Miami-Dade County

Park Structure and Landscape Pattern Book

Exemplary Park Design Standards • Miami-Dade County, Florida

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Note: Technical and design materials contained within this document must meet all applicable building codes and require review and verification.

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Restrooms at Haulover Park
Matheson Hammock Park
South Pointe Park (city of Miami Beach)
Crandon Park
Greynolds Park

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"The measure of any great civilization is in its cities, and the measure of a city's greatness is to be found in the quality of its public spaces, its parks and squares." - John Ruskin

introduction

1.1 Purpose

The purpose of the Pattern Book is to enhance Miami-Dade County's unique regional identity, create a sense of place, and achieve a balance between the individual expression of each park and the harmony with which they work together to create a unified vision of a park system in the tropics. This document is intended to guide designers through the development of new parks and green spaces, by establishing perimeters of design.

The Pattern Book will contribute to the preservation and promotion of our history, build upon our design heritage and conservation values and guide us toward environmental sustainability. The book also promotes greater communication and coordination between the various teams of professions that build our parks, leading to the betterment of our community through the development of thoughtful parks and green spaces.

Image: The Mound at Greynolds Park, Miami-Dade County, Florida

1.2 How to Use this Document

This document is intended to be used by all professionals involved with the design and/or retrofitting of Miami-Dade County Parks. As a comprehensive resource for urban design, landscape and architectural design for parks within Miami-Dade County, this pattern book will assist users in the formation of ideas through the planning and design of new and existing parks and park facilities.

This document has been developed to be used by each member of a multidisciplinary team of professionals or consultants. In order to ensure successful utilization of this document the following steps should be followed:

1. Identify the Knowns

Two items need to be known by each member of a multidisciplinary team or individual designing a new park or park facility, or retrofitting an existing park or facility:

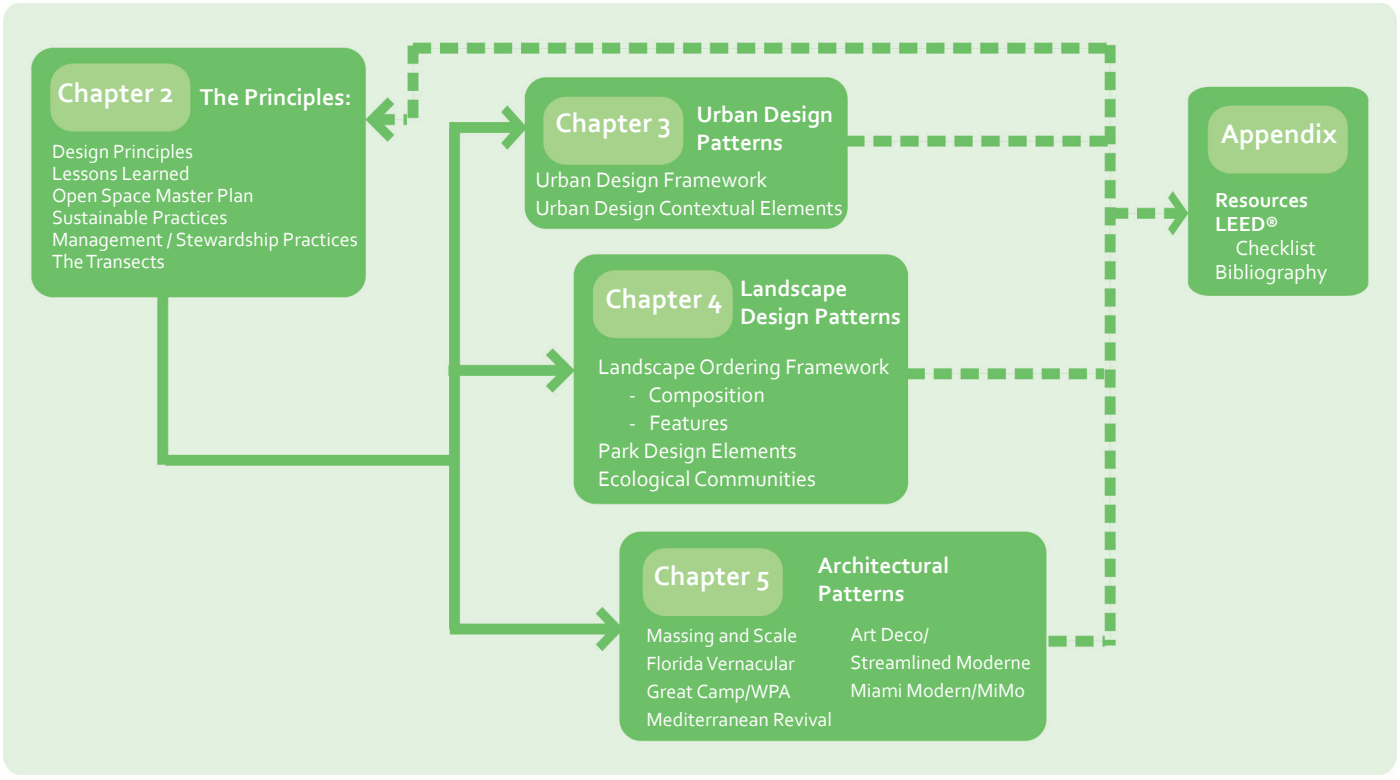
- Ecological Systems
- Programmatic Needs

The ecological systems historically present and currently existing within a park must be identified through on-site evaluation and data research. Programmatic needs, identified by the form and function of park facilities and programs, are identified by the Park Planning Program Plan. See the Park Planning Process section for a description of this step.

2. Site Design (Begin to Reference Document)

Review Chapter 2, ***Principles***, for guidance in identifying the Ecological and Built Environment Transect in which you are designing (analyze the context and/or reference planning documents). The transects will guide the design of certain elements in the Ecological and Built Environment, as described in Chapter 2.

Next, review Chapter 3, ***Urban Design Patterns***, for guidance on design of the built environment, including placement of buildings, design of streets, location of parking, and the interface of the park with the surrounding city. This chapter is divided into two sections: Urban Design Framework,



The diagram above is a visual organization of this document. Chapter 2 should be referenced by all professionals before utilizing this document for a design or retrofit project. Chapters 3 through 5 provide comprehensive guidelines for urban design, landscape design and architectural design for parks.

which apply in all settings, and Urban Design Contextual Elements, which are guidelines specific to certain Built Environment transect zones.

Next, review Chapter 4, ***Landscape Design Patterns***, for guidance on the design of the landscape. This chapter is divided into three sections: Landscape Ordering Framework (Composition and Features), which apply in all design; Park Design Elements, which are guidelines specific to certain Built Environment transect zones; and Ecological Communities, which provide typical characteristics and planting patterns for each ecological community commonly found in South Florida.

Finally, review Chapter 5, ***Architectural Patterns***, for guidance on the design of buildings and park structures, including instruction on how to compose building elements in an appropriate style. The styles described in this chapter are all commonly found in South Florida. The designer should determine the appropriate style for buildings and park structures based on input from County staff; this decision will usually be based upon study of the traditions found in surrounding neighborhoods, and identification of the style of existing buildings (if adding to an existing park).

Park Planning Process

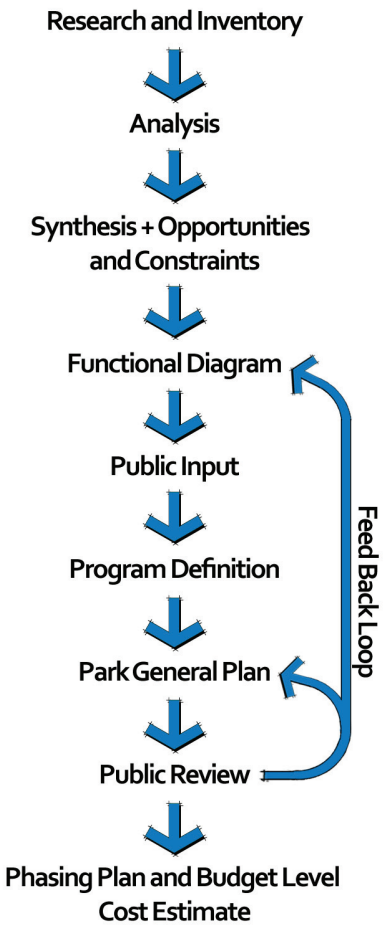
This process approach seeks to provide a way to better identify the needs of a particular community through a systematic method of research and community involvement. This approach looks beyond the specific property lines of the park in order to develop great parks that are a part of great neighborhoods and communities.

Research is the first step in this approach to park planning. Tailored to the unique aspects of each park, this step relies on research and inventory of existing conditions of the park and surrounding area. Once information has been gathered, an analysis of how the park fits into long range community plans such as Miami-Dade County Comprehensive Development Master Plan and the Miami-Dade County Parks and Open Spaces System Master Plan can be completed.

The next step is a synthesis of information to develop a list of opportunities and constraints for the park and surrounding area; these may include better connections, improved circulation, programming needs or sustainable park practices. Defining the form and function within the park comes next with emphasis on relationships between program needs and demands. Information compiles will be referenced in the design of parks and facilities.

Effective public involvement is the key to a successful community park. Community input is added to research and helps in the development of a cohesive park programming plan. Detailed design begins after form and function and program definition have been finalized and will require extensive reference to this Pattern Book. Consensus on programming and park development is the most important outcome of public involvement and may involve reviewing previous steps.

The final step is the preparation of a cost estimate and phasing plan. Taking park operations and maintenance into consideration, multiple phases may be identified with an emphasis given to infrastructure and connections to the park. The cost estimate highlights budget level needs of each phase for decision making.



The diagram above is a visual graphic of the Park Planning Process as outlined in the text to the left.

"Let us ask the land where are the best sites. Let us establish criteria for many different types of excellence responding to a wide range of choice." - Ian L. McHarg

2.0 Principles Overview

The principles established in this chapter have been developed to guide the creation and design of the County's parks, through the guidance of the surrounding community and environment. Six guiding principles exist in the planning and design of the parks within Miami-Dade County and include the following:

- Design parks in accordance with proven, historic principles of design
- Design parks in accordance with lessons learned from existing Miami-Dade County parks
- Design parks to accomplish guiding principles of the Miami-Dade County Parks and Open Spaces System Master Plan
- Design parks to be sustainable
- Design parks in respect to management and stewardship design practices
- Design parks in respect to ecological and built context

These six guiding principles reach across past, present and future goals of Miami-Dade County to provide high-quality, context-senitive parks and park facilities for the community. The following sections provide detailed information for each guiding principle listed above. All six principles should be followed whether designing a new community park or recreation facility, or retrofitting an existing park or facility.

Image: South Pointe Park, Miami Beach, Florida

2.1 Design parks in accordance with proven historic principles of design

Landscape design trends come and go, but there are some principles that have been proven to create timeless places. These principles of timeless park design have developed over the last several hundred years, have changed with social conditions, and have even disappeared for some periods, but remain relevant to creating tomorrow's great public spaces.

The tradition of parks in the United States has roots in European design, but by the later nineteenth century began to take its own path and transform itself into something distinctly American. Through all of its phases, there were guiding principles that shaped our parks, and how we used them. This section is an overview of basic design theory applicable to parks, the historic principles of park design in previous eras, and how these principles have affected the parks and open spaces of Miami-Dade County.

Design Theory

The design principles illustrated in this book are rooted in the dominant aesthetic theories and philosophies of several historic periods. Then, as now, artists and architects were concerned with how to use visual perception techniques to convey a message. Whether the medium is paint on canvas or plants and stone in the landscape, a designer's objective is to use the shapes, colors and symbols at their disposal to evoke a particular response from those who experience their art, architecture or landscape.

The visual message may be as simple as "please look in this direction so you can find the way to your destination", or as profound as a coastal hammock "scene," the view of which is so carefully orchestrated that the essential quality and beauty of the plants and space is revealed to visitors walking past it. In either instance, the message is the result of how the designer manipulates the visitor's perception of space as defined in our biological makeup and our cultural heritage.

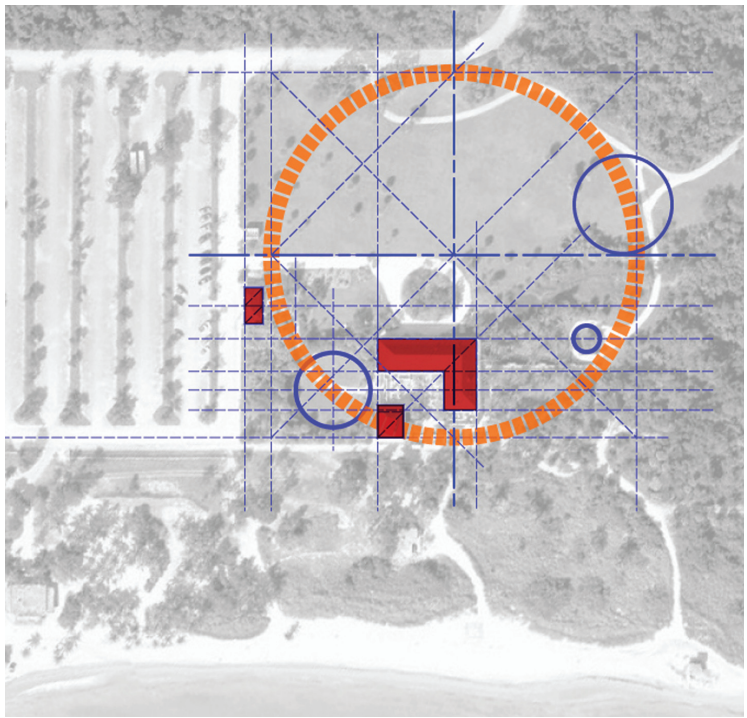
Gestalt psychology theories formulated in the early 20th century (gestalt meaning form or shape in German), describe how people instinctively perceive space as a series of shapes, and how our brain simplifies complex visual patterns for easier cognition. At a biological level, the more visually dissimilar, unfamiliar and complex our environment is, the harder the brain has to work to decipher and sort through all the stimuli. Arranging those perceived patterns into shapes that are familiar and easily understood is how designers manipulate the message the brain receives.

Gestalt theory identifies several basic principles that our brain uses to sort visual information, interrupt our perception of space, therefore, directly relating to design. Regardless of whether the shape is a two-dimensional pattern, a pattern placed on the ground and viewed in three dimensions, or an aggregate of two-dimensional and three-dimensional shapes, the brain automatically looks for familiar shapes to categorize what we see. A sampling of the major Gestalt principles that apply to park design includes the theories of Closure, Continuation, Similarity and Proximity.

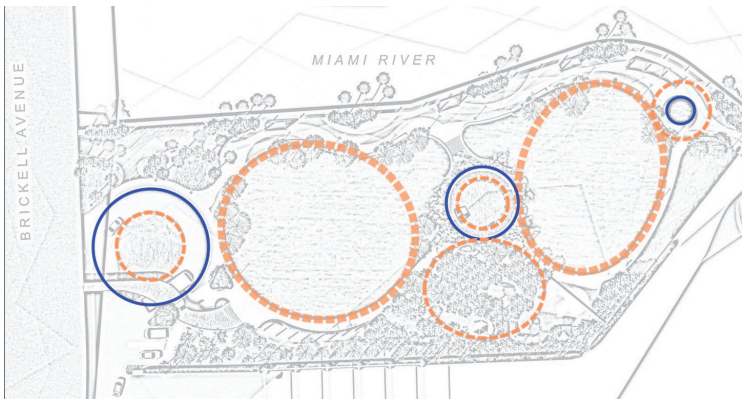
- Closure is when we see just enough of a shape to suggest what the rest of the shape looks like
- Continuation is how our attention is drawn to the convergence of lines and how we perceive converging lines as receding in perspective distance
- Similarity is grouping items by their shared characteristics, such as shape and form, but also color, texture, etc.
- Proximity is when dissimilar items are close enough together to be perceived as a single group, and not as individual parts

In western art tradition the search for "ideal" patterns and shapes culminated during the Renaissance with the use of circles, squares and proportionately "perfect" rectangles as the organizing basis of painting, architectural and landscape design. Regardless of how obscure the proportional

reference may seem to be, the belief has been and in general continues to be in design schools that through instinct and our cultural upbringing, we perceive perfection and beauty in the careful inclusion of these shapes in painting and in the built environment.

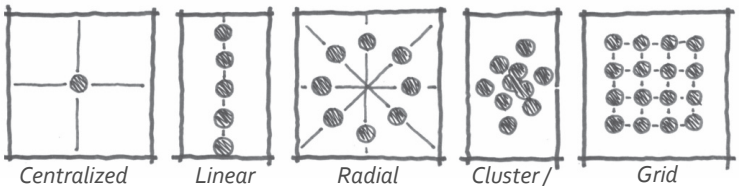


The diagram above depicts the enclosure of space found at the nature center at Crandon Park

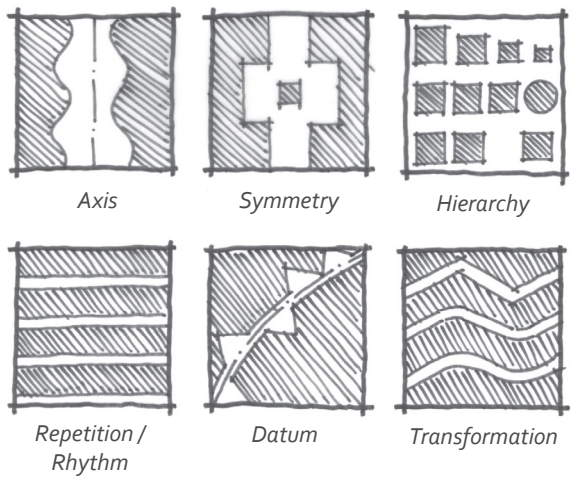


The Miami Circle is an example of a hierarchy of enclosed spaces forming a sequence from drop-off to water's edge (left to right)

Francis D.K. Ching in his book "Architecture: Form, Space & Order" outlines the fundamental ordering principles of architecture, that are applicable to landscape as well. These principles are helpful for categorizing the layout of park features; from structures to pathways, and at all scales of interpretation, from the arrangement of benches in a plaza, to the regulating lines guiding the placement of features for the entire site. Taking cues from Ching's principles, regardless of culture, the orderly arrangement of forms into geometric patterns falls into one of the following archetypal categories:

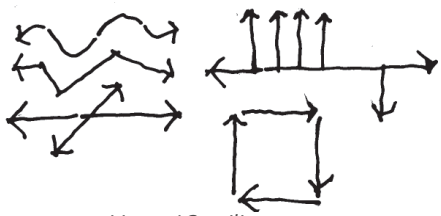


Within these, one can further clarify the arrangement of park elements and spaces using one or more compositional techniques:

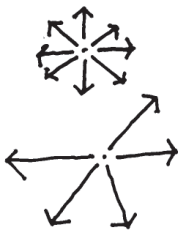


These geometric ordering systems are the basis for the design of the building in plan and facades, as well as the design of gardens and parks throughout history.

While the previous organizing principles apply most directly to a series of discrete features or even spaces, the pathways that thread these features together can be summarized as one or more combinations of the following basic patterns:

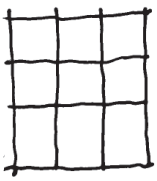


Linear / Curvilinear

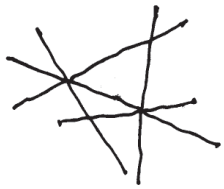


Radial

Spiral

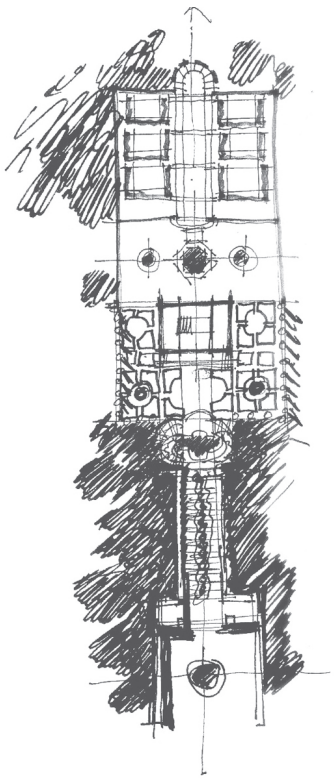


Gridded



Random

These geometric ordering systems and compositional techniques are the basis for design in general, and for gardens, parks and architecture throughout history. In particular, Italian Renaissance gardens, the French Enlightenment gardens and the English Landscape garden movement established the principles for the composition of parks at several different scales of conception and implementation; from the craft of human-scale outdoor rooms, to the connection of the park landscape into the surrounding region as far as the eye can see.



Plan of Villa Caprarola. Image illustrates the localized symmetry of Italian Renaissance design limited to small scale gardens

Italian garden design is characterized by the use of geometry in the landscape as a proportional representation of the adjoining villa facades and plan. These are simple compositions that started as an "ideal" geometry near the villa, but often quickly transformed to less rigorous geometric patterns along the perimeter of the garden. Italian gardens embraced connections and views to the surrounding landscape, but because of their often modest scale, never sought to control views outside the immediate bounds of the garden.

These gardens symbolized humanity's modest control of a small portion of the "natural world," the world inside the garden. Outside the garden was conceived as the "wilderness," portions of which were idealized in the garden as grottos or groves. The dichotomy of wilderness and civilization represented by the use of geometry is a fundamental characteristic of early Italian Renaissance Gardens, and later exaggerated to the point of humor and caricature in Baroque gardens such as at Boboli or Bomarzo.

Image of Vaux le Vicomte. The garden has been designed to appear as if it extends beyond the park to infinity. Courtesy of Vaux-le-Vicomte

French Enlightenment gardens on the other hand magnified the sense of rigorous control, to the point where extended vistas to the horizon were deliberately crafted to terminate on garden features. The use of perspective in constructing these layered features created not only an idealized geometric pattern on the ground, it crafted views of the landscape as exhibits of human control of the visible world.

The English Landscape Garden movement expressed compositional control of the environment in a very different manner from the French or Italian predecessors. While each of the major practitioners such as William Kent or "Capability" Brown, had their own compositional techniques, there are some commonalities among all of these designers with their treatment of the landscape design. The main building, the Manor House, was generally a neoclassical design, and the forecourt and the kitchen and flower gardens immediately adjacent to the house were extensions of that orthogonal geometry.

These "ideal" geometries, however, would abruptly transition to curvilinear forms, in the ground plane but especially in perspectival views of the park. Representing an idealization of nature in its purest, seemingly unaltered state, these "naturalistic" compositions expressed a romantic harmony between human constructions and nature. This was a view of wild nature where all the dangerous things were removed. Even though "nature" was often dramatically altered in the process, the illusion of untouched perfection was carefully constructed in perspective

Stourhead, England. This garden has been designed to give a false untouched appearance to the landscape. Courtesty of Lechona

to display nature's beauty and perfection from not just one culminating point as with Italian and French geometric compositions, but from multiple points within the garden.

In varying degrees of application, Italian, French and English garden design principles are the aesthetic compositional foundation for today's parks; an eclectic interpretation of one or more of these periods was seen in parks as diverse as Olmsted, to the plans constructed under Robert Moses in the New York City area. Today's hybrid parks are often rooted in multiple eras for their compositional influence.

Main bathhouse at Jones Beach, New York, courtesy of the Associated Press

Park Eras of the last 150 years in the United States

	Pleasure Ground (1850 - 1900)	Reform Park (1900 - 1930)	Recreation Facility (1930 - 1965)	Open Space System (1965 - 1990)	Sustainable Park (1990 - present)
Goals	public	social reform assimilation	public	revitalization psychological relief participation public	place-making ecological health revitalization psychological relief participation public
Functions	health	public health	health active recreation	health active recreation passive recreation arts and culture	health active recreation passive recreation arts and culture resource conservation community building

Above is a diagram summarizing the goals and functions of parks over the last 150 plus years in the United States (Galen Cranz)

Historic Principles of Park Design

The foundation of American park design can be traced as far back as the European Renaissance. The great plazas and gardens of this period were carefully planned and designed, a marked contrast to the more organically evolved market squares and public spaces from medieval times. Renaissance gardens were characterized by the merging of structures with the landscape and an emphasis on vistas, linearity, and composition. Later, gardens from the French Enlightenment would shift to become even more mathematically based and exerted a strong control over nature.

Eventually, the strict mathematical model went out of style and a new approach came into fashion: the landscape gardening school of England. The "wild gardens" of England turned typical Enlightenment gardens upside down, and favored naturalistic ground covers, rather than a groomed and cultivated look. This school of thought, put into practice in the hunting grounds for the nobles, emphasized meandering pathways, water features, large lawns, and gently shifting topography. Although they were mostly private grounds for the elite, these gardens and hunting grounds would be the forerunners to the landscape design of public parks.

Pleasure Ground – 1850-1900

The first major park spaces with public access in Europe were the "Pleasure Grounds" that emerged in the late 1600s. Typically these were commercial affairs that featured gardens, water features, event spaces for concerts, restaurants, and elaborate architecture. Some of these historic pleasure grounds remain to this day, such as Tivoli Gardens in Copenhagen, Denmark.

In the United States, the practice of landscape architecture was just beginning to emerge in the mid 1800s. The chart on page 14 shows the progression of goals and functions of parks in the United States starting with pleasure grounds of the mid 1800s. One of the pioneers of American landscape design was AJ Downing, who took the principles of English gardens and applied them to the American landscape. This was not a pure design preference, but was in part a reaction to

the industrializing world, and a nostalgia for the disappearing natural and pastoral lands. Downing promoted an aesthetic appreciation for "wild" landscapes, and emphasized the importance of sequence and experience in a space. He believed that embellishment such as shelters or pavilions should be rustic and thoughtfully placed. There was an emphasis on rockwork, and drawing attention to natural outcroppings and other natural features of the site; trees were placed thoughtfully in natural groupings to frame vistas and to hide unsightly aspects of a site.

Parade pleasure grounds in Bath, England. Courtesy of cotswold.info

As the United States continued to urbanize during the industrial revolution, people began to become more concerned with public health and social reform. It was a great era of philanthropy, and industrial barons deeded thousands of acres of their land to become public parks for city-dwellers. These first parks were typically large, often hundreds of acres, and provided a total contrast to the urban landscape: they were characterized by woods and meadows, curving paths, calm water bodies, and rustic structures. They were intended for casual strolling, carriage racing, bicycling, picnics, rowing boats, and listening to classical music.

Jackson Park, Chicago. Courtesy of bfcollection.net

The most famous type of this park in the United States is Central Park in New York City, designed by Frederick Law Olmsted. By the second half the nineteenth century most major cities in the country had developed similar large, landscaped urban parks. The intent was to provide a "civilizing influence" in increasingly chaotic, problem-ridden urban areas.

Many of these parks were designed by Olmsted, and those that were not were heavily influenced by him. Olmsted's designs were characterized by six primary principles: scenery, suitability, sanitation, subordination, separation, and spaciousness. He believed that buildings should be limited in number, small in scale, and should be part of the landscape, not dominate it. Built structures in general were to be in harmony with the landscape, not in competition. Roadways were carefully sited to guide people to vistas and important places in the parks. The parks were meant to be a pastoral haven from urban life, and were in a sense a reaction to the chaos and fears of the city.

The National Parks Movement

The National Parks system began with nostalgia and appreciation for the wilderness. By the early 1900s, the United States no longer had a western frontier, the nation was settled coast to coast. The frontier had long been part of the American psyche, and people became increasingly concerned that it would disappear altogether if the nation's iconic landscapes were not protected.

Design of the National Parks was firmly rooted in many of the principles seen in Olmsted's urban parks: the emphasis on natural features, rustic styles of buildings, and the careful planning of circulation systems. However, these parks were not meant to be pastoral escapes from the city, but havens for the wilderness, or "untouched" lands. Built features were subordinate to the landscape and were constructed of local materials in pioneer styles. The parks were almost completely naturalistic, informal, and intended to give the impression of unspoiled wilderness. The emphasis was on developing park facilities in harmony with the landscape,

and not on the creation of prototypes to be used in parks across the country. As a result, each park took on a unique, local character and slowly some of America's most treasured landscapes became accessible to the public.

The Twentieth Century

Beginning in the 1900s, two schools of thought on America's parks began. The first was the continuation of Olmsted's design aesthetic leading to the creation of the National Park Service and various state park systems. The second was the effect of the Reform Movement, where parks were foremost tools for social reform, and design was of lesser importance.

Community gardens at Harrison Park, Chicago (1920's). Courtesy of the Chicago Park District

The Reform Park - 1900-1930

While the national parks were developing at a grand scale, a social reform was happening in the cities. The late 1800s and early 1900s were a period of great immigration and overcrowding in urban areas. Many of the poorest people were squeezed into tenements with appalling living conditions that led to the outbreak of frequent disease, fire, and other calamities. The settlement house movement advocated for the creation of open space in the densest quarters of the city. There was a sense that the pastoral

Main pool at Jones Beach, New York. Courtesy of oldlongisland.com

Olmstedian parks were nice, but did not provide places for the active recreation and play that lower class families, particularly children, needed.

Social reformers advocated for the creation of smaller urban park spaces where children could play, and immigrants could be assimilated into American culture. These parks were a great contrast to the parks of Olmsted; they were small, often the size of a city block or less, and became part of the urban pattern (rather than a contrast to it). They were characterized by sandlots, playgrounds, rectilinear paths, and in larger sites had swimming pools and field houses. These new parks were intended to provide open space relief for urban children, immigrants, and the working class; though well-intentioned, it was still the upper middle class dictating values, and cultural differences were often ignored. Eventually the movement spread beyond the creation of new small urban spaces, and active recreation facilities began to appear in the open spaces of the pastoral central parks.

Recreation Facility - 1930-1965

World War I ushered in an era where people began to have more leisure time. In response, local governments began to perceive a need for increased numbers of recreation facilities. Open passive spaces increasingly gave way to ball fields, swimming pools and tennis courts. Parks

became less and less natural and more paved over with asphalt for the ease of maintenance. Structures also became more standardized, and the focus shifted almost entirely away from creating places of respite to creating places for active recreation. This era went hand-in-hand with the increasing suburbanization of the United States. As more people owned houses with yards, the middle class support for urban parks waned, particularly those that did not provide specific active recreation facilities.

Pool facility in Miami-Dade County, c. 1960.
Courtesy of the Historic Museum of South Florida

One exception to this trend was the Civilian Conservation Corps (CCC). As part of the Works Progress Administration, the CCC provided jobs to thousands of young men and women to develop facilities in national and state parks. This initiative carried forward many of the design practices found in the national parks, and out of economic necessity used local materials and local construction techniques that site supervisors were familiar with. The emphasis was still on keeping the character natural, and encouraging passive use of the park space, celebrating natural and cultural resources. Many of the CCC's parks survive today as flagship parks in the national, state and county park systems. Their aesthetic, an updated version of Olmsted design, exhibit classic park design principles updated for modern living.

Open Space System - 1965 - 1990

By the 1960s, urban America had changed significantly. With suburbanization, park spaces began to get more diverse. The process of developing parks and open spaces became more inclusive, and by the 1970s and 1980s, were used as a tool to revitalize depressed urban areas. Different types of parks and open spaces began to emerge: pedestrian malls, corporate plazas, trails, and pocket parks became increasingly common. Because of this diversity, size and elements varied, and the emphasis shifted to creating open space systems. In the suburbs particularly, there continued to be an emphasis on providing active recreation facilities in parks. As cities began to reach build-out, passive open spaces in parks were converted into ball fields and other programmed elements.

Paley Park in New York City is an example of an open space system era park with it's emphasis on providing a break from the urban context surrounding the park. Courtesy of Clifford Goodwill

This period largely coincided with the development of modern design, which has very different principles than its design predecessors. Modern design is characterized by an ethic of minimalism; when applied to the landscape, it is often translated as a proliferation of hard surfaces and

a total control over nature. These parks were designed more as pieces of art or sculpture rather than spaces that were welcoming to people. These modernist landscapes were particularly prevalent in urban areas and corporate plazas, and have largely proven unsuccessful as open spaces.

Sustainable Parks – 1990-Present

Beginning in the 1990s, the most recent evolution in park design is a focus on sustainability. With a social goal of improving both human and environmental health, parks are now being seen as places to restore the environment while simultaneously providing recreation benefits to residents. Elements such as native plants, permeable surfaces, and ecological restoration are becoming more common, and there is greater attention paid to the environmental impacts of development. In many ways, the guiding principles are shifting back toward those seen more commonly in the era of Olmsted, with a more naturalistic approach, fewer programmed spaces, and more multi-purpose open spaces.

South Pointe Park in Miami Beach is an example of the sustainable park era in park design with an emphasis on low impact plantings and pavings.

2.2 Design parks in accordance with lessons learned from Miami-Dade County

The Miami-Dade County Parks System began in 1929, when the County Road Beautification Department hired A.D. "Doug" Barnes. It was a time of great anxiety due to the stock market crash of 1929 and the Great Depression of the 1930s. The foundation of the County's parks system coincided with the start of the CCC. Mr. Barnes is credited with having the foresight to acquire many of the County's most cherished heritage parks and overseeing their development, including:

- Matheson Hammock Park (1930)
- Greynolds Park (1933)
- Haulover Park (1935)
- Redland Fruit and Spice Park (1938)
- Fairchild Gardens (1938)
- Homestead Bayfront Park (1938)
- Crandon Park (1947)

These parks today are some of the most beloved in the entire parks system, and have proven to be examples of timeless landscape architecture. The designer responsible for many of the County's heritage parks was William Lyman Phillips. Phillips worked with the Olmsted brothers off and on, and his influences stemmed from a number of experiences throughout his career.

In 1913, he did a Grand Tour of Europe, and was particularly struck by the beauty of French and Italian renaissance gardens. In his letters home, he spoke of the interplay between indoor and outdoor rooms, connections using loggias and allees, and the sense of sequence and experience. He was especially enamored with the various uses of water in the gardens, such as streams, lakes, sprays, ponds, and reflecting pools.

One of Mr. Phillips' most formative experiences was his appointment to design the town of Balboa in the Canal Zone of Panama in 1914. It was here that he cultivated a love for tropical plants, and how to best work with them to achieve beautiful spaces. After a number of various stints, Phillips went back to work for the Olmsted Brothers, where he eventually became the company's representative in Florida. His first major project in the state was the development of Mountain Lake Sanctuary, today's Bok Tower Gardens.

When the Depression hit, Phillips left the Olmsted Brothers and opened his own practice in West Palm Beach. Shortly after, the CCC legislation was passed and Phillips was accepted as the project superintendent for the first project in Florida. His first assignment was to develop Paradise Key into Royal Palm State Park. The goal was to make a public park in the Everglades, with the intent of respecting the history and natural beauty as much as possible.

Phillips then went on to finish the development of Greynolds Park in northern Miami-Dade. He designed a roadway system that followed the winding form of the river and lagoon. Abandoned mine pits were transformed into meandering lagoons, and old machinery was piled in the center then filled to create an observation mound that would serve as the park's focal point. Buildings in the park were constructed with native materials such as oolite limestone, coquina, and cypress shingles. Many of these original features remain today, and make the park one of the most unique places in South Florida.

Following the completion of Greynolds Park, Phillips went on to supervise the development of Matheson Park, which he kept as natural as possible and framed the visitors experience by a series of vignettes. Work on Crandon Park began in 1941, and Phillips completed his masterpiece, Fairchild Tropical Gardens, in 1954.

Throughout his many works in Miami-Dade, Phillips followed a number of design principles. Primarily,

- The priority in design is on form; plants and other materials should then be selected to best realize the intention of the form
- Buildings and other structures should be in harmony with the landscape, not in competition
- Emphasis on careful composition of space—objects should not be placed haphazardly
- Focus on character, individuality of the site
- Attention to wind, sounds, light and shadows
- Use of water
- Every detail should be in harmony with the overall concept

- Celebration of variety and contrast
- Importance of connectivity

These parks set the standard for the rest of the County's parks to follow. In the decades since Phillips' work, the County continued to grow its system to include over 263 parks. For various reasons, most of these parks were not designed in the same timeless vein as the initial heritage parks. This document is intended to serve as a guidebook for upgrading the County's parks to not only incorporate these classic park design principles, but to do so in a way that maximizes their seamlessness, beauty, access, equity, sustainability, and multiple benefits.

For further information on the influence of William Lyman Phillips on park design in Miami-Dade County please reference *William Lyman Phillips and the Design Principles of Miami-Dade County Parks* by Joanna Lombard.

Heritage Parks Lessons Learned

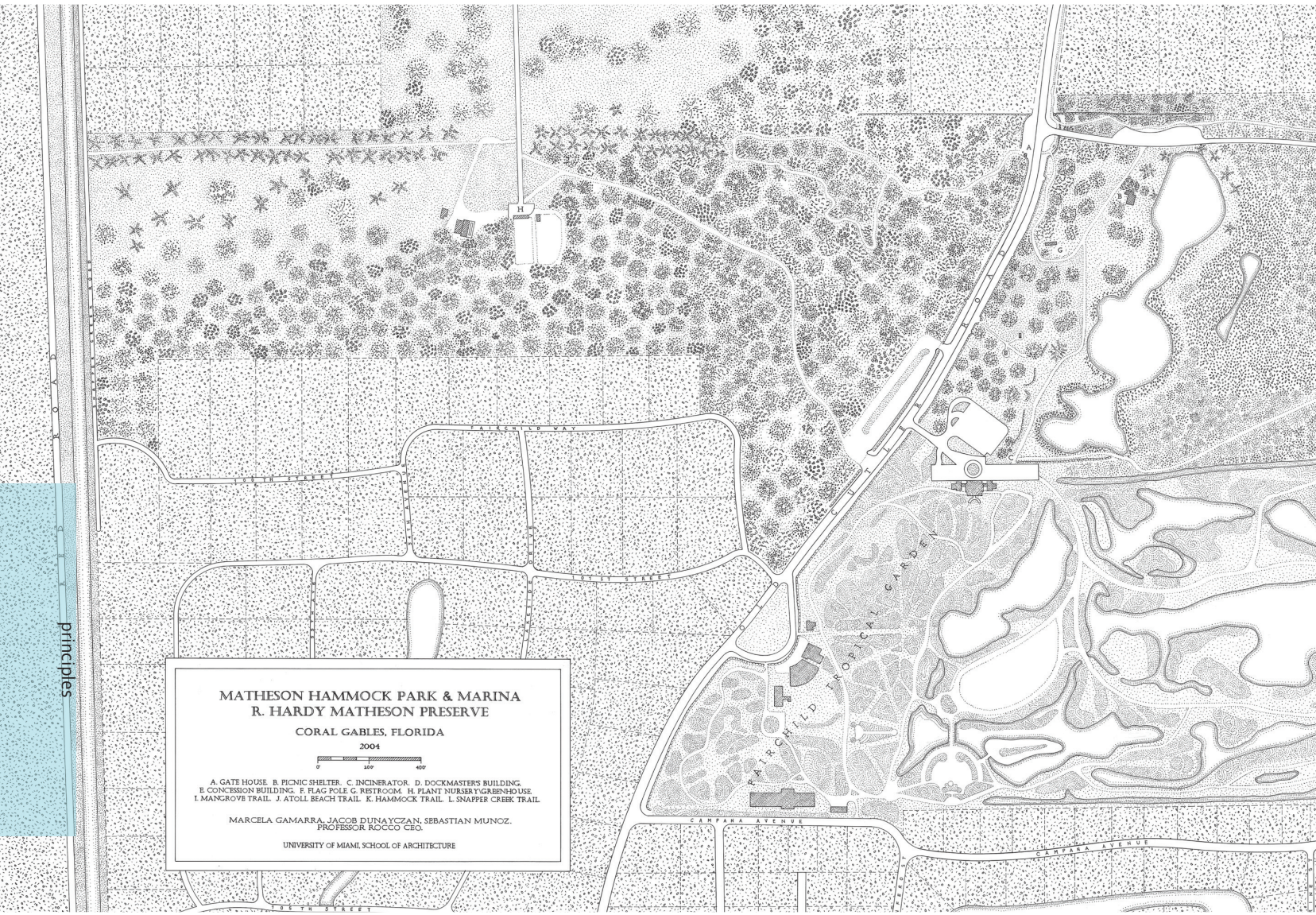
The design principles for this Pattern Book are derived from the County's "Heritage" parks: Matheson Hammock, Greynolds, Crandon and Haulover Beach Parks. These parks are deeply rooted in the County's history, and draw upon the area's natural resources and climate to guide the design and stewardship of the land through the design expertise of William Lyman Phillips and his mentor, Frederick Law Olmsted. As a first step toward understanding what can be learned from each of these parks, the following is outline of observations of each park. These first impressions are distilled into design diagrams, either in some combination with each other, or individually into separate principles for landscape, circulation and detailing.

