Recreation, the board began to set in motion a transformation of the landscape adjacent to the study site. One of the original four concepts proposed by English Landscape architect Thomas Mawson was that the area be a cultural precinct for the city and the subsequent landscaping was to be a very formal plan including a museum and stadium. This was the favoured plan of City Council. However, due to the lack of finances (the stadium alone would have been \$80000, an exorbitant sum at the time) and public dissatisfaction with the proposed plan, Lost Lagoon was conceived as it is today, a naturalistic design in the

English picturesque tradition (Steele,1993). In 1913, the natural system of the tidal mudflats was altered by the creation of an artificial lake that would later be known as Lost Lagoon. In 1916 a causeway was completed that separated Lost Lagoon from Coal Harbour. Lost Lagoon remained a saltwater body until 1933 when the pipes that fed the lagoon were shut off, the lagoon was filled with freshwater and stocked with fish for recreational fishermen who rented boats from where the Park Ecology House is currently located. Had Mawson's plan been implemented it is almost certain that the study site would not have housed child care. It would be the site of the proposed stadium in Mawson's plan.

The child care society that currently operates the centre, in 1974 , was operating from a church basement. They surveyed their options and decided that the study site would best serve the children's needs.

### 2.5.3 History of the institution of child care in parks

"Families require daycare. Modern technology and urbanizations have introduced many dislocations in family life and have mandated changing family lifestyles. It is difficult for services , necessary both to the protection and the enrichment of individual families in a changed socio-economic environment, to keep pace with the need.

We now expect a family to achieve what no other society has ever expected an individual family to accomplish unaided. In effect, we call upon the individual family to do what a whole clan used to do."

(Federal Minister of Human Resources, Status of Daycare, 1973)

The need for child care spaces rapidly burgeoned in the early 1970s. In 1971 the number of child care spaces was 17,391 in 682 centres nationwide (Status of Daycare 1971). In 1975 that number had increased to 69952 spaces in 1839 centres (Status of daycare 1975). Clearly the need for quality child care spaces was on the rise. The fundamental shift that was occurring would have the implications that children were spending longer

periods in care. In the Greater Vancouver Regional district, the need for more child care spaces was acute. The stated desire of governments of the day was to have the children in the public realm, visible and empowered. Therefore spaces for them would have to be located.

The provincial government at the time took an active role in trying to help build this infrastructure of care to meet public demand. The Daycare portfolio, at that time, fell under the jurisdiction of the Provincial Ministry of Human Resources. The honourable Norman Levi, Minister of Human Resources, announced the new approach of the government towards daycare in the legislature in February, 1973:

“All of the members of this house know the stories that are out there concerning children. The deserted mother with small children-locked into a house or apartment, slowly dying inside from that triple burden of being a mother, a father and a housekeeper-and trying to get by on welfare. There is now some glimmer of hope through daycare and the opportunities programme” (Hansard,1973).

The government had committed two hundred thousand dollars in 1974 dollars towards a capital program to start non-profit daycares. Eleven centres had applied and five more were under review. Some of these original centres are ones in Outside Criteria's study, including the study site. Levi continued to outline that it was the intention of the government to broaden the availability of child care and wished to assist with clarifying confusions regarding regulations and standards by opening a daycare information centre in the city of Vancouver (Hansard, 1973).

The search for spaces was often referred to in the media of that time as the “daycare crisis” and there is felt a general sense of urgency in meeting the need of the public. City social services, the committee of council and department of human resources were concurrently developing a list of proposed sites for child care centres. Many of those sites included parks. The child care centres, however, were meant to be temporary until permanent facilities could be located and built. Vancouver Board of Parks and Recreation was contacted by the Department of Human Resources concerning the location of child

care within park boundaries. The Board replied with an official letter stating its eight conditions for child care in parks (Vancouver Board of Parks Fonds, 1973). This agreement marks the beginning of the relationship between the VBOP and child care service providers.

Friction arose when it became unclear who was responsible for the maintenance of the child care grounds. Parks had made it clear with the first leases signed with the Province that the Department of Human Resources would be responsible for the maintenance of grounds. In the first three years of the arrangement, the Province paid for private landscapers to maintain the yards. At the end of the initial leases, the Board was not satisfied with the uneven standards of maintenance and contacted the British Columbia Society of Landscape Architects for guidance. This document set the standards for child care spaces in parks, establishing a planning process.

The child care in this centre is one of those that rose out of the church basement and into the public light. It was located in a church basement in the West End until 1974. It was one of the few full day group care providers in the area at that time and unique because it cared for children under three. The daycare's administrative society was hoping to find a new location when the church stated that it wanted to use the basement facilities for other purposes. The head of the Society at the time, contacted park commissioner Art Cowie on January 28<sup>th</sup> 1974 in regards to using what was then called "the Lagoon House".

Although the board had moved several months earlier a motion to demolish the house, in February the heritage board wished to examine the house and site first prior to giving the green light for demolition. The motion for demolition would be stayed until September of 1974.

The chronology by which the site became a child care centre was very quick in comparison to the current climate of providing spaces. During March and February of 1974 several sites for the child care were considered including the placement of portables on Sunset beach. The request for using the Lagoon house was forwarded to the Parks Board for feasibility studies. In May, City Alderman Darlene Marzari and Daycare

Information Centre inspector Marjorie Phelps toured the house and stated that “the two of us leaped at least four inches into the air for joy”(City of Vancouver Fonds 1974). In June, the Board of Parks and Department of Human Resources entered into a lease agreement for the use of the site as a child care centre.

The house was not yet ready to house children as it did not meet Provincial regulations. In July, City Health inspectors made a report about needed retrofitting (Vancouver City Health Dept. Fonds, 1974). This marks the beginning of the relationship of the centre to health licensing. The Daycare Society, City Alderman Marzari and The Urban Design Centre (Design advocates) had reservations and objections to the report and attempted to lobby for changes to regulations. Part of the lure of the Lagoon House was that it did not feel “institutional.” They did not want to fence the outdoor area nor make major structural changes to the building (such as closing off the stairway between the first and second floor). Health officers suggested the use of “institutional” materials like green linoleum but the Society preferred the existing hardwood floors. They were successful in all but one of their lobbying efforts. Provincial regulations clearly spelled out the need for fencing the perimeter of the yard and was therefore required by provincial law. The other two decisions fell within the statutory power of the official but were not written into provincial regulation and therefore variances were permitted. The City paid for the fencing of the area.

Tensions between the centre and the Vancouver Board of Parks often arose from landscaping issues. These tensions set off a bad start for the relationship between the centre and the V.B.O.P. The original lease was for three years (1974-1977). In 1977, the Park Board renewed it with hesitation for another three years. The hesitation arose from the continuing lack of clarity about who was responsible for grounds maintenance. The board wanted the costs of maintenance included in the society’s operating budget. As the second lease began to sunset in 1979, the Board expressed the desire not to renew the lease. The Vancouver Board of Parks had made it clear that the arrangement they had made with regards to child care in 1974 was *temporary*. The political will that existed in the early 1970s was evaporating and the drive to achieve quality in child care from

governments was already in regression. The child care centre, through skillful lobbying, managed to renew its lease in 1980. To the knowledge of the author, it has not faced difficulty renewing after this period.

The landscape for the study site has never been master planned, rather it is a collection of the interventions of previous and present occupants of the building. Trees planted at the perimeter of the site in the 1970s and originally intended to be shrubs have grown to up to 20 metres in height over the period of the last 30 years. Traces of the original landscaping remain on the slope of the site and in the shrubbery surrounding the site.

The play space in its current form dates from the 1980s and contains custom built equipment. Rob Degros built the play apparatus of the yard in the mid to late 1980s. DeGros' influence can be seen in child care play spaces throughout Vancouver including those at UBC. The grounds were lightly damaged when renovations and retrofitting of the house took place in 2001. The play apparatus lasted until June of 2006, when it was condemned by health licensing and removed due to the rotting of its wooden footings.

#### 2.5.4 The physical site

The study site is very large for a child care centre and well exceeds the minimum standard of 7m<sup>2</sup> per child as set out in the provincial regulations. Its entire area is 1820 m<sup>2</sup> of which 774 m<sup>2</sup> is used for the children's play space. The licensed capacity of the centre is for 24 children, thus translating into 32 m<sup>2</sup> per child of outdoor play space. Cyclone fencing delineates the perimeter of the site.

The site is located on a slope that effectively reduces the active play space due to safety concerns of the early childhood educators. The slope occupies 500m<sup>2</sup>, just under a third of the total area of the space. The grade of the slope at its steepest point is 18%, which may be manageable by adults but is too challenging for toddlers. This slope occupies the southwestern portion of the site. At the southeastern corner of the site is a 4.5 metre

embankment wall at the base of this wall is a gentle slope (4% grade). The rest of the site gently slopes (2-3% grade) towards the lagoon.

There is a high degree of organic ground plane materials on the site overall. However, a significant portion of the ground surface in the active play area is asphalt. Of the total 774 m<sup>2</sup>, roughly one quarter of this space (209m<sup>2</sup>) is asphalt. The climbing equipment and associated fall zones occupy 112 m<sup>2</sup>. The fall surface of this area is sand which serves to not only soften falls but acts as a play material as well. There are 3 patches of grass that occupy a total of 134m<sup>2</sup>. The largest occupies 84m<sup>2</sup> of the play area and the smaller two 36m<sup>2</sup> and 14m<sup>2</sup> respectively. The swings and their associated fall zone occupy 40m<sup>2</sup>. The fall surface here is sand but because of the nature of swing use and the high probability of accidents, the sand is not used for play. There is a play house on a platform and a wooden bridge which occupy 30m<sup>2</sup>. Surrounding these areas is an area of sand approximately 50m<sup>2</sup> in size. The sand here is somewhat mixed with dirt and leaf litter. The remaining 200m<sup>2</sup> of ground surface is dirt. To summarize, one quarter of the surfacing of the site is asphalt, one quarter sand, one quarter grass and the last quarter is dirt or covered and closed by structures on site.

The house, located on the south central part of the site has its main entrance from a bridge that connects it to the street at the south side of the house. This is the entrance and exit for infants and toddlers. The preschooler exit is located on the North side of the house. Between the House and the play space is a large balcony with stairs leading down to the play space. The house has windows on all directions and ones that specifically look out to the play space and lagoon from the Northwest corner room. This is the area that houses both the main play room on the first floor and the supervisor's office on the second floor.

Delineating the north edge of the site are large Douglas fir and Western red cedars. These trees are at least 30 years old and approximately 20 metres in height. There are also mature black cottonwood, Douglas fir, Big leaf maple and Western red cedar at the Southwestern corner of the site, on the slope.



### **3. Procedures**

#### **3.1 Assumptions and Rationale for the Qualitative paradigm of study**

The Outside Criteria Project and this project use the Action Research model. The Action research model as defined by Reason and Bradbury is:

“A participatory and democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory worldview...It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities” (2001).

The model therefore encourages direct involvement between researcher and the researched in order to activate change through the research process. The goal of this research orientation is to generate practical knowledge that contributes to the “well-being of human persons and communities”(Reason and Bradbury, 2001). The study follows a qualitative paradigm, defined as “an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting”(Cresswell,1994). A reduction in the distance between the researcher and the researched allows and encourages both parties to be affected by one another through the application of participatory methods in the research design.

The adoption of this model allows the research to benefit children and child care practitioners by gathering their perspectives and incorporating their needs in the study. The research model also runs counter to the assumption by the current Prime Minister that government money for child care is going to “armies of academics, researchers and special interest groups” (Harper 2006) without any discernible benefit to children and

families. This study is meant to improve existing spaces and to argue for new spaces that incorporate quality design of the outdoor space as a necessity rather than an afterthought. This requires the participation of all involved parties (city and park planners, health officials, daycare providers, spatial designers, politicians, children) in order to implement at an infrastructural level. Through the course of this project, political changes have affected the child care sector, placing pressure on the resources and time demands of practitioners in the field. The action research model is important because it incorporates voices that rise above the politics of the day and places the focus on those directly affected by policies and planning.

The action research model contains an “action agenda that changes the life of participants, institutions and the researcher’s life”(Cresswell, 2003). The nature of this change can be emancipatory as it focuses on “helping individuals free themselves from constraints found in the media, in language, in work procedures, and in the relationship of power in educational settings. It can free people from the “constraints of irrational and unjust structures that limit self development and self determination”(Kemmis and Wilkinson 1998).

### **3.2 Qualitative Research Strategy**

The research of this project occurs in a meta-narrative of my involvement with the Outside Criteria Project, CHILD and HELP.

Through my engagement in research with these groups, I was exposed to a variety of research methods and strategies. The study of the child care site, in particular its physical analysis, uses the Seven C’s (Herrington and Lesmeister, 2006), a set of criteria for analysis of outdoor play spaces derived through grounded theory, action research and a review of the literature. The strategy involved was to implement the findings of the analysis into a physical design to the study site and eventually culminating in the construction of the yard according to the design from which a before and after condition could be compared.

Whereas the theory of the Seven C's served well in analyzing and designing the site, implementation was more difficult. The context of a study site outside of the university laboratory type poses unique challenges and a different set of participants than previous studies. It was decided that an ethnographic approach was more appropriate to the study at hand because such a strategy places emphasis on "the immersion of the researcher in a particular cultural context and the attempt to ascertain how those living in that context interpret their situation"(Groat and Wang 2003). The case study and narrative are both strategies employed in this study. Similar to Lesmeister's study (2005), the fieldwork mostly involved participant observation as the primary mode of data collection. Where it differs is that it observes not only the children and caregivers, but public officials involved with me in the process of designing for the outdoor yard. This reveals how the parkland setting of my study site influences the design of the space. The stakeholders and context in a park differ from those at a university lab school.

### **3.3 Roles of the researcher**

#### **3.3.1 Designer**

From the initial contact with the centre I entered the project as their designer. The role of which was to analyse the site, identify problems and find solutions for them. I made sense of the program that was given in the initial phase of design and later as it changed. I proposed a conceptual design for the space that was used by the registered landscape architect on the project.

#### **3.3.2 Advocate**

Gathering information from observing the children and the staff, I became an advocate for the children and their rights. Children's rights to play are recognized under a UN convention and these rights are best exercised through innovative and child-centred play

spaces. I advocated for the children through design form. I based design decisions and defended them through the strength of the findings from Outside Criteria summarized earlier in section 2.2.1.

### 3.3.3 Observer

Throughout the process it has been my role to observe. Observing the children in play contributes to the body of knowledge about their interactions with the study site. My observations also educated me in what they like to do in play. During meetings with stakeholders, I observed policymakers and public officials and listened to their motivations in forming the child's landscape. They too are often frustrated with the current conditions for childhood and would like strategies to improve the situation.

### 3.3.4 Participant

Everyone has had a childhood. I drew from memories of my own childhood and did not discount entirely my own experiences as a child in my research. I also had a daughter born at the beginning of the research process; we became participants in this research through our interactions together in the city's parks, streets and public places.

### 3.3.5 Investigator

Unearthing the history of policy and design process from the archives required the skills of an investigator. The roles here were identification of sources and location of clues that lead me to other sources in the labyrinth of both the internet and the city of Vancouver archives. Through investigation, I found how child care had come to find itself on the study site. I also discovered how, and in what climate, that was achieved.

