

DESIGNING LANDSCAPES FOR GRIEVING CHILDREN AT ELEMENTARY SCHOOLS

by

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A THESIS

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## Abstract

Death and loss are natural processes of life, but even so, that does not make them any easier to cope with. For children who may not understand loss, adjusting to life after it can become a nearly impossible feat. Children's reactions to loss and the grief often include anger, anxiety, confusion, fear, sadness, shock, guilt, and regret (Murthy & Smith, 2005). Nature and art have been used as healing methods in the past, but rarely in schools. Because children spend much of their day at school, outdoor landscapes could be designed to that help alleviate children's grief and commemorate their memories.

This master's project proposes a set of guidelines and a palette of elements that can be used to create landscapes for grieving in elementary schools. To define these guidelines I combined stages of grieving from two different psychological models with design elements that could help children at each stage of their grief. These guidelines and elements were then tested by applying them at three different elementary schools in Manhattan, Kansas: Marlatt Elementary, Northview Elementary, and Theodore Roosevelt Elementary.

The designs at the three elementary schools help illustrate the flexibility of the guidelines and palette of design elements. Not only can the selected elements vary, but the sites can range in size and location. The palette of elements will enable schools to implement landscapes for grieving in a range of places and conditions.



# **Designing Landscapes for Grieving Children at Elementary Schools**

Valerie Thomas  
Kansas State University  
Master of Landscape Architecture  
Spring 2013

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A Report

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Valerie Thomas



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## Glossary

### **Grief**

the complete emotional response to the experience of loss not only through death but with any major loss, such as divorce, moving, a breakup of a relationship. This loss becomes noticeable in the psychological and social behavior of the child (Freeman, 1984, Wolfelt, 1983).

### **Bereavement**

the state of suffering a loss through death causing subjective responses experienced by children after a major negative event in their life (Wolfelt, 1983).

### **Mourning**

the behavioral process through which grief is eventually resolved or altered and is influenced by cultural response and spiritual beliefs. Mourning is "grief gone public" (Wolfelt, 27) or sharing one's grief with others (Wolfelt, 1983).

### **Loss**

is an experience that threatens the grieving person's continued survival, since they feel they cannot go on without having what they are missing. Loss has a greater affect on children since they are more dependent on others (Freeman, 1984).



1

# Introduction

## Introduction

On December 1, 1958 a fire broke out at Our Lady Angels Catholic school in Chicago. The fire killed ninety-two students, three teachers and injured seventy-six students. In the aftermath of the fire the school was rebuilt as quickly as possible and dedicated to those killed and injured by the fire, but no note was made of this on the plaque in front of the school. In fact the community did their best to not discuss the fire (Foote, 1997). A survivor of the fire, Michele McBride, who was thirteen at the time, wrote a book about her experience. She writes how she could not come to terms with what happened to her primarily due to her community's refusal to acknowledge that it happened.

"In my community it was always felt that bringing up memories of the fire would just add new grief to the old." (McBride, 26)

It took years for McBride to heal from the physical and emotional wounds of the fire. She would live the rest of her life in pain from the injuries of the fire and in mourning for everyone she lost. McBride needed time to grieve all the losses, as do many people (Mcbride, 2004).

"I could not recover from the fire until I learned how to mourn, not only for my dead friends but for my skin as well. I think that discussing a disaster and remembering the dead can help to heal wounds and resolve anguish in any stricken community." (McBride, 2)

Mcbride's experience shows that children need a chance to discuss their grief and receive help through their mourning process (Mcbride, 2004).



## Dilemma

McBride's experience holds true for many. Children should be able to discuss their losses and have the opportunity to mourn them. Understanding grief is never easy, and for children it may be too complex for them to even begin to cope. Because children often lack an understanding of death, they can react with anger and depression. Adults often want to avoid the subject with children, in the mistaken belief that avoidance will reduce the child's anguish; however, this usually leads to further problems. Without any discussion over death and loss, a child is often left feeling even more confused and may start to feel that it is unacceptable from them to mourn (Riley, 2003). Children also fear losing memories of those they have lost, those who have moved away, or even their family in a divorce.

Facilitating a child's grieving process within a landscape is different than facilitating the process of someone much older, but needs to be done because the effects of long-term bereavement in children can include

psychiatric disorders and emotional stress (Worden, 1996). Children need spaces to commemorate their losses and to help them heal. There is no end to mourning, but a landscape for grieving can help heal the pain a child is feeling.

## Purpose

The purpose of this study is to create design guidelines for landscapes for grieving that will help children cope with grief in their life and help them preserve their memories. By implementing the elements at an elementary school it will provide children with an opportunity to heal through the landscape. The grieving landscape will create a space where the child is given permission to mourn and where they can begin the process of accepting loss and adjusting to life after it, while still remembering.

For this project landscapes for grieving were created at three elementary schools in Manhattan, Kansas: Marlatt Elementary, Northview Elementary, and Theodore Roosevelt Elementary. The aim was to create design guidelines and then to apply them at the schools, in order to test their success.

The grieving landscapes are not intended for any specific person or event. Instead, they allow the all children to express their mourning in a public manner and preserve their memories at the same location. The aim is to provide children the opportunity to remember what they lost and understand that their loss is still an important part of their life.

## Research Questions

What are the design elements needed in a grieving landscape to help children mourn their losses, allow them to grieve publically, and commemorate private events in a school environment ?

What design qualities or characteristics of a grieving landscape would help children aged five to twelve grieve and commemorate their losses?

Taking those design qualities or characteristics, how could they be applied to elementary public schools in Manhattan, Kansas?

## Thesis

Worden's model of the four tasks of mourning shows that there is a variety of characteristics that come with each stage of grief. These characteristics can be matched with site elements that can help the child heal in outdoor spaces. Implementation of a palette of elements at elementary schools can create an environment for helping a child with any grief that they experience.



2

Background

## Grieving Process

Informs How to Help Children

On Death and Dying. Kuebler-Ross, E. (1969).

Grieving, Sharing, and Healing: A Guide to for Facilitating Early Adolescent Bereavement Groups. Murthy, R., Smith, L. (2005).

Planning and Managing Death Issues in the Schools: A Handbook. Worden, J. W. (1996).

Children and grief: When a Parent Dies. Worden, J.W. (1996).

Psychological Task for Bereaved Children. Baker, J. E., Sedney, M.A., & Gross, E. (1992).

Developmental Context of Childhood: Grief and Re-grief Phenomena. Oltjenbruns, K. A. (2001).

## Grief Therapy for Children

Holistic Nursing: A Handbook for Practice (3rd ed.) Dossey, B. et.al (2000).

Helping Adolescents Cope with Long-term Illness and Death. Corr, C. A. (2002).

Play Therapy. Schaefer, C. (2010).

Children and grief: When a Parent Dies. Worden, J. W. (1996).

Helping Children Cope with Grief. Wolfelt, A. (1983).

Facilitating Children's Grief. Riley, M. (2003).

Music as Intervention. White, J. M. (2001).

Counseling with Children in Contemporary Society. Goldman, L. (2004).

Childhood Bereavement. Black, D. (1996).

Nature as Therapy

## Nature Healing

Horticultural Therapy at a Psychiatric Hospital. Daubert, J.R., Rothert, E.A. (1981).

Last Child in the Woods: Saving Our Children from Nature Deficit Disorder. Louv, R. 2008.

"Can nature make us more caring? Effects of immersion in nature on intrinsic aspirations and generosity." Weinstein, et. al. (2009).

Healing Gardens: Therapeutic Benefits and Design Recommendations. Barnes, M., Marcus, C.C., (1999).

Plants as Therapy. Taylor, F.E. (1976).

Design with Nature. Mcharg, I.L. (1992).

Growing with Gardening: A Twelve Month Guide for Therapy, Recreation, and Education. Moore, B. (1989).

Growing Up in Cities. Lynch, K. 1977.

Sites as Healing

## Design Guidelines for Landscapes for Grieving for Children

Elements a Child Needs to Heal

## Memorials

The Unfinished Bombing: Oklahoma City in American Memory. Linenthal, E. T. (2003).

The Emotional Life of Contemporary Public Memorials: Towards a Theory of Temporary Memorials. Doss, E. (2004).

Shadowed Ground: America's Landscapes of Violence and Tragedy. Foote, K (1997).

Shared Grief is Good Grief. Dickinson, G. (2011, September).

Roadside Memorials in Community: A Scientific Study of Roadside Memorials. Jipson, A.

Remembering to Forget: Sublimation as Sacrifice in War Memorials. Rowlands, M. (1999)

Spontaneous Shrines: A Modern Response to Tragedy and Disaster. New Directions in Folklore. Glider, S. (2001, October).

Figure 2.1 Literature Map (Thomas, 2012).

# Literature Review

## The Grieving Process

Grieving is a complex process that everyone faces at some point in their lives. For children it can be even more complex, since they do not always understand it or have the support they need. Grief is not a disease, but a normal form of emotional expression and an adaptive process (Silverman, 2000). While there is no exact prescription for steps to follow during mourning, there are some common themes.

Worden (1996) outlines four tasks of mourning that he believes will help children through the process: accepting the loss, experiencing the pain, adjusting to a new environment, and finding ways to remember and memorialize the person or event.

In the first step, accepting the loss, the child starts to cope with the emotional aspect of the death. It is important at this stage that they are able to understand what happened (Murthy & Smith, 2005, Worden, 1996). Children under the age of five may not fully understand death and believe that the person will return or is

simply asleep (Berkan & Deaton, 1995). It is important in this step to help the children understand the loss so they can accept that the person will not return (Murthy & Smith, 2005, Worden, 1996).

In the second step in Worden's model, experiencing the pain and emotional aspects that accompany loss, a child might feel a multitude of feelings, such as anger, anxiety, regret, relief, sadness, apathy, caution, shock, confusion, fear, guilt, jealousy, and loneliness. If the feelings a child is having are ignored, then they might manifest in other forms, such as acting out. A child's mourning is also usually a reflection of the adults that are close to them. When child sees dysfunctional grief, they become frightened of their own feelings of grief. It is important for the child to be able to express their feelings to avoid this fear and to help them mourn (Worden, 1996).

The third step in Worden's model, adjusting to an environment in which the deceased is missing, varies

for each child depending on how close the child's relationship was with the person they lost. If the person they lost was part of their immediate family, the effects are much greater and adjusting to life without that person is harder to achieve (Worden, 1996).

For the last step, finding ways to remember the lost one in life, it is important for a child to realize that even though they lost someone close to them, that does not end the relationship they had with that person. A child needs to understand that death is part of life's experience, but they can still remember the person they lost. A child needs to be able to have a new perspective on their relationship with the one they lost that is based on memories (Worden, 1996).

Kuebler-Ross outline five stages of grieving that are similar to Worden's, however, Kuebler-Ross' version is meant for adults. Kuebler-Ross' five stages are denial, anger, bargaining, depression, and acceptance. In the denial stage, she notes that the child will often

be confused and dazed. A majority of children will seek to be alone during this time and lose interest in activities that they had enjoyed before (Kuebler-Ross, 1969).

The second stage, anger, is similar to Worden's second step. Here the child understands the loss, but faces strong feelings of anger whether it be at themselves, or directed at others. The child might want to be left alone at this stage, and might reject any help. The child might also act out in a physical or vocal manner at others. In the bargaining step the child tries to make unrealistic deals such as "If I behave then everything will be right again." Some children begin to start talking with others and expressing their feelings during this stage. Other children may not be ready to talk about their loss, but might be willing to communicate through drawings, wishes, memory books, or by playing. Kuebler-Ross' fourth stage is depression. The child may feel discouraged that their bargaining did not produce results, so the child

begins to feel depressed. In this stage the child may not be able to sleep, or have a tendency to oversleep. They might lose their appetite and show a lack of motivation in activities they use to enjoy. The child may also be more irritable and become upset more easily than before. The child usually tends to have an overwhelming amount of negative feelings during this stage (Kuebler-Ross, 1969). Kuebler-Ross' final stage is acceptance, here the child realizes that they cannot fight what happened to them and learn to accept its outcome. The child also learns to find new ways of expression and development during this stage (Kuebler-Ross, 1969).

Baker, Sedney, and Gross (1992) created mourning steps along the same pattern of Worden and Kuebler-Ross. They assert that a child must understand the loss and face the emotions that they feel and then accept that the loss is permanent and learn how to deal with the pain that comes with it. Lastly, the child needs to

find a new sense of the relationship with the deceased.

Some experts object to the idea of tasks of mourning, since grief is an individual form of expression and therefore cannot be a linear process that applies to all. A child's grief is dependent on their capacity to understand what occurred and those who are close to them. Children do not grieve all at once instead they go through periods of intense sorrow and breaks where they are not affected. The loss that occurred is often re-experienced through later phases of life. As the child grows older, they do gain new views on the death, but it still can have an effect on them (Oltenbruns, 2001).



## Worden (1996) Four Tasks of Mourning

### 1. Accept the loss.

The child may not fully understand the loss or believe that the person is gone. Children under the age of five may not fully understand death and belief that the person will return or is simply asleep. It is important in this step to help the children understand the loss so they can accept that the person will not return

### 2. Experience the pain and emotional aspects of the loss.

A child might feel a multitude of feelings when they lose someone, such as anger, anxiety, regret, relief, sadness, apathy, caution, shock, confusion, fear, guilt, jealousy, and loneliness.

### 3. Adjust to an environment in which the deceased is missing.

This phase varies on how close the child's relationship was with the person they lost. If the person they lost was part of their immediate family then the affects are much greater and adjusting to life without that person is harder to achieve.

### 4. Finding ways to memorialize the loss.

A child needs to understand that death is an ongoing life experience and unchanging, but they can still remember the person they lost. A child needs to be able to have a new perspective on their relationship with the one the lost, that is based on memories. It is important for a child to realize that even though they lost someone close to them, that does not end the relationship they had with that person.

## Kubler-Ross (1969) Five Stages of Grief

### 1. Denial

The child is confused and dazed and does not accept the loss. A majority of children will seek to be alone during this time and lose interest in activities that they had enjoyed before

### 2. Anger

Here the child understands the loss, but faces strong feelings of anger whether it be at themselves, or directed at others. The child might want to be left alone at this stage, any help they receive, they might see as unfair treatment. The child might also act out in a physical or vocal manner at others.

### 3. Bargaining

At this stage the child tries to make unrealistic deals such as "If I behave then everything will be right again." Some children begin to start talking with others and expressing their feelings during this stage. Other children may not be ready to talk about their loss.

### 4. Depression

The child may feel discouraged that their bargaining did not produce results, so the child begins to feel depressed. In this stage the child may not be able to sleep, or have a tendency to oversleep. They might lose their appetite and show a lack of motivation in activities they use to enjoy. The child may also be more irritable and become upset more easily than before. The child usually tends to have an overwhelming amount of negative feelings during this stage.

### 5. Acceptance

At this step, the child realizes that they cannot fight what happened to them and learn to accept its outcome. The child also learns to find new ways of expression and development during this stage.

## Grief Therapy for Children

While every child grieves differently and there are multiple factors that influence how they grieve, there are many types of therapeutic interventions that can help them with their emotions. Grief work with children can be done with individual therapy, family therapy, group therapy, or with support groups for children. Most types of therapeutic interventions allow children to express themselves (Goldman, 2004, Riley, 2003).

There is the normative information style of grief therapy that allows the child to understand that the feelings they are having are normal. This process includes informing the child with an honest explanation of death. Children desire to confirm the death to help them understand it, so they frequently ask questions. When children are not given an accurate description of what happened, they will fill in the blanks with their own answers, which can be frightening and far from reality. This therapy helps the child understand the concept of death (Black, 1996). Another form that helps the child grasp what has happened is personal

story telling. It encourages children to talk about their experience. This allows the child to gain a truthful perception of the event, and helps them distinguish the difference between what is reality and what is their imagination (Worden, 1996).

To help children remember who they have lost, it is important to provide them with the opportunity to reminiscence. Adults close to the child need to be able to listen when the child reminisces about the lost one and be capable of providing positive responses (Corr, 2002). Therapy styles that help the child remember include journal writing, writing letters, and memory books. Journal writing is a powerful form of self-reflection for children. It lets children keep track of their personal healing. Writing in a journal helps children connect their feelings, thoughts, and memories. Writing letters to the deceased helps the child understand the finality of death. Writing letters also helps the child say what they want to say to the deceased and express feelings they may not be able

to vocalize (Dossey, et al, 2000). Creating memory books helps children record memories of the one that they lost, in order to help them connect to that person. A child can write, draw pictures, or add photographs to the book. Children often become fearful that they will forget the person they love and this helps provide them the chance to commemorate them (Goldman, 2004).

Types of calming therapy that help the child become more relaxed and able to express how they feel, include music therapy, play therapy, and art therapy. Music therapy helps children relax and influences them to have positive feelings. Music provides a distraction from unpleasant life experiences. Music also influences the body by reducing blood pressure, heart rate, stress, and muscle tension (White, 2001). Play therapy helps children express what they are unable to say (Dossey, et al, 2000). Children desire to explore and create; they often do this through play, which enables self-expression. Play also gives

children the chance to control something because after a child loses someone they often feel that they have no control in their own lives (Schaefer, 2010). Art therapy allows thoughts and feelings to be expressed in a constructive fashion and helps children find new ways to understand the grief that they feel. It also helps them become more self aware of their own expression through creativity (Wolfelt, 1983).

## Nature Healing

The idea that nature can heal has been around for over a thousand years (Ulrich, 2002). Nature is beneficial for children because it can inspire creativity, provide opportunities for exercise, provide a sense a freedom, a sense of fantasy, and a sense of wonder (Louv 2008). Nature does more than inspire children; it can provide children with emotional healing. The natural and predictable cycle of nature provides comfort when rapid changes are occurring in a child's life. To children nature appears safe; nature will not yell, judge, or harm them. Plants are something a child can alter and change, in world where they are not often in control. Through all this nature does more than inspire, it provides emotional healing (Moore, 1989).

According to Barnes & Marcus, healing refers to beneficial development that promotes an overall physical and emotional well-being. She notes three factors that must be present for healing: the environment must provide the opportunity for relief from physical hurt and awareness of the pain; it

needs to provide relief from stress; and lastly it needs to improve an overall sense of well-being (Barnes & Marcus, 1999). Nature provides all of these elements for children.

Nature can help reduce stress levels in people. In a study completed by Ulrich in 1999, it was found that looking at nature compared to city environments was significantly more effective in helping patients reduce their stress levels. Nature can provide people with an opportunity to escape from stressful situations in their life through the calming settings that it creates (Ulrich, 2002).

There are four different types of elements in nature that can help boost a child's happiness, according to Marcus and Barnes. Visual elements such as flora and fauna, colors, textures, and a change in seasons can help a sad child feel happier. Auditory elements can also have a positive effect on a child's emotions. Bird songs, wind chimes, the sound of water trickling

or splashing, and the sound of wind in the leaves of a tree can uplift a child's mood. The psychological elements like the open space and peacefulness of the area can help a child. Lastly, practical elements such as the upkeep of the space and its accessibility can help a child experience the space in their own unique way. All of these features help children have a positive experience in nature, which helps them emotionally (Barnes & Marcus, 1999).

Plants can also help a child's esteem. In a study completed with emotionally disturbed individuals, it was noted that subjects who suffered from loneliness, anxiety, and the feeling of not being needed changed their attitude after they worked with plants. Plants help patients feel that something needs and depends on them, which increase their feeling of personal worth (Taylor, 1976). Watching a plant grow and helping it do so helps stimulate an emotional interest that was perhaps lost before. Working with plants helps a person feel that they have control of their surroundings (Daubert & Rothert, 1981).

Nature helps reduce stress in children and provides the opportunity for the child to relax, without pressure. Interacting with nature and other open spaces helps protect a child's emotional wellbeing, as well as reduce aggression levels (Louv. 2008; Lynch. 1977; Weinstein, et al. 2009).

## Healing Effect of Memorials

Memorials do not act solely as a representation of remembrance; they sometimes help commemorate a loss that has occurred (Rowlands, 1999). Memorials aid in the recovery process that individuals and communities go through after they have lost a loved one by providing spaces for communal ceremonies and rituals (Linenthal, 2003).

When the shootings at Columbine high school occurred, memorials sprang up everywhere and in many different forms. These memorials were a source of healing and comfort for the community. Many of the people who lost loved ones, felt touched by the outpouring of support that appeared in the items left at the memorials (Doss, 2004). Actions like this show that memorials have a unique way of unifying a community and sometimes a nation. When anguish occurs in a community, a memorial is an opportunity to rebuild. The planning and funding of a memorial helps a community bond together. A memorial shows how one person does not have to suffer alone but that

they have a community that grieves with them (Foote, 1997). The grief felt by a person is usually lessened when they have people to share it with and memorials provide that opportunity.

When someone loses a loved one they usually want to find a way to memorialize that person in a unique way. After losing a loved one it is hard for many to cope with the overwhelming amount of emotions that occur. Making a memorial or a commemorative space helps reduce their emotions to a more manageable scale, especially if they have not felt those feelings before. Making a space for a lost loved one provides a sense of purpose and helps provide those who felt powerless with control over something in their life (Glider, 2001).

Placing keepsakes at memorials and commemorative spaces is a therapeutic and comforting act that can be compared to praying (Glider, 2001). In a survey of families and friends who constructed roadside

memorials to loved ones lost in vehicle accidents, all participants said that the roadside memorial meant more to them than the grave site where their loved one was put to rest (Jipson, 2012).

People construct memorials to respect, honor, warn, praise, inform, remember, and glorify events and loved ones, but the memorials are readily built as a public act of mourning for the people who built them, to help them through their grief, and to invite others to share the grief (Dickinson, 2011).



## Precedent Studies

There are no specific precedents for sites intended to aid the emotional healing of grieving children. Therefore each precedent study was selected to display elements that contribute to a landscape for grieving: therapy through nature, memorializing, remembrance through landscape, and play through nature.

The Therapeutic Garden at the Institute for Child and Adolescent Development was chosen because it shows how a landscape can reflect children's feelings when they have faced an emotional trauma. It was studied to find which site features represent a child's emotions at each stage of their psychological healing. The Sensory Garden at Lucas Gardens School was selected because it displays a garden with community involvement for different users and a school garden oasis. It was studied to see how these features can be used to help a child find an escape from everyday life. The Prouty Garden in Boston, Massachusetts at the Children's Hospital was chosen to study nature's calming effect with children and how to incorporate to

an urban oasis that provides a sense of wonder for children. The Oklahoma City National Memorial was selected as an excellent example of how a memorial can help a community heal and remember who they have lost on a large scale. All spontaneous memorials, as a general group, were chosen because they display the healing effects that creating a memorial can provide individuals. The Vietnam Veterans Memorial was selected as a precedent study to display how a memorial can help people heal through very traumatic losses, help them have discussions, and help them meet people. While the Vietnam Veterans Memorial was not designed for children, the effect that it has helping veterans can be used as an example to help others. Teardrop Park was selected as an ideal example of how a child's playground can incorporate nature and appeal to children in different forms. It was studied to determine the best ways to use nature as a type of play element.

# Therapeutic Garden at the Institute for Child and Adolescent Development

**Location:** Wellesley, Massachusetts

**Type:** Formal Therapeutic Garden

**User:** Traumatized Children and Therapists

**Designer:** Douglas Reed

**Size:** One Acre

## Background

The garden is dedicated to treating children with emotional and behavioral problems that resulted from trauma (Marcus & Barnes, 1999). The site was designed to help children who have trouble revealing what they feel and help them find a way to articulate their emotions. Each space within the garden correlates to a stage of the child's recovery. The main concept for the design is that a child grows and develops by engaging with the landscape. A child can gain a sense of self with the physical environment by forging connections with plants, rocks, and water (Streep, 2003).

Douglas Reed worked closely with clinical psychologists for the design. Each area of the design is representative of the stage of therapy the child is at. By seeing body and mind as one, the site was designed to use symbolic landscape to disentangle traumatic "body memories" and engage the body and mind as one in the landscape (Streep, 2003).



Figure 2.2. Site Plan (Thomas, 2013).





Figure 2.3. Play Terrace with Basin. (Ward, A).



Figure 2.4. The Rill. (Ward, A).

## Play Terrace

The play terrace is at the entrance to the clinic and the garden. A low wall surrounds it providing seating. The paving breaks apart as one moves into the garden, forming a checkerboard pattern, that is meant to express a sense of freedom with movement that comes from it (Barnes & Marcus, 1999).

## Rill

Eight inches wide and bordered with steel, the rill starts from a sea green basin that splashes water out and into the rill. The rill meanders through the site, carving out design features and ends in a pond. The water and the abstract form of its movement, is symbolic of life and the journey of recovery that is experienced when visiting the site (Barnes & Marcus, 1999). The stream is meant to entice the child to follow it through the landscape on their journey of healing (Streep, 2003).

## Cave

The "cave" feature is a bench underneath the branches of a yew tree. The enclosed space helps provide the feeling of safety. It is common for a child who is emotionally disturbed to start with the cave in the landscape, using it as a hiding space. They eventually emerge from this space, though sometimes returning to its protection (Streep, 2003).

## Pond

After the rill weaves through the site, it pours into a pond. With the water as representation of the healing process, the pond is an end (Barnes & Marcus, 1999).



Figure 2.5. Bridge. (Ward, A).



Figure 2.6. Mound. (Ward, A).

## Bridge

The stepping-stone bridge is symbolic of risk taking for children. Children who are starting to wander out of the comfort of the cave, seek an almost sense of danger by crossing the bridge (Streep, 2003).

## Mound

Reed used the topography to design mounds for the children to climb. When the child is feeling more confident they become more active in the site, climbing up the mound, as well many rocks on the site. These elements further the risk taking in the landscape (Barnes & Marcus, 1999).

## Glade

A highly open and sunny space, the glade provides children with an opportunity to run around and play. At this phase the child has a desire to express freedom of movement and no longer looks to the landscape for protection (Barnes, Marcus, 1999).

## Plants

The plants were selected for the feelings they would evoke. Bamboo thickets and low hanging yews provide places for the children to hide and feel protected. Other plants represent swamp characteristics, while some areas are open and void of plants. Plants with lots of texture, like paperbark maples, were used to provide children with the opportunity to touch and feel. There is a great diversity in the planting palette, to provide year round interest, so the garden can be used in the winter too. By not routinely manicuring the lawn and planting very few annuals, it requires little maintenance (Barnes & Marcus, 1999).

## Analysis

While the garden is used for traumatized children, many of the features can be used for children who are mourning. The garden does illustrate how landscape features, such as water and "caves" can be used to evoke emotion and be a part of the healing process. The concept of using the landscape as a journey through the healing process for traumatized children can be replicated for children who are mourning. As well as the feature of the rill that leads the child through the garden. Landscape features such as the cave that provide a sense of security can be used to give the children who are grieving an opportunity to hide when they feel like being alone. Other children who feel the need for "risk taking" spaces after losing someone may want the experience that the bridge and mounts provide.



# The Prouty Garden in Boston, MA at the Children's Hospital

**Location:** Boston, Massachusetts

**Type:** Informal Strolling Garden

**User:** Hospitalized and Outpatient Children, Parents, Caregivers, Hospital Staff

**Designer:** Olmsted Brothers

## Background

Located at one of the premier hospitals for children, the garden was opened in 1956 and completed in 1987. The garden is accessible from a corridor off the first floor of the hospital; however, there is no signage to represent its specific location. The garden is approximately 190 feet by 120 feet and is enclosed by hospital buildings ranging from three to six stories in height. The buildings, several large trees, climbing hydrangeas, pyracanthas, and wisteria that outline the site and walls create a strong sense of enclosure (Barnes & Marcus, 1999).

## Uses

The primary use of the garden is an escape for patients who are waiting for surgery. In warm weather people eat their lunches in the garden. Special events in the garden include parties for patients, fund raisers, and a Christmas tree lighting celebration in the winter, which allows those who are too sick to venture out into the garden the chance to watch from inside. There is gardening and arts and crafts in the summer (Barnes & Marcus, 1999).