This information, along with detailed plans courtesy of the University of Miami, School of Architecture and Professor Rocco Ceo, are shown to identify the heritage of great park design in Miami-Dade County. Designers encouraged to reference this great park design heritage as part of the design process for new or existing parks and open spaces.

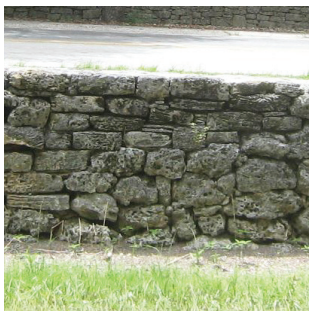
Learning from Matheson Hammock Park

From the overall layout to the craft of the individual structures and spaces, William Lyman Phillips' park design approach is clearly expressed and finely executed in Matheson Hammock Park. His design techniques in spatial composition and choreography, site planning and the use of local materials used throughout his career, are found in the park's design and is the reason for the park's continued success.

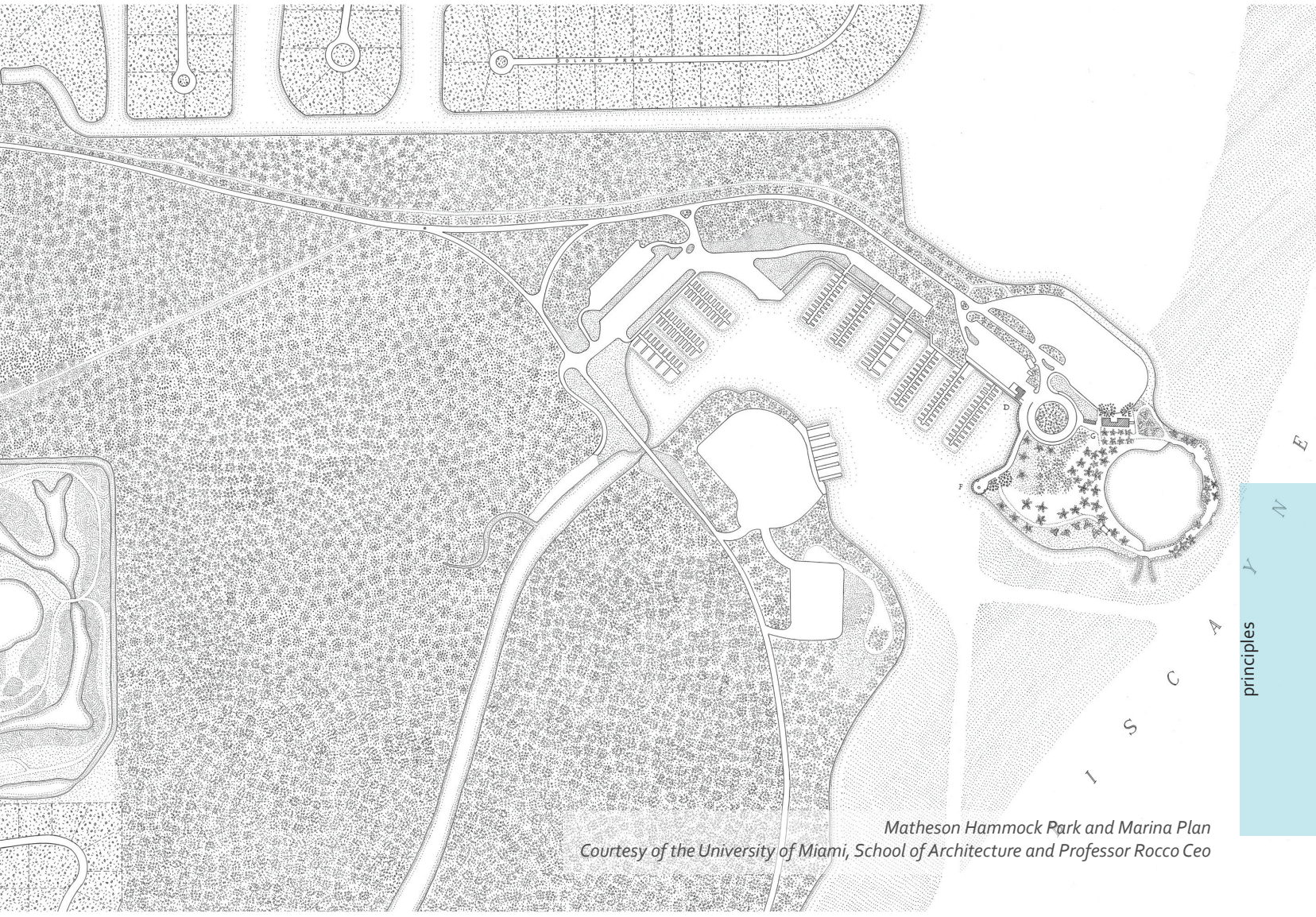
From a planning perspective, the park is comprised of two activity zones and two preserve zones based on the natural ecosystems (The Beach and Marina, The Hammock; the Mangrove Preserve and the Upland Hammock Preserve west of Old Cutler Road). Each activity zone is divided into multiple layers of sub-zones based on landscape type and use, drawing upon the adjacent mangrove preserve as a visual backdrop. Locating the park road along the boundaries of the mangroves is a conservation and park planning strategy that effectively balances the need for access to the picnic areas, beaches and marina, while maintaining preservation objectives for the mangroves. The result is a healthier wetland separated from activities that could damage the ecosystem, while still providing visitors a visually interesting and varied park experience.



Old Cutler Road delineates the eastern park boundary with rough cut limestone walls that are low enough to see over, but high enough to block or filter views into the park, and to reduce some of the tire noise generated by roadway traffic from being heard within the park. The original purpose of these walls flanking Old Cutler Road was to serve as a firebreak between the oak hammock to the east, and the mixed hardwood hammock to the west, which is now overgrown with exotics. Visually, the wall is generally consistent in height, follows the existing grade, and includes several short jogs in horizontal alignment and/or scalloped sections to wrap around the trunks of existing live oak trees. These dry laid walls are carefully constructed of locally quarried stone to last hundreds of years, and are a signature for the park because of their high quality and the symbolic ties of this material to the region's geography. This same stone is used elsewhere in the park for the main picnic pavilion in the oak hammock and the beachfront concession buildings.



Coral wall at Matheson Hammock Park



Matheson Hammock Park and Marina Plan
Courtesy of the University of Miami, School of Architecture and Professor Rocco Ceo

Park spaces along Old Cutler Road are visually layered when viewed from the road; starting with the perimeter wall, then a dense, mature thicket of canopy trees and tall shrubs (the hammock), obscuring many but not all views into and out of the park.

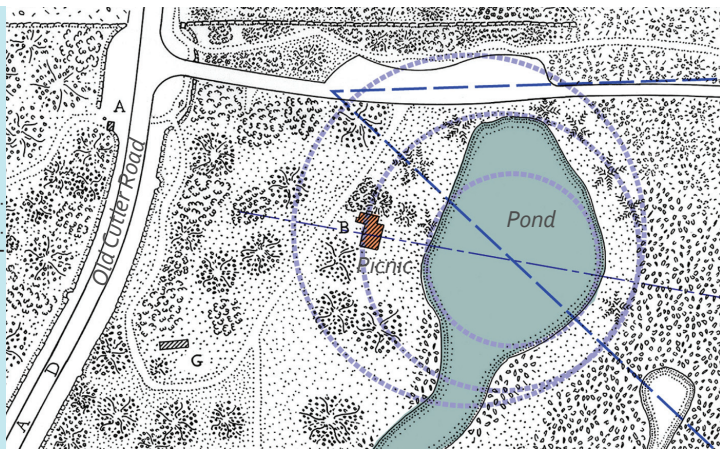
Arrival by car into the park is through an arced gateway wall extending into the park. A dense planting of canopy trees frames the road and the space quickly opens up to a view to the pond across an open field, unobstructed by cars, framed by plantings. The opposite side of the road is for car parking, leaving the view of the pond unobstructed. This area is the first dramatic view inside the park, because of the transition between the constricted and dense canopy spaces along Old Cutler Road and the contrasting openness of the pond view.

The main picnic pavilion fronting on the pond is not immediately visible when arriving by car, but walking through the park the pavilion reveals itself from behind several clumps of trees and palms, and is spatially tied to the water by its location parallel to one of the widest points of the pond. The curved edge of the pond and the background trees informally center on the view from the pavilion.

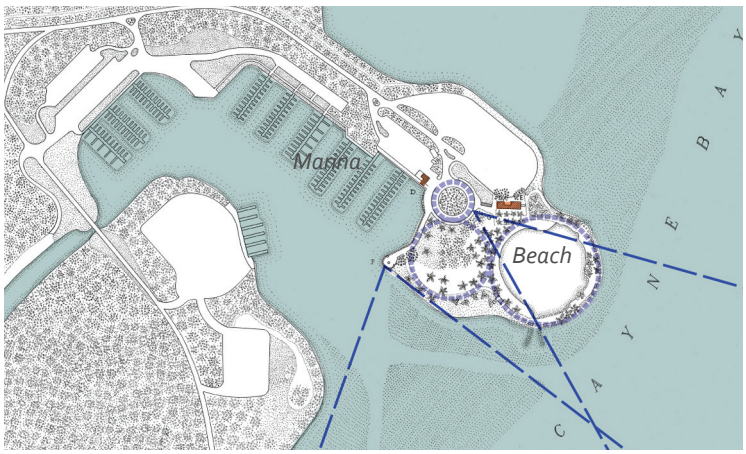
Arrival by bike or foot into the east park is through one of three 4' wide gated breaks in the wall, each with a different view of the park's landscape. Trails into or through the park are rarely perfectly straight for more than one or two hundred feet or so; there is always a curve introduced to limit views along the path, that eventually open up to another view and/or another completely different park room. This informality is in response to the existing trees and topography, resulting in a visual harmony.

The southern and easternmost edge of the mangrove preserve is lined with a narrow road that is pushed close to the ocean side of the park, terminating in a large, open cul-de-sac. This terminus fronts onto tidal flats and several carefully located openings in the mangroves provide dramatic views to Biscayne Bay and downtown Miami and Miami Beach on the horizon.

The Beach and Marina area is a powerful design composition, using pure geometry (circles) arranged in a way that clearly defines the park spaces, and creates a dramatic vista to the ocean showcasing the main feature of the space, the circular tidal pool. The tidal pool is perfectly scaled to provide a visual "middle ground" feature that frames views to the ocean. While the functional purpose of a tidal pool is to create a calm, shallow swimming area, this results in a layered view of the ocean that is visually attractive.



The diagram above is of the arrival sequence at Matheson Hammock Park and is based on graphics prepared by Rocco Ceo.



The diagram above is of the beach and marina areas at Matheson Hammock Park and is based on graphics prepared by Rocco Ceo.

A coconut grove along the beach backs into a roughly circular dune area, which connects with a circular arrival "green" filled with coastal upland trees. The circle filled with trees provides vehicular access for the beach and marina, and is a common arrival connection for the dock master building and the beach concession building. Lastly, a walkway along the south edge of the marina leads from this circle to the marina inlet, and an overlook with views into the marina basin to the west, and a dramatic panoramic view south to the ocean horizon.

The park buildings are iconic examples of style of architecture Phillips developed that is tailored to the geographic context, and their intended uses. The concession building and the main picnic pavilion in the oak hammock both have roof terraces for people to enjoy something that is a rarity in Florida, an elevated view of the landscape. During the winter months or in the evening throughout the year, these terraces also provide a spectacular setting to enjoy the cool, southeast trade winds for picnics, dances and other gatherings. These buildings are classically proportioned, but informal in character because of their regularly spaced fenestration, and local symmetry for portions but not the entire structure.

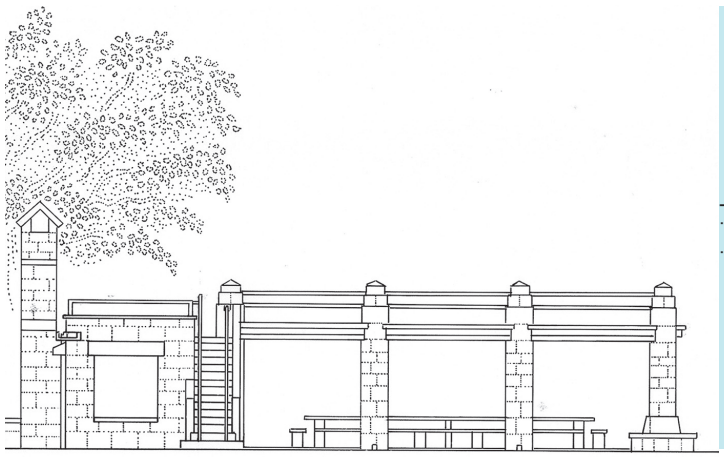
Summary

Matheson Hammock Park offers valuable lessons, including:

- Large-scale park planning that balances preservation and conservation needs with attractive and clearly defined access to the recreational activities.
- Use of native stone in main park structures is a durable and culturally and geologically relevant solution for addressing the long-term needs of the park infrastructure.
- Signature park views at the entrance and at the beach are made more dramatic by their contrast to the arrival spaces that precede those views, as well as the journey through a sequence of attractive and differing spaces leading up to those signature views.
- High quality and classically proportioned park buildings that were prototypes for a Miami-Dade vernacular that is as relevant today as it was when they were constructed.

For further information on the design elements of Matheson Park please reference *Building Close to Nature: The Early Architecture of Miami Dade County Parks* , by Rocco Ceo.

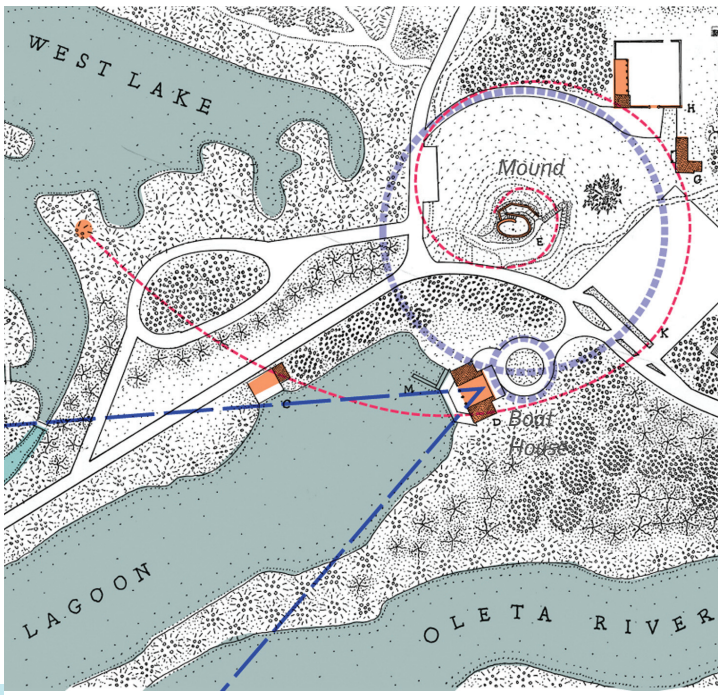
The above image is of the beach concessions at Matheson Hammock Park. Graphic is courtesy of University of Miami, School of Architecture and Rocco Ceo.



The above image is of a pavilion at Matheson Hammock Park. Graphic is courtesy of University of Miami, School of Architecture and Rocco Ceo.

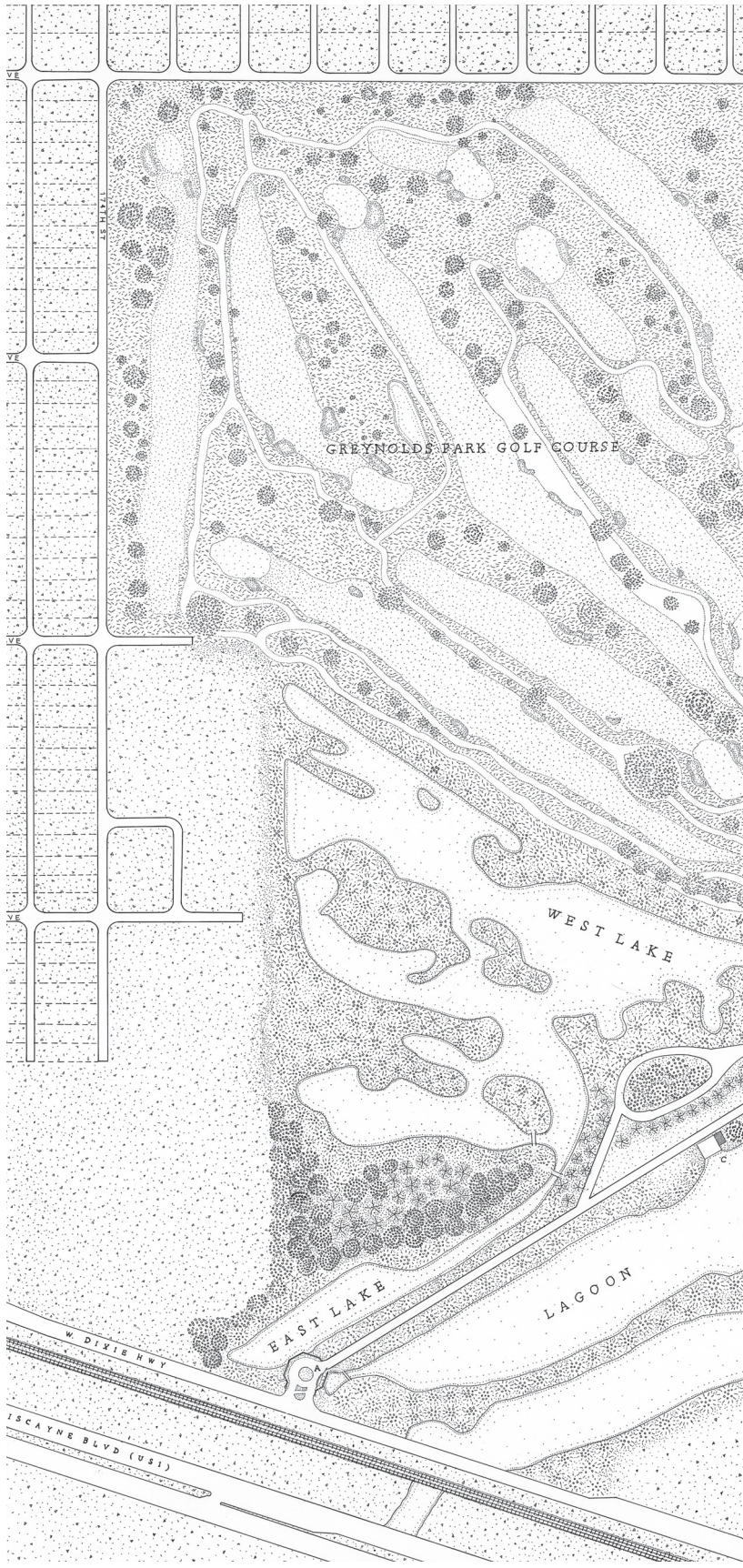
Learning from Greynolds Park

The signature lakes and landforms in Greynolds Park originate with the site's prior use as an abandoned rock quarry, and William Lyman Phillips' vision of a new landscape of varied spaces and vistas. One of the most striking features in the park is the "Mound;" the ramped and walled earthwork constructed by Phillips using abandoned mining equipment as its foundation. This spiraling feature is the centrally located and organizing feature for the park's composition; the park roads and all the structures on this side of the park are arranged around this attraction.



The diagram above is of the Mound at Greynolds Park and is based on graphics prepared by Rocco Ceo.

Although not directly connected to the mound by walks or trails, these other elements are visually linked to it at least partially, including the stone walled picnic area and fire ring on the east side adjacent to West Lake (these features are currently unusable and in disrepair), the boathouse, concession and the park operations building and maintenance complex. The buildings are an essential part of the park's composition, constructed of materials and forms that blend with the scale of the landscape constructed by Phillips, and serving as attractive focal elements in the park as well as useful recreation features.



principles

Greynolds Park Plan
Courtesy of the University of Miami, School of Architecture and Professor Rocco Ceo

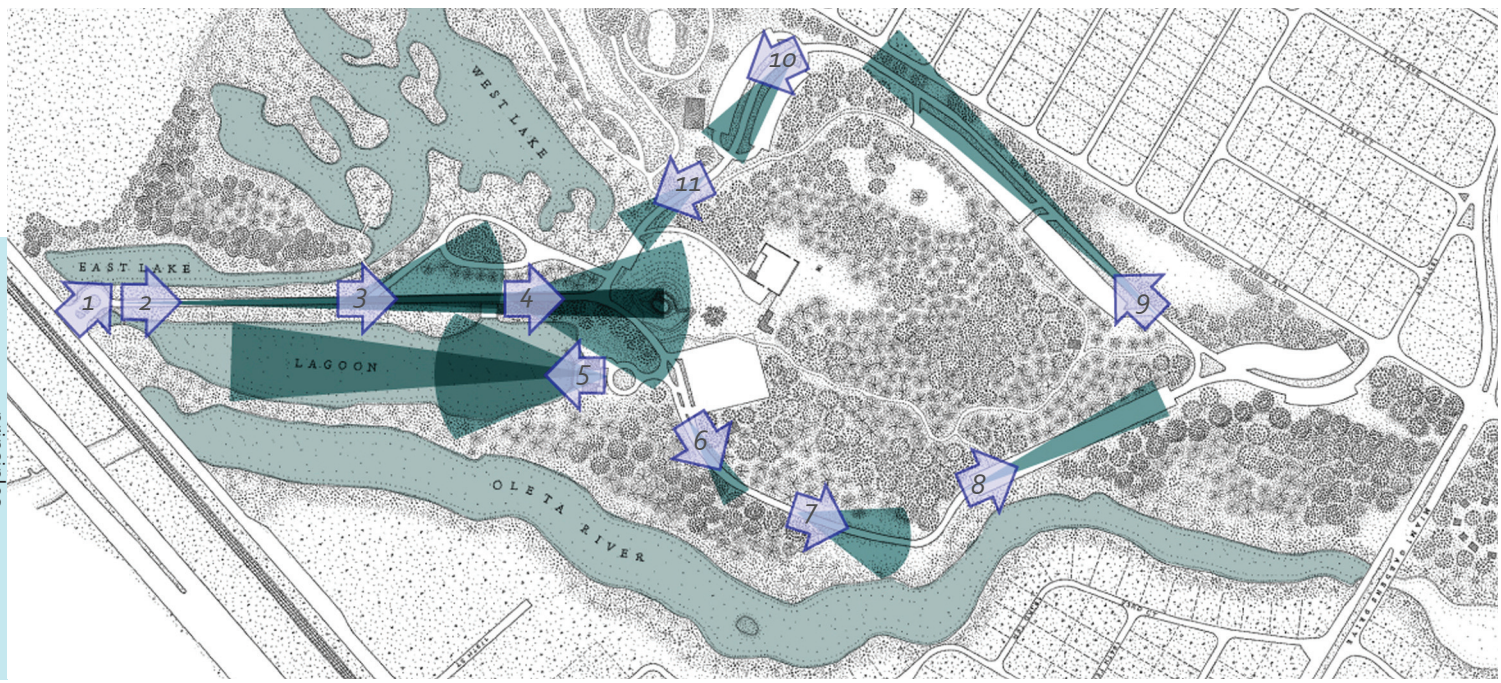
Movement through the park by foot or vehicle unveils a carefully choreographed series of views; this is Phillips' technique to add visual interest to the park, and is the compositional foundation for the park's design. By making each view different in dominant plant community, spatial proportion, focal length, and in openness or enclosure, the visitor is drawn through the park with a series of what may be interpreted as "postcard" views. These memorable spaces make walking through the park an enticing and visually rewarding activity. The following summarizes the progression of movement through Greynolds Park and corresponds with numbers on the image below.

1. Park entry on Dixie Highway is framed by stone walls that control views into the park until passing through the gate and around the island roundabout with several mature ficus trees that fill the island and cover the roundabout w/ canopy.

2. The entry drive is narrow, straight, and through dense mangroves and canopy trees, which shade the road throughout the day. The view terminates in an open lawn area showcasing the signature earth mound which is just barely visible from the entrance and is always bright due to the openness and southern exposure.

3. Halfway along the entry road the landscape begins to transition from the narrow tree-lined corridor to a sloped lawn space, with the slope high enough to hide the lagoon on the north side, and the slope on the south side gently pitching to a parking area with mature specimen trees next to a shallow, densely vegetated mangrove swamp. A small stone pedestrian bridge over the ravine becomes apparent as you move more slowly into the parking area.

4. The entry road continues toward the mound past a pavilion which is a two story boat house, with the lower story visible only from the lagoon. As the road begins to descend into the oak hammock at a rightward bend in the road, a view to the side of the lodge / concession pavilion opens up. The driver's view is drawn to the right



The diagram above depicts the progression of movement through Greynolds Park and is based on graphics prepared by Rocco Ceo.

because of the views into the woods and to the lodge that seems to appear from nowhere.

5. Arriving to the concession building by foot, the visitor is drawn to the central entry corridor, through which the view to the lagoon finally opens up. The boathouse is located at a point where it is just visible from the lodge, just before a small narrowing of the lagoon; visually, this "layers" the view to the lagoon by allowing the shoreline and trees to partially obscure some of the trees along the shoreline beyond the lagoon narrowing.

6 – 11. Continuing counterclockwise on the park road, there are several different picnic areas, each one sharply contrasting with the previous one in canopy, focal length, and plant material.

Summary

One of the great lessons from Greynolds Park is the ecologically sensitive way the site was recovered using indigenous plant materials and stone, from its destruction when it was quarried.

The architecture is a derivative of the CCC era buildings used in the National Parks, a bold, rustic yet refined style tailored to the available materials and the climate.

In addition, the landmark feature, The Mound, is not only a sculptural centerpiece, it also strongly announces that the visitor has arrived at the center of the park, offering panoramic views to the surrounding landscape, and it's slopes can also be used as amphitheatre seating, as was the case in the 1960's.

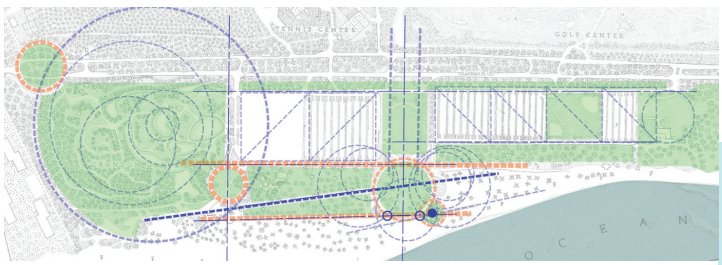
Lastly, the sequential array of differing, memorable spaces adds visual interest and encourages movement through the park for visitors interested in walking.

For further information on the design elements of Greynolds Park please reference *Building Close to Nature: The Early Architecture of Miami Dade County Parks* , by Rocco Ceo.

Learning from Crandon Park

In contrast to both Matheson Hammock and Greynolds Parks, Crandon is a beachfront park designed primarily to accommodate thousands of visitors and the vehicles that bring them to the beach. At the time the park was planned, this was a new and challenging problem addressed in large and growing metropolitan areas across the country. The safe and comfortable movement of large numbers of cars and people is a task that can destroy an otherwise pleasant park experience if handled poorly. The resulting design solution at Crandon Park is an elegant example of design restraint and simplicity, and exceptional large-scale site planning.

One of the most distinguishing features of Crandon Park, aside from the broad, white sand ocean beach, is the underlying geometric composition of the site plan. The park is bookended between the former zoo to the south and the Bear Cut Nature Preserve to the north. The main park spaces are "layered" parallel to the beach and delineated with walkways. The large rectangular parking areas oriented to the water maximize the efficiency of the lots, allowing for large picnic areas away from the beach. The geometric layout is based on regularly spaced square or rectangular shapes, and circular and curvilinear accent paths at roughly one quarter mile apart.

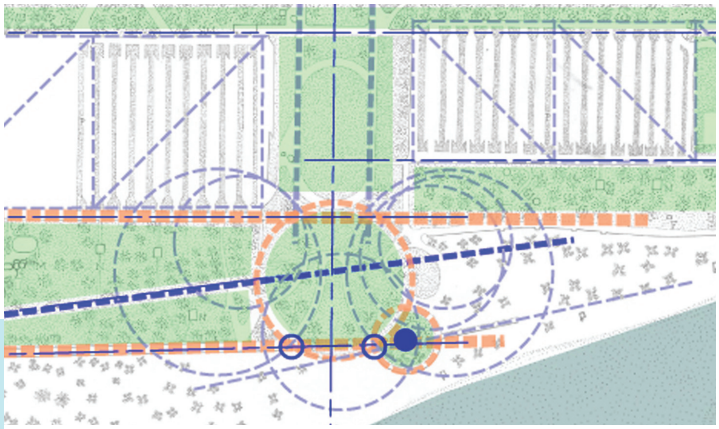


The above image identifies the portioning of Crandon Park's zones. Open space is shown in green with curvilinear organization with 1:1 squares organized in a 1:2 portion for the parking lots. Based on graphics prepared by Rocco Ceo.

A continuous series of grand broadwalks run the length of the park, interrupted at signature "anchor" points. The southern anchor is a huge circular lawn marking the entrance to the beach cabanas to the south, the zoo to the west, the playground to the north, and the beach and main concession building and gateway to the east.

In the middle of the park a rectangular "Great Lawn" space spans from the ocean to Crandon Boulevard. At one time this may have allowed more open views further west of Crandon Boulevard, which would have provided an even better sunset view from this part of the park. As the Great Lawn approaches the ocean the paths multiply into a series of large, symmetrically curved paths leading to the boardwalk and the beach. This area has over time lost much of the dynamism the park originally had; the circular space anchoring the north end of the beach side promenade once had a carousel in the middle, adding color, activity and animation to the center of the park. The view from the park to the carousel and the ocean on the horizon must have been a truly memorable experience.

At the far north end of the park is the nature center, which is a recently constructed complex located on the southern edge of the Bear Cut Nature Preserve that continues the incorporation of large geometric figures into the plan layout of the facility.



The diagram above depicts the geometric ordering found at the main entrance to Crandon Park and is based on graphics prepared by Rocco Ceo.

principles

Summary

The simplicity of the overall park design has remained intact over the years, having withstood hurricanes, an explosion in the number of automobiles to be accommodated, and the changing recreation needs of beachgoers.

The generously scaled boardwalks are in scale with the vastness of the surrounding ocean views, and allow visitors to easily move through the park at full capacity.

Crandon Park Plan
Courtesy of the University of Miami, School of Architecture and Professor Rocco Ceo

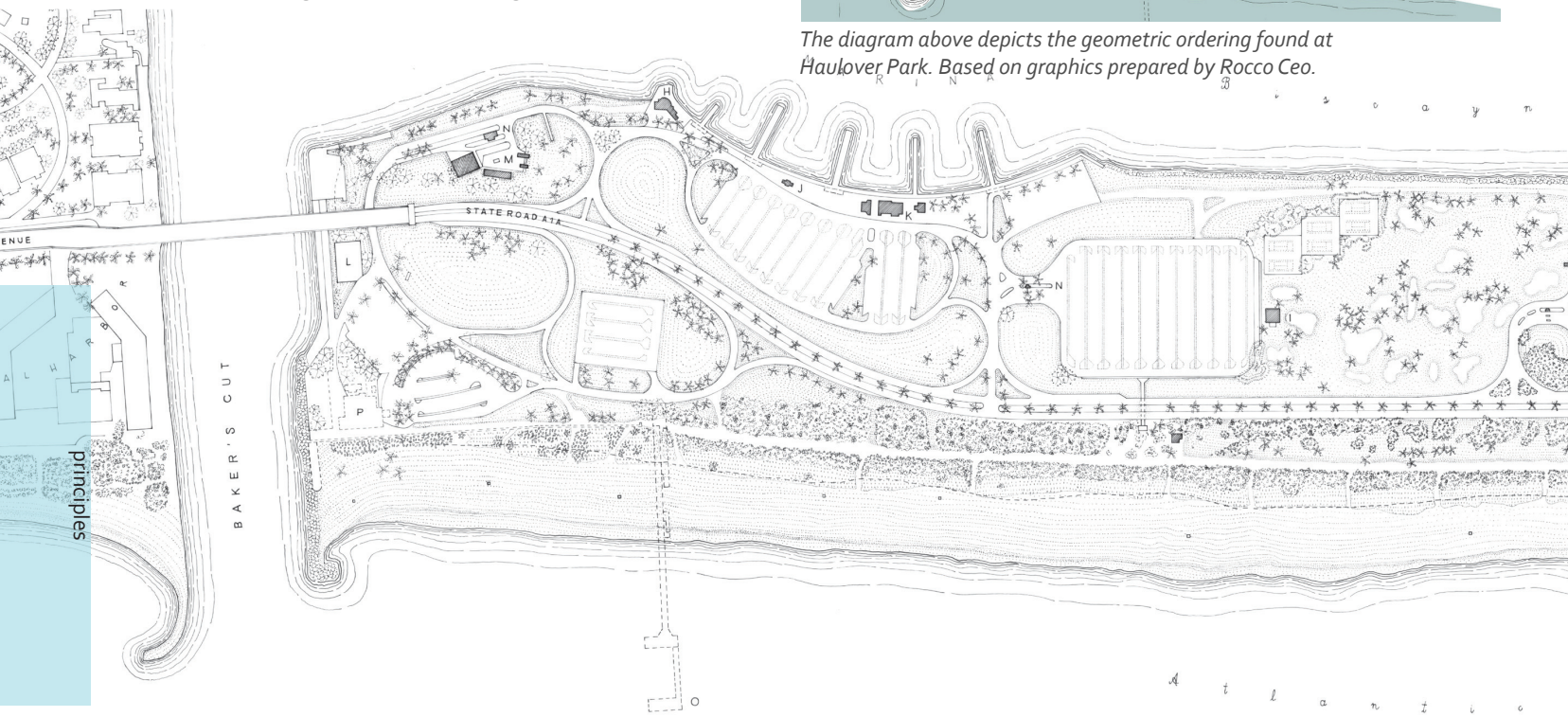
Learning from Haulover Park

Haulover Park spans the barrier island between the ocean and the Intracoastal Waterway. State Road A1A divides the park in two, with most of the parking on the west side of A1A, leaving the beach side free of vehicles for except at the southern tip facing Bakers Cut inlet.

Although similar in size and facing many of the same issues as Crandon Park, the plan for Haulover Park differs significantly from Crandon Park due to the highway location and access into the park. Like Crandon Park, Haulover Park's design is influenced by the large volume of vehicles needing parking spaces. At Haulover the design places a much greater emphasis on the movement of the vehicles; the access roads into the park from A1A are highway-style spiral curved ramps, a geometry that extends into the southern parking area and park drive, which is also where A1A curves west. Unlike Crandon Park where visitors immediately arrive into large rectangular parking areas, at Haulover the journey into and through the park is through broad, sweeping curved roads.

While largely derived from the functional movement of traffic, such curvilinear roads are also reminiscent of the path geometry in an Olmstedian park, or the street layout of an Olmsted suburb such as Riverside or Brookline. In retrospect, accommodating vehicles so graciously can result in a leisurely drive through the park, but more often than not it encourages faster speeds and in some instances a disregard for pedestrians by drivers.

The diagram above depicts the geometric ordering found at Haulover Park. Based on graphics prepared by Rocco Ceo.



Because the beach was separated from the parking areas, Haulover Park included tunnels and ramps under the highway. Because the highway was located on top of an embankment, views from the parking area to the ocean were blocked. To help guide visitors to the tunnel in the largest parking lot, the entrance is flanked by gateway buildings that project into the parking lot. The buildings at Haulover Park are a streamlined modern style popular in the 1940's and early 50's, especially for highway buildings. The modernity of the architecture relate to a nautical and automobile-inspired aesthetic, the two most prominent form-givers for the park. Although many of the original features have been either lost or obscured over time through additions, the strength and intention of the original vision of merging park and architecture with a modern theme is still evident, especially at the tunnel crossing and Life Guard Station.

