

Prison Landscapes: An Exploration of Therapeutic Landscapes in Women's Prison
Facilities

by

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Abstract

In the United States there are approximately 2.2 million people incarcerated in prisons and jails, making the U.S. incarcerated population the largest in the world (Kaeble and Glaze, 2016; Lindemuth, 2014). With the expansion of the prison population, women now comprise a larger portion than ever before (FBJS, 2010). There are approximately 100,000 women incarcerated in US federal and state prisons (FBJS, 2015). Many facilities do not contain adequate programs to help rehabilitate these women (Young, 2000).

Prisons are often termed “correctional facilities”, but struggle to promote positive behavior and well-being (Pacholke, 2014; Haney, 2001; SuedFeld, 1980). When the prison environment is examined, it is often found that prisons are bleak, unwelcoming institutions (Lindemuth, 2014). This prompts the question: How can landscape architects design prison environments that improve psychological health and promote positive behavior?

Evidence suggests that exposure to nature improves psychological health and promotes positive behavior (Moore, 1981; Ulrich, 1984, Ulrich, 1991, Hartig, 1991). Many studies report on the effects of therapeutic landscapes in healthcare settings, (e.g. Ulrich, 1999; Cooper Marcus & Barnes, 1995, 1999; Mitrione and Larson, 2007), however, limited literature exists on therapeutic landscapes within the prison context. The focus of this report is to explore how landscapes within women’s prison facilities can be designed to reduce stress and promote positive behavior.

Prison Landscapes

An Exploration of Therapeutic Landscapes in Women's Prison Facilities



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To my family, for all the love and support you've given me in the past 25 years. I'll never be able to fully express my gratitude.

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Preface

This report was driven by a personal belief that access to nature and good design should be available to all members of society regardless of circumstance. The incarcerated population has been largely neglected in many instances and especially in terms of access to therapeutic design. While landscape architecture may not address all the complex challenges incarcerated individuals face, creating a therapeutic environment may provide some relief and assist in the process of inmate rehabilitation.

The past approach used in the design of prison facilities has created sterile, isolating environments that convey ideas of containment and prioritize security. While there are several examples of correctional facilities that have been redesigned to provide more humane environments for inmates, there is still a need to further explore the effects of therapeutic design on inmate rehabilitation.

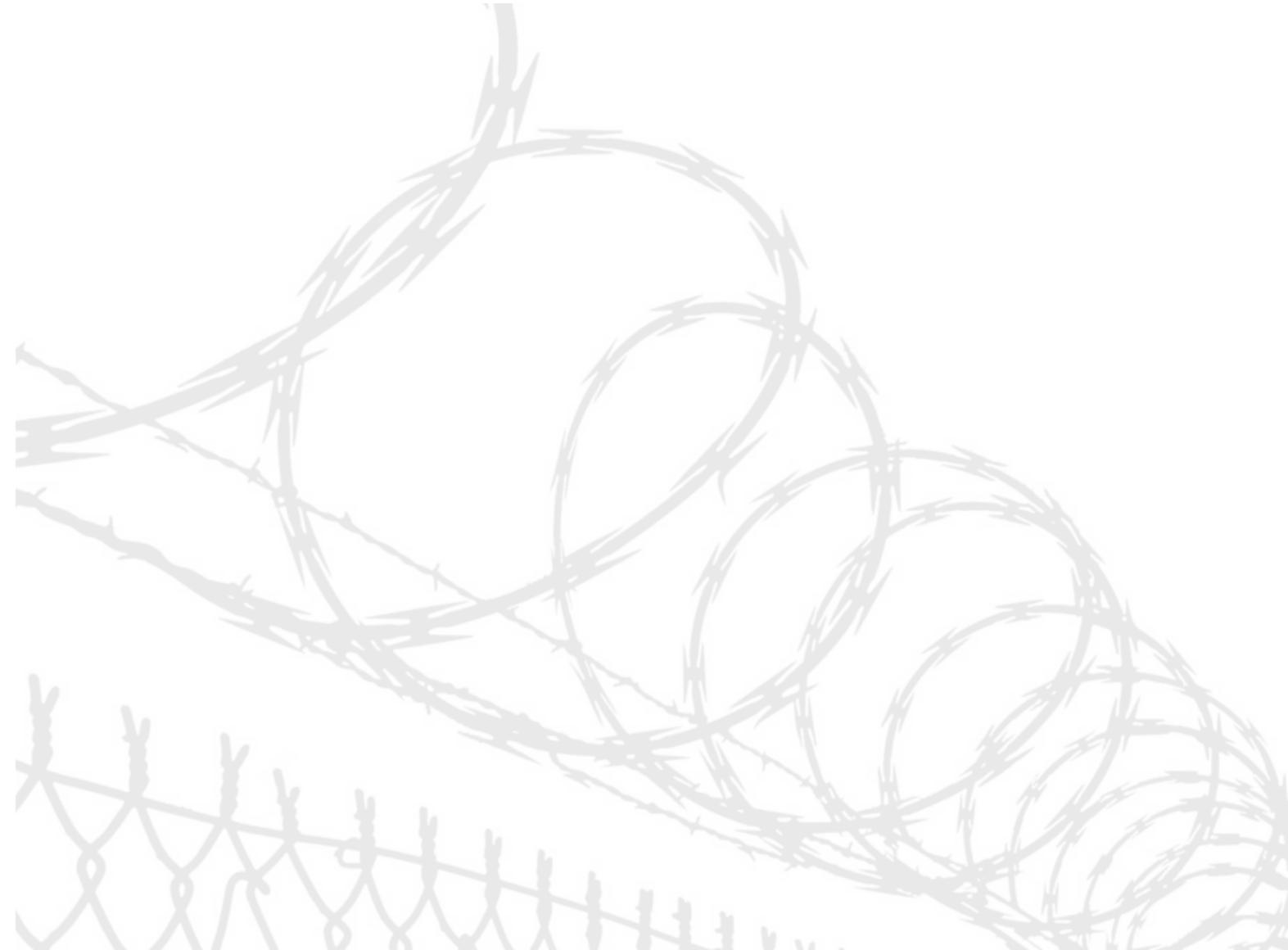
Incarcerated women in particular, are a highly underserved incarcerated population. Since women consist of a small percentage of the incarcerated population, their needs are often neglected in prison management and the design of the physical prison facility. Design can be used to create environments that better serve not only incarcerated women, but many other incarcerated populations.

The goal of this report is to examine ways of improving women's prison environments through landscape architecture. This report also aims

to bring attention to the necessity of reconsidering the needs of other incarcerated populations (male, elderly, disabled, juvenile, etc.). Creative approaches are needed to address the needs of improving health and well-being of prison inmates. This report is intended to serve as a starting point in generating ideas for the future of correctional design.

Chapter 1

Introduction



Background

The number of incarcerated women has increased substantially within the past quarter century. From 1980 to 2014, the number of women in Federal and State prisons has increased eightfold from approximately 13,000 to 100,000 (Federal Bureau of Justice statistics, 1981; Federal Bureau of Justice Statics, 2014). This increase is the result of many factors including increased law enforcement efforts, stricter sentencing policy, and post-release challenges (Haney, 2001). Today, incarcerated women are the fastest growing incarcerated population (Federal Bureau of Justice Statics, 2015).

Though prisons fit into the category of institutions often termed “correctional facilities,” they often struggle to promote correct behavior and well-being (Pacholke, 2014; Listwan et al., 2006, Haney, 2001; SuedFeld, 1980). Historically, women have been disregarded in prison policy, management approaches, and correctional programming (Morash et al, 1998; Fair, 2007). Many approaches to the treatment of incarcerated women have replicated that of men’s except for small adaptations (Fair, 2007). Often, these approaches do not address the specific needs of the incarcerated female population (Fair, 2007; Carp and Davis, 1989).

This “one size fits all” type approach is also seen in the physical design for women’s prison facilities (Carp and Davis, 1989). It has been common practice to replicate the building prototype used for men’s facilities

(Carp and Davis, 1989). “Until recently women’s facilities, have been designed to men’s prison standards, then painted pink” (“A Model for Female Correctional Design,” 2011). Placing women in prison environments ill-equipped to suit their needs can further aggravate the many problems incarcerated women face (Fern and Parker, 2005).

In a prison environment, inmates are often exposed to a considerable amount of stress (Lindemuth, 2014). Exposure to stress has negative implications for psychological health, physical health, and behavior (Ulrich, 1991). Stress during incarceration can come from many sources including physical and psychological illness, separation from family, and the lack of access to physical health and mental health resources (Harner and Riley, 2013a; Harner and Riley, 2013b).

Social and emotional environments of prisons may also contribute to stress levels due to their unpredictable nature (Greer, 2002). The fear of isolation, intimidation, violence, and sexual coercion contributes to the stress of the prison environment (Harner and Riley, 2013; Struckman-Johnson and Struckman-Johnson, 2002; Warren et al, 2004). Mental health issues are common among the incarcerated female population (Harner and Riley, 2013). During incarceration, mental health can worsen from prolonged exposure to stress (Harner and Riley, 2013a; Harner and Riley, 2013b).

Evidence suggests that environments containing nature and natural

elements, can positively impact psychological health (Moore, 1981; Ulrich, 1984, Ulrich, 1991, Hartig, 1991). Exposure to natural environments has been shown to provide benefits such as stress relief, improved self-esteem, and improved focus (Moore, 1981; Ulrich, 1984, Ulrich, 1991, Hartig, 1991; Jiler, 2006).

Prisons fall under Ulrich’s concept of “psychologically hard environments” (Ulrich, 1991). Psychologically hard environments are environments that prioritize function and efficiency over comfort and well-being (Ulrich, 1991). Stress coupled with psychologically hard environments is detrimental to wellness, health, and healing (Ulrich, 1991). Psychologically hard environments have historically been found in both the design of healthcare facilities and prison facilities (Ulrich, 1991). Though the mission of healthcare facilities and prison facilities is slightly different, the facilities share several functional and spatial similarities (Stevens [interview], 2016). In order to mitigate the negative effects of psychologically hard environments, Ulrich proposes designing “psychologically supportive environments” (Ulrich, 1991).

There has been renewed interest in examining the health benefits of therapeutic gardens in healthcare settings. This approach to healthcare design stems from the desire to provide an integrated, holistic approach to healing (Mitrone and Larson, 2007). It can be hypothesized that a similar approach in designing prison facilities may also be beneficial

in a prison setting. However, currently limited literature exists on the application of therapeutic landscapes in prison facilities. Often therapeutic landscapes are not considered relevant in prison setting (Lindemuth, 2014).

Relevance to Landscape Architecture

Prisons are unique environments that present many challenges to process of coping with stress. Exterior environments often consist of large expanses of bland-colored, hard surfaces that lack scale-defining elements (Phillips and Greibel, 2003). Forms and materials are often chosen to provide function and durability (Phillips and Greibel, 2003). Prison landscapes often contain expanses of mowed lawn, walls, and chain-link security fences lined with concertina wire (Lindemuth, 2011). This landscape typology has evolved out of the need to maintain safety (Lindemuth, 2011). Stress relief in prisons can potentially be achieved through applying landscape architectural principles often used in therapeutic healthcare design.

It is common practice in the field of landscape architecture to design spaces that promote positive health and well-being. Evidence has shown that environments that are purposely designed to be therapeutic can have a significant effect on relieving stress (Moore 1981; Ulrich 1984, 1991; Hartig 1991). By applying principles of landscape architectural that focus on reducing stress to prison environment, it may be possible to design a prison in a way that relieves stress while also

accounting for the critical concern of safety.

The practice of Landscape Architecture can extend even further beyond the goal of providing stress relief through addressing a wide range of challenges within the prison system. These challenges include health, economics, and inmate education and vocational training. According to a 2010 report, the cost to house one inmate is about \$31,000 per year. In some states such as Connecticut, Washington, and New York this cost can range from \$50,000-\$60,000 (Vera Institute of Justice, 2012). Approximately 20 percent of this cost is spent on health care-related services for inmates (Pew Charitable Trusts, 2014). Aging inmates, a prevalence of physical and mental illness, and the costly nature of delivering healthcare to prison inmates are all factors that are increasing the healthcare costs (Chokshi, 2013). For the female incarcerated population, mental health issues are a significant problem. As many as 73% of females in state prisons and 61% of females in Federal prisons have at least one mental health disorder (Bureau of Justice Statistics, 2006). Many incarcerated women rely on prescribed medications to treat psychological problems (Messina, et. Al, 2006). Rehabilitative landscapes may potentially improve the mental and physical health of inmates, thus reducing cost of inmate medical expenses.

Using landscape architectural approaches in prisons may also reduce

facility operational costs. Production gardens can be implemented to provide healthy food options for inmates which can aid in improving inmate health. Production gardens can also provide the opportunity for inmates to take part in therapeutic activity (Jiler, 2006; Stevens, 2016). Gardening can be used as a type of vocational training that provides inmates with skills that can be used upon release. Gardening programs, such as the one for Riker's Island Prison Complex, have been associated with reduced recidivism rates (Lindemuth, 2007).

In addition to gardening, prisons can use other technologies to reduce facility water and energy needs. Landscape applications such as strategic grading and planting design can be used to optimize water usage. Grading can redirect water into desired planted areas. Naturalized planting areas can utilize water runoff and provide a sustainable alternative to the water-dependent expanses of mowed lawn. Green roofs are another technology that can potentially help cut down energy costs. Green roofs can be used to reduce the amount of heat absorbed by buildings (Castleton, 2010). This can potentially decrease the amount money needed for energy expenses. The maintenance of these technologies can provide sources stress relief, education, and vocational training for inmates.

Landscapes can be designed to further enhance existing efforts of rehabilitation and provide areas for new therapeutic activities. Many existing prison rehabilitation

programs focus on rehabilitating inmates through therapy, education, and vocational training (Topeka Correctional [site visit], 2016). Outdoor spaces can be designed to accommodate the needs of these programs. For instance, newly implemented outdoor classrooms at the Iowa Correctional Institution for Women have been designed to accommodate the activities of the existing therapy programs. The activities that take place in the outdoor classroom spaces include journaling, individual or group therapy sessions, and role play therapy (Stevens [interview], 2016).

Programs and communities not immediately associated with the prison system may also be benefited through the application of innovative, therapeutic programming. In 2003 the Washing Department of Corrections implemented the Sustainability in Prisons Project. This program provides inmates with a chance to participate in ecological research and biological conservation (Sustainability in Prisons Project, 2017). This type of environmentally-focused programming has the potential to benefit environmental communities outside of the prison institution.

Capitalizing on the idea of programs such as the Sustainability in Prisons Program, landscape architecture can provide outdoor spaces to accommodate innovative types of environmentally-focused programming. Outdoor classrooms can be designed as spaces for inmates to learn about environmental education. Programs such as

beekeeping can support other rehabilitative activities like gardening, through providing pollinators. There are many types of outdoor spaces landscape architects can design that accommodate environmentally-oriented programming.

Project Purpose

Incarcerated women have specific needs and require special services that are often overlooked in prison management policy and facility design (Fairweather and McConville, 2000). This report attempts to address some of those needs through landscape design. **The goal for this report is to explore how landscape architectural principles can be used to design therapeutic landscapes for women's prison facilities.** This report also explores **to what extent prison environments can be designed to promote positive psychological health and behavior.**

These questions are examined through an exploration of ways to enhance the therapeutic outdoor experience through programming and form. This report addresses both physical forms and programmatic elements. Physical forms are explored in an attempt to "soften" the rigid and constraining effects of prison environment. Programmatic elements provide multiple levels of design complexity. The proposed uses of these spaces focus on proving various methods of stress relief and ways to promote positive behavior.

Therapeutic landscapes can potentially improve psychological health and promote positive behavior.

In order to design therapeutic landscapes for women's prisons it is necessary to understand the specific needs of incarcerated female population. This report attempts to identify and understand some of the key needs of the incarcerated female population in order to apply that knowledge to existing therapeutic design principles. The synthesis of this information will create an approach to be utilized in the specific challenge of designing therapeutic landscapes for women's prisons.

Road Map

This report discusses various methods used to (1) identify the needs and challenges of incarcerated women and (2) the challenges of existing prison environments. A literature review examines the topics of the challenges of incarcerated women, the characteristics of the prison environment, therapeutic healthcare gardens, and therapeutic prison landscapes. Methods also include a prison imagery inventory and analysis, interviews with experts, and facility site visits.

Information from the methods was condensed into key findings. Findings were then synthesized to create design guidelines for landscapes in women's prison facilities. The developed guidelines focus on providing recommendations for designing therapeutic prison landscapes. The final product of this report is a conceptual design for the Topeka Correctional Facility. The conceptual design applies the developed guidelines.

These guidelines and design exploration are a preliminary attempt at creating a widely applicable set of recommendations for landscapes within women's prison facilities. As research on therapeutic prison landscapes expands, the intention is for the guidelines become more comprehensive and expand into the study of landscape design for other incarcerated populations.

Key Report Products

The **Prison Imagery Design Analysis** contains a method for analyzing and documenting the current state of landscapes in prison facilities. The Prison Imagery Design Analysis is further discussed in Chapter 4 of this report.

Design Guidelines for Women's Prison Facilities provides recommendations for designing spaces that reduce stress and promote positive behavior. The Design Guidelines are provided in Chapter 6 of this report.

A Conceptual Site Design for the Topeka Correctional Facility uses the developed guidelines to create a conceptual design. This women's prison facility is located in Topeka, Kansas. Design Concepts for the Topeka Correctional are discussed in Chapter 7 of this report.

Report implications

This research has the potential to extend beyond designing women's prison facilities. The research presented in this report can serve as the starting point to further examine

landscape architecture approaches in a variety of prison institutional settings. Research can be expanded to include the needs of other incarcerated populations such as male, elderly, disabled, juvenile, etc. Further research and design exploration is needed across a variety incarcerated populations and site conditions (geographic location, security level, etc). Landscape architects can provide new approaches to design that can potentially decrease negative aspects of the environment and provide design alternatives that promote greater psychological health and well-being.

Chapter 2

Literature Review

The goal of this literature review is to analyze and synthesize existing literature related to landscape design for women's prison facilities. Literature on the topic of designing exterior environments within prisons is highly limited. Due to the limited information on the topic, this literature review involved the a review of topics which consisted related topics. These topics include: The Needs and Challenges of Incarcerated Women, Stress Caused by Prison Environments, and Therapeutic Design for Healthcare Facilities. Synthesized literature was used to create the Design Guidelines (Ch 6) and subsequently, the application of developed design guidelines in the Conceptual Design for the Topeka Correctional Facility (Ch7).

Challenges of the Incarcerated Female Population

It is important to recognize the distinct challenges incarcerated women face both prior to and during incarceration. Recognizing these challenges is critical in order to design to accommodate the unique needs of the incarcerated female population.

The reasons for female crime are wide ranging and complex. Crime is often a response to negative events which include both short term "crisis situations" and prolonged disadvantages (Singer et. al, 1995).

Prior to incarceration, many women face problems with drug and alcohol addiction, and physical and sexual abuse (Bureau of Justice Statistics, 2015; Harlow, 1999; Messina et

al., 2006;). Approximately 60% of women in state prisons and 40% of women in federal prisons have reported abuse prior to incarceration. (CSOSA, 2016; Bureau of Justice Statics, 1999). Illegal drug use and alcohol consumption are more common among abused incarcerated women than incarcerated women who had not been abused (Harlow, 1999). Incarcerated women were significantly more likely than incarcerated men to have severe substance abuse histories and to have grown up in homes where drug use was present (Messina et. al, 2006).

Approximately 59% of women are incarcerated for drug related charges. (Bureau of Justice Statistics, 2015).

Women are more likely than men to commit nonviolent crimes such as prostitution, fraud, property crimes, and drug offenses (Singer et. al 1995).

While in prison, many female inmates continue to struggle with addiction (James and Glaze, 2006).

Incarcerated women have a wide range of physical and mental health issues. Physical health problems include acquired immune deficiency syndrome (AIDS), sexually transmitted disease, obesity, and chronic health problems including hypertension, diabetes, epilepsy and respiratory illnesses (Young, 2000; Bureau of Justice Statistics, 2015;). Commonly cited mental health problems among female inmates include depression, anxiety, and post-traumatic stress disorder (PTSD) (James & Glaze, 2006). As many as 73% of females

in state prisons and 61% of females in Federal prisons have at least one mental health disorder (Bureau of Justice Statistics, 2006). It is commonly recognized that many inmates fail to receive the healthcare they need (Wilper et al. 2009).

Pregnancy and motherhood present challenges unique to the female incarcerated population. Pregnancy-related and gynecological problems present challenges for the female incarcerated population (Young, 2000). Health problems caused by drug and alcohol use have the potential to cause complications during pregnancy (Knight and Plugge, 2005). Often facilities are not well-equipped to provide for the needs of pregnant women (Ferszt and Clark, 2012).

Often issues coexist with one or more additional problems. Drug addiction often exacerbates psychological health problems (Messina, et. Al, 2006). Pregnancy can be further complicated by drug use (Knight and Plugge, 2005). Often, for incarcerated women there are not enough available services and programs to accommodate their physical and mental health needs (Young, 2000). Findings suggest that women were more likely than men to present greater challenges to treatment practitioners (Messina et. al., 2006).