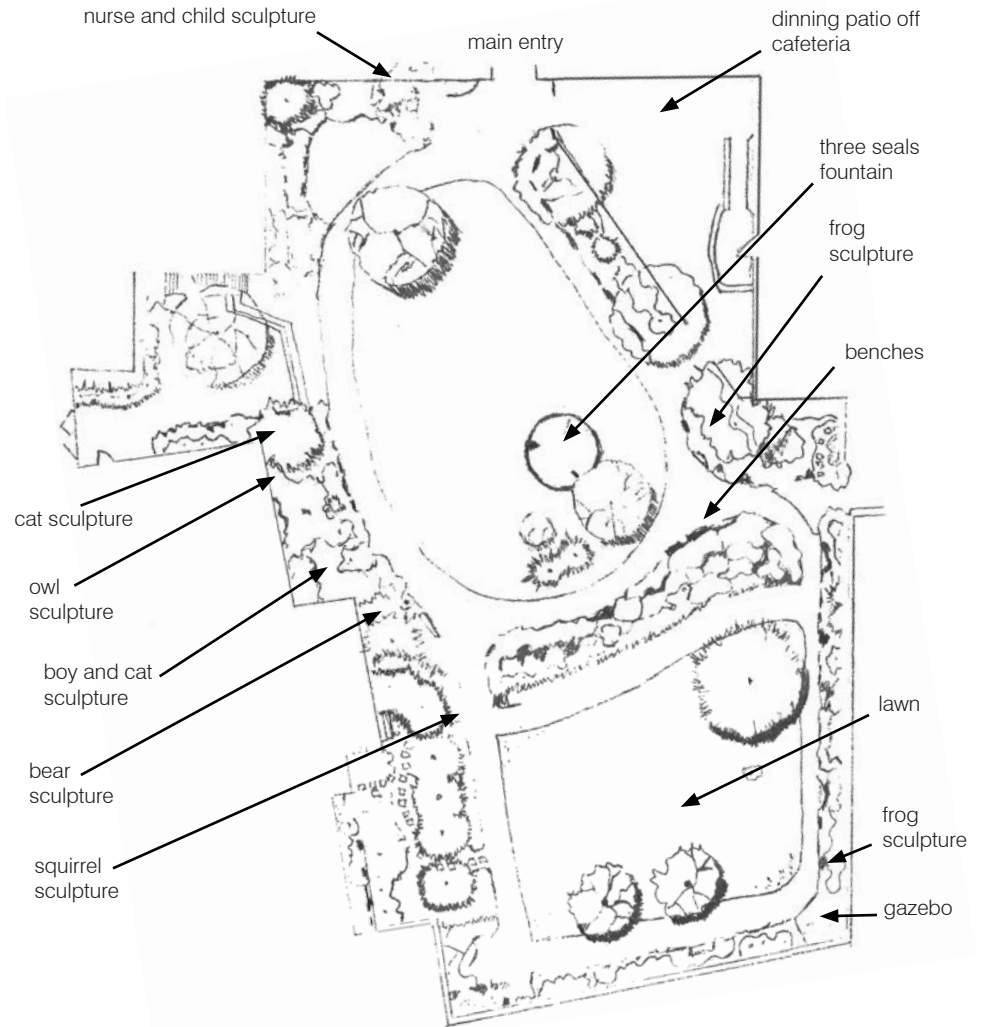


Figure 2.7. Site Plan (Thomas, 2013).



Figure 2.8. Fountain (Tranquility Knots 2012).



Figure 2.9. Nurse Statue (Tranquility Knots 2012).



Figure 2.10. Plantings (Tranquility Knots 2012).

## Users

While the garden was created to serve the children being treated at the hospital, it can be used by anyone. It is frequented by patients, staff, family members, and by the surrounding building's staff members as well. In good weather the garden has been used by up to 150 people (Barnes & Marcus, 1999).

## Sculptures

There are a number of sculptures hidden throughout the garden. These sculptures have become a sentimental favorite of many of the children, who hunt them out and affectionately name them. The sculptures are tucked within the planting, which adds a sense of wonder (Barnes & Marcus, 1999).

## Lawns

The garden has two large lawns with pathways surrounding them. The lawns are used by children for playing or relaxation. In warm weather many people picnic out on the lawns (Barnes & Marcus, 1999).

## Plantings

The plants in the garden were selected to create seasonal charm. The large trees reduce the scale of the surrounding buildings. At a lower height there are smaller trees such as flowering dogwoods and Japanese maples. All of the plants in the garden have labels identifying their Latin and common name. Inside the hospital there is a plan of the garden which calls out all the names of the plants for children who cannot venture outside (Barnes & Marcus, 1999).

## Analysis

The garden provides very few opportunities for children to interact physically with the landscape (Barnes & Marcus, 1999); however it is an example of how the landscape can help people relax when they are worried or afraid. It also creates a sense of wonder and mystery through the hidden statues, which the children enjoy. While the garden does not allow children tend to the plants, the children do interact with them, all of the plants are labeled, helping children identify them. The garden is different than a commemorative site, but the effects of nature on the children who visit the site can be used to help grieving children too.

# The Sensory Garden at Lucas Gardens School

**Location:** New South Wales, Australia

**Type:** Community-based Multipurpose Healing Garden

**User:** Severely impaired children, parents, siblings, caregivers, teaching staff, therapists, volunteers, community groups

**Designer:** Good Manors Landscape Architects and Jeanne Stratford

## Background

The Lucas Garden School is a special education facility for children with multiple disabilities with links to a nearby pediatric hospital. The gardens were created to bring nature directly to the children. Many of the children who visit the garden are in wheelchairs or cots. The Sensory Garden is the focal point of the Lucas Gardens School (Barnes & Marcus, 1999).

## Community Involvement

A major component of the design was including the community in the project. Originally there was a great deal of opposition from the community. To combat this, the principal of the school, invited the community to participate in the project to create an environment of "double healing process." Since an older school had been recently closed, it helped the community recover and accept the new students and faculty. Churches and local businesses contributed money and time to the project (Barnes & Marcus, 1999).

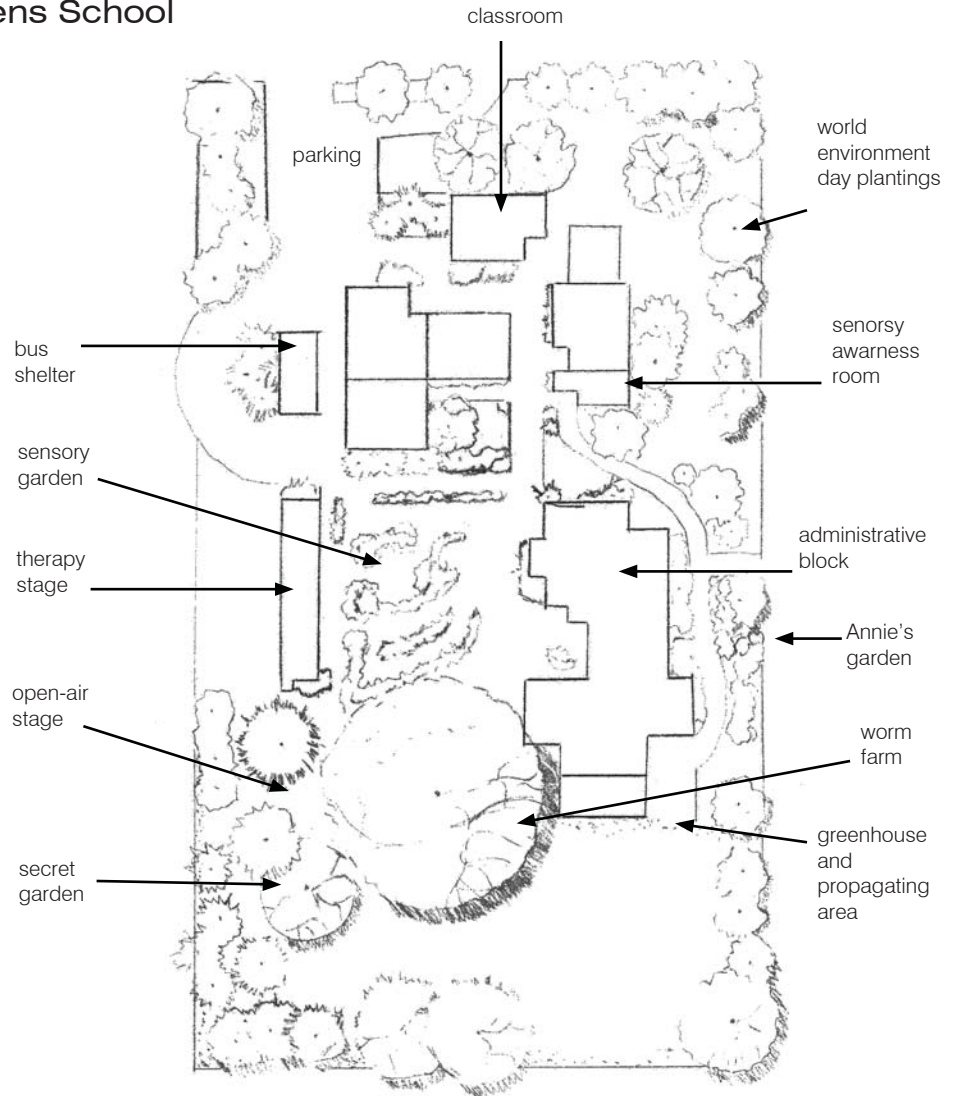


Figure 2.11. Site Plan Lucas Garden School (Thomas, 2013).

## Activity Stations

The activity stations provide spaces for the children to enjoy nature projects. A texture table lets children have an opportunity to play with natural objects and turn them into art projects. The splash table has two heights for children standing and for children in wheelchairs (Barnes & Marcus, 1999).

## Swinging Garden Bench

Set in a more natural retreat, the swing gives children a chance to curl up and relax. There are additional benches along the planters, providing further resting spots (Barnes & Marcus, 1999).

## Sensory Stimulation

There are wind chimes throughout the garden to add pleasant noises. There are maps that highlight areas where different noises can be heard. Bright colors with windsocks, flags, banners and windmills provide a calming effect in the garden. There are over fifty cue-signs displaying messages informing the children to do such things as "listen to the birds." The smell of all the plants creates a strong memory of the space (Barnes & Marcus, 1999).

## Jungle Area

Creating more of a challenge for the children, the jungle area features multiple vines hanging down, where children can explore and then search for their way out (Barnes & Marcus, 1999).

## Earthworm Breeding

The earthworm breeding was first developed as a community project. Children now have the opportunity to help breed worms on the site in the Palm Garden section. The breeding has become very popular. At the farm they create kits that they sell to schools and other organizations, making a profit for the school (Barnes & Marcus, 1999).

## The Secret Garden

The secret garden is a native plant space that attracts butterflies and birds (Barnes & Marcus, 1999).

## Analysis

Creating community support was a central component for this garden. By providing the community with access to the garden and including them in the design, the garden receives more visitors, more financial support, and more protection. Ensuring that the elementary schools are accessible to more people will help their success. The sense of adventure that the Lucas School Gardens creates could be used for children who may want to embrace risk such as the hanging vines that children can get lost in. The vines also create a space for children to hide and this could be used for children who want to escape and be alone. There are also spaces for groups to sit and talk, which could help the children who are ready to communicate. The worm breeding provides a new activity that many children have not experienced. All of these features can be used in the commemorative sites. Children who are grieving may look to embrace the risk created by the site or may desire the spaces to hide and be alone. The spaces for discussion can be used for children who are ready to communicate their feelings. Ideas such as worm breeding could be used for children who are looking for new activities.



# Oklahoma City National Memorial

**Location:** Oklahoma City, Oklahoma

**Type:** Memorial and Museum

**Designer:** Hans and Torrey Butzer and Sven Berg, Butzer Design Partnership

**Budget:** \$29.1 Million

## Background

On April 19, 1995 a bomb exploded outside of the Murrah Federal Building in Oklahoma City, killing 168 people. In the aftermath of the explosion, a chain link fence was set up around the perimeter of the site for safety. The fence, immediately became a symbol of hope. Tokens of love, support, and commemoration, such as stuffed animals, signs, poems, notes, cards, candles, baby shoes, and much more were left at the site. Even with this spontaneous memorial, there was a call for a permanent memorial to commemorate the people who lost their lives and the survivors of the attack. A design competition was held, with 624 memorial designs submitted. From these designs, Hans and Torrey Butzer and Sven Berg's design won (Linenthal, 2003). The memorial and museum were placed where the Murrah building once stood and now are visited by are around 350,000 people a year (Oklahoma City National Memorial, 2011).



Figure 2.12. Oklahoma City National Memorial Site Plan (Beamish, 2012).





Figure 2.13. 9:03 Gates of Time. (Beamish, 2012).



Figure 2.14. Reflection Pool. (Beamish, 2012).



Figure 2.15. Survivor Wall (Beamish, 2012).

## Gates of Time

The design uses two large concrete gateways to create the sense that the memorial site is a room. The gates, however, provide more than the sense of walking through doors, but with the markings of 9:01 on the east side and 9:03 on west side, they mark the time that the bomb exploded, 9:02 (Hurd, 2000). These thick, buff colored walls, were meant to not only pause the site at the time of the bombing, but to also bring any visitors to an understanding of the effect that one minute had on the Oklahoma City community (Linenthal, 2003).

## The Reflection Pool

After the bombing, Northwest Fifth Street, where the Murrah building had once sat, was closed down permanently and was dedicated as a sacred place for the memorial. To preserve the space, the designers placed a reflection pool where the footprint of the street had been. The pool was placed there to use calming effect that water provides as well as to promote healing and provide a peaceful setting for thinking and remembrance. Looking into the water, a visitor is shown the reflection of someone who has been forever changed by the events of that day (Linenthal, 2003).

## The Survivor Wall

Built from one of the remaining walls of the Murrah building, the survivor wall sits on the east side of the site. More than 600 names of the people who survived that day, some with severe injuries, were carved into the granite of the wall (Oklahoma City National Memorial, 2011). Many of the names carved into the wall are people who lived through the destruction of 16 other buildings that were completely ruined and the 347 other buildings that were damaged (Linenthal, 2003).

## The Survivor Tree

Before the bombing this lone elm tree provided the only shade in the downtown parking lot. The tree was not intentionally planted, instead it grew from a seed that had landed on the spot. Before the bombing the tree survived Dutch elm disease outbreaks and now it lived though the blast of the bomb and the explosion of all cars around it. Its survival was due to being placed in asphalt up to its trunk. Due to its survival, the elm tree became a sacred object and a symbol of hope. It is often a gathering place for family members and survivors (Linenthal, 2003).

The Survivor Tree was given a priority in the design for the memorial. The ground it sat on was leveled. The tree became accented by a round wall set at the high point of the site with cascading terraces sat below it. The terraces' change in topography helps protect the roots of the tree (Oklahoma City National Memorial, 2011). Cuttings and seeds from the tree are given out across the United States on the anniversary of the bombing, allowing survivor trees to grow everywhere (Linenthal, 2003).

## Rescuers' Orchard

Surrounding the survivor tree is an orchard of nut and fruit bearing trees. The orchard symbolizes the support of rescuers and volunteers who helped after the bombing and is a sign of gratitude felt by the city (Linenthal, 2003).



Figure 2.16. Survivor Tree. (rroberts41, 2009).



Figure 2.17. Survivor Tree. (Chao,2005).



Figure 2.18. Rescuers' Orchard. (Oklahoma City National Memorial, 2011).



Figure 2.19. Field of Empty Chairs. (Beamish, 2012).



Figure 2.20. Children's Area. (Fryer, 2008).

## Field of Empty Chairs

The field of empty chairs was considered, by the committee who selected the memorial as the most convincing and powerful component of the design. 168 chairs, made of bronze and glass, sit where the footprint of the Murrah building had been, representing all the lives that were lost. The chairs are organized in nine rows, in representation of the floors of the building, with the chairs arranged on spaces where the most lives were lost. Each chair displays the name of someone who lost their life on that floor. Nineteen smaller chairs represent the lives of the children who passed away. A row of five chairs on the grassy knoll are for the five people who lost their lives that were not in the Murrah building (Hurd, 2000). Originally anyone could walk out onto the grass and leave items of remembrance on the chairs. However, this wore the grass down too quickly, so presently only family members can walk out to the chairs, when accompanied by a member of the memorial staff (Linenthal, 2003).

## Children's Area

With the outpouring of support from around the world that was sent to Oklahoma City, much of it was from children. To continue the expression of love the site includes a wall of tiles that were painted by children and sent to Oklahoma City. To help children heal, buckets of chalk and chalkboards were built into the ground, giving children the opportunity to share their feelings through drawings (Linenthal, 2003).



## The Fence

The original chain link that became a spontaneous memorial surrounding the site, directly following the explosion, had 200 feet of it moved and preserved at the new memorial. The items that had been left there, were collected and preserved in the museum. Today items continue to be set at the fence and are still archived and preserved (Oklahoma City National Memorial, 2011). The original plan of the memorial called for a much shorter piece of the fence to be saved, but people who had lost loved ones in the bombing and were serving on the committee to select the design, fought to preserve more of the fence. The fence had been a symbol of the support the community had received from around the world, a memory to those they had lost, and a sign of respect to the people who lost their lives (Linenthal, 2003).

## Analysis

A healing, commemorative site at an elementary school would not be at the same scale that the Oklahoma City National Memorial is, but it could still emulate some of the same features. The Oklahoma City National Memorial provides spaces for everyone to remember and leave something behind. Keeping the fence up gives people the chance to be a part of the memorial, by leaving a piece of themselves at it. A similar feature to the fence could be placed at an elementary school site scale. It would not have the outpouring of gifts from the entire country, but the community could utilize a relatable element. The children's area use of chalk and the painted tiled-wall is successful in how it lets children express their feelings at the site and could be incorporated in the elementary schools. These decorative forms help the children become involved in the project while expressing their emotions.

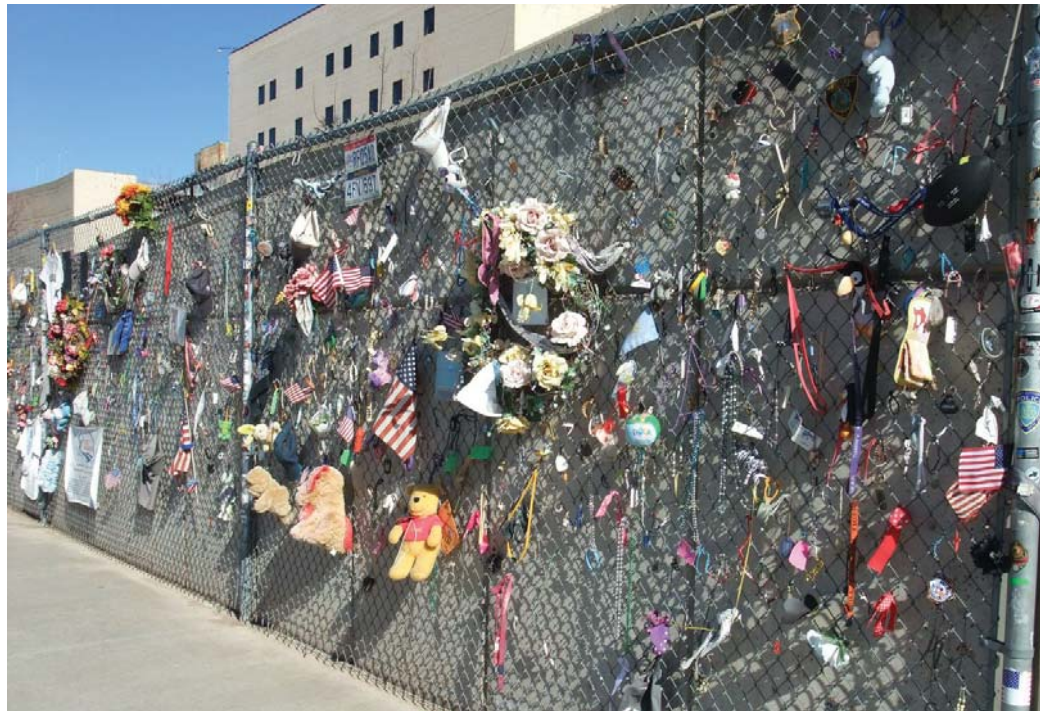


Figure 2.21. The Fence. (Beamish, 2012).



## Spontaneous/Temporary Memorials

**Types:** Roadside, Areas of Tragedy, Chain link Fences, Cars, Almost Everywhere

**Designer:** Anyone

**Budget:** Inexpensive

One of the first reactions from the public after an unexpected tragedy or loss is a spontaneous memorial. It starts with when someone leaves a candle or perhaps a teddy bear, which sparks an outpouring of contributions from the others. These memorials can be the sole expression of family and friends of the deceased by placing a cross and flowers by the roadside where a fatal accident occurred or it can be at a much larger scale such as sentiments from an entire county. Spontaneous memorials are public places that unite individuals and communities in their grief and sometimes, anger. From these memorials, private events invite public involvement (Santino, 2004).

The memorials are important to the families and friends who lost loved ones. They stand as a representation of support, love, honor, and commemorate the lost loved one. The spontaneous memorials are often considered by the people who created them to have a more emotional appeal, than permanent ones, since the family and friends are more actively involved in their creation (Jipson). Family and friends find the spontaneous memorials to be better representation of the people they were created for due to the personalized gifts that are left at them. The memorials provide a mark of history for the deceased (Doss, 2010).

The spontaneous/temporary memorials themselves are not as important as the items that are left there. Each item left in dedication signifies something different. Hand-written notes, poems, and letters let people have intimate conversations with the deceased. Flowers symbolize the beauty and shortness of life. Stuffed animals represent the loss of innocence. All of these social performances show the beliefs of the people who left them. The memorials function to remember the deceased. Even though the items set at the site become worn down by the elements, they are often preserved and seen as sacred (Doss, 2010).



Figure 2.22. 9/11 Spontaneous Memorial (Beamish, 2001)



Figure 2.23. Roadside Memorial. (Beamish, 2005).



Figure 2.24. Ghost Bike Memorial (Beamish, 2005).



Figure 2.25. Boston Marathon Bombing Memorial. (AnubisAbyss, 2013).

## Criticism

Spontaneous memorials are not always received well by all who view them. One Colorado man, who drove past a cross, marking a death on the roadside, everyday on his way to work, went so far as to yank it out of the ground. He stated that he did not like having to think about another person's grief and hurt every day, when he had his own pain to deal with. This "pushing" one's pain onto others is one of the main criticisms that spontaneous memorials receive (Doss, 2010). There are multiple laws in different states against roadside memorials and other spontaneous memorials. These laws are intended to avoid roadway distractions and halt the use of religion on public properties. Even when these laws are in place, it seems that in most places they are actively ignored, that or the police are too afraid of offending someone with such a sensitive issue and they let the memorials stand (Mullins, 2012). Other times these memorials are criticized for being "too much" and a material way of injecting oneself into an event that they were not part of (Linenthal, 2003).

## Analysis

Spontaneous memorials show how people use physical attributes to help them grieve. They also display how people desire to share grief in a community. The act of leaving behind flowers, notes, cards, stuffed animals, or poems, could be incorporated into the site, to help children share their grief, and help them express their feelings in a donation form. Since it is shown that some people think that spontaneous memorials "push" grief onto others, there could be limitations when implementing a place to leave memorabilia.



# Vietnam Veterans Memorial

**Location:** West end of the Mall in Washington, D.C.

**Type:** War Memorial

**Designer:** Maya Lin

## Background

The memorial is composed of two walls meeting together at an angle of 125 degrees, looking like a slightly opened book. Each wall is 246 feet 9 inches in length and is composed of polished black granite that displays the names of the 58,152 men and women killed (National Park Service, 2002).

When visiting the site, one typically approaches it from the southwest from the visitor center. At the center there is a plaque displaying information about the memorial. The visitor then descends into the site along a path with benches aligning its sides. A podium, containing a book with the names of all those who died in the war and their location on the wall, sits at a junction in the path. From here the visitor continues into the memorial, seeing the first names on the wall, listed in the order of when the death occurred. The walls of the memorial seem to rise out of the earth reaching a height of 10 feet 3 inches where they meet. Names upon the wall do not display any military rank or title. Additions to the memorial have been added nearby including an American flag, the Vietnam Women's Memorial, and the statue of the Three Fighting Men, (National Park Service, 2002).



Figure 2.26. Vietnam Veterans Memorial Plan (United States Geological Survey, 2002).





Figure 2.27. Vietnam Veterans Memorial (Hundley, 2012).



Figure 2.28. Vietnam Veterans Memorial (Hundley, 2012).



Figure 2.29. Vietnam Veterans Memorial (Hundley, 2012).

## Helping Veterans

Of the 3,403,100 Americans, deployed in the Vietnam War, 58,152 were killed (Kulka et.al., 1991). Many veterans of the war suffered from Posttraumatic Stress Disorder. Furthermore, veterans felt isolated from their communities, when they failed to receive support when they came home and many felt that they were unable to discuss their experiences.

Many veterans felt ashamed of their war experience.

The isolation and shame created a second trauma for many of the veterans (Lifton, 1973). In a study completed by Watkins, Cole and Weidemann it was shown that the Vietnam Veterans Memorial helps veterans feel relief from PTSD after visiting the site more than one time. The site helps veterans more effectively treat the symptoms, after being able to take in the memorial. Watkins, et. al noted that the wide open landscape surrounding the memorial and the views that surround the site provide veterans with an opportunity to prepare before they go down into the site. The approach was seen just as important as the site visit to the veterans. The black granite of the wall, which shows clean reflections, is responsive to the passing of time, actions of the visitors, and the losses commemorated upon it, is most helpful to the veterans, allowing them to grieve over what they would like to avoid. Another positive effect of the memorial is that it acts as a community gathering place for veterans, providing them with a place to meet, gain social recognition, and gain support for dealing with their losses (Cole, et. al, 2010).

## Children and the Memorial

While the memorial was designed for veterans of the war, children often visit it as well. Here they can touch the names of relatives and leave items. It was noted by Fitzgerald (2012) that the experience can be enhanced for the children, if a parent or teacher explains the memorial and some of the war to the child.

## Analysis/Take Away

While the Vietnam Veterans Memorial was not designed with children in mind, its healing effects can be used to help them. The memorial creates an experience that is a journey through the landscape. Rather than focusing on a statue it is focused on the landscape. This idea created a healing environment that can be replicated. The granite that the wall is composed of acts as a mirror letting people reflect how they feel.

# Teardrop Park

**Location:** Battery Park in Manhattan, New York

**Type:** Playground/Park

**Designer:** Michael Van Valkenburgh Associates

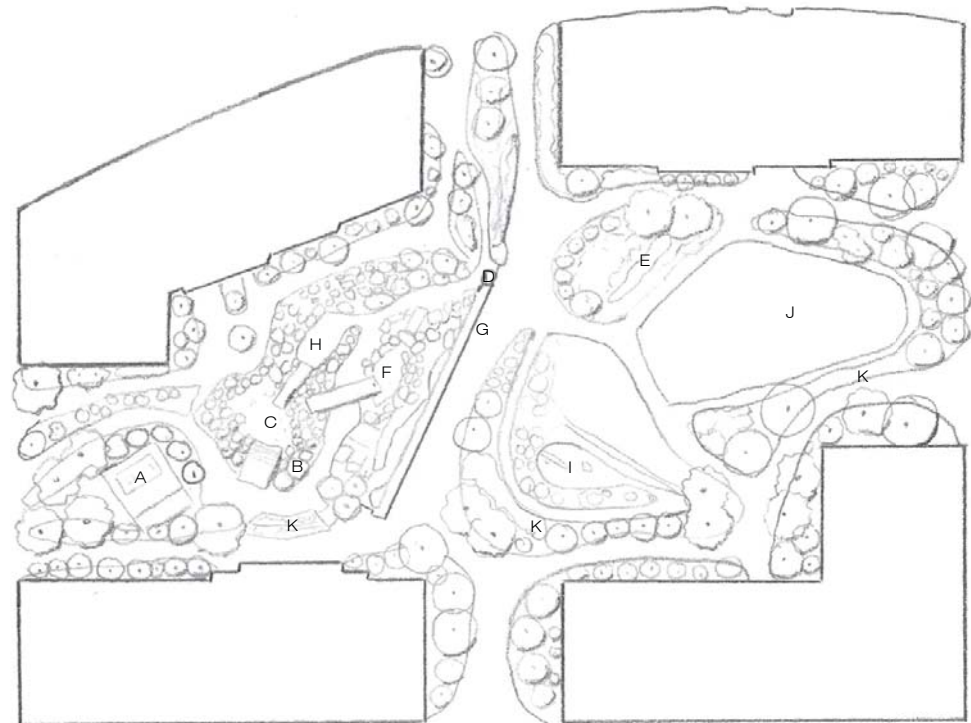
**Size:** 1.8 Acres

**Budget:** \$17 Million

## Background

The space that was designated for Teardrop Park had many pre-existing problems. The site had hardly any sunlight due to the four high-rise residential buildings surrounding it. Pollution and the shallow soils made it hard for plants to grow and strong winds plagued the site further.