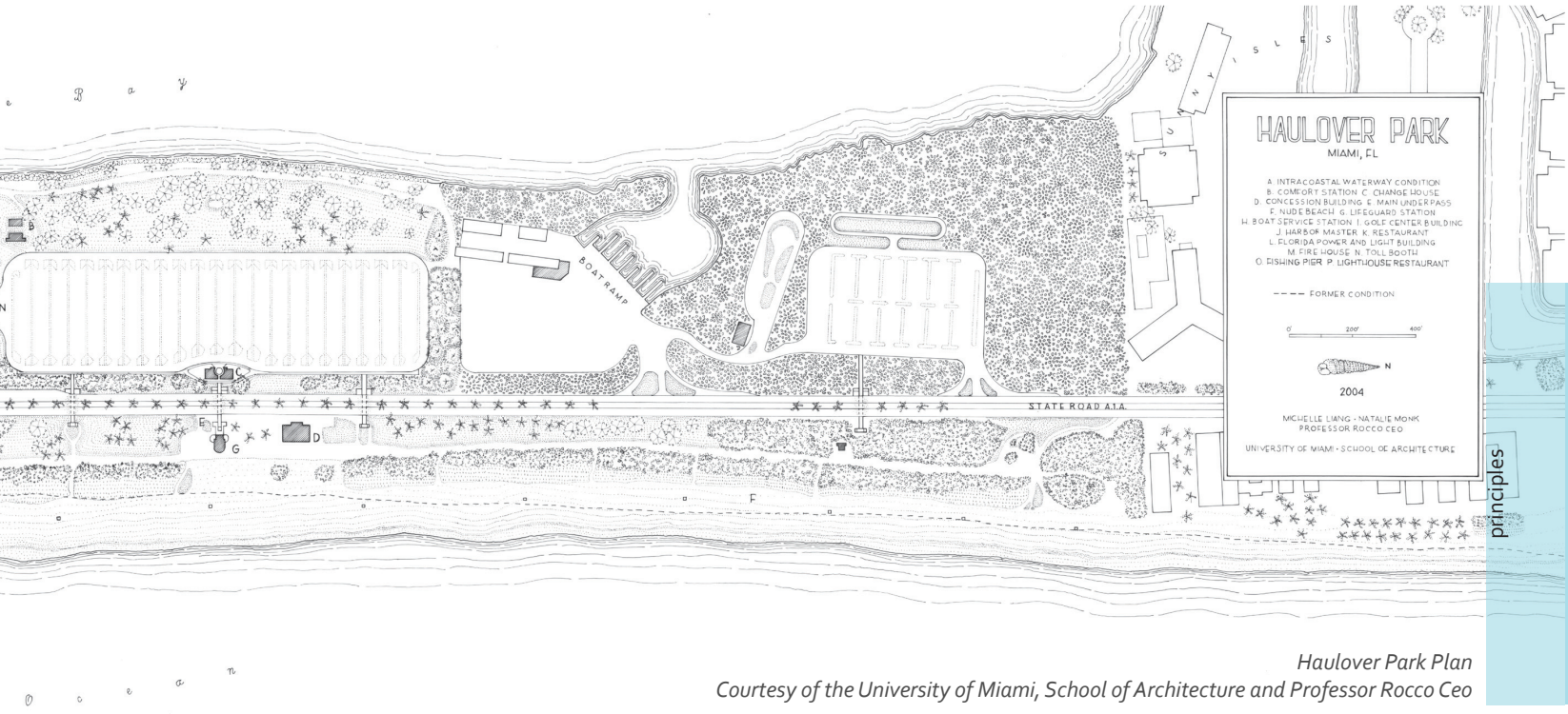
The recent bathroom additions in the park build upon the nautical inspiration in a manner sympathetic to the context, and original plan layout of the park.

Recent restroom addition at Haulover Park

Summary

The thematic design consistency from large-scale plan to small details in the architecture is one of the strengths of Haulover Park's design.

For further information on the design elements of Haulover Park please reference *Building Close to Nature: The Early Architecture of Miami Dade County Parks* , by Rocco Ceo.



Haulover Park Plan
Courtesy of the University of Miami, School of Architecture and Professor Rocco Ceo

Lessons Learned - Phillips to present

In summary, these four Heritage Parks illustrate how William Lyman Phillips applied fundamental park design principles to the unique environmental and cultural context of South Florida. Most of these principles originated in locations with temperate climates that have lower humidity, a more varied topography and considerably different resources available for acquiring and utilizing building materials and labor. Through Phillips' resourcefulness, he adapted timeless design principles to the local conditions of South Florida, in a manner that is still applicable and in use today.

When these parks were planned and built, the region was vastly different culturally, socio-economically, and in all the other ways that the region and the world were different in the 1940's and 50's. While there is still a need to "recreate," the best ways to meet that need has evolved, including the changes in available leisure time, changes in population demographics and stability, and other cultural indicators which have required all parks, not just those in the Miami-Dade area, to adapt to today's lifestyles. Sometimes the adaptations implemented to meet those needs have lasted and are compatible with the original park vision, and sometimes results have been less timeless.

The objective of this document is to incorporate the timeless lessons learned from the County's Heritage Parks, and to use the traditions on which they are based as a foundation for the design of future parks, creatively adapting the region's resources to construct parks that meet today's needs and serve as a valued resource for future generations.

The cabanas at Crandon Park are still a popular feature and are designed for ease with the use of motor vehicles.

The southern entrance view towards the mound at Greynolds Park was a basic framework element planned by Mr. Phillips.

The mound at Greynolds Park provides not only an overlook but serves as the focal point of the entire park.

Formerly a beach concessions building at Matheson Park, this structure now serves as a restaurant showing the adaptive use of park structures.

The entrance pavilion at Matheson Hammocks Park provides needed seating and an overlook platform adjacent to a pond.

The beach views at Haulover Park have been carefully constructed to offer park visitors wonderful vistas upon approaching the beach.

2.3 Design parks to accomplish guiding principles of the Open Spaces System Master Plan

The Miami-Dade County Parks and Open Spaces System Master Plan was developed during the sustainable park era and envisions that great parks, public spaces, natural and cultural areas, streets, greenways, blueways, and trails can form the framework for a more livable and sustainable community. Such a plan for the public realm cannot be considered as an isolated system, but one that is integrated into the overall fabric of the community and one that will create the kind of place and community where residents want to live, employers want to do business and tourists want to visit. The new framework will encourage the revitalization of neighborhoods, allow for the orderly redevelopment of existing land uses in response to changing markets and demographics, and ensure greater environmental protection.

The goal of the master plan is to 'create a seamless, sustainable system of parks, recreation and conservation open spaces for this and future generations.'

To achieve this goal, parks need to be accessible to everyone regardless of age or ability, public spaces need to be designed to engage residents, natural and cultural areas should be planned and managed to balance access and resource protection, streets need to be designed as linear parks, and greenways and water trails should connect every resident to places throughout the community. Each incremental action will provide an opportunity to move one step closer to improving the social fabric of the County, providing equitable access to parks and open spaces, and more opportunities for residents to meet, socialize and connect with one another.

In order to re-position the County over the next fifty years by creating a new framework for livability and sustainability, six guiding principles have been developed. These six principles form the Vision of the Open Spaces System Master Plan and include the following:

The following are guiding principles of the Miami-Dade County Parks and Open Spaces System Master Plan, which all design decisions are to be informed by:

Equity - Every resident should be able to enjoy the same quality of public facilities and services regardless of income, age, race, ability or geographic location.

Access - Every resident should be able to safely and comfortably walk, bicycle, drive and/or ride transit from their home to work, school, parks, shopping and community facilities.

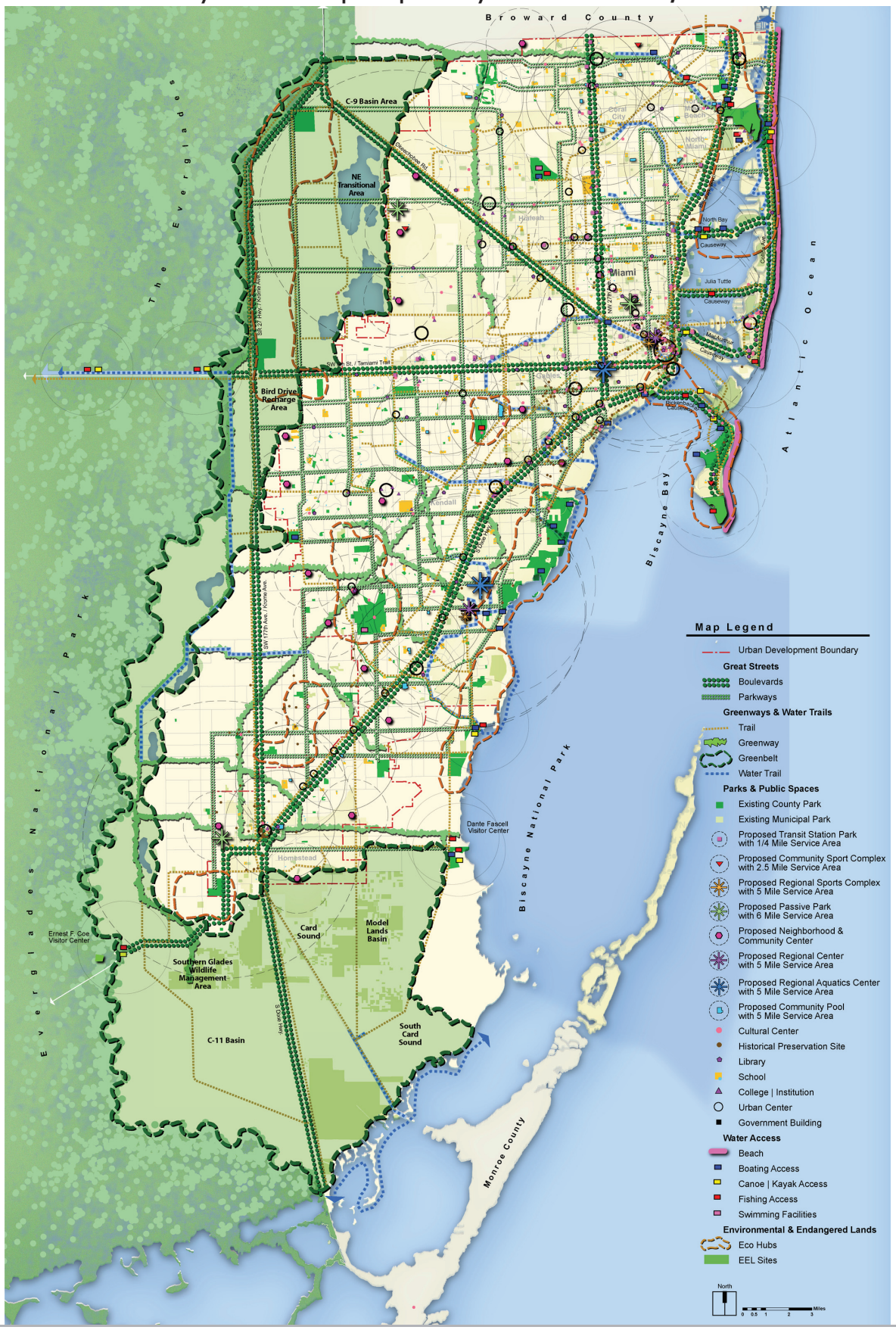
Beauty - Every public space, including streets, parks, plazas and civic buildings, should be designed to be as aesthetically pleasing as possible, and to complement the natural and cultural landscape.

Multiple Benefits - Every single public action should generate multiple public benefits to maximize taxpayer dollars.

Seamlessness - Every element of the County, including neighborhoods, parks, natural areas, streets, civic centers and commercial areas, should be connected without regard to jurisdiction.

Sustainability - Every action and improvement of the Park System, including facilities, programs, operations and management, should contribute to the economic, social and environmental prosperity of the County.

Miami-Dade County Parks and Open Spaces System Master Plan, 2008



2.4 Design parks to be sustainable

"The linked domains of sustainability are environmental (natural patterns and flows), economic (financial patterns and equity), and social (human, cultural, and spiritual). Sustainable design is a collaborative process that involves thinking ecologically, studying systems, relationships, and interactions, in order to design in ways that remove rather than contribute stress from the systems. The sustainable design process holistically and creatively connects land use and design at the regional level and addresses community design and mobility; site ecology and water use; place-based energy generation, performance, and security; materials and construction; light and air; bio-climatic design; and issues of long life and loose fit. True sustainable design is beautiful, humane, socially appropriate, and restorative." (AIA Committee on the Environment, Definition of Sustainable Design, 2007)

Sustainable practices can be achieved on a macro scale as well as a micro scale. Every incremental action leads to a more sustainable and livable community and it is through the following ten sustainable practices that this long term initiative can be achieved.

1. **Make parks easily accessible for pedestrians, cyclists, boat users, transit riders, and where appropriate, drivers**

In order to make parks useful to the maximum number of residents and users, other mobility modes besides driving should be encouraged and therefore planned for at every stage of design for a park or trail. A park's surroundings can contribute to the activation of other modes such as walking, transit usage, cycling, boating, and even equestrian travel. A high degree of pedestrian permeability can be accomplished within a park by arranging paths and trails as interconnected networks. This, ideally, should echo a high degree of connectivity in the street network around a park. A network of narrow, crossable and shaded streets implies that pedestrians and cyclists will enjoy a greater level of comfort and convenience. Such a network also implies a great number of routes and choices which in turn diminishes vehicular traffic on any one particular route.

The amount of land devoted to parking should be minimized, especially in urban, transit-served locations. In equestrian areas, the needs of horse-riders should be considered. Bike racks should be provided in convenient locations near gateways or along major access routes. Where bodies of water such as canals, lakes and estuaries are found within or near a park, the needs of kayakers, canoers and drivers of motorized watercraft should be anticipated by park designers.

A highly connected public space: CocoWalk, Coconut Grove, Miami

2. **Consider the Landscape Context**

With particular reference to goals for ecological restoration and natural resource management, conservation measures should consider adjacent land uses and property owners. In some cases, there may be synergy with adjacent landowners, such as a cooperative agreement with a natural resource agency for hydrological restoration. In other cases, adjacent land uses may conflict with resource objectives at the site, such as an unmanaged infestation of exotic species on nearby lands. Landscape-scale conditions of habitat may influence management potential (e.g. residential neighborhoods adjacent to Pine Rocklands that depend upon the use of fire) or provide a native seed source for restoration of natural systems. These partnerships or potential conflicts, may help inform future land acquisition that also considers the landscape context of natural resource protection around park sites.

3. Consider resiliency in design

Truly sustainable design must consider the need for resiliency to the dynamic weather patterns of south Florida, including the potential for sea level rise associated with climate change. Resiliency must obviously consider the potential for hurricanes, rainfall associated with tropical storms, and 100-year storm events. Buildings, trails, pavilions, signs, etc. must be designed and built to withstand dramatic changes in weather from month to month, and over time. Expected sea level rise of 3 feet in the next 50 -100 years could have drastic impacts on many of the parks in Miami-Dade, and facilities should include design components that are either easily moved, reusable or highly resilient to predicted changes in sea level, temperature, wind and rainfall.

4. Use renewable and locally-generated energy

The convergent global crises of climate change and fossil fuel depletion have touched every aspect of planning. When designed appropriately, each park can do its part in reducing greenhouse gas emissions by using renewable energy, especially renewable energy generated on-site, in order to power buildings and lighting systems. Solar water heaters, photo-voltaic panels and wind turbines are examples of ways to harness clean energy. These along with climate-responsive building design, can lower utility consumptions and costs.

Example of photo-voltaic panels within a landscape. Courtesy of XsunX

5. Seek ways to improve water quality

Many of the County's existing parks have no, or antiquated stormwater management systems. Many of these parks lie adjacent to important aquatic resources, and it should be a priority to treat stormwater before discharging to these surface waters. In some cases, it may be possible to retrofit the stormwater systems, and potentially include untreated, off-site drainage as well. Re-creation of historic Marsh Prairie and Sawgrass communities may provide an opportunity for wetland treatment along with habitat creation. In other parks, demonstration projects featuring Low Impact Design may be eligible for external funding from state or federal programs for stormwater retrofit projects.

Example of treated stormwater. Courtesy of Dubuque Soil and Water Conservation

6. Source sustainable construction materials

Whenever possible, designers should source sustainable building materials. These include local, durable or rapidly renewable materials. The monetary costs and greenhouse gas emissions associated with long-range transportation of construction materials are unsustainable. Careful attention should be paid to the harvesting and manufacturing methods of all construction materials. Wood should be certified by the Forest Stewardship Council, or be of a highly renewable species. Salvaged or recycled materials should be incorporated wherever possible. Repurposing construction debris into new structures and surfaces will enable waste to be diverted from landfills. Mulch should be made from on-site or locally collected landscape waste rather

than from virgin materials. Local stone masonry is very durable and contributes to a sense of place for parks. Indoor air quality can be improved by using materials that emit low levels or no measurable amounts of volatile organic compounds (VOCs).

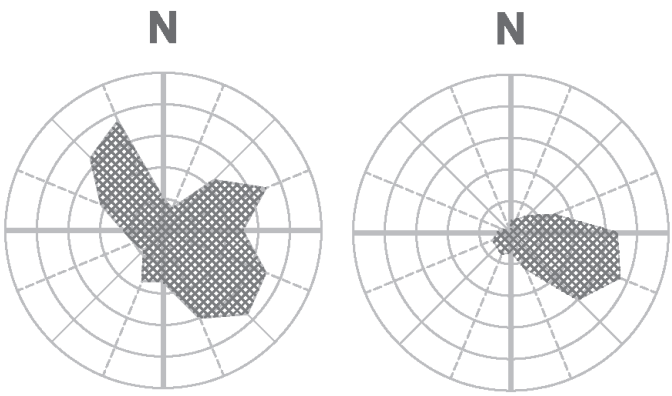
7. Restore native habitats

Many parks have been invaded by exotic species such as Australian Pine, Brazilian Pepper and Australian Maleleuca. The proliferation of exotic trees is a threat to biodiversity, not only to the native trees that are supplanted but to the native birds, mammals and insects that depend on native trees for habitat and sustenance. Recent eradication of exotic species, along with replanting of native species, has been successful in numerous parks throughout the County. Native landscapes, once established, need less irrigation and management than manicured exotic landscapes. Designers should be aware of the appropriate landscape palette, as identified in section5.3 of this document, in order to protect or restore healthy habitats within parks. This will serve to highlight special plant communities found nowhere else in the world.

A Pine Flatwood community with native plant species shown shortly after a controlled burn, near Zoo Miami

8. Build and retrofit structures to be energy efficient

Keep LEED NC rating system in mind when designing or remodeling park structures. Consult U.S. Green Building Council for latest techniques for reducing energy needs of structures. Energy for cooling buildings in South Florida is of special concern. All means, as outlined in section 4.2 of this document, should be made to reduce energy needs associated with cooling. Park buildings should incorporate solar and wind considerations to reduce the need for air-conditioning such as the use of porches or shade trees. Incorporate non-design related techniques such as, sealing windows and doors to prevent cooling loss; the use of high efficient air conditioning units in appropriate shaded positions should be utilized.



The two images above are examples of a wind rose. The wind rose on the left shows the prevailing winds for the month of February in South Florida while the wind rose on the right shows the prevailing winds for August. These are for reference only and additional resources should be referenced for a better understanding of the affect of prevailing winds in South Florida.

9. Decrease light pollution

Light pollution can have more than just an unappealing impact to the surrounding environment. Powerful lights in coastal areas often disorient the migration patterns of turtle hatchlings while inland floodlights on athletic fields can often disturb the circadian rhythms of nearby residents. Measures which can easily be planned for or incorporated into a management plan include: limit operational hours lights are on, specify lanterns and lightings systems which meet or exceed dark-sky requirements, and use energy efficient lighting systems.

Example of Dark-Sky compliant light fixture with solar power source, courtesy of Shenzhen Bang-Bell

10. Reduce, reuse, recycle

Reduce the amount of materials used by parks and park structures from construction through operation. Reuse structures and materials rather than discarding or demolishing them. All parks and park structures should provide clearly marked bins for recyclable waste from construction through operation. Where food preparation or servicing will occur, designated areas for composting should be planned.

Involving the community, especially children, in each of these practices ensures success. Explain to and teach residents the latest sustainable practices through interactive demonstrations at parks. Instill a sense of pride and wonder for parks and the environment.

2.5 Design parks in respect to management and stewardship design practices

On October 18, 2005, the Board of County Commissioners approved Resolution R-1200-05, followed by the approval of Ordinance 07-65, by the Board on May 8, 2007, which amended the Code of Miami-Dade County to establish a Sustainable Buildings Program for Miami-Dade County facilities. In this legislation, the County established a program to promote the green design, construction and operation of buildings that are developed, constructed and managed by the County.

The ordinance further establishes the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System as the acceptable approval rating system for all County projects. New construction, which includes the construction of any new building or any addition to a building, shall be required to attain "Silver" or higher designation under the LEED for New Construction (LEED-NC) Rating System. Non-major renovation/remodel includes those projects in existing buildings where the cost of construction is less than 50% of the building's replacement cost, but greater than $1 Million. Such projects shall attain "Certified" or higher designation under the appropriate LEED Rating System such as LEED for Existing Building, Commercial Interiors, Core and Shell, et al.

All projects should utilize the most current USGBC LEED criteria available to incorporate green building practices in the planning, design, and construction of new buildings, and in the remodeling, renovation, management and maintenance of existing buildings.

Further actions by Miami-Dade County include the development of GreenPrint: Our Design for a Sustainable Future to serve as an overarching sustainability plan to reaffirm, establish and synchronize government and community goals, initiatives and measures. Additional actions could include the following:

1. Groundplane plant materials

Disruption to the existing soil profile shall be limited as much as possible in undisturbed areas or where previous disturbance has been minimized (12" or less below undisturbed surface grade). Native or non-invasive and naturalized low or ground covering plant materials shall be used as much as possible as a substitute for irrigated turf grass.

2. Hardscape

Impervious hardscape shall be minimized as much as feasible while addressing space management and accessibility needs, to reduce the quantity of stormwater runoff to levels that exceed current South Florida Water Management District (SFWMD) criteria. A porous, compactible and granular material such as coquina gravel or shell rock shall be used in place of poured in place concrete or bituminous concrete in low traffic areas.

The width of all pedestrian paths shall be scaled to the smallest acceptable dimension for the given context or use normally 3' for low traffic areas to accommodate a single person, 6' wide for two people. Additional width should be justified by programming needs. A hierarchy of path widths ranging from 3' to 8' feet may be used to meet program needs. Where pervious paving materials are necessary in suburban or urban contexts the stormwater runoff shall be intercepted and collected in rain garden infiltration systems whenever the space permits to assist with improving water quality (see stormwater management section).

3. Maintenance edges

In order to simplify, reduce or eliminate the need for park personnel to trim vegetation around walls, a maintenance edge consisting of gravel or other paving material shall be placed at the base of those features whenever possible to eliminate grass or groundcover trimming and the potential damage to the wall by mowing or trimming equipment. Paved walkways shall include a non-paved 2' wide stabilized turf or other groundcover planted shoulder in areas where additional overflow capacity is needed to accommodate pedestrians.

4. Pathway layout and design

Primary pedestrian paths shall be designed in cross-section to accept the load of the maintenance or emergency vehicles that will be anticipated to serve the site, at the interval of usage necessary. Pathways shall be designed to accommodate the shortest reasonable route for pedestrians to their destination to eliminate or reduce worn patches on the surrounding unpaved areas. Main pathway widths shall be designed to accommodate service or emergency vehicle turning movements.

2.6 Design parks in respect to ecological and built context

South Florida's natural landscape was historically a unique blend of vegetative communities greatly influenced by flooding, drought and fire. These communities included the world's most famous wetland system, pine forests over limestone rocklands, tropical hammocks unlike any other forests in North America, flooded sloughs, and coastal systems characterized by mangrove forests and barrier islands. These ecological systems together make South Florida a truly unique land. The following Ecological Transect Map highlights the historical extents of each of these communities in relation to existing County parks and boundaries.

The Built Environment Transect is a classification system describing a cross section through the various densities and functions of the human habitat. There are six main transect zones commonly used in the planning profession today, ranging from the highest intensity and density (T6, the Urban Core Zone) to the lowest (T1, the Natural Zone). Each zone corresponds to characteristics of the physical form of development, such as building placement and height, types of civic space, and planting patterns. This pattern book utilizes the Built Environment Transect as a main organizing feature, to guide the appropriate development of park features according to their surrounding urban contexts.

The Ecological Transect

In Michael Grunwald's 2006 book *The Swamp*, he provides a detailed chronicle of the alterations of historical drainage patterns of South Florida. Grunwald highlights a 1912 trip to the area by journalists who were exposed to the state's plan for water control. The Canada Monthly reporter commented:

"I had read with the proverbial grain of salt the stories that have come north about the results that would follow the completion of the drainage project. Now that I have seen what has been accomplished by the engineers, I have to admit that the truth is more wonderful than any of the promises and predictions I had read before visiting Florida. A new name must be found for this land, for within a few months The Everglades will exist no more."

This quote was certainly prophetic, although somewhat overstated. Still, shortly after this passage was written, many of the historical natural communities in Miami-Dade County were irreparably modified. These alterations are in large part due to the inter-dependence of an extremely dynamic pattern of drought and flood in many of the natural communities in south Florida. Communities most affected by these hydrological alterations include Transverse Everglades, Marsh Prairie, Sawgrass and Slough/Pond/Marsh.

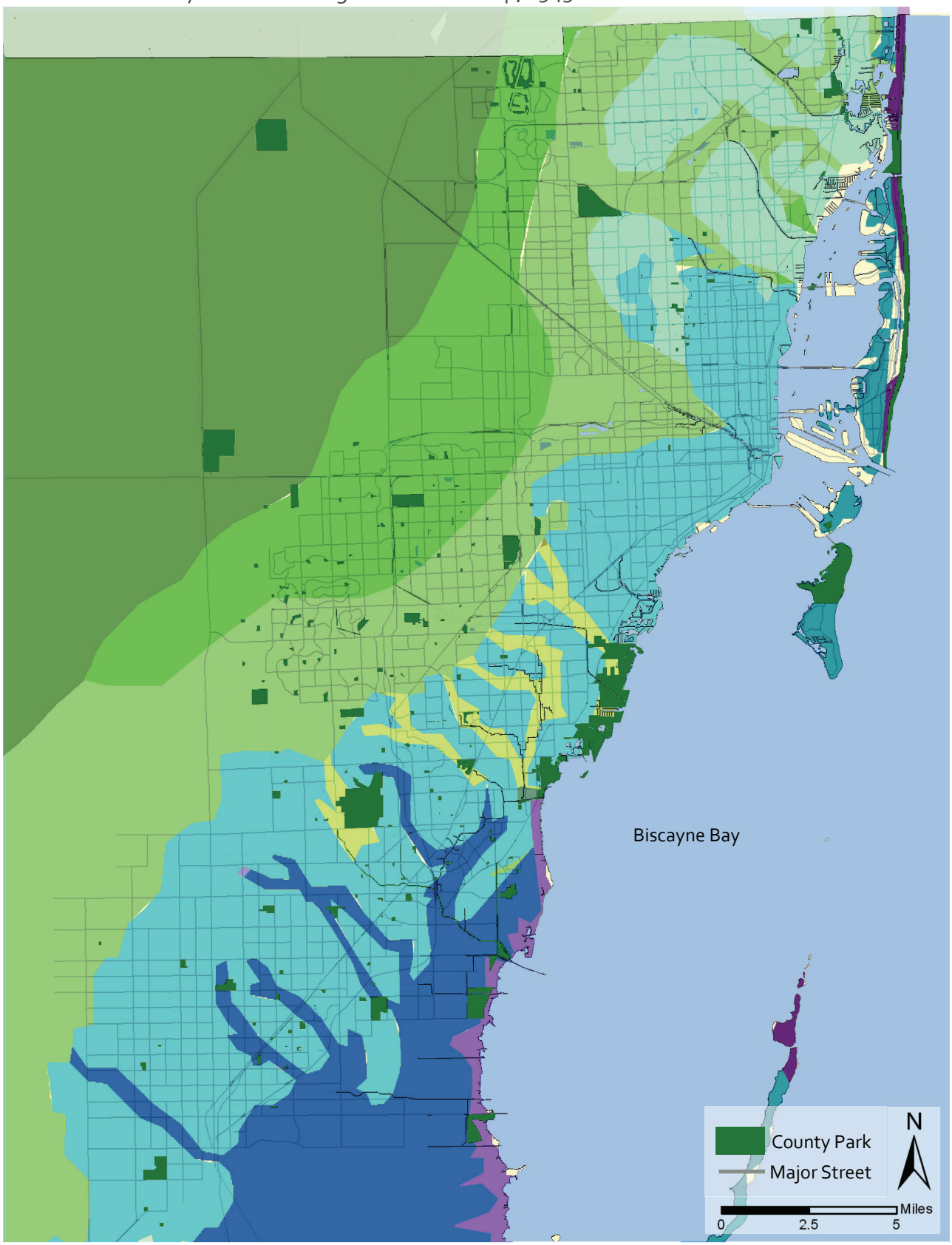
The unique upland communities of Pine Rocklands and Coastal Hammock were characterized by endemic plants that occur nowhere else in the world, and tropical species most similar to communities in the Caribbean. Pine Rocklands exist in remnant pockets across the County, and are being carefully managed to protect sensitive plant communities that are adapted to low intensity fires. Coastal Hammocks are diverse communities with complex canopies, subcanopies and understories that occur on mesic soils on elevations up to 10 feet above mean sea level.

The mix of natural communities in South Florida occurred on a gradient greatly influenced by water levels, salinity and topography. The relic pockets of natural lands that exist in Miami-Dade County today provide a glimpse of the vegetative diversity and location in the landscape of these communities, and can be used to guide the planting palette for landscaping Miami-Dade parks. The use of representative native plants in their appropriate place can reduce maintenance and educate visitors about the historical diversity in south Florida. Coupled with management to improve water quality and coordination with natural resource partners, these efforts will improve aquatic habitat and sustain resource values of natural communities.

Legend

- **Coastal Dunes:** Located adjacent to sea water bodies with elevations between 3 and 10 feet above mean sea level. Typically 1-3 miles in width.
- **Mangrove Swamps:** Located adjacent to sea water bodies with elevations between 1 and 5 feet above mean sea level. Typically 1 mile in width, but may be as much as 15 miles in width.
- **Southern Coastal Marsh:** Located between mangroves and pine rocklands with elevations between 1 and 5 feet above mean sea level. Typically 1-15 miles in width.
- **Coastal Hammocks:** Located between coastal dune and pine lands or in small pockets. Elevations between 3 and 10 feet above mean sea level. Typically 1 mile or less in width.
- **Pine Rockland:** Located along Atlantic Ridge with elevations between 5 and 15 feet above mean sea level. Typically 3 to 15 miles in width.
- **Pine Flatwood / Miami Open Pine Forest:** Located along Atlantic Ridge. Elevations between 5 and 15 feet above mean sea level. Typically 1 to 8 miles in width.
- **Transverse Everglades:** Located between the marsh prairies and coastal marshes with Pine Rocklands. Elevations between 3 and 5 feet above mean sea level. Typically 1 to 2 miles in width.
- **Marsh Prairie:** Located west of Atlantic Ridge and in small pockets. Elevations between 1 and 3 feet above mean sea level. Typically 3 to 10 miles in width.
- **Sawgrass Marsh:** Located between marsh prairies and slough. Elevations between 1 and 5 feet above mean sea level. Typically 3 to 10 miles in width.
- **Slough, Pond, Marsh:** Located in extreme western area of County. Elevations between 1 and 5 feet above mean sea level. Most of western area of County, may be in small pockets throughout.
- **Developed Fill:** No historic vegetation data
- **Water:** Biscayne Bay or Atlantic Ocean
- County Park

Miami-Dade County Historic Ecological Transect map, 1943



The Built Environment Transect

Following is a brief overview of these built environment transect zones as observed in south Florida. The County Built Environment Transect map to the right identifies the extent of the three major categories: rural, sub-urban, and urban in correlation to the individual zones listed below:

T1 Natural: The T1 (Natural) zone consists of lands approximating or reverting to a wilderness condition, including lands unsuitable for settlement due to topography, hydrology, or vegetation. An example of this in South Florida is Everglades National Park.

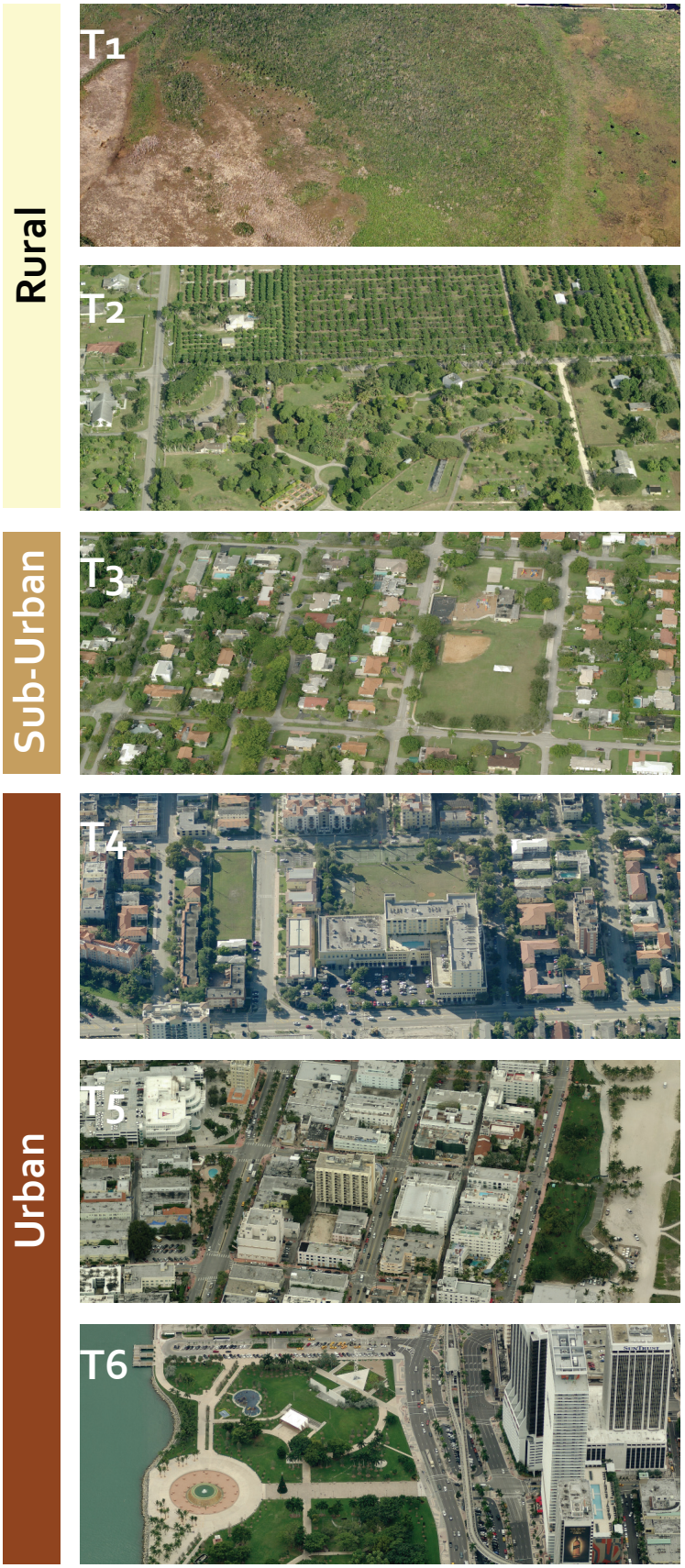
T2 Rural: The T2 (Rural) zone consists of land in an open or cultivated state or sparsely settled. An example of this in South Florida is the Redlands Fruit and Spice Park and surroundings.

T3 Sub-Urban: The T3 (Sub-Urban) zone is generally single-family residential in character, with a lower density. Although the Sub-Urban zone is primarily residential, it can have civic buildings and may be an appropriate location for schools and churches; limited commercial (such as a corner store) can sometimes be found here. Street plantings tend to be naturalistic, and there are deep front setbacks. Examples of this zone found in South Florida are the neighborhoods of Biscayne Park, Miami Shores, and parts of Kendall.

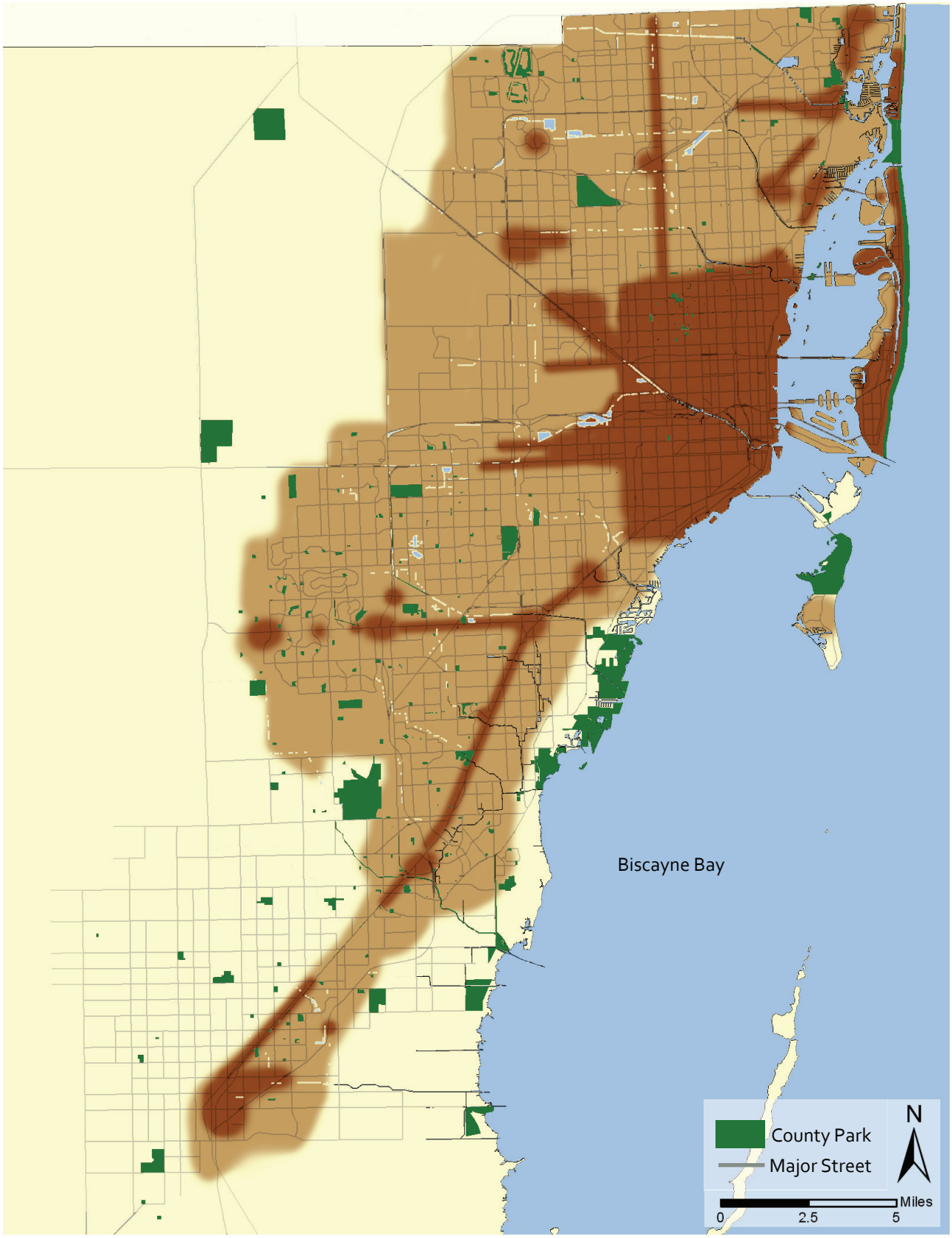
T4 General Urban: The T4 (General Urban) zone contains a wide range of attached and detached residential building types, civic buildings, and neighborhood-serving commercial uses. Setbacks allow a small front yard; street plantings can vary. Examples of this zone in South Florida are northern Coral Gables, and the neighborhoods of Little Havana.