### **3.4 Data Collection Procedure**

Outside Criteria developed the initial data collection procedure employed in this study in 2003. It includes a Field observation, 6 hours of videotaped observations of children at play on site in different weather conditions and a one hour focused interview with the centre's staff. In addition, notes from a workshop conducted with child care staff from different centres in August of 2004 are included in the data.

The second round of data collection was not directly related to Outside Criteria but related more to the process of implementing the design. Supplementing the Outside Criteria data are notes from site design committee meetings during the period of my involvement in from October 2004 to February 2006. Also included are historical information on child care in Vancouver from the City of Vancouver archives as well as historical child care policy debates from Hansard. This collection of data contributed to understanding the culture and context of the design process and the stakeholders involved in the process. It was also beneficial in understanding the site itself and contributed to the poetry of the final iteration of the design for the site.

The third collection of data expands on the original literature review conducted by Lesmeister (2005). This includes an addition of new precedent designs and studies. It also extends upon areas of child development (such as language) and their links to the physical environment.

### **3.5 Data Recording Procedures**

#### **3.5.1 Field Observations**

The field observation form, developed by Outside Criteria, is an evaluative tool used by researchers to document and measure the outdoor yards at the centres in the study. It consists of an inventory of the site's physical conditions, its functional/relational spaces, an analysis of its character, a design critique and a context diagram showing the place of the centre within the greater community context. These are filled out by hand by one researcher while the other takes photographs of the site at the child's and adult's height. In addition to this initial field observation, qualities of the site reveal themselves later to a greater extent over several visits and notes are taken throughout the video recording process. The initial observation form is included in the appendix.

#### **3.5.2 Video Observation**

Observation of the play patterns of the children is conducted through video documentation and field notes. Taping at the centre studies here was done for 3 hours in the winter of early 2005 and later 3 hours in spring of the same year. The method of video recording was established in late 2003. The taping is done in pairs, one researcher records on videotape while the other takes notes. The note taker is sometimes responsible for observing the overall play narrative that is taking place on site and may guide the camera to document different parts of the play yard as the narrative unfolds.

#### **3.5.3 One hour focused Interview with staff**

A one hour interview with staff serves to gain the insights of practitioners' perception of the outside space.

The questions asked by the interviewers were:

What do you like about your outdoor space?

What do you dislike about your outdoor space?

What do the children like best?

What do they dislike?

What would you change about your outdoor space if you could?

Are there any seasonal differences in the way the children use the space?

The answers to these questions were recorded on large sheets of paper so that the note taking during this process was transparent.

#### 3.5.4 Workshop Discussions

In August of 2004 a workshop was conducted at Westcoast Child care resource centre. The child care staff from different centres discussed and brainstormed how to transform their outdoor yards. The results of this workshop were recorded on large sheets of paper by group facilitators from the Outside Criteria project.

#### 3.5.5 Design meeting notes

From October 2004 to June 2005, I was the principal designer on this project. From June 2005 to August 2006 I was a design committee member in an advisory capacity. During this period I took notes of the progress of the design. These were recorded in notebooks containing my thesis research.

#### 3.5.6 Historical Information

I began historical research at the City of Vancouver Archives in January of 2006. I requested archival files from the fonds of Vancouver Board of Parks and recreation,

Urban Design Group, Health Licensing, and Daycare Information Centre. Notes written by me documented the various memos, letters, meetings, information materials, pamphlets and plans concerned with the creation of new child care spaces in the 1970s. Insurance maps copied from the archives machines document the various buildings on the site over time. Photographs from the Urban Design Fonds were assessed to determine the condition of the site immediately prior to its becoming a daycare. I requested four of these photographs to be printed for use in this thesis to document the landscape's change over time.

#### 3.5.7 Hansard Transcripts

To establish the context in which a large portion of child care spaces were established (including the study site), I studied transcripts of legislative debates of the British Columbia Parliament from Hansard for the period of 1973-1975. I recorded a timeline of action on the daycare portfolio as well as pertinent quotes concerning the establishment of child care and its importance from legislators.

#### 3.5.8 Precedent Studies and sites

The literature was consulted for studies that were similar to the scope of the Outside Criteria Study. These studies expand the review of literature done by Lesmeister (2005). Notes from the literature were gathered in a notebook. I surveyed design precedents sympathetic to accommodating children's development in outdoor environments and relevant to site design for child care.



### **3.6 Data Analysis Procedures**

#### **3.6.1 Field Observation and The Seven C's**

The categories of the Seven C's: character, context, change, chance, clarity, connectivity and challenge formed the criteria by which the physical site was analysed. This criteria outlined by Lesmeister (2005) and Herrington and Lesmeister (2006) was useful in identifying needs for site improvements and guiding the design objectives.

#### **3.6.2 Video and Anecdotal notes of Children at play**

The approach for analysis of video observations was different from previous approaches by Herrington and Outside Criteria. Instead of using video as a tool for comparison of play patterns in a before and after condition, it was used as a proactive tool for enhancing and incorporating existing play patterns of the children in a new design.

The anecdotal observations together with the video observation form a rich narrative of play that informs the designer's concept of the space. Play durations and play behaviours that fall outside of expected parameters, language exchanges, behaviours linked to particular landscape elements and microclimatic conditions of the session are incorporated to provide a richer context for the data.

As the main players in the videos, the children are made full participants in the design. This embraces the idea of the proactive approach of child participation described by Mark Francis. This view holds that participation is a method for children and adults work together to "reinvent childhood and the places that support it" (Francis and Lorenzo 2002). Observations of how children are playing and how that type of play can be accommodated in an enhanced way influenced the final design iteration.

The observation method allows for the designer to directly observe children interacting with the landscape itself rather than the common practice of conceptualizing play zones in plan view without seeing existing patterns of use. The children, through their observed behaviours and uses of the site, are educating and communicating with the researcher of what they can do on the site.

### 3.6.3 One hour Focused Interview

Outside Criteria did a content analysis of the interviews of the sixteen centres in the greater study and came up with norms for participant responses. The categories most identified by staff were the desire for additional sensory experience, better organized space and better physical equipment, seating, structures. The Interview with the center in the park was compared and contrasted with this norm. A content analysis was also done to specifically identify the values of the participants towards the outdoor play space.

### 3.6.4 Design Meeting notes

A content analysis was conducted to see where conflicts between the identified site needs (as defined by the Seven Cs) and Design Committee participants occur. These conflicts are areas where the research fails to convince participants or is overruled by an opposing power structure(s) or due to external circumstance. They were the areas where obstacles to implementation were identified. However it should be realized that these notes are my notes as a design committee member and are therefore highly subjective. I have used my critical judgment in including certain material eliminating bias as much as possible.

### 3.6.5 Historical Information from archives and Hansard

A chronology or an evolution of the site was made by piecing together information and, where possible, correlating historical data sources to build a story of how the park and study site were formed. I documented the correspondence and planning documents of

various governmental and non governmental agencies in order to immerse myself in the climate of the time when the child care centre was founded on the study site. This allowed me to understand the values of its participants and establish the continuum of service to the present day.

#### 3.6.6 Precedent studies and sites

These studies and sites were consulted to locate the current study site in the literature and design history concerned with spatial design for early childhood.

### **3.7 Strategies for validating findings**

#### 3.7.1 Audibility

The *process* by which findings concerning the evaluation of the physical design of the site have been made quite clear in the previous work by Herrington and Lesmeister (2006). I strive here in this report to make clear the process by which implementation occurred in this specific situation and as a way to show how the final design iteration was arrived at.

#### 3.7.2 Critical validity

Where applicable, I attempt to find bias in the work and admit where bias may be present. Design methods and products have a strong element of subjectivism and bias is quite common. Where it warrants I point out the biases of the researcher.

### **3.8 Process of Discovery-Chronology**

#### **3.8.1 Joining and Familiarisation with Outside Criteria**

Early in 2004 I joined the team at the Outside Criteria project and was immersed into the context of researching child care. On a personal note, this coincided roughly with learning that my wife was pregnant and that I would become a father. These two facts were the main motivators behind pursuing a course of research into early childhood development and childhood's expression reflected in the landscape.

Prior to identifying the site that would eventually be studied; I was immersed in a course of activities that allowed me to learn the methods of the group. These included field observations, recording, viewing and coding of videotapes, interviews and a workshop with practitioners. These activities contributed to an emergent theory of the group known as the Seven C's, design criteria for outdoor play spaces at child care centres.

#### **3.8.2 Births**

Two births occurred in the autumn of 2004, that of my daughter Pera and that of this particular project. In late summer a member of the child care's administrative society contacted Susan Herrington. They sought a graduate student who would be interested in proposing a design for the outdoor play yard for which funds had been earmarked since 2002. After the initial meeting at the centre with the administrator and Professor Herrington, the centre was entered into our study and I was engaged as the designer for the outdoor playspace, with the goal of it being built in the summer of 2005.

Our method of analysis was employed to study the centre's yard and my first impression of the yard was that it needed little improvement due to an excellent contextual position and the seeming abundance of malleable materials and vegetation. A one hour interview

was conducted with the staff and the main impression gained from the interview was that they enjoyed the “naturalness”. That fall, design meetings were conducted primarily with the administrator and sometimes with the staff supervisor.

### 3.8.3 First design iteration and communication of the participatory model

The observation of the children began in January of 2005 and these observations gave me a good idea of how they were using the space. This and the interview with staff in the fall allowed me to confidently propose the first design concepts for the space. The design was shown to the administrator who approved the iteration but was hesitant due to a lack of exposure to non traditional playground designs. (Nicholls, Design Meeting Notes, 2005). During this period I familiarised her with our participatory model and precedent work by Professor Herrington, such as the infant garden(1997). These communications convinced her in the model’s strength and its emphasis on children’s use of space.

### 3.8.4 Obstacles: the safe spaces grant

A provincial grant, known as the safe spaces grant, was created in late 2004. The administrator communicated her intention to have the centre apply for the grant in order to secure more funds for the outdoor play space. The grant had stipulations attached, first: that the funds must be directed towards improvements to meet CSA standards and secondly, that any proposals must be approved by a child care licensing officer. At a design meeting we contacted the administrator of the grant to inquire if our proposal would qualify. The administrator was puzzled by the fact that we would apply if there was no play structure. At a later design meeting health licensing officers became involved in the design committee earlier than expected due to the stipulations and deadlines of the grant. They expressed several reservations about the proposal, including the fact that there was no play structure (Nicholls, Design Meeting Notes 2005). The grant also accelerated the design process in order to meet the deadline of the grant.

The grant also put a different framework on the perception of the design. The grant's emphasis on safety caused that to become the primary value in the design. The initial concepts began to be scaled back due to safety concerns. A custom play structure designer joined the design committee and small structures were proposed for the site. The staff supervisor completed the grant proposal without plan drawings but instead a verbal proposal. I am not certain if my report and drawings were included in the grant application, it is included in the appendix. The grant monies were eventually rewarded in full.

### 3.8.5 International Conference and the end of design duties

Taping of children ended in May and the final concept was drafted and rendered. It was presented to the parents committee and received favourable reviews from them. It was apparent that construction would not progress as planned as we were coming into summer and contractors were not yet arranged. It had been a hope of the administrator that members of her society could do the labour but there was a lack of certainty regarding the budget and the stipulations that were attached to the money.

The administrator of the centre met with the city of Vancouver's social planning, environmental health and licensing, and Vancouver Board of Parks officials concerning budget issues but also to discuss the design. I was not privy to these meetings and had stopped active design activities. In June, I traveled to Istanbul to present a paper on the influence of the market in children's outdoor play spaces at the Union of International Architects congress. My experiences in the spring had enlightened me to the fact that perception of play had been radically changed and infected by the lobbying and communications of playground equipment manufacturers. Although my particular project did not include manufactured equipment at this point hearing the stories of my colleague, Chandra Lesmeister, lead me to believe that many of the new play spaces in Vancouver would contain equipment and that manufacturers had been aggressively marketing at child care centres.

Upon my return in late summer, I learned that in order to proceed with the project, a registered landscape architect would need to be contacted as I did not yet have the legal status or professional authority required to draft construction documents. At this point I became a design consultant and ended my responsibilities as the main designer on the project.

### 3.8.6 Design Committee deliberations

A landscape architect was engaged by the city and commenced active duties in the autumn. I attended a site visit with him, officials from the city, the administrator and the staff supervisor. From my conceptual plan and the site visit, he drafted a new plan. The design committee met twice over the autumn and winter of 2005. In early 2006 the committee found the plan satisfactory and it was hoped that construction would begin in summer 2006. During this period I tried to understand the different institutional cultures of design committee members and their motivations.

### 3.8.7 Drafting of the Official Plan

A final plan was produced by the landscape architect of record and approved. While this plan was different from my original concept plan, for example the elimination of landforms and inclusion of a climber, I was pleased to have contributed my voice to the process, helping to shape a space where play will occur.

### 3.8.8 Removal of climber and the future of the site

The climber was destroyed in the summer of 2006. At this time I visited the site to take photographs, I noticed on the sand where the climber had been traces of the children making canals. A new climber is to be installed in the same place as the old in November of 2006. The area where the sand is will be FIBAR, an engineered wood fibre.

### 3.8.9 Final Iteration

For some time I had considered developing an ideal design, one without constraints of budget. In summer of 2006, I developed new design concepts that reflected all the knowledge that I had gained over the period of two years. All the research consolidated into a strong design vision, based on all the data collected. It is the design proposal that is presented in this thesis.



## **4. Findings**

The findings here relate to the site and the process of design. They follow earlier findings made by Outside Criteria in the Seven C's (Herington and Lesmeister 2006). The latest findings add to the strength of the earlier work by Outside Criteria and help to establish the case for procedural change for design committees. The findings also establish a course of action for the final design iteration of the study site.

The findings presented here are organized in categories: physical site improvements required, relevant literature, video observation, mechanics of the Cs, obstacles from planning process, and historical information.

### **4.1 Findings from the Physical Site**

The site, at first impression, needed very little change. The context of the park and the presence of large specimen trees give shade, continual change and provide framed views to Lost Lagoon and Stanley Park. The findings from the field observation and the interview pointed out areas where improvements could be made. These changes include incorporating a slope into the fabric of the designed landforms, clarifying spatial definitions, working with re-use elements and careful consideration of the ground surface as a place for play.

#### **4.1.1 Challenges of Topography**

The site is located on sloping terrain, quite a steep grade at the southwest end of the site (18% grade) and with a tall retaining wall at the southeast. Sloping terrain is rarely judged as suitable for child care play spaces. The north end of the site is very close to sea level, the entire area having once been tidal flats. The slope presented a challenge because it had been designed for automobiles rather than the movement of young

pedestrians. (Nicholls & Lesmeister: Field Observation, 2004) It was perceived as a dangerous element of the site because of its grade (Staff Interview 2004).

The sloping terrain also meant that during winter months the low point of the site was inundated with runoff. Study of the topography in the context of the greater area shows this site as a water collecting site.

#### 4.1.2 Lack of tactile vegetation and qualities of change in the yard

Analysis of the vegetation on site showed that although there was the appearance of a high amount of vegetation on the site (see illustration 3), most of it was not what could be considered tactile vegetation. Children's activities with vegetation at the child's level (picking, collecting, hiding within) witnessed at other centres in our study did not have an opportunity to occur here. The amount of tactile vegetation is very low (see illustration 4) considering the context of being in a park. Furthermore, the specimen trees on the site were for the most part evergreen which have less visually apparent changes over the seasons. This contributed to a lack in the quality of Change as outlined in the Seven Cs.