Incarceration may have significant impacts on the incarcerated women and their families (Sharp and Marcus-Mendoza, 2008). Approximately 62 percent of women in state prison and 56 percent in federal prison are

mothers to a child under the age of 18 (Bureau of Justice Statistics, 2010). Many of these women are noted as the primary caretaker of these minor children (Sharp and Marcus-Mendoza, 2008). Incarceration presents many challenges to raising a child and many women experience high levels of stress due to concern for the health and well-being of their children (Sharp and Marcus-Mendoza, 2008).

Children may be especially vulnerable to the impacts of having an incarcerated mother (Sharp and Marcus-Mendoza, 2008). Studies have found that children with incarcerated mothers experience feelings of uncertainty and loss (Sharp and Marcus-Mendoza, 2008). Studies have also indicated that there is the potential for the children to be placed with families that have histories of abuse and that lack adequate resources to raise a child (Sharp and Marcus-Mendoza, 2008). Evidence suggests children with incarcerated mothers suffer emotionally, financially, and socially (Richie, 2001). Incarceration can cause the weakening of the mother child-relationship and create difficulties in repairing relationships even after the mother is released (Richie, 2002).

Incarcerated women commonly perceive imprisonment be detrimental to their health. (Douglas et. al, 2009; Harner and Riley, 2013a; Harner and Riley, 2013b). Women noted a vast range factors contributing to poor health. Most commonly noted were isolation, lack of mental stimulation, drug abuse, negative relationships (e.g. bullying) and lack of family

contact (Harner and Riley, 2013a, Harner and Riley, 2013b). Other factors contributing to poor mental health, included fear, stress, limited access to mental health services, worry over physical health issues, and poor treatment by health and correctional professionals” (Harner and Riley, 2013a, Harner and Riley, 2013b). Evidence suggests that women’s health in prison is closely linked to their experience of incarceration. (Douglas et al., 2009; Nurse et al., 2003). Existing physical and emotional issues are often aggravated during incarceration due to exposure to facilities unsuited for women (Fern and Parker, 2005).

Prison Environments

Designing for security has been of utmost importance in prison architectural design (Federal Bureau of Prisons, 1949; Great Britain: Home Office, 1985; Phillips and Greibel, 2003). The forms of the physical environment have often prioritized safety, security, and durability (Lindemuth, 2011; Phillips and Greibel, 2003). The concept of normative design proposes an approach to designing environments in a way that promotes positive behaviors and beneficial inmate interaction (United States Bureau of Prisons, 1949; Phillips and Greibel, 2003). The concept of normative design aims to “deinstitutionalize” the prison environment without compromising security (Phillips and Greibel, 2003). Applications of normative design are generally reserved for inmates of minimum security status (Phillips and Greibel,

2003).

Historically, women’s prison policy, programming, and design have mirrored the approaches used in men’s institutions except for small adaptations (Fair, 2007). Until recently, there has been a considerable lack of attention given to the environment that is specific to the needs of women (Julie Stevens interview). Women are typically more sensitive and have shown to be more responsive to the normative design approach (A Model for Female Correctional Design, 2011). Prolonged exposure to harsh prison environments can potentially lead to negative psychological consequences (Liebling and Maruna, 2005).

An important aspect to consider within prisons is social and emotional environments. “Many women described the emotional environment of correctional facilities to be both capricious and unpredictable while also being rigid and constraining” (Greer, 2002). Studies suggest that social environments can contribute to the negative experience of prison (Douglas et al., 2009; Nurse et al., 2003; Greer, 2000).

Female inmates are significantly impacted by the relationships they form in institutions (A Model for Female Correctional Design, 2011). Research in a women’s prison found high levels of mistrust among female inmates (Greer, 2000). Female inmates have reported relationships in prisons can often form out of economic manipulation (Greer, 2000). In recent years, research has found that the

relationships between incarcerated women are not as familial as in past generations and there has been a shift away from relatively caring “pseudo-families” (Greer, 2000). Women now often perceive serving time in prison to be a more solitary process (Greer, 2000). Many women use solitude as a way to avoid conflict. Avoidance and distraction are used as a way to avoid conflicts and deal with stress of the environment (Greer, 2002).

Prison environments can be potentially hostile and violent areas (Lindemuth, 2014). Inmates and staff deal with constant fear for personal safety. Many inmates and staff believe that they are potential targets for assault (Lindemuth, 2014). The potential for violence is a daily reality within the prison system. While incarcerated women are typically less violent than their male counterparts, incidents of violence still occur in women’s facilities (Harer and Langan, 2001) Violence among female inmates is commonly linked with mental health disorders (Warren et. al, 2002). Fear of violence can provide a constant source of stress (Lindemuth, 2014).

The Effects of Nature on Mental Health and Behavior

There is a significant amount of research that examines the relationship between nature and improved mental health (e.g. Kaplan, 1995; Kaplan, 2008; Ulrich, 1984; 1991; Moore 1981; Hartig 1991). Studies have shown correlations between environment and stress. When environments are purposely

designed to be therapeutic, they have been shown to relieve stress and alleviate mental fatigue (Ulrich, 1991).

Moore (1981), West (1985), and Spafford (1991) have contributed to the body of research related specifically to restoration in a prison setting. Moore (1981) analyzed the relationship between views, noise levels, and privacy, and the number of sick calls received by the infirmary. He found that inmates with views to farmland reported less sick calls than those with views to the interior prison yard (22.9% vs 28.4%). He also found that having lower noise levels and more privacy within the facility positively influenced health. West (1985), using a similar methodology, continued the study, relating sick calls to the percentage of naturalistic elements viewed, versus built elements. He found views with a higher percentage of naturalistic elements, reported fewer sick calls. A study conducted by Spafford (1991) suggests the significance of visually complex natural views. Views with greater visual complexity were found to have higher calming effects for prison inmates and staff.

Research relating to views of nature within prisons has suggested that inmates with views to nature are positively impacted both physically and psychologically (Moore, 1981; West, 1985; Spafford, 1991). Higher percentages of naturalistic elements and more visually complex views of nature were shown to have a greater calming effect on inmates than views of interior prison yards (West, 1985; Spafford, 1991). The three studies

indicate that nature has beneficial effects on the physical health and mood and behavior of inmates.

Gardening and Active Participation

Additional therapeutic benefits can be gained through active landscape participation (Lewis 1990). Gardening programs can provide opportunities for inmates to engage in active landscape participation (Jiler, 2008). Lewis (1990) notes that both observation and participation are beneficial; however there is a different kind of healing and restoration that is achieved through gardening. Active participation through creating and maintaining green spaces may provide deeper, long-lasting emotional and psychological benefits (Lewis, 1990).

Historically, gardening has been associated with improving health through fresh air and exercise. Gardening provides psychological benefits such as stress reduction, increased self-esteem, and improved mental focus (Jiler 2006). The act of gardening has been used to provide horticultural therapy for inmates (Jiler, 2006). Gardening can provide a way for inmates to cope with stress and health issues caused by incarceration (Lindemuth, 2007). Both inmates and staff can benefit from the calming experiences a garden. Officers at Riker's Island have expressed a feeling of calm when they experience the garden areas. Officers have also observed the garden having a noticeable calming effect on the inmates (Lindemuth, 2014).

The act of gardening can allow inmates to regain a sense of control through the opportunity to care for and shape their environment (Jiler, 2008). Participation allows inmates to feel personally responsible for caring for and nurturing plants (Jiler, 2008). This connection results in a deeper level of care and appreciation for a landscape (Jiler, 2008). Gardens can also provide a chance for inmates to explore the process of personal growth, change and self-realization (Jiler, 2008).

Gardens and other landscaped areas in prisons can provide opportunities for inmate education and vocational training as well as providing cost benefits for the facility. Providing gardens and landscaped areas can allow inmates to develop skills related to landscape planting and maintenance (O'Callaghan et. al, 2010). Production gardening can allow inmates to learn about and experience the process of growing food while and also provide facility cost benefits. Food grown in the garden can be used in the facility kitchen, providing an opportunity for healthy meals. Nutritious food options can lead to improved physical health.

Several studies have shown that garden programs can potentially help improve behavior and lower recidivism rates (Jenkins, 2016; Lindemuth, 2007). A study conducted by Rice (1993) found that inmates that participated in the San Francisco County Jail the Garden Project were more likely to reduce destructive behaviors such as forming friendships with criminal associates, damaging

familial relationships and drug use (Lindemuth, 2007). Many prison gardening programs are demonstrating reduced recidivism rates (Jenkins, 2016). The Greenhouse Program on Riker's Island has documented a drop in the recidivism rate from 65 to 25% (Lindemuth, 2007).

Healing Gardens in Hospital Settings

Gardens are often not considered relevant in a prison context (Lindemuth, 2014), however, recently there has been a renewed interest in the use of gardens in healthcare facilities (Mitrione and Larson, 2007). The growing interest in an integrated approach to medicine, has led to increased research on the relationship between nature and health (Mitrione and Larson, 2007). Ulrich (1984) has been a much cited research study in this subject. Ulrich's study examined the relationship between the length of hospital stay, the use of pain medicine, and views through hospital windows. Results of the study found that patients with natural views recovered faster and needed less pain medication.

Both healthcare facilities and prisons can fall under Ulrich's concept of "psychologically hard" environments. Psychologically hard environments prioritize function and efficiency over comfort and are detrimental to the well-being and psychological needs of patients. (Ulrich, 2008). Ulrich (2008) states that prolonged nature exposure during long durations of time (such as those experienced in healthcare

facilities and prisons) may tend to have the substantial stress relieving benefits.

Individuals in healthcare facilities and prison facilities suffer from a large range of physical and mental health problems (Harney and Riley, 2013). While the primary purpose of healthcare facilities is to distribute healthcare services to ill patients, the goals of many prisons are commonly centered on safety, rehabilitation, and reintegration. Individuals in both healthcare facilities and prison facilities can undergo considerable amounts of stress and long periods of confinement (Ulrich and Parsons, 1990; Clearwater and Coss, 1990). Individuals in both healthcare facilities and prison can both benefit from stress relieving nature exposure (Ulrich, 2008).

Ulrich's Theory of Supportive Design suggests that healthcare facilities can be designed to be "psychologically supportive". This theory employs the use of design to (1) limit obstacles that impede coping with stress and features that are stressors (2) provide stress relieving physical features or social situations (3) provide benefits for patients, visitors, and staff (Ulrich, 1991). The transition of prison environments from psychologically hard to psychologically supportive may not resolve all the issues related to healthcare needs in prison, however, it may help alleviate some health problems.

Prison Design Literature

Prisons are unique design environments that presents many design challenges. Prisons are often highly political environments that can quickly fall under new administration. The process of design and implementation can be restricted or altogether terminated by a new warden and staff. Constantly changing administration can prevent long term progress and limit opportunities in the design and implementation of therapeutic landscapes in prisons (Lindemuth, 2014).

In order to cope with the issue of rapid turnover, a high degree of advocacy and participation is needed. Public and staff support is highly important in order to achieve successful projects (Lindemuth, 2014). Throughout the design and implementation process, is necessary to work closely with all levels of staff.

The concerns of staff should be understood and addressed by the designer. Staff may be resistant to change due to perception of safety concerns created by adding elements to the prison landscape. It is important that the designer highly consider the requirements of safety as well as therapeutic elements. Providing a safe environment is critical for both inmates and staff.

Superintendents that implement therapeutic gardens and landscapes may run the risk of being viewed as lenient. In order to respond to this problem the landscape design can include cost benefits (Lindemuth, 2014). Designing landscapes that are

therapeutic and provide cost benefits may help gain support for the idea of prison landscapes.

There are many challenges in designing therapeutic landscapes for the prison environment. Incarcerated women deal with numerous physical and psychological health problems both prior to and during incarceration. Stress caused by the prison environment can potentially worsen these problems. Exposure to nature has been shown to reduce stress and promote positive behavior. Landscape architecture can be used to create stress relieving environments that address the needs of incarcerated women and work within the constraints of prison environments.

The following chapters will further examine, existing prison landscapes and explore ways of potentially mitigating the stress of the prison environment through landscape architecture design principles.

Chapter 3

Methodology

Methods discussed in this chapter were used to gain an understanding of the current state of prison landscapes. Methods consisted of an imagery analysis, interviews, and site visits. The prison imagery analysis was used to examine space and form, function, technology, and ecology found in prison landscapes. Interviews with landscape architects were used to gain an understanding of the process of designing within the prison context. A site visit to the Topeka Correctional Facility provided an opportunity to interview staff and observe the site for the conceptual design portion of this report. A site visit to the Iowa Correctional Institution for Women provided an opportunity to interview Julie Stevens and observe a recently installed outdoor classroom area and production gardens.

Key pieces of information were synthesized from the methods and used to inform the design guidelines and the conceptual design for the Topeka Correctional Facility.

Observing Existing Prison Facilities Using Online Images and Google Earth

Images of ten prison facilities were examined to gain an understanding of the landscape architecture principles of space and form, function, technology and ecology. These principles were examined to determine potentially negative aspects (that cause stress or disrupt the process of coping with stress) and positive aspects (that reduce stress) of the prison facility design. Examining negative aspects helped

identify issues to be addressed in the design guidelines. For example, a 40' tall stone wall is a form of technology that exists within prisons. Walls provide the function of security, but a solid wall may block views of the surrounding landscape. Alternatively, a permeable boundary could provide inmates with visual exposure to nature. Visual exposure to nature has been shown to improve mental health (Ulrich, 1984; Ulrich et. al, 1991; West 1985; Moore, 1981).

During this step, ten prisons that are currently operational within the United States were examined. In order to provide a comprehensive analysis, the facilities examined included men's facilities, women's facilities and coed facilities. Facilities selected for the analysis included State-level facilities, Federal-level facilities, and one Military facility (Federal-level but operated by the Department of Defense). The majority of facilities selected house various security levels. State prisons have three security levels: minimum, medium, maximum. Federal prisons have five levels: minimum, low, medium, high, and administrative.

Facilities within the Midwest were prioritized in order to examine the landscapes of facilities within the geographical region of the site selected for the conceptual design (the Topeka Correctional Facility). Two administrative level prisons (ADX Florence, and Federal Medical Center Carswell) were also included in order to examine landscapes for facilities that house inmates that pose the highest security risks or have serious

medical problems. The remaining facilities were randomly selected from a list of all State-level and Federal-level facilities. During the selection process, prison facilities lacking sufficient historical information and facility imagery were disregarded.

Jails and juvenile detention facilities were not included in this analysis due to the duration of time individuals stay in these facilities. Jails and juvenile facilities are often shorter-term stays, while individuals occupying prisons are typically there for long-term periods of time. The exploration of landscape design for jails and juvenile detention centers should not be disregarded. Prison facilities were the focus of this report because this type of facility presents opportunities for the study and observation of the long-term effects of nature on stress and behavior.

The following general inventory data was collected for each facility:

- Name of Facility
- Location
- Management (Federal or State)
- Level of Security
- Genders served
- Total Capacity
- Population (estimated)
- Date Opened
- Additional Notes

The landscapes of the ten prison facilities were then examined from a landscape architecture design standpoint. The design analysis information is classified into 4 categories; Form/Space, Function, Technology, and Ecology. These

categories are derived from Ching's Architecture: Form, Space, and Order 3rd Edition (Ching, 2007).

General inventory data and design analysis information was formatted into the *Imagery Analysis* template (page 26-27) . This template includes images from Google Earth and free-use images in order to provide an additional understanding of the visual qualities and spaces found in prisons.

Challenges

There is very little existing literature on design for outdoor space within prison facilities. Literature on prison design primarily consists of recommendations for prison architecture. Prison architecture guidelines make few, vague suggestions for the programming and design of outdoor space. This lack of literature created challenges in identifying beneficial and detrimental forms, functions, technologies, and ecology in existing prison landscapes.

Design guidelines for therapeutic gardens in healthcare facilities provided a base-level knowledge that was used to determine therapeutic qualities of prison landscapes. The imagery design analysis was also supplemented by an understanding of landscape architecture design principles gained from the author's education in Landscape Architecture at Kansas State University.

Another challenge of this method was the available imagery for facilities. For presumed security purposes, prison facility imagery is somewhat limited in

quantity and quality. Imagery also may not accurately show what the facility looks like currently (some imagery taken from Google Earth was last updated in 2015).

Google Earth imagery allows for facilities to be examined in plan view. Analyzing the layout of a facility in a two dimensional plan view creates challenges for determining critical spatial aspects such as the building heights. The ability to use the 3D building feature in Google Earth is enabled for a limited number of prison facilities. However, the 3-D building feature still lacks a sufficient amount of detail. In order to obtain more detailed imagery, Google searches for images were performed. These images are also limited in quantity and in quality.

Examining still images does not provide a complete understanding of spatial and experiential qualities. It is difficult to determine how spaces are used through analyzing still images. None of the images were taken with the intent of showing the prison landscape design. There may be spatial qualities, design features, and programmatic functions that exist, but are not immediately understood through looking at photos. Regardless, a design analysis was attempted. The imagery design analysis provides a method of analyzing prison landscape design that could be used to create a more detailed analysis in future research. More in-depth research and analysis could be conducted through site visits to the facilities.

Another challenge was the lack of

general inventory information that was publicly available. Many prisons lack web pages that discuss current facility statistics and historical information. The general inventory information listed in the following chapter was obtained through use of Wikipedia pages. It is recognized that Wikipedias not a preferred source and information may not be entirely accurate or up-to-date.

Interviews with Landscape Architects

During the research process two designers were identified as having relevant experience related to prison landscape design. These two experts included Amy Lindemuth, Designer at Mithun (Seattle, WA) and Julie Stevens, Assistant Professor at Iowa State University (Ames, IA). Both women have had experience in design and implementation in prison facilities. Interviews were conducted to gain insights from their specific experiences in working in prison environments.

Interviews were set up via email. The initial email included a brief summary of the research topic and a request for an interview. Emails were exchanged and phone interviews were arranged with Ms. Lindemuth and Ms. Stevens. Interview topics for Lindemuth and Stevens focused on general information about their research and experience, the process of working with inmates and correctional staff, their design process, and available post-occupancy evaluations. Full interview questions and recorded notes will be included in the Appendix.

Site Visits and Interviews

Over the course of the research, the Topeka Correctional Facility and the Iowa Correctional Institution for Women were visited and observed. The Topeka Correctional Facility was visited in order to observe and inventory the site chosen for the conceptual design and to interview staff. Observations and interviews informed the conceptual site design portion of this report. During the interview topics of the prison context, rehabilitation programming, landscape safety concerns, and potential design improvements were addressed to Deputy Warden, Colene Fishchili, Chief of Security, Tammy Shoulders, and Landscaping Instructor, Bradley Metzler. After the interview, a tour of facility grounds was lead by Mr. Metzler.

During the process of corresponding with Julie Stevens, she extended an invitation to visit the Iowa Correctional Institution for Women. ICIW was visited in order observe the design implemented at the facility and to ask Mrs. Stevens additional questions. During the visit, the author was able to take part in the one of the weekly landscape education classes led by Julie Stevens and several Iowa State Landscape Architecture students. Notes and observations were recorded during the class and site tour.

Site visits allowed for the observation of site functions such as the flow of circulation, accessibility of spaces, programming, and topography. Site visits also allowed for the observation of experiential qualities of the

spaces. The use of photography was not authorized within the facilities. Sketches were produced in order to aid with the author's spatial memory. Key information and syntheses of site observations are included in Chapter 5. Full interviews and additional site visit notes are provided in the Appendix.

Figure 3.01 The Prison Inventory and Analysis template is as follows:

Prison Name

General Inventory

Location:

Managed by:

Security Level:

Gender:

Capacity:

Estimated Population:

Date Opened:

Figure

Additional Notes:
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Design Analysis Chart

Form/Space	Function	Technology	Ecology	Context
Mas/Void Organization	Simulation	Superintendental Technologies Lighting	Existing vegetation	Access
Scale of built elements		Materials (hardscape, softscape)	Topo/slope	Views
Degrees of Enclosure	Programming	Security measures, Surveillance (watch towers, cameras) Lighting Walls/fences	Soil/hardscape ratio	Parking lots
Space defining elements	Superintendental Qualities			Vegetation
Overhead structures and purpose (shade)				Barrenness
Ordering principles Symmetry Spatial hierarchy Rhythm Repetition				Prison Exterior Lighting

Figure
Figure

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Chapter 4

Imagery Analysis Findings

United States Penitentiary, Leavenworth



Figure 4.01

General Inventory

Location: Leavenworth, KS
 Managed by: Federal Bureau of Prisons
 Security Level: Medium
 Gender: Male
 Capacity: unknown
 Estimated Population: 1,971 (442 in prison camp)
 Date Opened: 1903



Figure 4.02

Additional Notes:

Also known as the "Big House", USP Leavenworth is one of the oldest federal prisons in the US. USP Leavenworth was the largest maximum security prison in the US before being reduced to a medium security facility in 2005 (Kimble, 2015).