T5 Urban Center: The T5 (Urban Center) zone includes predominantly attached building types that accommodate a great mix of uses, including retail/commercial, offices, row-houses, apartments, and civic functions with a network of interconnected streets, wide sidewalks, street tree planting, and buildings set close to the lot frontages. An example of this in South Florida is Ocean Drive on South Beach.

T6 Urban Core: The T6 (Urban Core) zone contains areas of the highest density, with the greatest variety of uses, and civic buildings of regional importance. It may have larger blocks to accommodate mid-block parking; streets have steady street tree plantings and buildings are set close to the lot frontages to provide a continuous street wall. An example of this in South Florida is Downtown Miami, including Bayfront Park.



Miami-Dade County Built Environment Transect map



"A hundred years after we are gone and forgotten, those who never heard of us will be living with the results of our actions."

- Oliver Wendell Holmes

3.0 Urban Design Overview

The Urban Design Patterns established in these Design Standards have been created to guide the design and character of the public outdoor rooms and spaces of the County's parks, defined by buildings, streets and landscape features. The Framework and Context-Sensitive Design Elements described in this chapter have been derived from a study of precedents found in Miami-Dade County and/or respected and admired towns and cities throughout the United States. The goal is to implement sustainable design practices, establish an identifiable, high-quality character for parks in Miami-Dade County, and prescribe appropriate context-sensitive design solutions for the interface between parks and their surrounding communities.

Image: Evelyn Greer Park, Pinecrest, Florida

3.1 Urban Design Framework

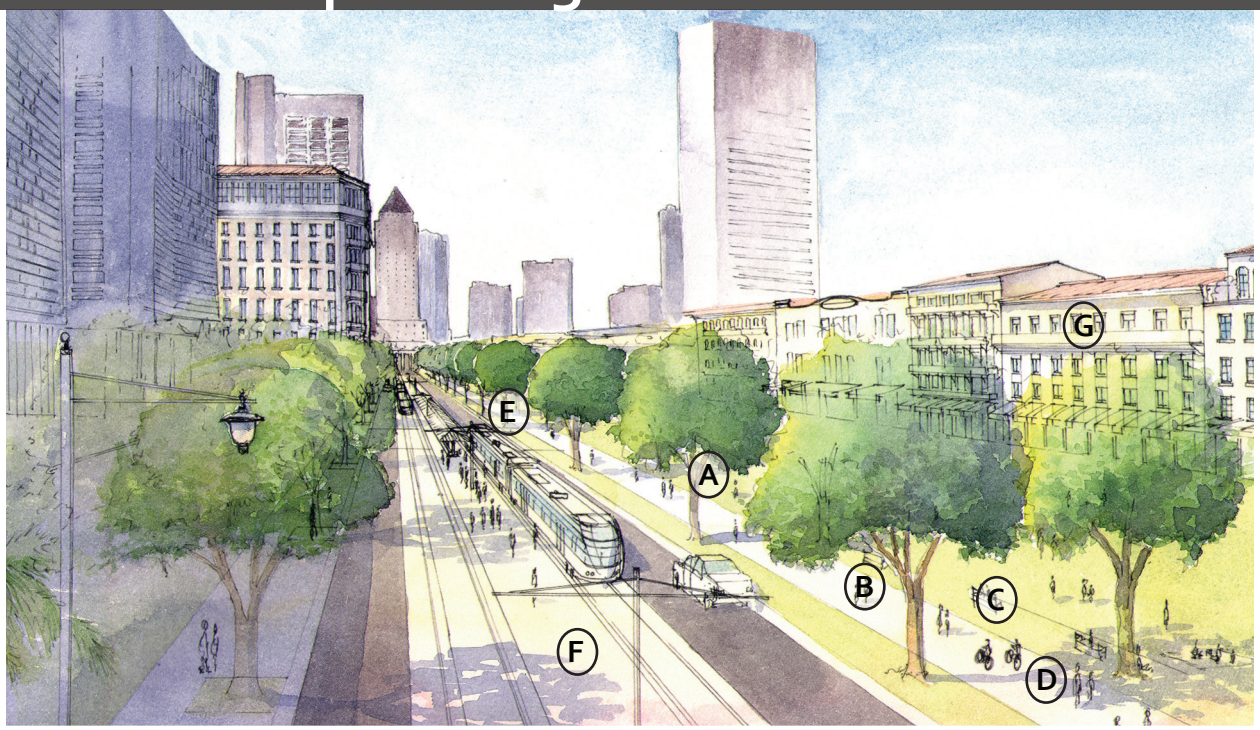
The Urban Design Framework are guidelines for the design of parks and their associated public spaces that are applicable in all areas of the Built Environment Transect. These framework elements are reflective of high-quality urban design practices, including guidelines for enhancing connectivity to area transit systems, for the shaping of urban spaces, for establishing vistas and terminating views, for providing adequate buffers and establishing the appropriate relationships between park programmatic elements. The following framework elements are addressed in this section:

- Connectivity to Transit (pg. 50)
- Connectivity to Community (pg. 52)
- Building Siting (pg. 54)
- Utility and Service Siting (pg. 56)
- Structured Parking (pg. 60)

3.1.1 Connectivity to Transit

Transit-Oriented Developments (or TODs) provide a time-tested living alternative by combining highly walkable mixed-use neighborhoods with public transportation. This combination offers the possibility of vibrant communities served with more efficient transportation options while at the same time reducing per capita energy consumption and greenhouse gases. Great examples of highly walkable communities linked by transit, which were built before the automobile gained prevalence, are readily available as models. New examples continue to emerge as communities strive for a greater level of sustainability and choice for mobility of its residents.

providing connections



Key Concepts:

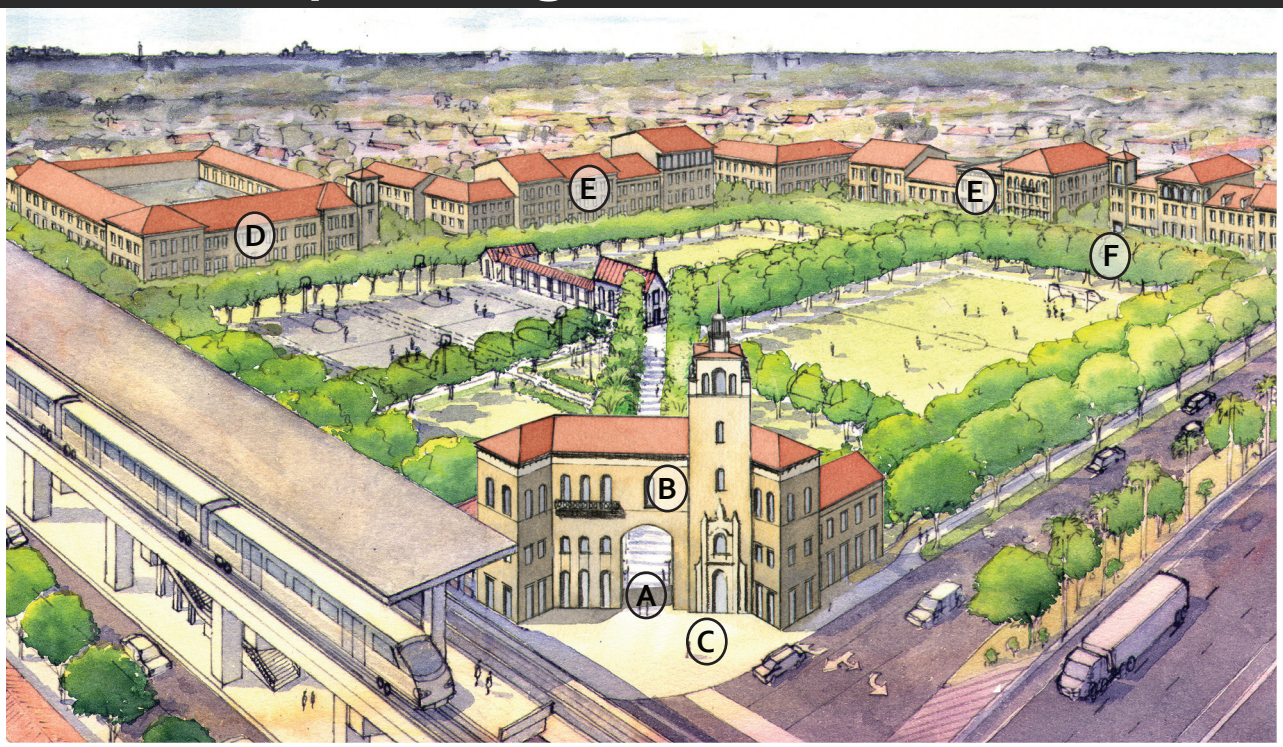
Design features on the park perimeter should facilitate interaction with the community and accessibility by many means of travel including pedestrians, bicyclists, and transit users. These design features include:

a. Regularly spaced trees should be provided to shade pedestrians and define the park edge.
b. A high level of transparency is desired to welcome park users; walls should be low (or omitted where possible); understory planting should be kept to a minimum.
c. Benches should be included at regular intervals to accommodate pedestrian use.
d. Sidewalks should be wide to accommodate a high level of pedestrian use (and may be wide enough to also accommodate bicyclists where space permits).
e. Transit routes, if present adjacent to the park, should stop at the park entrance; a transit shelter should be provided.
f. Dedicated transit ways (if present) and sidewalks should be of a different paving material than vehicular travel lanes; differentiating materials helps to define the pedestrian / transit environment, and narrows the visual width dedicated to the vehicular realm.
g. Buildings may front directly on the park, with doors and windows that activate the space, providing "eyes on the park" for an additional level of security.

Urban Design Framework

Miami's parks should strive to become Transit-Oriented Parks (TOPs), fully linked to users of the County's transit systems. Transit reaches its full benefit when it is possible for riders to leave their cars at home and become pedestrians at both ends of their trip. In order for this to occur, the environment at both origin and destination must be highly walkable. Some strategies that can be applied to park sites adjacent to transit facilities in various transect contexts, urban and suburban, are included in this section.

providing connections



Key Concepts:

a. A prominent park entrance should be located adjacent to the transit station.
b. The park entrance can be marked by a gateway building, directing transit users into the park. This building could contain a mixture of uses, to take advantage of proximity to the rail station.
c. A hardscaped plaza may also be used to mark the main entrance.
d. Buildings adjacent to the park may be designed as TODs, with a mixture of uses to support the transit system. Higher densities are anticipated around transit stops, which will also supply additional park users.
e. Buildings front onto the park, with doors and windows acting as "eyes on the park" to provide natural surveillance and enhance the pedestrian environment.
f. Park edges should contain synergistic uses, such as shopfronts and restaurants, to activate the sidewalk and park, and encourage pedestrian activity near transit stations.

3.1.2 Connectivity to Community

The image and functionality of a park is dependant on its connections to its users in the surrounding community. Park streets should be designed in a manner that welcomes and accommodates users from all modes of travel: vehicular, pedestrian, and bicyclists, as well as transit (rail or busway). Common design elements that facilitate this connectivity include wide sidewalks or multi-use trails (and in some contexts equestrian trails), bike lanes or sharrows, crosswalks, and on-street parking. These design elements should be included on park perimeter streets, and continue within interior park streets and trails. The goal should be an interconnected network of streets and trails, for seamless interaction between the park and surrounding community.

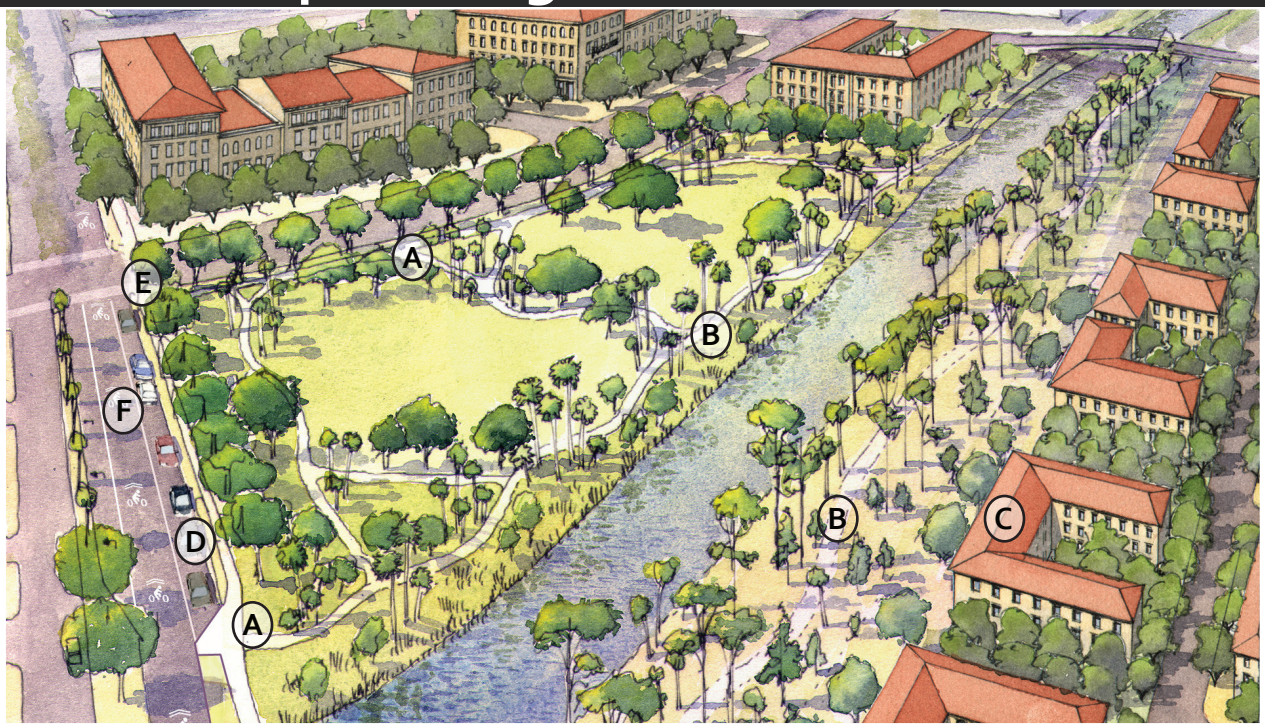
providing connections

Key Concepts:

a. Busways should provide dedicated stops at prominent County parks; a shelter can be designed in a similar style to park buildings, to mark this unique destination.
b. Crosswalks should be provided for safe pedestrian access.
c. A gateway (gate or architectural feature) should mark the park entrance.
d. Buildings adjacent to the park may be designed as TODs, with a mixture of uses to support the transit system. Higher densities are anticipated around transit stops, which will also supply additional park users.
e. Buildings front onto the park, with doors and windows acting as "eyes on the park" to provide natural surveillance and enhance the pedestrian environment.

Urban Design Framework

providing connections



Key Concepts:

Park design features that facilitate interaction with the surrounding community include:

a. Sidewalks on perimeter streets should lead to interior park paths; sidewalks and trails within the park should create continuous loops, providing an interconnected network for pedestrians.
b. Water features may have public sidewalks or trails on both sides (making this space feel like it is part of the public realm, facilitating connections around a potential barrier).
c. Buildings should front onto water features, providing "eyes on the park" for an additional level of security, and enhancing the public nature of this resource.
d. Perimeter streets should have on-street parking to accommodate visitors, reducing or eliminating the need to dedicate space within the park for vehicles.
e. Crosswalks should be provided at key intersections, to provide a safe linkage to surrounding blocks.
f. Perimeter streets should be designed to have either bike lanes or sharrows, which ideally connect to a larger bicycle network within the community. Bike racks should be provided within the park at appropriate locations (such as near park buildings, or adjacent to park resources).

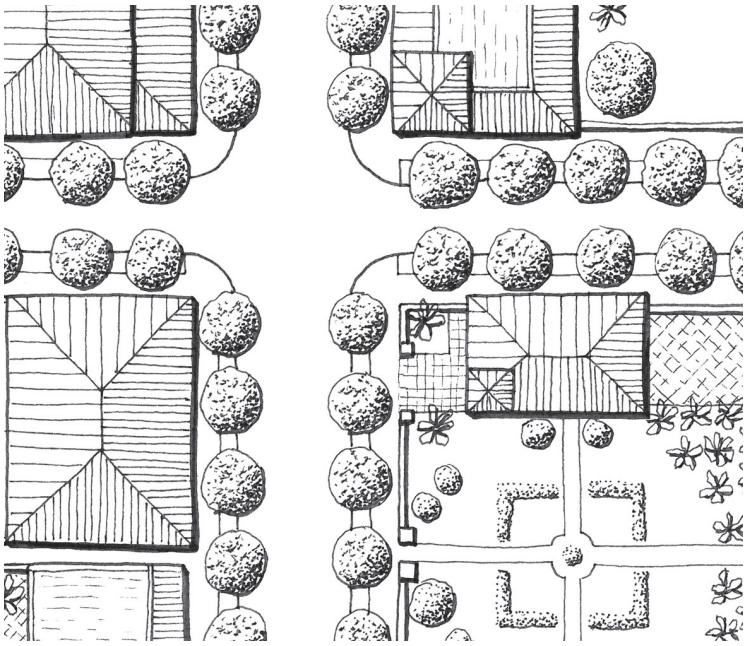
3.1.3 Building Siting

The siting of buildings within the public realm is used to create order and define outdoor rooms of a specified character. Generally, buildings located along a street should be located parallel to that street, within an appropriate build-to line or zone (as described below). This creates an appropriate rhythm and enclosure of the street space; varying setbacks create a more relaxed character, while a consistent build-to line is more formal. Building siting should also take into account surrounding viewsheds; ideally, prominent buildings should be located at key street intersections, or on axis to terminate a view down a street or from a nearby waterway. For more guidance on siting of buildings interior to the park, refer to page 118.

build-to-zone

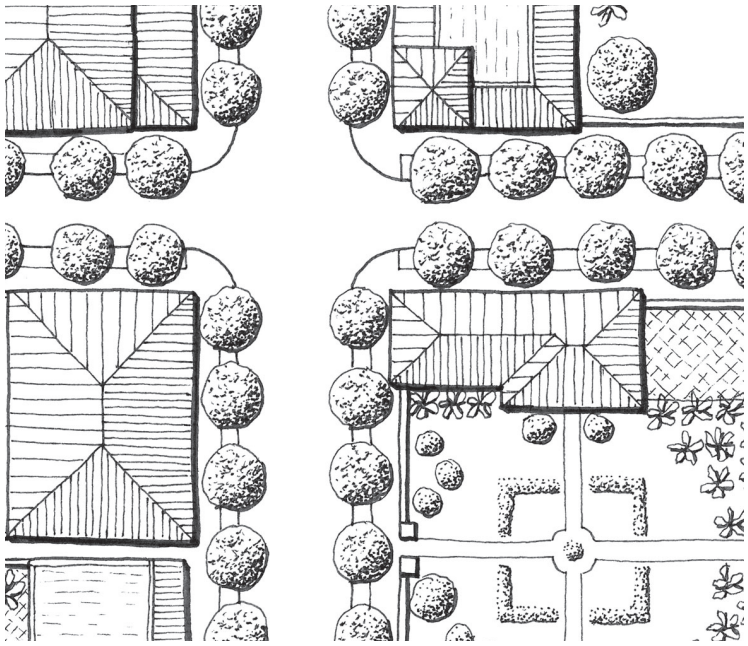
Build-to-Zone

A build-to-zone is a range of allowable distances from a street right-of-way that a building should be built to, in order to create a moderately uniform line of buildings along the street. Build-to-zones are most applicable in sub-urban or urban settings, where a general urban character is desired, created by buildings shaping the street space. The appropriate build-to-zone should be determined based on the character and observed setback of buildings in the immediate context, or based on a desirable regional precedent. Forecourts created between the building and street space can be further defined and formalized by garden walls or hedges; this is most appropriate in urban settings.



build-to-line

Urban Design Framework



Build-to-Line

A build-to-line identifies the precise horizontal distance from a street right-of-way that a building should be built to, in order to create a uniform line of buildings along the street. Build-to-lines are most applicable in urban settings, where a specific urban character is desired, created by buildings shaping the street space. The appropriate build-to-line for a site should be determined based on the character and observed setback of buildings in the immediate context, or based on a desirable regional precedent.

3.1.4 Utility and Service Siting

The siting of utilities and service access should be considered during the early stages of design, so that these details can be properly screened from view of pedestrians and park users. Utilities (including necessary equipment such as electric meters, backflow preventers, and air handlers) need to be consolidated on the park site or grouped, and ideally designed to be enclosed within an architectural element or building.

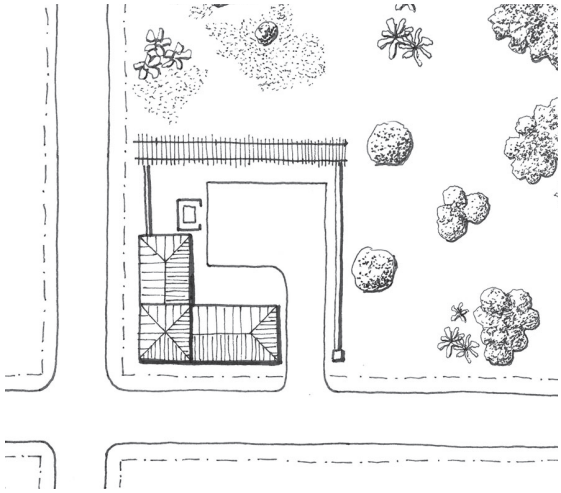
Landscaping alone is not adequate to screen these elements from view; incorporating utilities as part of a structure (such as an observation tower, gateway, entrance booth, pavilion or seating element) provides an opportunity to create civic art as well as serving its practical function. If there is programmatic function to necessitate a park building, utilities should be consolidated within this structure. In addition to utilities, some park buildings require a service court for dumpsters, equipment or other uses. These elements should be screened from view of pedestrians by the use of buildings or landscaping. Some design approaches for screening are shown here; a recommended solution can be observed firsthand at the maintenance yard at Greynolds Park.

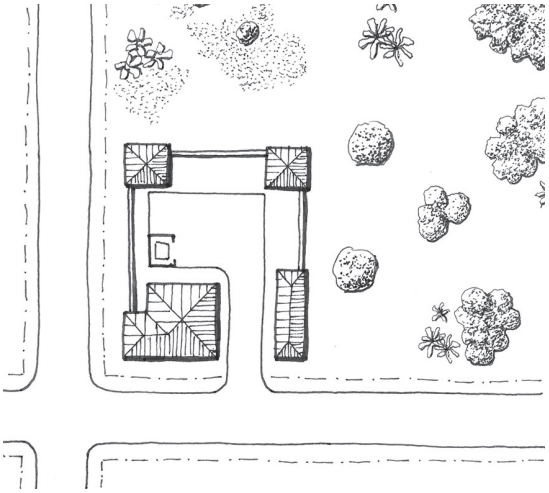
Buildings should be used to screen a maintenance yard from view of park spaces (image from Greynolds Park)

The service side of the maintenance yard (Greynolds Park)

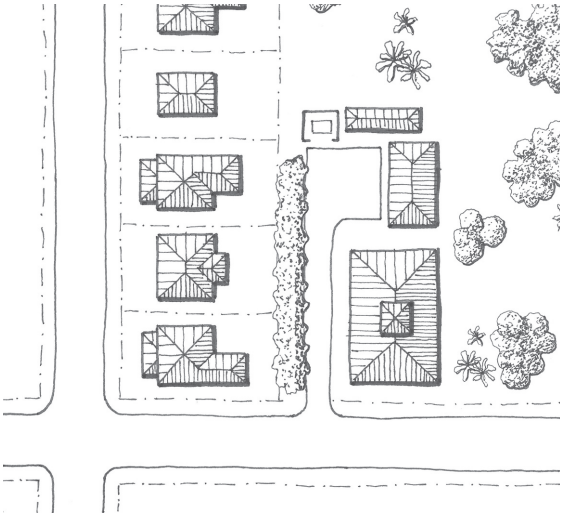
Urban Design Framework

service area screening

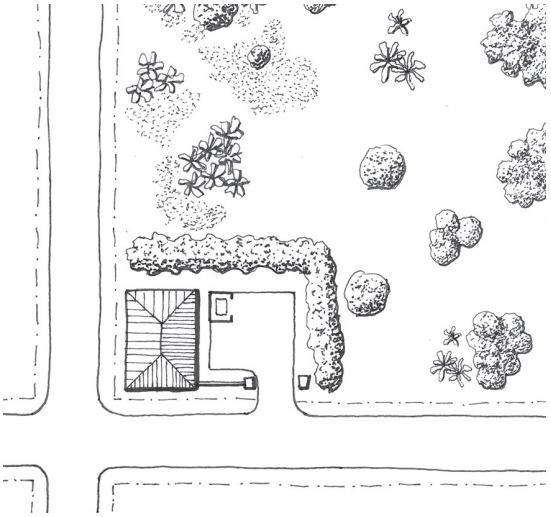




If a maintenance yard is necessary adjacent to a park building, it should be screened from the view of park users. This can be accomplished using a garden wall / pergola system (left) or by dividing the building program into a series of smaller structures to surround the service area (right). The appropriate solution is dependant on the necessary programming of building spaces.

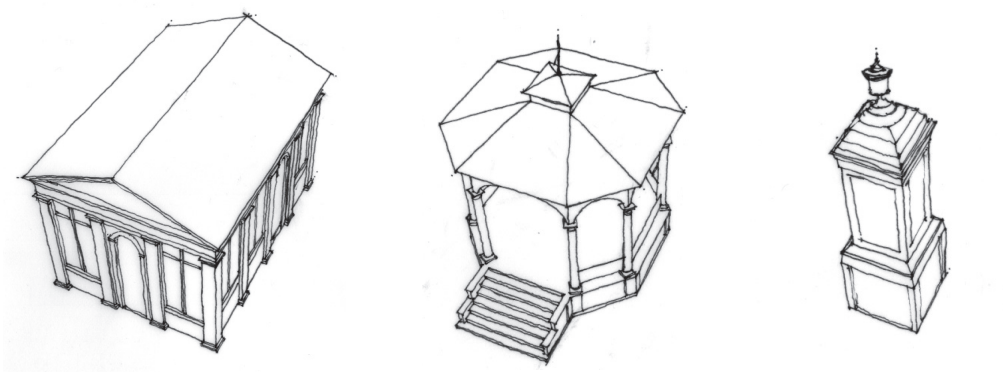


If a park is faced by the rear yards of surrounding homes, the introduction of a rear alley behind park buildings is the ideal solution; this provides building frontages facing the park, and a service yard screened from view of park users.



A final way of screening is accomplished via landscaping; this is the least desirable option, and should only be used if the other options illustrated in this section are not feasible.

utility screening



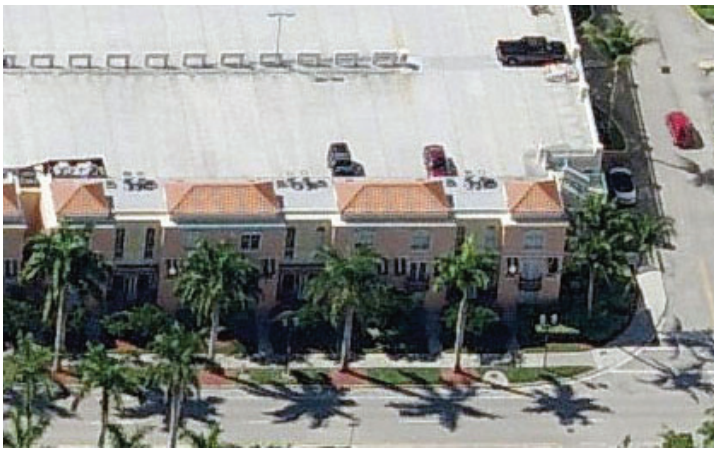
A small portion of a park pavilion building could be used to house utilities; ideally, all utilities should be consolidated to reduce the number of needed locations in the park (image to left). Utilities could also be located inside or under an accessory structure, such as a gazebo, observation tower, or seating feature (image second from left). Gateways and architectural markers can be used at strategic locations, to mark an entrance or significant landscape feature. These works of art can also incorporate meters or other small utilitarian needs (image to right).

The City of Coral Gables has a wonderful tradition of marking key locations with elements of civic art. The variety of elements found include towers, gateways, markers, seating areas, and fountains. In many instances these also serve utilitarian purposes, housing storage and utility areas. These elements could serve as inspiration and precedent for how to successfully screen utilities in park settings (refer to images below and at right).

Urban Design Framework

3.1.5 Structured Parking

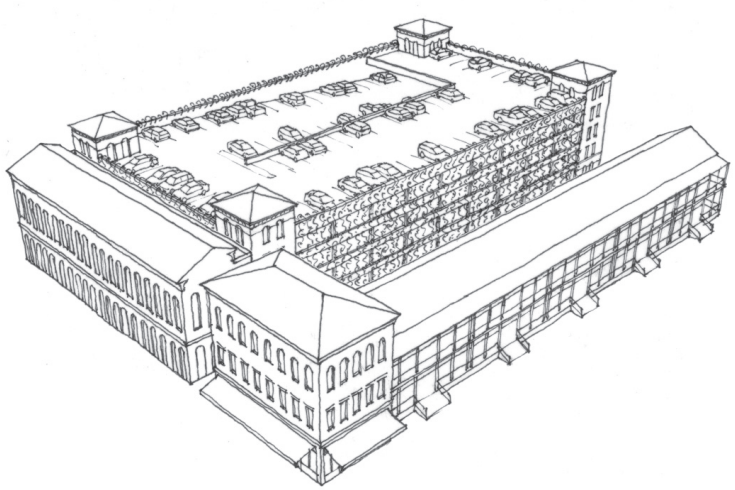
Structured parking can provide a much-needed utility for compact car storage. These structures can have great impact on the character of surrounding streets and public spaces. As a result, careful attention should be given to design, to reduce the visual impact of the garage on surrounding streets and park spaces. This section provides appropriate design strategies for the screening of parking structures.



Example of a liner building on structured parking (Mizner Park, FL)

Example of a garage "greening" (Miami Beach, FL)

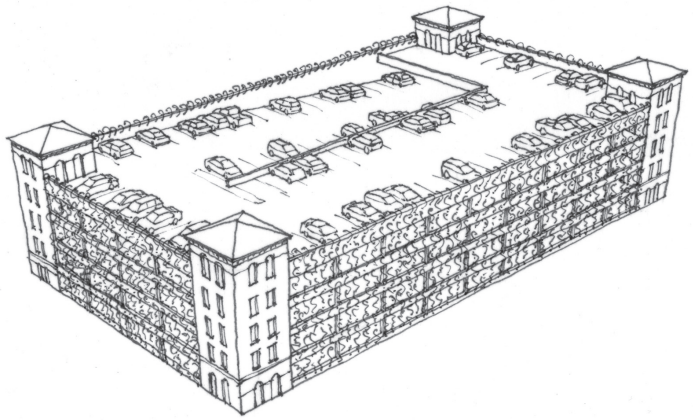
liner building



The best solution for concealing a parking structure is by providing a "liner" building between the garage and surrounding public spaces. If there are needed facilities or park programmatic elements that can inhabit the liner building space, this preferred strategy should be pursued. The liner buildings may be narrow; examples of potential liner building functions include nature centers, classrooms, or retail spaces that support park functions. The important design element is to have active, inhabitable spaces with doors and windows that face onto public streets and park spaces.

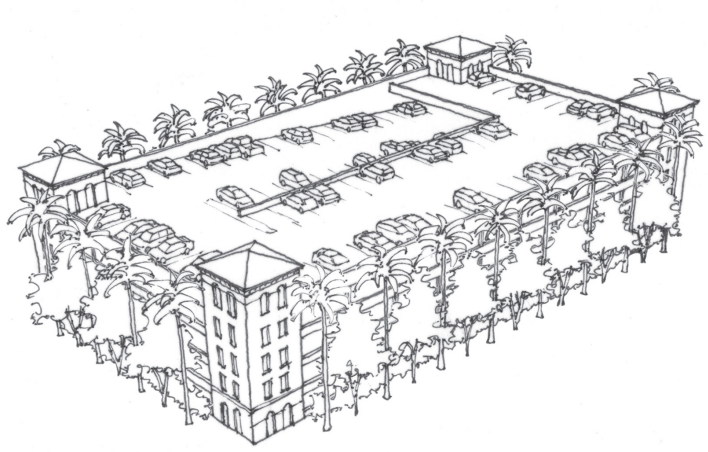
Urban Design Framework

greening garage walls



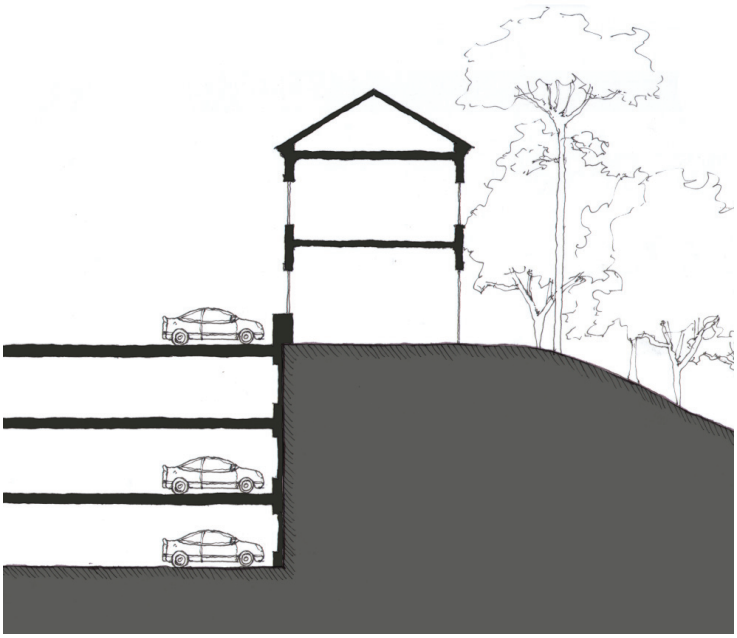
One option to reduce the visual impact of the façade of the garage is to "green" the exterior walls. This added vegetation provides a sustainable purpose (reducing heat island effect) as well as visual interest for park visitors. The garage can be further concealed using liner buildings (in areas where there is adequate building program needed at the park) or landscaping (with adequate trees/shrubs to provide screening). An example of this type of design approach can be found at 7th Street and Collins Avenue on South Beach.

landscaping



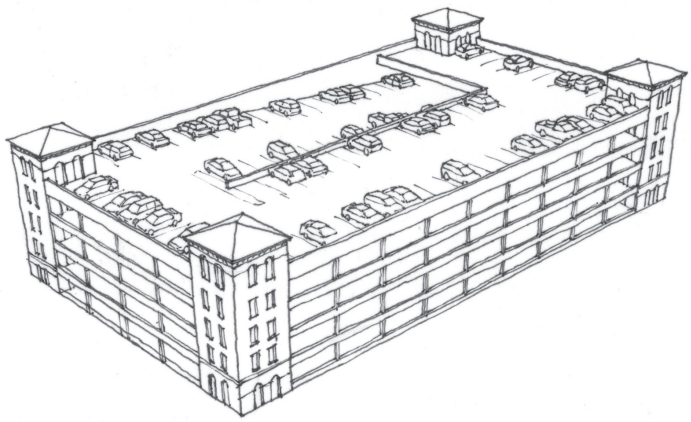
Another design approach that could be used is providing heavy landscaping along garage facades. This should only be used if it can be proven that none of the other approaches described in this section are feasible. It is recommended that this solution only be applied in limited areas, within rural or sub-urban contexts. Trees and shrubs should be selected that are of adequate height and span to provide at least 75% screening of the garage façade.

utilizing topographic change



A final design option for completely screening a parking structure is utilizing any topographic change to conceal a level or two of parking. An example of where this strategy could be applied is on the western side of Haulover Beach. As much of the County has limited topographic change, this strategy may only be applicable in a few select locations; however, it provides for complete screening of several facades of the parking structure, where feasible. Any remaining facades not concealed by earth or fill should utilize one of the other screening methods as outlined in this section.

discouraged



Parking structures that are completely un-lined and un-screened should not be constructed in Miami-Dade County parks. These structures can produce blight on the surrounding physical environment, and thus detract from the physical resource of the park. One of the screening options presented in this section, or another method approved by the Miami-Dade County Park and Recreation Department should be used to conceal the facade.

3.2 Urban Design Contextual Elements

In addition to the Urban Design Framework in section 3.1, there are also elements of park design that should vary based on where the park is located in the Built Environment Transect (its context); for a general mapping of the Built Environment Transect in Miami-Dade County, refer to page 39. These are primarily elements that are found on the park perimeter, that impact the interface between the park and the city. For example, parks in urban settings should enhance and be designed appropriately to fit this context, built to promote a high level of pedestrian activity, with park structures adjacent to the sidewalk to frame the street, and formalized planting patterns. These same design decisions would be out of place in a rural context.