#### 4.1.3 Lack of Spatial Definition and Clarity

There was a lack of sub-space definition. (Nicholls & Lesmeister: Field Observation 2004, Interview with staff 2004). Pieces of equipment (bridge, playhouse, toddler and preschool climber, swings) tended to define the sub areas. The equipment did, however, create strong subspaces underneath as a cave-like space and on top as a prospect point. The playhouse was a frequently used subspace but tended to be used by only one child at a time

The spatial composition of equipment left awkward and unused spaces at the edges. The pieces of equipment were not integrated into the landscape or any thought given of how these spaces would interact or be connected. The designed asphalt pathway, which

defined the "island" of the main play structures, was not used because the equipment created many "dead spaces" around it. The structures reduced the overall clarity of the space by occupying the centre of the yard.

#### 4.1.4 The problem of Re-Use elements

The yard was retrofitted for the purposes of child care and therefore some of its spaces were defined by elements of the previous tenants (such as an asphalt driveway and parking lot) rather than with the needs of children in mind. This material and spatial intrusion into the play yard breaks the unity of the outdoor yard. The asphalt area at the Southeastern part of the site, used for wheeled toys, was originally intended for use as a parking lot and is not suitable in scale or materials. There is no definition of space, no spatial clues for circulation or function in this area except for the pre-existing curbs that frequently pose a safety hazard to the children (Nicholls & Lesmeister, staff interview, 2004).

The driveway into the space from the Southwest is the way the youngest children must enter the yard. There is no sense of arrival when arriving in the main space at the bottom of the slope as the driveway just continues to cut across the yard and terminates in the old parking lot. This manner of entry is forced due to the retrofit heritage house and the fact that it is not deemed safe for the toddlers to use the stairs in the house. The driveway and parking area form strange, unjustified subspaces in the yard and work to degrade the connectivity, clarity and character of the space.

The re-use elements were also the first elements identified by the administration for desired removals on site (Nicholls, Design Meeting notes 2004).

#### 4.1.5 Ground Plane materials

The yard had a high degree of porous materials such as sand, grass and dirt. It also had large areas of asphalt (209m<sup>2</sup>). The ground materials, as floors for subspaces, were not well defined. The grass was not doing well due to the acidic soils created by coniferous leaf litter, being located in a water collecting area and repeated foot traffic.

### 4.2 Findings from the literature

The Seven Cs arose from an extensive review of the literature by Lesmeister and Herrington (2006). The findings here extend upon the earlier work by Lesmeister and Herrington. These areas include the sequence of child development, play and its role in development, the role of the environment in language development and models for analysis of space related to early childhood development.

#### 4.2.1 Sequence of Development

Accommodating for the child's development in physical design requires an understanding of the principles of developmental theory. These principles are helpful to understanding the way children mature and grow. They also form a well researched base from which to observe children from. Identifying children's development and needs is best done through observation. (Martin 2004)

Age and stage constructs created by developmental psychologists are methods for organizing child development into understandable sequences. Passages from one stage to another are measured by acquisition of skills or *milestones*. Understanding these ideas of the stages helps the designer to create basic developmentally appropriate designs. Child care provision usually divides the stages as infancy, toddlerhood, preschooler and school age. These stages are typically associated with age groups that vary from culture

to culture. Other models include Freud's psychoanalytical approach, Erikson's psychosocial approach, Piaget's developmental psychology model and Allen and Marotz's age/stage profiles.

The following important principles in the development literature are outlined by Martin in her book on observing children, *Take a Look* (2004). These following eight principles are useful to the designer to reflect upon when planning outdoor play environments for early childhood:

1. *Attachments* to people are necessary for a child's development and should be accommodated in the child's environment (Bowlby, 1965; Ainsworth, 1972).
2. Young children learn from *direct, first hand experiences in their environments* and are the main constructors of their own knowledge (Piaget, 1954).
3. Adults can be *facilitators* of learning, like gardeners in the child's garden (Froebel, 1826).
4. Through assessment of what a child knows and can accomplish challenges can be developed that help the children to perform at a new level of skill. Vygotsky describes this as the *zone of proximal development*. (Vygotsky, 1978).
5. Learning can be extended by observing the children's current abilities and making strategies that bridge one level of development to the next. This is known as *scaffolding* (Bruner, 1966).
6. Intelligence is multifaceted and should be provided for through provision of a wide range of experiences. (Gardner, 1993).
7. Complex interplay between children and their environment enables them to search for meaning (Bandura 1977; Martin, 2004).

8. Human development occurs within a social system made up of networks; the social, political, economic, and religious aspects of the child's environment will influence development (Bronfenbrenner, 1979).

Observation of children, through the lens of these child development principles, lays the basic groundwork for understanding the whole child. Observation of the sequence of development develops a richer image of the child and what they are capable of doing. Developmental milestones of children are included in the appendix for reference but it should be noted that they cannot replace the direct observation of the children themselves.

#### 4.2.2 Environment, Play and Development

Research shows that children's development is affected by interactions with their environments. Piaget is often cited in this research. Piaget developed the idea of stages of psychological development or the development of cognitive processes. He embraced a constructivist theory, implying that children are not passive recipients of a given environment but that the child plays an active role in the construction of their knowledge of the world. Piaget surmised that children construct knowledge by using certain tools of the mind to organize their world. He termed this *adaptation*, a process which "humans modify their environments to fit their personal needs as well as themselves in response to their environments" (VanHoorn et al., 2003). The two main aspects of adaptation are assimilation and accommodation, which interact to act as a source of learning and development. (VanHoorn et al., 2003) Assimilation, new elements and experiences are incorporated into existing structures of thought. In accommodation, existing structures of thought are changed to accommodate a new experience. The environment plays a key role in this process of constructing knowledge. An environment low in changeability presented to the child will offer little opportunity for the process of accommodation to take place. Organic matter, being in a state of flux and changing over time, is excellent for the purposes of witnessing change in space and experience.

Change and flexibility in environments is often cited in the literature as necessary elements in a child's world for development and learning to take place. "Children require a range of play opportunities if they are to achieve full developmental potential"(Brown, 2003). Brown coins the term *compound flexibility*, defined as the "interrelationship between a flexible/adaptable environment and the gradual development of flexibility/adaptability in the child"(Brown, 2003) This view contends that there is great developmental potential in the play environment if it is properly considered. When the environment is suitably flexible it initiates a cycle of development and learning sparked by the child's inquiry.

The theories of Lev Vygotsky compound the importance of the environment and play in the young child's development. Vygotsky's main contribution to development theory was the idea of *zone of proximal development*(1978), referring to the child's *social* interactions as essential to development, play is the source of these interactions and occurs as a result of shared challenges in the environment. To the designer this implies that the physical space where play occurs must be conducive to a range of social interactions. There must be places of solitude, of camaraderie with one or two friends as well as areas for congregation of the whole group. A space that is undifferentiated in character makes these sorts of relations difficult. Vygotsky also stressed the importance of symbolic play. He observed that young children use objects to represent other objects and called these objects of the child's imagination *pivots*. *Pivots* help the child to anchor meanings of words. Therefore a sword fern in a play yard could contribute to the child's understanding of swordness (long pointy object at one end with a handle(stem)). Flexibility in objects and social relations contributes positively to the child's development.

A continuum of social participation in play was proposed by Parten(1932). Based on structured observations, she developed categories of social play: onlooker behaviour, solitary play, parallel play and group play. Spaces that provide opportunities for the full range of these activities allow for social development and subsequent benefits of

development in that area as proposed in Vygotsky. Observations by Outside Criteria noted that organic play spaces, those with plenty of living matter and well considered subspaces, tended to show more group play than less complex environments (Herrington et al.2005).

In spite of the wide body of literature in support of outdoor play and its role in development, there is still difficulty convincing others of its importance. The reasons are to be found in people's perception of play. Play itself is hard to define. Perceptions of play differ across a wide spectrum and not all definitions recognize development as an outcome of play(Bruce 1991; Bruce 1997). The lack of a common definition and understanding of the role of play in development hinders its accommodation into early childhood programs(Fisher 1996). This contributes to the perception that outdoor play environments are not worthy of the same attention as the serious learning environments of the indoors.

Outside Criteria believes that play is one of the most important factors in the young child's development. Play plays a significant role in the development of children in all domains. Play is the vehicle through which a child builds understanding of the world (Piaget, 1962)

#### 4.2.3 Play and its role in Language Development

Play has an especially powerful role in developing language. It offers opportunities and contexts to communicate with other children and with adults. It gives younger children solitary time to verbalize in private and thus increase confidence. (Wortham, 2003). Play stimulates innovation in language (Garvey 1977; Bruner 1983; Levey 1984; Frost 1993). Play introduces and clarifies new concepts and words (Smilansky 1968; Chukovsky 1971). Play motivates language use and practice (Vygotsky 1962; Smilansky 1968; Garvey and Hogan 1973; Garvey 1977; Bruner 1983). Play develops metalinguistic awareness, which is defined as a different kind of language performance where children become aware of the form of language *in itself* and requires different cognitive demands



than speaking and listening (Cazden 1976). It can be indicated by an ability of the child to manipulate language elements playfully (Collier, 1979). Play also encourages verbal thinking (Vygotsky 1962).

#### 4.2.4 Language development and environment

“Landscapes were the first human texts, read before the invention of other signs and symbols. Clouds, wind and sun were clues to weather, ripples and eddies signs of rocks and life under water, caves and ledges promise of shelter, leaves guides to food; birdcalls warnings of predators. Early writing resembled landscapes; other languages-verbal, mathematical, graphic-derive from the language of landscape” (Spirn, 1998).

Not unlike the early humans mentioned in this quote from Spirn, children also learn from landscapes. Children’s actions in the material world provide stimuli for conceptual development (Harris in Otto, 2002) Objects, people and actions presented to the young child form the child’s understanding of a culture’s priorities (Menyuk, 1988). The interrelativity of phenomena is developed by the child’s experiences in the world. The method and quality of symbol acquisition forms the basis of the way they will understand culture, society and the material world in the years to come. Learning occurs through first hand experiences of the world (Piaget, 1953) rather than vicarious experiences. Therefore, it is important when planning spaces for children to insure that the environment itself can provide experiences that are rich and complex in nature.

A child’s explorations of language occur simultaneously with explorations of their environment. In toddlerhood, a stage most often heralded by the ability to walk, telegraphic speech of infancy gives way to speaking in simple sentences. The preschool age is considered the most important time for language development. There is dynamic interaction that connects explorations of language and explorations of environment.

Children form strong social relationships with each other through their interactions and day to day activities. Language serves as a negotiating tool for social interactions. Conversations may be monitored for assessment of the level of social development. Play can also be observed to monitor social development of children (Parten 1932). Given the right environmental circumstances children will form strong, positive and cooperative relationships with one another.

#### 4.2.5 Analytical models of outdoor spaces for early childhood

Kritchevsky (1969) in a pioneering work for the NAEYC developed a method of understanding the physical space of early childhood institutions. She developed the idea that a play space is made up of *contents* and *empty spaces*. Contents contain play units which are measured for complexity, variety and amount to do per child. Complexity, in Kritchevsky's model is measured by the extent a play unit "contains potential for active manipulation and alteration by the children" (Kritchevsky 1969). Variety in the model is measured by how many activities a child is invited to do with the various play units. Amount to do per child is the measure of how many children the unit can accommodate.

The spatial organization of units is addressed in terms of circulation, articulation of space, flexibility and proximity of storage to units. Circulation refers to the need to provide a clear path from the perspective of the child. Articulation of space refers to the need for the play yard to have surfaces unimpeded by permanent equipment. These spaces must be balanced and articulated with the designed circulation to avoid dead space. The path, play units and empty spaces must be arranged in a way to complement each other and provide clarity from the child's point of view.

Herrington and Lesmeister address most of these ideas in the Seven Cs (2006). The language in this work is more oriented to the designer than Kritchevsky's work and the Seven C's incorporates the latest in research since Kritchevsky's landmark work. One major point of departure from Kritchevsky's model is the consideration of character and

context of an outdoor play space, which was not explored by Kritchevsky. Herrington and Lesmeister's model is more holistic in approach and attempts to link more closely the specific sequence of development in early childhood to elements in the physical environment.

The idea of conceptualizing space as a zone for activities is proposed by Esbenson (1987); Erikson and Guddemi (1992) and Rivkin (1995). It has frequently been misapplied by designers who do not understand development or the nature of children's play. This misapplication usually occurs when the designer creates an artificial zone as a themed spatial unit rather than a place where the child's activities can be accommodated. Activity lists allow design teams to see if all developmental domains are being sufficiently addressed in the physical space. Eriksen developed a list of activities that were linked to the developmental domains which could be consulted when making places for activities in the outdoor play yard.

These models are helpful for the designer to specifically link development with physical space.

#### 4.2.6 Precedent Sites

##### *The Infant Garden*

Susan Herrington's Infant Garden at Davis, California played an influential role in developing the conceptual plan for the study site's outdoor yard. In the article, *The Received View of Play and the Subculture of Infants* (1997), Herrington outlines the infant garden as a design alternative to the culture of bland, corporate play apparatus and their role in the denigration of the idea of being outdoors. The garden was designed with the assumption that the *landscape* can "comprehensively support the four domains (physical, social, cognitive, emotional) essential to the development of young children" (Herrington, 1997). The paper also outlines a process that begins with stakeholders stating their goals for the outdoor space, analysis of existing space, translating

development theory into landscape form, spatially arranging the forms in a manner that was clear from a child's perspective and articulating the form through careful choice of materials that enhance development and exploit the unique qualities of being outdoors. Herrington outlines 5 main elements in the design, a central mound with a sand area at its centre, a pine circle, a maze, a mist field and a paving mosaic. The materials selected for these elements were carefully considered to provide developmental opportunities.

#### *Cornelia Hahn Oberlander's Expo 67 Children's Creative Centre*

Cornelia Hahn Oberlander's work with children's spaces is influential and inspirational to this work. Oberlander was an informal advisor to the Vancouver Board of Parks and Recreation in the beginning of the placement of child care centres within park boundaries. Her design for the Children's Creative Centre at Expo 67 in Montreal shows a sensibility of the designer in translating observations of children at play into designed forms.

She achieved in her design a total environment for the concept of "education for creativity." It was a restful, garden like atmosphere of gentle mounds, pine trees and hedges. It was purposely built to contrast with the concrete and asphalt jungle of the city. It provided an opportunity for active and creative opportunities. The main spatial organization was a sand area with a canal running through the space. There was an area for children to build structures with logs, an old boat in which children could rock in, and a stovepipe tunnel. The nursery area was enclosed by a cedar hedge and had a water play area, a sandbox, rabbit hutches, a playhouse, a teepee, flowerpots and step seating to ease integration for children new to the space.

#### *Robin Moore's environmental yard*

Robin C. Moore, early in his career, interpreted the theories of child development into design practice. He has contributed greatly to the research concerning the use of vegetation to fulfill developmental needs. In *Plants for Play* (1993), Moore considers the

tactile, auditory, olfactory, visual and play value of different types of plants. He makes suggestions for specific plants for specific purposes. Moore is no stranger to the area of child development, he has devoted his career to researching children and the relationship to their environments, most notably in the book *Childhood's Domain* (1986). In this earlier work he applied Broffebrenner's ecological approach to the study of children's spaces, looking in particular at the way children perceived their spaces and the manner in which children extended themselves in their environments.