Form/Space

Scale of built elements

30'+ tall wall surrounds perimeter
 Main building at entrance is a large official government looking type building

Degrees of Enclosure

Large open recreation area
 large open lawn area with only light poles and mowed grass
 tall building walls define spaces
 areas enclosed by fences

Space defining elements (walls, fences, trees, etc.)

metal link fences
 wall around perimeter
 Large building walls

Overhead structures

no determined shade structures,
 building height may provide some shade

Ordering principles

Spatial hierarchy- Large entry building is the most dominant feature of the site

Function

Approach/entry experience

Entry circulation leads directly into the central part of the main building

Exterior pathways within the prison grounds

gridded circulation system, except in SE corner, stands in stark contrast to the rest of the circulation within the prison

Programming

Recreation area: track, baseball diamond, sports courts (basketball, tennis etc.)
 Large, open, paved, outdoor seating area with tables and benches

Experiential Qualities

Doesn't appear to a significant amount of protection from natural elements (limited or no shade structures, wind blocks, etc.)
 Some building windows may overlook the recreation area, however most windows seem to be oriented to provide views of other buildings and/or pavement
 30'+ Solid wall that defines perimeter blocks views of surrounding landscape

Technology

Experiential Technologies

Lighting: tall floodlight posts

Materials

Concrete wall
 Chain-link fences
 mowed lawn
 concrete
 colored paving in rec area

Security measures

Surveillance (watch towers located in the corners along the wall)
 Flood Lighting
 Walls and wire Fences used

Ecology

Existing vegetation

mowed lawn provides limited ecological value

Soil/hardscape ratio

Large amount of hard surface area (pavement and building roofs) slightly less amount of mowed turf area

Context

Open land with residential neighborhood to the South

Watchtowers located along perimeter wall

30' Solid wall surrounds perimeter

Many building views are blocked by other buildings

Large expanse of pavement near assumed housing unit



Figure 4.03

Small highly enclosed spaces surrounded by tall building walls

Vegetation within facility is primarily mowed lawn

Naval Consolidated Brig, Miramar



Figure 4.04

General Inventory

Location: San Diego, CA
 Managed by: US Navy
 Security Level: Tier II Military
 Gender: Male and female
 Capacity: 400
 Estimated Population: unknown
 Date Opened: 1989



Figure 4.05



Figure 4.06

Additional Notes:

Naval Consolidated Brig, Miramar is used to house prisoners of war, unlawful combatants, those whose freedom is deemed a national security risk by the military or national authorities, and members of the military found guilty of a serious crime (Wikipedia).

The area that houses female inmates was consolidated redesigned focusing on the needs of the female population (A Model for Female Correctional Design, 2011)

Design Analysis

Form/Space

Mass/Void Organization

linear, and clustered repeating triangular forms

Scale of built elements

Buildings all of similar height, looks to be 1 and 2 story buildings\

Degrees of Enclosure

extremely high level of enclosure, all outdoor spaces are surrounded by building on all sides
 largest area of green open space is the entry courtyard area-not accessible by the inmates

Space defining elements (walls, fences, trees, etc.)

mostly building walls, exterior perimeter has chain-link fence

Overhead structures and purpose (shade)

buildings have overhang areas that provide shade

Ordering principles

Spatial hierarchy-building mass is predominate feature of site
Repetition-most outdoor spaces rectangular and look the same, building masses are mostly triangular Many repeating forms

Function

Circulation

Approach/entry experience-direct linear path into building entrance

Exterior pathways within the prison grounds-lacking outdoor pathways, most pathways are within the buildings

Programming

open lawn space
 some kind of sand/dirt volleyball court
 paved area with possible gym equipment

Experiential Qualities

Building walls form highly enclosed spaces
 Narrow building windows provide views of interior yard areas and built structures

Technology

Experiential

Technologies
 Materials concrete, turf, and sand

Security measures

Surveillance (watch towers, cameras)
 Metal Fences lined with barbed wire

Ecology

Existing vegetation

possible area of xeriscaping outside the fence
 Barren areas between buildings and fence

Soil/hardscape ratio

most of the site is building mass, large expanses of hard surfaces

Context

main parking lot is right in front of the main entrance
 Vegetation bordered by a golf course on the south
 Vegetated desert shrub and tree landscape

Repetitive building forms

Rigid pathway form

Largest area of greenspace is located at the building entrance and is inaccessible to inmates

Paved, fenced in outdoor cages



Figure 4.07

Similar character of exterior spaces: rectangular in shape, similar in size, similar outdoor programming

Expanses of mowed lawn with limited other vegetation

Area between units and fence is kept clear of vegetation. Lack of interesting views

Two levels of razor wire fences enclose perimeter

ADX, Florence



Figure 4.08

General Inventory

Location: Florence, CO
 Managed by:
 Security Level: Supermax with adjacent minimum security camp
 Gender: Male
 Capacity: unknown
 Estimated Population: 927 (408 supermax, 519 camp)
 Date Opened: 1994



Figure 4.09



Figure 4.10

Additional Notes:

ADX is the only supermax prison in the United States. Super-maximum-security prisons contain the most secure levels of custody and house inmates classified as the highest security risks in the prison system (Mears, 2006).

Form/Space

Mass/Void Organization
 Organization varies by security level
 In this facility most buildings are organized a central open space.
 Central open space is large open lawn
 repetitive building forms

Scale of built elements
 huge watch towers, taller than buildings, cant exactly determine the scale of the buildings

Space defining elements
 fences and walls define exterior boundaries
 building walls define spaces within the walled boundary

Overhead structures
 no determined shade structures, building height may provide some shade

Ordering principles
Symmetry-strong symmetry security area
Spatial hierarchy-varies by security level, some areas have more building mass, some have large areas of open space
Rhythm
Repetition- lots of repetition in the building forms

Function

Circulation
Approach/entry experience- each security area is located far away from the main circulation road

Exterior pathways within the prison grounds- rigid geometries form efficient circulation pathways in all areas of facility, some areas have the majority of circulation within buildings/have limited outdoor pathways

Programming
Program types (relaxation, recreation etc.)- outdoor courts, baseball, soccer fields, recreation cages-fenced in wire cage with concrete floor

Experiential Qualities
Views from inside cells to outside windows look upon vast open spaces or at other buildings

Comfort (Protection from natural elements)- open expanses contain limited areas of shade spaces appear to lack protection from natural elements

Technology

Experiential Technologies
 Lighting tall floodlight poles throughout and around perimeter near the fences
 has an area of solar panels

Materials
 large expanses of mowed lawn
 concrete paving
 wire fences
 bland -colored buildings, brick buildings

Security measures
 huge concrete watch tower structures
 Floodlights
 2 layers of fences with razor wire

Ecology

Existing vegetation
 prairie like surroundings

Soil/hardscape
 large areas of building roofs, mowed lawns and paved pathways

Context

Facility is surrounded by vast a open fields/prairie like landscape located far away from main roads isolated feeling

Scale of facility is huge

Vast open spaces, lack of enclosure

Rigid, repetitive pathways for efficient circulation

Floodlights



Figure 4.11

Repetitive building forms

Large centrally-located watchtower

Federal Medical Center, Carswell



Figure 4.12

General Inventory

Location: Fort Worth, TX
 Managed by: Federal Bureau of Prisons
 Security Level: all levels (with Minimum-security camp)
 Gender: Female
 Capacity: Unknown
 Estimated Population: 1,488 (331 in camp)
 Date Opened: 1994



Figure 4.13



Figure 4.14

Additional Notes:

Houses female inmates with special physical and mental health needs (Wikipedia).
 Previously served as a medical center for the Carswell Air Force Base (Wikipedia).

Form/Space

Scale of built elements
 large hospital-like buildings

Degrees of Enclosure
 large open lawn space

Space defining elements
 fences surround perimeter and define main outdoor space
 Trees reinforce pathways

Overhead forms
 trees are found throughout the open area and provide many opportunities for shade

Ordering principles

Symmetry
Spatial hierarchy- outdoor space has significant presence
Rhythm
Repetition

Function

Circulation
Approach/entry experience
Exterior pathways within the prison grounds
 wide concrete pathways

Programming
 Lawn space takes up a large amount of outdoor space, lawn is inviting with seating areas and trees
 recreation sports courts, baseball field, track

Experiential Qualities
 trees provide dynamic visual interest and shade

Technology

Materials
 mowed lawn area
 concrete paths
 has a lot more trees than all other facilities that were examined

Security measures
Surveillance (watch towers, cameras)
Lighting
Walls/Fences

Ecology

Existing vegetation
 Trees may provide some ecological value

Soil/hardscape ratio
lots of green lawn area

Context

Located nearby lakes and river
 Some buildings may be able to view the lake
 surrounding context contains dense tree mass



Figure 4.15

Garden area

Expanses of lawn dotted with trees that provide some sense of shade/shelter

Pathways for efficient circulation

Large hospital building

El Dorado Correctional Facility



Figure 4.16

General Inventory

Location: El Dorado, KS
 Managed by: Kansas Department of Corrections
 Security Level: Medium, Maximum, and Special management
 Gender: Male
 Capacity: 1511
 Estimated Population: unknown
 Date Opened: 1991



Figure 4.17

Additional Notes:

Facility was built in response to a lawsuit challenging prison conditions. EDFC is the newest correctional facility in Kansas (Cadue, 2014).

Form/Space

Mass/Void Organization
 area of administration buildings organized on a grid
 housing units arranged around a central open space
 large open fenced in lawn area on the south end of the site

Scale of built elements
 Mostly 3 story buildings

Degrees of Enclosure
 Main central space is formed by housing units
 Large open space
 fences used to contain inmates within central space

Space defining elements
 wire fences surround perimeter
 buildings form main central outdoor space

Ordering principles
Symmetry-high level of symmetry throughout facility
Spatial hierarchy
Rhythm
Repetition

Function

Circulation
Approach/entry experience-leads directing into main office building
Exterior pathways within the prison grounds-direct efficient circulation within the facility

Programming
 Recreation: Basketball courts and a track
 limited outdoor seating areas

Experiential Qualities
Views from inside cells to outside-majority of views of other buildings, and interior space
 limited shade/protection from natural elements
 facility may have a fenced in garden area

Technology

Materials
 mowed lawn
 concrete pathways
 wire fences

Security measures
 Two layers of curved wire fencing with razor wire
 large scale watch towers
 floodlights

Ecology

Existing vegetation
 expanses of mowed lawn

Soil/hardscape
 Expanses of mowed lawn
 large amount of roof area

Context

Large open prairie like context
 Facility located far away from the main road

Razor wire fences surround perimeter

Fences in front of the entrances to units

Fences contain inmates within the central outdoor area



Figure 4.18

Recreation cages outside presumed max security units

Central outdoor area consists of pavement and mowed lawn

Symmetry and repetitive forms create monotonous experience

Central California Women's Facility



Figure 4.19

General Inventory

Location: Chowchilla, CA
 Managed by: California Department of Corrections
 Security Level: Min-Max
 Gender: Female
 Capacity: 2004
 Estimated Population: 3676
 Date Opened: 1990



Figure 4.20

Additional Notes:

CCWF is the largest women's prison facility in the US (Wikipedia)
 Facility houses the death row for the State of California's female inmates (Wikipedia)

Form/Space

Mas/Void Organization

Housing units arranged around central open spaces
 repetitive building forms

Scale of built elements

moderately low buildings throughout facility around 2-4 stories

Degrees of Enclosure

Large open recreation area
 large open lawn area with only light poles and mowed grass
 tall building walls define spaces
 areas enclosed by fences

Space defining elements (walls, fences, trees, etc.)

metal link fences around perimeter
 building arrangement creates underutilized spaces

Overhead structures

no determined shade structures, building height may provide some shade

Ordering principles

Symmetry
 Spatial hierarchy
 Rhythm
 Repetition

Function

Circulation

Exterior pathways within the prison grounds
 rigid angular circulation for efficient circulation
 pathways are of similar width

Programming

Recreation area: track, baseball diamond, sports courts (basketball, tennis etc.)
 Large, open, paved, outdoor seating area with tables and benches

Experiential Qualities- Difficult to determine

Doesn't appear to a significant amount of protection from natural elements (limited or no shade structures, wind blocks, etc.)
 areas of vegetation leading into the housing units
 majority of housing unit buildings windows may overlook the recreation area, other buildings or expanses of pavement
 limited seating areas

Technology

Experiential Technologies

Lighting: tall floodlight posts

Materials

concrete walkways
 Chain-link fences
 mowed lawn

Security measures

Surveillance (watch towers located in the corners along the wall)
 Flood Lighting
 Walls and wire Fences used

Ecology

Existing vegetation

expanses of mowed lawn
 areas of trees planted along the entry paths to housing units
 appears to be a garden area

Soil/hardscape ratio

Large amount of hard surface area (large expanses of paved areas and building roofs)
 slightly less amount of mowed turf area

Context

Facility is surrounded on all sides by plots of small trees

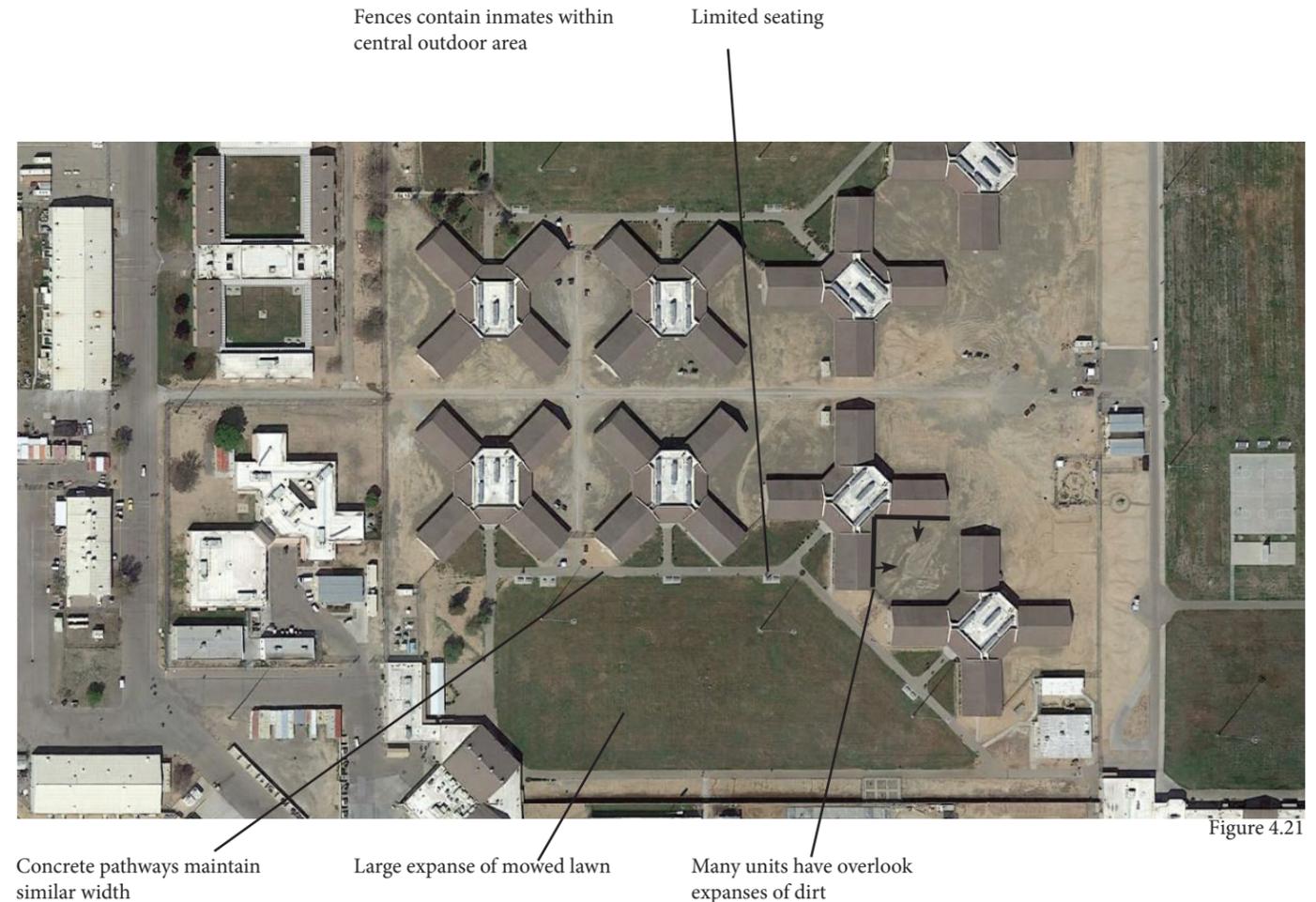


Figure 4.21

Topeka Correctional Facility



Figure 4.22

General Inventory

Location: Topeka, KS
 Managed by: Kansas Department of Corrections
 Security Level: work release-maximum
 Gender: Female
 Estimated Population: 853
 Date Opened: 1970s



Figure 4.23



Figure 4.24

Additional Notes:

Site chosen for Conceptual Design

Facility has landscape and horticulture program available for minimum security inmates (Topeka Staff interview, 2017).

Form/Space

Mass/Void Organization

Varies by level of security Minimum: buildings organized central open space
 Medium and maximum have the housing units located in more in the middle of the fenced in area with open space surrounding the buildings

Scale of built elements

low buildings: 1-3 story

Degrees of Enclosure

Large open recreation area
 large open lawn area with mowed grass
 security areas enclosed by fences

Space defining elements (walls, fences, trees, etc.)

metal link fences
 building walls

Overhead structures

Administration building provides an overhead plane that extends off the building and provides shade

Ordering principles

Symmetry
 Spatial hierarchy
 Rhythm
 Repetition

Function

Circulation

Approach/entry experience

Entry circulation leads directly into the central part of the main building

Exterior pathways within the prison grounds

pathways with sharp angles and straight lines
 pathways configured to provide efficient travel

Programming

Recreation area: track, baseball diamond
 Large, open lawn area
 few outdoor seating areas
 production gardening areas in both minimum and max security areas

Experiential Qualities

Doesn't appear to a significant amount of protection from natural elements (shade structures located in visitation area only)

Some building windows may overlook the recreation area, however many of the housing units have windows that are oriented towards other buildings

Planted area exists within the facility by the administration building (under the overhead plane).
 planted areas are located at the entrance of each housing units

Technology

Materials

Concrete wall
 Chain-link fences
 mowed lawn
 concrete

Security measures

Wire fences and security cameras

Ecology

Existing vegetation

expanses of mowed lawn provides limited ecological value
 planted areas are ornamental plants which may provide benefits to pollinators

Topo/slope

drainage area/creek is located to the west of the site, water from the site drains into the creek area
 areas between buildings have erosion

Soil/hardscape ratio

Large amount of hard surface area (pavement and building roofs)
 Large expanses of mowed turf

Context

Open land to the North, Residential neighborhood to the East, I70 to the South, and Payless Headquarter building to the West

Production gardens in max and min security areas.



Figure 4.25

Views to expanses of mowed grass

Angular pathways with no variation in width

Large expanse of pavement

Hutchinson Correctional Facility



Figure 4.26

General Inventory

Location: Hutchinson, KS
 Managed by: Kansas Department of Corrections
 Security Level: min-max
 Gender: Male
 Capacity: 1784
 Estimated Population: Unknown
 Date Opened: 1895



Figure 4.27



Figure 4.28

Additional Notes:

Hutchinson Correctional Facility is the second largest facility for adult males in Kansas.

Many of HCF's structures were constructed between 1889 and 1912. The facility has emphasized the need to rehabilitate and repair the aging structures. (Cadue, 2013).

Form/Space

Scale of built elements

30'+ tall wall surrounds perimeter
 2-4 story buildings

Degrees of Enclosure

varies from narrow spaces to large expanses of open area

Space defining elements (walls, fences, trees, etc.)

metal link fences
 wall around perimeter
 pathways

Overhead structures

no determined shade structures,
 building height may provide some shade

Ordering principles

Symmetry
Spatial hierarchy large recreation area
Rhythm
Repetition

Function

Approach/entry experience

after turning 90 degrees off the main road the Entry circulation leads directly into the central part of the main building

Exterior pathways within the prison grounds

angular circulation paths of various widths, some pathways are wide enough to accommodate service vehicles, but create a potentially uncomfortable walking experience

Programming

Recreation area: track, baseball diamond, sports courts (basketball, tennis etc.)

Experiential Qualities- Difficult to determine

Doesn't appear to a significant amount of protection from natural elements (limited or no shade structures, wind blocks, etc.)
 large expanses of pavement and mowed lawn provide little visual interest
 Solid wall encloses facility and blocks views of surrounding landscape

Technology

Materials

Stone/Concrete wall
 Chain-link fences
 mowed lawn
 concrete
 colored paving in rec area

Security measures

Surveillance (watch towers located in the corners along the wall
 Walls and wire Fences used

Ecology

Existing vegetation

moved turf provides limited ecological value

Soil/hardscape ratio

Large amount of hard surface area (pavement and building roofs) large expanses of of mowed turf area

Context

Residential neighborhoods to North and West of facility, Open land to the East. Property owned by HCF to the South

Watchtowers located along the perimeter Wide expanses of pavement Large building scale Expanses of mowed lawn



30' high solid stone wall surrounds perimeter

Wire fences used to define exterior spaces within the wall

Rigid pathway forms

Figure 4.29

Julia Tutwiler Prison for Women



Figure 4.30

General Inventory

Location: Wetumpka, AL
 Managed by: Alabama Department of Corrections
 Security Level: Maximum
 Gender: Female
 Capacity: 702
 Estimated Population: 985
 Date Opened: 1942



Figure 4.31



Figure 4.32

Additional Notes:

In 2016 Alabama Governor, Robert Bentley announced plans to close the facility and build four new facilities to replace the aging Julia Tutwiler facility (Shelburne, 2016).