At left are images of exemplary parks in the South Florida region, in the rural, sub-urban, and urban contexts. The following pages contain a matrix to summarize the elements of park design that should respond to context, as well as sketches demonstrating idealized conditions. The following elements will be addressed in this section:

- Park Entrances and Gateways (pg. 68)
- Park Edge Treatment (pg. 70)
- Parking (pg. 72)
- Building Orientation to Street (pg. 74)
- Building Entrance / Primary Frontage and Service Access (pg. 76)
- Solar Considerations (pg. 78)

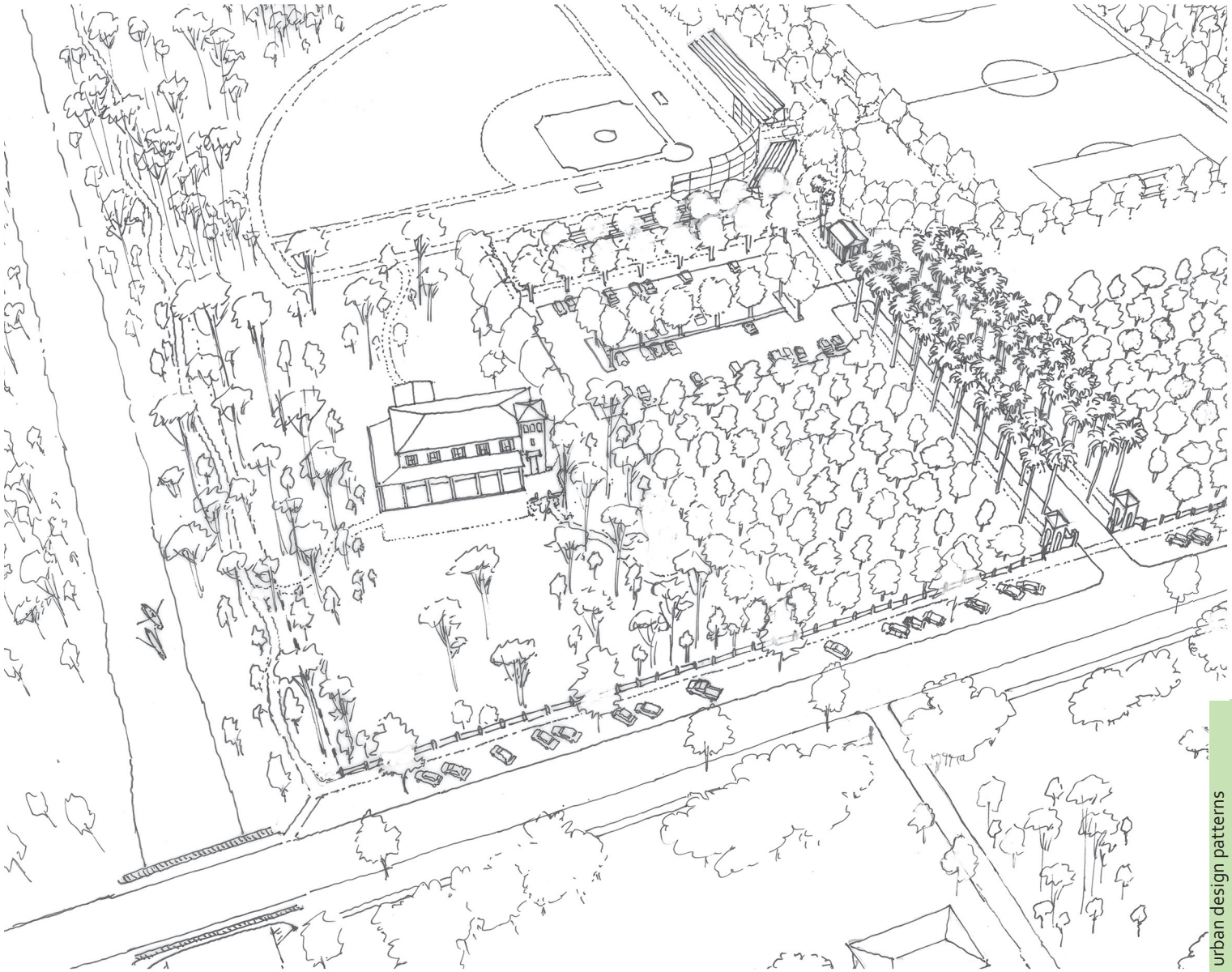
At left, from top to bottom:
Fruit & Spice Park, Homestead, FL (rural)
Greynolds Park, North Miami Beach, FL (sub-urban)
Lummus Park, Miami Beach, FL (urban)

3.2 Urban Design Contextual Elements Matrix

		rural	sub-urban	urban
URBAN DESIGN ELEMENTS	Park Entrances & Gateways	Access: main entry for vehicles and bikes off primary road, secondary pedestrian / equestrian entrances encouraged; design priority is for vehicles, cyclists, equestrians, then transit users & pedestrians Gateway: oriented for visibility from road Park perimeter: adjacent ideally to at least 2 roads	Access: provide multiple entrances for pedestrians & cyclists; minimize number of entrances for vehicles; design priority is for pedestrians & transit users, cyclists, then vehicles Gateway: building and/or gates terminate street vistas and/or anchor prominent intersection Park perimeter: ideally bounded by streets or water all sides, faced by the fronts of buildings	Access: priority is for pedestrians & transit users, cyclists; vehicular access is limited Gateway: building and/or gates terminate street vistas and/or anchor prominent intersection Park perimeter: generally bounded by streets or water all sides, faced by the fronts of buildings
	Park Edge Treatment	Informal treatment: vegetated, minimized low understory plantings, transparent barrier	Informal or formal treatment: vegetated, minimized low understory plantings, transparent barrier	Formal treatment: fences, buildings, rows of trees
	Parking	In areas adjacent to building (constructed of pervious materials such as gravel); on-street in swales	To the side or rear of buildings, screened by habitable space or vegetation (pervious materials encouraged - pavers, etc); on-street (in swales or along curb); necessary quantities reduced by other means of transportation (transit, walking) and shared parking	To the side or rear of buildings (could be structured) screened by habitable space or vegetation; on-street; necessary quantities may be satisfied by other means of transportation (transit, walking, etc) and shared parking
	Building Orientation to Street	Buildings placed internal to the park	Buildings address street edge - either adjacent to the sidewalk or may be behind small setback	Buildings address street edge - placed adjacent to the sidewalk
	Building Entrance / Primary Frontage and Service Access	Frontage: varies - design dependant on surrounding elements; service access: least visible building side	Frontage: facing primary street; service access: least visible side, shielded from view of pedestrians	Frontage: facing primary street; service access: by rear alley, back of house (shielded from the street view)
	Solar Considerations	Building siting varies - may orient building to solar / wind angle as appropriate	Buildings should orient to the street - buildings respond with appropriate façade treatments	Buildings should orient to the street - buildings respond with appropriate façade treatments

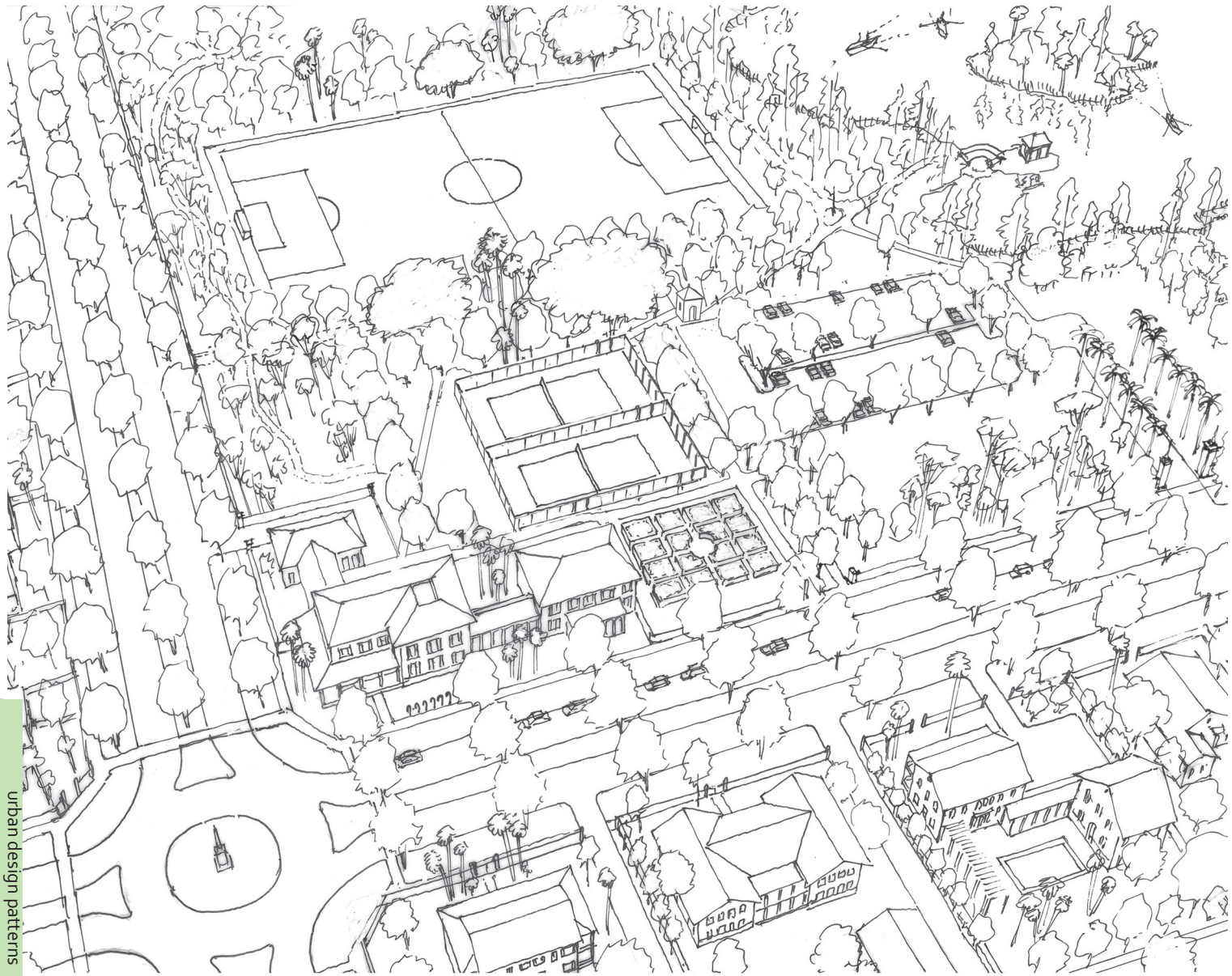
Urban Design Contextual Elements

rural



Idealized sketch of a park in a rural context.

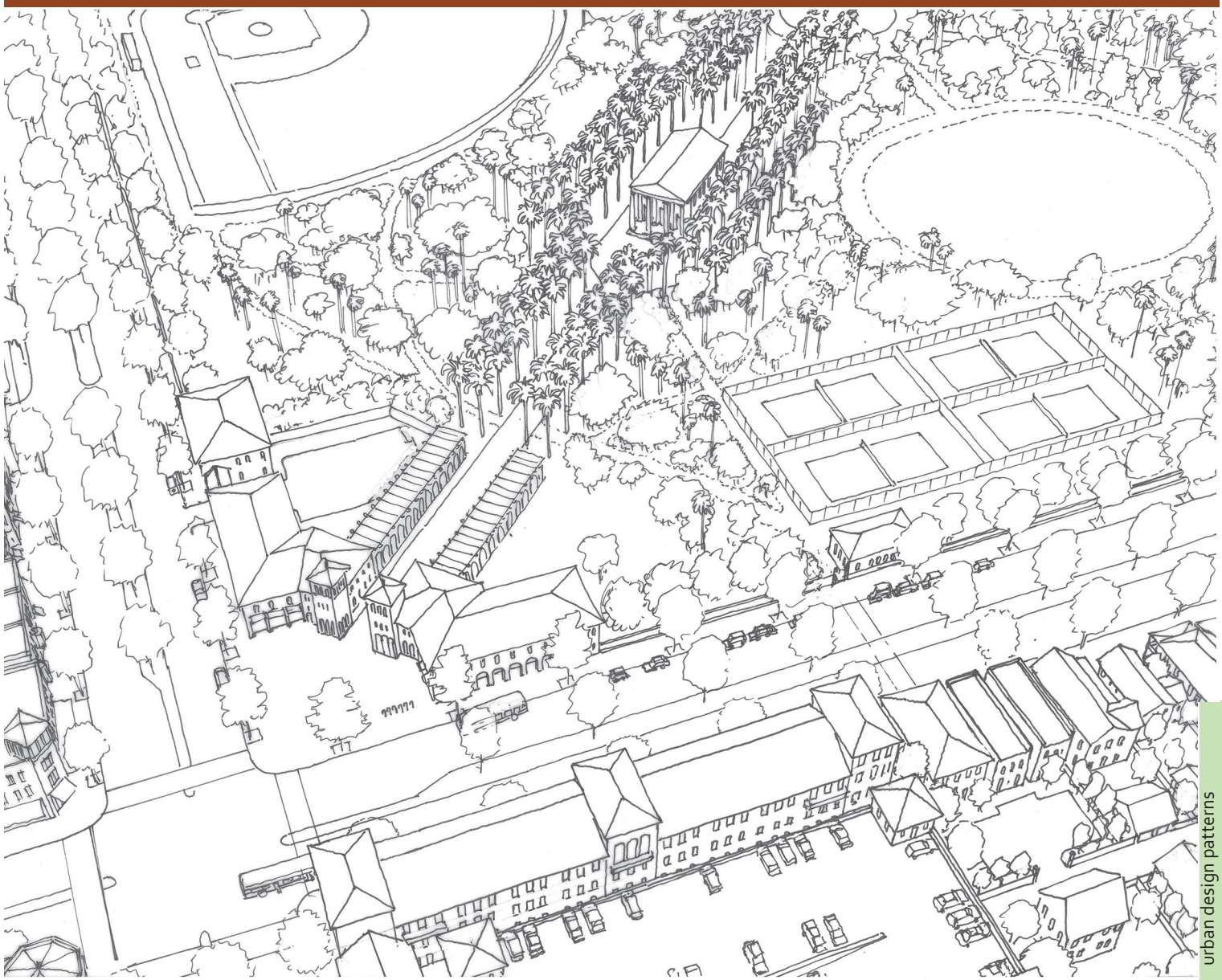
sub-urban



Idealized sketch of a park in a sub-urban context.

Urban Design Contextual Elements

urban



Idealized sketch of a park in an urban context.

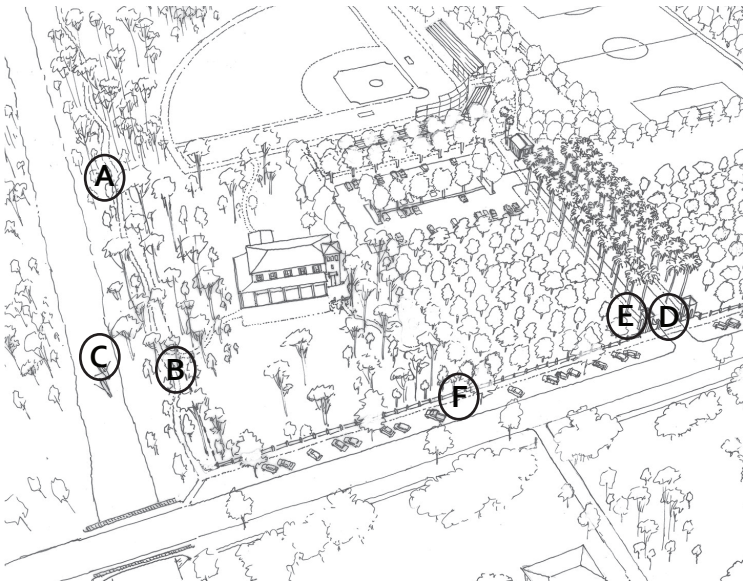
3.2.1 Park Entrances and Gateways

The design of the perimeter of a park defines access and interaction with the community; ideally, all park edges should have public access, either via a street, pedestrian path, or waterway. In urban conditions, the need for public access to the park edge is increased, and the park perimeter should be faced with the fronts of buildings (rather than the rear yard of surrounding homes, as may be appropriate in rural areas). As one moves through the transect, priorities for access/entrance types shift from equestrian (found only in rural contexts), to vehicular (necessary in the rural and sub-urban areas), to pedestrian/bicycle (most important in the urban context, where park users commonly arrive via transit or from surrounding homes in walk/bike distance).

Gateways are defining features (buildings and/or gates) that mark key park entrances; well-designed gateway features often become beloved landmarks for the local community. This should be the goal for the design of gateways in the Miami-Dade County park system. In rural settings, gateways should be in a highly visible location, marking a key spot along a perimeter road. In sub-urban and urban contexts, gateways can be located to terminate the view from surrounding streets, or to anchor key intersections along perimeter roads.

The entrance to Matheson Hammock Park delineates a separate entrance for pedestrians and vehicles

rural

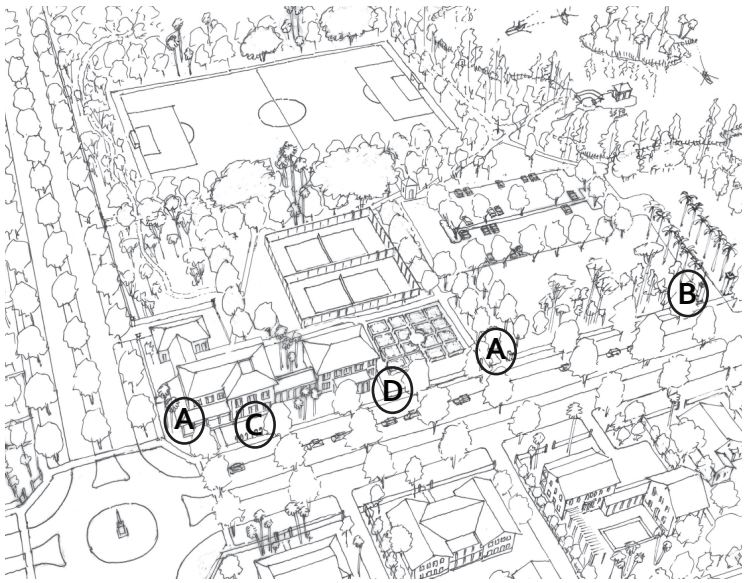


Key Concepts:

a. A multi-use equestrian trail may be one of the primary means of access in a rural context.
b. Equestrian/pedestrian entrance points may be provided via a trail that is located away from perimeter streets.
c. Boat and kayak access points should be provided when a park is adjacent to a canal or body of water. These access points should be connected to a network of interconnected sidewalks and trails within the park.
d. Vehicular entrance points should be marked by an identifiable gateway feature.
e. Separate from the vehicular entrance, a pedestrian entrance point from the perimeter street should be provided. This entrance should be connected to a network of interconnected sidewalks and trails within the park.
f. Pedestrian circulation on perimeter streets may be informal (no sidewalk required; may have separate walking path or trail).

Urban Design Contextual Elements

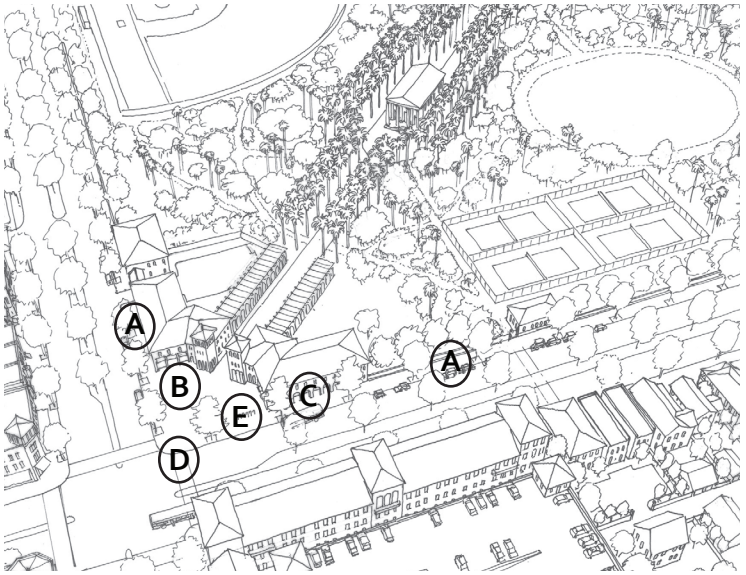
sub-urban



Key Concepts:

a. Pedestrian access points should be provided directly from the sidewalk on perimeter streets. These entrances should be connected to a network of interconnected sidewalks and trails within the park.
b. Vehicular entrance points should be marked by an identifiable gateway feature.
c. Bicycle racks should be provided at pedestrian access points, and in key locations within the park (such as near buildings or play fields) to encourage park access by bicyclists.
d. Sidewalks should be provided on perimeter streets, separated from vehicular lanes and on-street parking spaces by narrow tree lawns. A typical sidewalk width found in this setting is between five and eight feet.

urban



Key Concepts:

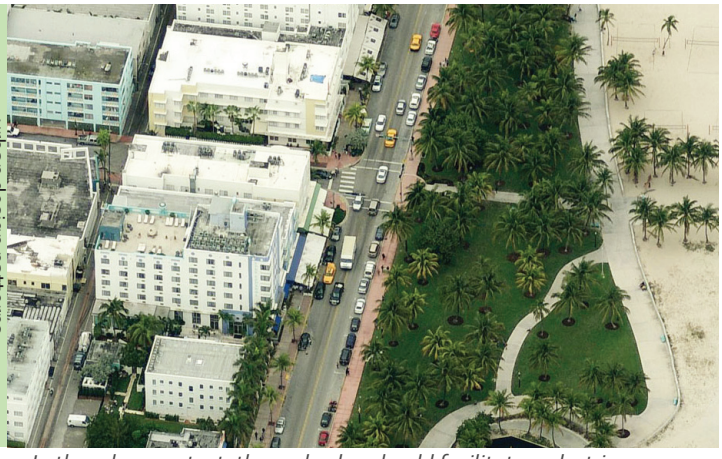
a. Pedestrian access is the highest priority in urban contexts; wide sidewalks (between eight to twelve feet is typical) should be provided on perimeter streets. Street trees may be located in tree wells within this sidewalk dimension.
b. A formalized entry plaza may be used to mark a prominent park entry. This plaza should be defined by perimeter park buildings and/or an entry gateway monument. The plaza should provide access for pedestrians using local transit service, from surrounding residences, commercial buildings or from parking lots in adjacent blocks.
c. Parks should be easily accessible to transit users; a covered transit shelter should be integrated into the design of perimeter park buildings or walls.
d. Crosswalks should be provided at key locations along perimeter streets to provide safe access to the park from surrounding blocks.
e. Bicycle racks should be provided at pedestrian access points, and in key locations within the park (such as near buildings or play fields) to encourage park access by bicyclists.

3.2.2 Park Edge Treatment

Elements that are found within the outer edges of the park define a character that should be contextual with surrounding streets and blocks. Park edge treatment design elements generally include vegetation configurations (spacing and patterns), fences and hedges, and perimeter buildings.

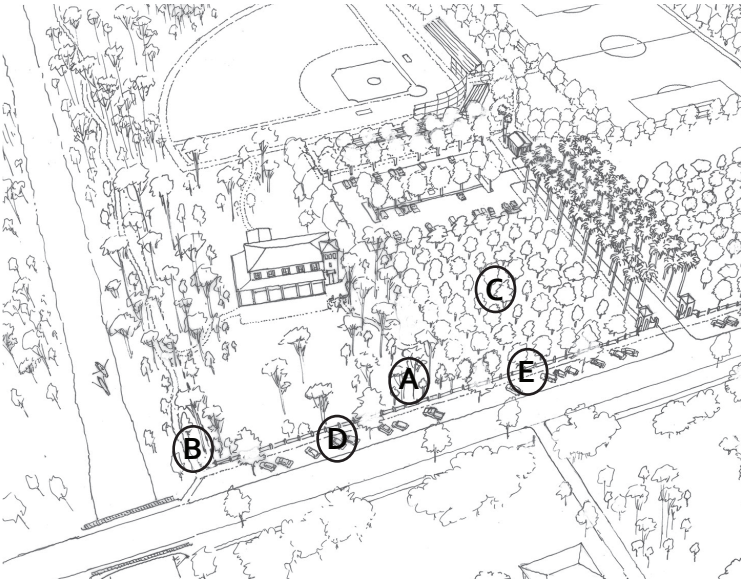
Park edge in a suburban location defined by a stone wall and landscaping (Matheson Hammock Park)

urban design patterns



In the urban context, the park edge should facilitate pedestrian access, with wide sidewalks, street trees, crosswalks, and on-street parking (Lummus Park, Miami Beach)

rural



Key Concepts:

a. A mixture of transparent and opaque vegetation with dense understory should be used to define the edge of perimeter streets.

b. Trees and plantings along the park perimeter should generally be grouped organically, in naturalistic patterns (an exception to this is if an orchard is present).

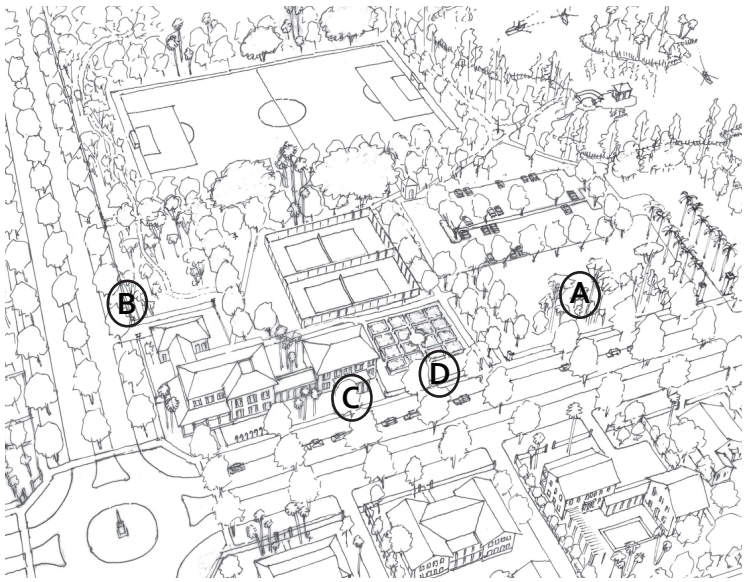
c. Groves or orchards can be incorporated into the design of the perimeter of the park, contributing to community character, providing opportunities for local food production, and becoming an educational opportunity for park visitors. These groves can either be preserved remnants of existing orchards, or newly created.

d. Street trees may be spaced irregularly; spacing between trees may be wide (greater than 40' O.C.).

e. If a perimeter wall is included, it should be a spilt rail wood fence (or of an alternate material and configuration determined to be appropriate in a rural context by the Miami-Dade County Park and Recreation Department).

Urban Design Contextual Elements

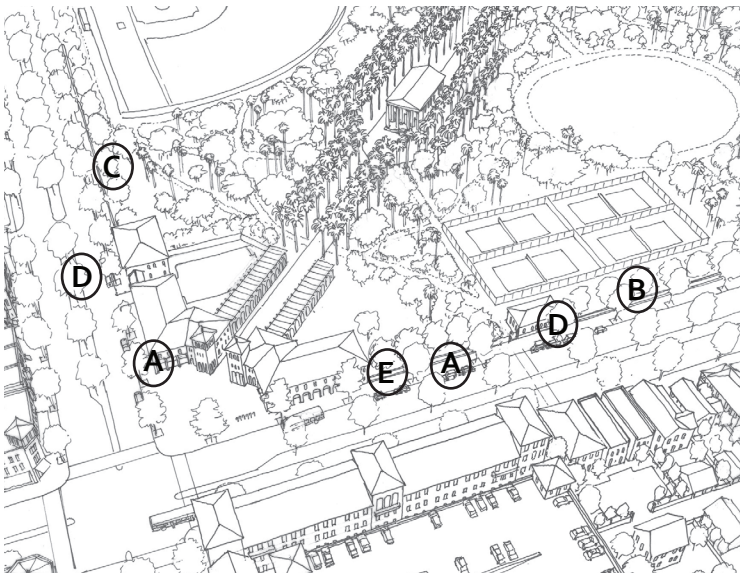
sub-urban



Key Concepts:

a. Plantings found on the park perimeter should maximize transparency to open spaces (trim understory).
b. Trees and plantings along the park perimeter may be grouped in organic or formalized patterns.
c. Street trees should be provided, spaced regularly, at 35' O.C. maximum.
d. Perimeter walls, if included, may be formal (such as a stucco or rock garden wall or manicured hedge) or rustic (such as a split-rail fence).

urban



Key Concepts:

a. A continuous street wall should be maintained along the sidewalk to define the park perimeter, comprised of building walls, fences and hedges (see item 'e' below).
b. Plantings found on the park perimeter should maximize transparency to open spaces (trim understory).
c. Trees and plantings along the park perimeter should be grouped in formalized patterns.
d. Street trees should be provided, spaced regularly, at 35' O.C. maximum. A single species or consistent pattern of alternating species should be designated for each street, to give that street a defined, formal character.
e. A formal perimeter wall should be included to define the street edge; appropriate materials/configurations include a stucco or rock garden wall, wrought iron fence, or manicured hedge. (Alternate materials and configurations may be determined to be appropriate in an urban context by the Miami-Dade County Park and Recreation Department).

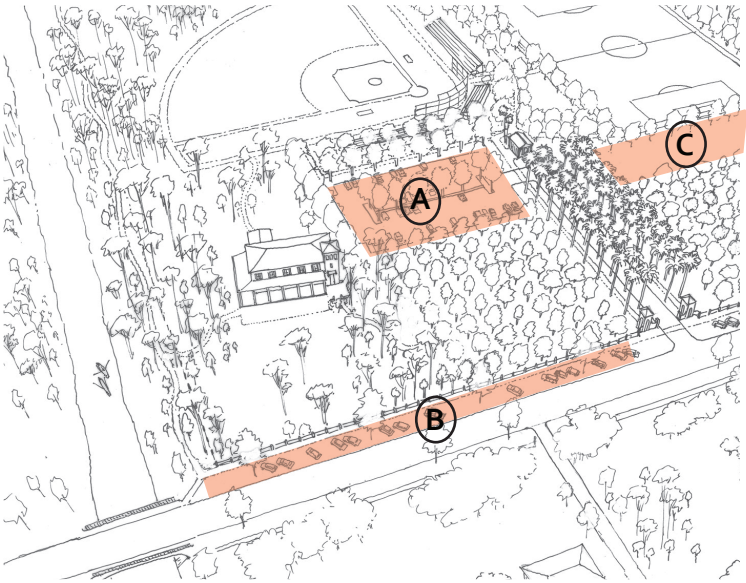
3.2.3 Parking

The design and location of parking facilities should strike a balance between encouraging walkable, pedestrian-oriented settings and providing necessary vehicular storage to support park functions. The primary goal is to provide neither more nor less parking than is needed. The quantity of spaces should be determined based on everyday usage, with overflow areas provided to accommodate high usage or special events. On-street spaces should be counted toward meeting requirements; sharing of spaces with surrounding uses is encouraged, especially as one moves towards urban settings. The use of pervious materials such as gravel, grassy swales, or permeable pavers is strongly encouraged, especially for larger lots. In addition, in sub-urban and urban settings, parking facilities should be screened from view of surrounding streets and waterfronts.

Where possible, parking interior to a park should be concealed by landscaping, with intermittent drainage swales (Greynolds Park)

Large expanses of asphalt should be avoided; this setting could be enhanced with the introduction of swales to accommodate larger shade trees (Haulover Park)

rural

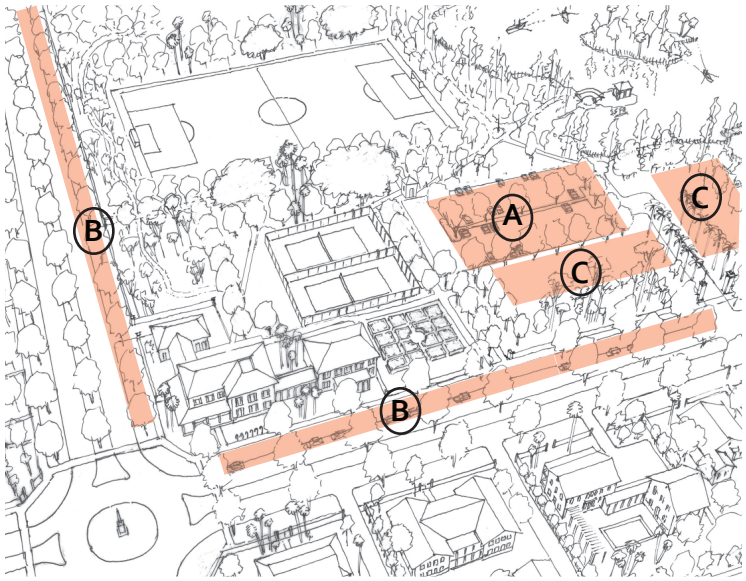


Key Concepts:

a. Parking facilities should be located in proximity to park resources (such as play fields or meeting spaces); parking areas should be screened from pedestrian view (sidewalks and trails) where possible by buildings or vegetation.
b. Angled or parallel parking within grass swales on perimeter and internal park streets should be permitted where feasible, to reduce the necessary size of parking facilities.
c. Grassy areas can be reserved for overflow parking for large events, to minimize the amount of year-round dedicated paved areas.

Urban Design Contextual Elements

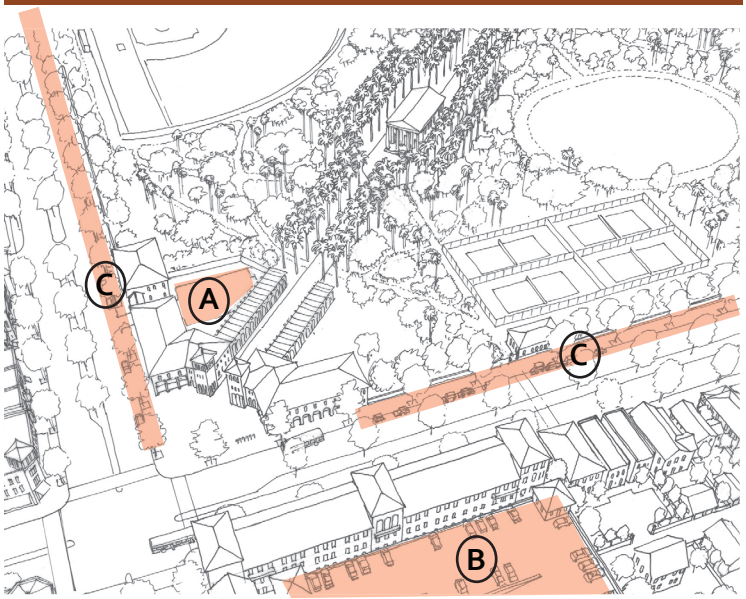
sub-urban



Key Concepts:

a. Parking facilities should be located in proximity to park resources (such as play fields or meeting spaces); parking areas should be screened from pedestrian view (sidewalks and trails) by buildings or vegetation.
b. Angled or parallel parking on perimeter streets should be included, to reduce the necessary size of parking facilities. Parking may also be included on internal park streets, where feasible.
c. Grassy areas can be reserved for overflow parking for large events, to minimize the amount of year-round dedicated paved areas.

urban

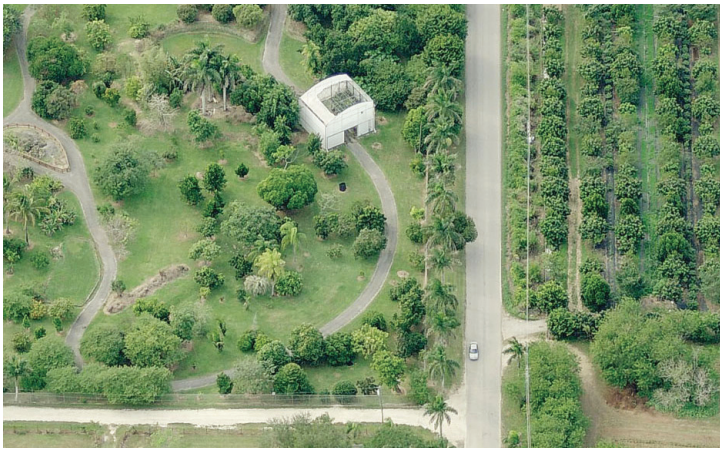


Key Concepts:

a. In general, parking internal to the park should be limited in urban contexts given accessibility to transit, a greater density of park users within walking distance, on-street parking opportunities, and sharing of parking facilities with adjacent buildings/uses. Parking areas should be screened from pedestrian view (sidewalks and trails) by buildings or vegetation.
b. Parking facilities may be located in adjacent blocks.
c. Angled or parallel parking on perimeter and internal park streets should be included, to reduce the necessary size of parking facilities.

3.2.4 Building Orientation to Street

Building orientation varies as one moves through the transect; generally, buildings have more freedom in rural settings, as they are detached from the street and can be sited based on other priorities (such as termination of a primary view, or adjacency to park programmatic elements such as fields and playgrounds). As one enters the sub-urban realm, it is more important that buildings address the street edge. In urban settings, buildings are generally located directly adjacent and parallel to the sidewalk, enclosing the street scene and forming part of the street wall.

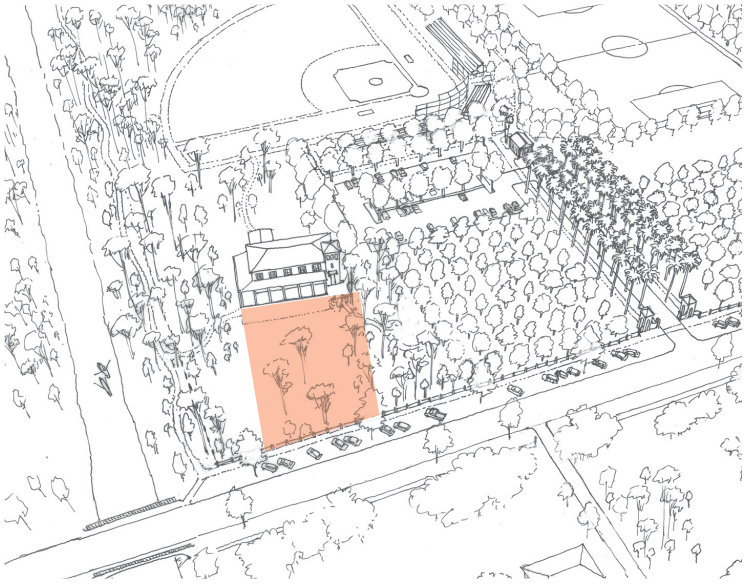


In the rural setting, park structures have freedom to orient as needed, away from the street edge (Fruit & Spice Park)

In urban and sub-urban contexts, park buildings should address the street and become part of the street wall (Vizcaya entrance)

urban design patterns

rural

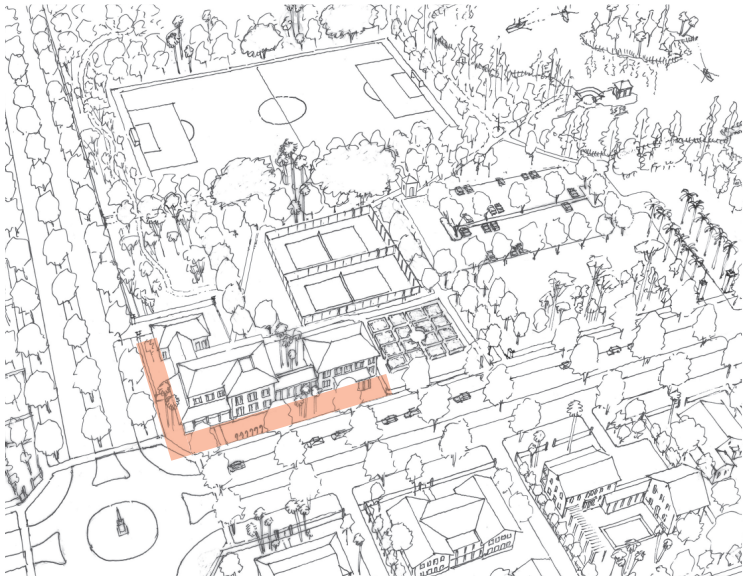


Key Concepts:

In rural contexts the relationship between park buildings and perimeter streets is very loose; building may be set back from the street, and can be rotated as needed to fit park functionality.