It was known from the start that the site should be designed for children, who living in the dense city had little opportunity to experience nature. So designers created the site to form a sense of wonder that the children did not normally have access to (Berrizbeitia, 2009). A main force behind the design was sustainability which structured how the park was organized (Michael Van Valkenburgh Associates Inc., 2006).



- A. Toddler Play
- B. Wooden Steps
- C. Sand Cove
- D. Tunnel
- E. Marsh
- F. Water Play
- G. Ice Water Wall
- H. Slide Hill
- I. Reading Circle
- J. Lawn Bowl
- K. Geological Section

Figure 2.30. Teardrop Site Plan (Thomas, 2013).



Figure 2.31. Grass Bowl (Ruskamp, 2013).

## Sand Lot

Elevated above most of the site, the sandlot is removed from most of action in the park allowing smaller children to play there while being protected from the antics of the older children (Michael Van Valkenburgh Associates Inc., 2006).

## Grass Bowl

The designers insisted on having a grass field, since many people would not think of the space as a park, if a grass lawn was absent. Studies were conducted to discover the area that would receive the most sunlight through the day. Using the topography, they added a tilt to the lawn to acquire more sunlight in the space (Hine, 2007).

The grassy lawn now provides visitors an opportunity to rest and lounge in the sunlight or to run and play frisbee (Michael Van Valkenburgh Associates Inc., 2006).



Figure 2.32. Water Rocks. (Kline, 2013).

## Water Rocks

Water sprouts out of the rocks creating an active space during hot summer days. This space is one of the most popular for the older children, who climb up on the rocks and splash through the water (Michael Van Valkenburgh Associates Inc., 2006).

## Wooden Step Bleachers

Composed of small wooden steps, the bleacher provides visitors a view of the site. The steps are often filled with people reading or watchful parents (Michael Van Valkenburgh Associates Inc., 2006).

## Sand Cove

The sand cove provides a base of sand for the children dismounting the slide. Unlike the sand lot, the cove is meant for the older more active children (Michael Van Valkenburgh Associates Inc., 2006).

## Slide

The slide in the park is steeper and taller than most at fourteen feet tall and twenty-five feet long. The slide is embedded into a hill composed of stones and lands in a sand cove. The placement of the slide gives it a natural appeal, that does not occur in most playgrounds. Instead of the typical ladder or stairs to the top, the slide has a natural rock staircase. Benches surround the slide allow parents to keep an eye on children playing here (Michael Van Valkenburgh Associates Inc., 2006).

## Bluestone/Ice Wall

The goal of the bluestone/ice wall was to combine the wonder and beauty of a geological specimen with the enchantment of nature. In the summer time, the bluestone/ice wall is covered in moss, while in the winter, water runs down it forming icicles on the facade. Plants backing the wall, create a natural feel. The rocks that form this wall are placed in an irregular pattern, that seems to explode at certain spots. The wall shows how earth, plants, rocks, and water combine to embody the landscape (Michael Van Valkenburgh Associates Inc., 2006).



Figure 2.33. Bleachers looking to Slide.(Reibold, 2012).



Figure 2.34. Slide. (Winslow, 2013).



Figure 2.35. Bluestone Ice Wall. (Kline, 2013).



Figure 2.36. Ice Wall (Lining, 2013).





Figure 2.37. Quiet Area. (Reibold, 2012).

## Plantings

There are over 16,870 plants and trees planted at Teardrop Park. 88% of plants are native to New York. The plants were selected for specific microclimates that exist at the site. A drip irrigation system, using water captured at the site, is used to maintain the health of the plants (Hill, 2011).

## Analysis

While a park or playground will not be the outcome of the project, Teardrop Park shows how nature can be used to create a unique experience. The aesthetic experience that Teardrop Park creates helps children gain empathy and an affinity for nature. The materiality, spatial techniques, and intimacy of nature form a world of possibilities for children who visit the site. These experiences with nature can be used in the Manhattan sites to help the children develop a relation with the landscape. The use of light, sound, water, and nature to invite children into a unique experience should be used in the guidelines. The non-traditional playground equipment that incorporates nature and wonder into the design could be implemented in the elementary schools to form a distinct experience with nature. Teardrop Park is different from the Manhattan sites, by its location and the amount of money spent to create it, but the experience it creates can be implemented at the elementary schools.



3

## Analysis and Application





## Element Development

The framework for children's stages of grief was created by combining Worden's tasks of mourning, which focuses on children, with Kuebler-Ross' five stages of grief, which focuses on adults. This created a hybrid of mourning stages. Each of the four stages describes characteristics a child might feel at that stage. Stage one is where the child is in denial and lacks an understanding of the loss. In stage two the child begins to experience the pain and emotional aspects that come with loss. In stage three the child begins to adjust to an environment and begins to find hope. In the final stage, the child finds new ways to commemorate the loss.

Using these four stages and the characteristics of how the child feels at each stage and the precedent studies, I developed guidelines for designing a landscape for grieving and from there a palette of design elements that would help the child with those feelings. Since similar emotions are felt at multiple stages, some design elements can aid in different stages.

When implementing a landscape for grieving in an elementary school, it is not necessary to include every element in the palette. It is more important to include at least one design element that meets the needs of each stage of grief.

# Guidelines for Landscapes for Grieving

Given the four stages of children's grief, there are a set of landscape design guidelines to follow when developing a landscape for grieving.

## 1. Ensuring Accessibility/Usability

Particularly Important for Stages 2, 4

The commemorative site needs to be open and available to all students and visitors to the school. Even students who are not grieving should have the chance to use the site.

The site's pathways should have a clear hierarchy while providing opportunities to make choices. The pathways should also provide usage to all students and be accessible to disabled students.

## 2. Providing a Range of Social Settings

Particularly Important for Stages 1, 2, 3

Children who are in the first step may desire to be alone and removed, while other children may desire to talk to someone. It is important to provide spaces for children to be alone and spaces where they can gather and enjoy the company of others. Children may want to be able to observe people while be removed from interactions, providing chances for people watching can help children stay removed from the interaction while still watching it.

## 3. Providing Interaction with Nature

Particularly Important for Stages 1, 2, 3, 4

Providing the opportunity for children to engage with nature provides them with the chance to engage all their senses. Having the interaction with nature helps children relax. Planting and tending to the plant helps children feel in control of a situation at a time when they may feel that they have no control of anything in their life.

#### 4. Providing Hands on Activity

Particularly Important for Stages 2, 3

Because children may lose interest in activities they use to enjoy, providing them with the chance to engage in new activities may help them overcome these feeling and find new activities they can enjoy. Hands on activities such as planting or sandboxes allow the children to alter the environment and give them a sense of control.

#### 5. Providing Art Integration

Particularly Important for Stages 2, 3, 4

Providing brightly colored art, wind chimes or water features provides a new garden experience while appealing to the senses. Giving the children the chance to alter or create art to add to the site helps them explore their creativity while providing relaxation.

#### 6. Providing Remembrance Spaces

Particularly Important for Stage 4

For children who fear forgetting or want to honor someone it is important to provide a space that they can commemorate someone. This can be similar to spontaneous memorials where they can leave objects at a fence line or it could be similar to the Oklahoma City National Memorial where they can chalk out their emotions.

## Stage 1. Denial and Understanding the Loss

Characteristics

**Confused or dazed**

**Feelings of being lost**

**Desires to be alone**

**Worry for others in their life**

**Loss of interest in activities**



**Provide Site Elements  
Such as:**

Spaces to talk

Areas of seclusion

Private/hidden spaces

Spaces to observe people

Removed and private space

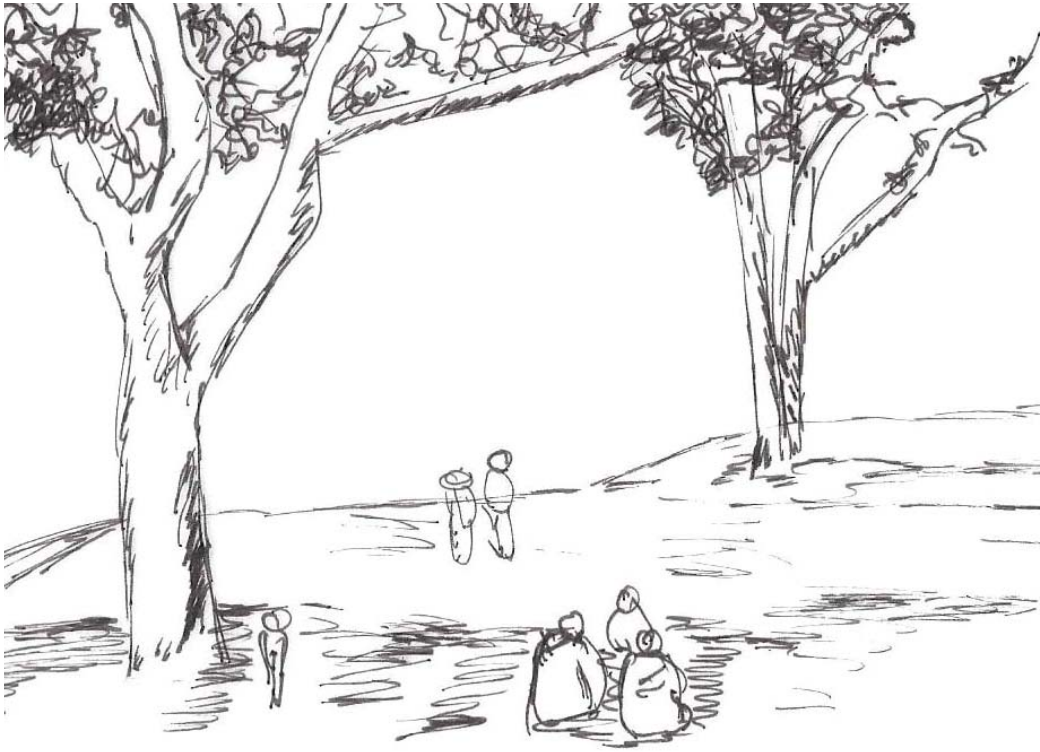


Figure 3.1. Open fields provide spaces to sit and talk or area to run



Figure 3.2. Benches for spaces to sit and talk

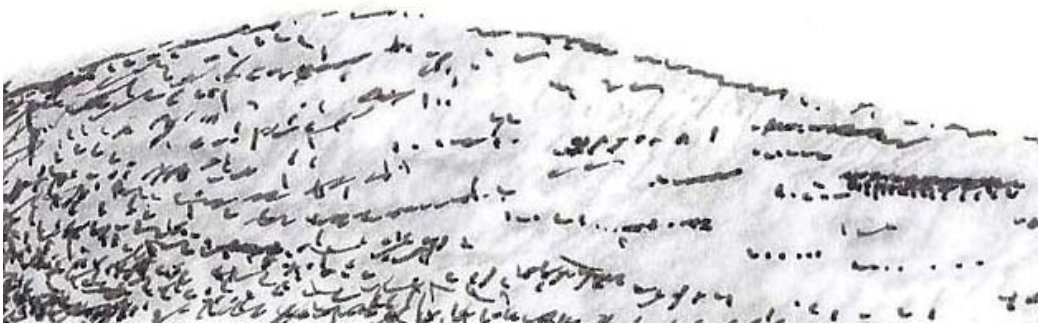


Figure 3.3 Mounds to sit on and watch people or to run up and down

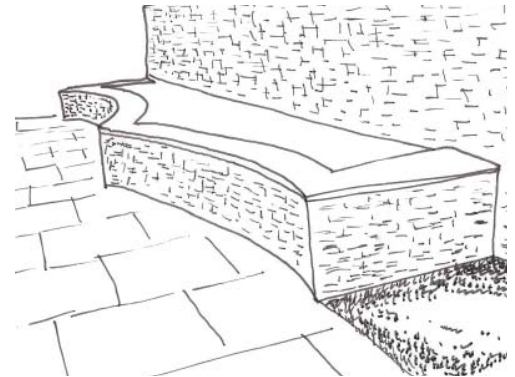


Figure 3.4. Raised seating to sit and watch people



Figure 3.5. Dense trees or vertical elements to hide and feel secluded in



## Stage 2. Experiencing the Pain and Emotions

### Characteristics

### Acting out or embracing danger

### Frightened

### Desire to be alone

### Bargaining

### Depression

### Provide Site Elements Such as:

Spaces to be active  
Playgrounds  
Sport fields  
Places to be loud  
"Risk taking" landscapes

Secure spaces  
Enclosure  
Group seating

Secluded spaces  
Lone Seating  
Private spaces  
Access to nature

Areas to talk  
Memory books

Access to nature  
Sunny spaces  
Bright colors



Figure 3.6 Open fields provide spaces to sit and talk or area to run



Figure 3.7 Bird feeders provide a connection to nature



Figure 3.8 Risk taking spaces allow children to be active and embrace danger



Figure 3.9 Benches for spaces to sit and talk

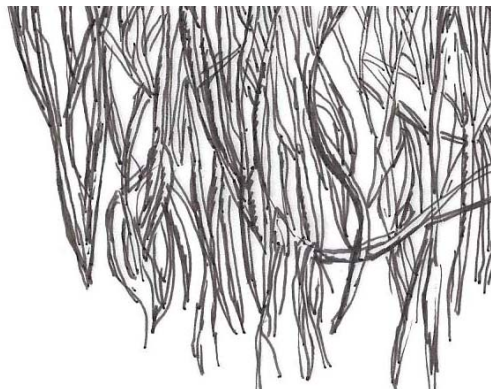


Figure 3.10 Vines to hide and get lost in provide a risk space

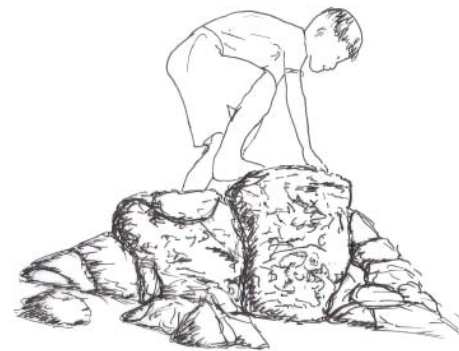


Figure 3.11 Rocks to climb on allow children to active and take risk

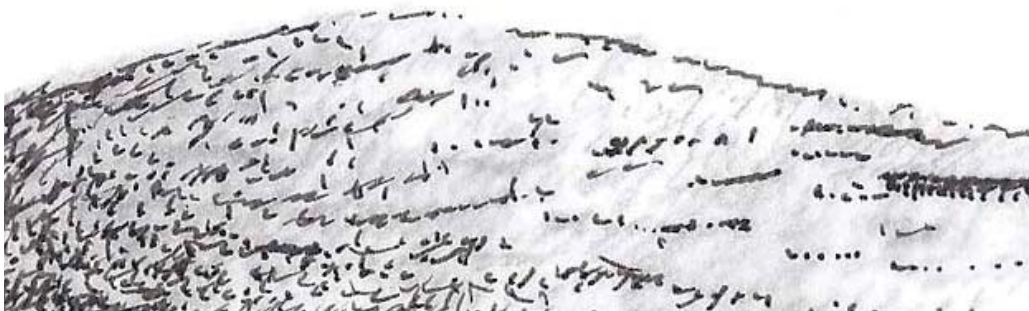


Figure 3.12. Mounds to sit on and watch people or to run up and down

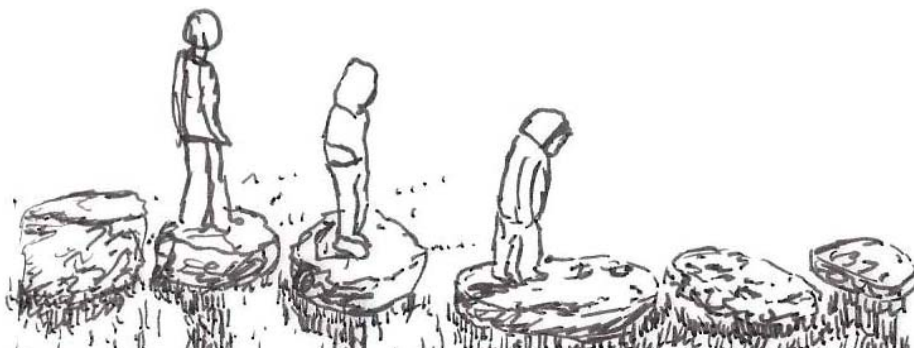


Figure 3.13 Stepping stones allow children to embrace risk

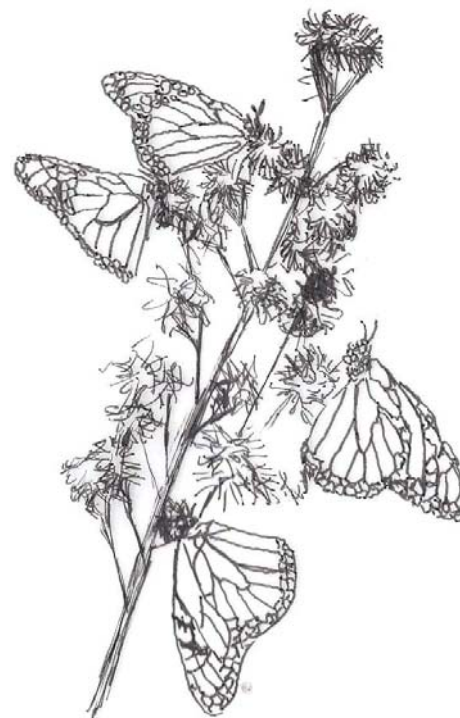


Figure 3.14 Plants to provide children with a connection to nature

## Stage 3. Adjustment/Acceptance/Hope

### Characteristics

**Feel that there is a lack of control in their life**

**Desire Support**

**Open to new things**

**Provide Site Elements  
Such as:**

Options in the landscape  
Free play  
Ability to make choices in the landscape  
Spatial options

Places for discussions  
Larger seating areas  
Areas to display feelings

New activities  
Planting gardens  
Caring for plants

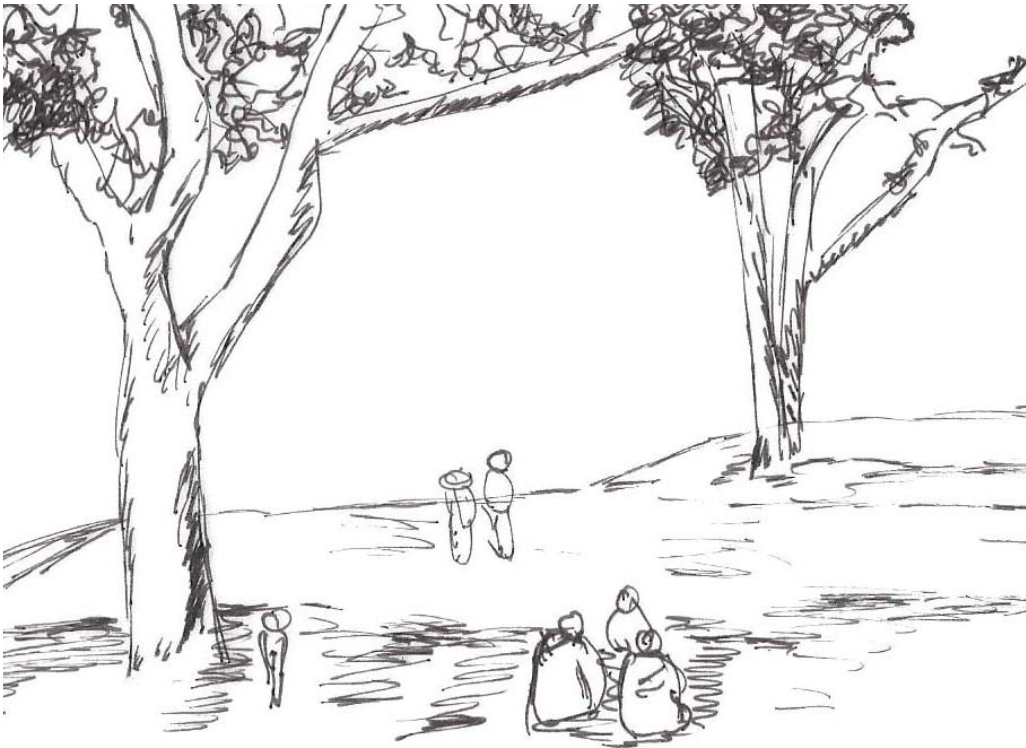


Figure 3.15. Open fields provide spaces to sit and talk or area to run

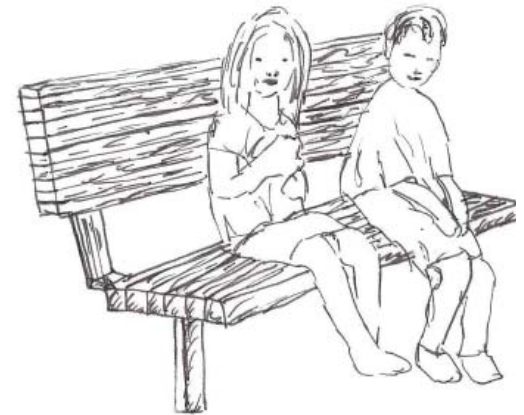


Figure 3.16. Benches for spaces to sit and talk



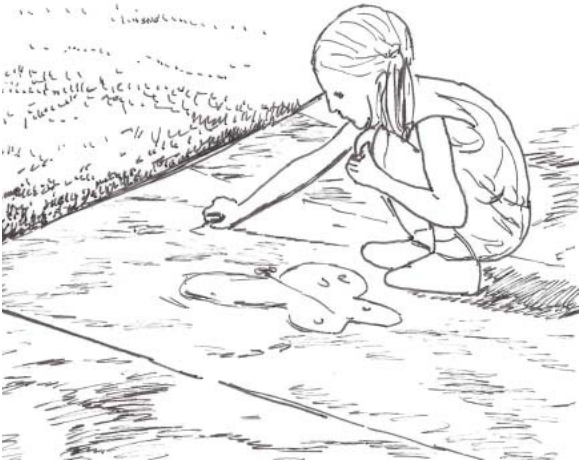


Figure 3.17 Chalk to display feelings



Figure 3.18. Gardens for planting and a connection to nature



Figure 3.19 Sandbox for children to create and destroy



Figure 3.20. Bird feeders provide a connection to nature

## Stage 4. Finding Ways to Remember

Characteristics

Fear of forgetting the one they lost



Provide Site Elements  
Such as:

Places to commemorate  
Places to remember

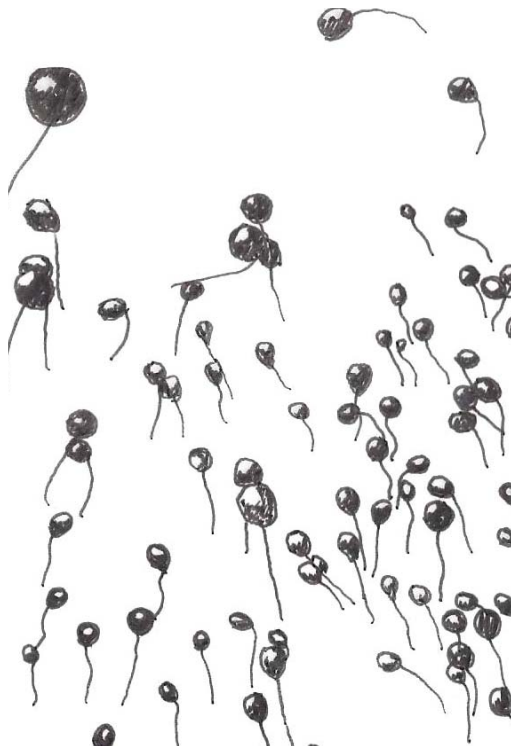


Figure 3.21. Releases of balloons in memory of someone



Figure 3.22. Reflective surfaces that have a calming effect



Figure 3.23. Flags for the children to hang in memory

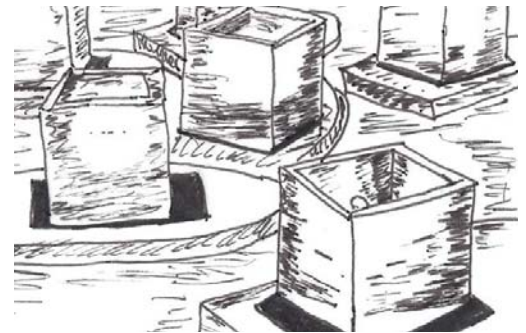


Figure 3.24. Floating candle boats in memory



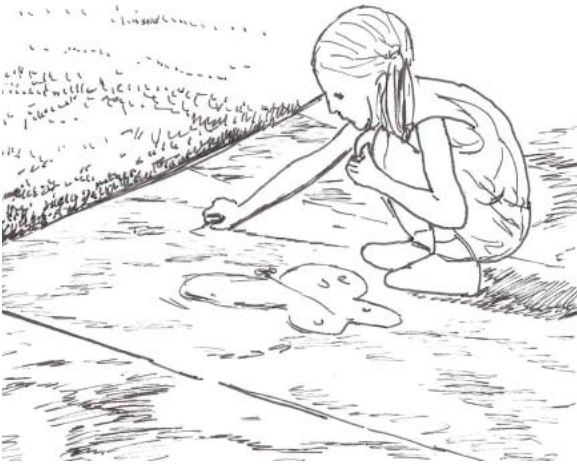


Figure 3.25. Chalk to display feelings



Figure 3.26. Gardens for planting and a connection to nature

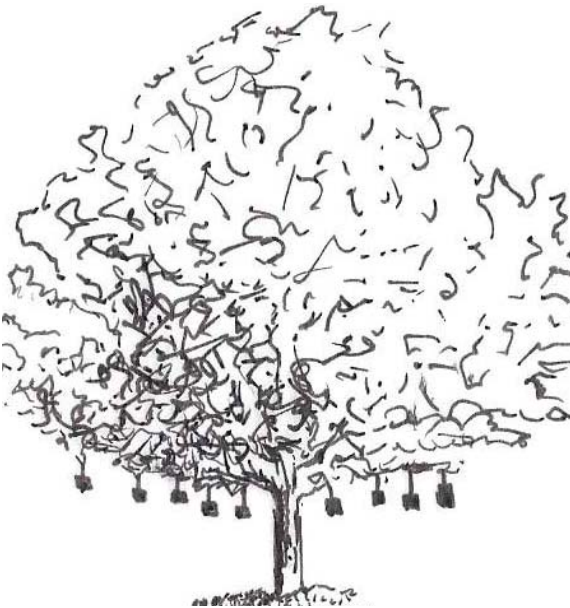


Figure 3.27. Trees to leave notes or wishes

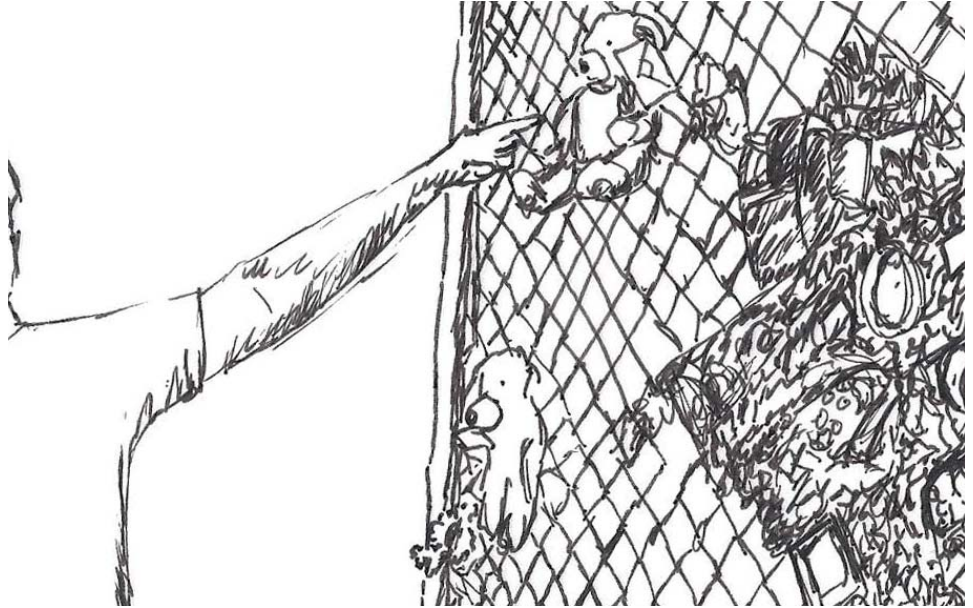


Figure 3.28. Places to leave objects in remembrance



# 4

## Implementation

## Site Selection

The aim was to select three very different schools with a range of characteristics from the eight elementary schools in Manhattan, Kansas and to design a grief landscape for each using the proposed guidelines and palette of design elements. Using site inventory and analysis, GIS data gathered from Riley County's GIS data sources, and statistics from the Kansas Department of Education, Marlatt Elementary, Northview Elementary, and Theodore Roosevelt Elementary were then selected for designs.