Moore's design approach to children's spaces is best expressed in his environmental yard at the Washington School in Berkeley, California. The space was once mostly surfaced with macadam. The Macadam surface had traditional metal play apparatus and painted lines for ball games. There was a small garden used for students gardening activities. However, in the 1950s the entire area was asphalted over. Moore and associate Herb Wong initiated the process of change in the yard. A task force was organized comprising of teachers, parents and volunteers. Together, they began to draft a preliminary vision for the yard. They transformed the space with the help of community partners into a naturalized landscape that had water and vegetative elements. Moore, through his organization, the Natural Learning Initiative, continues to advocate for the provision of natural spaces for children.

### *Bengsston's Play Space Case Studies*

Case studies of play spaces, which reflect broader aims than safety, are to be found through the research of Arndt Bengsston in his book, *Environmental Planning for Children's Play*. The book explores the phenomena of designer-led playground design of the 1960s and 1970s. Historically, the designer playground movement in North America was an outgrowth of a larger urban reform movement in the 1960s (Brett, et al., 1993). The players in this process were civic leaders, designers, educators and park/ recreation officials. Architects and Landscape architects such as Richard Dattner and M. Paul Friedberg encouraged the participation of the community and children in developing spaces for children. Both have examples of their work featured in Bengsston's book. The

great difference in approach comparing then and now was that the designers conceived of the whole space of the playground and how the architectural elements related to one another, today's approach is much more product and consumer oriented, with equipment being installed and the landscape accommodating it, rather than developing a whole concept for the playspace itself

### *Lesmeister's design*

Chandra Lesmeister developed a design for the outdoor yard at a UBC laboratory child care centre. She used the principles of Herrington's Infant Garden as well as Herrington and Studtmann's *Yard to Garden* (1998). The yard design is the first application of Outside Criteria's method of analysis. The design was also the first to apply the design criteria of the 7Cs into physical form.

## **4.3 Findings from Video Observation**

“When I was asked to design the playground, I asked myself what children like to do? Run, climb, build, feel contrasting textures, see colours, those are things children enjoy. I saw my role as an interpreter for the ideas of the educator and to relate those to design principles.”

(Cornelia Hahn Oberlander: Bengsston, 1971)

Understanding what children like to do requires observing them. Through observation, the child becomes a participant in the design process. Infants, toddlers and preschoolers can rarely verbalize and reflect upon their own play let alone represent it in drawings and writing. The best way to incorporate their ideas is to follow their play narratives, watch facial expressions, measure duration and engagement. Video is a powerful medium to record the child's participation in the process. The videos communicate and educate the

designer in how the child likes to play. They offer clues to the investigator about what makes a good place to play. Here are findings in the video data gleaned from my analysis of the study site.

#### 4.3.1 Sequence of development not designed for in the space.

Toddlers' requirements in the play yard are different from those of preschoolers. The unregulated mixture of the two groups requires greater intervention of caregivers, raising the stress of the caregiver and interfering in the free flow of play. Moreover, none of the yard is scaled for toddlers. Moving about the yard on their own is difficult and the lack of clarity in subspaces and circulation creates a dangerous condition for toddlers. Most of the designs for the toddlers are merely scaled down versions of designs for preschoolers. This difference in scaling without thought of the different functional needs and use patterns is known as *scaling fallacy* (Lidwell, Holden & Butler, 2003). This pushdown phenomena is a frequent problem in the design of equipment and activities (Lowman and Ruhman, 1998) as well as the physical environments designed for this age group (Dodge, Dombro & Koralik, 1991).

Toddlers were witnessed mostly watching preschoolers play and testing their abilities to move about the site. Onlooker play (Parten, 1932), the beginning stage of development of social play, allows toddlers to witness the stages of development that lie ahead. In the video, toddlers are often observed watching the co-operative play of the preschoolers. They require a space where they can feel safe to do so though, otherwise there is a risk of stressful events occurring such as being knocked over. Stressful environments and the negative experiences that they produce can impede the brain development of toddlers (Shore 1997). These negative experiences have a "decisive impact on the architecture of the brain and the nature and extent of adult capacities" (Shore 1997).

Preschoolers, on the other hand, did not have sufficient physical challenges. Their play was quite sophisticated with a high degree of cooperative pretend play and language use. They made do with the materials at hand but again the spatial arrangement and subspaces

provided did not reflect their play patterns. The structures provided did not interest them in terms of their physical challenge except for the elements on them that are now prohibited by current licensing regulations. The preschool children were observed quite often attempting to create their own subspaces with materials at hand. With more support in the spatial arrangement, these spaces and opportunities can be enhanced.

#### 4.3.2 Spaces for interaction: subspaces, malleable materials and loose parts

The play of the children, the preschoolers in particular, showed that they created their own subspaces from using loose parts and malleable materials such as sand and water. The play structures were used as a location for interaction, not according to their designed intention, but rather co-operatively transformed into dens by the children. The low point of the site was used extensively for the creation of a “rushing river” made with shovels and a garden hose. These existing areas for interaction were areas that could be enhanced and designed to extend play.

The toddlers did not have a space of their own where they could safely watch the play of others, nor did they have an area where they could safely interact with each other. Further, because they were not well provided for in the yard in terms of landscaping or equipment, it was noticed in the videotapes that toys were bickered over by toddlers, a frequent sign of a lack of opportunity to engage with the environment.

#### 4.3.3 Organic elements create opportunities for language exchange

Elements such as topography, vegetation, water, sand and gravels provide opportunities for language exchange. Children were observed talking to trees, negotiating the creation of a river together, creating a den cooperatively, talking about the topography as an imaginary house with an upstairs and downstairs and discussing the location of a squirrel.



These were only a few of the many examples where children were the environment offered children the chance to communicate with each other. These opportunities serve to further language development.

#### **4.4 Explorations in the way the Cs operate- the mechanics of the Seven Cs**

The design criteria outlined by Herrington and Lesmeister (2006) are non prescriptive and fluid and are meant to be used interactively rather than serve as a checklist for designers.

There are certain inner workings and clustering which can act as tools for designers to shape spaces. These are outlined in this section.

##### **4.4.1 Change and Chance work together to define subspaces and outdoor rooms**

Change addresses the different scales of space within a larger space, commonly referred in this work as subspaces. Spaces are scaled to house different types of social interactions as defined by Parten(1932). Chance refers to the materials that allow children to make an imprint on their space and to witness changes in weather and season. (Herrington and Lesmeister, 2006) The scaling of space and its furnishing with materials that activate change and chance determine the character of a subspace or outdoor room in the yard.

##### **4.4.2 Context and Clarity help define Character**

The subspaces, when well considered for change and chance, and reflect the context in which they are located, help to define character of a space. Context relates to the processes that are happening on a site and therefore are a direct acknowledgement of the landscape the yard is located in. Context also reflects the surrounding conditions and history (Lesmeister 2005). Clarity refers to the readability or legibility of the space.

When subspaces are well considered in scale and material and reflect the context of the site, they contribute to clarity. This clarity, in turn, helps define the character of the space.

Unity in character comes from a sum of the parts rather than an overarching theme from the designer.

#### 4.4.3 Character is the vehicle which binds all the elements of the criteria together

Character is the collection of all the elements and how they contribute to the general feel of the playground. All of the other Cs will form the character of the yard. Likewise, a careful consideration of character will influence decisions made about the component parts of the yard. Character is a much more powerful tool for the designer than a contrived theme. The former implies the expression of values and meaning, whereas the latter implies an adult concept that will be readable by adults but may not be perceived by children.

### 4.5 Obstacles from the planning process

Obstacles found in the planning process of the project may be indicators of the difficulties of transposing an innovative model, such as the Seven Cs, to a non lab school context. The presentation of findings here are obstacles that were encountered during the planning process.

#### 4.5.1 Different approaches to playground design not well understood

The traditional approach to design of play space, of equipment being placed on the landscape, is what is in the minds of most adults when contemplating children's play (Herrington 1997). Modular and metaphor-based equipment tend to be what is chosen for public play areas. These types of play areas are what Herrington calls "token gestures of childhood that signify play"(Herrington 1997). During a design committee meeting at the park daycare, the administrator expressed an expectation that metaphor based equipment would be included in the plan (Nicholls, Design Meeting Notes 2005). Later in the

process a design committee member looking at the final iteration of my plan expressed a concern that the children would not have anything to interact with (Nicholls, Design Meeting Notes 2006). These perceptions of how play is designed for, and adult concepts of play areas for children is an obstacle to pursuing new approaches, it requires a communicative and educational role on part of the designer.

#### 4.5.2 Participatory model requires designers/planners with special training and skills

Francis(2002) identifies one of the setbacks of the proactive children's participatory model is that it requires designers and planners with special training and skills in the methods of proactive practice. These skills include negotiation, politics, and the ability to lead cross-disciplinary teams (Francis 1999). Clients tend to be more familiar of the traditional culture of professional practice where they seek professional assistance and service determined by the client's desires rather than the designer's vision. The relationship between designers and the community is "restricted by the culture of practice, contract law and concerns with liability" (Francis 1999). The designer in using a proactive model faces the difficulty of having to take on the roles and responsibilities of the physical design but also has to act as facilitator, communicator and educator for the new approach. This involves a time commitment and engagement that many Landscape architects would find difficult. The level of engagement requires all members of the design committee to understand the importance and function of landscape in the child's life. The language used to explain such concepts is sometimes perceived as "expert-based" and can alienate participants (Kaplan & Kaplan, 2004).

#### 4.5.3 Frame of Safety

The framing of all play space issues into that of risk vs. safety wrongly places all the emphasis and discussion of play values on this issue alone. During the staff interview answers regarding the question of how the staff would like to transform their yard, many participants cited safety interventions (Nicholls & Lesmeister, Staff Interview notes

2004). Safety as a value or desire limited more creative responses seen at other centres in the greater study(Nicholls, workshop notes, 2004). The lack of predictability in the children's play was frequently seen as a negative (Nicholls, Design meeting notes 2005). Elements that were not fastened down were perceived as dangerous, especially stones and gravel (Nicholls, Design meeting notes 2004, 2005).

Policy and regulations regarding safety in the play yard weigh discussions toward these issues. The influence of the Canadian standards Association in forming policy and perception regarding play spaces and its negative effects on early childhood centres in particular are explored in greater detail in research by Herrington and Nicholls(2006). The findings of this research indicated that the CSA standards "focus on technical information concerning structural integrity, performance requirements, and maintenance of materials and play structures, left behind the needs and desires of children" (Herrington and Nicholls, 2006). Furthermore, spatial requirements mandated in the standards for fall zones and no-encroachment areas had the detrimental effect of reducing the area for non-equipment play as well as the elimination, in certain cases, of the ground plane as a place for play.

Liability issues also loom large for the landscape architect. The issue of who is liable for playground injury is a worthy subject to be explored but will not be looked at here. The perception among the landscape architecture community is that landscape architects are liable (Nicholls, Design meeting notes, 2006). They do not seem to be liable by policy or regulations but to quote the project's landscape architect: "who wants to take the risk?"(Nicholls, Design Meeting Notes, 2006). In professional practice courses for landscape architects it is taught that they are liable for playground injury without differentiating the unique policy and regulation that governs play spaces at licensed child care centres as opposed to public parks or school grounds (Nicholls, UBC Class Notes, 2006).

There are three main differences between a child care centre and a public playground. The first is that the outdoor play spaces at child care centres are not intended for use by

the general public. Secondly, child care centres are planned with limited spatial parameters. Provincial regulation sets the minimum outdoor space for child care at 7m<sup>2</sup> per child. Lastly, children and staff use these outdoor play spaces on a daily basis. The children in these spaces are supervised at all times.

During discussions with the design committee it was noted that vegetation and porous ground plane materials, such as sand and gravel were perceived as menacing and a threat to the child's safety. In this particular project, edible plants were perceived as undesirable because of their ability to attract local wildlife such as raccoons and rats (Nicholls, Design Meeting Notes, 2006). Edible vegetation in an urban landscape is often perceived as unhygienic (Kaldjian 2004, Class notes 2006). Porous materials such as sands are often discouraged because of the possibilities of animals defecating in them, especially cats.

In neighbourhoods where drug use is high both vegetation and porous materials are suspected of concealing used intravenous needles. The study site is located in a neighbourhood that is *perceived* to have an increasing drug user population.(O'Connor, 2006) The design committee, however, did not identify the risk of IV needles as a concern. All of these factors tend to move the discussion away from the benefits of these materials to framing them as possible detriments to the child. The result is that the child is viewed as vulnerable rather than strong or capable.

#### 4.5.4 Differences in Institutional Cultures

The presence of different institutions on the design committee presented a basic problem to communication between parties. Each institution had its own particular culture and philosophy and these are at times in conflict. Child care centres located in shared public spaces, like parks, are regulated by several separate institutions and are more susceptible to the machinations of three levels of government. In the case of a park child care centre, the institutions involved are the Board of Parks and its operations wing, The City of Vancouver Facilities Management team and Department of Social Planning, The Vancouver Coastal Health Authority as representatives for the Province of British

Columbia's Ministry of Health, the Society that administers the child care service, the Union representing the early childhood educators and in the case of the study site, The University of British Columbia. During the process of designing this study site, the representatives from these institutions did not always philosophically or politically agree. Each had its own perceptions of the infrastructure of care in early childhood. Each Institution has a different organizational structure as well with different stakes and accountabilities in the design process.

Aesthetic issues and graphic clarity are one of the areas where disagreements can occur. The play of early childhood can be messy, and some believe, should be messy for the benefit of the child's development. This mess, placed in the public eye, is perceived by some in the same way as an uncut lawn in suburbia: a subject for quiet disapproval and lobbying of public bodies to remove the unsightly item from view and earshot (Vancouver Board of Parks, Superintendent's fond, 1974). Each Institution in the process has its own sense of what the aesthetic of play spaces should be. The reading of plan drawings and conceptual drawings is also perceived differently by the separate institutions (Nicholls, Design meeting notes 2005, 2006) This lack of a common sense of aesthetics and graphic clarity can sometimes lead to discord in the process.

Sharing of values is often crucial to success for innovative projects (Francis, 2002b). Francis' case study of Village Homes is one such example. The Developers employed a participatory model in coming up with the design concept. Participants in the model bought in to the ideas behind the design. Outside Institutions and new residents of the community often did not share the values of the pioneer community and this compromised the integrity of the original idea (Francis, 2002b). Similar things occurred during the process of determining the fate of the study site. Disagreements occurred when participants who were not involved with the original process joined the Design Committee and exercised veto on the early design concepts (Nicholls, Design Meeting Notes, 2005, 2006). The different time demands of the separate institutions also made dialogue regarding these issues difficult.

Lastly, the perception of the institution of child care varies from institution to institution and individual to individual. Although difficult and sensitive to engage or map, attitudes regarding child care affected decisions made by the Design Committee members. The design proposal occurred during highly politicized debates between federal politicians surrounding the issue of the institution and validity of universal child care. The stability of the infrastructure of care is not secure and providers worry about budget issues. Lack of commitment from governments is problematic to the institutions dealing with the issue and decisions are made quickly in order to secure whatever funding is available from the government of the day lest it dry up when a succeeding government takes power.