Urban Design Contextual Elements

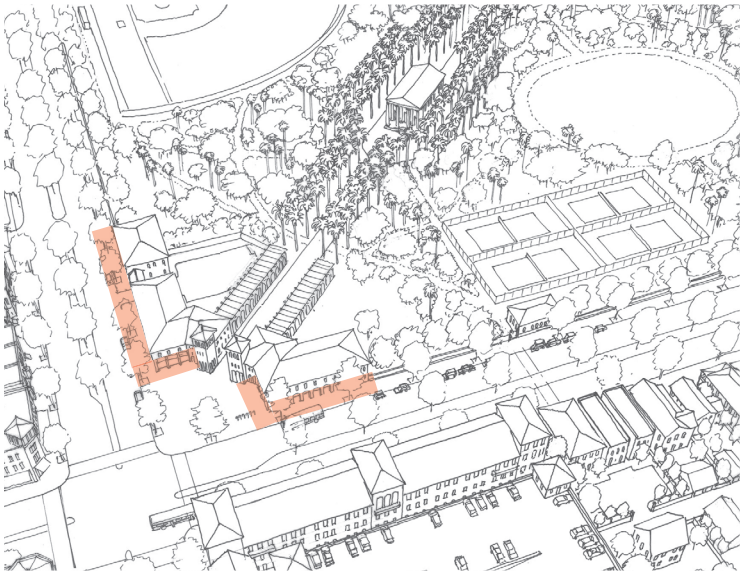
sub-urban



Key Concepts:

In sub-urban contexts, buildings should address perimeter street edges; the building can be placed at the back of the sidewalk or behind a small setback. The front building façade should be placed parallel to the perimeter street, with an appropriate build-to zone. (The build-to zone should be determined through a review of desirable neighborhood and/or regional precedents).

urban



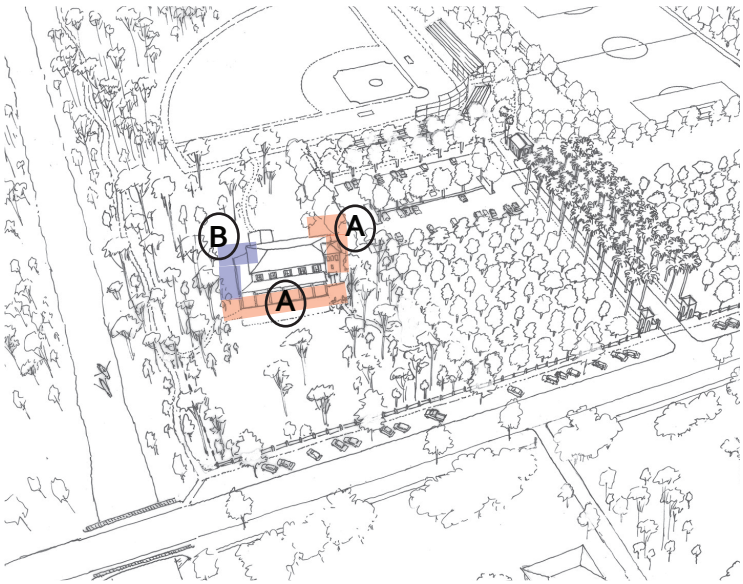
Key Concepts:

In urban contexts, buildings should address perimeter street edges, and be placed at the back of the sidewalk. An exception to this could be granted if the buildings are used to form an entry plaza that is accessible from the sidewalk. The front building façade should be placed parallel to the perimeter street, along a specified build-to line. (The build-to line should be determined through a review of desirable neighborhood and/or regional precedents).

3.2.5 Primary Frontage and Service Access

In most urban settings, buildings have defined fronts (the public face of the building, commonly addressing the street) and backs (the private face of the building, also commonly used for service access). In park settings, often buildings need to be designed with four good sides, as all sides of the building face high-priority public spaces (streets, fields, waterfronts, etc). In these instances, it is important that the design of the building incorporate an appropriate method for consolidating and screening service areas and "back-of-house" functions. This involves designating a primary frontage, which should be held to the strictest architectural standards and be readily accessible by pedestrians, and a service frontage which should occur on the least visible building facade. As one moves into the urban transects, it is increasingly important that the primary frontage be designated along perimeter streets, to provide a public face to the park.

rural



Key Concepts:

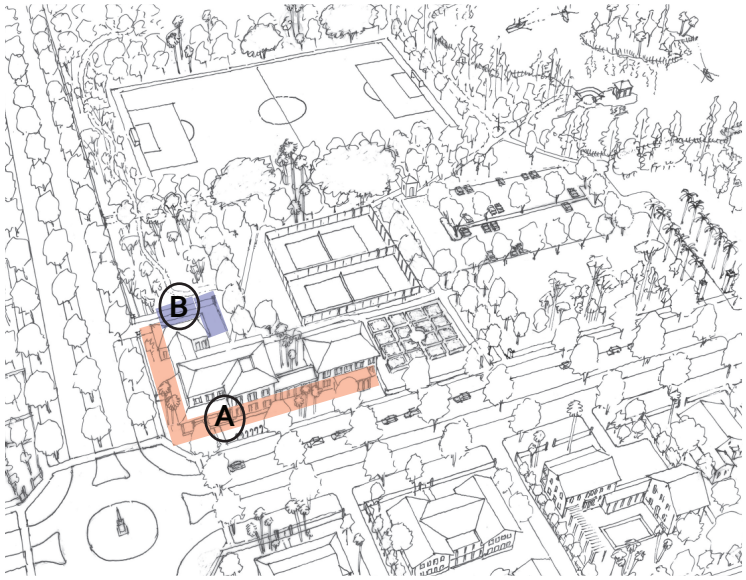
a. Designation of the Primary Frontage should consider the facade that is most visible from perimeter or internal streets, and how pedestrians will access the building (from trails, sidewalks, and parking areas).
b. Designation of the Service Frontage should be to the least visible building frontage, generally opposite the Primary Frontage. For guidance on the appropriate design and screening of service areas, please refer to page 57.

urban design patterns

Back-of-house functions such as utilities and maintenance yards should be shielded from view of public areas by park buildings, walls, and landscaping (Greynolds Park)

Urban Design Contextual Elements

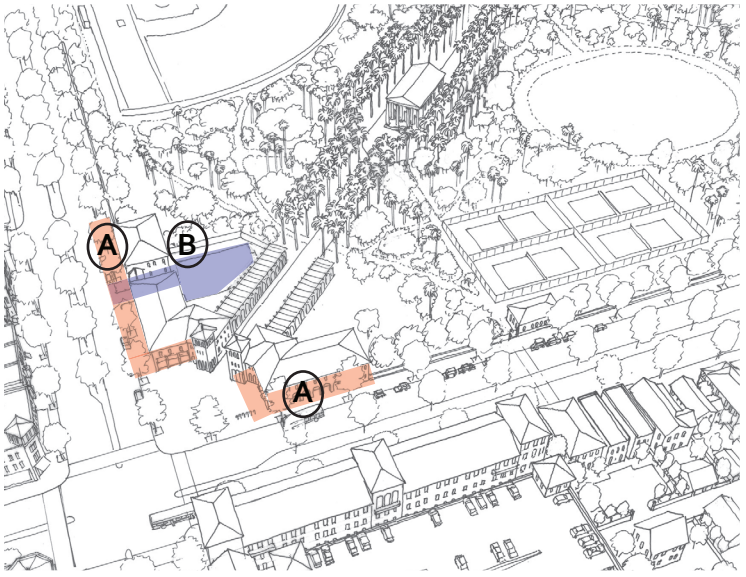
sub-urban



Key Concepts:

a. Designation of the Primary Frontage should consider the facade that is most visible from perimeter or internal streets, how pedestrians will access the building, and providing a public face to the park edge. On a corner site, two primary frontages may be designated.
b. Designation of the Service Frontage should be to the least visible building facade, out of view from pedestrians on perimeter streets (generally opposite the Primary Frontage). For guidance on the appropriate design and screening of service areas, please refer to page 57.

urban

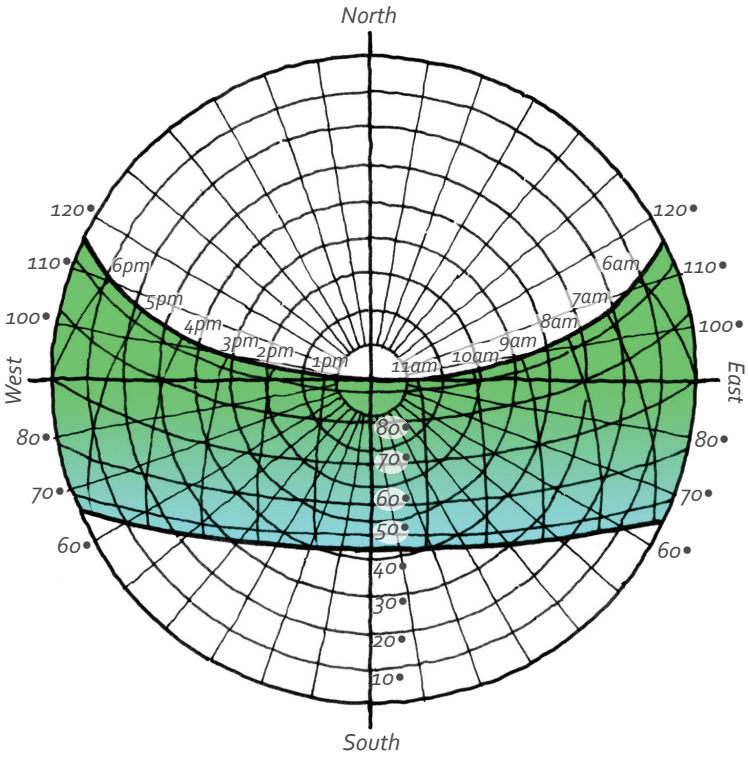


Key Concepts:

a. Designation of the Primary Frontage should consider the facade that is most visible from perimeter or internal streets, how pedestrians will access the building, and providing a public face to the park edge. On a corner site, two primary frontages may be designated.
b. Designation of the Service Frontage should be to the least visible building frontage, out of view from pedestrians on perimeter streets (generally opposite the Primary Frontage). In urban contexts, this is often provided through introduction of a rear alley system behind buildings. For guidance on the appropriate design and screening of service areas, please refer to page 57.

3.2.6 Solar Consideration

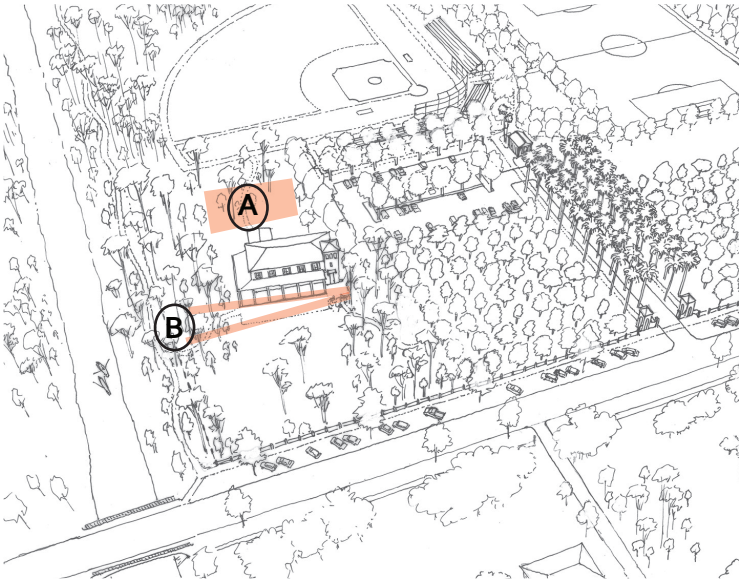
The design and positioning of buildings should incorporate design responses which are intended to conserve and/or generate energy. The appropriate solar response can vary based on transect.



Sun path diagram, above, is the graphic projection of the sun's path within the sky onto a horizontal plane at the 25 degree North Latitude (Miami-Dade County). Winter solstice is shown in blue, summer solstice in green. Time of day is identified at one hour intervals.

Solar panels should be flush to the roof (integrated) or at the same angle as the roof pitch.

rural

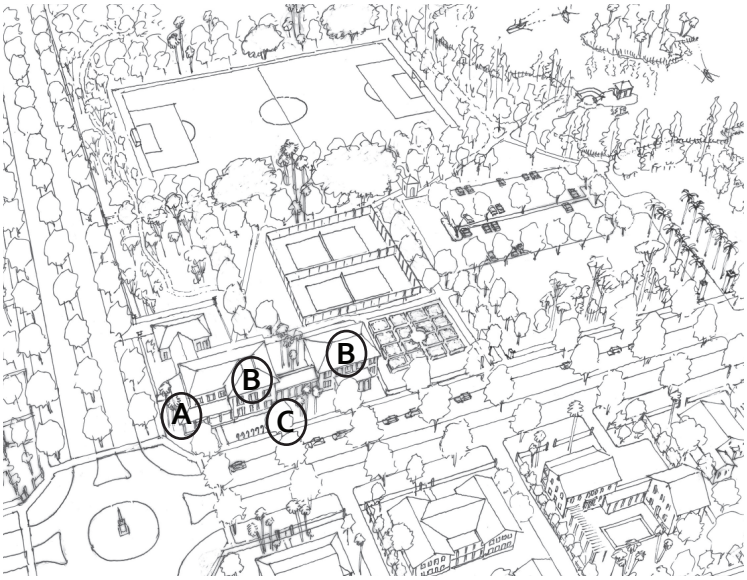


Key Concepts:

a. Introducing a solar array should be considered; this will generate energy and can also become an educational component for park visitors. Solar devices could also be incorporated into the design of buildings.
b. Since buildings are set back from the street in this context, building orientation (the siting of the building footprint) is given full freedom to be rotated as needed to orient toward prevailing breezes, or to minimize solar gain.

Urban Design Contextual Elements

sub-urban



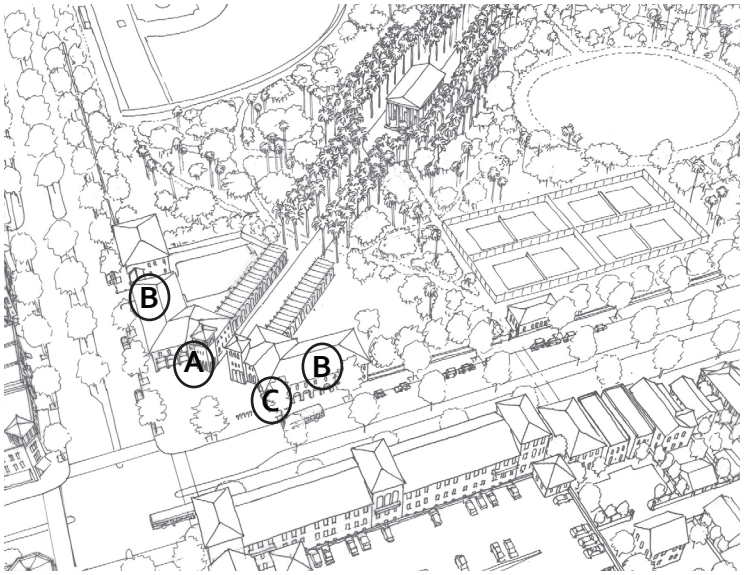
Key Concepts:

a. Building facades should be designed with appropriate solar responses. For example, this could include tall, narrow windows with operable shutters on a south-facing façade; using deep overhangs, balconies, and awnings to shade windows and doors; applying appropriate stylistic shading elements such as Art Deco eyebrows, MIMO brise-soleil, or Mediterranean Revival arcades or loggias; and using landscaping on the south and west façade to shield doors and windows from the sun.

b. The use of solar panels in this context should be integrated with the design of building structures (for example, integrated roof panels that are flush with the structure).

c. Building orientation is dictated by perimeter street layout; perimeter park buildings should be parallel to the street within an appropriate build-to zone as established by precedents or zoning requirements of the surrounding neighborhood context.

urban



Key Concepts:

a. Building facades should be designed with appropriate solar responses. For example, this could include tall, narrow windows with operable shutters on a south-facing façade; using deep overhangs, balconies, and awnings to shade windows and doors; applying appropriate stylistic shading elements such as Art Deco eyebrows, MiMo brise-soleil, or Mediterranean Revival arcades or loggias; and using landscaping (which could be in the street right-of-way) on the south and west façade to shield doors and windows from the sun.

b. The use of solar panels in this context should be integrated with the design of building structures (for example, integrated roof panels that are flush with the structure).

c. Building orientation is dictated by perimeter street layout; perimeter park buildings should be parallel to the street along a build-to line as established by precedents or zoning requirements of the surrounding neighborhood context.

"Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and cheer and give strength to body and soul alike." - John Muir

4.0 Landscape Design Overview

As outlined in chapter two of this document, the purpose of a public parks system can be broadly summarized as twofold: to provide a setting for exercise and a range of competitive sports tailored to serve a variety of skills and abilities; and to provide a setting for mental and physical relaxation and enrichment by creating a peaceful, often naturalistic setting for visitors to experience. Attaining these two contradictory objectives in a single park has been a challenge since the earliest public parks were constructed, and is an even more pressing reality in today's parks. Attaining a balance between these opposites is possible when there is sufficient space in the park site, but most of all, when equal attention is given during the planning stages to both the aesthetic design program as well as active recreation program elements.

Image: Matheson Hammock Park, Coral Gables, Florida

4.1 Landscape Ordering Framework

The following guidelines serve as a starting point for designing a park landscape in Miami-Dade County in a manner consistent with timeless aesthetic design frameworks. Starting with Landscape Ordering Framework, which influences design inside of the park, regardless of architectural style or location in the Built Environment Transect. Next are the Park Design Elements which are dependent upon their location within the Built Environment Transect, and lastly, the Ecological Communities within Miami-Dade County, and how the Ecological Transect should inform all aspects of park planning, design, and construction.

Compositional Elements in the section include:

- Conceptual Idea (pg. 83)
- Ordering Geometry (pg. 84)
- Enclosure/Open Space Definition (pg. 92)
- Circulation (Vehicular and Pedestrian) (pg. 96)
- Postcard Views, Vistas and Panoramas (pg. 100)
- Linear Spaces (pg. 102)
- Transitional Zones / Buffers (pg. 104)

Landscape Features: in the section include:

- Entrances/Gateways (pg. 106)
- Plazas (pg. 110)
- The Great Lawn/ The Green (pg. 112)
- Lakes, Ponds and Canals (pg. 114)
- Courts, Athletic Fields, Outdoor Stages Orientation (pg. 116)
- Internal Park Building Siting (pg. 118)
- Mounds and Overlooks (pg. 122)
- Elevation Changes (pg. 124)
- Water Features (pg. 126)
- Gardens (pg. 128)
- Allees (pg. 130)
- Groves (pg. 132)
- Bosques (pg. 134)
- Plant Massing (pg. 136)
- Seating and Site Furnishings (pg. 138)
- Lighting (pg. 140)
- Signage Siting (pg. 142)
- Public Art in Parks (pg. 150)
- Parking Configuration (pg. 152)
- Utility Siting (pg. 154)
- Trails (pg. 156)

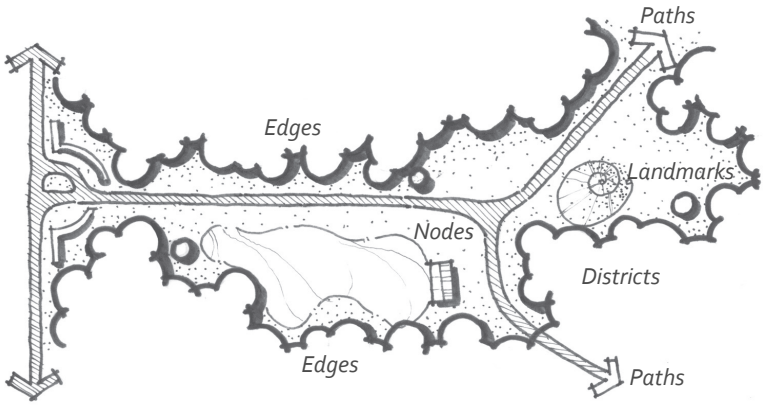
4.1.1 Conceptual Idea

Landscape Ordering Framework
composition

The conceptual idea for the design of the park is intended at a minimum to help assure a consistency in the layout and selection of plant materials and site structures, including materials, colors, scale, and forms. While this is helpful for design continuity in the simplest of parks, those facilities with more elaborate or specialized facilities and programming requirements, or those facilities that are located where the historic or ecological context is particularly rich, may benefit from a more elaborately developed conceptual basis.

Regardless of design idea or even scale, the park experience for visitors will be enhanced if the site is conceived at the outset as a series of inter-related parts. For example, Kevin Lynch conceptualized the organization of city neighborhoods into five categories that are also applicable to a park's organization. In "Image of the City" Lynch identified Paths, Edges, Districts, Nodes and Landmarks as fundamental components of a neighborhood; the strength of those components is measured by how clear and legible these are for the residents in the neighborhood. A well-defined neighborhood provides visual clues in the landscape, roads, and buildings that link the area together into an identifiable place.

Scaling these five categories down to an individual park site is useful for conceiving the park as a series of rooms with walls of plant material and buildings (Edges), connected by corridors (Paths) that hierarchically signal where other rooms are (Nodes), and an identifying feature or place (Landmark) is present that holds the park (District) together. A very large park may have multiple districts, a very small park may have a landmark no larger than a bench or tree; the permutations are endless. However, the intent is to include a process during the conceptual arrangement of the park to make sure people can intuitively read where the nodes and landmarks are, and that those places are cohesively tied together using materials, geometry, and the other elements outlined in this book.



For example, the above diagram shows how Greynolds Park includes the five elements of a neighborhood.

Example of a park with foreground, mid and background compositional layout.

Example of the Citroen in Paris with foreground, mid and background compositional layout.

4.1.2 Ordering Geometry

Whether arranging individual elements or designing the entire park, an underlying or ordering geometry is helpful, some would even say it is crucial, for establishing visual clarity and consistency in the design of a park. An ordering system is the framework for simplifying the placement of features and spaces; the goal is to reduce clutter and confusion, in contrast to the flood of visual noise that exists outside the park realm. Upon entering the park, visitors should be able to enjoy a place where the landscape and supporting structures are artfully arranged to create a relaxing, engaging visual experience.

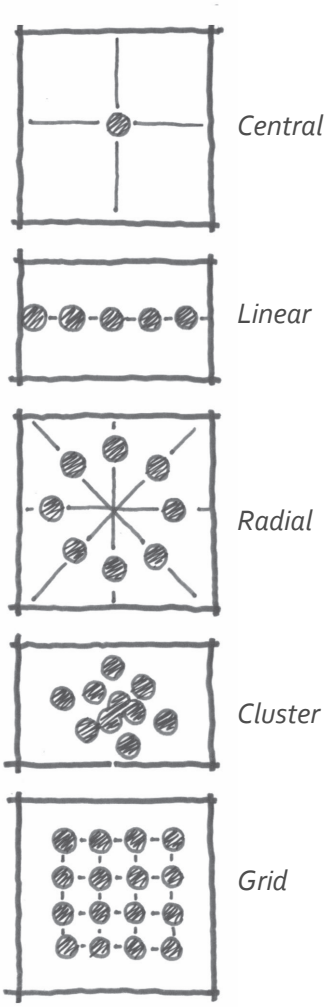
Perceiving an organizing geometry is possible only through the contrast of the main feature (figure) and it's surrounding context (ground).

- Form
- Shape
- Texture
- Scale

The selection of an organizing geometry is not necessarily related to the program features included in a park; the "ideal" park diagrams to the right illustrate differing approaches to composition utilizing the same program elements in similar placement within the site.

Example of a garden space organized through symmetry at the Vizcaya Museum and Gardens, Miami

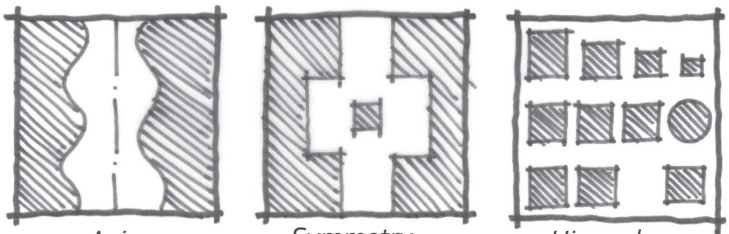
organization



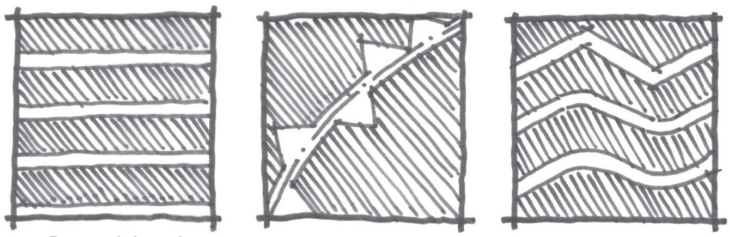
landscape design patterns

Landscape Ordering Framework
composition

arrangement



Axis *Symmetry* *Hierarchy*



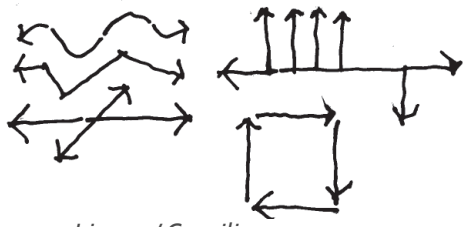
Repetition / Rhythm *Datum* *Transformation*

Key Concepts:

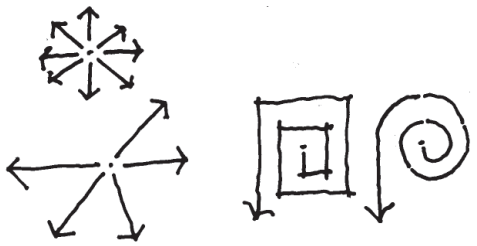
Add further clarity to the arrangement of park elements and spaces using one or more compositional techniques:

- Axis
- Symmetry
- Hierarchy
- Repetition / Rhythm
- Datum
- Transformation

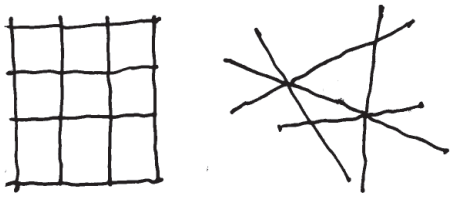
paths



Linear / Curvilinear



Radial *Spiral*



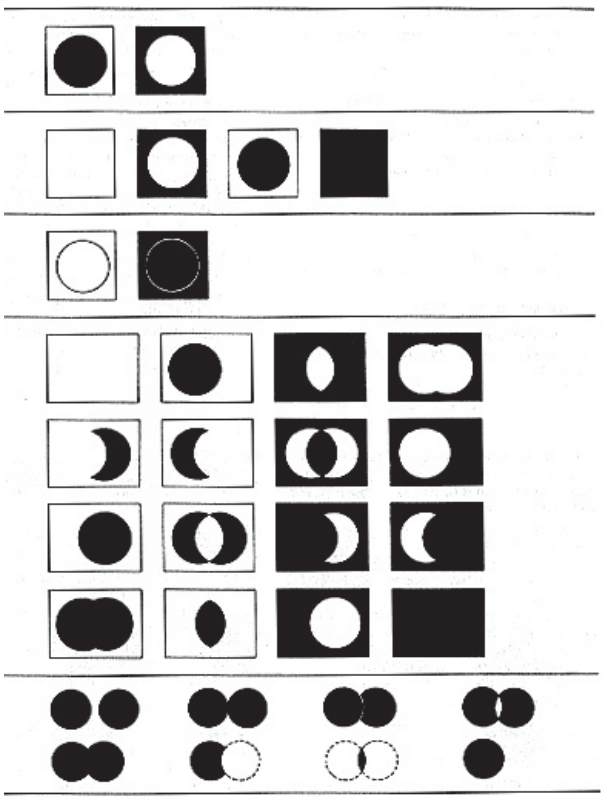
Gridded *Random*

Key Concepts:

While the previous organizing framework applies most directly to a series of discrete features or even spaces, the pathways that thread these features together can be summarized as one or more combinations of the following basic patterns:

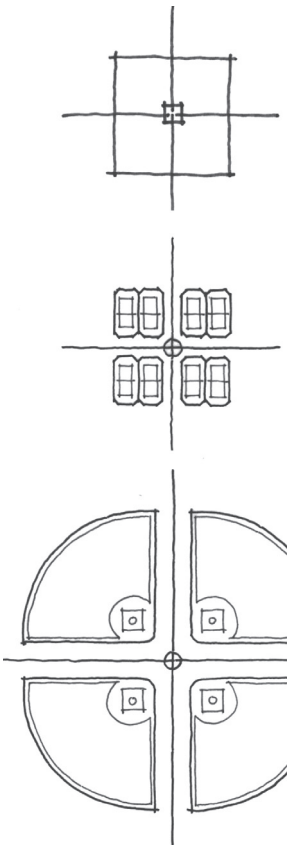
- Linear (including curvilinear)
- Radial
- Spiral
- Gridded
- Random

combinations

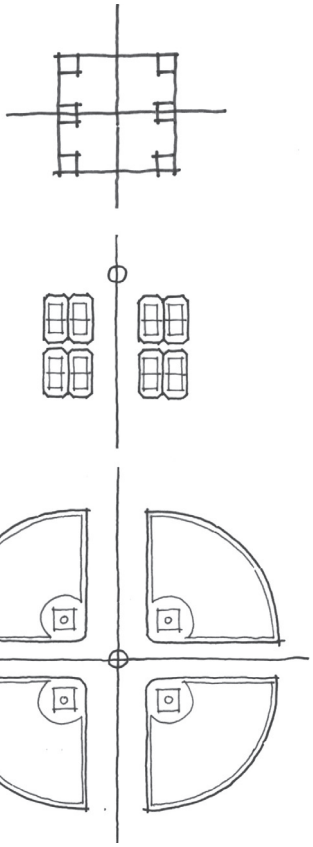


Graphic from 'Principles of Two Dimensional Design' by Wucious Wong

central



linear



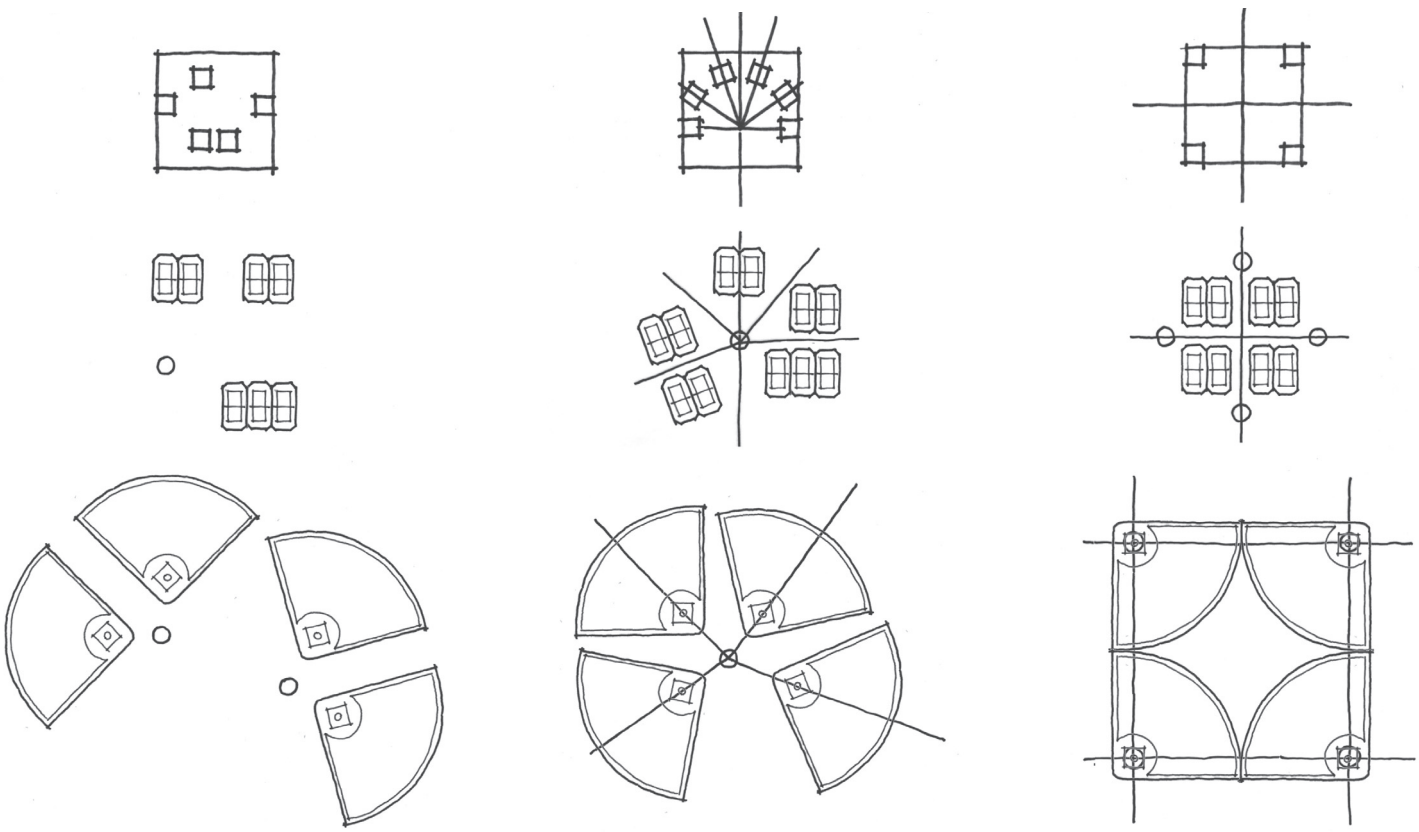
Key Concepts:

Overlap is a fundamental composition technique where multiple forms are combined, and the original shapes are still legible as figure or ground, and continued as a trace outline or implied utilizing the gestalt principle of closure.

landscape design patterns

Landscape Ordering Framework
composition

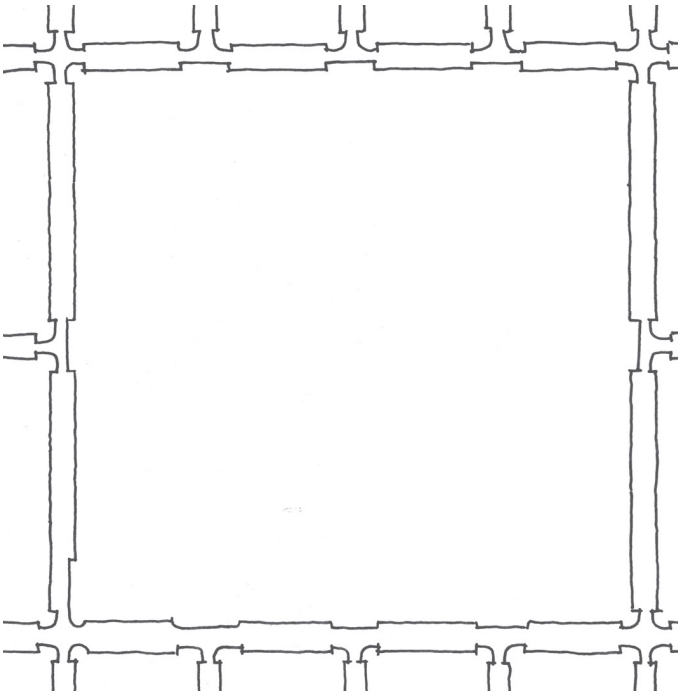
cluster	radial	grid



Key Concepts:

A Central, Linear, Radial, Cluster, or Grid two-dimensional arrangement is applicable to structures, as well as spaces and even some recreation features such as tennis courts and fields, although many of those features have orientation or adjacency requirements that override compositional priorities.

block pattern

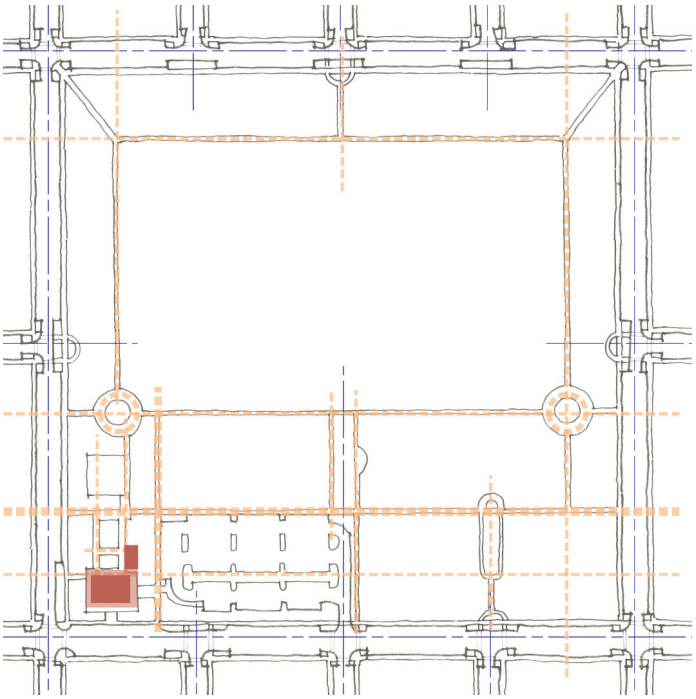


While an ideal geometric ordering system would be consistent from the largest scale to the smallest detail, in practical terms most parks will require one geometric ordering system for the overall plan, and one or more additional systems for the individual parts.

An organizing geometry is not necessarily related to the program features included in a park; the "ideal" park diagrams located on page 88-89 and 90-91 illustrate differing approaches to composition utilizing the same program elements in similar placement within the site, but with very differing spatial results.