Facility was Alabama's only max security prison for women

In 2012 a Federal Report was issued describing a "repressive and intimidating environment" in which "inmates reported being in fear of retaliations from staff if they reject staff's sexual advances" (Shelburne, 2016).

Form/Space

Mas/Void Organization

Linear building with "arms" that branch 90 degrees from the main building
 Building is centrally located within the fenced perimeter
 narrow linear spaces are created between "arms"

Scale of built elements

low 1-2 story buildings

Degrees of Enclosure

building walls define narrow outdoor spaces
 main outdoor recreation space is defined by fenced perimeter and building walls
 areas enclosed by fences

Space defining elements (walls, fences, trees, etc.)

metal link fences
 building walls

Overhead structures

2 trees on site may provide some shade

Ordering principles

Spatial hierarchy- The one large (administration housing units) building takes up the majority of the site

Repetition of building forms

Function

Circulation

Approach/entry experience
 one way stretch of road leads into a drop-off area outside the administration building
Exterior pathways within the prison grounds
 primary circulation is within the buildings
 no defined outdoor pathways

Programming

Recreation area: baseball diamond, sand volleyball court

Experiential Qualities- Difficult to determine

Doesn't appear to a significant amount of protection from natural elements (limited or no shade structures, wind blocks, etc.)
 The form of the building limits views from windows, most windows are oriented to provide views of other buildings
 no determined seating areas

Technology

Experiential Technologies

Lighting: tall floodlight posts

Building form and window placement provides views of other building walls

Materials

Chain-link fences
 mowed lawn
 concrete building walls

Security measures

Flood Lighting around perimeter
 Wire Fences topped with concertina wire

Ecology

Few trees on site may provide habitat
 mowed lawn provides limited ecological value

Soil/hardscape ratio

Majority of site consists of large building mass, large amount of roof area
 areas surrounding building are mostly mowed lawn

Context

Facility is bordered by dense expanse of trees
 A highway is located to the west of the building

Building forms create narrow spaces

Views consist primarily of building walls

Primary vegetation consists expanses of mowed lawn

No clearly defined outdoor pathways

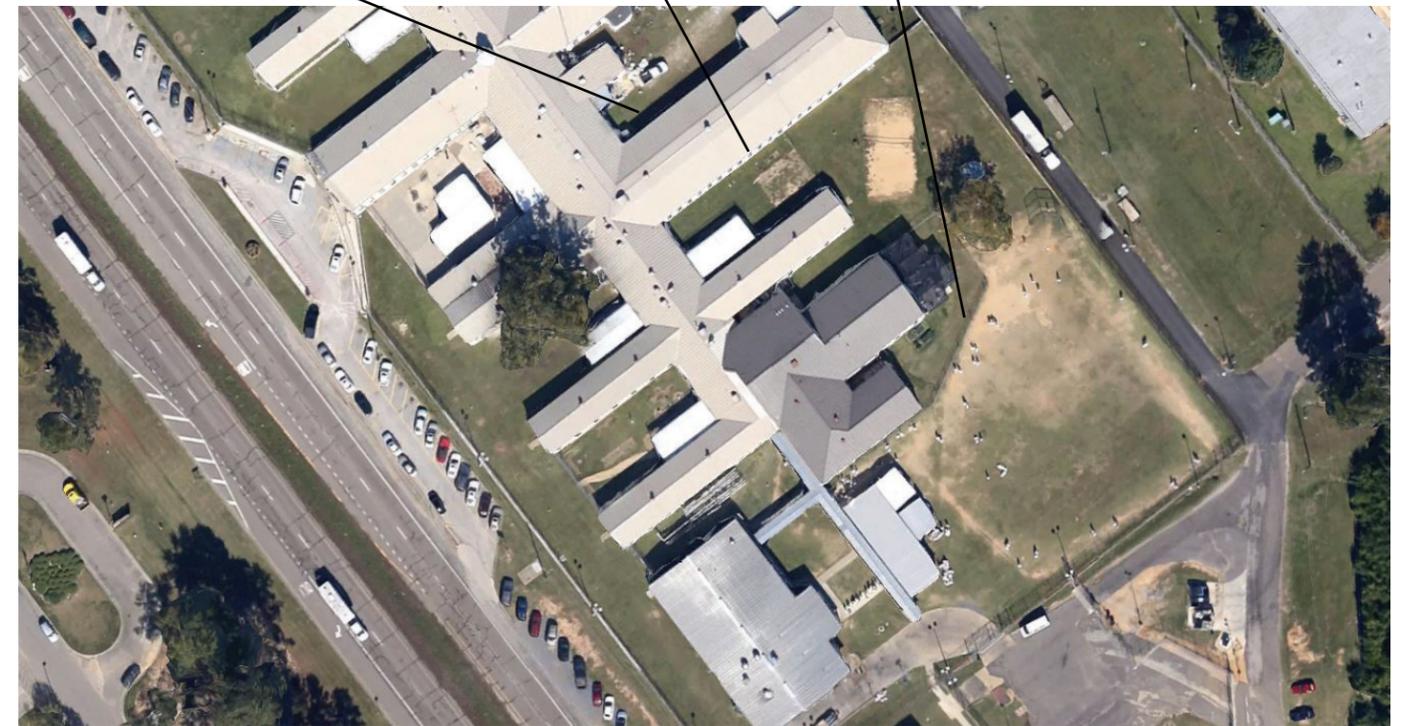


Figure 4.33

Iowa Correctional Institution for Women



Figure 4.34

General Inventory

Location: Mitchville, IA
 Managed by: State of Iowa
 Department of Corrections
 Security Level: medium and minimum
 Gender: Female
 Capacity: unknown
 Estimated Population: 510 (in 2002)
 Date Opened: facility partially reconstructed in 2015



Figure 4.35 Therapeutic landscape design construction

Additional Notes:

Facility was partially reconstructed in 2015. During the reconstruction process, a landscape design project completed by an Iowa State Landscape Architecture studio lead by professor, Julie Stevens. The project included the design and construction of a central courtyard consisting of outdoor classrooms/therapy spaces and rolling hill lawn. A small therapeutic garden by the medical building and a decompression space for staff outside the facility were also implemented (ICIW Site Visit, 2017).

Design Analysis

Form/Space

Mass/Void Organization

Gridded organization with buildings located throughout the fenced in perimeter

Scale of built elements

2-4 story buildings

Degrees of Enclosure

Large open recreation area
 large open lawn area with only light poles and mowed grass
 tall building walls define spaces
 areas enclosed by fences

Space defining elements (walls, fences, trees, etc.)

metal link fences
 wall around perimeter
 Large building walls

Overhead structures

allee of trees provides shaded corridor along a secondary circulation path

Ordering principles

Symmetry
 Spatial hierarchy
 Rhythm
 Repetition

Function

Circulation

Approach/entry experience

Entry circulation leads directly into the central part of the main building

Exterior pathways within the prison grounds

gridded circulation system of various widths, primary circulation pathways are wider secondary circulation pathways are more narrow

Programming

No determined recreation area
 Centrally located outdoor common space allows inmates to sit and socialize and also engage in therapy program activities such as journaling and role play
 therapeutic garden area is located near the hospital building
 production gardening areas are located throughout the facility
 decompression area outside the facility near the administration building provides stress relieving area for prison staff

Experiential Qualities- Difficult to determine

colors on buildings provide more visual interest than normally found in a prison setting
 pathways formed using a gridded system, turns are all 90 degree angles
 allee of trees provides comfortable shaded walkway-however is located away from main areas of activity
 central common space provides area to socialize and relax
 production gardens provide visual interest

Technology

Materials

Concrete building walls incorporate colors not normally found in the prison setting
 Chain-link fences
 mowed lawn
 concrete pathways

Security measures

Chain-link fences lined with concertina wire

Ecology

Existing vegetation

mowed lawn provides limited ecological value
 trees provide opportunities for habitat
 production gardens provide benefits for pollinators

Soil/hardscape ratio

large portion of area within fenced perimeter consists of mowed lawn area

Context

Residential area is located to the east of the facility
 Farmland is located on North, South and West of the facility

Decompression area for staff

Trees enclose shaded pathway



Figure 4.36

Outdoor classroom and therapy spaces

Rigid gridded circulation system

Large expanses of mowed lawn

Garden outside medical building

Synthesis of Critical Information

The following information contains findings synthesized from the analysis of prison imagery. Findings address the form and space, function, technology and ecology, found within various prison landscapes.

- Almost all prisons contain a recreation area. Recreation areas include running/walking tracks, sport fields and hardscape courts (e.g. baseball, basketball, etc.) Outdoor exercise is recognized as important in a prison setting.
- The women's administrative facility at Carswell appears have the highest consideration for overall landscape design. This facility houses inmates with special physical and mental health needs. This provides an example of a facility that shares the function of a healthcare facility and a prison facility. This facility displays the application of nature for potential health benefits within a healthcare and prison environment.
- Many facilities have outdoor pathways which are linear and angular in form. These pathways appear to be configured to provide direct, efficient circulation. There is a lack of curvature in many pathways within prison facilities.
- Primary vegetation in prison facilities consists of expanses of mowed lawn. Several facilities have vegetation such as trees, but use of vegetation other than lawn is limited. The lack of vegetation displays the concern for maintaining visibility across the site.
- Ecological value does not appear to be highly considered within prison landscapes. Expanses of mowed lawn provide little habitat and require constant watering.
- There appears to a general lack of shelter and shaded area. Trees that provide shade are limited. It is difficult to determine from the imagery to what extent building heights provide shade.
- Many facilities use a bland color palette for materials.
- Many facilities contain large expanses of hard surfaces (e.g. walls, roofs, asphalt, concrete).
- Many facilities appear to lack variety in planned seating areas. Seating areas opportunities commonly consist of individual benches located along the primary circulation path.
- Chain-link fences are commonly used to restrict inmate access to areas. Access to outdoor spaces is highly regulated
- Many window views from the buildings consist of views of built infrastructure (eg. views to interior courtyards and other buildings).
- Four of the ten facilities have discernible garden areas. All four of the facilities with gardens are women's facilities.

Conclusions

Facilities show varying levels of exterior environment design. The majority of facilities examined do not appear to display an extensive, holistic approach to the design of the exterior environment. This current lack of design consideration provides opportunities to explore various design interventions in diverse prison contexts. Examining imagery of what exists is an important step in outlining and addressing potential problems within various prison contexts. The findings from this examination of imagery influenced the creation of the *Design Guidelines* (Chapter 6).

Chapter 5

Interview and Site Observation Findings

This Chapter provides a summary of findings from each interview and site visit. Many of the findings have a significant amount of overlap. Findings from this chapter influenced the formation of the design guidelines and the conceptual design for the Topeka Correctional Facility.

Amy Lindemuth

Currently employed at Mithun in Seattle, WA, Amy Lindemuth is a landscape architect that has several published essays on the topic of prison landscape design. Her essays include “Behind Bars: Landscapes for Health and Healing in Corrections” and “Designing Therapeutic Environments for Inmates and Prison Staff in the United States: Precedents and Contemporary Applications”. She has been involved with the design and implementation of landscape interventions for the Monroe Correctional Facility Special Offender’s Unit, in Monroe, WA and the Bedford Hills Facility, a max security women’s prison in New York. She also has various blog posts on The Therapeutic Landscapes Network relating to therapeutic design for prison landscapes. Her work provides research and experience with the topic of restorative landscapes in prisons.

Synthesis of Critical Information

The following information provides key takeaways from the interview with Amy Lindemuth. Full interview notes are included in the Appendix.

Designing a prison landscape comes with many challenges. Oversight, budgets and public interest can be

highly political.

It is critical to gain support for the project. Leadership changes occur frequently. Support is needed from various levels of prison administration.

It is important to maintain an efficient construction schedule and to quickly establish programmatic uses. Leadership changes can negatively affect the success of the design. Projects and missions that may have been supported by one warden, may not be supported by a new warden. Prison staff can play a large role in determining which parts of the project get built and how successful the project is after implementation.

Location of the design will be a major factor in determining complexity of the design. Areas with dense planting may only be allowed for certain security level inmates or may only be accessed by a few inmates at a time.

Julie Stevens

Julie Stevens is currently an associate professor in Landscape Architecture at Iowa State University (Ames, IA). In 2010 the Iowa Department of Corrections contacted the President of ISU in hopes of engaging students in creating a landscape design for the Iowa Correctional Institution for Women. Julie Stevens lead a group of fourth and fifth year landscape architecture students in designing and implementing several outdoor spaces for the facility. The spaces include a small garden space near the hospital building, an outdoor classroom for the counseling programs, and a

decompression space for the prison staff. Professor Stevens and several volunteer landscape architecture students host a weekly educational landscape class for the offenders. The goal of this class is to teach the offenders how to manage and maintain the landscapes within the facility. The goal is that the women will eventually become fully responsible for the facility landscape and learn to maintain it on their own.

Synthesis of Critical Information

The interview with Julie Stevens focused on the process of working with an Iowa State landscape architecture studio class in researching, designing, and implementing a master plan for the ICIW facility. The following list provides key takeaways from the interview:

Therapeutic designs for prisons can use some of the same design theories used in healthcare facilities. One of the key challenges when designing for prisons is that there is not a lot of research on prison landscapes. Much of the literature on therapeutic landscapes addresses therapeutic landscapes in healthcare settings. While hospitals and prisons may have slightly different missions, the structure of space of the facilities is similar.

Safety is a high priority for staff. Prison staff has a hard time believing that a safe prison environment can include more than expanses of mowed lawn and concrete. A large part of the challenge acme from convincing staff members that outdoor environments can be beneficial. The Security Director was a very active participant

during the design process.

Feeling safe is also important to the women. During the design process, the women helped identify unsafe areas of the student’s design proposals.

Stress is a problem for both inmates and staff. Prisons are high stress Living and Working environments. Stress can negatively affect many existing problems for inmates. For correctional staff, working in a high stress environment has led to problems with alcohol and substance abuse, and suicide.

Designing a prison landscape is a very human-centered process. It requires a lot of communication between staff, inmates and administration. Throughout the process it is necessary to spend a lot of time with prison staff, inmates, and administration to address their needs and concerns.

There are many challenges to overcome. There are a lot of challenges in convincing people the importance of healthy outdoor environments. It is essential to have support from like-minded people. Another significant challenge comes from funding. With state budget cuts there are a lot of people that are highly concerned with how money is being spent.

There is a growing interest in landscape design among in prisons (at least in Iowa). Several men’s prisons in Iowa have contacted Professor Stevens expressing interest in design plans for their facilities.

Topeka Correctional Facility

The following is a list of findings gained through talking to the Topeka Correctional Staff and observing the facility:

Type and Location of Vegetation needs careful consideration.

Certain types and placement of vegetation may potentially compromise security
 Trees are not to be planted near the fence. Severe weather can damage the trees (e.g. breaking branches) and in turn, trees may potentially damage the fence. Damaged fences can compromise security.
 The area between the housing units (shown as the red roof buildings in Figure 5.01) and the fence is kept clear of vegetation. Mowed grass allows contraband that is thrown into the facility to be easily seen and confiscated.

Design Budget should be feasible.
 Money is an issue for many prisons. Changes may have to be implemented in a series of phases in order to accommodate budget constraints.

Aesthetic quality is important.
 It is evident that the Topeka Correctional Facility staff takes pride in the appearance of the landscaped areas. The planted areas are well-maintained and visually pleasing. Staff also indicated additional areas they thought could be improved with landscaping.

Many inmates are interested in participating in the landscape and horticulture program. The

facility receives a large number of applicants for the program. About 50 applications are received, however, the available classroom space can only accommodate around 10 inmates. Many inmates cannot participate in the program due to a lack of resources (eg. classroom space).

Figure 5.01
 The notated map on the following page displays the Topeka Correctional Facility. Driving and walking routes are depicted with dashed lines. The dashed teal line shows a route that was driven by car. The dashed green line denotes the route that was traveled on foot. Call outs include important site information and observations made during the site visit. Additional observations can be found in the Imagery Analysis on (page 43).



Iowa Correctional Institution for Women

The following information was noted during the site visit. Information came from site observations and on site conversations with Julie Stevens, two of her students, and an ICIW Corrections Officer:

The women appear to be invested in production gardening and landscape management. During the landscape class the women designated maintenance tasks and were engaged in the discussion of the types of vegetables to plant and where the vegetables should be planted.

Design should maintain a realistic budget. State budget cuts have contributed restricted funds for landscape design.

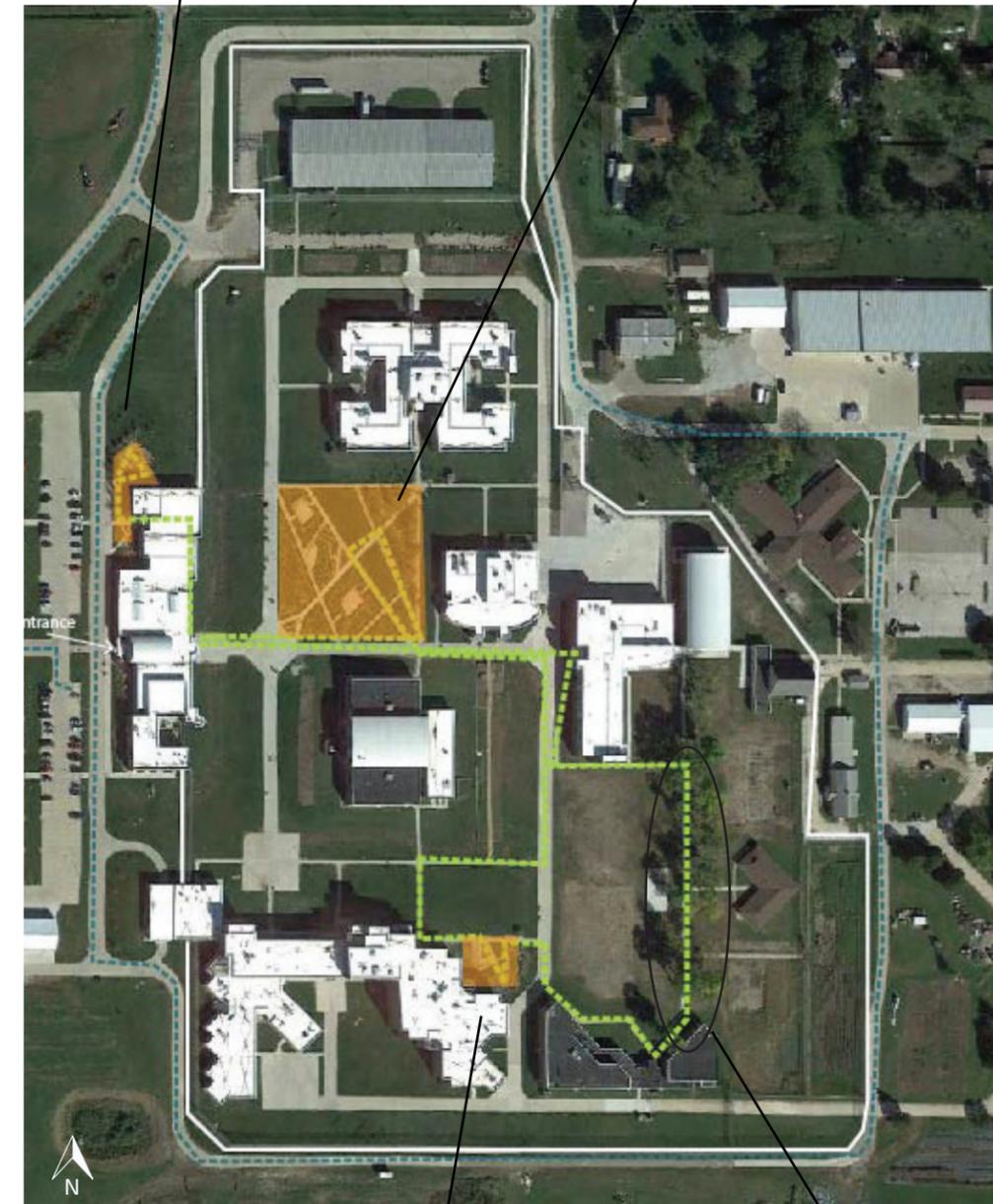
Building relationships is critical. Relationships with staff create a level of understanding needed in order to gain support for the project. It is also beneficial to build relationships with people that have access funding and to landscaping materials in order to help with the financial cost of the project.

It is important to maintain a high level of optimism and persistence. There are many potentially discouraging challenges that include changing mindsets and gaining support for the project, and various levels of political and budget constraints.

Figure 5.02
The notated map on the following page displays the Iowa Correctional Institution for Women. Driving and walking routes are depicted with dashed lines. The dashed teal line shows a route that was driven by car. The dashed green line denotes the route that was traveled on foot. Areas in orange show the locations of spaces designed by Iowa State Landscape Architecture studios. Call outs include important site information and observations made during the site visit.