The determining factors for site selection were: the percentage of students that are economically disadvantaged, the school population, the size of the school site, the ratio of students to teachers, the ethnicity of the students, and the amount of students who are able to walk to school.

The percentage of students that are economically disadvantaged was used as a proxy for how much access the children could have to external grief

counseling. The number of students who attend the school indicates how many students will have access to the site on weekdays. The size of the school site will influence the size of the grief landscape. The ratio of the students to teachers relates to how much individual support the school can provide for the student. The ethnicity of the students was considered because different cultures handle grief differently. The ability of the students to walk to school affects the students' access to the site without a vehicle, when school is not in session. Having three different schools enables a variety of factors to be represented in the standards for designing grief landscapes for children.

Figure 4.1. Percent of Minority in Manhattan, KS Elementary Schools (Thomas, 2012).

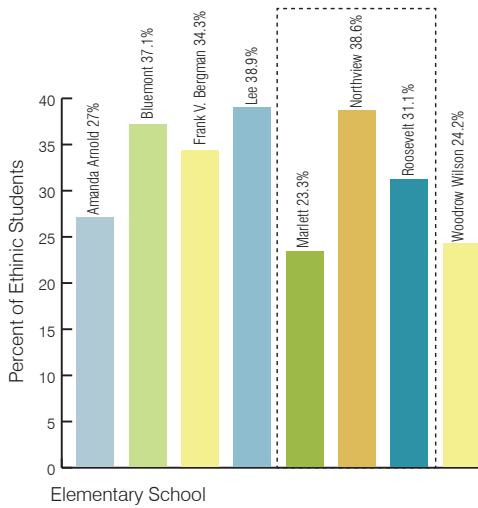


Figure 4.2. Ratio of Students to Teachers in Manhattan, KS Elementary Schools (Thomas, 2012).

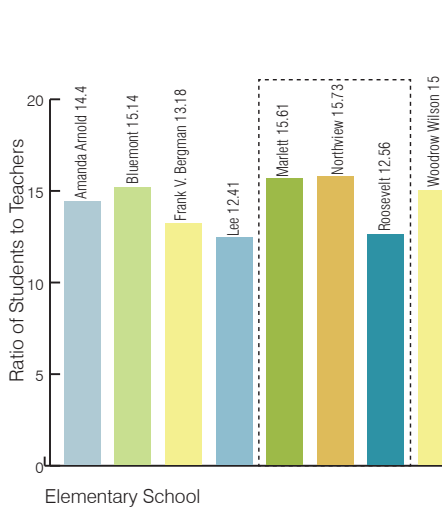


Figure 4.3. Manhattan, KS Elementary School Sites at 1"=500' (Thomas, 2012).

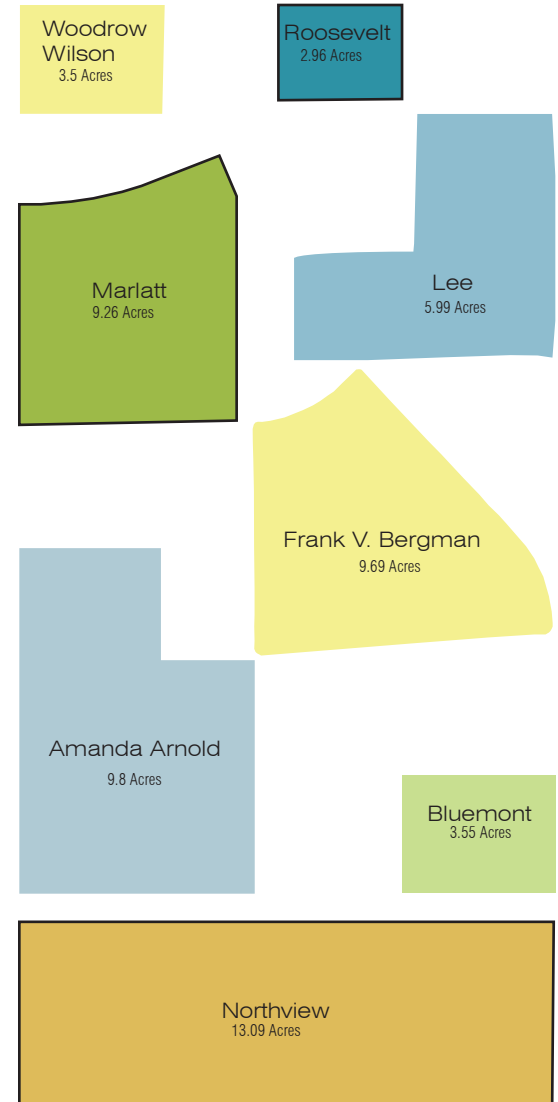


Figure 4.4. School Population in Manhattan, KS Elementary Schools (Thomas, 2012).

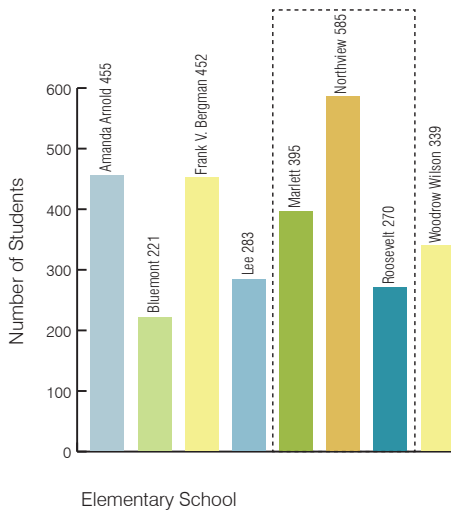
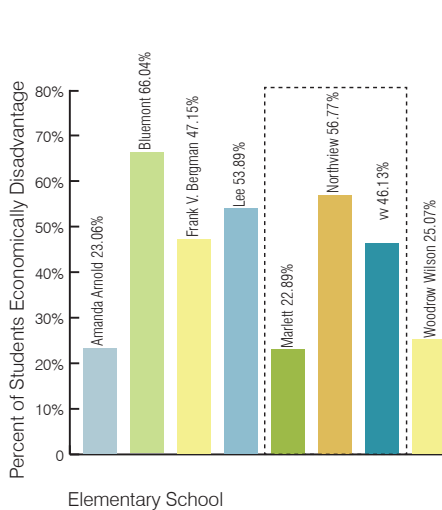


Figure 4.5. Percent of Economically Disadvantaged Students in Manhattan, KS Elementary Schools (Thomas, 2012).





Marlatt was selected because it has a low number of economically disadvantaged students, a medium site size, a medium number of students in attendance, a high ratio of students-to-teachers, a low number of minority students, and it is not easily accessible for students who are walking. Northview was chosen because it has a high number of economically disadvantaged students, a large site size, the highest number of students in attendance, the highest ratio of students-to-teachers, a high amount of minority

students, and can easily be accessed by the students who are walking. Theodore Roosevelt was selected because it has an average amount of economically disadvantaged students, the smallest site size, the lowest number of students in attendance, a low student-to-teacher ratio, a medium amount of minority students, and it cannot be easily accessed by students who are walking.

A site analysis was conducted on the three sites to determine the best location for each grieving landscape and the type of design elements that are best suited for the school.

	Amanda Arnold	Bluemont	Frank V. Bergman	Lee	Marlatt	Northview	Roosevelt	Woodrow Wilson
Economically Disadvantaged Students	23.06%	66.04%	47.15%	53.89%	22.89%	56.77%	46.13%	25.07%
Site Size	9.8 Acres	3.55 Acres	9.69 Acres	5.99 Acres	9.26 Acres	13.09 Acres	2.96 Acres	3.5 Acres
Number of Students	455	221	452	283	395	585	270	339
Ratio Students to Teachers	14.4	15.14	13.18	12.41	15.61	15.73	12.56	15
Minority Students	27%	37.10%	34.30%	38.90%	23.30%	38.60%	31.10%	24.20%
Walkability	High	Medium	Low	Low	Low	High	Medium	Low

Table 4.1. Site Selection Statistics (Thomas, 2012).

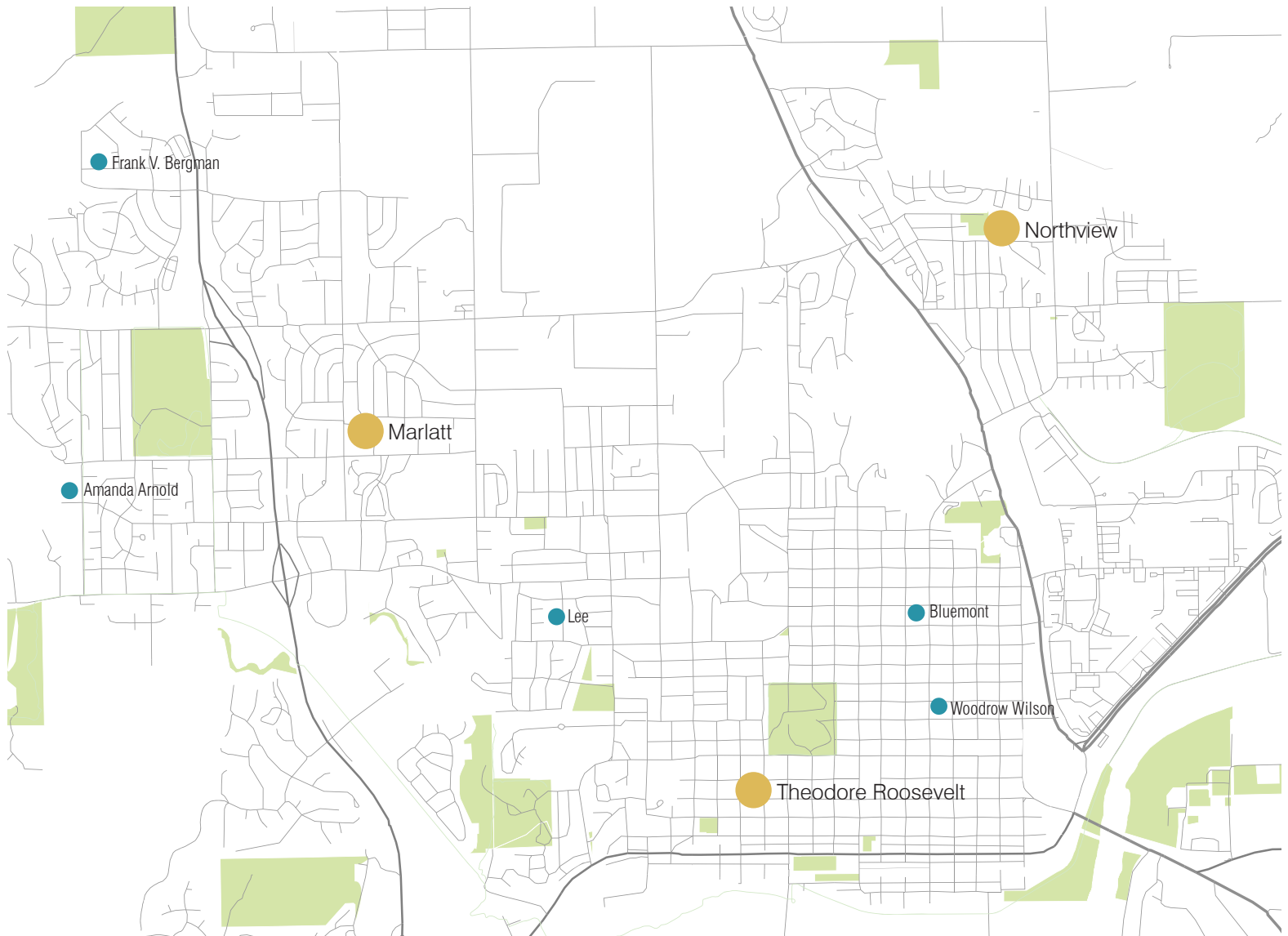


Figure 4.6. Location of Selected Elementary Schools (Thomas, 2012).

# Marlatt Elementary



Figure 4.7. Context Map. (Thomas, 2012).

The site was selected by looking at existing site conditions and determining available and under developed space on the site. Of the three selected schools, the space is the smallest with the highest enclosure. The site is also the most separate from other spaces such as the playground and recreational fields. However, it is next to a main entrance to the school.



- Single Family Residential
- Planned Unit Development
- Multiple Family Residential

Figure 4.8 Marlatt Surrounding Context (Thomas, 2013).



Figure 4.9 Marlatt Site Conditions. (Thomas, 2013).



Figure 4.10. View a. Existing playground.



Figure 4.11. View b. Blacktop.



Figure 4.12. View c. Basketball Courts.



Figure 4.13. View d. South Entrance.



Figure 4.14. View g. Site chosen for grieving landscape.



Figure 4.15. View e. Future Development.



Figure 4.16. View f. Recreational Field.



Figure 4.17. Marlatt Elementary Site Zones (Thomas, 2013).

The high enclosure of Marlatt's school building creates a quiet zone for the entire site.



## Northview Elementary



Figure 4.18. Context Map (Thomas, 2012).

The site was selected by looking at existing site conditions and determining available and under developed space on the site. Of the three selected schools, the space is the largest. It is adjacent to a playground, open field, and neighborhood trail.



Single Family Residential Multiple Family Residential  
Planned Unit Development Park

Figure 4.19. Northview Surrounding Context. (Thomas, 2013).



Scale: 1"=180'



Site Entrance  
3' Contours  
Site Boundary

Figure 4.20. Northview Elementary Site (Thomas, 2013).



Figure 4.21. View a. Picnic area.



Figure 4.22. View b. South playground.



Figure 4.23. View c. Learning landscape.



Figure 4.24. View d. Blacktop playground.



Figure A.25. View f. Site chosen for grieving landscape.



Figure 4.26. View e. Recreational field.



Figure 4.27. View g. Swing set.

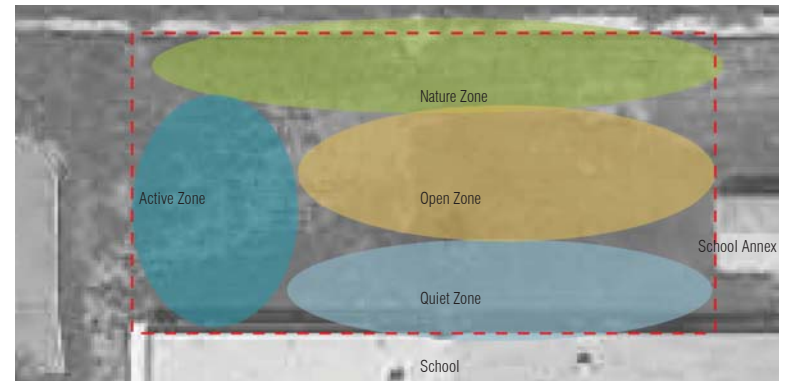


Figure 4.28 Northview Elementary Site Zones (Thomas, 2013).

The site analysis indicated the best locations for each element in the stages of grief. Northview's adjacency to the neighborhood trail suggest a nature zone. The active and loud playground nearby lends itself to the active zone. The buildings and small enclosure on the south offers an opportunity to create a quiet zone. The open zone is adjacent to the large recreational field.

# Theodore Roosevelt Elementary

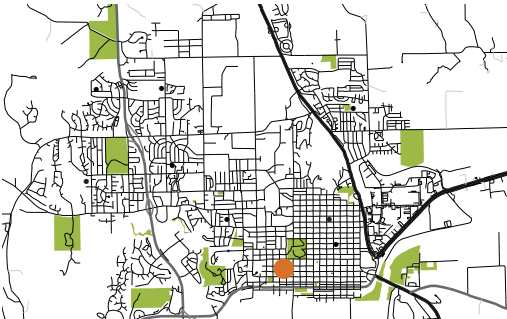


Figure 4.29. Context Map. (Thomas, 2013).

Theodore Roosevelt’s site was selected by looking at existing site conditions and determining available and under developed space on the site. The space is adjacent to Pierre St, and 14th St. and a large open field. The site has a southern exposure and receives more sunlight then the other two sites.



- Single Family Residential
- Multiple Family Residential
- Restricted Business
- Park

Figure 4.30. Theodore Roosevelt Surrounding Context. (Thomas, 2013).

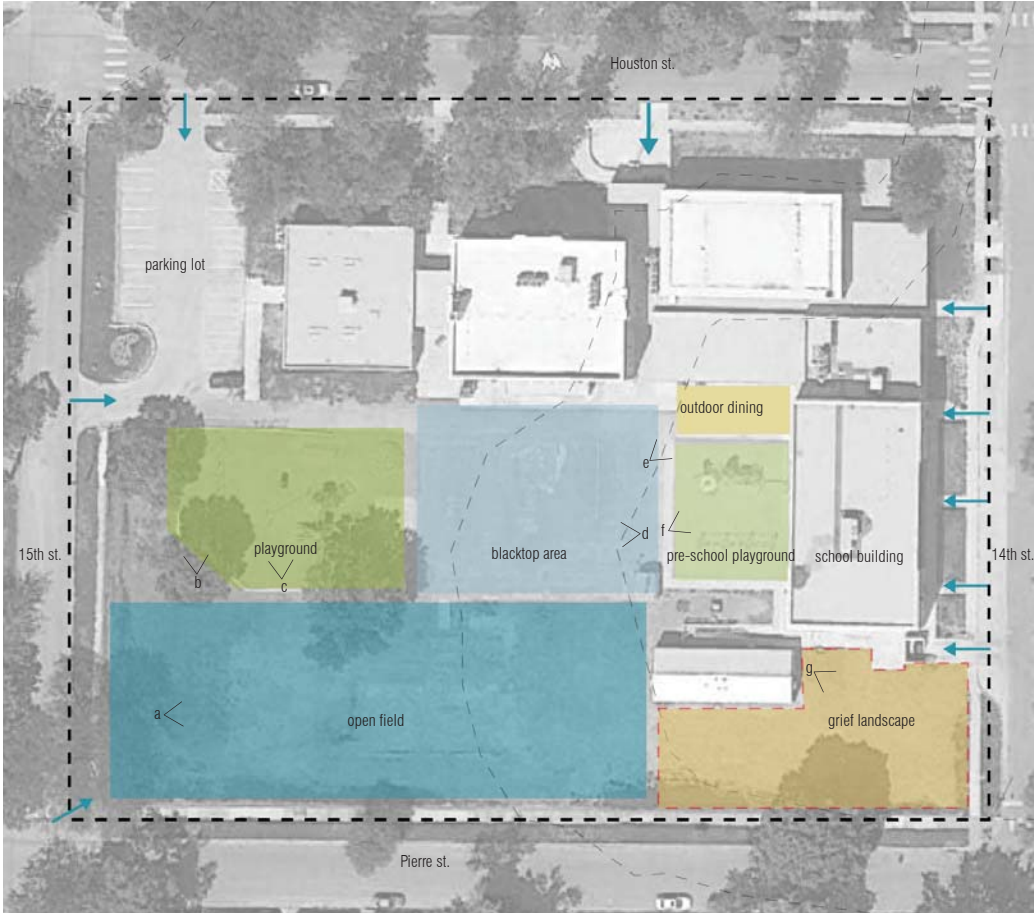


Figure 4.31. Theodore Roosevelt Elementary Site. (Thomas, 2013).

- Scale: 1"=100'
- 0 25' 50' 75' 100'
- N
- Site Entrance
- 3' Contours
- Site Boundary





Figure 4.32. View a. Recreational field.



Figure 4.33. View b. Swing set.



Figure 4.34. View c. Playground.



Figure 4.35. View d. Blacktop playground.



Figure 4.36. View g. Site chosen for grieving landscape.



Figure 4.37. View e. Outdoor dining area.



Figure 4.38. View f. Pre-school playground.

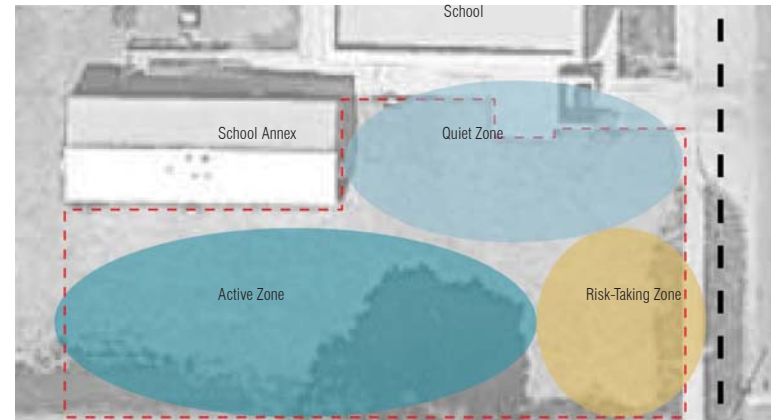


Figure 4.39. Theodore Roosevelt Elementary Site Zones (Thomas, 2013).

The site analysis determined the best locations for each design element. The quiet zone for Theodore Roosevelt is adjacent to the school building, while the risk-taking zone is adjacent to the roads which create a feeling of danger. The active zone is next to the recreational field where the children currently play.

## Marlatt Elementary Grieving Landscape

Marlatt Elementary's grieving landscape is the smallest of the three designs. It is bounded by the building on three sides and a large staircase at one end. To create a sense of intrigue when walking up the staircase towards the site, vines hang over the wall. Past the wall the site is partially blocked from view by the grassy mound. As students turn into the site the pathway is framed by the sea of poles and the mound. From there, the children are pulled in towards the class flags that frame the entrance to the building.

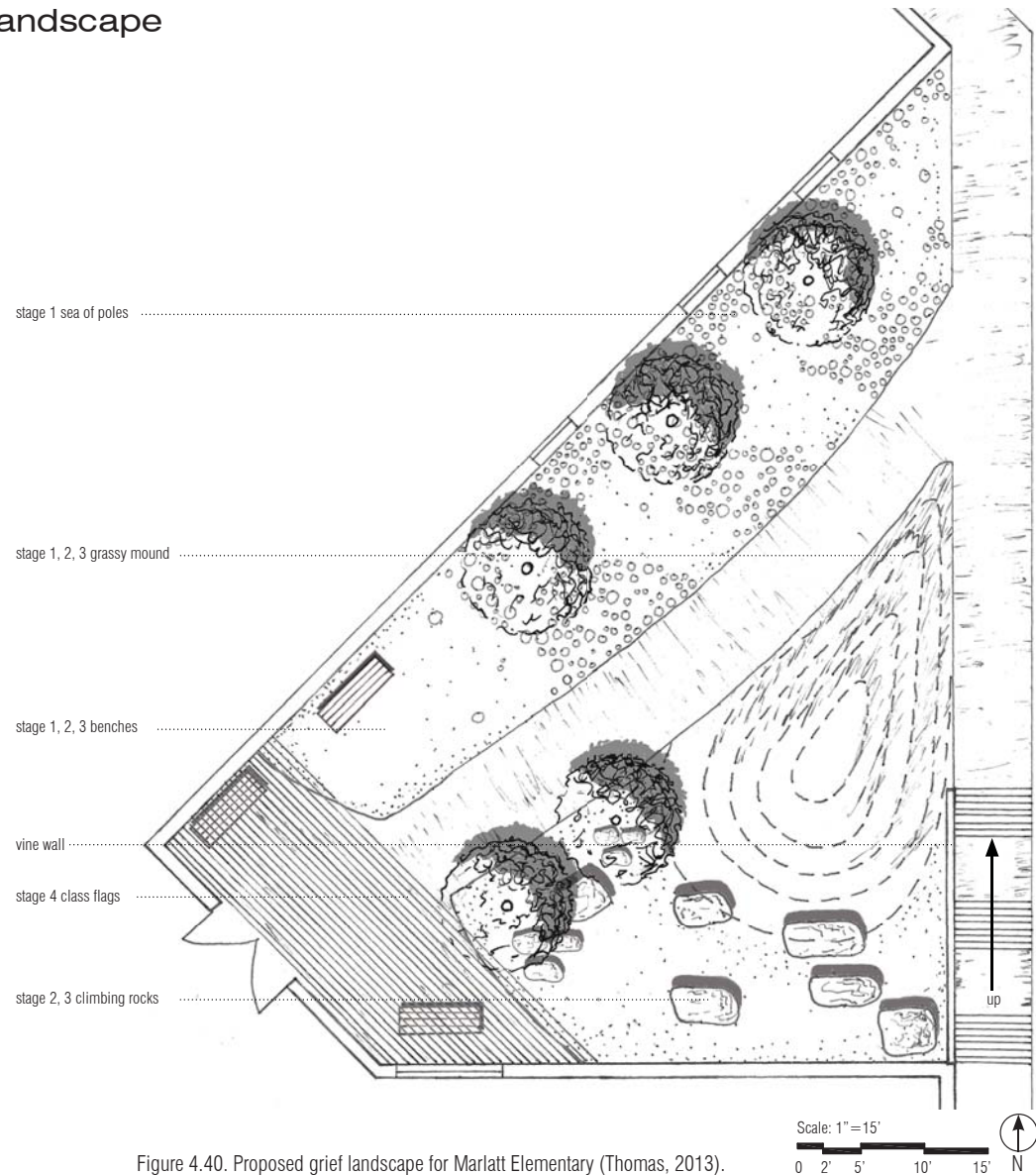


Figure 4.40. Proposed grief landscape for Marlatt Elementary (Thomas, 2013).

## Site Elements

### Sea of Poles for Stage 1

The sea of poles is composed of hundreds of molybdenum-filled nylon rods ranging from two inches to six inches in diameter. The hollow poles contain a light at the top and are highly flexible, allowing them to blow in the wind. They are meant to emulate the feelings of tall prairie grasses. At night the lighting inside the poles will make it appear as if they are filled with fireflies. Since children at stage one may desire to hide away and be alone, the spaces in between the poles provide shelter and enclosure, while still providing a place to play.

### Grassy Mound for Stages 1,2,3

The grassy mound rises five feet and has a southern aspect to catch as much sunlight as possible. Children can run up and down the mound or perch upon it to watch others.

### Benches for Stages 1,2,3

The large benches on the site provide children with a place to sit and discuss when they are ready to talk.

### Climbing Rocks for Stage 3

The rocks provide children with an opportunity for risk taking and acting out. The rocks are placed in sand to provide a safe landing if the children accidentally fall off.



Figure 4.41. Marlatt Elementary grieving landscape aerial (Thomas, 2013).

### Class Flags for Stages 4

To provide children with the chance to commemorate and make the space their own, each class will be given a string to hang flags on. Then each student will be able to paint their own flag and hang it up on their class string. This will frame the entrance to the school and add color to the site. Children will be able to replace the flags and change them out.





Figure 4.42. The sea of poles that children can walk through and play in (Thomas, 2013).