The park site is approximately 30 acres, and fits within a surrounding neighborhood block structure consistent with the suburban to urban context typical in Miami-Dade County. The park is oriented north-south, with perimeter on-street parking, and surrounding building facades face the park. A neighborhood collector street runs along the south face of the park.

geometry



Key Concepts:

The ordering geometry is axial, symmetrical, and orthogonal.

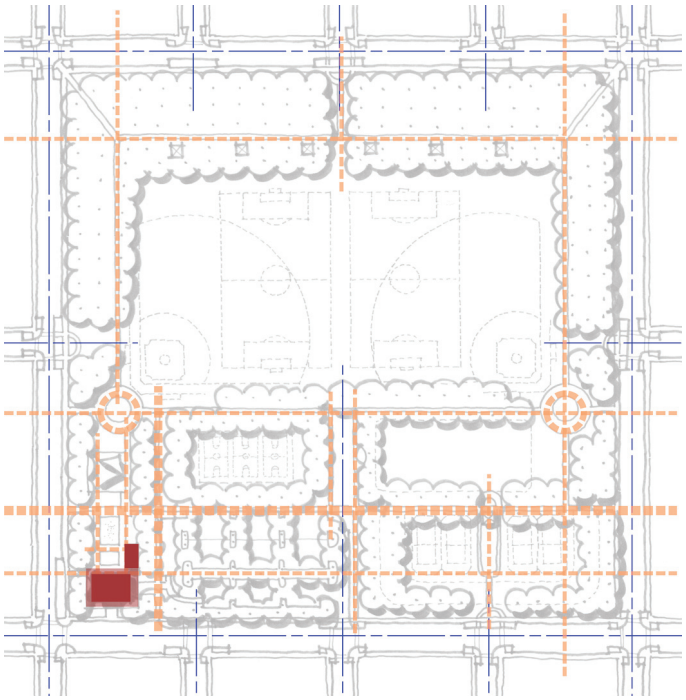
Regulating axes originate from the surrounding street grid, emphasizing views that terminate or extend into the park from those streets.

The main "figure" of the park is a rectangular "Great Lawn" filling the north half of the park, allowing views into it from the street ends.

An east-west regulating datum line between the Great Lawn figure and the neighborhood collector road is the spine that connects all the park spaces.

Landscape Ordering Framework
composition

open space definition

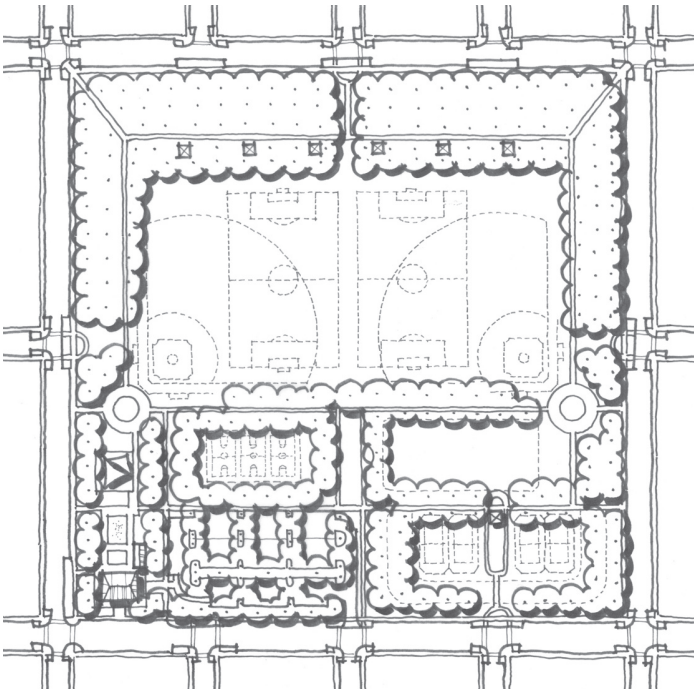


Key Concepts:

The "Great Lawn" is scaled to accommodate soccer fields, and is delineated by walkways that visually terminate in a landform and signature planting circle on the south side, and deflect to corner access walks into the neighborhood on the north side.

The walkway grid defines rooms for a community building and playground area on the west side, and off-street parking.

ideal plan

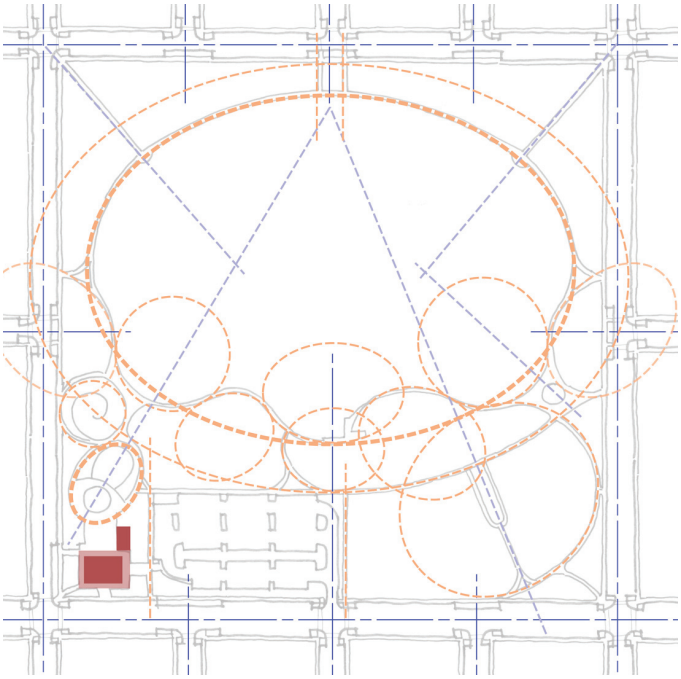


Key Concepts:

A bosque of trees frames the walkways and open spaces.

The "Great Lawn" is visible throughout the park because all walks tie into the Lawn, which is a contrast to the surrounding dense canopy.

geometry

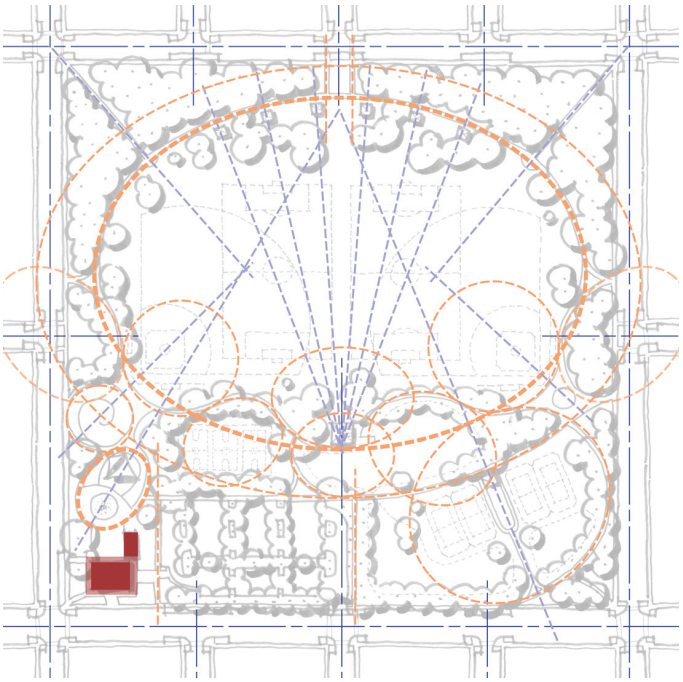


Key Concepts:

The organizing geometry for this prototype is an ellipse, which connects radially to the surrounding park features and street ends.

The surrounding street grid east and west of the park is "absorbed" in smaller partial ellipse shapes.

open space definition



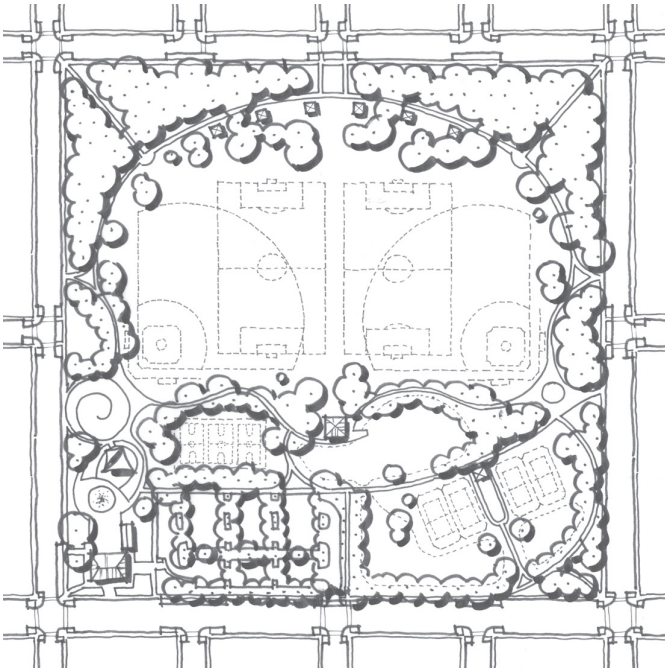
Key Concepts:

There is "closure" implied in the main elliptical figure of walkways, and in several smaller partial ellipses south of the main figure.

Spiral shapes are implied in the south half of the park, originating in spaces or features and attracting attention by leading your eye to those features.

Landscape Ordering Framework
composition

ideal plan



Key Concepts:

The large elliptical organizing space forms an open space which can be utilized as a multiple purpose space.

A grove of trees fills the space between the walkways and open spaces. Accent groupings of trees inside the elliptical figure frame views of the Great Lawn, and provide shade for the walkway from southern exposure.

summary

Both park prototypes follow the same site planning principles for the arrangement of the various park features, to reinforce the urban design and design composition principles introduced previously and described in greater detail throughout this document:

- Community building is located at the corner of the busiest street to facilitate walking access, and present an accessible, neighborhood-scale civic presence to passersby on foot or by car.
- Restroom is part of the community building and centrally located close to the playground, splash play area, basketball and baseball areas for economy and convenience.
- Playground feature is centrally located near the community building and baseball to accommodate a broader group of family users.
- Tennis is separated from other sports near the edge of the site close to the busier street because the user groups differ, and spatially tennis courts are opaque features, creating a continuity of built edge at these busier corners of the park.
- The Great Lawn is located deeper in the neighborhood because it is a more passive appearing space, and adjacent residences can enjoy the long views possible in such a space.
- Baseball diamonds in the center of the park anchor the corners of the Great Lawn, with soccer fields overlapping the outfield.
- The baseball diamonds are located in the center to place the backstops closer to the community building, and the off-street parking.
- Stormwater detention areas along the south east side of the park are incorporated into the open space composition with grasses and trees.
- Parking lot entrance aligns with a street end, but no parking is visible along the street axis.

4.1.3 Enclosure / Open Space Definition

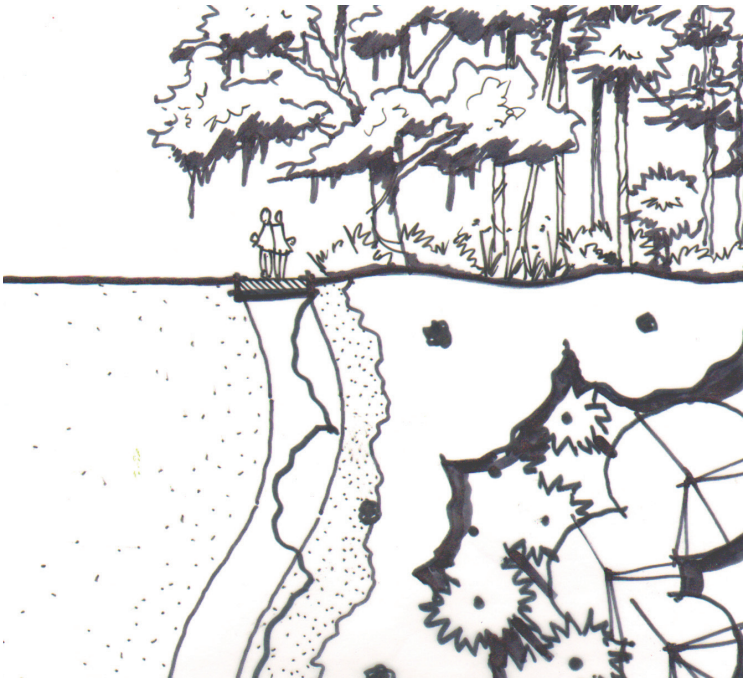
Creating a sense of enclosure for park visitors allows them to perceptually escape the world outside the park realm, to a soothing "pastoral" or a comfortably rustic "sublime" experience within the park. The following are compositional techniques to help establish clearly defined edges to park spaces that are appropriately scaled and ecologically sensitive to their position within each respective transect.

In a typical Miami-Dade County park the distinction between the "open" landscape center and the perimeter enclosure of a park space is usually a canopied landscape, with an occasional backdrop of low or mid-rise buildings. In a new park the starting point for construction can vary from two contextual extremes: an existing stand of native canopied vegetation, or a completely vacant and sterile tract of previously developed land currently covered with asphalt that must be completely re-graded and planted and constructed, to help define and distinguish the park rooms from each other and from the surrounding context. In either extreme the objective is to be sensitive to historic ecological plant and wildlife communities, while providing the visual distinction and containment necessary to create the open space.

Example of an open space defined by vegetation at Crandon Park, Miami-Dade County

Landscape Ordering Framework
composition

plan / section



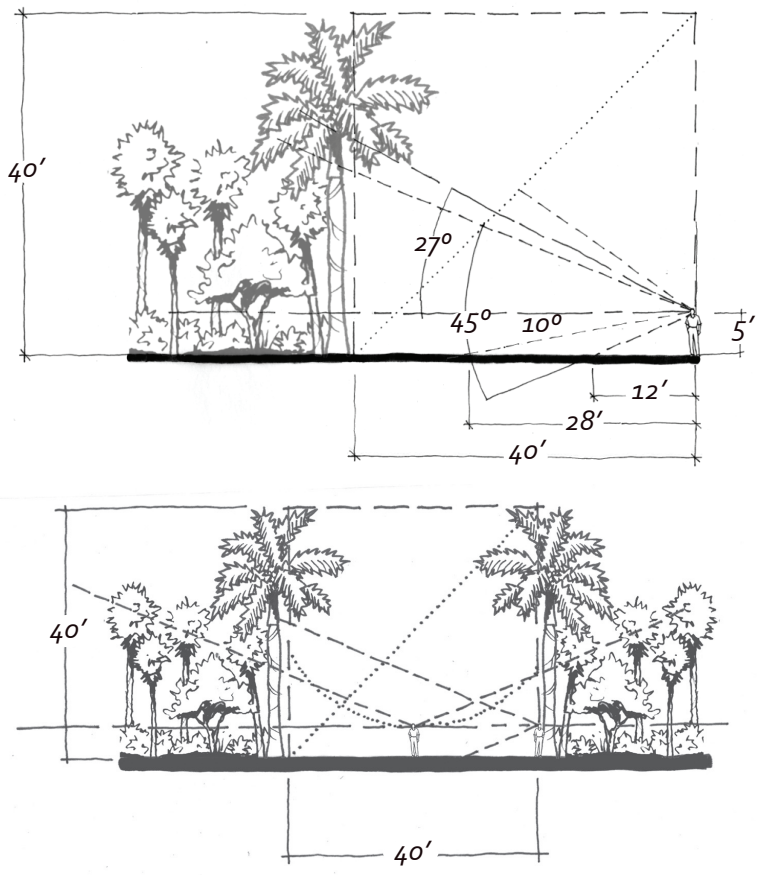
Key Concepts: *(image to left)*

- Perimeter walks may help delineate the edge of the space and provide a maintenance edge
- Landscape edges defining the open space include shrub rows/hedges, bosques/groves, or native habitat
- Edge definition may be scaled to buffer incompatible uses or views utilizing plant material compatible with the native plant habitat
- Structure edges include fences, trellises/pergolas, walls and buildings
- Surrounding buildings will have an impact on the sense of enclosure within the park
- Park open spaces should be defined by edges composed of one or more plan view "figures" such as squares, rectangles, circles and ellipses
- Figural shapes may be wholly or partially implied, depending upon whether the space is to be more naturalistic in character, in which case a less-rigid adherence to pure geometric shapes is encouraged
- Figural park space shapes in plan and in cross section should utilize a proportioning system to regulate the length, width and height of the spaces, similar to how proportions are used in buildings to proportion rooms and the building façade and massing
- Combine multiple figures into a series of park rooms
- Separating features such as a specimen tree, plant grouping or a structure from the main "figure" of the edge of the space, adds visual interest and hierarchy by making that feature stand out
- When the proportion of a space exceeds approximately 2:1, the features at the narrow ends of the space may appear more visually dominant
- As a space increases in size the proportion of "sky" increases in the visitor's field of view

spatial dimensions

Key Concepts: *(image to right)*

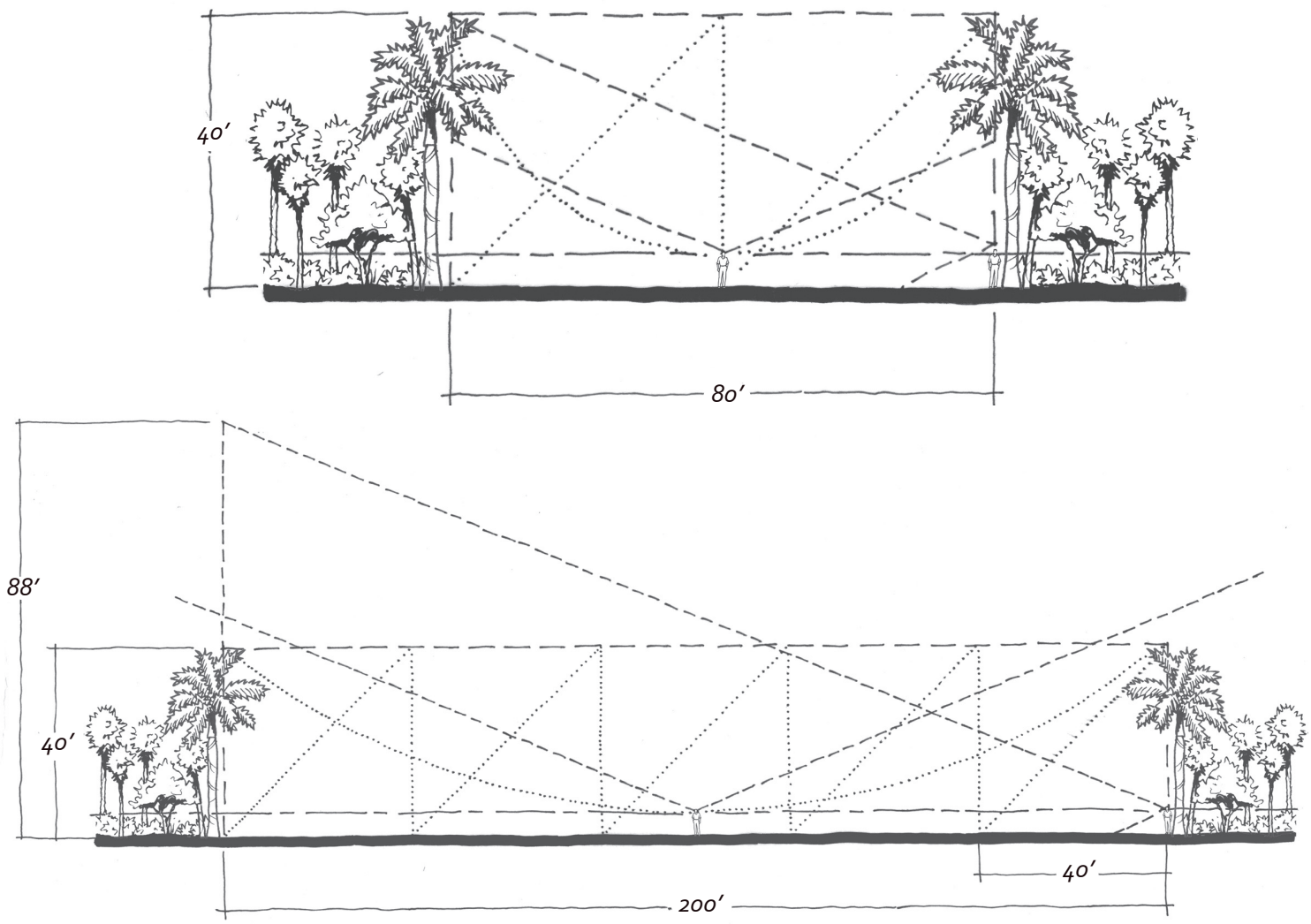
This diagram illustrates the typical framework for how a person physically sees, and the various view angles and resulting dimensions for a person with an average eye level of 5′ high.



1. A wide-angle cone of vision is typically around 45 degrees, which places the lower edge of the cone in front of a person at approximately 12′ away looking straight ahead. This is a theoretical cone of clear focus, however in fact, the average person's cone of vision is closer to 180 degrees if areas out of focus at the periphery of the cone are included. For planning purposes in plan, the 45 degree angle is a simple measure for determining how well a space is "contained" when viewing from a particular angle.
2. In contrast, Christopher Alexander cites a 10 degree angle of view below the horizon as the normal line of sight, which moves this theoretical perfect horizontal line of sight much closer to the viewer. However, as people experience a space their eyes are constantly scanning the view plane, and as one's movement through a space increases in speed, the viewshed starts to level out.
3. Between approximately 45′ and 75′ a person begins to lose visual detail in what is seen; in particular, the facial features and expressions of others.
4. 40′ is roughly the average height of a sabal palm or a live oak tree, which at a 45 degress cone of vision provides a strong sense of enclosure when the plant groupings are massed or spaced close enough to visually merge together.
5. When the proportion of a space in plan exceeds approximately 2:1, the features at the narrow ends of the space may appear more visually dominant. As a space increases in size the proportion of "sky" increases in the visitor's field of view.

Landscape Ordering Framework
composition

enclosure



Key Concepts:

As the proportion of height to distance increases the sense of enclosure diminishes, because the proportion of sky to surrounding tree canopy or building edge starts to drop.

A 5:1 proportioned space is roughly the maximum ratio that provides a clear sense of enclosure within a space, whether viewed from the edge or in the center. Assuming a boundary of average palms and oak trees, this translates into an open space of approximately 200′ wide. This is also coincidently the approximate width of several notable "Great Lawn" spaces, such as Bryant Park in New York, and the Lawn at the University of Virginia.

4.1.4 Circulation (Vehicular and Pedestrian)

The main objectives in park circulation are the movement of pedestrians and vehicles to their respective, and oftentimes common, destinations, in a manner that is safe for all and does not degrade the park experience for any visitors, nor disturb the reasonable rights and privileges of the surrounding residents. The neighboring "residents" definition is expanded to include the native plant, insect and animal life that would typically occupy the ecological context of the park. Physical access to the park by car or foot is to be considered a right that requires careful regulation to control damage to the ecosystem, and to protect pedestrians, the neighboring landowner's homes and businesses, and visiting drivers alike.

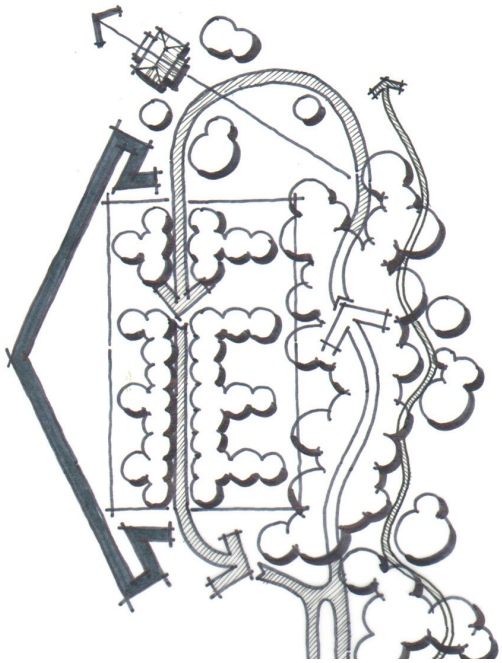
Pedestrian circulation through a space with an added curvilinear design which pulls the walker's view towards a tree

Pedestrian circulation within Haulover Park with a straight route for highly traveled promenade

Vehicular circulation through Halpatioke Park provides graceful curves and views establishing an experience for the park user

Landscape Ordering Framework
composition

vehicular

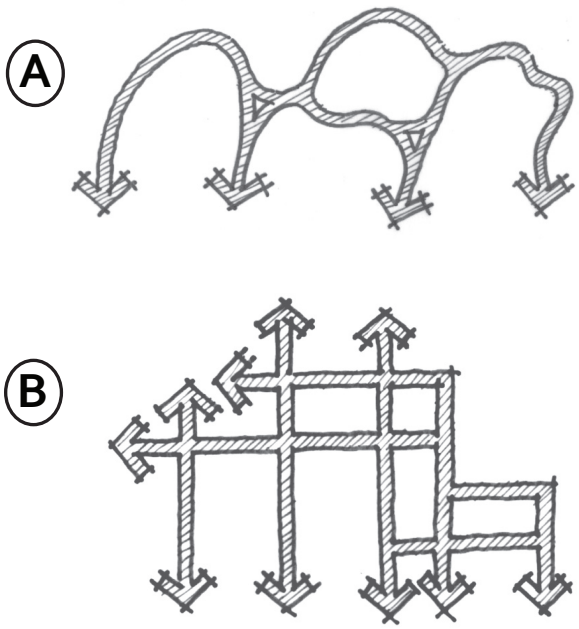


Key Concepts:

This ideal relationship diagram above illustrates the relationship between arriving at a park by car, and the park destination that serves as the attraction and purpose of the vehicular trip. Arriving to the park by car is part of the park experience, and is enhanced by minimizing vehicle / pedestrian conflicts and delineating the least amount of interior park space possible to paved vehicular parking areas.

- Entry
- Clearly designated pedestrian crossing if needed
- Alternative access route to parking area
- Park drive
- Pedestrian trail
- Postcard view to park landmark/destination
- Drop-off at destination
- Pedestrian route to park spaces
- Paved parking area
- Overflow parking lawn

patterns



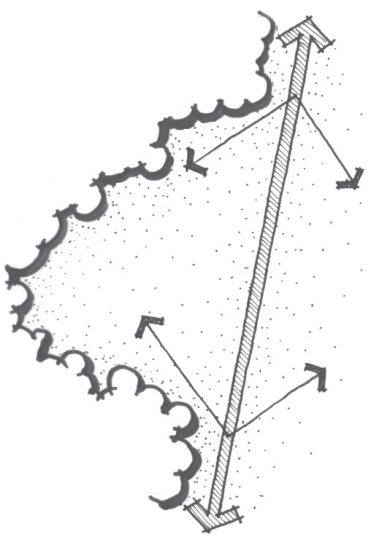
Key Concepts:

Within the park an interconnected network of paths (angular or curvilinear in form) for pedestrians must be provided to allow several options for experiencing the park for regular users.

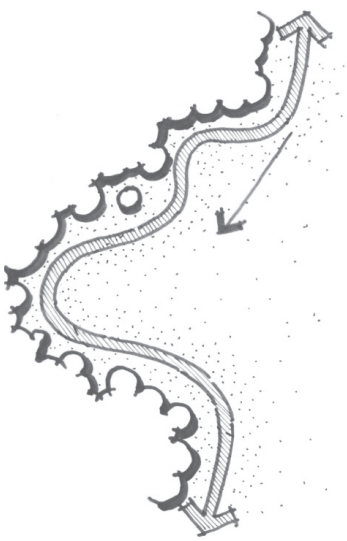
pattern A
a. Interconnected loops
b. Best for rural and suburban settings
c. Establish hierarchy of loops

pattern B
d. Connected grid
e. Best for urban conditions
f. Establish hierarchy of routes

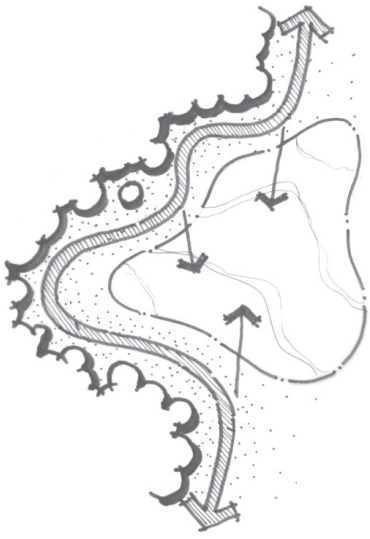
path composition



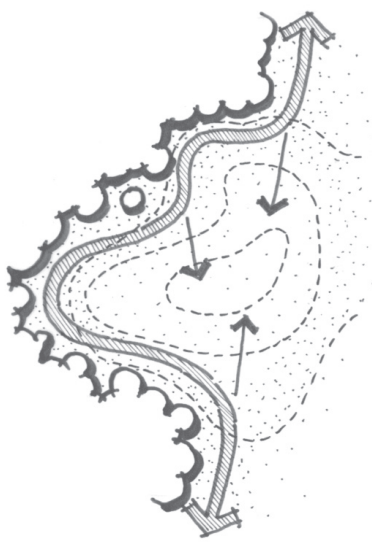
Straight path



Curved path



Curved path responding to water



Curved path responding to topography

Key Concepts:

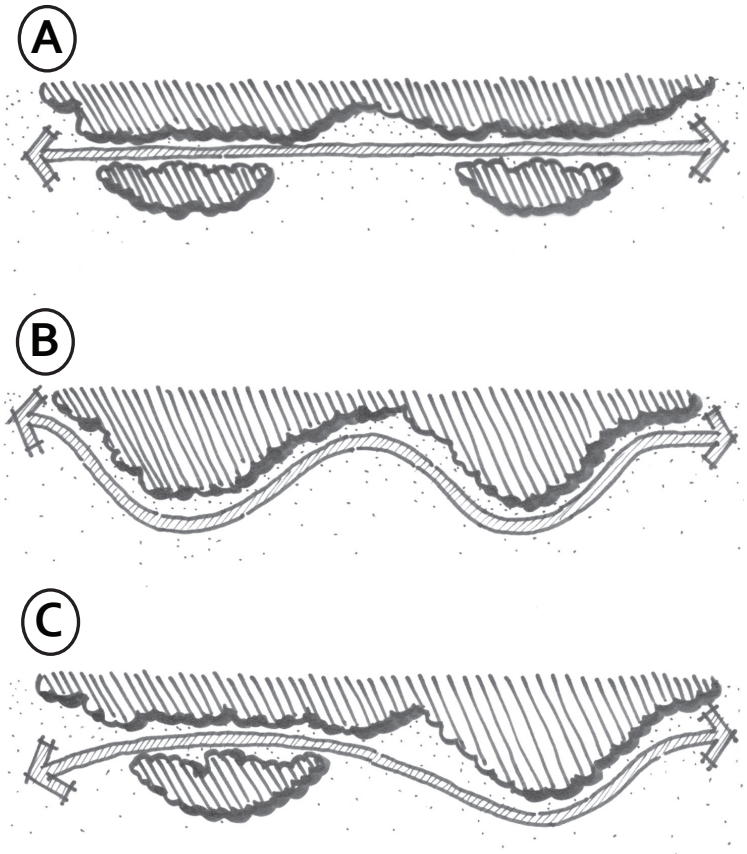
Unless there is a compelling reason or physical obstruction, people are always drawn to follow the straightest or most expedient route to their destination. The straight path is the path of convenience; it is the shortest route to a destination, and along the way the surrounding changes in spatial enclosure may add visual interest to the journey. What may be lost in terms of shade, visual beauty or other attributes, is offset by the value of expedience.

Compositionally, a curved path allows for a variety of views and is typically shaped in response to topography, to accommodate the fluid movement of pedestrians or vehicles around obstacles, or to align a traveler's forward view to a near or distant landmark or accent feature.

The straight path on the other hand is not only expedient in function; it may also have a calming effect in its predictability by allowing users to focus on the destination or a distant node or landmark.

Landscape Ordering Framework
composition

edges



Key Concepts:

edge A
The most direct walking route is a straight line, and is ideal where the destination is clearly visible or perceptually close and visitors want to take the fastest route. Visually this may be in sharp contrast with a naturalistic landscape edge, but it does allow for a variety of differing spaces along the way.

edge B
Following the landscape edge helps control the spread of grasses or native groundcovers, and is most appropriate for recreational or leisurely walk routes such as multipurpose walks or nature trails.

edge C
A hybrid walk is a route that balances expedience in movement with a rich spatial experience, resulting in a varied yet convenient walking route.

4.1.5 Postcard Views, Vistas and Panoramas

An integral part of planning the layout of the park is the strategic placement of viewpoints for signature or "postcard" views. These views are what visitors should remember about the design of the park, and are important for helping them immerse in a rich and varied visual experience during their visit. Included in the types of views to be incorporated when feasible are vistas and panoramas, each with their respective visual quality and purpose.

To create these "postcard" snapshots of the park, it is useful to think like a landscape photographer or a painter, and carefully select the vantage points to best convey the lasting park images, and compose those views using landscape and architectural features arranged in overlapping layers to convey depth.

Layering in landscape photography or painting is commonly referred to as foreground, middle ground and background, but each postcard may not always have all three of these "layers" due to the size of the space, or the nature of the landscape.

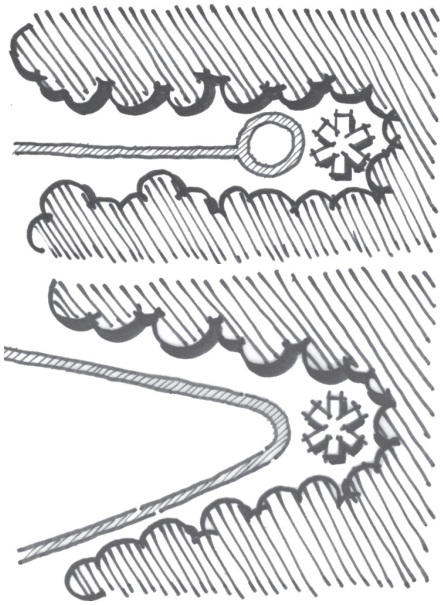
Mall vista at Fairchild Tropical Gardens, Miami

Example of a layered view at Crandon Park with foreground, mid-ground and background views framed by vegetation

Example of one of the choreographed views at Greynolds Park

Landscape Ordering Framework
composition

vistas



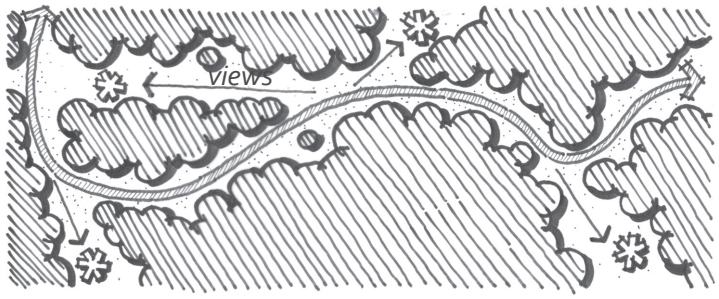
In order to clarify how these terms are used in this document, a vista refers to a controlled view focused on a single point on the horizon, whereas a panorama is a sweeping view that may contain one or more focal points.

A vista may be either an enticing precursor view to an intriguing long distance scene of a seemingly unattainable destination, to draw visitors through the park, or it may be the culminating view within a park such as the mall vista in Fairchild Tropical Gardens.

Panoramas are views that entice you to scan the horizon, and are best experienced with a contrasting precursor spatial experience such as a vista or a constricted space without long views.

A great panorama will generally include a focal element on or near the horizon, unless the view is to a vast landscape like the ocean or the everglades, in which case the extreme scale contrast is the "reward" view after the contrasting confined spatial experience.

views



A collection of views is useful for drawing vehicles and/or pedestrians through the park, to focus on a park landmark such as a landform, sculpture, structure or to open up to a panoramic view. Views can be "choreographed" into a collection of experiences, that when combined, allow the individual views to be more meaningful because of their contrast to the preceding view.

Choreographed views are analogous to a dramatic performance, where in its simplest form a drama has a beginning, middle and end, but in actuality is composed of a variety of peaks and valleys in the mood, thematic material, and set design. A choreography of postcard views will utilize basic compositional devices such as contrast, transformation, etc.

Focus of a vista must be on a feature or scene that will not substantively change or be degraded in the future, or will always be under park control. If a vista or panorama is one of the culminating park experiences, it must stand the test of time and always be part of the organizing structure of the park.

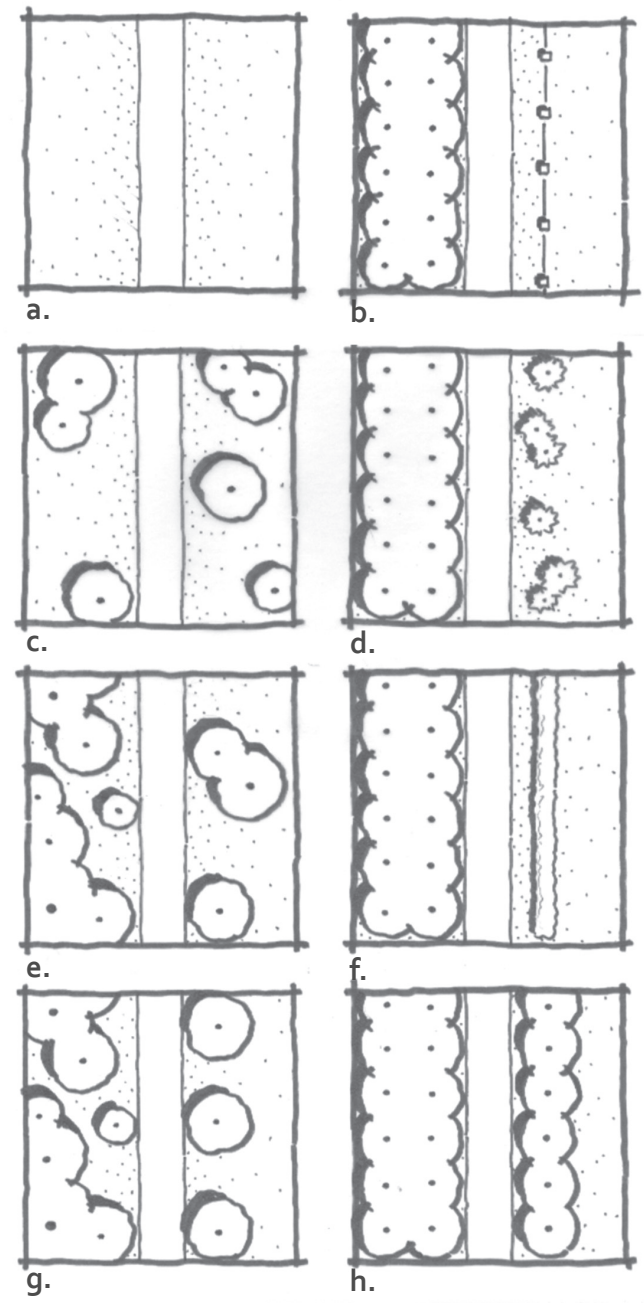
4.1.6 Linear Spaces

Linear spaces may be classified as corridors through or in some instances framing a park, and offer visitors an experience that is defined by that corridor and the surrounding views and experiences within. Paved paths and roadways should be as narrow as practical to reduce visual and environmental impacts.