#### 4.5.5 Issues of time in the design process

Planning for play is done for a relatively short time period. Play equipment is replaced every time a new standard makes the old equipment obsolete. Equipment wears and decays. This means that play is always being planned for the short term by placing objects on the landscape. The more long term view would look at landscape itself as a suitable accommodator for children's play because landscapes, although changing over time, do so in an organic and evolutionary manner. Designers seldom understand the time that children spend in the yard and the fact that enthusiasm for equipment based play quickly fades through day to day use and ultimately results in increasing the boredom levels of the children and disenchantment with their place of play.

#### 4.5.6 Costs of materials and labour

The current construction climate has sent prices of materials and labour to unsustainable levels. child care centres, which have limited budgets, are often unable to afford quality materials or the services of a landscape architect. The project's landscape architect liked the ideas presented in my plan but expressed that my plan was the "\$500000 dollar plan." (Nicholls, Design Meeting Notes, 2006). Because the process of publicly funded construction requires insurable contractors and the sourcing of materials through them,

the budgets for projects get quickly expended. If large areas of hardscape or labour-intensive work is required the budget is often not sufficient. The budget for this project was derived from consultation of *RS means* for North America which provides a method for estimating work. However the level of cost in the Vancouver area is above that presented in *RS means*, a directory put out every year to guide North American contractors' pricing, with the implication that, at the present time, estimating budgets of projects is difficult at best and impossible at worst. This type of climate is very unfavourable for children's outdoor play spaces and presents perhaps the greatest obstacle to implementation of innovative designs for early childhood.



## **5. Site Design and Proposals for Action**

The following section includes a design proposal that reflects an ideal situation: the lack of budget restraint and design stipulations of funding bodies. The section also encourages participants in the design process to use memory as a tool in the design process. Lastly it outlines suggestions for changes to the design process and spatial planning for child care.

### **5.1 Design proposal**

The proposal presented here is the final iteration of the design of the study site.

#### **5.1.1 Design Intent**

The design intent is to translate the “fundamental theories of early social, emotional and sensorimotor development into landscape forms, textures, and images”(Herrington 1997). The discovery and realization of the poetry and revelation of landscape processes are also guiding ideas in the design.

A second intent was to capitalize on the context of the surrounding topography and its expression within the site and incorporations of design elements that assisted children in reading, inhabiting and making an imprint upon the landscape.

A third intent was to create spatial definition, unity and developmentally appropriate challenges through landforms, vegetation and ground plane materials. This involved increasing the clarity of the overall space through careful consideration of the design of sub-spaces.

#### **5.1.2 Internal logic of the design**

The context of the yard is that it is situated both in the park and at the edge of the urban grid. It was decided to relate the vectors of the design to one of four systems, that of the

lines of the urban grid, the radial pattern suggested by the specimen trees, the vectors of the slopes in the topography and/or the geometry of the architecture's position in the landscape. Materials used in the yard also reflect the transition from an urban space to an organic space. The hardscaped areas follow the architecture and urban grid lines and dissolve into the slope vectors and radial patterns as the park is entered. The Edwardian history of the site is alluded to by the vertical elements of the cedar hedges that follow the radial lines of the trees. The vectors of the slope are carried through the site by the proposed undulating landform. The undulating hills serve the purpose of giving form to processes happening on the site. The shaping of the land also creates prospect points for the children to look outside of the yard into the park. These views are framed by the vertical hedges. The effect is intended to create different tableaux for the children to observe the outside goings on in the park.

The drafting of the final design concept encompassed three main ideas. The first was that the site should include places where the children could interact in different social groupings according to their stage of development. The second, the site should provide opportunities for language expression. The third notion, was that the yard should be cognitively challenging to the children having a degree of mystery and plenty of things to discover and delight about.

The yard was divided into a main area for the toddlers at the Northeast end of the site and a preschool area at the Northwest end of the site. Both groups share the North central part of the site. The areas are clearly delineated by vertical planes of evergreen vegetation. Interactions between the children were designed by creating a series of outdoor rooms and gathering spaces of varying scales to accommodate different types of social interaction and play.

Unity is achieved in the design by using vertical elements, in most cases vegetation, to create defined areas that are sequenced to reflect the child's development and offer a range of experiences as the child moves through the space. The three major vertical separations created by the hedges relate the perimeter trees to the architecture of the

house and the canopy to the ground plane. The areas created by the vertical elements of the hills and hedges are connected by pathways created by stepping stones, footbridges, and asphalt paths cut from the existing asphalt.

The site is located on a slope at the end of the city's urban grid and the site is a water collecting area for runoff destined for Lost Lagoon. Capitalizing on these two site conditions were the basis for the plan in its final form. Working off of the city's urban grid lines, the lines of the house and the radial lines suggested by the specimen trees on site a spatial plan was developed that defined subspace areas according to an internal logic derived from the processes of the site.

### 5.1.3 The new subspaces explained

#### *Red Rectangle*

This red brick plaza is the place of entry into the playspace for all the children . It is so named because of the red bricks and the colour of the *Nandina domestica* 'firepower' shrubs that frame the space. It is scaled so that all children can gather in the space at once for group activities like dancing, singing in chorus, and group games. The colour of the space gives it a dynamism and activates the child's excitement upon arriving in the outdoors. Two strips of existing asphalt are preserved and act as indexes for pathways into the yard. The mass planting of Nandina that surround the rectangle also serve to direct circulation to other parts of the yard.

#### *Hydrography-Pebble Rill and dry creek*

Surrounding the Nandina plantings of the red rectangle is a large circular pebble rill that provides a separation between the plaza and the other areas of the yard. The pebble rill is part of the hydrological system of the site, it collects water from the slope and redirects it to a dry creek. The dry creek offers opportunities for play with water and the shaping of canals and waterways. It is placed in the area where children currently create their "rivers." The pebble rill and the dry creek reveal the processes of the site hydrology and

also help to delineate the separation of toddler space and preschool space. The dry creek is an area that is shared by both age groups. The dry creek is framed by plantings and offers areas that can be used for solitary play and co-operative play alike. The presence of gravels that can be molded contribute to the elements of change and chance in this space.

### *Prospect Hill*

This landform sits at the centre of the site taking the place of where the climber used to be, the borders of the cedar hedges at the east and west define it. On the prospect hill are large boulders to sit on, arranged in a circle to provide a good place for circle time, climbing activities and surveying the goings on of the play space and park. The hill is planted with resilient fescue. The landform also directs surface flows of water into the pebble rill and dry creek.

### *Preschool sand play area*

Situated to the southwest of the site and south of the children's decks is a large sand play area. The conifers to the south of this area frequently drop cones and other leaf litter that could be used for the children sand creations. The proximity to the decks also means that the transfer of materials such as sand to the decks could be made easier, turning the decks into a locus for the collection of loose parts and porous materials as imaginary play props.

### *Preschoolers' deck*

The decks are sites for the interactions of preschoolers. They can be programmed in a variety of ways and serve as sites for the interventions of children in the play site. Centred around a large existing *Thuja plicata*, the decks are observation posts for the changing of the seasons and a place where the child can observe the sequence and narrative of the play space. The decks are solely for the older children, their use being a rite of passage by the oldest preschoolers and a place where they can reflect upon and form a visual memory of this time in their lives.

The decks would be made of cedar. And have ample space for the placement of tents upon them, which would allow the children to have a dry place of retreat during the rainy season.

#### *Tiger's den*

This is a preschool sand play area directly east of the decks. It is so named because it is framed by the native tiger lily, *Lillium columbianum* planted two rows deep. Flanking behind the lilies is woodrush (*Luzula sylvatica*). Both of these plants are suitable to the acidic conditions of the soil and are within the association group of the specimen trees. The tigerlily is known to attract the Rufous hummingbird. The palette of this space would be orange and brown from the colour of the vegetation and leaf litter from the trees. The vegetation both frames and colours the space. Opportunities for language exchange are available through the introduction of elements that establish and attract change over time (see figure) this could be said of all subspaces in this section. The sand allows the children to make an imprint on the space.

#### *Merrybell grove*

The merrybell grove is a sand play area framed by plantings of merrybells (*Uvularia grandiflora*) and Pendulant sedges (*Carex pendula*). The colour palette here is light green-yellow. The pendulant sedges are offered as a play prop (the pendulant buds can be picked) and allow the children to witness the change of seasons. They provide a hiding space in the summer when the sedges grow long. The space is framed at the east and west by hedges. The tiger's den lies to the west of this space and there is a storage area for toys that lies between these two spaces.

#### *Poppy circle*

This area is at the head of the dry creek and is framed by blue poppies (*Meconopsis grandis*), coppiced *Salix pupurea* #157, pedulant sedges and sword fern. The colour palette here is green-blue-purple. The area is designed at the meeting of the toddler zone and the preschooler zone and is meant to be shared by both groups. It is an area where

rills can be made and it is also a great place for hiding games. The spiral shape also allows for solitary play as one child can situate themselves around the bend from other children if need be. The space is easily supervised from any of the high points on the site and the willows offer enough transparency for child minders to see what and where the children are. The willow not only allow children to witness seasonal change, they can also be used for curriculum activities, play props and they relate to the willows directly outside the yard at the edge of Lost Lagoon.

### *Toddler hill*

The toddler play hill is connected on the same vector as the two other created play hills in the space. It is an area where the children and their minders can observe the active play of the preschoolers from a safe distance. The area is framed on the west by *Choisya ternata*, Mexican mock orange, a plant with a sweet fragrance and showy white blossoms. It serve the function of a fence as it is a broadleaf evergreen with a dense and bushy habit. The ground plane is a fescue. Framing the eastern edge of the hill are mass plantings of sword fern (*Polystichum munitum*) a plant that does well for the soil condition and shade of this area. The sword fern's fronds can also be employed as play props. There are informal sand play areas around the east side of the hills, with a low wood rail balancing beam running between them. The sand may be played in or provide a soft landing to the young gymnasts.

### *Terrazzo cycle path*

A planted island of Flame grass (*Miscanthus sinensis*) replaces the existing asphalt of the previous parking lot and helps frame the terrazzo cycling path. The cycle path lies at a lower grade than the surrounding areas. The continuation of the asphalt vector from the red rectangle would cut through the space on a diagonal allowing for a straight passage to the swings. The terrazzo would allow for variation in colour and texture of the path diversifying the experience of using wheeled vehicles in this space and slowing down "traffic." The path at the northeast tip would have cobbles with spaces between where the

children could watch surface flows from rain go into the drain. During dry weather it would offer variation in texture. At the southernmost tip of the path is the black garden, an area of black mondo grass. Adjacent to the cycle path and between the cycle path, the house and the red rectangle is the tricycle pad, an area where tricycles and wheeled vehicles are stored. There is a slight grade change here that raises it above the cycle path. Here wheeled vehicle riders can exchange gossip and plan their riding activities.

#### 5.1.4 Circulation devices

##### *Stepping stones*

The primary way of navigating through the site is by stepping stones. These serve not only as indexes for movement but are also elements for play. Scanning memory most people remember games in which the spatial definitions of the ground plane served as cues for imaginary games. Examples of which can be seen in avoiding cracks in the sidewalk lest your mother be injured, or using stepping stones as safe points in an “ocean full of sharks” or a “river” full of alligators. The stepping stones thus serve as the point of refuge from these imaginary threats.

##### *Asphalt axis*

The major divisions of the play yard (toddler, preschooler, cycle area) are indicated by the asphalt axis, a remaining strip of the former material of the site. It indexes 4 directions to and from the house, the preschooler area, the toddler area and the cycle area. It ends when crossing the pebble rill at the northeast and northwest but continues to the swings at the southeast.

##### *Hedge gates*

The hedge gates direct the flows of east west traffic in the site. They are also a referent to the Edwardian history of the site.

## *Footbridges*

The footbridges indicate areas where the pebble rill is to be crossed. They are framed by *Nandina domestica* 'firepower' within the circle formed by the pebble rill.

## **5.2 Incorporation of memory in design process**

Calling upon memory of one's childhood and more specifically how one played as a young child often serves to remind us of the experiences that children enjoy. Some people have vivid memories of the places they spent their childhood and the spatial qualities of the space. Although there is a risk of nostalgia clouding perceptions, I believe that memory of one's childhood is a powerful tool for people who design children's spaces. First it creates an empathy with children. Even if a tough childhood was experienced and it was in adverse conditions, the desire to seek something better for children will be a by-product of this contemplation. The risk is of those who had very nice places when they were children that they attempt to recreate to the letter the experience of their childhood, which again leads to adult desires and ideas of play being imposed on children. Nevertheless, I believe that calling upon memory enriches the discussion and deepens the meaning of the spaces created for all involved.

### **5.2.1 The incorporation of the designer's memories of play into this design**

When developing this design, I could vividly remember the feeling of running through the undulating paths of the forest directly adjacent to my childhood home. Blessed with a large woodlot used by horseback riders many of my preschool experiences occurred there with my brother. I also have strong memories of how the space would constrict along the path and open up, usually onto a sand field with ferns at the edges.



The spaces in my design do echo these childhood spaces in some ways. The memories allowed me to feel what these spaces would be like to the child experiencing them. Actually going back to those places with my daughter allowed me to get a sense of their scale, and I could see that she found the same delight in them that I had 30 years ago. The path ended in a trickling and curving creek that eventually lets out into the Ottawa River, which in turn empties into the St-Lawrence that leads to the Ocean. It is my place of beginning. I believe that I unconsciously expressed the spirit of this place in this design

### 5.2.2 The incorporation of memory of site and memory of institutions

I believe that the understanding of both the site's history and the institution's development helped me gain a picture of my actions taking place in an *evolving* context. It also helped me understand the positions of the various institutions involved in the design deliberations. Understanding the memory of the site allowed me to imagine it before the current condition and to see the degree of change that had occurred. It also allowed me to look outside of the site and place it in the greater context of landscape processes and relation of people to those processes. I realize many designers don't have time to explore these histories but I believe that it is a useful tool to discover the sites where early childhood centres are located and the stories of their establishment.

## 5.3 Suggested Changes to design process and spatial planning in daycare

### 5.3.1 Prochaska's model for Change

The process of changing the way we design for play in order to realize the full potential of the outdoors as a vehicle for children's well being and development requires full commitment from all members of a design team. The current process of designing for outdoor play needs improvement. The insistence that pieces of equipment are necessary as elements of play and insisting that the playground be entirely risk free are flawed

positions that are not made evident by research. A collective delusion engages populations involved in the design process for children across North America. The enthusiasm for shiny new equipment as a panacea to the challenges of designing for children is not founded in reason or research. The *obsession with safety* and the belief that only equipment will deliver it wastes entire budgets on products that are rarely used, require expensive surfacing and actively reduce the area in which children truly enjoy playing. Resorting to equipment catalogs, in light of evidence and research that finds equipment doesn't fully provide for the child's developmental needs, is a repetitive and harmful practice of designers and planners that requires change.

The Outside Criteria study found that equipment was only used 13% of the time during a play period. Of that 13%, it was further broken down into activities that followed designed intent or activities that were not according to designed intent. Yet play planners continue to commit a majority of their budgets for the outdoor space to equipment.

Prochaska identifies a five stage model for the change process (Prochaska 1992, Prochaska & Norcross 2002). This model may be effective for developing new approaches of design for the outdoor play spaces. They are focused steps toward achieving change. The advantage of this model is that it is proactive and reflects the research model presented here. The role of the designer in this process can be that of guide, educator and consultant. It has to be emphasized that all institutions involved must engage the process from the beginning and together if the change is to be successful. The stages identified in the process of change are: Precontemplation, Contemplation, Preparation, Action and Maintenance.