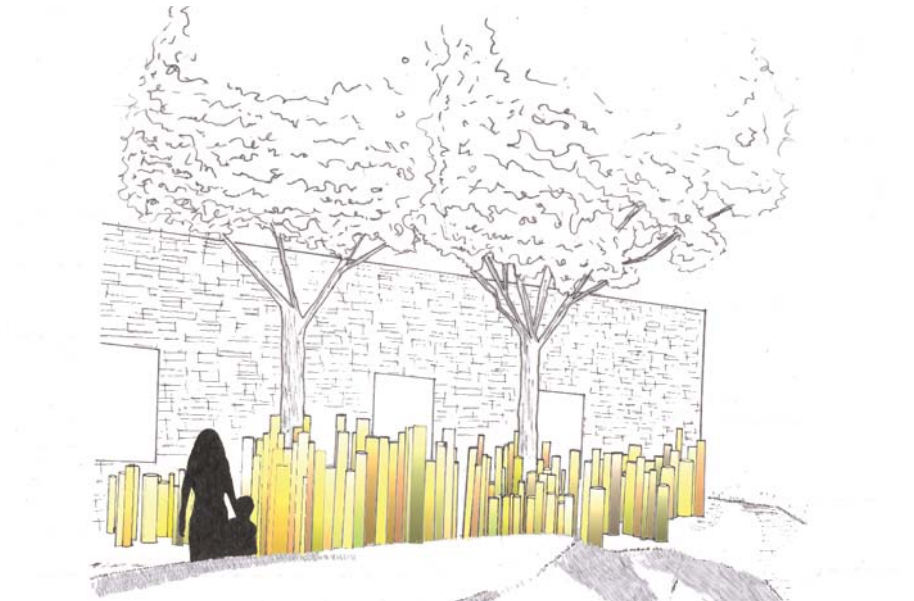


Figure 4.43. Grassy mound looking to the sea of poles (Thomas, 2013).



Figure 4.44. Class flags that the children can decorate and hang (Thomas, 2013).

# Northview Elementary Grieving Landscape

Northview Elementary's grieving landscape was designed to emulate a journey. Entering from the southeast, the child would walk through a prairie that contains tall grasses that get higher as the child walks into them. The prairie is meant to help children at stage one. From there the child will walk past a lowered sand pit and past climbing rocks that are designed to help children at stages two and three. The climbing rocks move into a mound and the pathway curves around it bringing the student to a tree allée and past the meadow. The tree allée takes the student to the wish tree, which is the end point to the journey. However, the tall grasses move into the stage four space and a smaller pathway leads back to the beginning, this represents the idea that one does not grieve in a linear process, but instead jumps back and forth through stages of grieving.

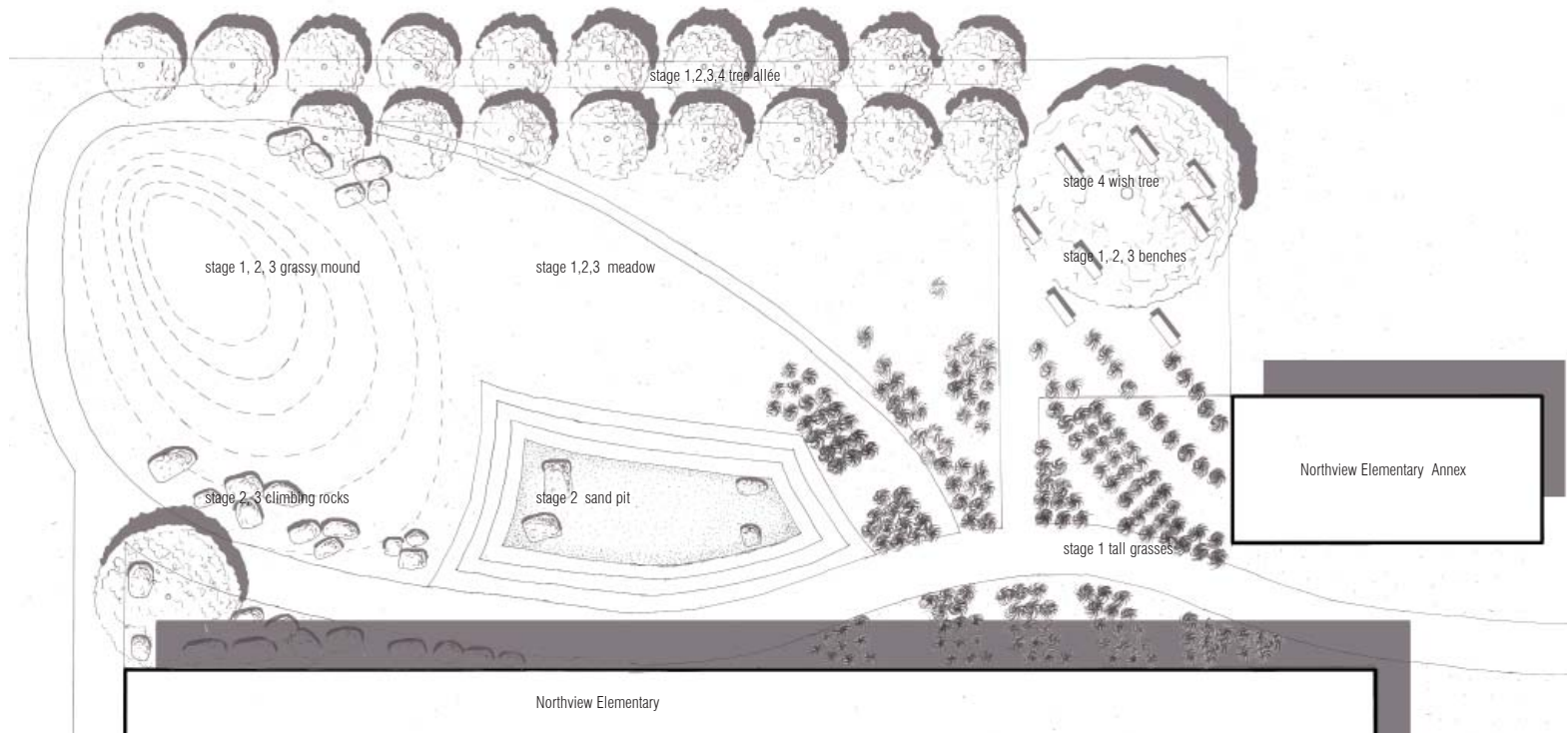


Figure 4.45. Proposed grief landscape for Northview Elementary (Thomas, 2013).

## Site Elements

### Prairie for Stage 1

The prairie is composed of tall grasses that get taller as the student walks past them. This provides the students who desire to be alone a place to hide.

### Sand Pit for Stage 2

The low sand pit is surrounded by limestone steps that the children can rest on. The sand provides children with the chance to create and destroy. It is a place for free play.

### Climbing Rocks for Stage 3

The rocks provide children with an opportunity for risk taking and acting out. The rocks are placed in the sand pit, in the grass, and on the sides of the mound.

### The Meadow for Stages 1,2,3

The meadow is a large, open, grassy field where children can run and play or sit and talk in the grass.

### Grassy Mound for Stages 1,2,3

The grassy mound rises six feet and has a southern aspect to catch as much sunlight as possible. Children can run up and down, or roll down the sides of the mound or perch upon it to watch others.

### Benches for Stages 1,2,3

The large benches on the site provide children with a place to sit and discuss, when they are ready to talk.

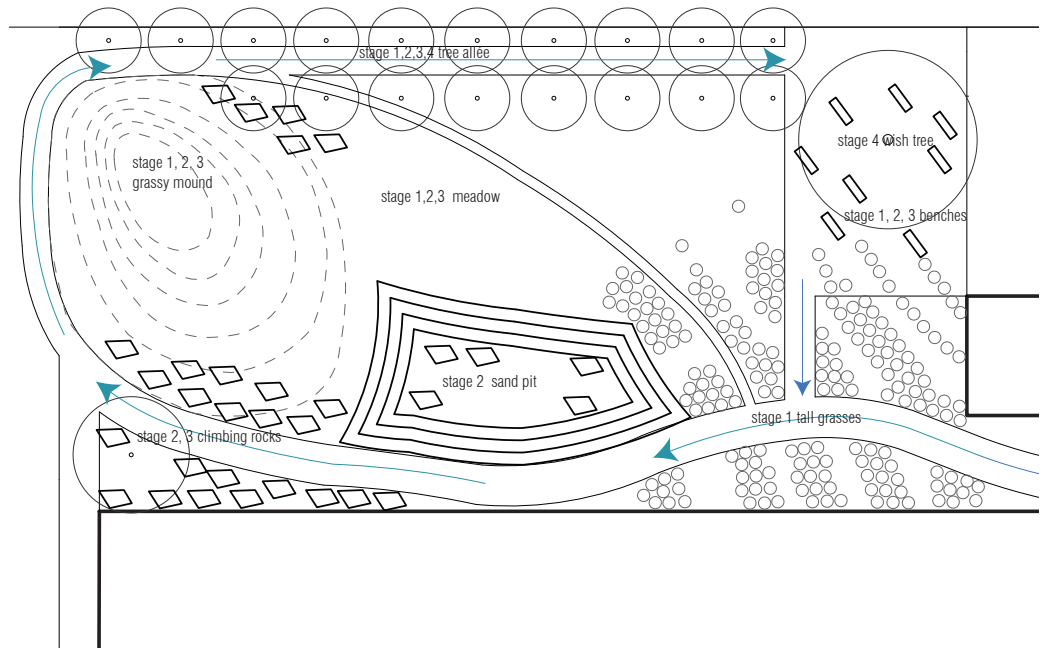


Figure 4.46 Journey Diagram (Thomas, 2013).

### Tree Allée for Stages 1,2,3,4

The tree allée lines the pathway to the wish tree creating a space of high enclosure. The trees that compose the allée have bird feeders, bird houses, and wind chimes in them. This gives students a connection with nature and stimulates their senses on their journey.

### Wish Tree for Stage 4

The wish tree is where students can tie notes or wishes onto the branches. It lets children commemorate and remember. It also provides children with the opportunity of having the feeling that they are being listened to in manner that they will not be judge or ignored.





Figure 4.47. The prairie where children can hide (Thomas, 2013).



Figure 4.48. Tree allée that provides children with a connection to nature (Thomas, 2013).



Figure 4.49. Children can tie wishes onto the wish tree (Thomas, 2013).

## Theodore Roosevelt Elementary Grieving Landscape

Theodore Roosevelt Elementary's grieving landscape was designed to link the design elements together in poetic flowing forms. Since grief is not a linear process, the site brings the stages together to replicate this idea. The regulating lines that create the sea poles flow out to the rest of the site demanded by paving patterns.

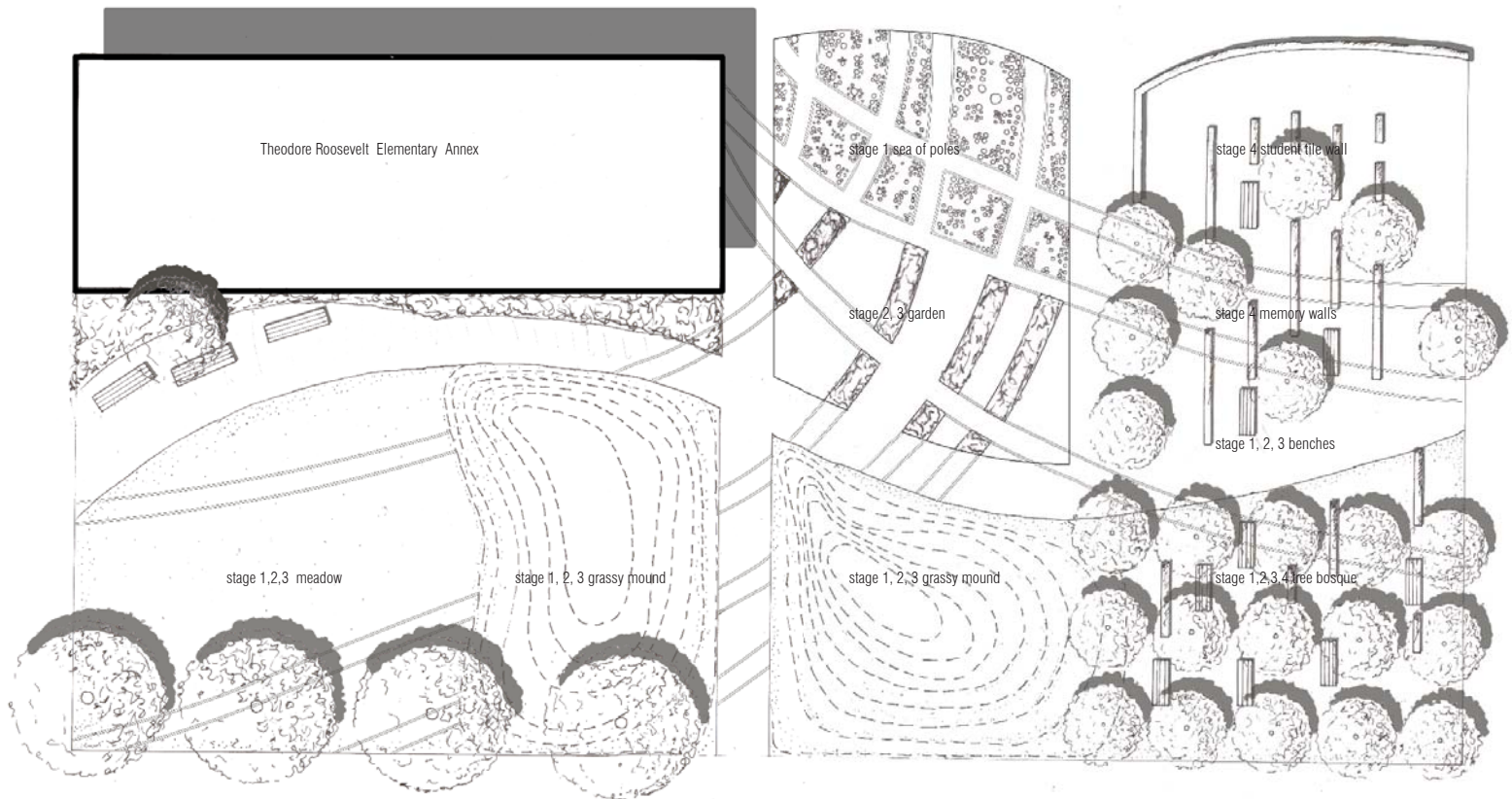


Figure 4.50. Proposed grief landscape for Theodore Roosevelt Elementary (Thomas, 2013).



## Site Elements

### Sea of Poles for Stage 1

The sea of poles is composed of hundreds of molybdenum-filled nylon rods ranging from two inches to six inches in diameter. The hollow poles contain a light at the top and are highly flexible, allowing them to blow in the wind. They are meant to emulate the feelings of tall prairie grasses. At nighttime the lighting effect will make it appear that the poles are filled with fireflies. Since children at stage one may desire to hide away and be alone, the spaces in between the poles provide shelter and enclosure, while still providing a place to play.

### Garden for Stages 1,2,3,4

Planting beds range in size and provide students with the opportunity to connect and tend to nature. The beds can help children feel in control, when they may feel that they have no control over anything. The middle garden beds are handicap accessible.

### The Meadow for Stages 1,2,3

The meadow is a large, open, grassy field where children can run and play or sit and talk in the grass.

### Grassy Mounds for Stages 1,2,3

The grassy mounds rise six feet to eight feet in height. They both have southern aspects to catch as much sunlight as possible. Children can run up and down the mounds. They also can roll down the sides or perch on top and watch people below.

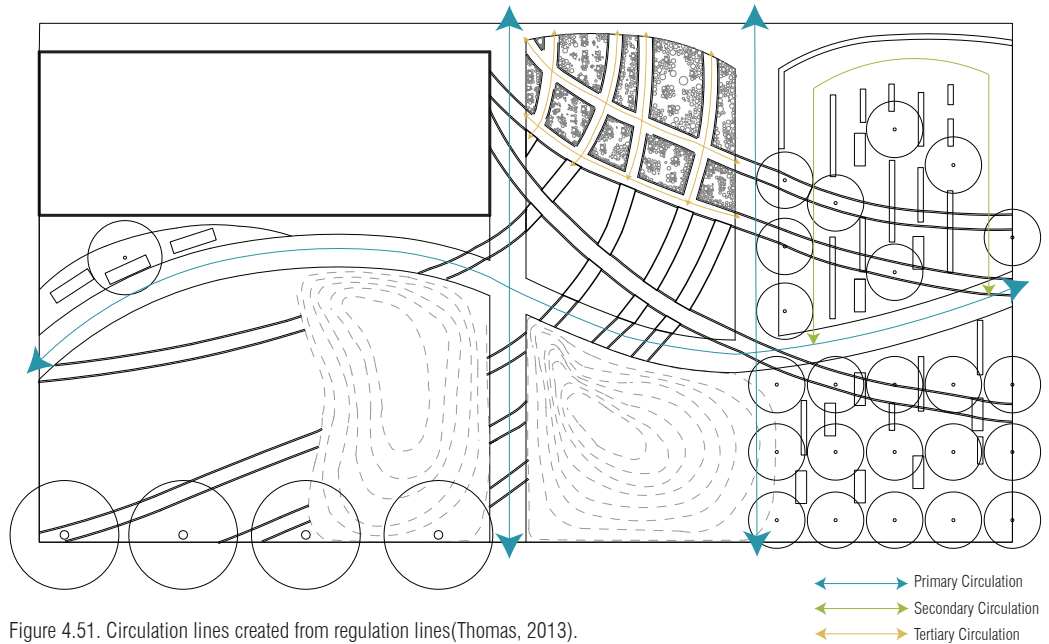


Figure 4.51. Circulation lines created from regulation lines(Thomas, 2013).

### Tree Bosque for Stages 1,2,3,4

The tree bosque is a grouping of fifteen trees with benches and memory walls through out it. The area provides a space of high enclosure and a strong connection to nature.

### Student Tile Wall for Stage 4

The student tile wall surrounds the memory walls and is composed of tiles crafted by the students. Each student creates their own tile and adds it to the wall. At the end of the school year the student can take the tile home with them. This enables the children to make the space their own.

### Memory Walls Stage 4

The memory walls are a series of five foot, concrete walls that vary in length. Some walls are chalking walls where the students can draw upon them. Others have niches in them for students to leave objects at the site, while some are magnetic, allowing students to hang pictures or drawings upon them. The rest of the walls are green walls that bring some nature to the space. This gives students the chance to commemorate moments in their lives.

### Benches for Stages 1,2,3

The large benches on the site provide children with a place to sit and discuss when they are ready to talk.

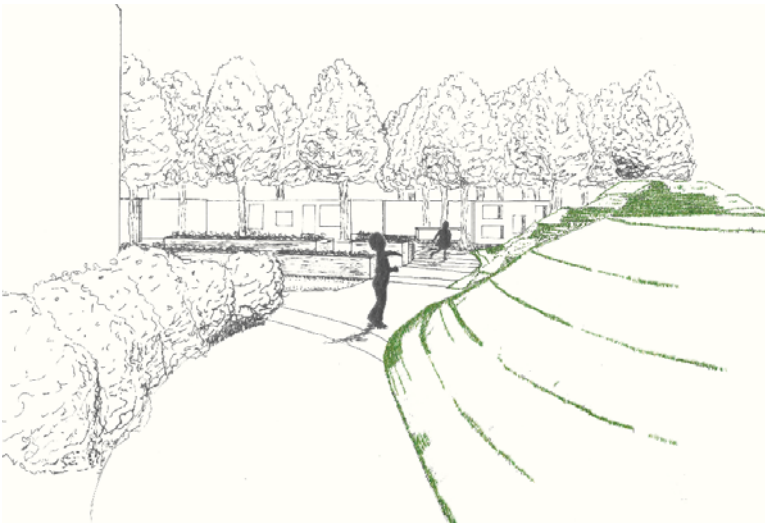


Figure 4.52 View of the grassy mound looking to the memory walls (Thomas, 2013).



Figure 4.53. Children playing in the sea of poles (Thomas, 2013).

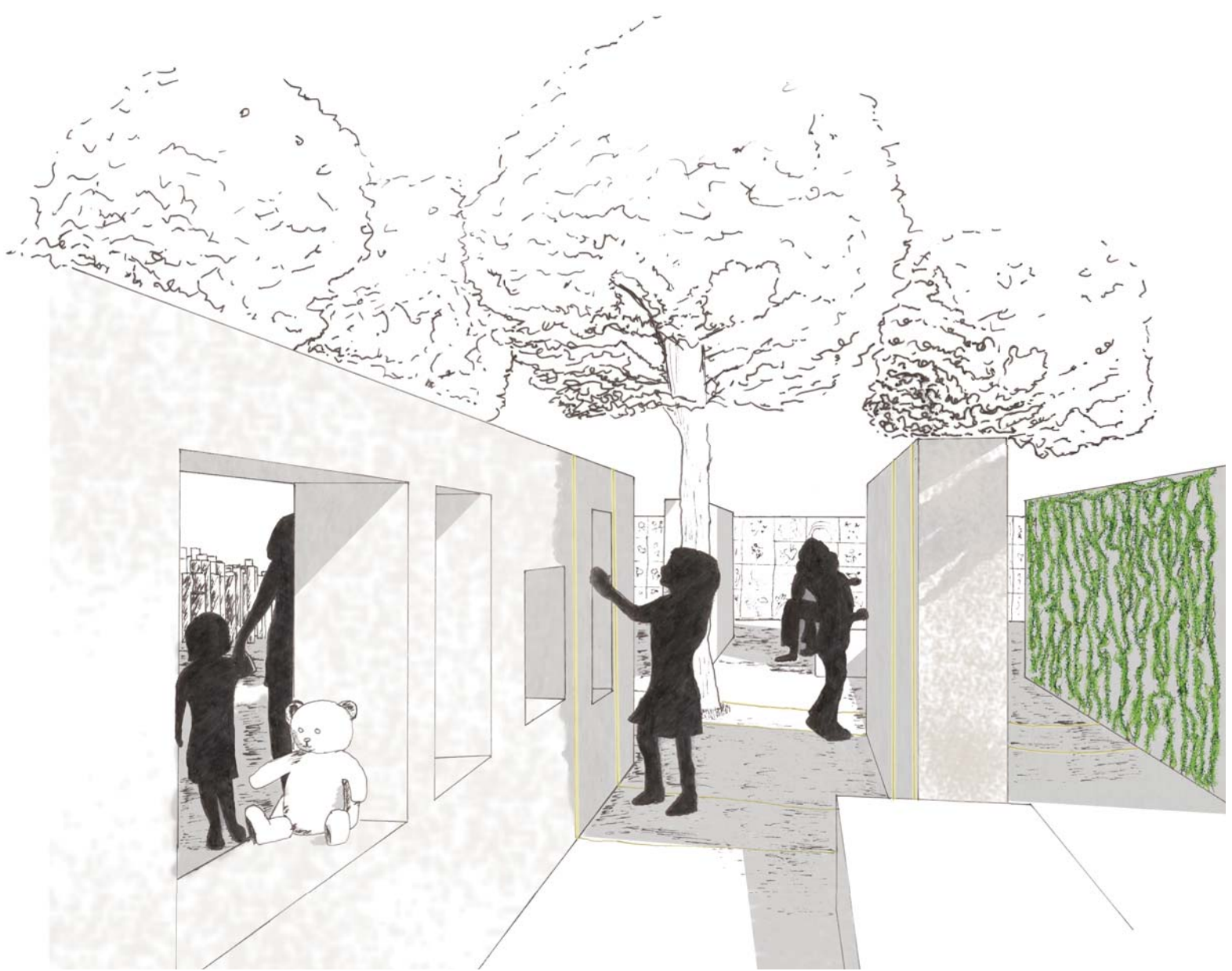


Figure 4.54. Children leaving objects on the memory walls (Thomas, 2013).





5

Conclusions

## Challenges

The maturity level in children affects the way they grieve. How a child grieves varies from early childhood to middle childhood. For children around five years or younger the concept of death is very similar to a prolonged sleep or leaving for an extend time; at this time the children hold the idea that the lost one will return. For children around ages six to nine years old, death is accepted, but they do not understand its power over them. To children at this stage death happens to others, but not to them. Past the age of nine, children understand that death is a process of life and it will happen to them (Berkan & Deaton, 1995). Since the designs are located at an elementary school the children range from five to twelve years old. The wide range of maturity will affect how the site is designed to encompass all the children.

Maturity is not the only factor that determines how a child mourns loss, whether from death or other causes. The way a grieving child is able to adjust and accept the reality of their loss is determined by many

factors, such as their relationship to the deceased, their culture, the cause of death, how close their family is, the familiarity of their community, their own prior loss experiences, the social support they receive, and their own personality (Murthy & Smith, 2005). These factors can limit the success of any grieving landscape, because the site can provide the environment to heal, but it cannot ensure that the child will heal in the space.

## Conclusions

Planning grieving landscapes in elementary schools offers the opportunity to help children with their grief. Worden and Kubler-Ross' stages of grief help describe the emotions children will experience during their grieving process. Installing landscapes for grieving at schools can help children heal their emotional wounds. Grieving sites may not help every child heal, but they could provide the setting for the healing to take place, regardless of the size of the site. Providing this setting for children can possibly help them avoid emotional anguish and future problems that can be caused by extended grief.

Elementary schools are the best place to test the grieving sites because children have the opportunity to visit them daily and because schools often have therapists. Elementary schools can also be used by the entire community, which give more people a chance to visit the landscape. Providing children with the chance to visit a landscape that addresses their feelings and emotions can help them on their healing

pathway. Beyond being a place for a child to receive help with grief, the site can be enjoyed by all children at the school as a different type of playscape that introduces a new outdoor setting for the child.



# Works Cited

- Baker, J. E., Sedney, M.A., & Gross, E. (1992). Psychological task for bereaved children. *American Journal of Orthopsychiatry*. 62, 105-116.
- Barnes, M., Marcus, C.C., (1999). *Healing gardens: Therapeutic benefits and design recommendations*. Canada: John Wiley & Sons Inc.
- Berkan, W., Deaton, R. (1995). *Planning and managing death issues in the schools: A handbook*. Westport, CT: Greenwood Press.
- Berrizbeitia, A., & Michael Van Valkenburgh Associates. (2009). *Michael Van Valkenburgh Associates: Reconstructing urban landscapes*. New Haven, Conn. ; London: Yale University Press.
- Black, D. (1996). Childhood bereavement. *British Medical Journal*. 312(14), 96-8.
- Cole, F., Watkins, N., Weidemann, S. (2010). The war memorial as healing environment: The psychological effect of the Vietnam Veterans Memorial on Vietnam War combat veteran's posttraumatic stress disorder symptoms." *Environment and Behavior*. 42(3), 351-375.
- Corr, C. A. (2002). Helping adolescents cope with long-term illness and death. *The Prevention Research*. 9(2), 6-8.
- Daubert, J.R., Rother, E.A. (1981). *Horticultural therapy at a psychiatric hospital*. Chicago, IL: Chicago Horticultural Society, Publisher.
- Doss, E. (2004). *The emotional life of contemporary public memorials: Towards a theory of temporary memorials*. Amsterdam: Amsterdam University Press.
- Doss, E. (2010). *Memorial mania: public feeling in America*. Chicago, IL: University of Chicago Press.
- Dossey, B. M., Keegan, L., & Guzzetta, C. E. (2000). *Holistic nursing: A handbook for practice*. (3rd ed.). Gaithersburg, MD: Aspen.
- Dickinson, G. (2011). Shared grief is good grief. *Phi Kappa Phi Forum*. 91(3), 10-11. Retrieved from November 28, 2012, from: <http://web.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=3d3516da-aac7-43c7-8a4c-af81aac5a4a0%40sessionmgr111&vid=2&hid=126>
- Foot, K. (1997). *Shadowed ground: America's landscapes of violence and tragedy*. Austin TX: University of Texas Press.
- Freeman, E.M. (1984). Loss and grief in children: Implications for school social workers. *Social Work in Education*. 6(4), 241-258.
- Glider, S. (2001, October). Spontaneous shrines: A modern response to tragedy and disaster. *New Directions in Folklore*. 5 (2), 1. Retrieved from November 27, 2012, from [https://scholarworks.iu.edu/dspace/bitstream/handle/2022/7196/NDiF\\_issue\\_5\\_article\\_2.pdf?sequence=1](https://scholarworks.iu.edu/dspace/bitstream/handle/2022/7196/NDiF_issue_5_article_2.pdf?sequence=1).
- Goldman, L. (1997). *Children grieve too: Lessons in how to support children through a normal, healthy grief process*. In G.E. Dickinson & M. R. Leming (Eds.), *Dying, Death and bereavement*(2002/2003). Guilford, CT: McGraw-Hill/Dushkin.
- Goldman, L. (2004). Counseling with children in contemporary society. *Journal of Mental Health Counseling*. 26(2), 168-187.
- Hill, K. (2011). Teardrop Park. *Landscape Architecture Foundation*. Retrieved December 3, 2012, from: <http://lafoundation.org/research/landscape-performance-series/case-studies/case-study/391/>
- Hines, S. (2007). Abstract realism. *Landscape Architecture*. 97(2), 94-103. Retrieved November 27, 2012, from: <http://www.asla.org/lamag/lam07/february/feature2.html>
- Hurd, M.K. (2000). Forming the gates of time. *Hanley-Wood, LLC*. Accessed November 27, 2012, from: [http://www.concreteconstruction.net/images/Forming%20the%20Gates%20of%20Time\\_tcm45-589658.pdf](http://www.concreteconstruction.net/images/Forming%20the%20Gates%20of%20Time_tcm45-589658.pdf)
- Jipson, A. *Roadside memorials in a community: A scientific study of roadside memorials*. Retrieved from November 28, 2012, from: [http://graphics8.nytimes.com/images/blogs/roomfordebate/Roadside\\_Memorial.pdf](http://graphics8.nytimes.com/images/blogs/roomfordebate/Roadside_Memorial.pdf)
- Kulka, R. C., Schlenger, W. E., Fairbank, J. A., Jordan, B. K., Hough, R. L., Marmar, C. R., et al. (1991). Assessment of posttraumatic stress disorder in the community: Prospects and pitfalls from recent studies of Vietnam veterans. *Psychological Assessment*. 3, 547-560.