Staff Decompression Space
Space has a hardscape area with a grill and seating

Outdoor classrooms/therapy Spaces
Space also include a rolling hills lawn and an aspen grove (space shown in greater detail on the following page).



Outdoor garden/courtyard
The building to the to the south of the space is the facility's healthcare building. Women that have mental health problems and those that are on suicide watch have views to this courtyard. Garden is ADA accessible. This design focuses on providing spaces where women can be by themselves. Many women with mental illnesses find groups of people to be overwhelming.

Ash tree corridor
Julie mentioned this was a beloved area by the women. The walkway provides a pleasant shaded walking experience

Outdoor classroom area

Julie and her students worked with the counselors and the women in the counseling programs when designing the classroom area
The offenders refer to the classroom area as “the yard”



Role play therapy space

Amphitheater space is used for productions and memorials. Women use this space to sit and socialize. Amphitheater was supposed to have a shade structure but it wasn't built due to budget.

Space is enclosed by low seating walls. Women use this area for sitting and journaling.

Aspen grove

Aspens were chosen because they don't get very wide at the base. Maintenance includes limbing them up they're arranged to form small pockets of space for one on one counseling

Rolling grassy hill line

(When discussing materiality)
JS: *Wardens pride themselves in having tidy prisons- They don't want dirt being tracked indoors.*
This led to the selection of turf grass that can handle lots of foot traffic. This is the only place the women are allowed on the grass

Additional Notes

Design issues: Topography data from the city was incorrect. Slopes were a little steeper than expected. Gravel was used for the paths, but is only suitable on a 3% slope or less. There might be future problems with gravel wearing away and having ruts in the pathway.

Iowa has had a lot of state budget cuts.

Obtaining Materials for the design:

Julie had lots of connections to get materials for the design
Trees for the staff decompression space came from the Department of Transportation. Limestone used for the classroom space was weathered (and couldn't be sold) and extremely discounted

Chapter 6

Design Guidelines

Chapter 6 discusses the Design Guidelines for women’s prison facilities that were developed from existing therapeutic design elements and findings from the methodology. The concepts of form and space, function, technology, and ecology are utilized in landscape architecture (Ching, 2007). In rehabilitative healthcare environments these concepts are applied in ways that create stress-relieving environments through providing a sense of control, privacy, social support, movement, and natural distractions (Martin, 2011). Figure 6.01 suggests that landscape architecture concepts used

to provide stress relieving design elements in healthcare environments can be applied in the prison context. Landscape architecture principles and healing garden design elements can be modified for the prison context based on findings from the methods. Findings can also influence the creation of new programs and forms to be used within the prison context. The developed set of guidelines includes programming elements and formal elements to used to create prison environments that provide stress relief and promote positive behavior.

The developed design guidelines attempt to provide recommendations to create therapeutic prison landscapes. In order to provide a more soothing, comforting environment, landscape architects can incorporate a knowledge of spatial coherence into landscape design. In the developed guidelines, spatial coherence encompasses both programs and forms that facilitate the process of reducing stress and promoting positive behavior.

Spatial coherence is achieved through the site-wide application of programming elements and formal elements. The relationship between program and form influence the design of the built environment. Through determining program, forms can be used to facilitate spatial and programmatic needs. Space is created by form. Form provides visual and experiential qualities that enhance the space.

Architectural and vegetative forms with curved shapes and color can be used throughout a site to designate spaces and provide a consistent, overall application of visual and experiential qualities (spatial coherence).

Spatial coherence allows for the environment to be understood as a interconnected system of spaces and experiences. As an individual passes through the environment, they experience a seamless flow of one experience into the next. Many prison facilities appear to lack continuity and spatial coherence. Currently, spaces within many facilities appear to

operate singularly. Spatial coherence can provide site cohesiveness through interconnected programs and the consistent application of formal design principles. Programs and forms can be designed to work in tandem to support the overall goal of providing a therapeutic environment.

Figure 6.03 on pages 68-69 provides a list of synthesized findings on the challenges of women and the design of the prison environment. From these findings six design elements were created. Programs were developed in response to the needs for incarcerated women. Formal elements were created in response to the prison environment. Tables 6.01-6.08 further discuss the programming elements.

While the developed concepts for programs and formal elements can be applied throughout sites with diverse site conditions, the application of programming elements and formal elements may be dependent on specific site conditions such as security level, topography, etc.

The Guidelines provided in the chapter are not comprehensive. This report provides a preliminary attempt at creating guidelines addressing the challenges of incarcerated women and the prison environment. Additional guidelines can be developed as prison landscape research continues to expand.

Design Elements for Prison Facilities

Building upon the design recommendations for healing gardens, three programs and three formal elements added as recommended

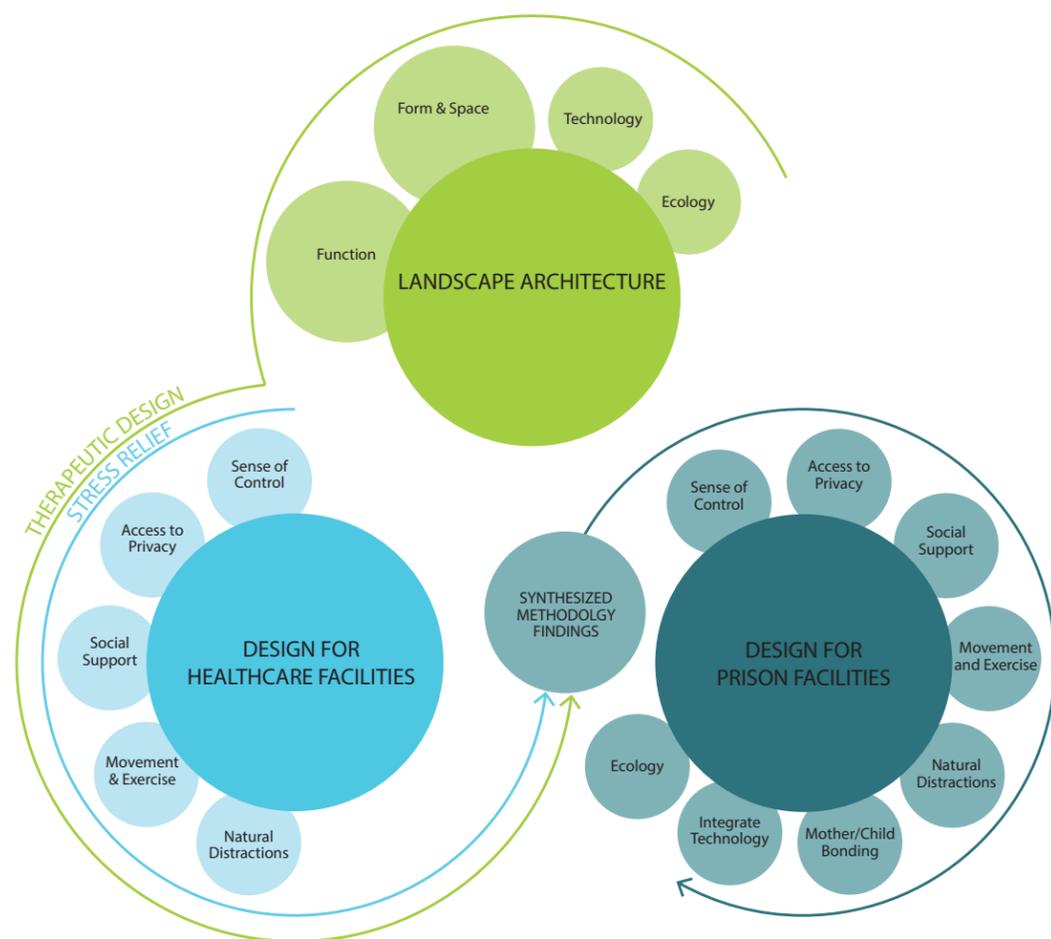


Figure 6.01

Design Element for Healing Gardens

Examining the design principles used in therapeutic landscapes for healthcare facilities can serve as a starting point for informing therapeutic design principles for prisons. Kelly Martin's thesis, "Hospital Healing Garden Design and Emotional and Behavioral Responses of Visitors and Employees" identifies 5 key elements of healing gardens derived from various sources of literature.

The 5 key elements of Healing Gardens discussed by Martin (2011) are as follows:

Sense of control –the ability for individuals to choose how they interact with their physical and social surroundings.

Access to Privacy- the ability to have space to be alone.

Social support- the opportunity to receive emotional support from others. This can come from various ways of interacting with others.

Movement and exercise-the ability to engage in physical activities such as running and walking.

Natural distractions- restorative, natural, environmental features.

Listed under each Key Design Elements is a set of "Design Feature Items" for hospital garden design. Design Feature Items address specific desirable features for therapeutic design.

design elements based on the findings from the Methodology. The six design elements are as follows:

Provide Shelter

The Imagery Design Analysis revealed that areas of outdoor shelter are limited. Shelter can provide protection from natural elements and also serve as a place of refuge and mental escape for inmates. Shelter can provide areas of safe, comforting outdoor experiences.

Promote Mother-Child Bonding

Literature revealed separation from children is a common source of stress for many incarcerated women. Incarceration separates women from their family which can be detrimental in the development of critical mother-child relationships. During incarceration, mothers are allowed to spend a limited amount of time with their children during visitation hours. Places and programming to strength mother-child bonds should be incorporated into the landscape design in order to support the process of healthy childhood development. Designing to promote mother-child relationships critical recommendation for women's prison facilities in particular.

Integrate Technology

Many technologies can be integrated into prison landscape design. Sustainable technologies can be used to enhance and optimize site ecological functions. For example, rainwater collection, planting design, and grading can be used to optimize site water use. Carefully thought out implementation and maintenance of

sustainable technologies can provide stress-relief, vocational training, and facility cost-benefits. Existing site technologies may also benefit from strategic design. For instance, walls and fences are a common form of technology used in prisons to provide security. The design of walls and fences can be strategically considered in order to better promote the goal of rehabilitation.

Curvature

Curvature can be used to counterbalance the rigid architectural forms commonly found throughout the prison environment. Curvature can be incorporated through the use of rolling hill landforms and sinuous winding paths.

Vegetation

Vegetation can provide numerous experiential benefits. Vegetation can provide shade, color, sense of scale, visual interest through movement, sound, and smell.

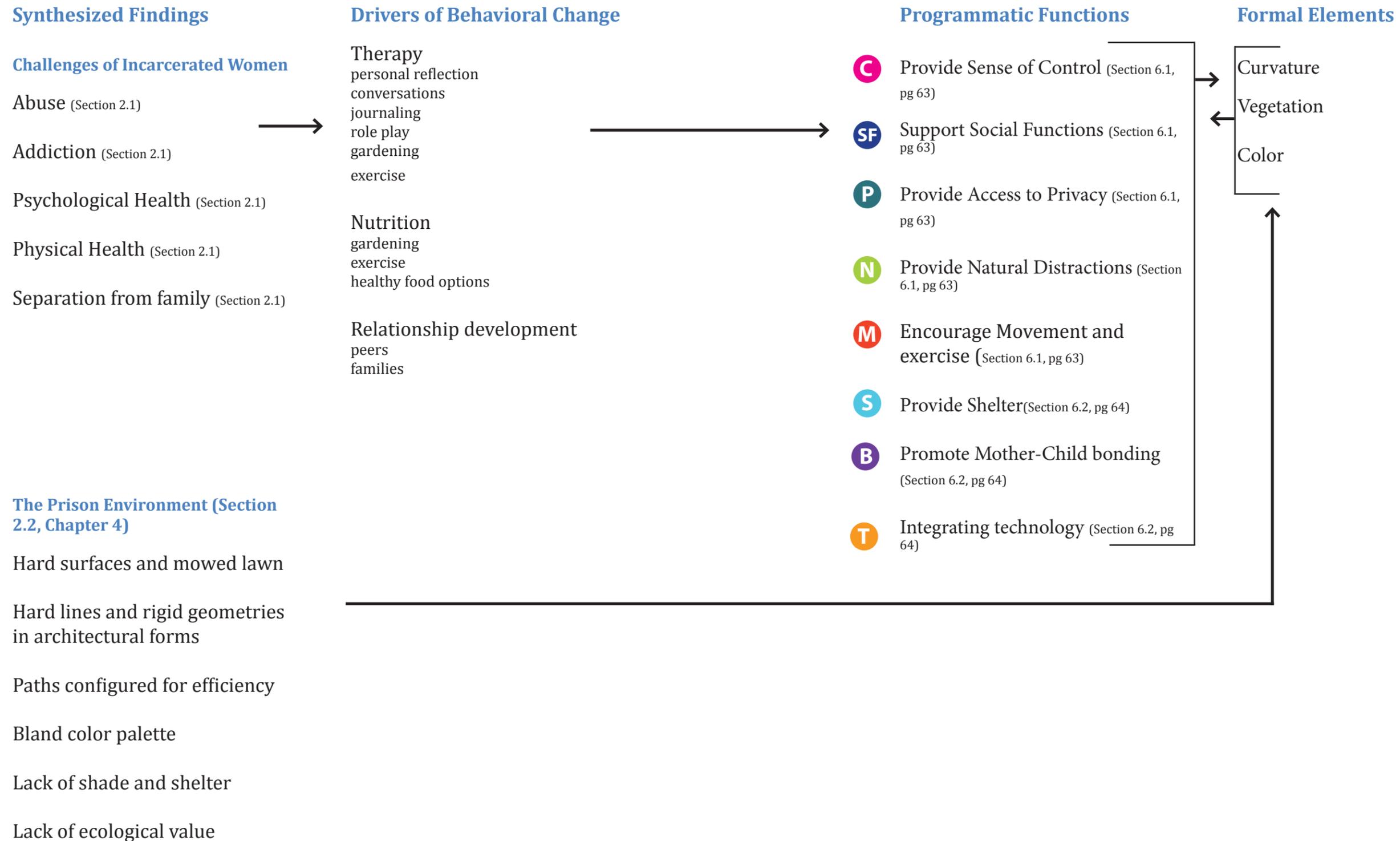
Color

The Imagery design analysis revealed that bland colors are commonly used in prison facilities. Color can provide therapeutic benefits and create engaging spaces. Color can be applied through vegetation and material surfaces. Chapter 7 discusses the application of developed guidelines for a prison located in Topeka, KS. The Topeka Correctional Facility was the site selected for the exploration in therapeutic landscape design. Programming elements from each of

Figure 6.02: Pool of Perceived Healing Garden Design Feature Items (Martin, 2011)

Key Design Element	Design Feature Item	Published Recommendations				
		Ulrich, 1999	Cooper Marcus & Barnes, 1995, 1999	McDowell & Clark-McDowell, 1998	Mitrione & Larson, 2007	Naderi & Smith, 2008
Sense of control	The garden is easily visible from the hospital entry.	Provide ease in finding one's way to the garden	Garden is easily visible from front entry			
	The garden provides an inviting entrance.			Provide an entrance that invites the visitor to the garden		
	This garden is easy to see from hallways in the hospital.		Garden is easily visible from interior corridors			
	Maps that show the way to the garden are available at different locations in the hospital.		Provide maps to the garden at elevators and front entry			
	There are proper signs leading to the garden.		Provide directional signage to the garden at elevators and front entry	Sign to identify the garden		Proper signage leading to the garden
	The doors leading into the garden are easy to use.		Provide doors that are easiest to use (automatic)			
	The paving of pathways within the garden is smooth.		Provide smooth paving without large grooves			

Figure 6.03
Design Elements for Spatial Coherence



Provide Sense of Control C	
Design Feature Item	Recommendations
Ease of Navigation	Paving is smooth to promote use of pathways
	ADA accessibility accounts for the needs of elderly and handicapped populations
	Wayfinding is easy to understand
Views/Visibility	Views of outside while inside building can facilitate beneficial health effects from viewing the landscape
	Maintain critical sightlines in outdoor space. Maintaining sightlines is critical for both inmates and staff. Clear sightlines allow threats to be quickly and easily identified.
Opportunity of Choice	Provide choice of seating (alone, group). Variety in seating areas accommodates the need for individual privacy and for group socialization.
	Provide Different walking routes. This can include curving pathways for meandering, paths of various widths, and paths of various paving materials to create experiential diversity
	Provide different choices for scenic views to prevent redundancy and add to the level of visual interest
	Provide choice of sunny areas and shaded areas to accommodate various weather conditions and individual experiential preferences
Provided Comfort	Seating is comfortable in order to promote usage
	Avoid glare from materials (concrete, metals). Glare from reflective materials can create discomfort and potentially induce stress

Table 6.01

Additional Considerations

Visibly should be maintained for staff and inmates. The materials and placement of structures, vegetation, and landform should be carefully considered. Materials should maintain a level of visual permeability. The placement of structures, vegetation and landform should not impede critical sightlines.

Curved walls may be provided as an alternative to walls that form angular corners. Narrow corners may potentially provide areas for entrapment.

Multiple access points to spaces should be provided in order to allow for the escape from threats.

Support Social Functions SF	
Programming Elements	Recommendations
Presence of Seating	Movable seating provides inmates with the opportunity of choice of seating location and social experience
	Comfortable materials to sit on promote use of seating areas
	Seating provided at angles suitable for conversation. Opportunities to engage in conversation while seated are a way inmates gain social support
	Place seating along circulation paths to provide rest areas
Presence of tables	Tables to provide areas for group activities such as card games or board games
Areas for conversation	Areas should be provided in various locations throughout the site to provide easy access to social support
	Areas for small group and larger group conversation
	Variety of viewing experiences provide distractions from potentially heated conversations. Views in areas of conversation can provide calming relief

Table 6.02

Additional Considerations

Movable seating should not provide potential weapons. Seating should be movable, but should be substantial enough to not be picked up and swung (eg. folding chairs may not be preferred).

Provide Access to Privacy P	
Design Feature Item	Recommendations
Areas for privacy	Provide places where people can be alone in order to provide an experience not commonly found in a prison setting
	Create feeling of enclosure in order define spaces and offset the vast openness commonly found in the prison landscape
	Area should be large enough to not feel crowded. Crowded areas may be stress inducing for some individuals

Table 6.03

Additional Considerations

Areas of semi-privacy may be more applicable in a prison setting. Providing areas of complete privacy may be detrimental for security. Semi-private areas allow for direct supervision from prison staff, but may provide a perception of privacy.

Provide Natural Distractions N	
Programming Elements	Recommendations
Presence of Vegetation	Vegetation should be located throughout site in order to provide some extent of soothing natural elements for all security levels
	plants located near building edges to soften effects of hard architectural forms
	Provide plants with a variety of forms, textures, scents, and colors to create visual complexity
	Wind can blow through tree leaves and tall grasses to provide visual interest through movement
	Plants that attract wildlife will add ecological value to the often ecologically-unsustainable prison landscape
	Edible plants can provide a source of food for facility kitchens
Presence of Water	Edible plants can provide nutritious food options to promote physical health
	Water feature is easy to see in order to provide visual access to a calming natural feature
	Water feature provides soothing sounds
	Water feature is appropriate size depending on location and maintenance requirements

Table 6.04

Additional Considerations

Location and density of vegetation requires strategic planning. Vegetation should not block critical sightlines. Highly trafficked areas such as building entrances should be kept clear of dense vegetation. Dense vegetation may only be applicable in areas where additional monitoring can be provided. Trees should not be placed in areas where they can be used for escape (climbing over fences, onto buildings etc.). Large trees near fences are not recommended as they pose the potential to damage the fence if tree branches get broken off. Dense areas of vegetation near the perimeter fence may conceal contraband thrown over the fence into the facility. A buffer of mowed lawn may be necessary in this area to make contraband easily visible during security sweeps.

Encourage Movement and Exercise M	
Design Feature Item	Recommendations
Presence of Paths	Configure paths to pass through areas of diverse experiential qualities (eg diverse views)
	Paths for efficient travel should be maintained
	Provide paths for meandering. Meandering paths can be created through curving and narrow paths. Meandering paths provide an alternative walking experience to the commonly observed straight, angular, pathways meant for efficient circulation
	Provide paths for recreation. Tracks with multiple lanes can be used for running and walking
	Proper materials should be to support the activities of meandering, running, and walking

Table 6.05

Additional Considerations

Path materials require consideration. Gravel, mulch, and earthen paths may require additional maintenance. Material selection should take into account the available resources for maintenance. Topographical slope may limit the choice of path materials (eg. gravel and mulch paths may only be suitable in areas of minimal topographic slope). Stone and brick paths require that the materials be adhered into place in order to prevent threats to security (eg. using stones and bricks as weapons).

Provide Shelter S	
Design Feature Item	Recommendations
Protection from natural elements	Provide relief from sun through use of shade trees, or overhead structures
	Provide relief from wind through use of wind blocking vegetation or structures
Areas of psychological escape	Sense of being transported away from the current environment, areas of warmth, rest, and comfort
Departure Waiting Areas	Provide a safe area for people to wait for transportation upon release from prison

Table 6.06

Additional Considerations

Shelter may be design for temporary usage. The use of shade sails allows for the construction of shade when needed. Trees may only provide shelter spring through fall.