*Precontemplation.* Populations involved do not have an active intention to change the current way of doing things or the quality of their environment. They may realize that things are not perfect with the status quo due to the comments and criticisms of external bodies but they themselves feel that little can be done in the near future. The role of the designer here is to encourage the process of change and gently nudge the participants

towards engaging the process by delivering insights into the benefits of changing the way things are done.

*Contemplation.* The populations involved realize that a problem exists and are willing to take action towards remedying a problem in the near future. The designer here helps the participants come to realize what is not working by engaging in a dialectic method of inquiry with participants at the beginning of the design process.

*Preparation.* Intention combined with a new behavioural criteria begins the process of changing the way things are done. Small changes to the way of doing things are attempted. Still, a criterion for action is not yet ready to make the large changes required. The designer helps the participants prepare a course of action by developing a criteria for change. The designer's role is akin to that of an "experienced coach preparing a game plan or reviewing the plans of others"(Norcross and Prochaska, 2002).

*Action.* The populations modify their behaviour, experiences and environment in order to overcome problems. There is a large commitment of time and energy to the problem. There is external recognition of the changes. Here the designer becomes consultant and expert advisor, being the source of information for the population who have begun to take matters into their own hands.

*Maintenance.* People work to consolidate and build upon the gains of the action stage. They apply the skills learned during the action stage to new situations that arise. The designer remains in the consultant role but plays less of an active role and more of a supportive one.

*Termination.* The new way of working forms into a new paradigm for the populations *who were involved* in the change process. They now are in the position of helping and advocating for others who desire to undergo the process. The designer has now gained new advocates within the institutions devoted to planning for outdoor play. This makes the designers' future job of convincing others to change their approach to play.

The model is a useful frame for the proactive design process. Its application may reduce some of the frictions and obstacles in the current process.

### 5.3.2 The Reggio Emilia Environmental planning model

In Reggio preschools, part of the environmental planning process is to identify shared values and passions of families, teachers and community. From this point of departure it is easier to determine which materials, equipment and routines are congruent with identified values (Fraser, 2003). The Stakeholders meet, develop lists, rework lists and thus obtain ownership of the values they identify in common.

Once lists are completed the space is assessed to see what needs to be changed in the space to reflect the things stated as important by the group. The questions that are posed in this moment of clarity are:

How well does the (space) reflect the values the group has identified?

What overall message does the space convey to children, parents and other visitors?

How will the environment mirror an image of the child that is rich powerful and competent?

How well does the arrangement of the room reflect our respect for children, families and the community?

Does the environment offer experiences that heighten multisensory awareness?

Leila Gandini, a curriculum planner with Reggio elaborates on the model:

“ In order to act as an educator for the child, the environment has to be flexible: It must undergo frequent modification by the children and the teachers in order to remain up to date and responsive to their needs to be protagonists in constructing their knowledge. All the things that surround the people in the school and which they use- the objects, the materials, the structures are not seen as

passive elements that condition and are conditioned by the actions of children and adults who are active in it” (Gandini,1998).

This requires the constant discussion and modification of the physical space because each chosen element has meaning and either adds to or deters from the stated philosophy of the centre. It also places much of the responsibility into the hands of the educators. It should be noted that local administrative bodies in Reggio Emilia are sympathetic to the system of care there and realize its strengths.

Loris Malaguzzi, one of the minds behind Reggio displays the level of commitment and engagement that the people of Reggio Emilia have with their environment. He states:

“We value space because of its power to organize, promote pleasant relationships between people of different ages, create a handsome environment, provide changes, and promote choices and activity and its potential for sparking all kinds of social affective and cognitive learning. All of this contributes to a sense of well being and security in children. We also think that the space has to be a sort of aquarium that mirrors the ideas, values attitudes and cultures of the people who live within it.”(Malaguzzi: Fraser,2003)

Reggio provides an example to people that change is possible. Centres in British Columbia have employed the model to a good degree of success in the indoors of their centres. Transferring the spatial principles of Reggio to the outdoors of the centre would be a positive move. *It is possible.*

#### **5.4 Conclusion**

The journey undertaken in this research is a long and continuing one. The arrival of my daughter gave the situation more gravitas. We *must* improve spaces for our children. It is not only in the interests of parents and the infrastructure of care to engage in this, we must engage it as a society. Recent literature such as Louv (2005) show that the degradation of public space for children is playing a hand in making our society and its individuals dysfunctional and detached from the context of their environments.

Children are physically smaller and closer to the ground than adults. The small things that we take for granted: pebbles, sticks, small flowers, insects and weeds, the minutiae and detritus of our surroundings, hold countless hours of potential for the child's imagination and offer an opportunity for them to create their world. In fact, it appears that it is necessary for children to have opportunity to use their senses in a way that allows them to distinguish the diversity of objects in their environments. Organic environments, which tend to contain many diverse and changing elements, renewed from season to season offer a stimulating sensorial environment for young children.

Sensory perceptions are the main generators of our sense of place, of our bodies' movement in space and time. To a young child, these experiences build the foundations of their world and their ability to communicate that world to others. The elements that make up physical environments shape experiences and contribute to quality of life. The debate surrounding children's outdoor environments in the public realm (i.e. child care, public parks, preschools) focuses on the issue of safety versus risk, which are common adult concerns in current times. Little attention is paid to the sensory qualities of the child's space and its contribution to the child's sense of well being and safety in the world. It is crucial for the child to build a network of positive, rich experiences in space if they are to develop a strong sense of place and fully engage the world they move in.

The environments that are designed for children will temper their experience, setting patterns and perceptions in motion that will stay with children for their lives. Future citizens will require empathy and understanding of their environments if we are to overcome the problems of the future such as global warming. If our desire as a society is to embrace a sustainable path then we must begin to offer rich and sensorial environments for our very youngest so that they live and breathe the future we desire for them. We need to give them life enhancing places so that they may value the spaces around them and are equipped with an innate understanding of the world.

The image we have of children is an important concept when approaching design for early childhood. The way that we perceive children to be will effect the way that we design for them. If the child is viewed as impressionable, vulnerable and weak this will produce an environment where all risk is removed, where the child is not asked to test her abilities. Too often this has been our image of the child in North America and we have built our environments for them accordingly. Consequently we can imagine the child as rich in potential, strong, competent and powerful. The way we form our image of the hypothetical child will temper our design and the child will react to the quality and character of spaces we have imagined for them. They will be shaped by their space. Is it not imperative that we, as designers, give them the best we can?

Illustration 1. The Final Proposed Site Plan

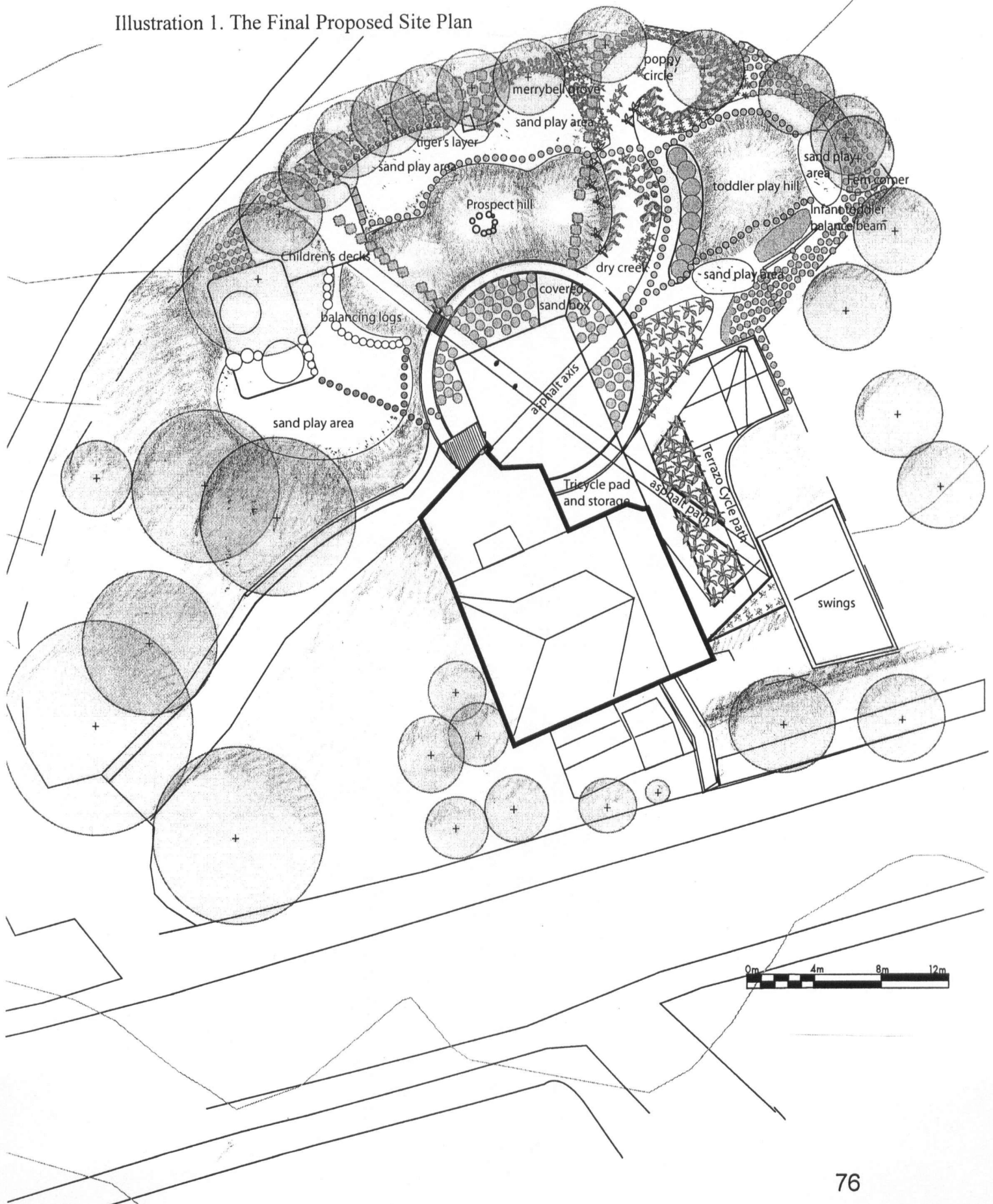
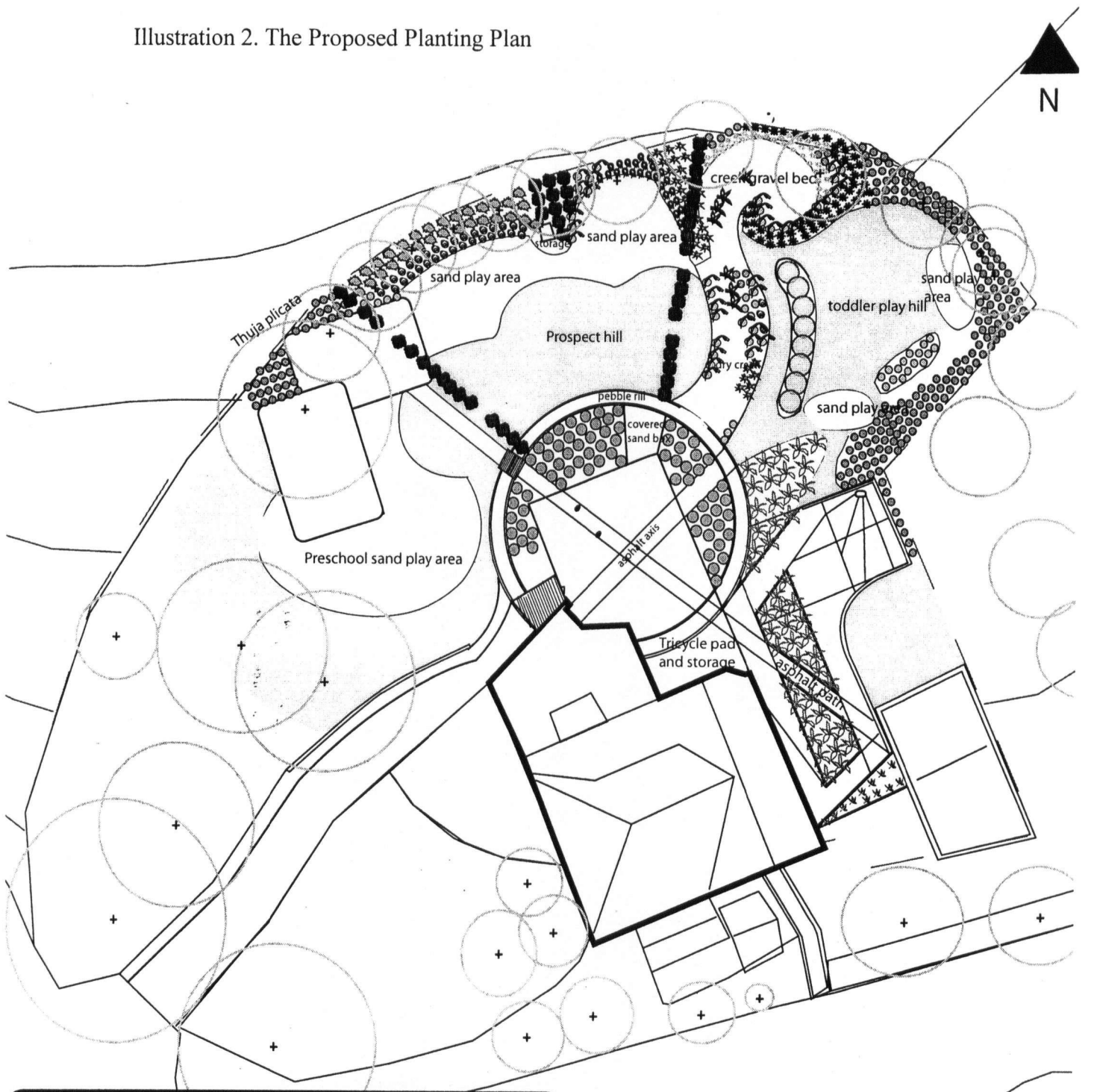




Illustration 2. The Proposed Planting Plan



- |   |   |
|---|---|
|  <i>Thuja plicata artovirens</i>      |  <i>Miscanthus sinensis 'purpureus'</i>      |
|  <i>Choisya ternata</i>               |  <i>Luzula sylvatica</i>                     |
|  <i>Nandina domestica 'firepower'</i> |  <i>Carex pendula</i>                        |
|  <i>Polystichum munitum</i>           |  <i>Carex greyi</i>                          |
|  <i>Athyria filix-femina</i>          |  <i>Salix purpurea #157(coppiced)</i>        |
|  <i>Lillium columbianum</i>           |  <i>Uvularia grandiflora</i>                 |
|  <i>Meconopsis grandis</i>            |  <i>Scirpus lacustris + Blk. mondo grass</i> |