- Kuebler-Ross, E. (1969). *On death and dying*. New York, NY: Touchstone Rockefeller Center.
- Lifton, R. J. (1973). *Home from the war*. New York: Simon & Schuster.
- Linenthal, E.T. (2003). *The unfinished bombing: Oklahoma City in American memory*. Oxford University Press, USA.
- Louv, R. (2008). *Last child in the woods: Saving our children from nature deficit disorder*. Chapel Hill, NC: Algonquin Books.
- Lynch, Kevin. (1977). *Growing up in cities*. Massachusetts. United Nations Educational, Scientific, and Cultural Organization.
- Marcus, C., Whitehouse, S. (2000). Kids like to do stuff. *Landscape Architecture*. 90(5), 133-6.
- McBride, M. (2004). *The fire that will not die*. Palm Springs: ETC Publications.
- Mcharg, I.L. (1992). *Design with nature*. Garden City, NY: John Wiley & Sons Inc.
- Michael Van Valkenburgh Associates Inc. (2006). *Teardrop Park*. Retrieved November 27, 2012, from: <http://www.mvva-inc.com/project.php?id=2>
- Moore, B. (1989). *Growing with gardening: A twelve month guide for therapy, recreation, and education*. Chapel Hill: The University of North Carolina Press.
- Mullins, P. (2012). *Spontaneous mourning and material culture: The archaeology of roadside memorials*. Archaeology and Material Culture. Retrieved November 28, 2012, from: <http://paulmullins.wordpress.com/2012/07/24/spontaneous-mourning-and-material-culture-the-archaeology-of-roadside-memorials/>
- Murthy, R., Smith, L. (2005). *Grieving, sharing, and healing: A guide to for facilitating early adolescent bereavement groups*. Champaign, IL: Research Press.
- National Park Service. (2002). *Vietnam Veterans Memorial*. Retrieved January 9, 2013, from: <http://www.nps.gov/vive/index.htm>
- Oklahoma City National Memorial. (2011). *Survivor tree: Witness to tragedy, symbol of strength*. Retrieved November 27, 2012, from: [http://www.pp.okstate.edu/grounds/TreeCare/OSU\\_ST.pdf](http://www.pp.okstate.edu/grounds/TreeCare/OSU_ST.pdf)
- Oklahoma City National Memorial. (2011). *Symbolism*. Retrieved November 27, 2012 at <http://www.oklahomacitynationalmemorial.org/secondary.php?section=2&catid=30>
- Oltjenbruns, K. A. (2001). *Developmental context of childhood: Grief and re-grief phenomena*. In M. S.
- Painter, B.(2012, November). Survivors hope Oklahoma City bombing museum updates will tell story to a new generation. *NewsOK*. Retrieved December 3, 2012, from: <http://newsok.com/survivors-hope-oklahoma-city-bombing-museum-updates-will-tell-story-to-a-new-generation/article/3728100>
- Riley, M. (2003). Facilitating children's grief. *The Journal of School Nursing*. 19 (4), 212-8.
- Rowlands, M. (1999) Remembering to forget: Sublimation as sacrifice in war memorials, in A. Forty and S. Küchler (eds), *The Art of Forgetting*, Oxford:Berg
- Santino, J. (2004). "Performance commemoratives, the personal, and the public: Spontaneous shrines, emergent ritual, and the field of folklore." *Journal of American Folklore*. 177(466),363-372.
- Savage, K. (2009). *Monument wars*. Berkeley, CA: University of California Press.
- Schaefer, C. (2010). *Play therapy*. Washington, D.C.: American Psychological Association.
- Silverman, P. R. (2000). *Children as part of the family drama: An integrated view of childhood bereavement*. In R. Malkinson, S.S. Rubin & E. Witztum (eds.), *Traumatic and non-traumatic loss and bereavement: clinical theory and practice* (67-90). Madison, CT: Psychological Press.
- Shackel, P. (2001). *Myth, memory, and the making of American landscape*. Gainesville, FL: University Press of Florida.
- Smith, P. (1998). American history X. In Merck, M. (Eds.) *America First: Naming the Nation in United States Film*. (224-248). Retrieved December 3, 2012, from: <http://osf1.gmu.edu/~psmith5/AmHistX.pdf>



- Streep, P. (2003). *Spiritual gardening: Creating sacred space outdoors*. Makawao, Maui, HI: Inner Ocean Publishing, Inc.
- Strobe, R. O. Hansson, W. Stroebe, & Schut (eds.), *Handbook of bereavement research: Consequences, coping, and care* (196-7). Washington, DC: American Psychological Association.
- Taylor, F.E. (1976). *Plants as therapy*. New York: Praeger Publisher.
- Ulrich, R. S. (1999). *Effects of gardens on health outcomes: Theory and research*. In C. Cooper-Marcus & M. Barnes (Eds.), *Healing Gardens: Therapeutic Benefits and Design Recommendations*. New York: John Wiley, pp. 27-86
- Ulrich, R. S. (2002). *Communicating with the healthcare community about plant benefits*. In C. Shoemaker (Ed.) *Proceedings of the Sixth International People Plant Symposium*. Chicago: Chicago Botanic Garden.
- Weinstein, N., Przybylski, A. K., & Ryan, R. M. (2009). Can nature make us more caring? Effects of immersion in nature on intrinsic aspirations and generosity. *Personality and Social Psychology Bulletin*. 35, 1315 -1329.
- White, J. M. (2001). Music as intervention. *Nursing Clinics of North America*. 36(1), 83–92.
- Wolfelt, A. (1983). *Helping children cope with grief*. Muncie, IN: Accelerated Development.
- Worden, J. W. (1996). *Children and grief: When a parent dies*. New York: Guilford Press.

## Table Citations

Table 11.1 Thomas, V. (2012). Site Selection Statics. [Table], Data Sources: <http://www.schoolmap.org/School/Amanda-Arnold-Elementary-Student/http://www.schoolmap.org/School/Bluemont-Elementary-School-Student/>, <http://www.schoolmap.org/School/Frank-V-Bergman-Elementary-Student/>, <http://www.schoolmap.org/School/Lee-Elementary-Manhattan-KS-Student/>, <http://www.schoolmap.org/School/Marlatt-Elementary-Student/>, <http://www.schoolmap.org/School/Northview-Elementary-Manhattan-KS-Student/>, <http://www.schoolmap.org/School/Theo-Roosevelt-Elementary-Student/>, <http://www.schoolmap.org/School/Woodrow-Wilson-Elementary-Manhattan-Student/>, [http://svapp15586.ksde.org/rcard/building.aspx?org\\_no=D0383&bldg\\_no=5112](http://svapp15586.ksde.org/rcard/building.aspx?org_no=D0383&bldg_no=5112), [http://svapp15586.ksde.org/rcard/building.aspx?org\\_no=D0383&bldg\\_no=5114](http://svapp15586.ksde.org/rcard/building.aspx?org_no=D0383&bldg_no=5114), [http://svapp15586.ksde.org/rcard/building.aspx?org\\_no=D0383&bldg\\_no=5113](http://svapp15586.ksde.org/rcard/building.aspx?org_no=D0383&bldg_no=5113), [http://svapp15586.ksde.org/rcard/building.aspx?org\\_no=D0383&bldg\\_no=5126](http://svapp15586.ksde.org/rcard/building.aspx?org_no=D0383&bldg_no=5126), [http://svapp15586.ksde.org/rcard/building.aspx?org\\_no=D0383&bldg\\_no=5128](http://svapp15586.ksde.org/rcard/building.aspx?org_no=D0383&bldg_no=5128), [http://svapp15586.ksde.org/rcard/building.aspx?org\\_no=D0383&bldg\\_no=5130](http://svapp15586.ksde.org/rcard/building.aspx?org_no=D0383&bldg_no=5130)

## Figure Citations

Figure 2.1. Thomas, V. (2012). *Literature Map*. [Map], Made using Adobe CS4.

Figure 2.2. Thomas, V. (2013). *Site Plan*. [Drawing], After Barnes, M. Marcus, C.C. 1999. Therapeutic Garden at the Institute for Child and Adolescent Development. *Healing Gardens: Therapeutic Benefits and Design Recommendations*. (337). Canada: John Wiley & Sons Inc.

Figure 2.3. Ward, A. Reedhilderbrand. *Children's Therapeutic Garden*. Retrieved April 24, 2013 from <http://www.reedhilderbrand.com/>

Figure 2.4. Ward, A. Reedhilderbrand. *Children's Therapeutic Garden*. Retrieved April 24, 2013 from <http://www.reedhilderbrand.com/>

Figure 2.5. Ward, A. Reedhilderbrand. *Children's Therapeutic Garden*. Retrieved April 24, 2013 from <http://www.reedhilderbrand.com/>

Figure 2.6. Ward, A. Reedhilderbrand. *Children's Therapeutic Garden*. Retrieved April 24, 2013 from <http://www.reedhilderbrand.com/>

Figure 2.7. Thomas, V. (2013). *Site Plan*. [Drawing], After Barnes, M. Marcus, C.C. 1999. Prouty Garden. *Healing Gardens: Therapeutic Benefits and Design Recommendations*. (349). Canada: John Wiley & Sons Inc.

Figure 2.8. Tranquility Knots. (Photographer). (2009). *Prouty Garden-Spring*. [Photograph], Retrieved Oct. 15, 2012 from <http://www.flickr.com/photos/tranquilityknots/3490779803/sizes/m/in/set-72157617463147869/>

Figure 2.9. Tranquility Knots. (Photographer). (2009). *Prouty Garden-Spring*. [Photograph], Retrieved Oct. 15, 2012 from <http://www.flickr.com/photos/tranquilityknots/3491594542/sizes/o/in/photostream/>

Figure 2.10. Tranquility Knots. (Photographer). (2009). *Prouty Garden-Spring*. [Photograph], Retrieved Oct. 15, 2012 from <http://www.flickr.com/photos/tranquilityknots/5125516377/sizes/m/in/set-72157617463147869/>

Figure 2.11. Thomas, V. (2013). *Site Plan*. [Drawing], After Barnes, M. Marcus, C.C. 1999. Sensory Garden at Lucas Garden School. *Healing Gardens: Therapeutic Benefits and Design Recommendations*. (360). Canada: John Wiley & Sons Inc.

Figure 2.12. Beamish, A. (Photographer). (2012). *Oklahoma City National Memorial Site Plan*. [Photograph]

Figure 2.13. Beamish, A. (Photographer). (2012). *Gates of Time*. [Photograph]

Figure 2.14. Beamish, A. (Photographer). (2012). *Reflection Pool*. [Photograph]

Figure 2.15. Beamish, A. (Photographer). (2012). Survivor Wall. [Photograph]

Figure 2.16. Beamish, A. (Photographer). (2012). *Survivor Tree*. [Photograph]

Figure 2.17. Beamish, A. (Photographer). (2012). *Survivor Tree*. [Photograph]

Figure 2.18. Beamish, A. (Photographer). (2012). *Rescuers' Orchard*. [Photograph]

Figure 2.19. Beamish, A. (Photographer). (2012). *Field of Empty Chairs*. [Photograph]

Figure 2. 20. Fryer, W. (Photographer). (2008). *Drawing outside the Oklahoma City National Memorial*. [Photograph], Retrieved April 22, 2013 from: <http://www.flickr.com/photos/wfryer/2802002612/>

Figure 2.21. Beamish, A. (Photographer). (2012). *The Fence*. [Photograph]

Figure 2.22. Beamish, A. (Photographer). (2001). *9/11 Spontaneous Memorial*. [Photograph]

Figure 2.23. Beamish, A. (Photographer). (2005). *Roadside Memorial*. [Photograph]

Figure 2.24. Beamish, A. (Photographer). (2005). *Ghost Bike Memorial*. [Photograph]

Figure 2.25. AnubisAbys. (Photographer). (2013). *Boston Marathon Bombing*. [Photograph], Retrieved April 22, 2013 from: <http://www.flickr.com/photos/anubisabyss/8666066019/>

Figure 2.26. United States Geological Survey. (2002) (Photographer). *Vietnam Veterans Memorial Plan*. [Photograph], Retrieved April 22, 2013 from: [http://commons.wikimedia.org/wiki/File:Vietnam\\_veterans\\_wall\\_satellite\\_image.jpg](http://commons.wikimedia.org/wiki/File:Vietnam_veterans_wall_satellite_image.jpg)

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Figure A.72. Thomas, V. (Photographer). (2013). *Northview.* [Photograph], taken January 3, 2013.

Figure A.73. Thomas, V. (2012). *Ethnicity of Students.* [Graph], Made using Adobe CS4. Data Source: <http://www.schoolmap.org/School/Northview-Elementary-Manhattan-KS-Student/>

Figure A.74. Thomas, V. (2012). *Economically Disadvantage Students.* [Graph], Made using Adobe CS4. Data Source: [http://svapp15586.ksde.org/rcard/building.aspx?org\\_no=D0383&bldg\\_no=5128](http://svapp15586.ksde.org/rcard/building.aspx?org_no=D0383&bldg_no=5128)

Figure A.75. Thomas, V. (2012). *Northview Elementary Site.* [Map], Source Data: Google Earth. Manhattan, Kansas. Accessed 10 November 2012.

Figure A.76. Thomas, V. (Photographer). (2012). *View a.* [Photograph], taken January 3, 2013.

Figure A.77. Thomas, V. (Photographer). (2012). *View b.* [Photograph], taken January 3, 2013.

Figure A.78. Thomas, V. (Photographer). (2012). *View c.* [Photograph], taken January 3, 2013.

Figure A.79. Thomas, V. (Photographer). (2012). *View d.* [Photograph], taken January 3, 2013.

Figure A.80. Thomas, V. (Photographer). (2012). *View e.* [Photograph], taken January 3, 2013.

Figure A.81. Thomas, V. (Photographer). (2012). *View f.* [Photograph], taken January 3, 2013.

Figure A.82. Thomas, V. (Photographer). (2012). *View g.* [Photograph], taken January 3, 2013.

Figure A.83. Thomas, V. (Photographer). (2012). *View h.* [Photograph], taken January 3, 2013.

Figure A.84. Thomas, V. (2012). *Northview Elementary Walkability.* [Map], Source data: Riley County GIS. "Schsite," "Parks," "Roadway 2006," "Census2010." <ftp://ftpgis.rileycountyks.gov/> Accessed 7 November 2012.

Figure A.85. Thomas, V. (2012). *Context map.* [Map], Source data: Riley County GIS. "Schsite," "Parks," "Roadway 2006." <ftp://ftpgis.rileycountyks.gov/> Accessed 7 November 2012.

Figure A.86. Thomas, V. (Photographer). (2013). *Elementary.* [Photograph], taken January 3, 2013.

Figure A.87. Thomas, V. (2012). *Ethnicity of Students.* [Graph], Made using Adobe CS4. Data Source: <http://www.schoolmap.org/School/Theo-Roosevelt-Elementary-Student/>

Figure A.88. Thomas, V. (2012). *Economically Disadvantage Students.* [Graph], Made using Adobe CS4. Data Source: [http://svapp15586.ksde.org/rcard/building.aspx?org\\_no=D0383&bldg\\_no=5130](http://svapp15586.ksde.org/rcard/building.aspx?org_no=D0383&bldg_no=5130)

Figure A.89. Thomas, V. (2012). *Theodore Roosevelt Elementary Site.* [Map], Source map: Google Earth. Manhattan, Kansas. Accessed 10 November 2012.

Figure A.90. Thomas, V. (Photographer). (2012). *View a.* [Photograph], taken January 3, 2013.

Figure A.91. Thomas, V. (Photographer). (2012). *View b*. [Photograph], taken January 3, 2013.

Figure A.92. Thomas, V. (Photographer). (2012). *View c*. [Photograph], taken January 3, 2013.

Figure A.93. Thomas, V. (Photographer). (2012). *View d*. [Photograph], taken January 3, 2013.

Figure A.94. Thomas, V. (Photographer). (2012). *View e*. [Photograph], taken January 3, 2013.

Figure A.95. Thomas, V. (Photographer). 2012. *View f*. [Photograph], taken January 3, 2013.

Figure A.96. Thomas, V. (Photographer). 2012. *View g*. [Photograph], taken January 3, 2013.

Figure A.97. Thomas, V. (Photographer). 2012. *View h*. [Photograph], taken January 3, 2013.

Figure A.98. Thomas, V. (2012). *Theodore Roosevelt*. [Map], Source data: Riley County GIS. "Schsite," "Parks," "Roadway 2006," "Census2010." <ftp://ftpgis.rileycountyks.gov/> Accessed 7 November 2012.

Figure A.99. Thomas, V. (2012). *Context map*. [Map], Source data: Riley County GIS. "Schsite," "Parks," "Roadway 2006." <ftp://ftpgis.rileycountyks.gov/> Accessed 7 November 2012.

Figure A.100. Thomas, V. (Photographer). (2013). *Woodrow Wilson*. [Photograph], taken January 3, 2013.

Figure A.101. Thomas, V. (2012). *Ethnicity of Students*. [Graph], Made using Adobe CS4. Data Source: <http://www.schoolmap.org/School/Woodrow-Wilson-Elementary-Manhattan-Student/>

Figure A.102. Thomas, V. (2012). *Economically Disadvantage Students*. [Graph], Made using Adobe CS4. Data Source: [http://svapp15586.ksde.org/rcard/building.aspx?org\\_no=D0383&bldg\\_no=5132](http://svapp15586.ksde.org/rcard/building.aspx?org_no=D0383&bldg_no=5132)

Figure A.103. Thomas, V. (2012). *Woodrow Wilson. Elementary Site*. [Map], Source data: Google Earth. Manhattan, Kansas. Accessed 10 November 2012.

Figure A.104. Thomas, V. (Photographer). (2012). *View a*. [Photograph], taken January 3, 2013.

Figure A.105. Thomas, V. (Photographer). (2012). *View b*. [Photograph], taken January 3, 2013.

Figure A.106. Thomas, V. (Photographer). (2012). *View c*. [Photograph], taken January 3, 2013.

Figure A.107. Thomas, V. (Photographer). (2012). *View d*. [Photograph], taken January 3, 2013.

Figure A.108. Thomas, V. (Photographer). (2012). *View e*. [Photograph], taken January 3, 2013.

Figure A.109. Thomas, V. (Photographer). (2012). *View f*. [Photograph], taken January 3, 2013.

Figure A.110. Thomas, V. (Photographer). (2012). *View g*. [Photograph], taken January 3, 2013.

Figure A.111. Thomas, V. (Photographer). (2012). *View h*. [Photograph], taken January 3, 2013.

Figure A. 112. Thomas, V. (2012). *Woodrow Wilson*. [Map], Source data: Riley County GIS. "Schsite," "Parks," "Roadway 2006," "Census2010." <ftp://ftpgis.rileycountyks.gov/> Accessed 7 November 2012.

Figure B.1. Thomas, V. (2013). *Pole Detail*. [Graphic], made using AutoCad.

Figure B.2. Thomas, V. (2013). *Climbing Rock Detail*. [Graphic], made using AutoCad.

Figure B.3. Thomas, V. (2013). *Class Flag Pole Detail*. [Graphic], made using AutoCad.

Figure B.4. Thomas, V. (2013). *Memory Wall Green Wall Section Detail*. [Graphic], made using AutoCad.

Figure B.5. Thomas, V. (2013). *Memory Wall Niches Section Detail*. [Graphic], made using AutoCad.

Figure B.6. Thomas, V. (2013). *Memory Wall Niches Elevation Detail*. [Graphic], made using AutoCad.

Figure B.7. Thomas, V. (2013). *Handicap Garden Bed Detail Side Elevation*. [Graphic], made using AutoCad.

Figure B.8. Thomas, V. (2013). *Handicap Garden Bed Detail Inside Brackets*. [Graphic], made using AutoCad.

Figure B.9. Thomas, V. (2013). *Handicap Garden Bed Detail Top*. [Graphic], made using AutoCad.





# Appendix A

Site Selection

# Amanda Arnold Elementary

Total Students: 455

Student to Teacher Ratio: 14.4

Site Size: 9.80 Acres

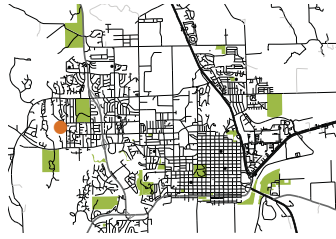


Figure A.1. Context Map (Thomas, 2012).



Figure A.2. Elementary School. (Thomas, 2013).

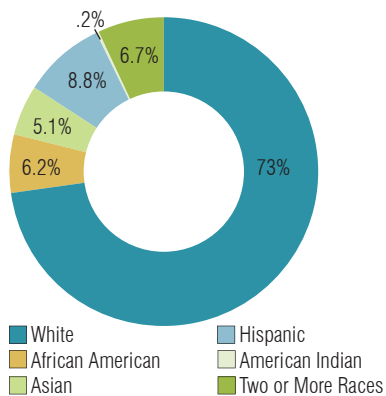


Figure A.3. Ethnicity of Students. (Thomas, 2012).

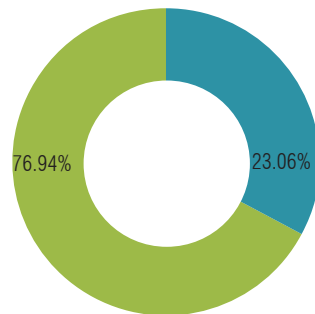


Figure A.4. Economically Disadvantage Students. (Thomas, 2012).



Figure A.5. Amanda Arnold Elementary Site. (Thomas, 2012).

Scale: 1"=150'



Figure A.6. View a. (Thomas, 2013).



Figure A.7. View b. (Thomas, 2013).



Figure A.8. View c. (Thomas, 2013).



Figure A.9. View d. (Thomas, 2013).



Figure A.10. View e. (Thomas, 2013).



Figure A.11. View f. (Thomas, 2013).



Figure A.12. View g. (Thomas, 2013).



Figure A.13. View h. (Thomas, 2013).

## Walkability Ranking: High

Amanda Arnold Elementary can be easily accessed by walking. The twenty minute walking radius falls over a majority of neighborhoods that feed into the elementary school.

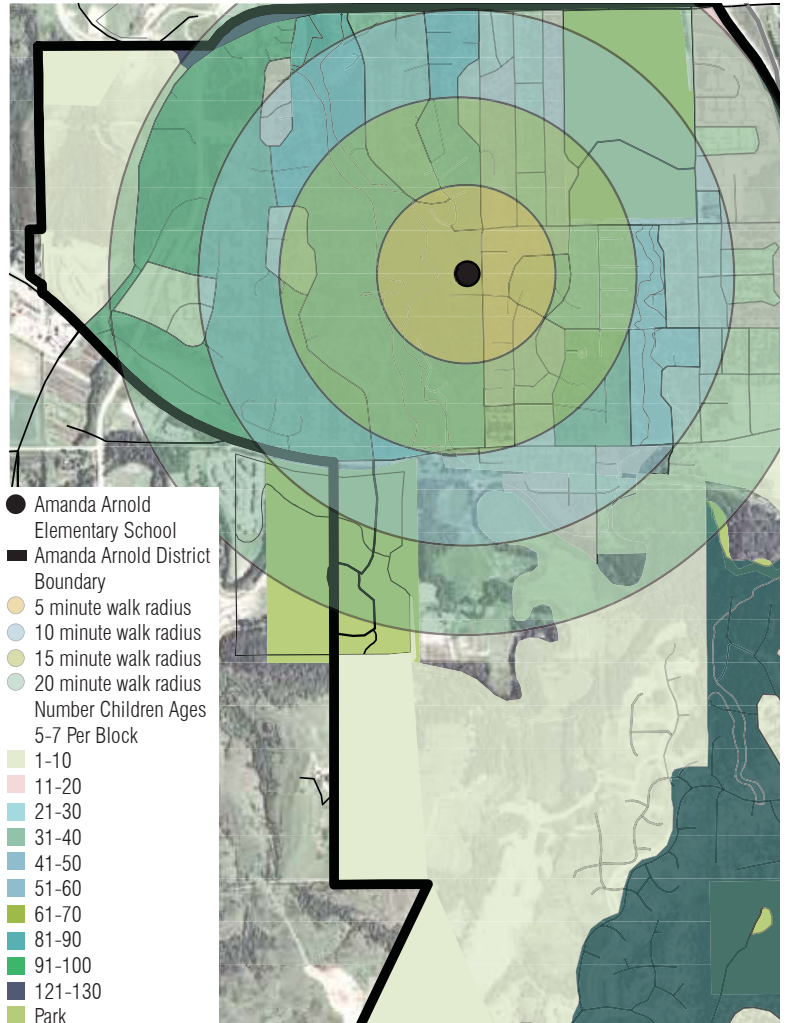


Figure A.14. Amanda Arnold Walkability . (Thomas, 2012).

Scale 1:25000



# Bluemont Elementary

Total Students: 221  
Student to Teacher Ratio:15.14  
Site Size: 3.55 Acres



Figure A.15. Context Map. (Thomas, 2012).

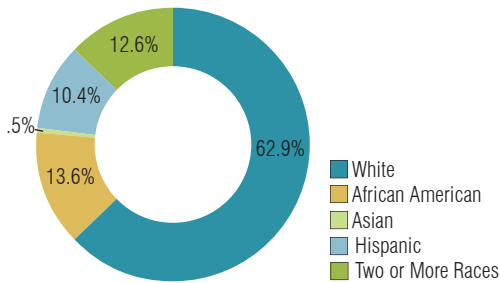


Figure A.17. Ethnicity of Students. (Thomas, 2012).

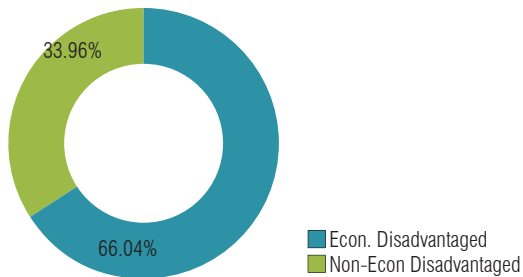


Figure A.18. Economically Disadvantage Students. (Thomas, 2012).



Figure A.16. Bluemont. (Thomas, 20123).



Figure A.19. Bluemont Elementary Site. (Thomas, 2012).

Scale: 1" = 100'



Figure A.20. View a. (Thomas, 2013).



Figure A.21. View b. (Thomas, 2013).



Figure A.22. View c. (Thomas, 2013).



Figure A.23. View d. (Thomas, 2013).



Figure A.24. View e. (Thomas, 2013).