Promote mother-child bonding B	
Design Feature Item	Recommendations
Areas of Shared Challenges	Implementing Obstacle course playground equipment allows mothers to provide help and support through aiding their child in completing a task
Areas of Shared Achievements	Create opportunities for positive reinforcement for both mother and child
	Places to participate in shared hobbies such as gardening or arts and crafts
Areas Privacy and social interaction	Provide areas of privacy for sensitive mother-child conversations
Natural Distractions	Provide natural distractions to ease tension and provide a break from difficult conversations

Table 6.07

Integrate Technology T	
Design Feature Item	Recommendations
Walls and Fences	
Security Cameras	
Water Management	Utilize strategic grading and areas of plantings
Seating	
Tables	
Paths	
Shade Structures	
Signage	

Table 6.08

Additional Considerations

Obstacle course playground equipment may include balance beams and climbing walls or any other playground equipment that may present a challenge to the child.

Areas of shared hobbies can be used for mothers to bond with their child through completing tasks or sharing knowledge. An example of this might be a mother that is part of the horticulture program can share her knowledge of plants and gardening their child. This allows the mother and child to bond through the process of teaching and learning.

Additional Considerations

Many technologies can be applied in the prison context depending on the facility's programmatic needs. Conversations with the inmates and staff may determine which technologies are most applicable within the prison.

Chapter 7

Design Concepts for the Topeka Correctional Facility



Figure 7.01

the eight programs were incorporated into the design concept. Architectural and vegetative forms with curvature and color were applied throughout the design. Programs and form were used to create spatial coherence within three focus areas in the minimum security area of the facility.

Site Description

The Topeka Correctional facility is an all-women's facility located at 815 SE Rice Road in Topeka, Kansas. The facility houses 853 inmates of all security levels from Maximum through Minimum (minimum includes work release). The facility was built in the 1970s and became the only women's prison in the state of Kansas in 2011.

Challenges

Several challenges were encountered during the design process. As with most design exercises for educational purposes, there was not enough time for prolonged site observation. The site was only observed during one tour. Various seasonal and weather conditions were not able to be observed. Another drawback was the limited site imagery. Authorization to take pictures was not granted. If the project were to extend beyond educational purposes more extensive communication with staff, inmates, and administration would need to occur. Extensive conversations to address the needs and concerns of a landscape design were not addressed with staff, inmates, and administration. The conversation with the three staff members only identified locations that they wanted planted with aesthetic vegetation.

Other landscape architectural practices were not discussed extensively.

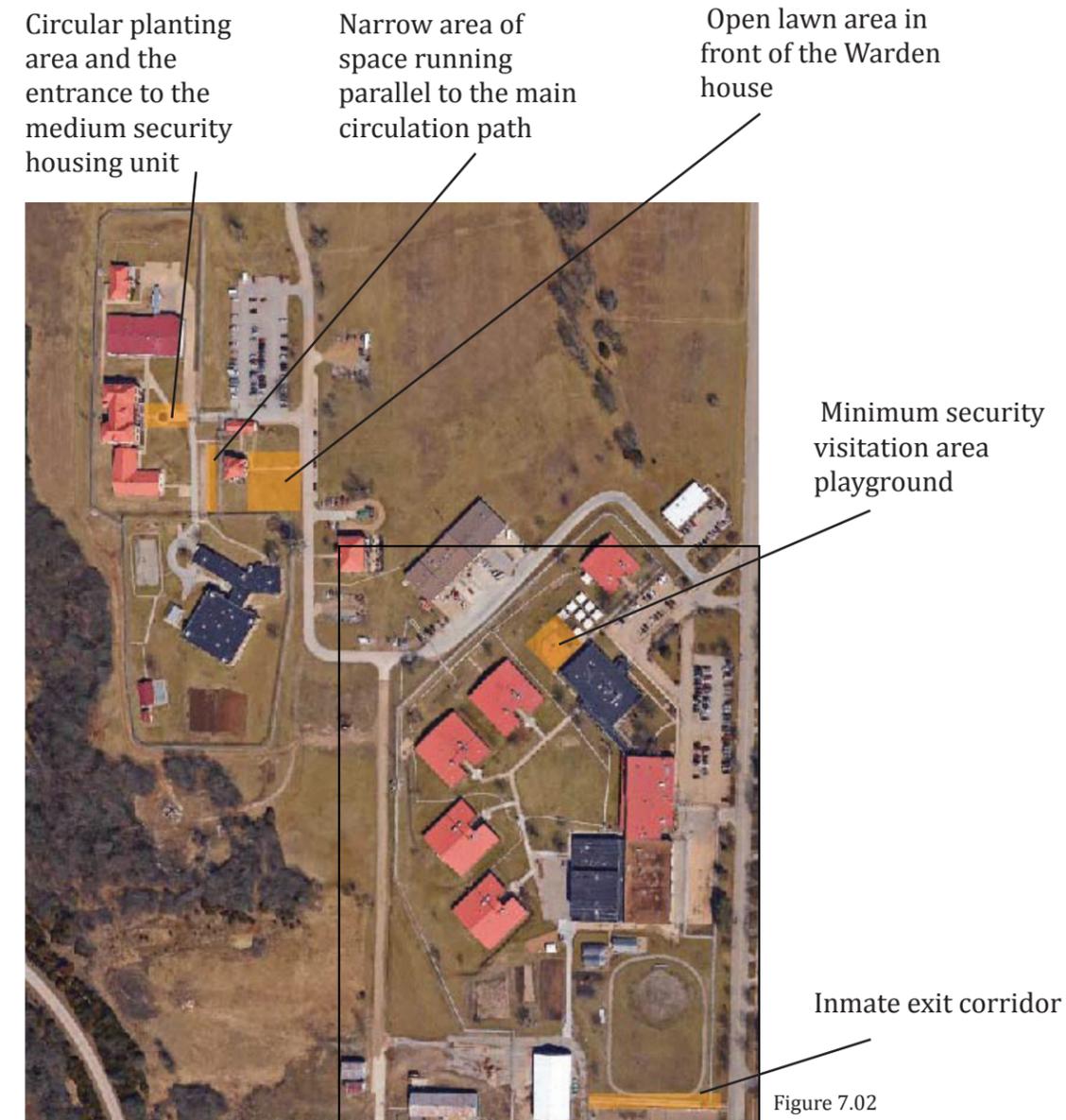
Focus areas

During the site visit to the Topeka Correctional Facility, staff members identified areas they believed would benefit from aesthetic landscaping. Figure 7.02 identifies the areas that were chosen by the staff. Areas

chosen by the staff were taken into consideration during the selection of the final three focus areas. The design exploration focused on three areas chosen within the minimum security area. The three areas include the central courtyard space, the inmate exit corridor, and the outdoor visitation area (Shown in Figure 7.03).

Outdoor Visitation Area is where

inmates meet with visitors, family, and friends during the weekends. This area contains low metal shade structures and picnic tables for inmates to sit and talk with visitors. A playground space is provided for children. During the site

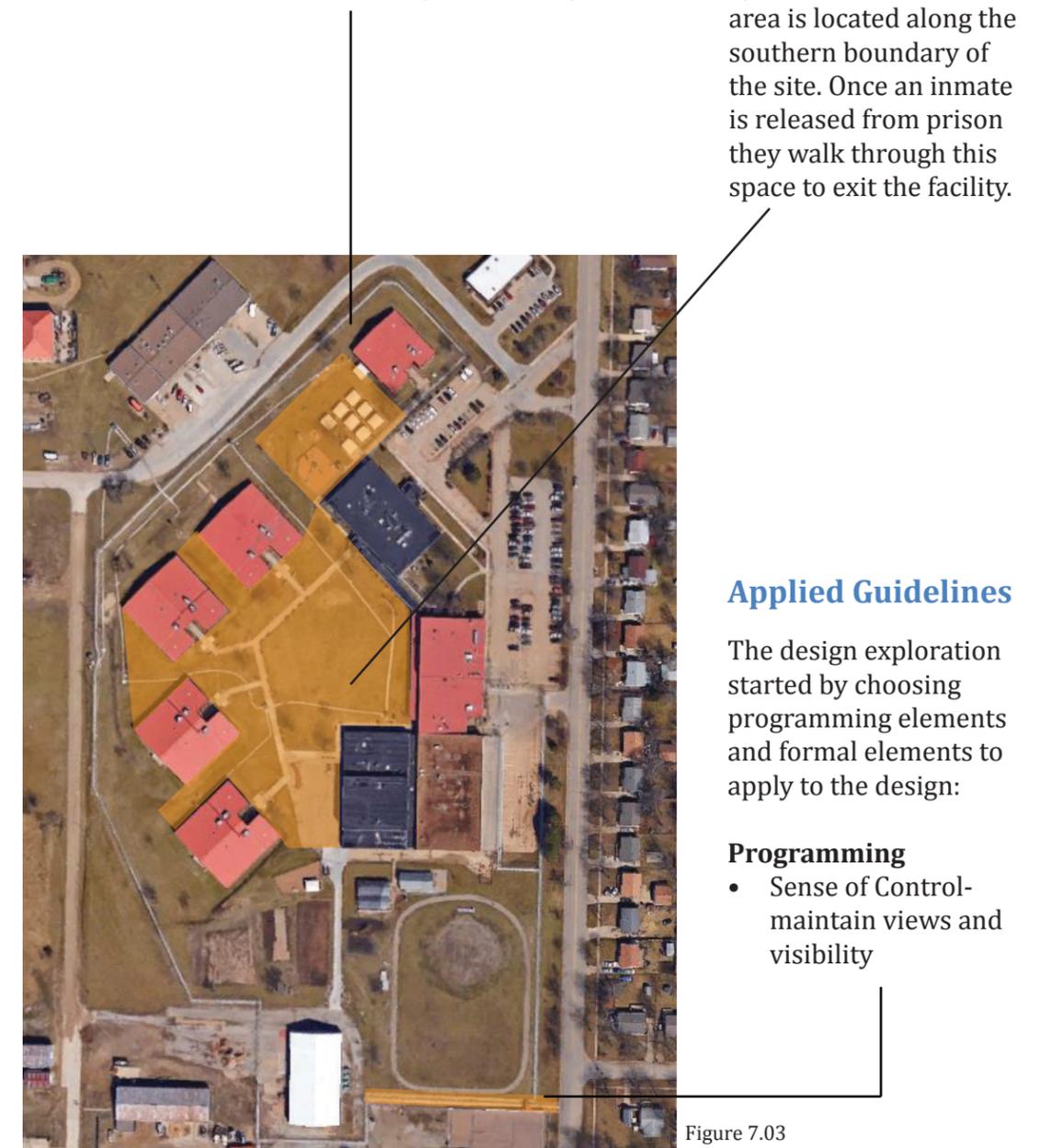


visit tour, Mr. Metzler mentioned design ideas for a new playground may be beneficial. The design for this area was expanded beyond the playground to include the shade structure area and additional space between the playground and the fenced boundary.

Central Courtyard is a large open lawn area in the middle of the site. Currently this area consists of a flat grassy lawn and several benches located along the primary circulation path. Due to the central location, this area is widely accessed by a

variety of people. This area could be designed to provide further programmatic uses and become a more activated, inviting space.

Exit Corridor is a corridor of space defined by a linear stretch of concrete path enclosed by wire fences. This area is located along the southern boundary of the site. Once an inmate is released from prison they walk through this space to exit the facility.



Applied Guidelines

The design exploration started by choosing programming elements and formal elements to apply to the design:

Programming

- Sense of Control-maintain views and visibility

- Access to Privacy- provide areas for privacy
- Social Support -provide areas for conversation
- Natural Distractions- incorporate vegetation
- Movement and exercise- provide paths
- Shelter-relief from natural elements, areas of psychological escape from current environment, departure waiting areas
- Mother-Child bonding shared challenges and achievements
- Integrating technology- integrating water management technology through use of grading and vegetation

Formal Elements

- Curvature
- Vegetation
- Color

Site Observation and Analysis

Examination of the site contained within the fenced-in boundary of the minimum security area lead to the observation of several important existing design moves. Notable design moves included spatial hierarchy, existing program placement and path to space relationships. A clear spatial hierarchy is determined by the level of accessibility to the spaces. The central courtyard space is highly defined by the building edges. This primary space has a high level of presence due to the number of individuals that move through the space and have views to the space. Other spaces consist of the recreation area, the garden area, and a visitation area. These spaces are located

along the outer edge of the site. The recreation area and the visitation area are only accessible during certain times of the week. A linear stretch of unused space is located between the fence and the housing units. Inmates are not allowed in this area. The perimeter spaces are less enclosed and are created by both building walls and fences.

The primary path consists of angular lines of concrete which are configured to provide efficient circulation throughout the site. Smaller paths branch off the primary path at a ninety degree angle and terminate at recessed building entrances.

It is also important to note that a building plane extends from the buildings on the east side of the site, inward toward the central space. This plane defines a covered walkway space and provides one of the few areas of shade on the site.

Process

The design exploration began with holistically examining the entire area within the minimum-security fenced boundary. Explorations in program placement occurred first. Programming bubble diagrams were used as explore spatial relationships.



Figure 7.04

It was determined that the program placements were well-suited in their current locations. Keeping the programmed uses in their current locations allows the project to remain feasible in terms of budget.

The existing primary circulation provides an efficient linkage of the spaces throughout the site. The placement of the primary circulation remained the same except for a subtle shift closer to the housing units. The form of the path was modified through the addition of curves. The existing angular turns of the path were rounded to create a more sinuous flowing pathway throughout the site.

Enhancements to form and space and increased programming were incorporated into each of the three focus areas. The use of visual characteristics which include curvature, vegetation, and color were kept consistent throughout the site. The application of place-specific form and programming will be discussed in greater detail in the individual descriptions of the focus areas.

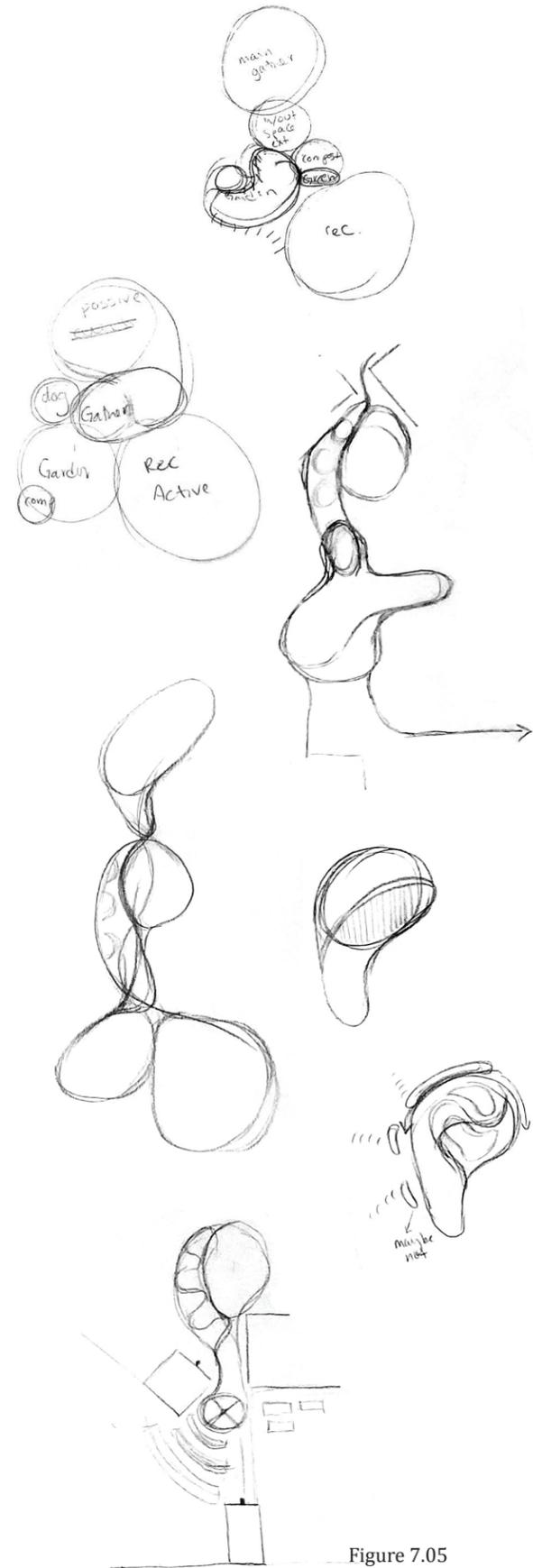


Figure 7.05

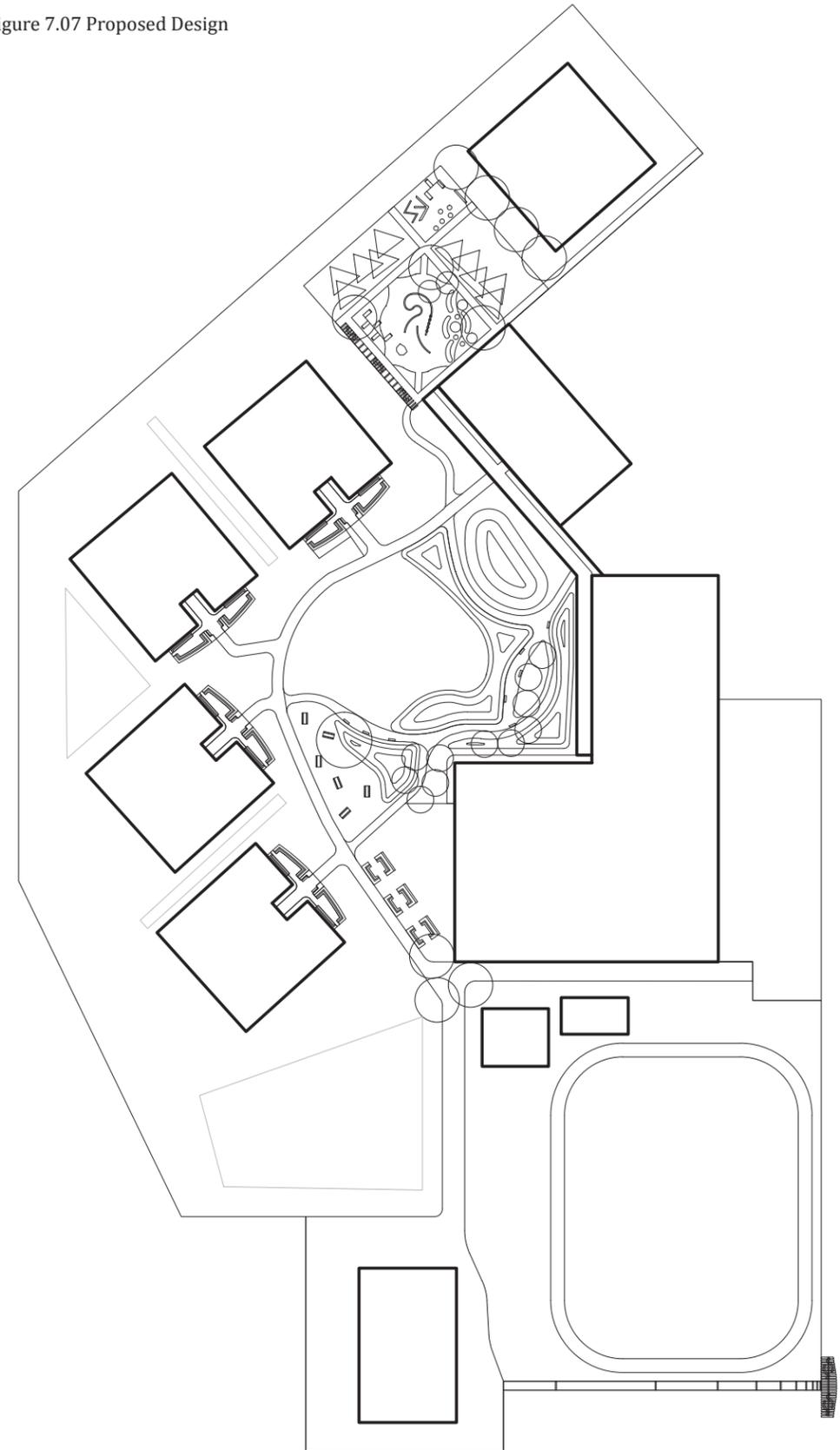
Design Concept

The intent of this design is to create an outdoor prison environment that promotes improved health and well-being. In order to create a stress relieving prison environment, the design focuses on providing greater spatial coherence through the site-wide application of design elements. Developed programming elements were applied to the spaces to create an interconnected system of spaces. In order to soften the physical environment formal design moves of curvature, vegetation and color were used. Formal elements were used to counterbalance the rigid, hard line forms commonly found in prison architecture. Subtle formal gestures used throughout the design. Minimal levels of intrusion may be more applicable in the prison setting than bold design moves. While this minimalism style of design may place constraints on design options, the subtlety of intervention was purposely used in order to maintain visibility and lessen security concerns.

Figure 7.06 Existing Design



Figure 7.07 Proposed Design



The Central Courtyard

This space is centrally located in the site and is highly defined on all sides by building edges. This primary space presents many opportunities to enhance spatial form and programmatic function. Currently this space contains an area of lawn where inmates can engage in activities such as Frisbee. A limited number of benches for sitting, conversation, and relaxation line the circulation path around the lawn space. The path running along the west side of the lawn provides primary circulation. Smaller paths that branch off this primary path at a ninety degree angle provide access to the housing units.