Planting Legend



Illustration 3. The existing vegetation on the site

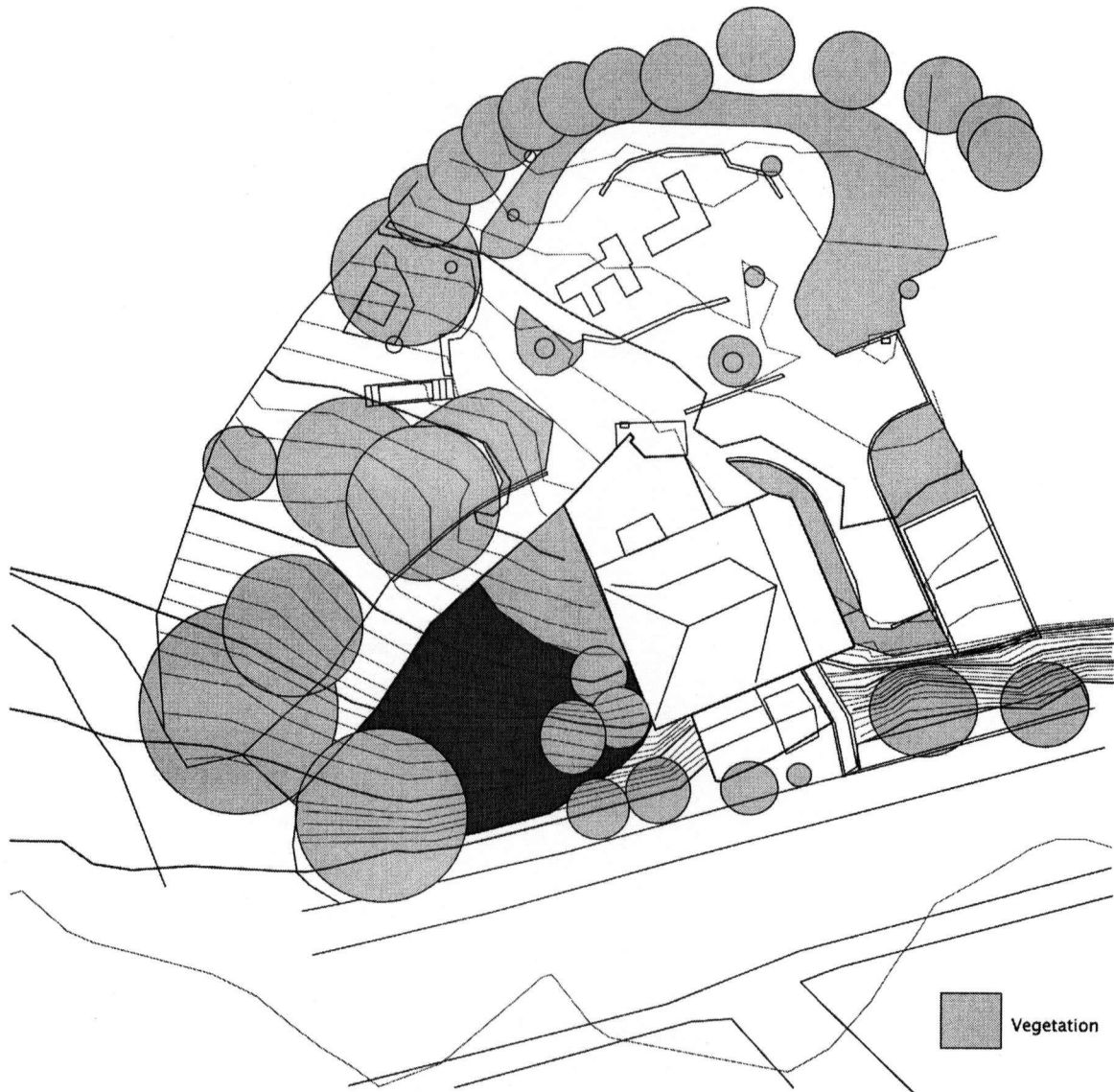


Illustration 4. Existing Tactile vegetation on the Site

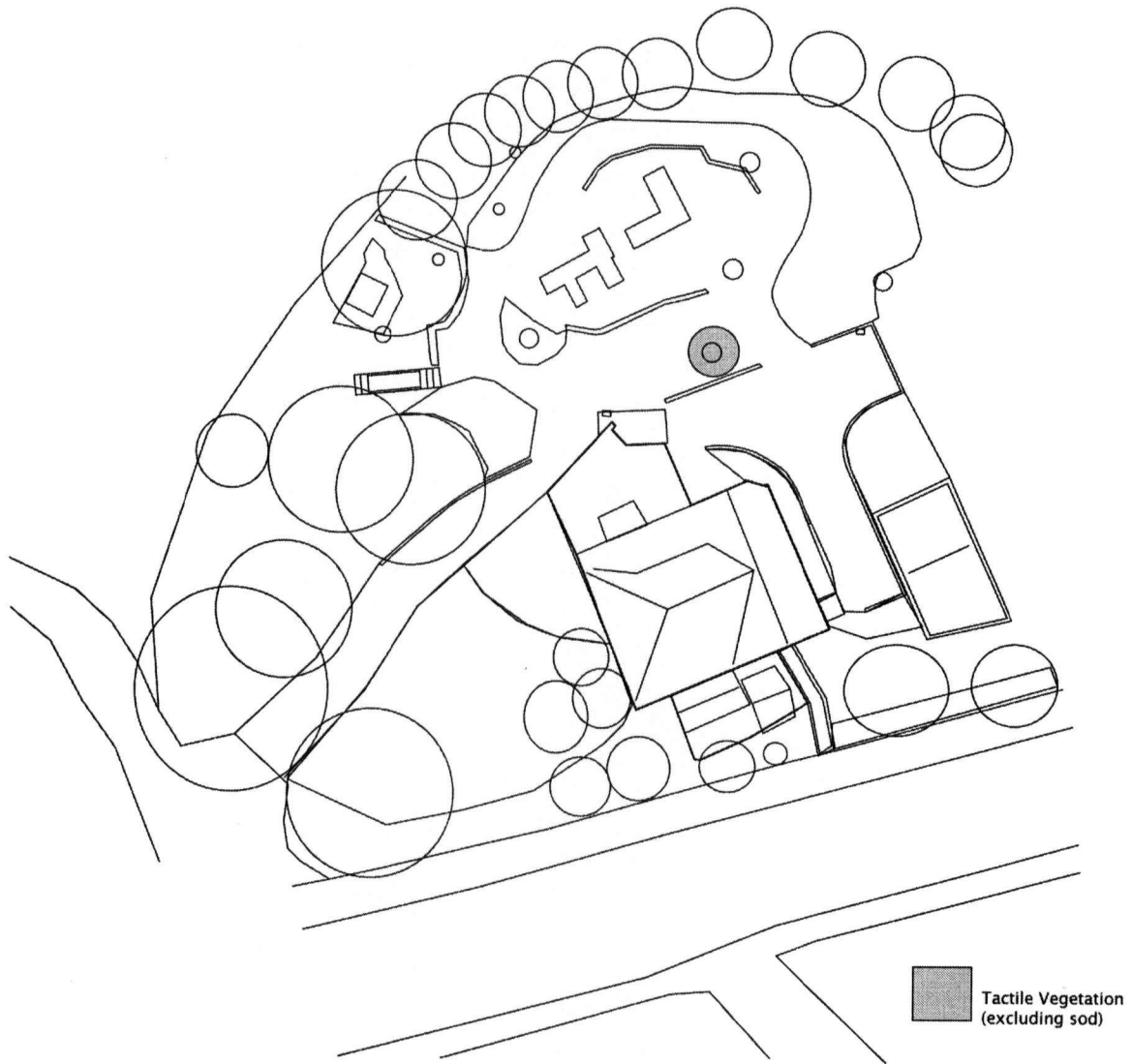


Illustration 5. Looking at the site from North to the South, 1974 & 2006.





Illustration 6. Looking at the site from the Southwest towards the Southeast, 1974, 2006.



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## **Appendix A**

### **The Program Philosophy of the child care centre presented in this study**

The centre's Mission is to provide excellent child care for children age's 18 months to 5 years through a commitment to:

Creating a safe, fun, supportive and developmentally challenging environment that will stimulate the physical, emotional, social, creative and intellectual growth of each child.

Promoting self-reliance and independence in order to foster good self-esteem in all children.

Promoting good eating habits to help foster good health and physical development by providing a nutritious hot lunch and snacks everyday.

Providing a comfortable atmosphere in which children feel proud of their cultural heritage and where cultural sharing is encouraged.

Providing opportunities for students in Early Childhood Education to observe the programs and to gain practical experience working with the children.

Whenever possible, meeting the child care needs of families of all income levels, who live, work, or attend school in the West End of Vancouver.

Welcoming all families to our centre regardless of race, religion, sexual orientation, economic status or parental marital status.

Ensuring the physical and emotional well being of each child.

## **Appendix B**

### **Guiding philosophy statements of Institutions involved in the design process for early childhood care**

#### **City of Vancouver Social Planning**

Staff provide support, advice and information to a wide range of community organizations, provide leadership and facilitation in bringing key people around a specific problem or issue.(City of Vancouver, Social Planning Website, 2006.)

#### **Vancouver Coastal health Authority-Health and Environmental Licensing**

The mission of the community care facilities licensing program is to protect and promote the health, safety and well being of vulnerable children and adults in care facilities through education, collaboration and regulation.(Vancouver Coastal health Website, 2006)



## **Appendix C**

### **Vancouver Park Board's 1974 Communique to the Ministry of Human Resources concerning the 8 Conditions of Placing temporary day care centres on or adjacent to Parks and Recreation Property.**

The province of BC, Department of Human Resources to be responsible for:

1. Building to be painted and maintained on a yearly basis.
2. Buildings and play areas to be suitably landscaped.
3. Grass to be cut and landscaping maintained on a regular basis, to the satisfaction of the board (superintendent)
4. The daycare centre to comply with all city by-laws and regulations and responsible for any additional construction or alteration costs.
5. Grounds and buildings to be kept clean of paper and debris at all times.
6. Underground services and wiring to the centre.
7. Siting of the building to the satisfaction of the board(superintendent)
8. Written assurance that the temporary buildings will be removed from park sites within 2 years and the site returned to its original condition.

(1974)

## **Appendix D**

### **1977 BCSLA standards for daycare landscapes**

- A) Site plan indicating variety of plant, quantity and spacing.
- B) Hardy plants and maintenance free.
- C) Variety of colour, texture and form.
- D) Plant list with botanical name, nursery size, ultimate size, root condition and quantity.
- E) Use of ground cover rather than bark mulch.
- F) Trees for shade.

## **Appendix E**

### **Province of BC Safe Spaces Grant Proposal/ The Original Design Proposal**

#### **Playground Renewal**

##### **Table of Contents**

##### **Introduction**

##### **I. Description of Required Upgrades**

- a. Reordering of circulation pathways
- b. Creation of age appropriate play areas
- c. Protective Surfacing Upgrades
- d. Drainage
- e. Play structure replacement

##### **II. Detail of Objectives**

- a. Incorporating play structures into natural topographical features and enhancing child development and safety
- b. Resilient surfacing materials explanations.
- c. Providing natural areas for play using plant material
- d. Meeting CAN/CSA-Z614-03 standards for safe and developmentally appropriate play.

Annex A Experiential program for yard

Annex B Detail of Grass hill in CAN/CSA-Z614-03 and designers detail of grass hill

Annex C Description of plant material

Annex D Cost estimates derived from RS means 2004 Site and landscape construction.

## Introduction

The [REDACTED] outdoor yard renewal design proposal uses the latest information from the fields of landscape architecture and early childhood development practitioners in creating a healthy play atmosphere. In October of 2004 [REDACTED] contacted The CHILD project, a consortium of research groups committed to study early childhood development in British Columbia. The specific group that it is working with is Associate professor Susan Herrington's *Outdoor Criteria* research group. The group studies the influence of design on outdoor play spaces and its effects on types of play.

Outdoor criteria is committed to advocating for creation of children's spaces that enhance development and create healthy atmospheres for the children using them. Pooh corner daycare engaged the services of a graduate research assistant, Jamie Nicholls, as well as the services of [REDACTED], to chart a new direction for the yard. The proposed design for [REDACTED] aims to address current safety concerns as well as the developmental needs of the children using the space.

## **I. Description of Required Upgrades**

### **a)Reordering of circulation pathways and surfaces.**

The present hierarchy of circulation is not conducive to safe play. In particular, the area for wheeled vehicles needs to be redesigned and resurfaced to provide clear and safe circulation routes. An area where non riders can safely observe and wait their turn should also be provided.

### **b)Creation of age appropriate play areas.**

There is presently no area for toddlers that accounts for their specific developmental needs. Furthermore, the playground needs a formal separation between preschooler areas of play and toddler areas of play. The proposed toddler area needs to be resurfaced and equipped to provide developmentally appropriate and safe play opportunities for this age group.

### **c)Protective Surfacing Upgrades**

All play areas require their protective surfacing to be refilled. The retaining barriers for the protective areas must also be renovated. The provision for maintenance of these surfaces for a ten year period should also be incorporated into the long term plan for the play yard.

### **d)Drainage**

Parts of the play yard should be regraded to improve drainage of site and prevent present or future ponding of water.

### **e)Play structure replacement**

The ageing structures existing on the site are deteriorating and require to be replaced with play structures that meet the standards of CAN/CSA Z614-03(hereafter referred to as "CSA standards" or "the standards").

## **I.I Design Objectives**

### **a Incorporating play structures into natural topographical features and enhancing child development and safety**

Statistics from the CHIRRP show that the majority of playground injuries result from falls off of play equipment. This is a serious concern of parents of toddlers. In order to not only meet but exceed CSA standards , it was decided that the structures placed upon the site should be at grade, incorporated into the landscape itself and/or at heights which do not require extensive resilient surfacing because the equipment is not above the limits outlined in the standards. The term “playstructure” as outlined in the standards is *a freestanding structure with one or more components and their supporting members*. A constructed grass play hill is a freestanding structure that is outlined in Annex F of the standards.

The standards themselves suggest using natural elements in Annex F (see section II.d) . Extensive research in the area shows that natural topography and vegetated environments are superior in terms of safety and developmental appropriateness.( Herrington 1997 , Moore 1997).

### **b Resilient surfacing explanations**

CSA Standards outline the advantages and disadvantages of resilient surfacing in Annex. Surfacing of play yards is often used also as a play surface whether it lies inside or outside the no encroachment and protective surfacing zones. In Annex F of the standards there is a suggestion that malleable materials be prevalent on the site for play purposes. Loose materials described in CAN/CSA Z614-03 (gravel, sand, engineered wood fibre) are advantageous because of their malleability. The first two, sand and gravel, are also extensively used for safe play that is appropriate for development. When play equipment is not in use, sand and gravel provide children with the opportunity to use the ground surface as a play area. Where resilient surfacing for fall zones is required, the proposed design uses engineered wood fibre. In all other cases, sand and gravel have been chosen for their play values and role in early childhood development.