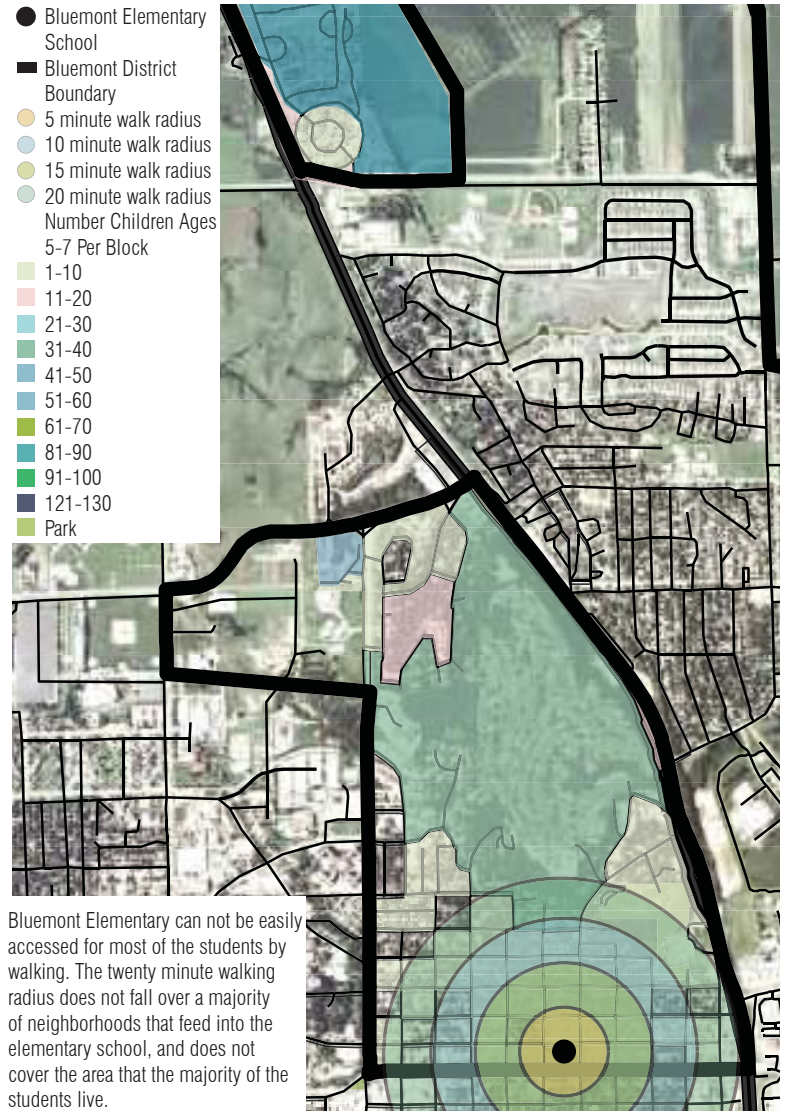
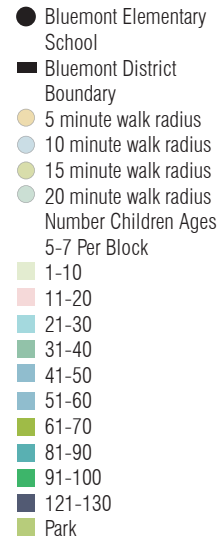
Figure A.25. View f. (Thomas, 2013).



Figure A.26. View g. (Thomas, 2013).



Figure A.27. View h. (Thomas, 2013).



**Walkability Ranking: Low**

Scale 1:25000

Figure A.28. Bluemont Elementary School Walking Capability in School District Boundary. (Thomas, 2012).



# Frank V. Bergman Elementary

Total Students: 452  
Student to Teacher Ratio: 13.18  
Site Size: 9.69 Acres



Figure A.29. Context Map. (Thomas, 2013).

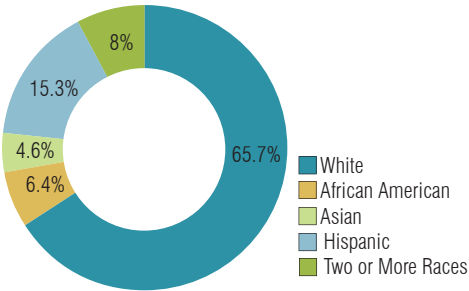


Figure A.30. Ethnicity of Students. (Thomas, 2013).

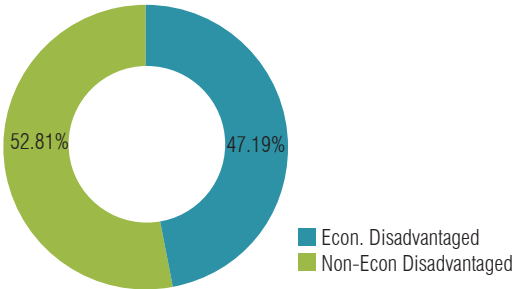


Figure A.31. Economically Disadvantage Students. (Thomas, 2013).



Figure A.32. Elementary. (Thomas, 2013).



Figure A.33. Frank V. Bergman Elementary Site. (Thomas, 2013).

Scale: 1" = 150'



Figure A.34. View a. (Thomas, 2013).



Figure A.35. View b. (Thomas, 2013).



Figure A.36. View c. (Thomas, 2013).



Figure A.37. View d. (Thomas, 2013).



Figure A.38. View e. (Thomas, 2013).



Figure A.39. View f. (Thomas, 2013).



Figure A.40. View g. (Thomas, 2013).



Figure A.41. View h. (Thomas, 2013).

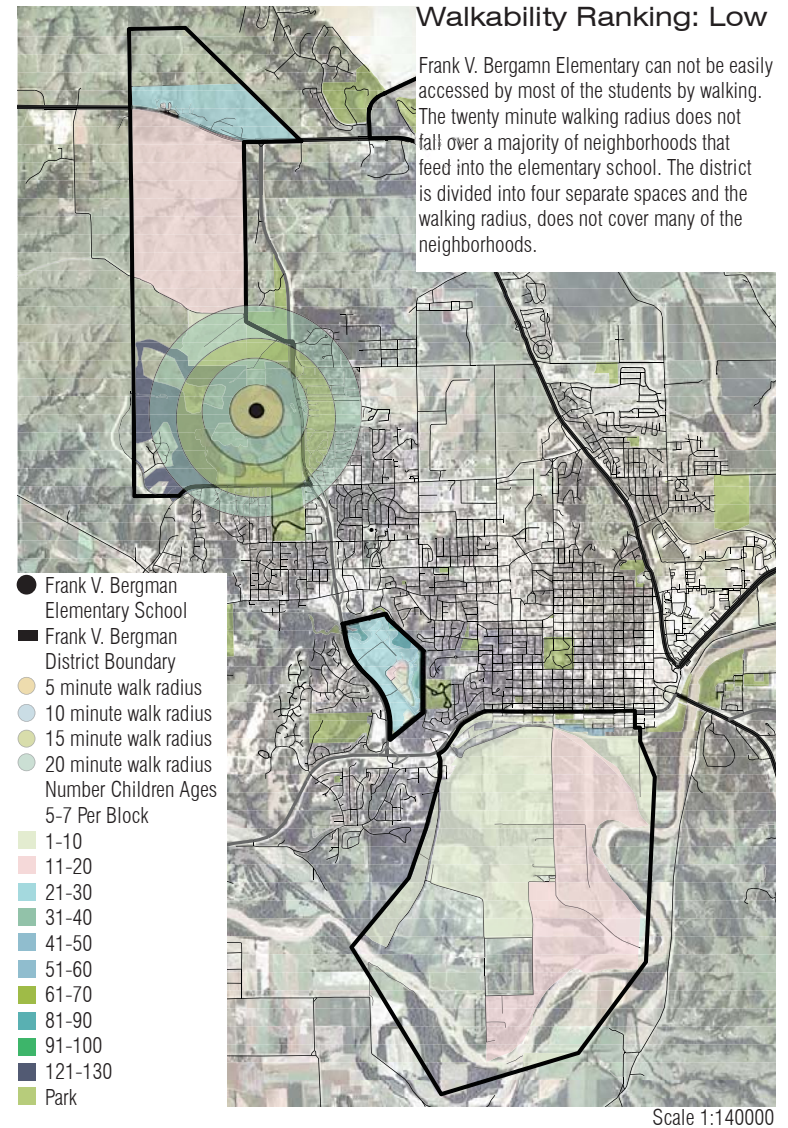


Figure A.42. Frank V. Bergman Elementary Walking Capability in School District Boundary. (Thomas, 2012).



# Lee Elementary

Total Students: 283  
 Student to Teacher Ratio: 12.41  
 Site Size: 5.99 Acres

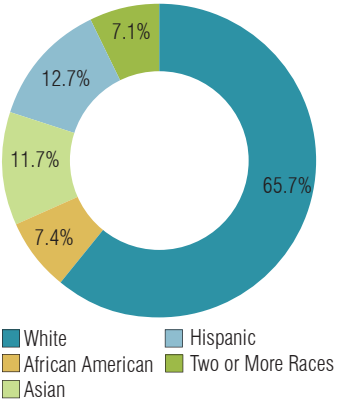


Figure A.45. Ethnicity of Students. (Thomas, 2012).

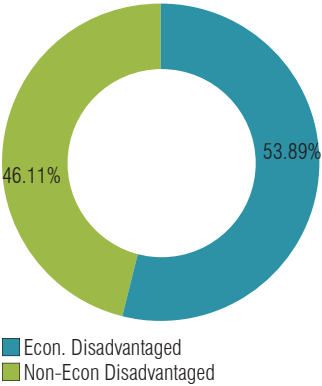


Figure A.46 Economically Disadvantage Students. (Thomas, 2012).



Figure A.43. Context Map. (Thomas, 2012).



Figure A.44. Lee. (Thomas, 2013).



Figure A.47 Lee Elementary Site. (Thomas, 2012).

Scale: 1"=200'



Figure A.48. View a. (Thomas, 2013).



Figure A.50. View c. (Thomas, 2013).



Figure A.52. View e. (Thomas, 2013).



Figure A.54. View g. (Thomas, 2013).



Figure A.49. View b. (Thomas, 2013).



Figure A.51. View d. (Thomas, 2013).



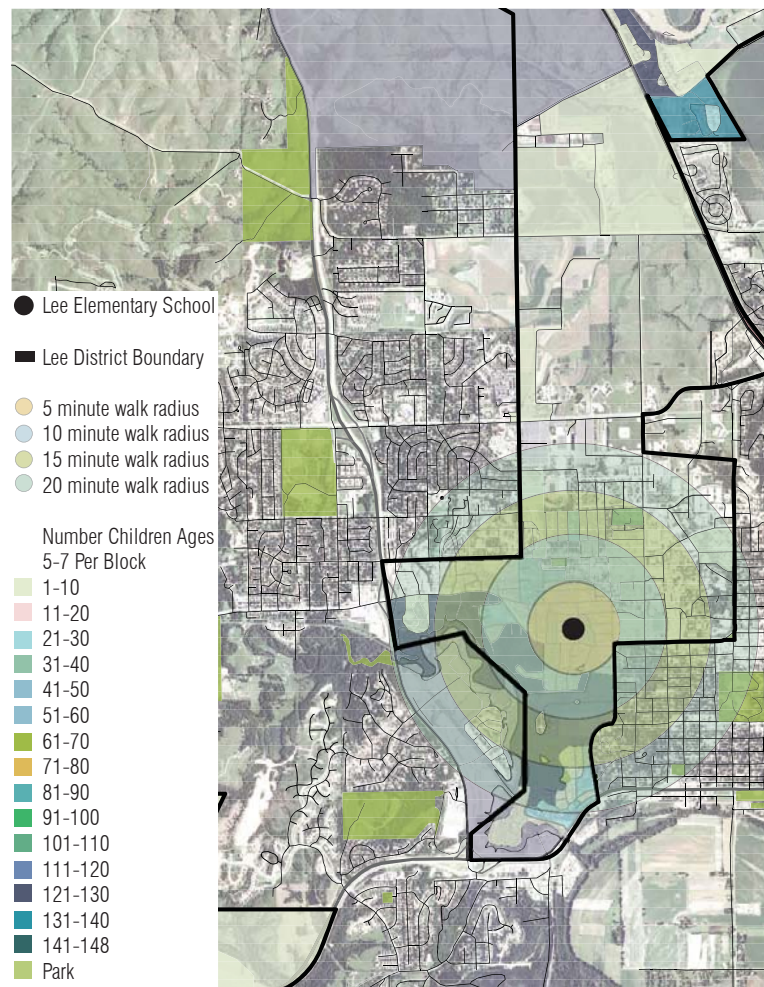
Figure A.53. View f. (Thomas, 2013).



Figure A.55. View h. (Thomas, 2013).

## Walkability Ranking: Low

Lee Elementary can not be easily accessed by most of the students by walking. The twenty minute walking radius does not fall over a majority of neighborhoods that feed into the elementary school. The district is divided into three separate spaces and the walking radius, does not cover many of the neighborhoods.



Scale 1:165000

Figure A.56. Lee Elementary Walking Capability in School District Boundary. (Thomas, 2012).



# Marlatt Elementary

Total Students: 395

Student to Teacher Ratio: 15.61

Site Size: 9.26 Acres



Figure A.57. Context Map. (Thomas, 2012).



Figure A.58. Marlatt. (Thomas, 2013).

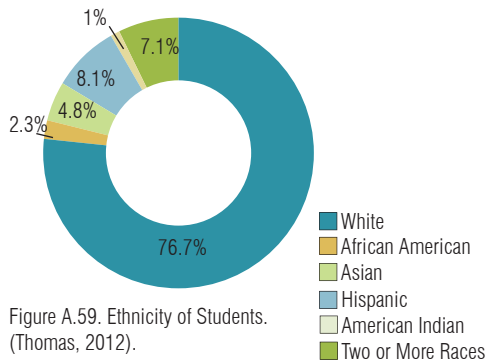


Figure A.59. Ethnicity of Students. (Thomas, 2012).

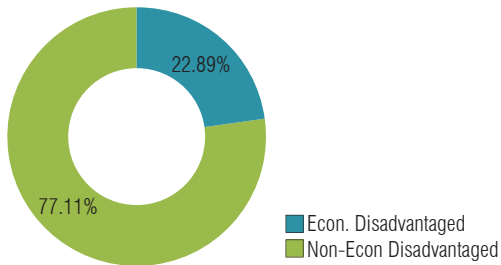


Figure A.60. Economically Disadvantage Students. (Thomas, 2012).

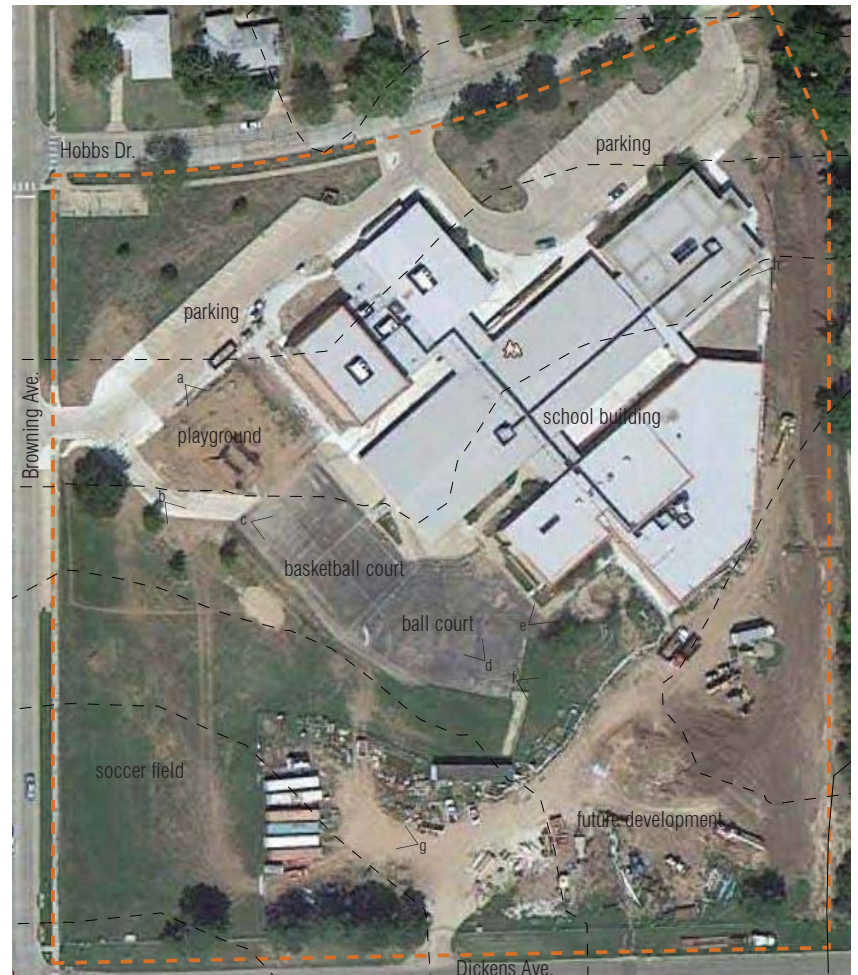


Figure A.61. Marlatt Elementary Site. (Thomas, 2012).

Scale: 1"=200'



Figure A.62. View a. (Thomas, 2013).



Figure A.64. View c. (Thomas, 2013).



Figure A.66. View e. (Thomas, 2013).



Figure A.68. View g. (Thomas, 2013).



Figure A.63. View b. (Thomas, 2013).



Figure A.65. View d. (Thomas, 2013).



Figure A.67. View f. (Thomas, 2013).



Figure A.69. View h. (Thomas, 2013).

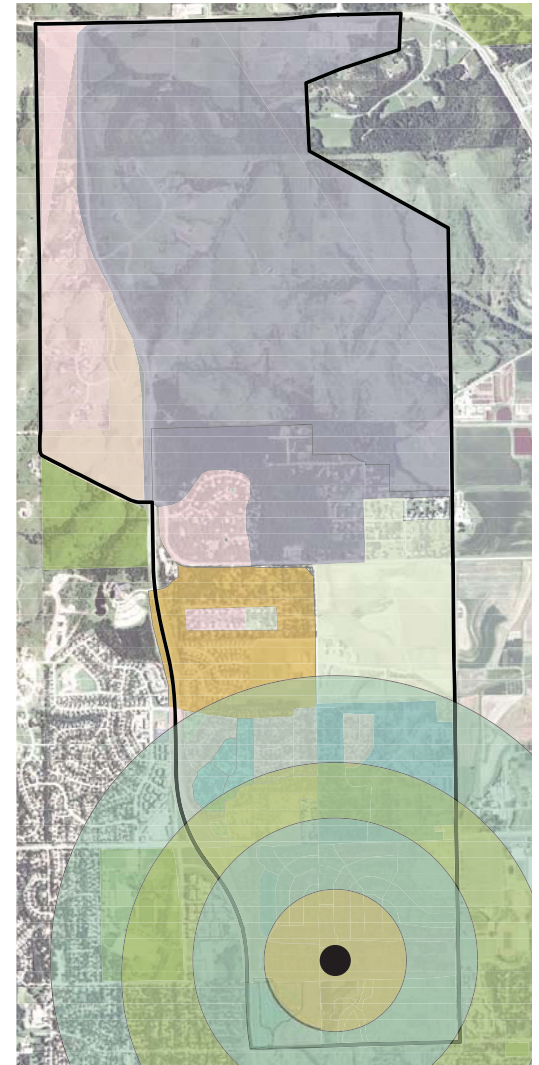
## Walkability Ranking: Low

Marlatt Elementary can not be easily accessed by most of the students by walking. The twenty minute walking radius does fall over a majority of neighborhoods that feed into the elementary school, and the highest concentration of students is not in the radius.

- Marlatt Elementary School
- Marlatt District Boundary
- 5 minute walk radius
- 10 minute walk radius
- 15 minute walk radius
- 20 minute walk radius

### Number Children Ages 5-7 Per Block

- 1-10
- 11-20
- 21-30
- 31-40
- 41-50
- 51-60
- 61-70
- 71-80
- 81-90
- 91-100
- 101-110
- 111-120
- 121-130
- 131-140
- 141-148
- Park



Scale 1:25500

Figure A.70. Marlatt Elementary Walking Capability in School District Boundary. (Thomas, 2012).



# Northview Elementary

Total Students: 585  
 Student to Teacher Ratio: 15.73  
 Site Size: 9.26 Acres



Figure A.71. Context Map. (Thomas, 2012).



Figure A.72. Northview. (Thomas, 2013).

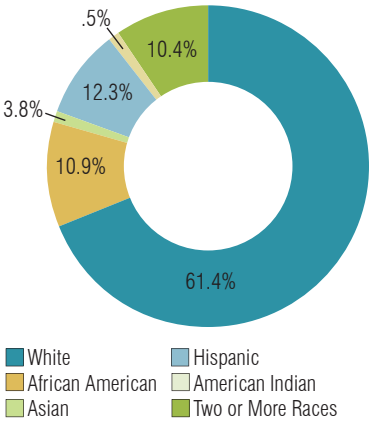


Figure A.73. Ethnicity of Students. (Thomas, 2012).

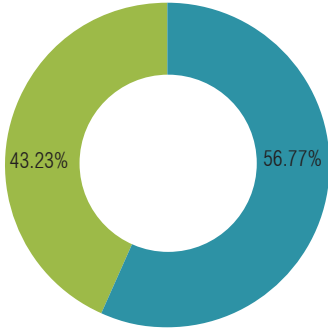


Figure A.74. Economically Disadvantage Students. (Thomas, 2012).



Figure A.75. Northview Elementary Site. (Thomas, 2013).



Figure A.76. View a. (Thomas, 2013).



Figure A.77. View b. (Thomas, 2013).



Figure A.78. View c. (Thomas, 2013).



Figure A.79. View d. (Thomas, 2013).



Figure A.80. View e. (Thomas, 2013).



Figure A.81. View f. (Thomas, 2013).



Figure A.82. View g. (Thomas, 2013).



Figure A.83. View h. (Thomas, 2013).

## Walkability Ranking: High

Northview Elementary can be easily accessed by most of the students by walking. The twenty minute walking radius does fall over a majority of neighborhoods that feed into the elementary school, and has the highest concentration of students in the radius.

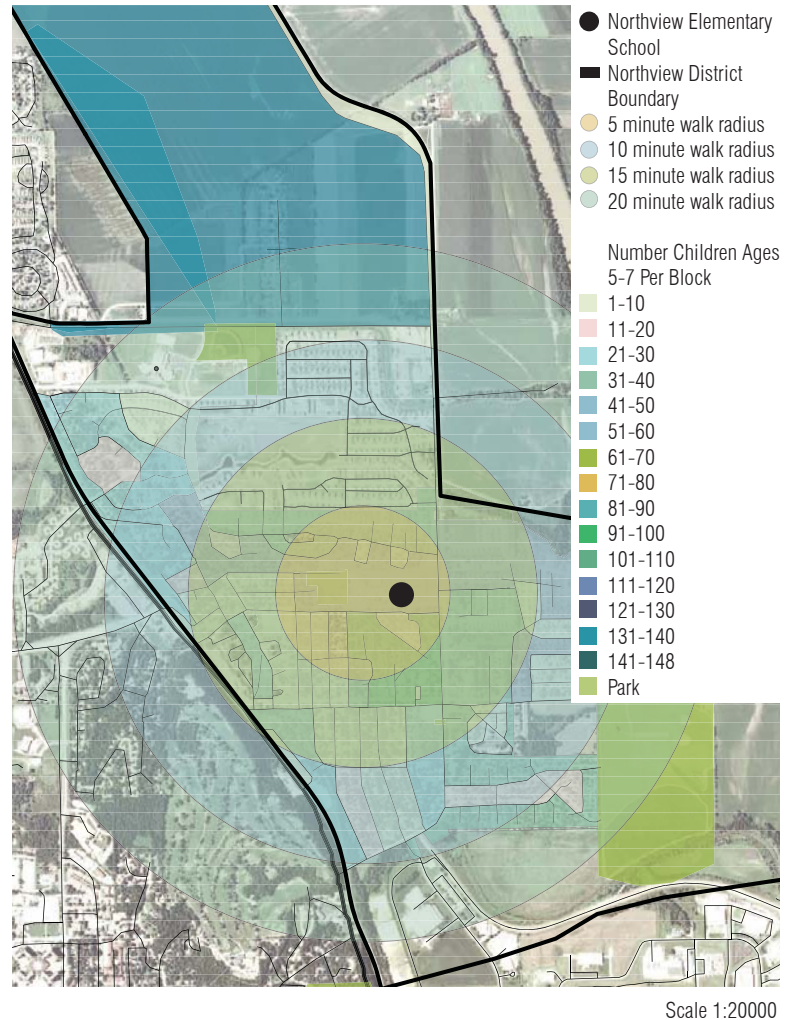


Figure A.84. Northview Elementary Walking Capability in School District Boundary. (Thomas, 2012).



# Theodore Roosevelt Elementary

Total Students: 270  
 Student to Teacher Ratio: 12.56  
 Site Size: 2.96 Acres



Figure A.85. Context Map. (Thomas, 2013).



Figure A.86. Theodore Roosevelt. (Thomas, 2013).

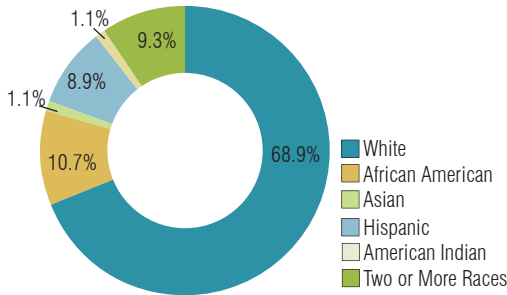


Figure A.87. Ethnicity of Students. (Thomas, 2012).

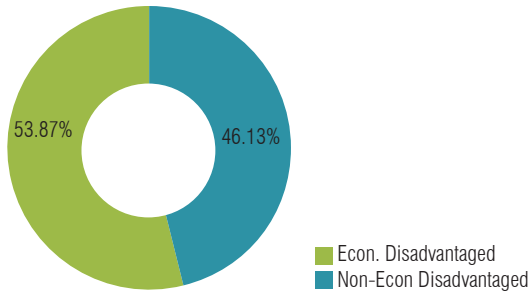


Figure A.88. Economically Disadvantage Students. (Thomas, 2012).

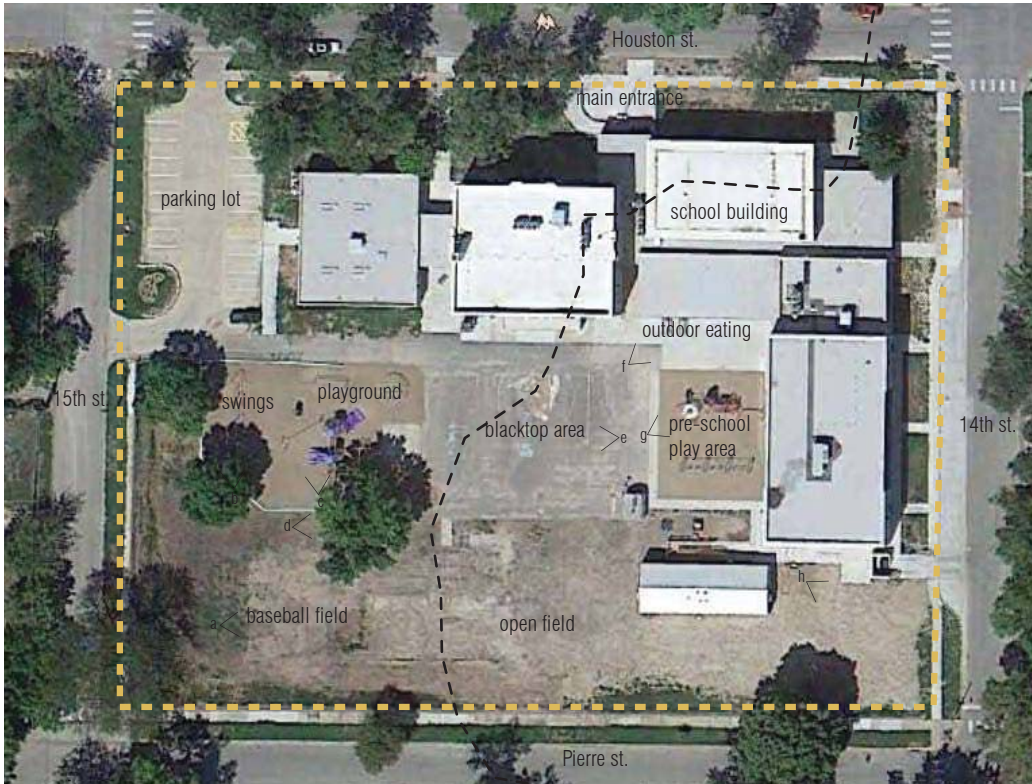


Figure A.89. Theodore Roosevelt Elementary Site. (Thomas, 2012).

Scale: 1"=200'



Figure A.90. View a. (Thomas, 2013).