The design intervention began by shifting the primary path closer toward the housing units, in order to increase the amount of lawn space. This allows the lawn to become the primary feature of this space. Several subspaces were then designed within the central courtyard. An additional pathway was added along the east side of the central courtyard. The narrower curving quality of this pathway allows for a more therapeutic meandering experience. This pathway provides an alternative route that stands in contrast to the pathways built for efficiency. Berms were added to further define this path and to give the user the experience of walking through subtle rolling hills. Berms extend into the lawn, framing the space and creating an inviting form. The height of the berms is kept around three feet as to not interfere with visibility. Seating is providing along the meandering pathway allowing

areas of semi-privacy and person reflection.

Small seating areas were provided outside of each housing unit. The design enhances the exiting entry experience by providing additional planting areas and more seating opportunities. The curving form of the seating area complements the curved form of the paths. This area can be used by individuals that do not wish to venture away from the housing unit.

An area of underutilized pavement is located adjacent to the central quad area. In order to activate this space, the area was modified into a small plaza. The small enclosed spaces along the edge of the plaza define the plaza space and can be used as places for small group therapy sessions. The larger open area of the plaza space can accommodate larger group sessions or other activities.

The following programmatic functions were used in the central courtyard space:

Sense of control- Designed forms were kept open and low to the ground. No seating area was designed to be fully enclosed so that individuals could escape a threatening situation. Low design interventions allow for visibility to be maintained. A variety of different experiences were designed to allow individuals with the opportunity of choice. Choices include opportunity of sitting, walking, or active play, sun or shade, small or large group conversation, etc.

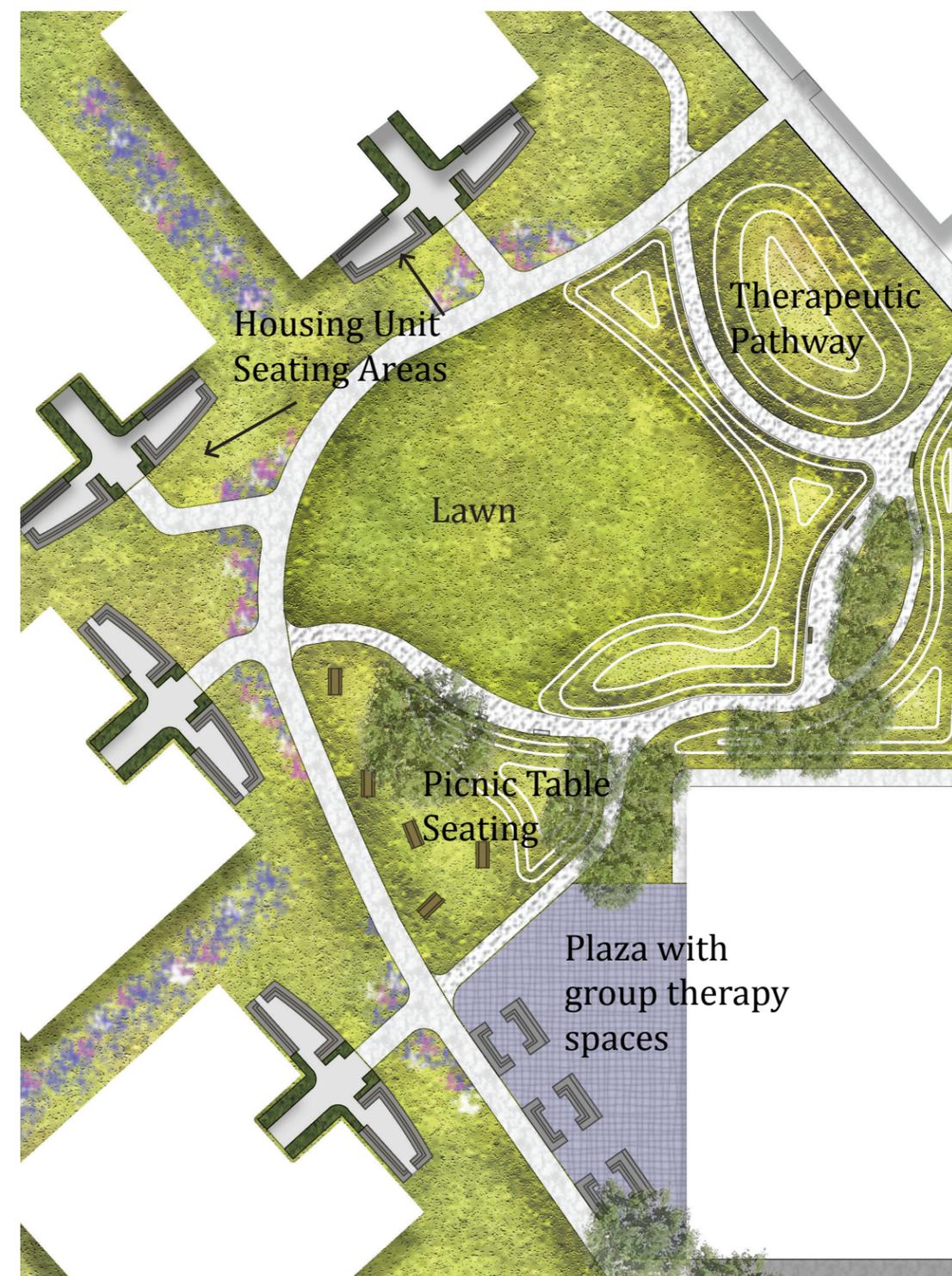


Figure 7.08 Central Courtyard Design

Areas for conversation- Many diverse areas were provided to facilitate a range of different conversation experiences. Spaces of various sizes and experiences are located throughout the central courtyard. Smaller areas for more private conversation were added by the entrances to each housing unit. Benches are located along the main circulation path and along the meandering pathway. Picnic tables are provided in an area of the courtyard to be used for forms of relaxation such as journaling and board games.

Areas for privacy- While complete privacy may not be feasible in the prison setting semi-private areas were designed to offer a perceived increase in privacy. Semi-private areas provide relief from the experience of public areas. Small areas outside the housing units can be used for inmates to be alone or have small group conversations with one another. Benches were provided along the therapeutic pathway to provide areas for personal reflection.

Movement and exercise- Enhanced lawn space, the modification of existing paths, and the addition of a new path were design decisions made to promote movement and exercise throughout the site. The lawn provides an open inviting space for activities such as Frisbee, catch, or relaxing on the grass. The curves applied to the primary pathway and the meandering pathway provides a sense of relief from the rigid lines of the prison environment. The meandering pathway was designed to join with the existing circulation path to create a

continuous loop of circulation that can be used for walking exercise.

Vegetation and water management technology were both addressed through the planting design in the central courtyard area. Low ground planting areas were added next to the main circulation path to enhance the experience of walking on that pathway and also to absorb water runoff. Existing site drainage patterns have created areas of erosion between the housing units. In order to address this issue, native planting areas were added between the housing units. Native planting areas can absorb water runoff and provide natural views to look out upon while inside the unit. In order to soften the hard lines of building edges, trees were added. Trees also provide further definition to spaces. Trees selected include small ornamental trees and larger trees to provide shade. Areas for conversation located outside the housing units and around the plaza area have are edged with vegetation to provide additional visual interest.



Figure 7.09 Therapeutic Walkway

The visitation area

The visitation area was redesigned to create areas to promote socializing and family bonding. This rectangular space located on the north side of the site currently contains a playground area and low metal shade structures that cover picnic tables. These picnic tables are used for sitting and conversing with friends and family. During the tour this area was mentioned as one of the areas that may benefit from redesign.

Design began by subdividing the visitation space into four subspaces. The largest space contains the playground. This playground is designed to be the primary feature of the visitation space. In the north corner, a smaller playground for toddler-aged children was designed. Bordering both the playgrounds are linear stretches of space that contain overhead shade sails and picnic tables. The placement of the picnic tables allow individuals to view activities occurring in both playground areas. Shade sails are meant to replace the existing metal shade structures. Shade sails allow protection from the sun while opening up the space.

The main playground was designed to be the primary feature of this area. The playground consists of several smaller areas that are designed for relaxing play, dependent play, and independent play. The area for dependent play was designed to encourage bonding between mother and child. Play equipment in this area includes obstacle course-like equipment. In order to navigate this

type of equipment, a child may need help and support from their mother. This equipment allows parents to help physically and emotionally support their child, fostering a connection between them.

The following design elements were applied in the visitation area design:

- Mother-child bonding
- Areas for conversation
- Shelter
- Vegetation

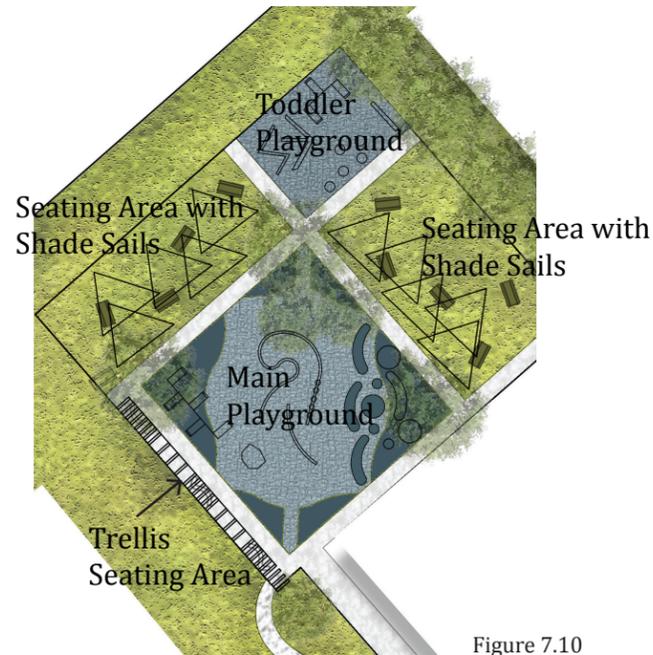


Figure 7.10



Figure 7.11 Balance beams and slacklines are types of obstacle course equipment where mothers can help their child to completing the task. This provide opportunities for positive encouragement and recognition of achievement. Shade sails and picnic tables (seen in the background) provide sheltered areas for conversation.

Main Playground



Figure 7.12



Figure 7.13



Figure 7.14

Toddler Playground



Figure 7.15



Figure 7.16



Figure 7.17

The exit corridor

This space is a long linear space located along the southern boundary of the site. The space is defined by a linear stretch of concrete path enclosed by wire fences. Once an inmate finishes their sentence, they pass through this space and exit the facility. This space terminates at a bus stop which then takes the newly released individual back into the city. This area was also chosen by the staff as an area that would benefit from design.

This corridor of space serves as an inmate's final passage to freedom. The intent for this passage is to provide send off into the everyday community. The design for this area incorporated an overhead structure and brightly colored vegetation planted along the pathway. The wire fences located along the sides of the path can be decorated with temporary art installations for the occasion of an inmate's release. Rhythm, repetition, and gradation are used in the design of the overhead structure. Overhead structures are initially spaced far apart at the beginning of the exit sequence. As in individual travels along the path, the forms gradually get closer together. The space created by the forms transitions from undefined, to highly defined. The corridor terminates in a shelter space defined by an overhead trellis. Seating is provided in this area. Shelter area provides a place where individuals can wait to be picked up.

The following design elements were applied to the design of the exit corridor:

- Vegetation
- Shelter



Figure 7.18 Rhythm and repetition with gradation leads to freedom. Temporary art installations can decorated the existing chainlink fence.

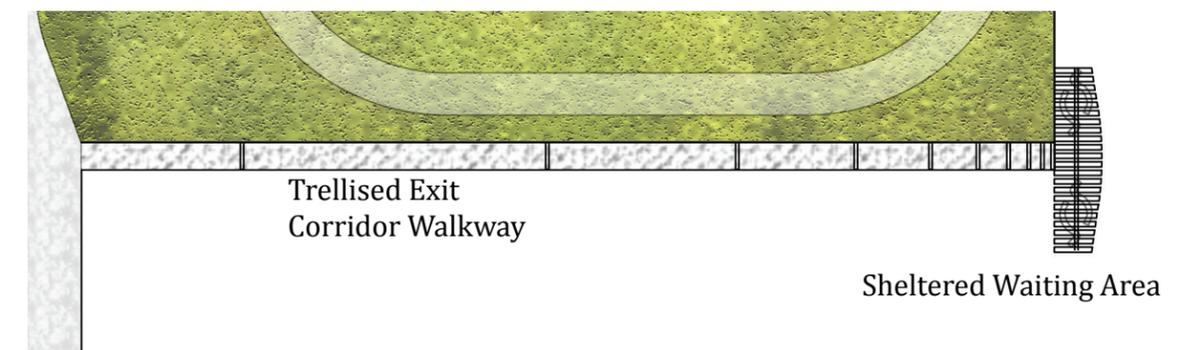


Figure 7.19

Figure 7.20 Proposed Program Location

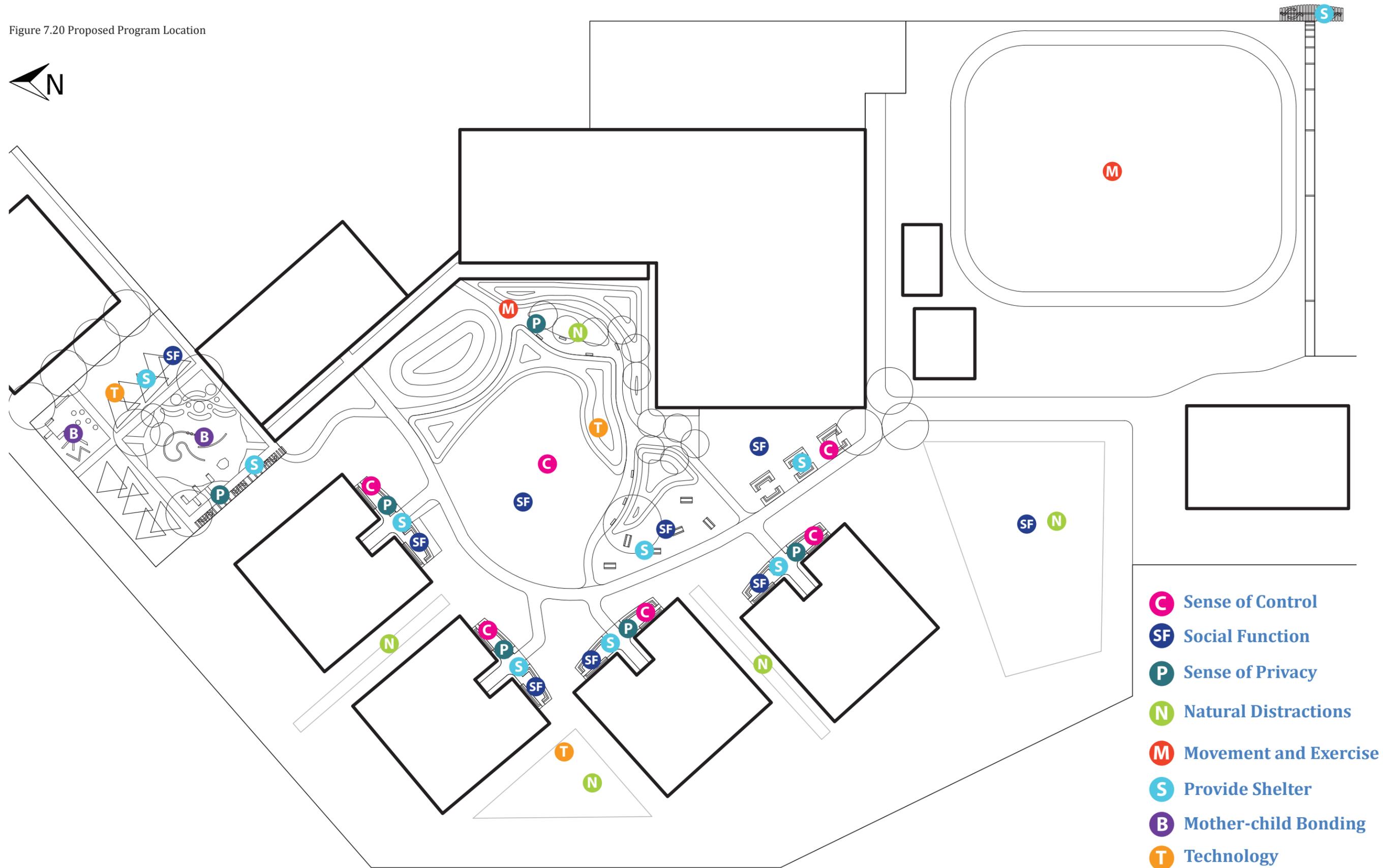
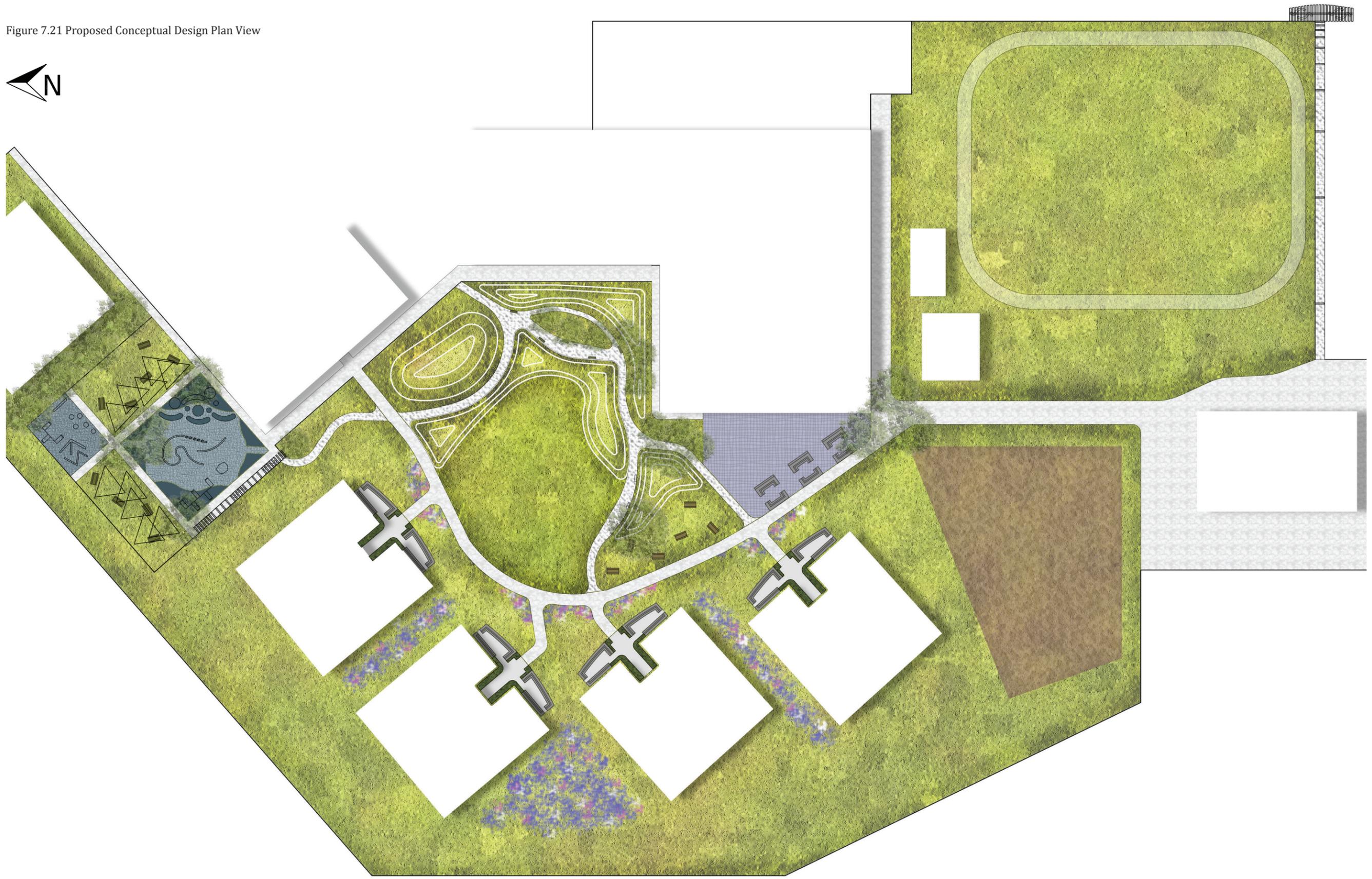


Figure 7.21 Proposed Conceptual Design Plan View



Additional Design Considerations

One of the major challenges of designing for the prison environment is the constraint of security. Maintaining visibility was a high priority in this design exploration. Placement and density of vegetation was limited in order to maintain lines of sight (especially near building entrances and other highly trafficked areas). Areas of design intervention were kept under 4 feet to maintain a high level of visibility. The overall approach is a Minimalism style of design.

Additional design considerations provide suggestions to enhance the garden area and the activation of underutilized space located between the perimeter fence and the housing units. The potential to expand the design beyond the fenced in perimeter is also addressed in these considerations.

An apiary can be provided in the space between the housing units and the perimeter fence in the minimum security area. This will activate a space that is currently not being used. Beekeeping can teach inmates valuable vocational skills and raise awareness of environmental issues leading to the decline of the bee population. Beekeeping can also provide a greater understanding of environmental systems. By raising pollinators, inmates can understand the relationship between people and environment. Bees can enhance the existing gardening program by pollinating plants throughout the facility.