### **c Providing natural areas for play using plant material**

Annex F and G in the standards outline reasons and guidelines for using natural plant materials in playgrounds. Creating natural landscape enclosures and spaces is recommended for enhancing developmental (physical, social, manipulative-cognitive, reflective) objectives. In creating these natural areas, extensive plant material that conforms to the standards has been used.

d Meeting CAN/CSA-Z614-03 standards for safe and developmentally appropriate play

The standards are the basic minimum requirements for providing safe play spaces for children. It is the objective of the designers of this project to not only meet the minimum standards but to exceed them and create a dynamic, didactic area that addresses both the child's development and safety needs. The design incorporates the suggestions of the Annex F in the standards (Space Requirements for Recommended Play Activities). In section F.3.1 Suggested Facilities and Equipment for Play Activities for Preschool and Kindergarten Children(Toddlers):

Activity	Suggested facilities and equipment
a) Physical play	<ul style="list-style-type: none"><li>-a hard surface route preferably a large or circular one for wheeled toys</li><li>-Facilities and space for large muscle activities such as climbing equipment or swings</li><li>-soft open space for running or ball games</li></ul>
b) Social play	<ul style="list-style-type: none"><li>-playhouse and other structures to encourage imaginative play</li><li>-landscaped enclosure</li><li>-table and benches/chairs</li></ul>
c)Manipulative cognitive play	<ul style="list-style-type: none"><li>-<i>sand</i></li><li>-water play, <i>natural areas</i>, pots and pans, outdoor blocks, boards, outdoor drawing boards.</li></ul>
d)Quiet retreat play	<ul style="list-style-type: none"><li>-enclosure: landscaped or fenced</li><li>-perch or hideaway</li></ul>

The proposed design fulfills the suggested facilities for play activities for this age group. Under section F.2 Type of site the standards emphasize working with suitable topography and specify standards for the building of grass berms as play facilities. It further states that such hills are one of the most popular facilities in a playground (section F.2.2). Incorporating play components into berms is a strategy that meets both developmental and safety issues as outlined in the standards.

Annex A of the standards outlines in section A.3 the elements that may appear in a supervised play area. Of these elements the proposed plan incorporates suggestions for providing storage areas, water play areas (in a limited fashion), as well as loose materials and Garden plots. The water play area conforms fully to the standards and uses manufactured elements for water disbursement. As outlined in this document earlier the design allows for proper drainage of the site and avoids the pooling of water in keeping with the standards.

Clause 4 of the standards encourages that play areas should be age specific, where a facility is shared by school age children and preschoolers, the equipment should conform

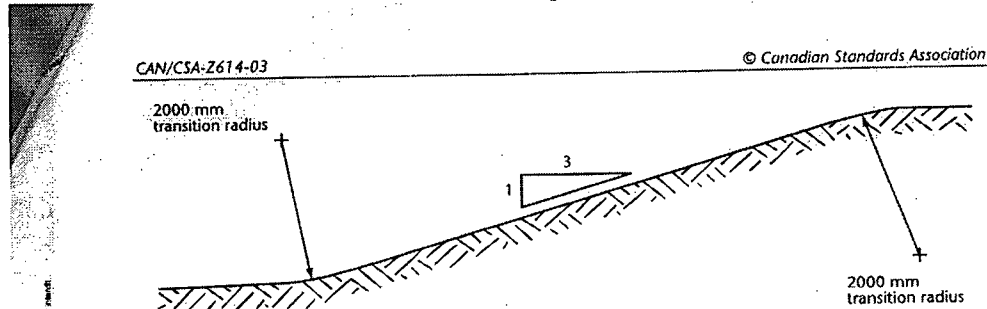
to the needs of both groups. The design allows for this and surpasses it. The design delineates a separation between near infants 18months-4years and the older children 4+. This is done by use of fencing and natural vegetative fencing as is outlined in Annex G.8.3 which concerns mature plants used as dividers.

The standards have been applied in every aspect of the design of this space. The design not only meets standards, it builds on them to develop a dynamic play space which also incorporates developmental needs.

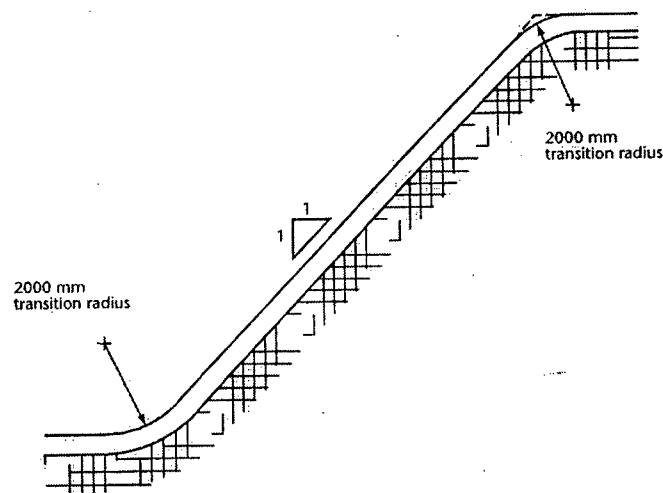


## Annexes

Annex B detail of grass play hill in standards and designers grass play hill. Water play and rushing river: An area of pea gravel is shaped like a river. At the “head” of the river are 1 or 2 water spouts which a hose can be attached to. These spouts conform to standards and are off the main circulation paths



**Figure F.1**  
**Grass Play Hill**  
(See Clause F.2.2.)



**Figure F.2**  
**Asphalt or Concrete Play Hill**  
(See Clause F.2.2.)

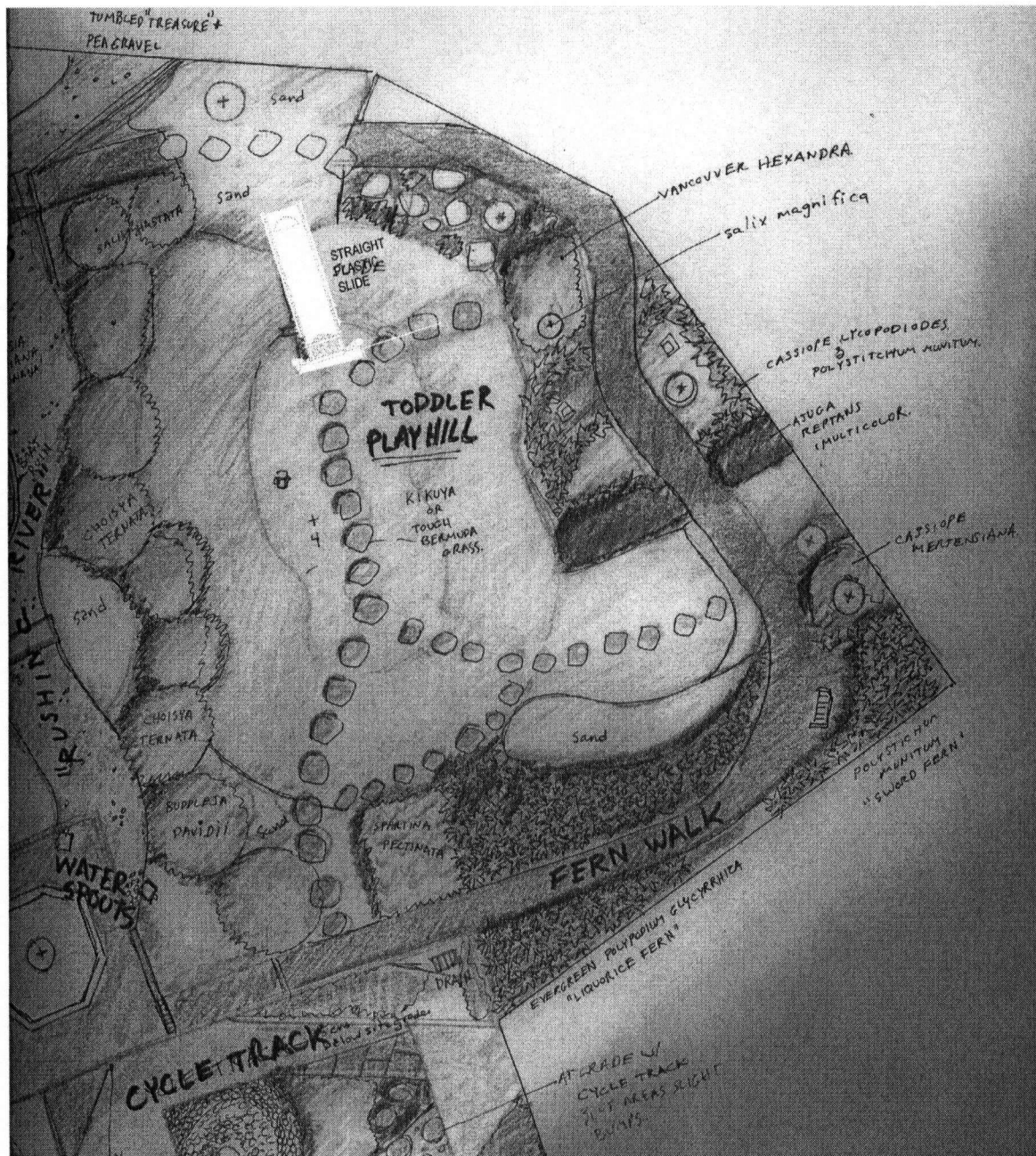
### F.2.3 Layout

In the planning process, potential playspaces should be investigated for the presence of any hazardous materials.

Spaces for each type of activity should be well-defined.

Conflicting activities, such as quiet play and physical play, should not be located next to each other (see Clause F.3.1).

Grass play hill as shown in the standards.



Designers proposal

## **Annex A Experiential program for play space**

### **Shared areas/flex spaces**

Gathering Circle and Red Garden: An area of red brick pavers, red benches and red plants provides a stimulating area for children to gather, get ready for play, and offers a transition point between the indoors and outdoors. The colour element is a sensorial delight that enhances excitement but also signifies stop for coming into and leaving the space.

Cycle track: A circular track for wheeled vehicles is provided. There are areas of the track that incorporate different paving materials. This is to provide a textural, sound element to wheeled play and to also de-emphasize high speeds (that lead to potential accidents). In this way, the cycle track incorporates other developmental needs as well as the physical.

Landscape enclosure: textural and picking garden: This area is composed of *vaccinium angustifolium*, *vaccinium ovatum* and *rubus spectabilis*. In addition to attracting birds, the fruit of the plants is also entirely edible, the plants themselves are non toxic and they contribute to the ecology of Stanley Park rather than working against it.

The textural garden is composed of plants that are interesting to touch and look at. Plants such as lamb's ear are soft to the touch and impart in children a sense of wonder about the landscape. Both areas encourage children to engage with the natural world. This is beneficial to both the child's health and developmental experience.

The enchanted Wood: This area is an enclosed woodland garden with open wall play houses. It provides a "forest" setting that can be easily supervised while offering children a taste of the wilderness and the greater park.

### **Toddler area**

Fern walk: A path of engineered wood fibre through a low enclosure of licorice and sword ferns. The smells of the ferns and the wood fibre present an olfactory experience for the toddler. The sword ferns may be used to hideaway from peers or as play props. The area leads either to the gathering circle or the toddler play hill.

Landscape enclosure 2: A planted area along the path provides enclosures for children to pause and rest in a vegetated area that will change constantly through the seasons providing different sensory qualities at different period of the year.

Toddler Play Hill: A grass hill with stepping stones and a slide incorporated into it provide toddlers with both an age appropriate safe climbing experience, interaction with natural materials rather than an overly synthetic environment and it also provides an

observation point for the youngest of this age group who tend to act as observers rather than active players. The berm also provides a soft open space. The berm and slide both conform to safety standards. (3-1 slope at height that doesn't require resilient surfacing)

Sand Areas: 3 sand areas are provided in the toddler zone. They provide spaces to both observe other play activities as well as offer a chance to develop cognitive manipulative skills. The sand provided conforms to the standards, is non toxic and presents an excellent play surface.

Choisya and buddleja "fence": Delineating the toddler area is a plant barrier of *Choisya ternata* and *Buddleja davidii*. These plants act as physical dividers to the two adjacent play areas. They also attract butterflies and have a wonderful scent. This provides yet another opportunity for olfactory experience and an element of the play space those changes with the season.

Willows: Outside the grounds lie 2 beautiful willow specimens. A few small shrub varieties of willow will be planted to provide continuity with the outside space and to transmit filtered light and shelter during the summer months. In the winter the "whips" may be used as play props.

### **Older children's area**

Water play and "rushing river": An area of pea gravel is shaped like a river. This river is largely imaginary. At the "head" of the river are 1 or 2 water spouts which a hose can be attached to. These spouts conform to standards and are off the main circulation paths. The water spouts are situated at the border of the toddler area to sometimes accommodate their need for water play.

Children's garden plots: Small garden plots are provided to children to grow things in. With the help of care workers the children learn to enjoy working with living material. There are many documented cases of gardening aiding in development and building self confidence. The garden plots would be a place that fosters a sense of achievement for the children.

Log tunnel: A hollowed log cut into sections will be imported to the site. Not only does it provide a unique play opportunity it is also appropriate in the context of the site. Pooh Corner is located at the edge of Stanley Park. The tree acts as a cultural reference to the site that connects children with the larger park.

Dry materials lab: This area provides a variety of dry, loose materials for play. The idea is that children will mix and match and create their own landscape fabrications (sandcastles, small sculpture). The dry materials lab engages the imagination of the young child.

Pooh House: The Pooh house is an existing playhouse on the site. Its porch area will be extended to meet with the pathway.

## Annex C Description of plant material

Latin name	Common name
Polypodium Glycyrriza(evergreen var.)	Liquorice fern
Polystichum munitum	Sword fern
Cassiope Mertensiana	Western moss heather
Ajuga Reptans 'multicolor'	Ajuga Reptans 'multicolor'
Cassiope Lycopodiodes	Cassiope Lycopodiodes
Salix magnifica	Magnificent willow
Vancouver Hexandra	Vancouver fern
Spartina Pectinata	Marsh grass
Buddleja Davidii	Butterfly bush
Choisya Ternata	Mexican Orange blossom
Salix Hastata	Halberd leaved willow
Vaccinium angustifolium	Lowbush blueberry
Vaccinium ovatum	Evergreen blueberry
Rubus Spectabilis	Salmon berry
Stachys byzantia	Lamb's ear
Artemisia Schmitiana 'nana'	Silver mound
Saxifraga frederici	Saxifraga frederici
Castilleja parviflora	Mountain Indian paintbrush
Nandina domestica 'firepower'	heavenly bamboo
Vaccinium Corymbosum	highbush blueberry
Lavender	
Myrica gale	sweet gale
Cynodon dactylon	Bermuda grass

## **Annex D Cost estimates for applicable items**

The estimate for the entire project is \$65000

The estimate for applicable items is \$27637.42

Creation of age appropriate area for toddlers

### Item: Play hill

costs

Soil-Common Borrow	105 Cubic yards of topsoil & delivery	\$1224
Fill with hand tamp		\$1995
Finish grading		\$ 18
Erosion control		\$ 750
Fertilizer		\$ 20
Grass slope mix #6 spreader		\$ 62
Lawn bed prep		\$ 46.50
Planting 10 shrubs		\$ 410
Toddler Slide and Installation		\$ 6050
Stepping stones and installation		\$ 1208
Subtotal		\$11783
Provincial and Federal tax		\$1767.52
Total		\$13550.52

### Item: Removal of existing playstructure

Dumpster rental 1 week	\$ 531
Demolition work	\$ 1500
Removal fee	\$ 250
Subtotal	\$2814
Provincial and Federal tax	\$422.15
Total	\$3236.15

### Item: Toddler play equipment

Play observation apparatusX2(binoculars)	\$ 640
Installation	\$ 80
Voice projection toy	\$ 392
Installation	\$ 80
Play water taps X2	\$ 2293
Installation	\$ 275
Portable Water table	\$ 1250
Subtotal	\$ 5010

Provincial and federal tax	\$ 752
Total	\$ 5762

Creating area for wheeled vehicles

Item: Cycle track

Selective removal of pavement	\$450
Remediation of soils and planting	\$1275
Selective setting of paving stones	\$ 675
Removal fee	\$ 265
Pebbled Rumble circle	\$1760
Subtotal	\$4425
Provincial and federal tax	\$ 663.75
Total	\$ 5088.75