Figure A.91. View b. (Thomas, 2013).



Figure A.92. View c. (Thomas, 2013).



Figure A.93. View d. (Thomas, 2013).



Figure A.94. View e. (Thomas, 2013).



Figure A.95. View f. (Thomas, 2013).



Figure A.96. View g. (Thomas, 2013).



Figure A.97. View h. (Thomas, 2013).

## Walkability Ranking: Medium

Roosevelt Elementary can be easily accessed by most of the students by walking. The twenty minute walking radius does not fall over a majority of neighborhoods that feed into the elementary school, however a highest concentration of students is in the walking radius.

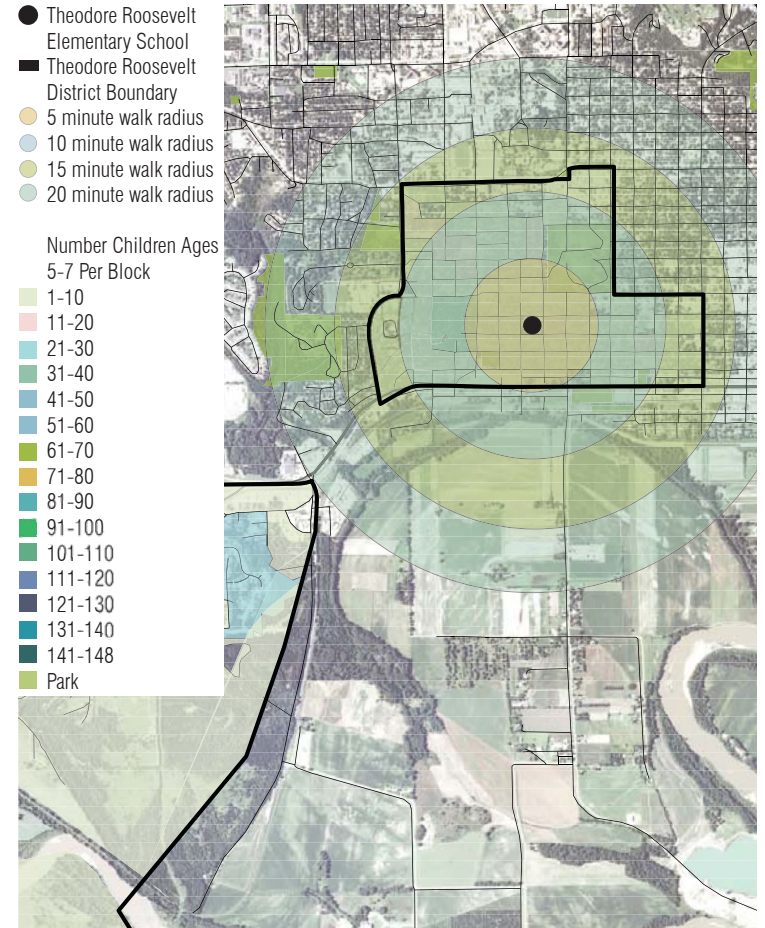


Figure A.98. Theodore Roosevelt Elementary Walking Capability in School District Boundary (Thomas, 2012).



# Woodrow Wilson

Total Students: 339  
Student to Teacher Ratio: 15  
Site Size: 3.50 Acres



Figure A.99. Context Map. (Thomas, 2012).



Figure A.100. Woodrow Wilson. (Thomas, 2013).

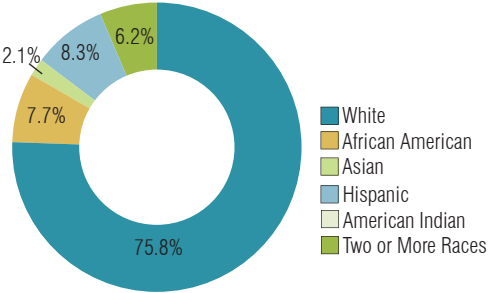


Figure A.101. Ethnicity of Students. (Thomas, 2012).

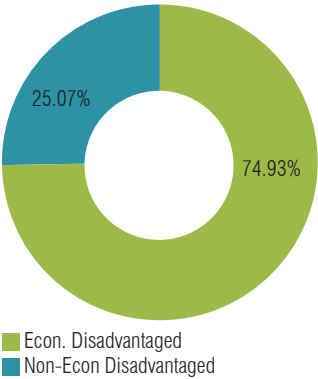


Figure A.102. Economically Disadvantage Students. (Thomas, 2012).



Figure A.103. Woodrow Wilson Elementary Site. (Thomas, 2012).

Scale: 1"=200'



Figure A.104. View a. (Thomas, 2013).



Figure A.106. View c. (Thomas, 2013).



Figure A.108. View e. (Thomas, 2013).



Figure A.110. View g. (Thomas, 2013).



Figure A.105. View b. (Thomas, 2013).



Figure A.107. View d. (Thomas, 2013).



Figure A.109. View f. (Thomas, 2013).



Figure A.111. View h. (Thomas, 2013).

## Walkability Ranking: Low

Woodrow Wilson Elementary can not be easily accessed by most of the students by walking. The twenty minute walking radius does fall over a majority of neighborhoods that feed into the elementary school, and the highest concentration of students is not in the radius.

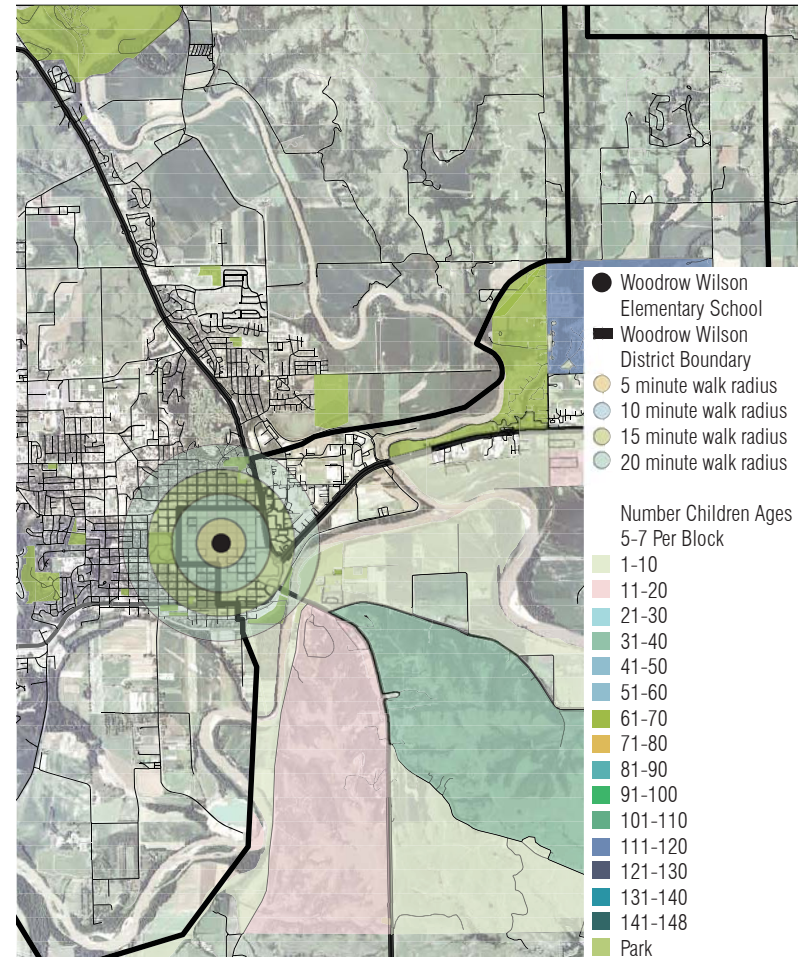


Figure A.112. Woodrow Wilson Elementary Walking Capability in School District Boundary. (Thomas, 2012).

Scale 1:75000





# Appendix B

## Construction Details

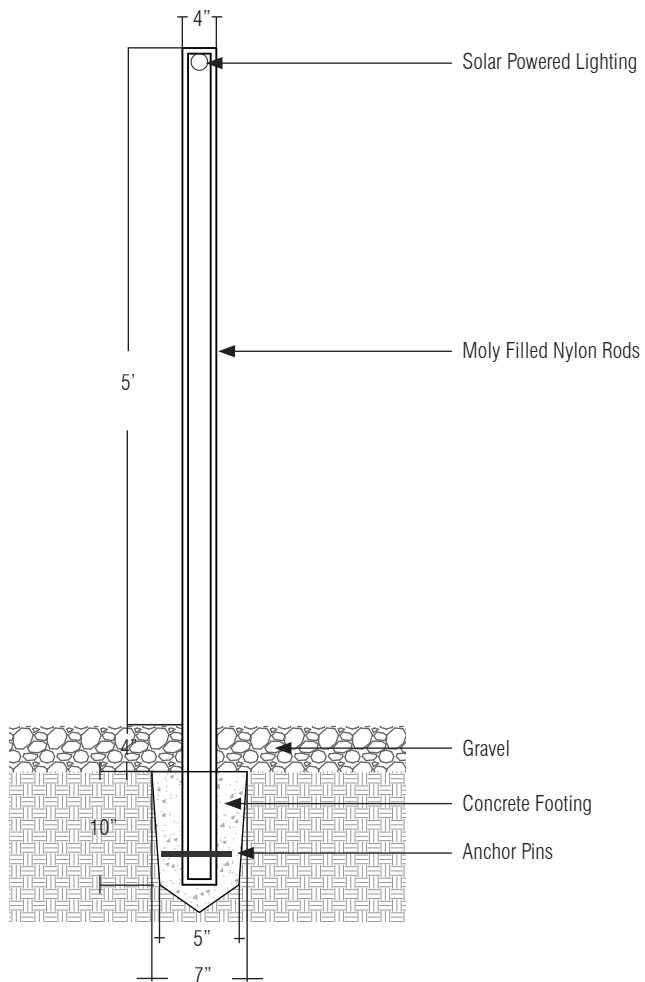


Figure B.1. Pole Detail

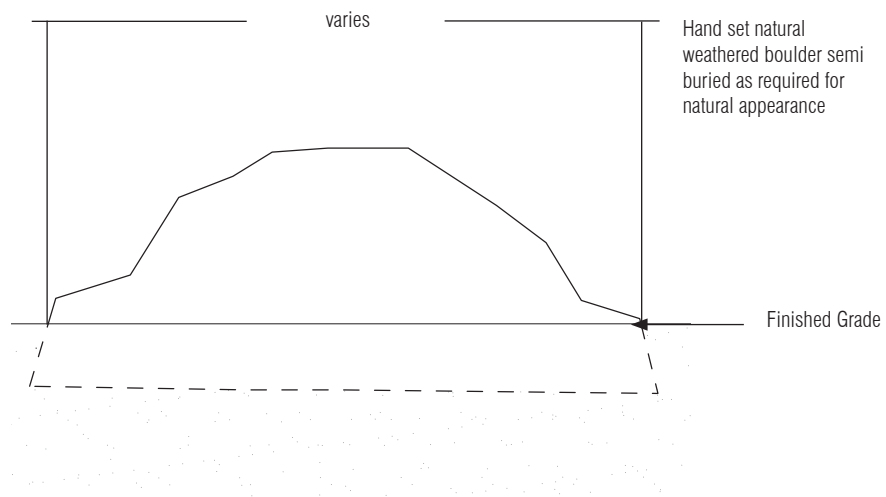


Figure B.2. Climbing Rock Detail

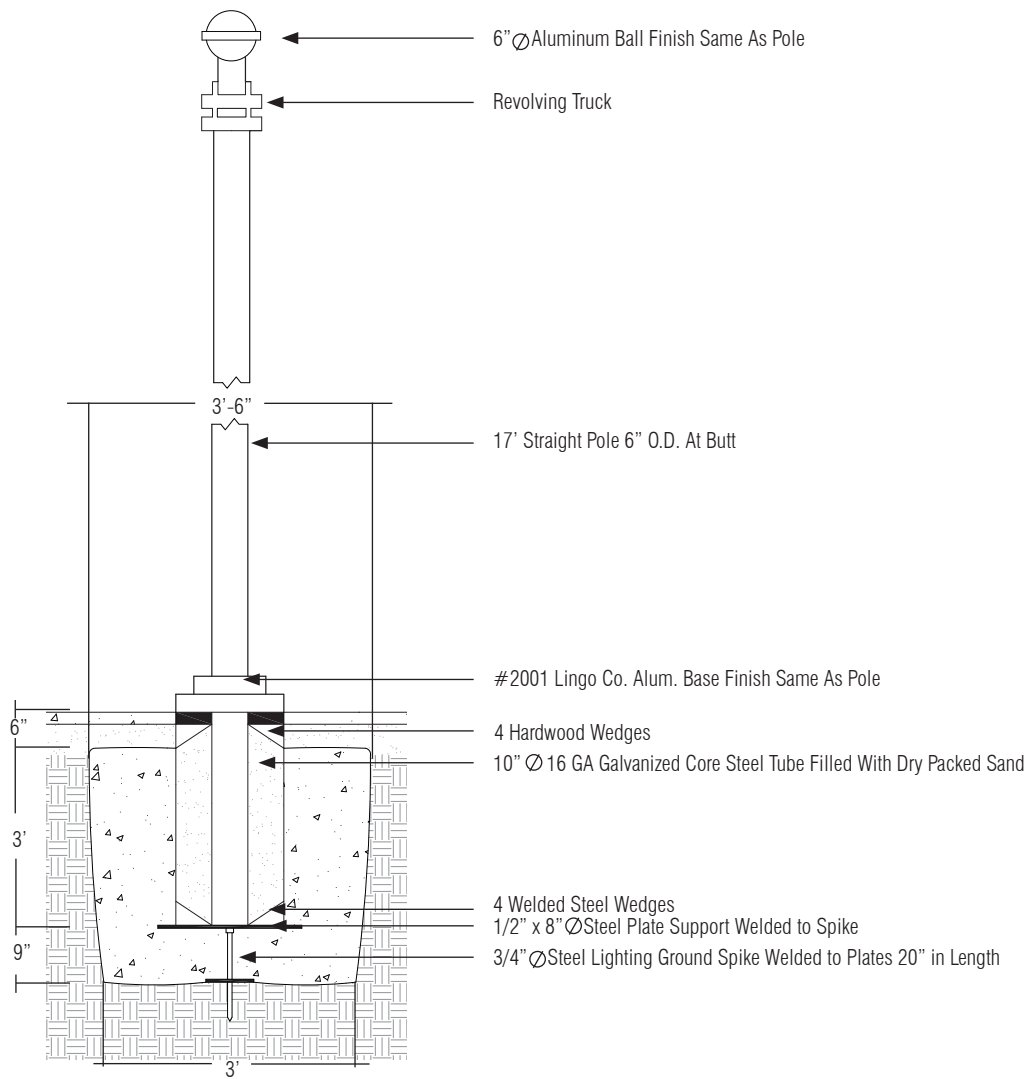


Figure B.3. Class Flag Pole Detail

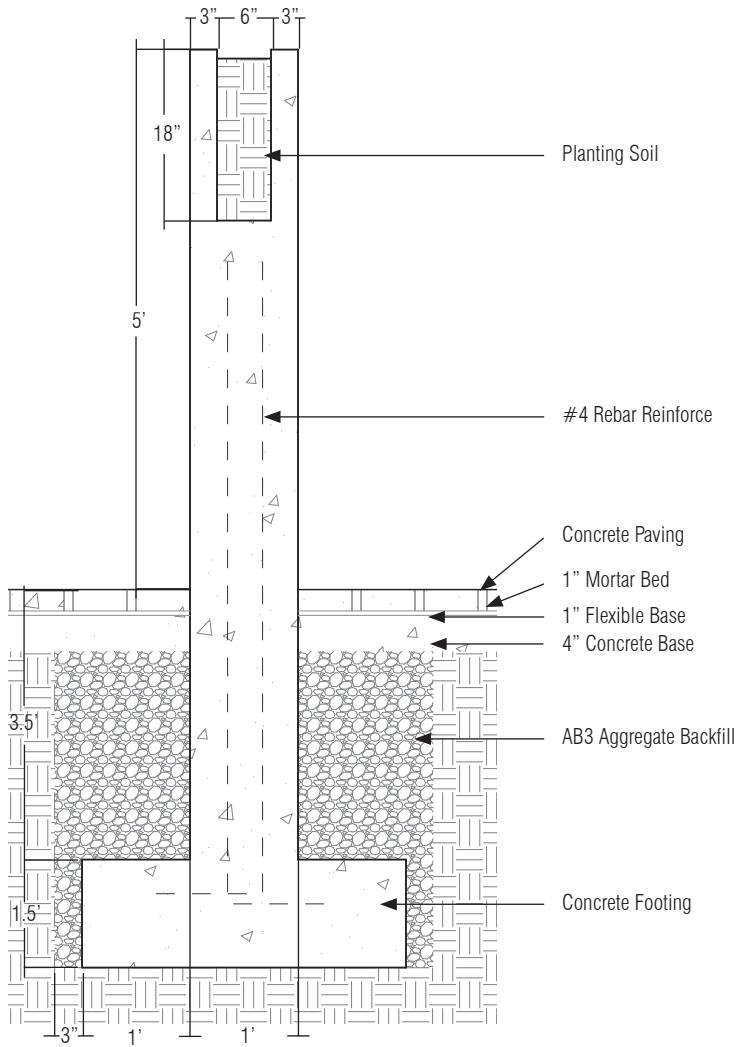


Figure B.4. Memory Wall Green Wall Section Detail

1' 3/4"

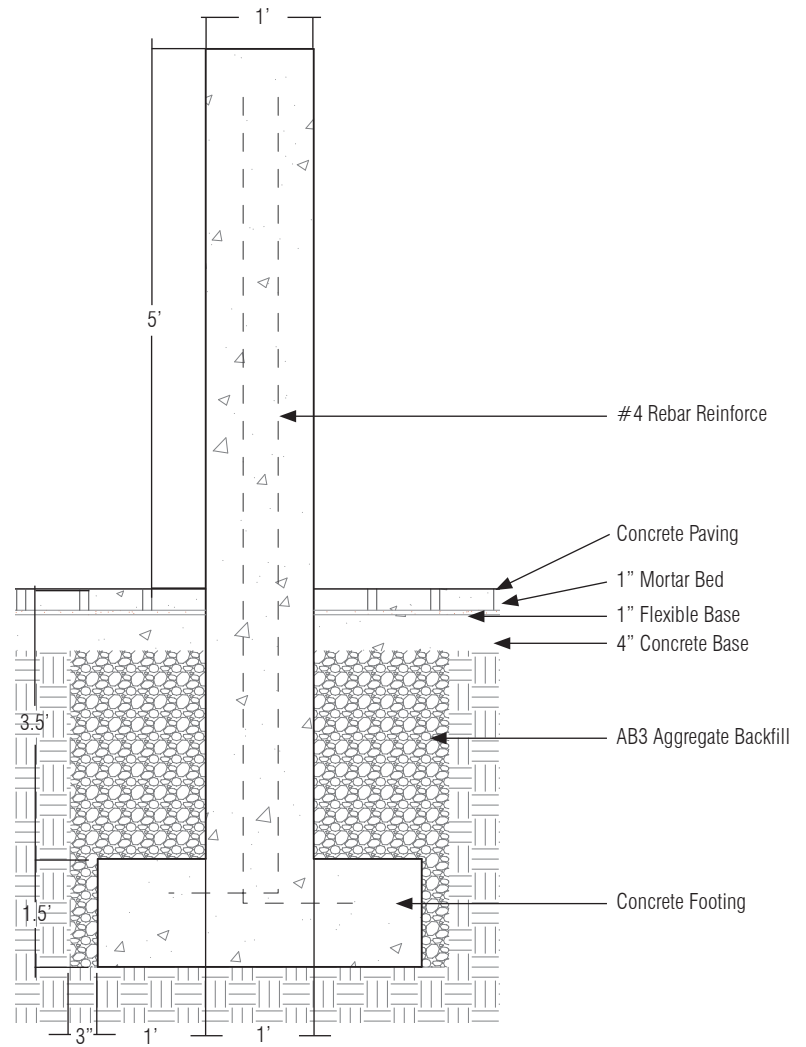


Figure B.5. Memory Wall Niches Section Detail

1' 3/4"



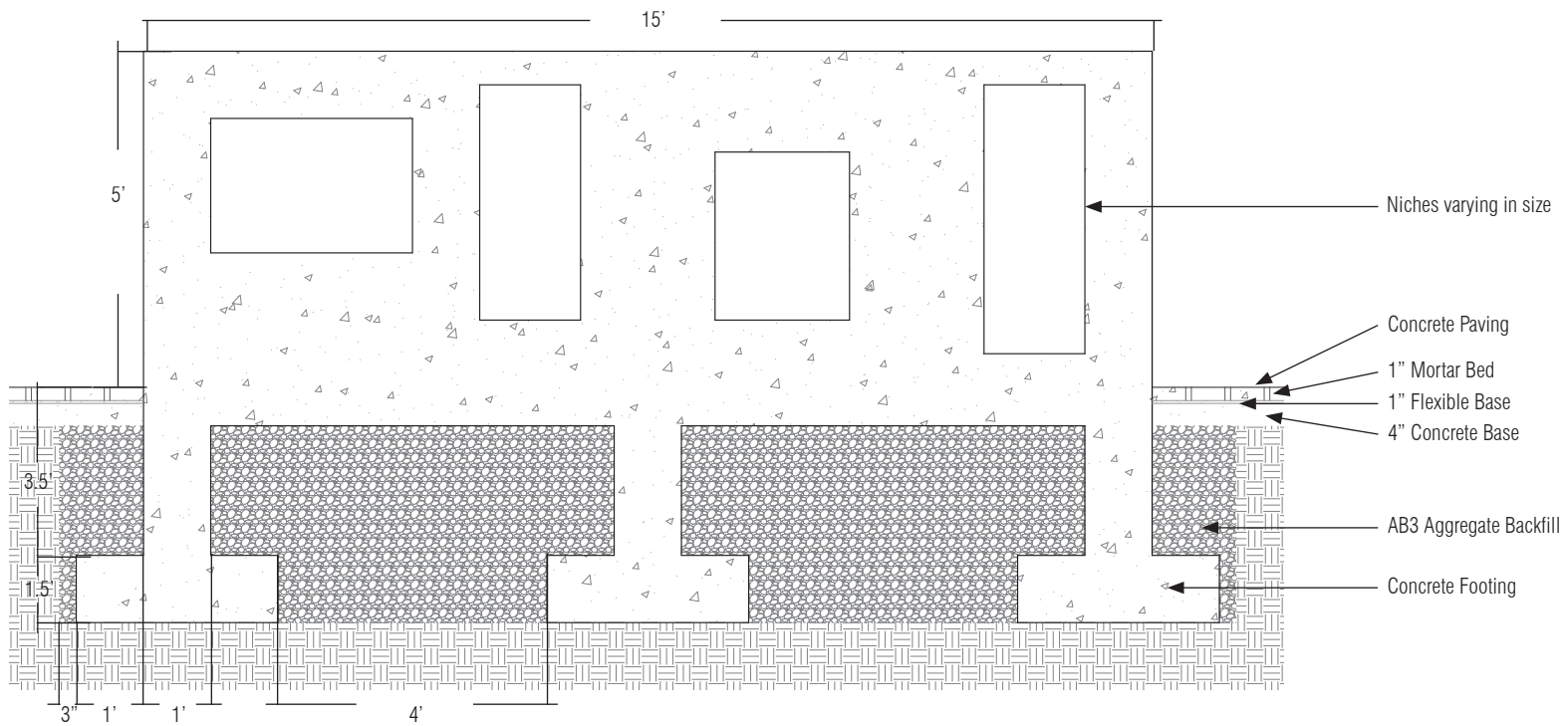


Figure B.6. Memory Wall Niches Elevation

1' 3/4"

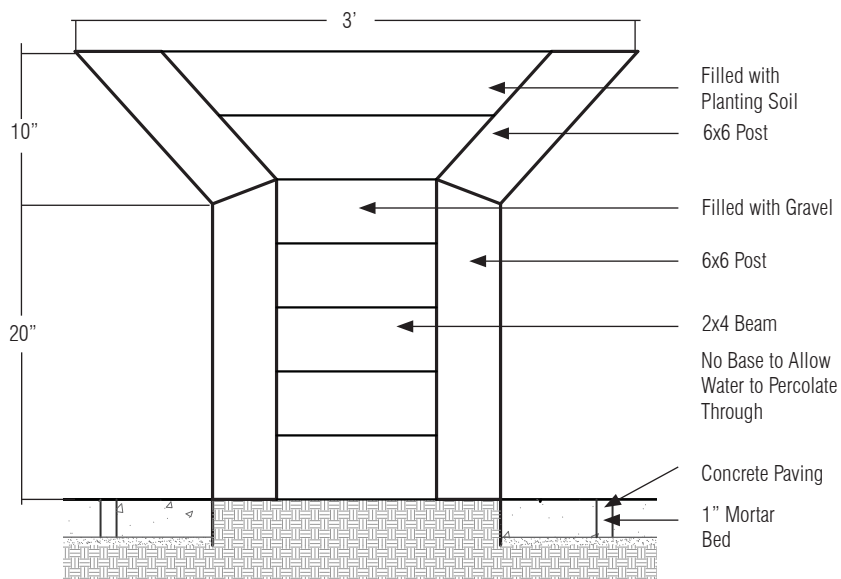


Figure B.7. Handicap Garden Bed Detail Side Elevation

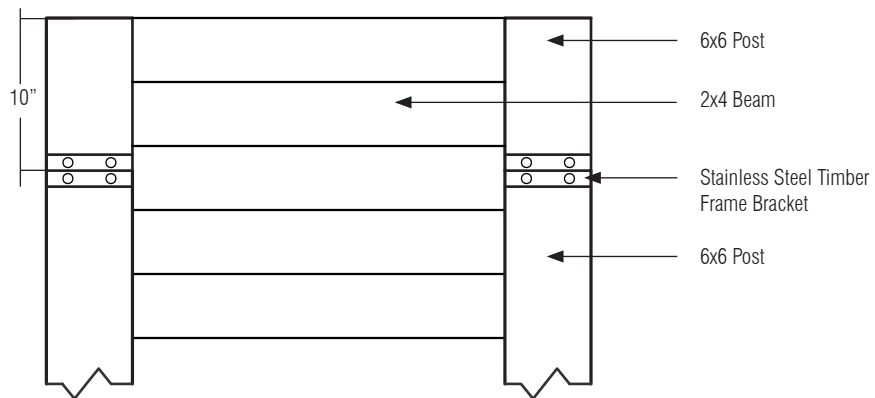


Figure B.8. Handicap Garden Bed Detail Inside Brackets

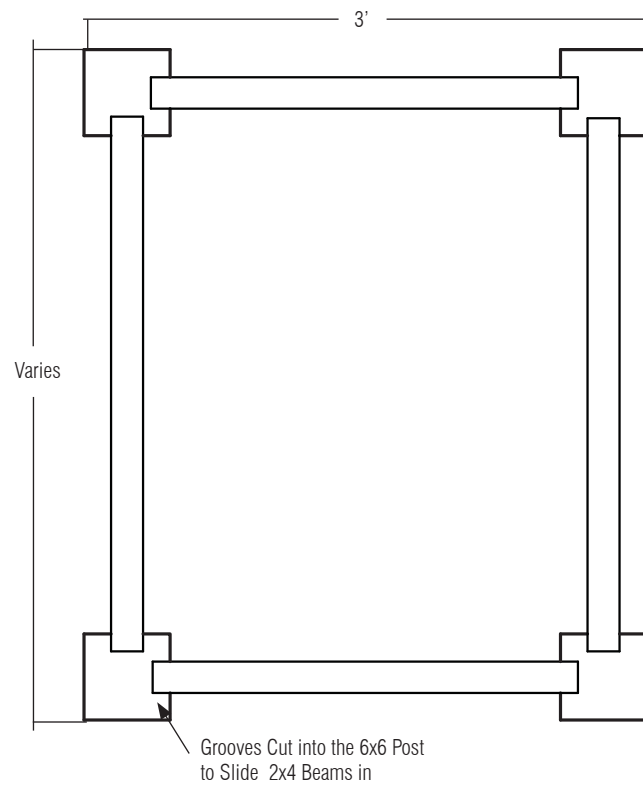


Figure B.9. Handicap Garden Bed Detail Top