Beekeeping can also be profitable. Inmates currently raise and sell houseplants to the public. If apiaries were installed, sales could possibly expand to include honey and beeswax products.

A water retention area could be implemented behind the housing units near the current garden area. Current site drainage patterns already direct water into this area of the site. The retention area could be planted with small fruit trees such as paw paw trees that could be supplemented by the additional water in the retention area. The inclusion of pawpaw trees (*Asimina triloba*) could provide another source of food for the facility. A water retention area could serve as an expansion of the gardening area.

There is the potential to expand the design beyond the fenced-in perimeter of the site. Vegetation, such as planting trees located outside the fenced boundary could provide appealing views to nature. This may be relevant if placing large trees with a fenced in area poses a security issue for certain inmate security level areas.



Chapter 8

Discussion and Conclusion

Discussion

This report explored the questions of “How can principles of landscape architecture can be used to design therapeutic landscapes for women’s prison facilities?” and “To what extent can the outdoor prison environment be designed to promote stress relief and positive behavior?” In an attempt to answer these questions, this report develops Design Elements for Spatial Coherence that directly correspond to the challenges faced by incarcerated women, existing conditions in prison environments, and drivers of behavioral change.

Literature has reported numerous negative effects caused by incarceration, discussed therapeutic effects of nature, and offered design related suggestions using nature to mitigate stress. Fear and stress can exacerbate problems with addiction, physical health, psychological health, and anxiety caused by separation from family. Nature been shown to decrease stress. Martin’s developed Pool of Perceived Healing Garden Design Feature Items provides a synthesis of therapeutic design elements. This synthesis served as the starting point for developing the programmatic functions for this report.

The synthesis of literature allowed for the development of additional programmatic functions specifically related to the needs of incarcerated women and the selection of therapeutic formal elements. Both programmatic functions and formal elements are necessary components in therapeutic landscape design.

These programmatic functions and formal elements have been examined in the design for healthcare facilities, but more research and exploration of these principles is needed within prisons. The proposed design elements for spatial coherence presented in this report are intended to be a starting point for developing a more comprehensive set of guidelines.

Many challenges accompany the area of prison research and design. One of the most common challenges is gaining support for the idea that nature and landscape design is beneficial and worth the investment. Further research in prisons is needed to provide evidence on the positive benefits of nature. This research can potentially help change mindsets regarding prison management approaches. The question, “To what extent can nature exposure influence correctional behavior and mental health in a prison setting” needs to be further explored to provide supportive evidence designing therapeutic prison landscapes. Addressing this question will require a significant amount of time and persistence, but until this occurs it may be difficult to gain support for idea of therapeutic landscapes in prisons.

Designing for people that are of a different background and circumstance presents a challenge to designers. Designers must be empathetic, but it is difficult to fully understand all the challenges and complexities that incarcerated individuals face. In order to address some of these challenges the design process should be highly inclusive of

inmates, staff, and administration.

The research in this report can be enhanced and improved in several ways. The development of the design guidelines and proposed concept design would have benefited from more frequent and extensive conversations with correctional staff members. If time had allowed, it would have also been highly beneficial to interview inmates through focus groups and surveys to assess their perceived needs and desires for the landscape.

One of the key lessons learned from this process is that even small design changes can have beneficial impacts. Small changes to existing formal elements and assigning programmatic functions may help to reduce stress and promote positive behavior. Facilities are often unable to accommodate a large scale, master planning level intervention therefore, smaller scale design interventions should be considered as viable option. Significant impacts can be created by curving a pathway or planting vegetation. Whether design is examined from a large-scale planning perspective or a small-scale site specific intervention, either approach could provide some relief from the rigid and constraining nature of the prison environment.

Conclusion

The needs of the incarcerated female population are wide ranging and complex. The challenges incarcerated women face are often unaddressed. Landscape architectural design

principles can respond to needs specific to women and mitigate the negative effects of the prison environment. Landscape architecture can provide ways to relieve the stress through the design of both physical features and programmatic elements. Further research can provide a more comprehensive analysis of constraints and opportunities within prison environments. A better understanding of these constraints and opportunities can provide a more informed design approach.

Prisons should extend beyond deterring crime through containment, and more closely examine methods to help rehabilitate inmates. While goals to rehabilitate are commonly found in the mission statements of prisons, the various interpretations of the term “rehabilitation” could cause issues in forming a standard approach. This report attempts to serve as a starting point in establishing a standard approach in rehabilitation using therapeutic landscapes.

Evidence suggests that nature can have rehabilitative effects through relieving stress and promoting positive behavior. Landscape architecture principles of form and function can be examined in the design of landscapes in order to increase health and well-being. The research, in this report can be used in beginning to address the needs of other incarcerated populations including male, elderly, juvenile, and handicapped populations. Expanding this area of research could have significant implications for the 2.2 million incarcerated individuals in the U.S.

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Appendix: Interview and Site Observation Notes

Julie Stevens Phone Interview Notes

1. Background Information

How did you get this opportunity?

In 2010 the Iowa Correctional Institution for Women broke ground for a new prison and the President of Iowa State University was contacted in order to recruit students to create a landscape design for the facility. The President then contacted the Department of Landscape Architecture.

Julie noted that many people have had difficulties in getting into prisons to work with them to make any design changes.

2. Design process

What kind of research was conducted to prepare yourself and your students for creating a design for this type of environment?

Research included reading lots of literature in the beginning
Research projects included surveys and focus groups

The Iowa State Landscape Architecture program offers research and design classes where students study attention restoration theory, therapeutic gardens, biophilia theory, etc. The students focus on people/environment relationships and were able to apply these theories in their design proposals for the prison.

There is not really an existing body of literature for prison landscapes. Most of the literature is on architecture, and historical information on how prisons have been built. This literature often reflects how society views incarcerated persons.

A prison facility is not all that different than a healthcare institution. The facilities have different missions however the structure of spaces have many similarities.

*During the research or design phase, who did you talk to (inmates, employees, etc.)?
Did you receive input on what they wanted for the design?*

(In Iowa they're called offenders, different places will have different terms that are deemed politically correct)

Initial contact was made through focus groups. Offenders and staff were asked about what they wanted to see in the landscape. Offenders were more responsive than the staff was.

(*after the implementation of the Master Plan)

As project has progressed the women have become part of the design team. The women have become more active in making decisions and shaping their environment.

Currently, the Iowa State Landscape Architecture Department has a partnership with the prison where they work with the women to plant and maintain the landscape. The hope is for the women to fully transition into becoming the independent leaders of this process.

What were some of the safety concerns for designing a prison landscape?

Many staff can't understand how they can have anything more than expanses of lawn in prisons. Expanses of lawn is perceived (by staff) as the safest option. Eliminating all threats, results in keeping only the most basic necessities. One of the biggest struggles is convincing people that healthy outdoor environments are a necessity in prisons.

The women were very helpful in giving insights to safety concerns. The women are highly concerned for their personal safety. For example, during the design process, one of the design proposals contained a space that was sunk into the ground. The offenders were quick to point out that a space like that wouldn't be safe because it was out of sight and someone could be beat up.

The Security Director is a very active participant in the process. Everything that gets built has to be approved by the Security Director.

Some officers were concerned with having trees in the design.

Aspens were selected because trunks don't get very big, meaning people can't hide behind them or climb them. Aspens can be limbed up to maintain visibility.

Branches could potentially be used as weapons, but there are other items the offenders have access to (such as pens) that could also potentially be used as weapons.

Part of the battle is convincing people that you can change the existing design for the better.

Where did the idea for an outdoor classroom come from?

In the first semester of designing for the facility a group of students designed an amphitheater space. The warden loved it and really wanted to have it built, so the following class the students honed in on the kinds of programming that could be moved outside.

The building where intensive treatment took place had rooms tiny windows and harsh lighting. In order to provide a solution, the students proposed outdoor spaces where intensive treatment could take place. The studio class worked with women and counselors in the intensive treatment program and designed an outdoor classroom based on what they learned.

Where does the money come from to do these projects?

Grant funds from the Department of Corrections
Grant funds from the Iowa State Department of Landscape Architecture
Trees and materials donations
Labor cost was kept low by using student interns

3. Post-occupancy information

How often do the offenders use the space and how does it operate?

There is a larger tiered space designed for big group gatherings and 2 other smaller classrooms that are sized for a treatment class. There is also an aspen grove for one on one counseling or alone time.

The offenders can use the space anytime- weather permitting. They have a lot of access to the spaces and the areas get used all the time.

The design provides the only place within the facility where the women can sit on the grass (in order to accommodate a high level of foot traffic, a specialized high traffic turf was used for that area)

Is there any post occupancy data available?

Yes, but the results haven't been published yet (as of Oct 2016).

Surveys were completed and sent back by 149 women.

Survey Information included the various ways that the women use the space and perceptions of the space. Some of the ways they use the space include:

- Reading
- Relaxing
- Hanging out with people
- Personal reflection

The women perceive the space to be:

- Calming and relaxing
- Helping them manage conflict
- Helping them focus better

A limitation is the lack of preconstruction data.

Is there any post occupancy data available for the decompression space?

No studies yet, but they are hoping to collect some data in the Spring (2017).

The upcoming Landscape Architecture classes are focusing on creating decompression spaces for 2 Men's prison facilities in Iowa. The Director of Corrections has recently reached out to the Iowa State Landscape Architecture Department to design staff decompression spaces in response to several staff suicides. Statistics show that suicide rates higher for correctional officers than the general population. For the correctional officer population there are a lot of issues with stress, self medication, and substance abuse.

Many prison facilities are not built to accommodate a garden space for staff and officers.

In the Iowa Correctional Institution for Women, the decompression space requires that the staff leave the facility. This means that space is not highly used during the workday.

Staff use the decompression area only when they're coming to or from their shifts.

In the men's prisons, students are looking for spaces that can be used for decompression areas. Whereas the women's facility was being rebuilt, the men's facility is already built

The project for the women's prison has snowballed into a huge collaboration.

4. Key Takeaways

What are your key takeaways or things that you have learned from you experience in working with the Iowa Correctional Institution for Women?

The process of working with the prison facility is very human centered. You spend a lot of time with offenders, staff, administrators. It is really important to understand their needs and concerns.

The prison environment is highly political. You can encounter a lot of pushback from taxpayers over how taxpayer dollars are being spent. Not everyone is a fan of the idea of prison landscapes. A lot of the officers still have not been fully been convinced. Change is hard for people.

Forming relationships with the people (offenders, staff, administrators) is critical.

Amy Lindemuth Zoom Interview Notes

Amy Lindemuth became interested in corrections while taking anthropology course at the University of Washington.

She obtained work experience with two projects

1. Designing a courtyard for the Monroe Correctional Facility Special Offender's Unit
2. Designing and constructing a mother-child garden for Bedford Hills Correctional Facility in New York

The following information contains key takeaways from her experiences working in the prison environment:

Working in prisons poses a significant challenge because oversight, budgets, and public interest can be highly political. Prison staff can play a large role in determining which parts of the project get built and how successful the project is after implementation.

Leadership changes occur frequently, and it is important to gain support from various levels of prison administration and to implement projects quickly. Location of the design will be a major factor in determining complexity of the design. Areas with dense planting may only be allowed for certain security level inmates or may only be accessed by a few inmates at a time. Prison staff may view Gardens and densely planted areas as detrimental to security.

The historical context of the facility may also affect what you're able to do with the landscape. Location is important. Visual complexity may be affected by location. Areas of dense planting may be in secured locations

Architects are often risk adverse. They keep designing in the same way because they can utilize an existing prototype for secure design.

It is difficult to find like-minded people that believe that nature within a prison can make a difference

Male inmates and female inmates may have different risk perceptions.

Inmates and staff have different design criteria. The Staff need safety in order to decompress.

Strong programming is important- spaces can be designed to accommodate programming goals

Topeka Correctional Facility Site Visit

Met by Mr. Metzler and shown into a conference room where we were joined by Colene Fischili (deputy warden) and Tammy Shoulders (chief/head of security)

Prior to the visit the following questions had been prepared. Maps printed at several scales were printed out beforehand in order to notate. 1 map included some surrounding context. 1 map was zoomed in on the facility and had minimal context.

The following description of my project was given to the staff prior to the interview: The primary goal of this research is to focus on how the outdoor space within the prison can be designed to provide therapeutic benefits and aid in the process of rehabilitation. One of the primary outcomes for my project is to create a landscape design for this facility using the information I gain from talking to you and through touring the facility.

I'm very interested to discuss some of the rehabilitation programs you have, as well as maybe discussing other programs that would benefit from being outside. I'm looking at the possibilities to expand and develop areas of rehabilitation. Ideally, I'd like to look around the whole facility, however I understand if there are issues with security.

Questions for the staff

1. General Facility Information

How many inmates are there at the facility?

About 853 . The facility is not overcrowded

What is the age range of the inmates?

Inmates are 18-70s Average age is around 32-35

2. Programming

Can you tell me a little about the Horticulture and landscape program? Is it all one program or are they two separate programs?

The Horticulture and Landscape Program is just one program. The Horticulture program is not separate from the Landscape Program

When and how did the Horticulture and Landscape programs start?

Started before any of the three staff members were at the facility. They estimated the program had been in place around 12 years.

They weren't sure how the program got started since the program started before they were there

How is the Horticulture and Landscape Program funded?

Part of the money comes from the Inmate benefit Fund (IBF). Part of the money in the IBF comes from the commission of house plant sales. Inmates that are involved in the Horticulture and Landscape Program grow house plants and sell them to the general public.

How many women are in the program?

9-10 are in the program, but there are around 50 applicants. A lot of women are turned away because there is not enough classroom space to accommodate everyone

What is the general attitude of the women that participate in the program?

They're enthusiastic. They have to apply to be in the program, so they want to be there.

Do inmates that go through the program ever end up getting jobs related landscape and horticulture?

Sometimes. Two of the women that participated in the program have recently gotten jobs related to what they learned.

What are some of the other rehabilitation programs at the facility?

Some of the programs include: A Microsoft Office Specialist course, GED, substance abuse treatment, sex offender treatment, general mental health, warehouse positions, workforce development skills (resume building) WALC program (Women's Activities and Learning Center), United Methodist Women, Inmate and children programs and Service dog training
Recently inmates worked with the Boy Scouts of America to plant flowers over by the minimum security outdoor visitation area.

Where are the levels of security housed?

(See Figure 7.01 on page 80)

Are there any security levels are not allowed to go outside?

All levels are security have yard time

How long do they typically spend outside?

How long they can be outside depends on their security level. Work release and Minimum get the most outside time (about 4 hours?) The max security gets maybe about an hour less of yard time than minimum security

How are they monitored?

They have a correctional officer with them at all times and there are also security cameras throughout the facility.

What are areas of the facility are the most commonly used by the inmates and what happens there?

The track gets used almost every day in the summer however they need additional supervision in order to be in the recreation area

Women will often sit on the benches on the edge of the quad area

Do the majority of women spend yard time outside?

Some choose to remain in their rooms however, the majority of women will spend yard time outside

3. The Garden Area

How cells are assigned? Are there any preferences to the cells with views of the garden area?

Randomly assigned to whatever is open.

No notable preference for the rooms with views to garden

Is the garden used year round?

Veggies are grown spring through fall.

What kinds of plants are grown in the garden?

The garden is used for vegetables. House plants are grown in the greenhouses and sold to the public.

Is everything that is produced used by the kitchen? Does any produce leave the facility (sold at a farmer's market, etc.)?

Everything gets used in the facility.

What was the rationale for the location of the garden/Why is the garden located where it is?

That's where there was room for a garden

4. Safety Concerns

Are there any challenges with putting vegetation between buildings?

Security guards walk between the buildings to do security checks. If anything is put between the buildings, it shouldn't interfere with the security checks.

What are the biggest security concerns with having people outside? (e.g. Violence or the passing of contraband?)

Fights will happen occasionally, like they do in every prison. Drugs have not been a

problem.

Have there ever been any security problems with the existing trees (eg. using branches as weapons?)

No, the trees have never been a problem.

5. Questions to improve the resource needs of the facility (water, and energy)

Is there an irrigation system for watering the grass?

No

Does the facility use Rain barrels or any other means of collecting water from the roofs?

No

Do you have any cost estimates for water and energy?

Annual water costs are approximately \$79,000 per year and sewer is \$136,000. Electricity is just under \$30,000 per month.

Are there any plans for facility expansions?

No, but the garden could possibly be expanded. (The garden hasn't been expanded because more staff is needed to help manage the program).

Are there problems with flooding?

Some of the units have issues with flooding (it was observed that several housing units sit at lower elevations, water would flow directly towards the buildings.)

As the meeting was wrapping up the Head of Security, Tammy Shoulders cleared Mr. Meltzer and I to access all parts of the facility.

Topeka Correctional Facility Site Visit

Notes and Observations

Minimum security area

We passed several women who said hello and had brief exchanges with Mr. Metzler.

Covered walkway area next to the administration buildings was nicely landscaped (even though it was observed in winter and not much was blooming...due to time of year plant types were not easily identified). Looked like an area that would be aesthetically pleasing there. It was evident that a lot of time and effort has gone into this area to make it look nice. Small pond area under the covered walkway area... apparently had fish in it at one point

Entered into another building and observed the horticulture and landscape program classrooms. The women were currently working on hand drafting plan drawings

Passed computer classrooms where women learn basic computer programs, offices, and indoor gym

Exited the building and walked toward greenhouses.

Greenhouses were warm brightly lit spaces. There was a steady hum from lights and fan. Overall, the experience in the greenhouse was peaceful feeling.

Walked past the green houses and noticed an open compost pile and pile of wire plant supports.

Small dog run with shade structure

Gardens slope downward to the west

Are there any unused areas in the minimum security area? Why are they not used?

They're not supposed to go behind the housing units because they can't be easily monitored back there.

Observations: about 1 correctional officer per 20 women

How often do people visit?

Saturdays and Sundays are visiting days

Pointed out square openings in the fence that are used for fire hoses.

After mentioning the idea of putting native grasses behind the housing units, I was informed that the area between the fence and the housing unit needs to be kept clear so that guards that do security checks can easily find contraband. Outdoor areas are swept for contraband every day before yard time.

Eroded channels between each housing unit

3' wide concrete path covers cables

Large triangular area of pavement- isn't used except sometimes women learn to use heavy machinery

Housing unit entry areas consist of planted areas with benches. These are found

outside of each housing unit in the minimum security area

What levels of security are allowed to participate in the Hort and Landscape Program?

Minimum and work release inmates.

Work release are allowed to mow outside of the fenced in perimeter also allowed to build furniture

BM: Playground may benefit from being redesigned

Aesthetically unappealing metal shade structures in outdoor visitors area

Medium security

During my visit to this area women were outside for yard time. Women were running up and down the stretch of pavement in front of the housing unit. According to Mr. Metzler this activity is what they do for exercise

Medium and max security areas have curved metal security fences as opposed to the straight fences found in min security areas (all fences are lined with concertina wire)

Behind the medium security housing unit was just mowed turf

Site slopes to the west

Passed behind the laundry unit

Huge area of underutilized space on the north side of the medium security site

Space in front of the facility is used to host the house plant sale. The inmates love to sell houseplants to the public

There were problems with getting enough staff for the facility. The state lowered the age of correctional officers from 21 to 18

Iowa Correctional Institution for Women

Site Visit Notes and Observations

Main atrium echoes a lot, which made it difficult to hear what people were saying.

Every Friday Julie and a couple landscape architecture student volunteers from Iowa State go to the facility and work with a group of offenders in a class. The purpose of the class is to teach the women how to manage and maintain the landscape within the prison. During this class, the women, with the help of Julie and her students, allocate tasks such mowing, and plan the planting of the production gardens. The hope is that this class will be taken over and independently operated by the offenders. The Production gardening program at ICIW started a year ago. They are currently in their second year of the program.

Julie and her students are currently working on developing an app for the women to use. This app helps the offenders manage the gardening program (currently the details, of the app are not fully determined, because the app is still in production).

During the visit, I was able to observe one of the landscape program classes lead by Julie and her students. Observations and Notes of the class are as follows.

The class took place inside a newly built programming building. The class consisted of about 12 offenders and 2-3 correctional officers.

The goal of class on that day was to create a gardening schedule and meeting schedule.

Offenders were organized into three groups of four. One group worked on the schedule and the other two groups worked on creating 2 separate planting plans for the vegetables.

Offenders working on the planing plans were given maps of the garden areas and scaled areas of veggies to be planted. With the assistance of Julie and the students, the women came up with a schedule and 2 planting plans. Groups then presented the developed schedule and the 2 planting plans to the rest of the class.

While the women seemed hesitant at first, they gradually became more interested and excited in discussing the types of produce to plant in the garden.

After the class I was then given a tour of the facility. Notated maps are included in Chapter 5

JS: Historically prisons haven't been designed to accommodate women's needs. Women's prisons were essentially men's prisons without urinals.

Women's prisons are starting to be designed to accommodate women's needs. One of the differences between men and women is that women tend to be more relationship oriented. Women like to socialize so they need areas that can be used for that purpose.