A linear space at Haulover Park with protected open views to ocean and dense vegetated screen of vehicular traffic on opposite side.

An example of a linear space defined by a hedge row of trimmed pines at the Vizcaya Museum and Gardens, Miami

linear spaces



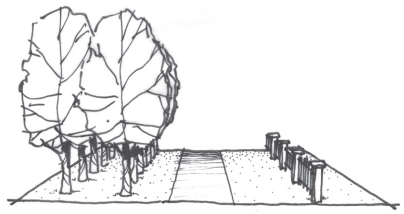
Landscape Ordering Framework
composition

linear spaces definition

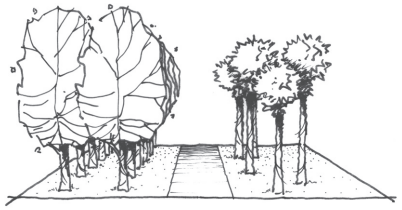
Key Concepts:

Various techniques exist for linear spaces and are dependent on surrounding conditions, views, and style. *(from top left to bottom right)*

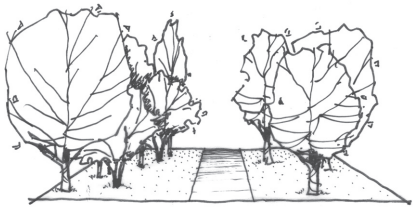
a. path in open landscape allows greatest views but may have limited interests for users
b. path with double row of shade trees and fence creates rhythm with the fence posts and canopy trees
c. path with sparsely spaced trees creates a sense of openness but with limited framing of views and interests
d. path with double row of shade trees and random clustering of palms creates a balance of rhythm and open views
e. path with random clustering of canopy trees establishes select view sheds
f. path bordered by allee of trees and hedge row creates closure within the spaces but allows for views out to the horizon
g. linear path with clustered and formally spaced canopy trees
h. path through formal layout of trees (allee) creates repetition and rhythm.



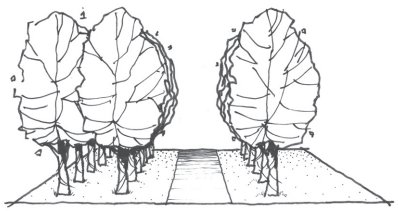
Colonnade with Fence



Colonnade with Palm Clusters



Clusters of Canopy Trees



Complete Allee

Key Concepts:

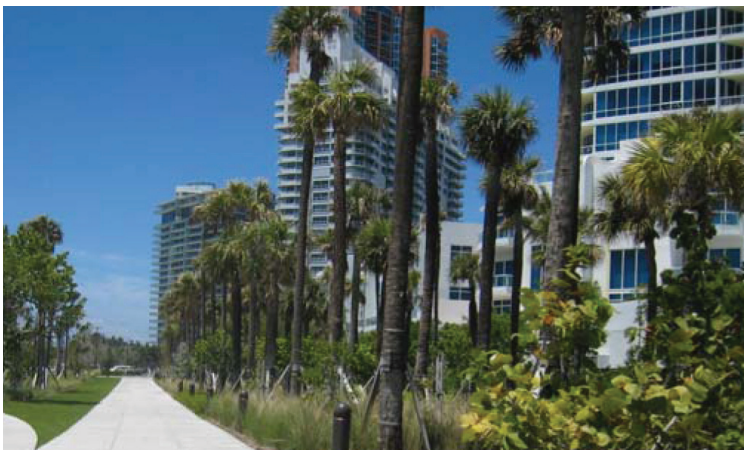
The above images show a progression of linear spaces from openness to complete definition. The same proportional measures defining plazas or open spaces apply to linear spaces. Reference page 90.

4.1.7 Transitional Zones / Buffers

Transitional zones refer to several types of spaces within the park and are oftentimes the most intriguing and socially active areas. These can be the interstitial spaces between "programmed" activity areas and circulation corridors (paths, roads, etc.), in which case they may be perceived as buffers from the active open spaces but dually serve as a resting place for visitors while they are not engaged in the active space(s). In other instances, the transition is the connective zone between landscape and architecture, in which the activities within the park and/or building spill into a defined area that is organized compositionally by both building and landscape; lastly, it can be a public or semi-public zone such as a plaza or courtyard that has not been exposed to the elements.

A transitional space as a linear path with a single row of shade trees at ESPN Wide World of Sports Complex

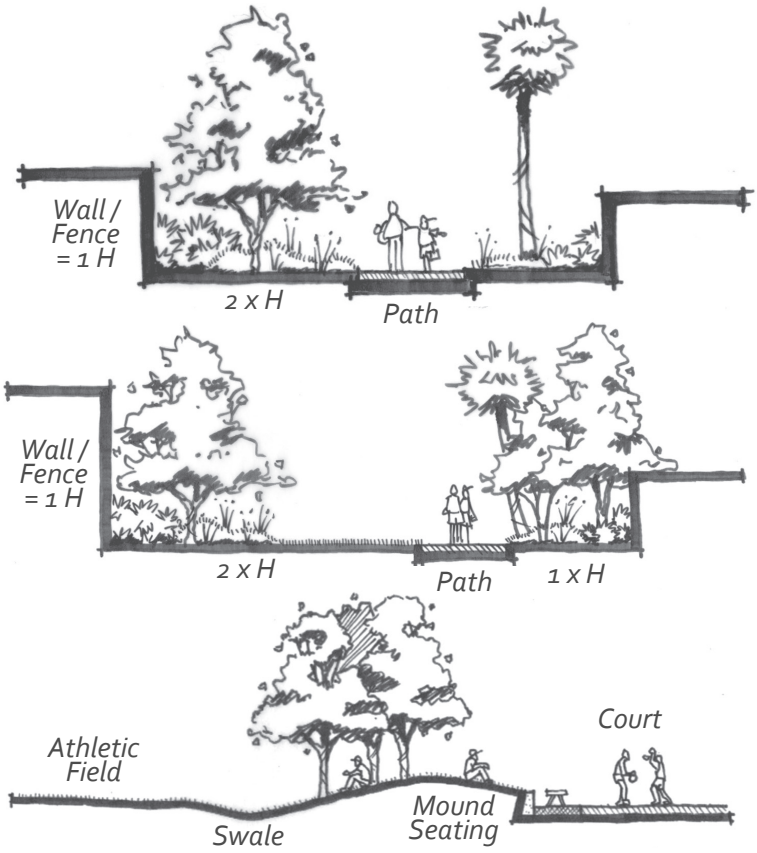
A transitional space as a linear path with a single row of shade trees and terminating with a building at ESPN Wide World of Sports Complex

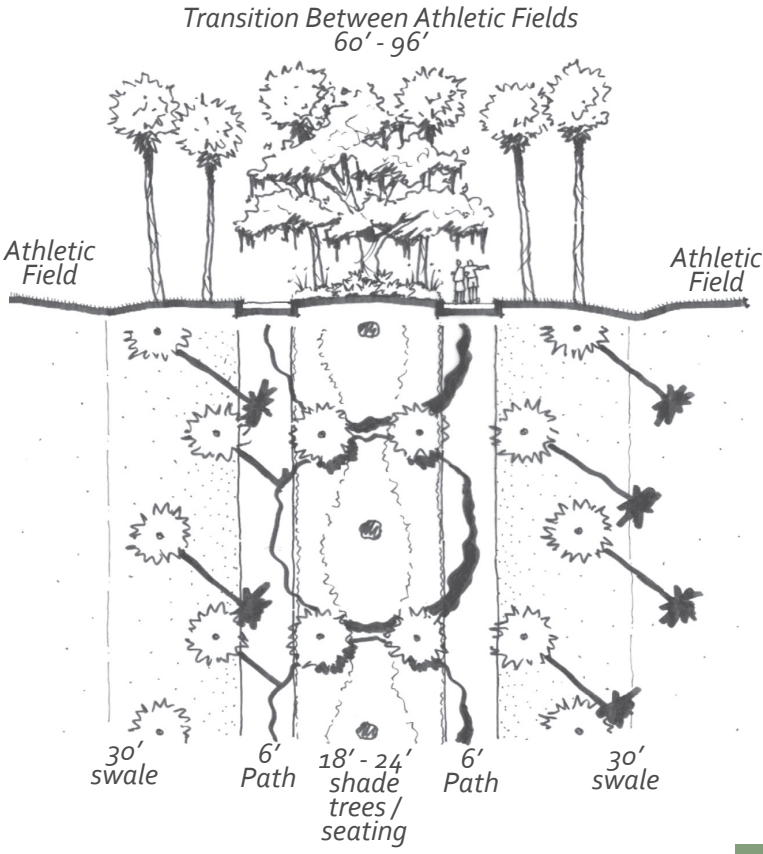


An example of a landscape buffer along a path at South Pointe Park, Miami Beach

Landscape Ordering Framework
composition

transitional spaces / buffers

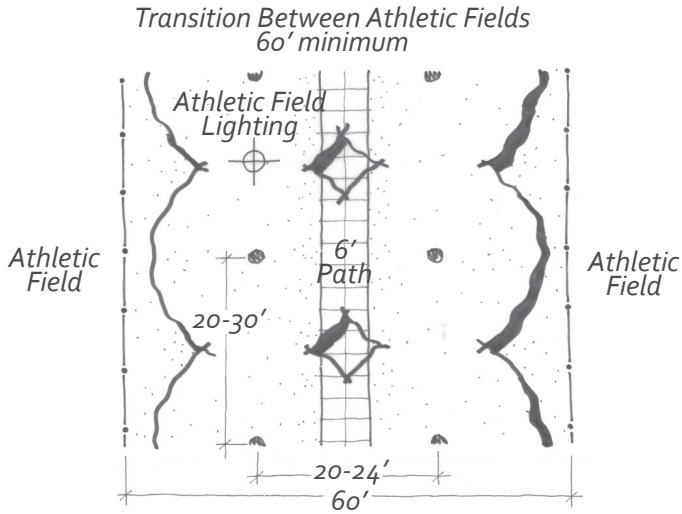




Key Concepts:

Provide a transition zone between park structures and the landscape by extending the building geometry into the landscape with plant materials and/or walls or other hardscape features. Transition spaces are to be functional and adequately scaled to separate user groups and activities. Buffers should be scaled to obscure or hide features to provide privacy, such as:

- Large parking areas
- Maintenance areas
- Above ground utilities
- Active recreation fences
- Field lighting



4.1.8 Entrances/Gateways

Entrances and gateway features are designed to mark arrival and control access to the park and select features within the park. Each entrance should be scaled and designed to match the intensity and types of activities within the park and the urban context.

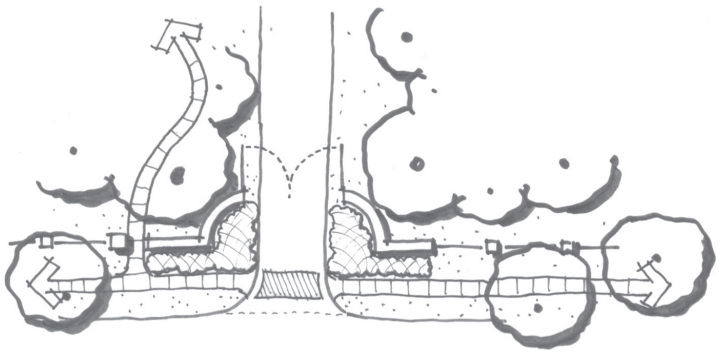
An example of a vehicular entrance feature with a pedestrian gate and entrance building at Vizcaya Museum and Gardens, Miami

A pedestrian gate anchored by a vista at Fairchild Tropical Gardens, Coral Gables, Florida

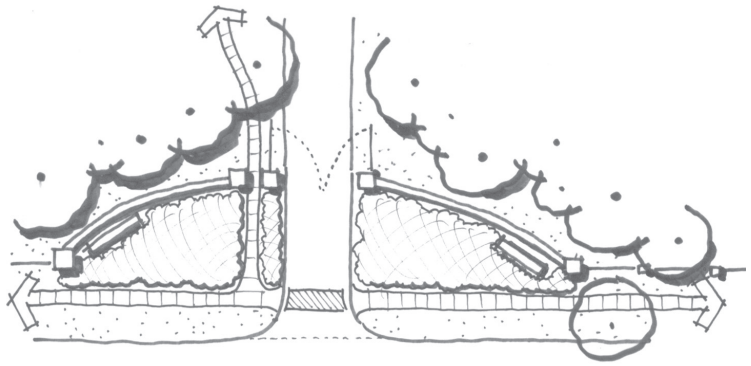
A pedestrian gateway as an extension of a building at Greynolds Park, Miami-Dade County

Landscape Ordering Framework
landscape features

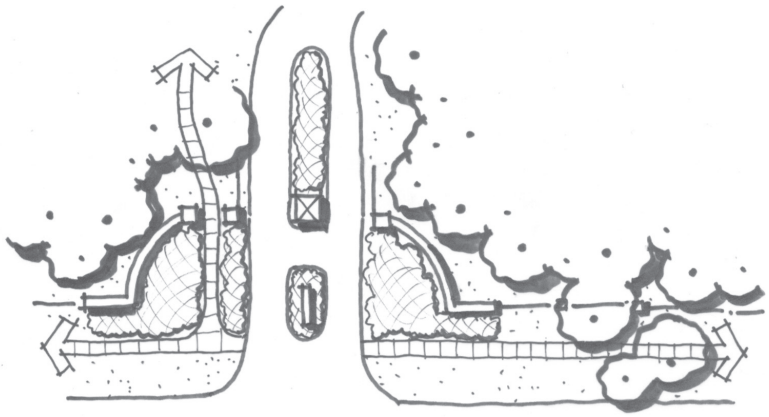
vehicular entrances



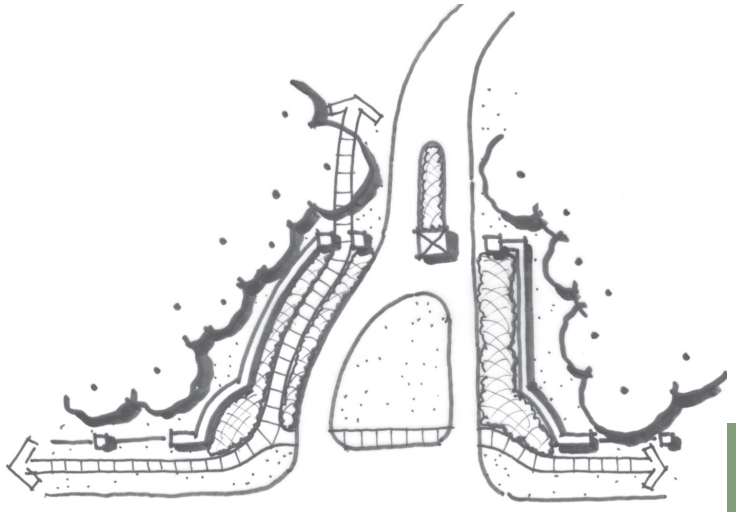
Vehicular Entrance – Urban/Sub-Urban



Vehicular Entrance – Sub-Urban/Rural



Vehicular Entrance – Urban/Sub-Urban with gatehouse

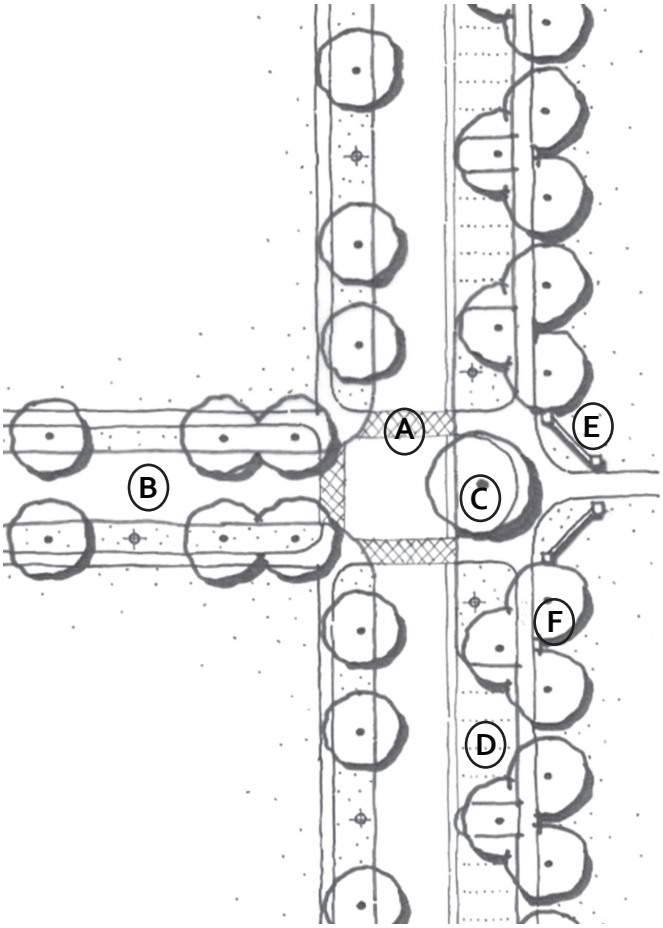


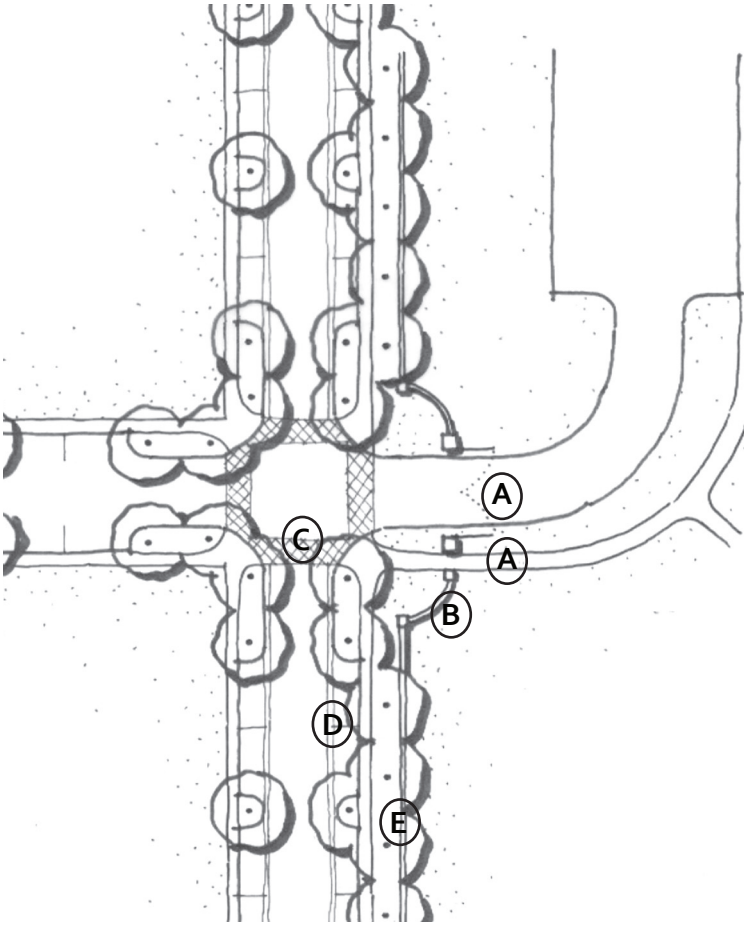
Vehicular Entrance – Sub-Urban/Rural with gatehouse

Key Concepts:

Vehicular entrance should be scaled for visibility at the posted speed limit on which the park users are accessing the park from. The entrance should be scaled to serve the size and intensity of activities in the park. Park entrances should be identified by contrast with surrounding context such as the landscape plant materials, a signature fence and/or wall in rural areas. In areas where park access roadway speeds are in excess of 40 MPH, a courtesy identification sign should be located at least several hundred feet before the vehicular entrance turnoff.

pedestrian entrances





Key Concepts:

Pedestrian entrance for rural to sub-urban context (left):

a. Crosswalks provided as necessary
b. Located at street terminus
c. Canopy tree terminating view
d. On-street parking in swale
e. Gateway features
f. Perimeter plantings

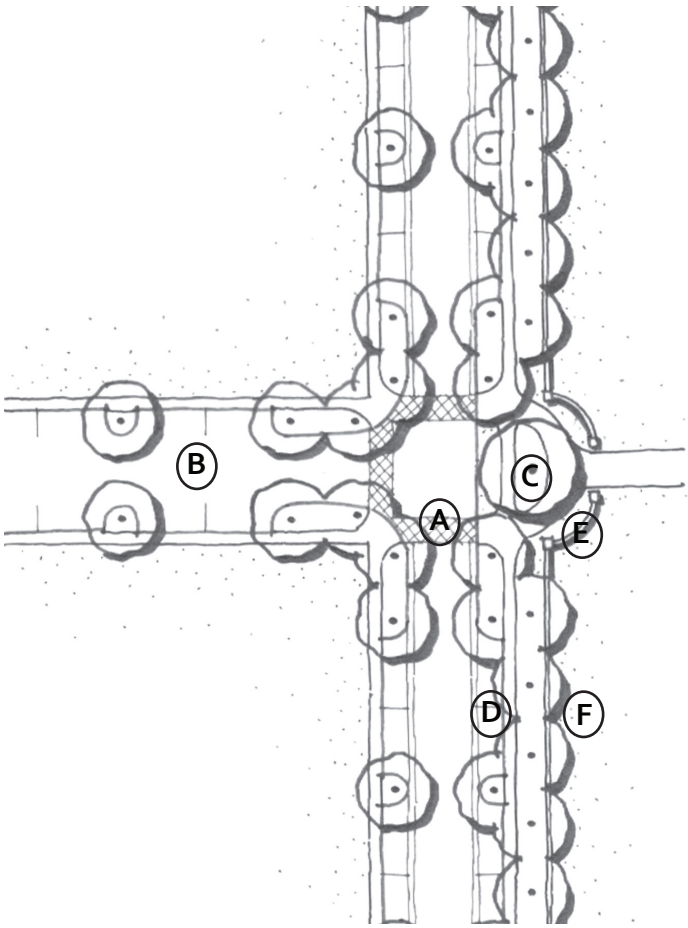
Key Concepts:

Pedestrian entrance for combination vehicle and pedestrian entrance in a rural or sub-urban context (right):

a. Separation of pedestrian access and vehicle access
b. Gateway features
c. Crosswalks as necessary
d. On-street parking
e. Perimeter plantings with wall / fence

Landscape Ordering Framework
landscape features

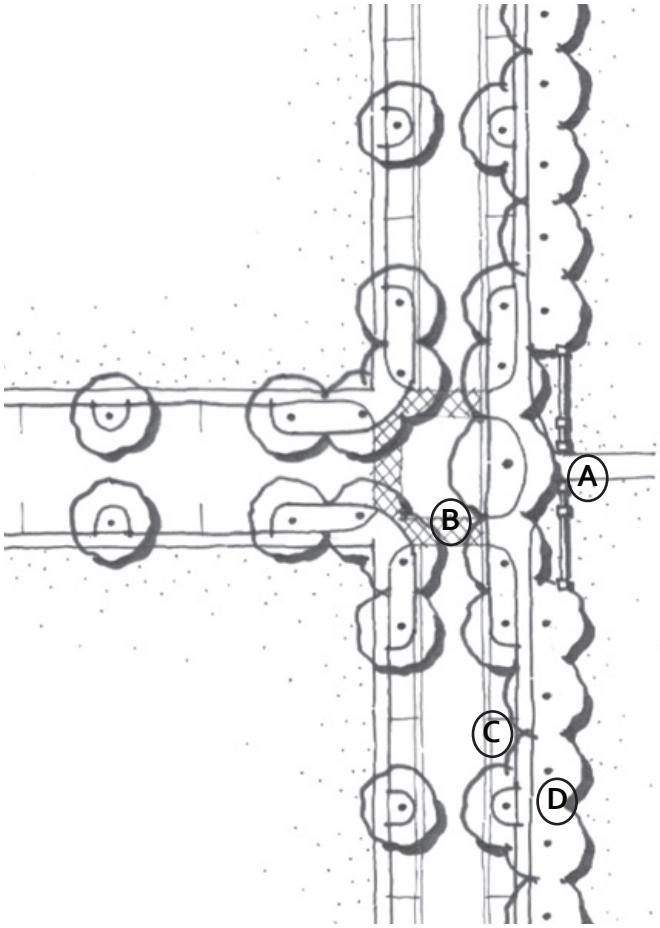
pedestrian entrances



Key Concepts:

Pedestrian entrance for sub-urban to urban contexts (left):

a. Crosswalks provided as necessary
b. Located at street terminus
c. Canopy tree terminating view
d. On-street parking
e. Gateway features
f. Perimeter plantings with wall or fence



Key Concepts:

Pedestrian entrance for sub-urban to urban context (right):

a. Gateway features
b. Crosswalks as necessary
c. On-street parking
d. Perimeter plantings without wall or fence

4.1.9 Plazas

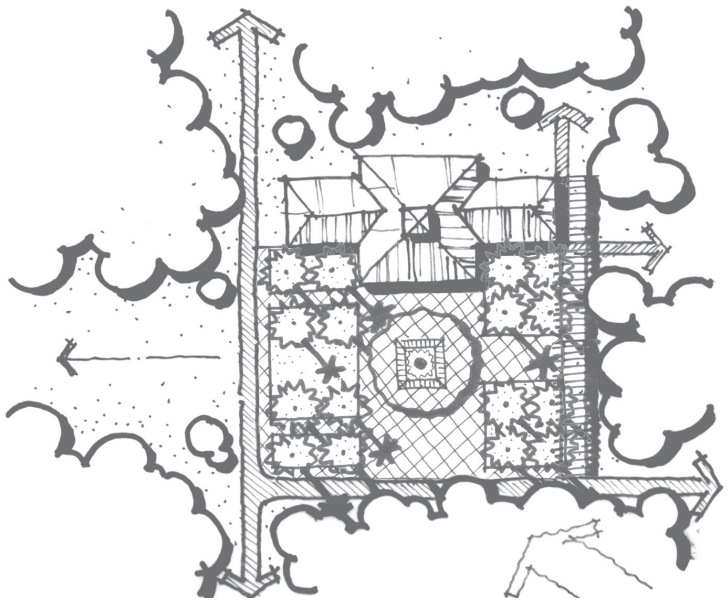
Plazas are public gathering spaces that are extroverted in character by their adjacency and visual connection to a public thoroughfare, and in their function as a crossroads or gathering place for large gatherings of people.

Courtyards in contrast may also be connected to a thoroughfare, but are introverted spaces dominated by the buildings that frame the space, and have a more singular function related to the adjacent uses. Both courtyards and plazas share a common need for addressing basic human needs for comfort, interest and safety. With these needs met a plaza or courtyard may have social and recreational benefits by meeting a human need for public interaction. In contrast, a perpetually vacant or unusable public plaza or courtyard has the opposite effect; it can be viewed as a regrettable or sad place.

A vital plaza must have at least ten things that people can do, as outlined in the Project for Public Places "Power of Ten" principle. It is also important that the plaza's orientation take advantage of the prevailing breeze. Plaza users must have a shaded place to sit during the day, any time of year in South Florida. This may require multiple seating areas to take into account the suns movement. The façade of the building or structure facing the plaza should be in sunlight at least part of the day.

Forecourt entry plaza with palm bosque in West Palm Beach. Width and depth of space is approximately a 1:2 ratio to the tallest part of the building

internal plaza



Key Concepts:

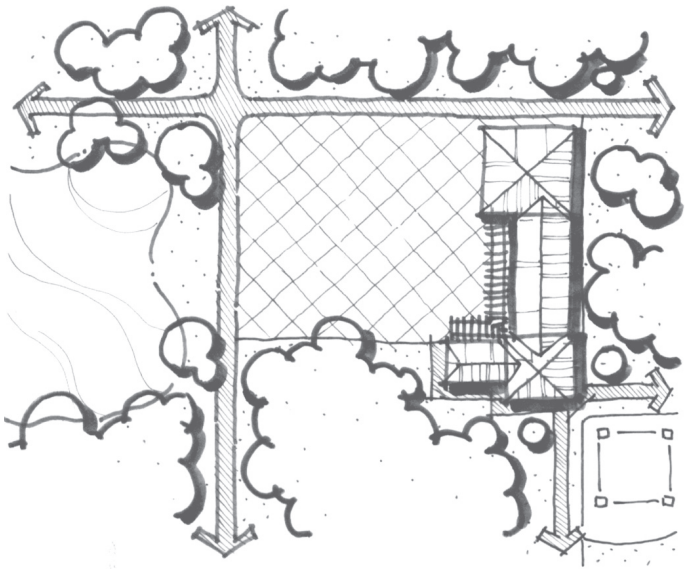
Pedestrian plazas are designed to be as small as possible to reduce the amount of paving, while serving as a hub or crossroads for multiple activities fronting upon the space, and access to or through the space to other park venues.

Plazas are best when the shape of the main space is simple, without blind corners, in order to concentrate activities that will animate the plaza throughout the day for a variety of users.

In general, Elbert Peets suggests that a plaza should be no wider than three times the height of the tallest portion of the building anchoring the park space. A visually balanced and comfortable plaza proportion is approximately 1:1 (height:width), or no more than 1:3 between the plaza and the surrounding buildings, structures and landscape enclosing the space, which creates an intimate relationship between the plaza and the building.

Landscape Ordering Framework
landscape features

entrance plaza

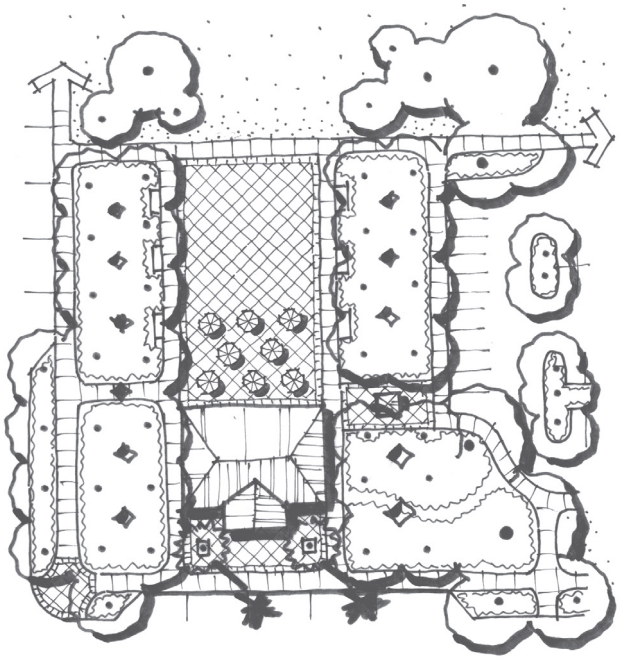


Key Concepts:

A plaza can be the park/community interface in more populated areas, especially in urban and suburban zones.

A plaza must be proportioned in depth and width to the building(s) that "anchors" the plaza. The exact plaza proportion ratio is highly dependent on the massing of the primary building that anchors the space, the surrounding features and landscape forming the other "walls" of the plaza, and views from within the plaza. In general, plaza proportions are a ratio between the highest portion of the main building and the distance away from the building face to the opposite edge of the plaza.

forecourt



Key Concepts:

As the forecourt to a building, the proportion of the space must be calibrated with the scale of the adjoining structure and landscape to "contain;" not overwhelm the space.

A vital plaza must also include the five required elements from William "Holly" Whyte's "Social Life of Small Urban Spaces":

- sun, wind, water, vegetation
- fixed and moveable seating
- food
- the space must face a street
- must include a social triangulation, the convergence of several differing reasons for people to spend time in or pass through the space

4.1.10 The Great Lawn/The Green

The Great Lawn is a multifunctional space intended to evoke a sense of solitude in users when the space is empty of activity because of the vast scale of the space in contrast to its surroundings. To be successful the space must also have the ability and purpose to serve as a setting for large public gatherings or accommodate informal field sports on an occasional basis. In relative terms the size of the Great Lawn varies depending on the context; a 200' square could be considered a Great Lawn in urban areas where space is highly constrained, whereas a 200' square of lawn in a rural setting may be hardly noticeable.

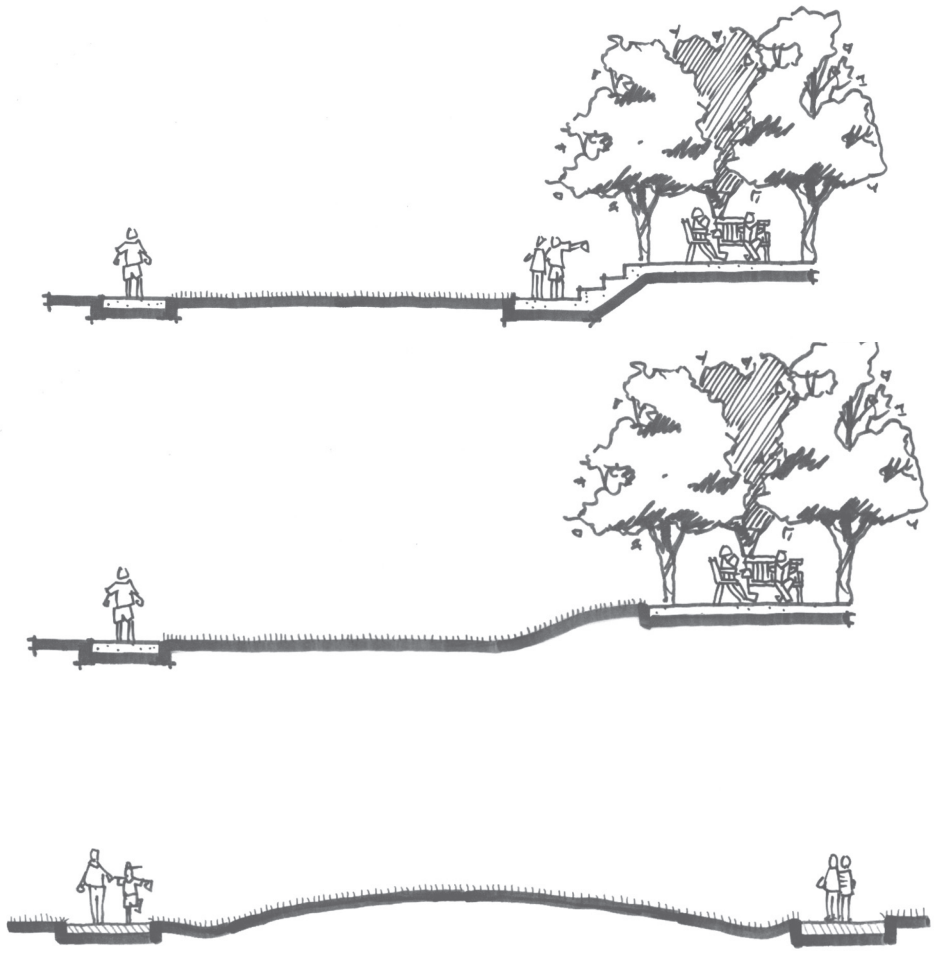
The Lawn at the University of Virginia is an example of a 1:2 proportioning

Example of a great lawn in a highly urban context, Bryant Park, New York City

The Lawn at Palermo Park in Coral Gables, Florida, is used for special events and craft fairs

Landscape Ordering Framework
landscape features

great lawns



Key Concepts:

In general, the Great Lawn should be the central organizing space of a park, around which other spaces are sited in relation to.

- Surrounded by activities with a view into the space
- Portions of the Lawn may be shared with programmed athletic fields in constrained circumstances
- A perimeter path lined with trees or other edge defining features enclose most of the space
- A portion of the Lawn must be open to a public street, wide walkway or landscape corridor, a building or other transitional open spaces
- Locations of drainage structures should be in areas with limited or no activity and should be subtle with no visual impacts to vistas or viewsheds

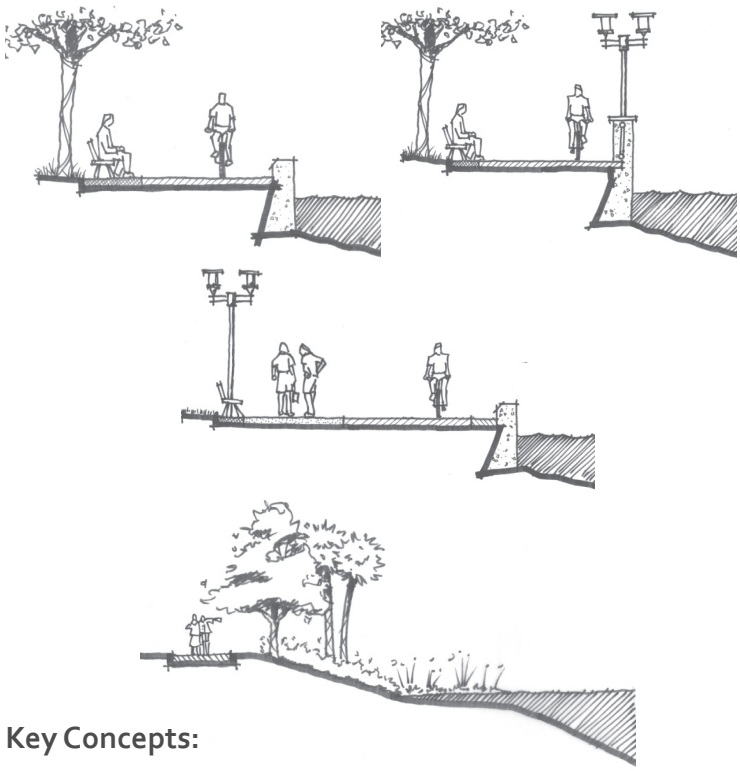
4.1.11 Lakes, Ponds and Canals

Storage and conveyance of water in a park should be respectful of the ecological value of this important resource, as well as the aesthetic value of the water's surface and surrounding vegetation. Water symbolizes life, vitality and health; to see a water body that is clean and supporting abundant plant life reinforces the park's aesthetic purpose of creating a peaceful or even tranquil experience for visitors.

The reflecting pond at Bok Tower in Lake Wales, Florida, is designed to capture the entire length of the tower's reflection. Courtesy of Bok Tower Gardens

Example of a natural edge with plantings and limited user access, Valencia Community College, Orlando

edges

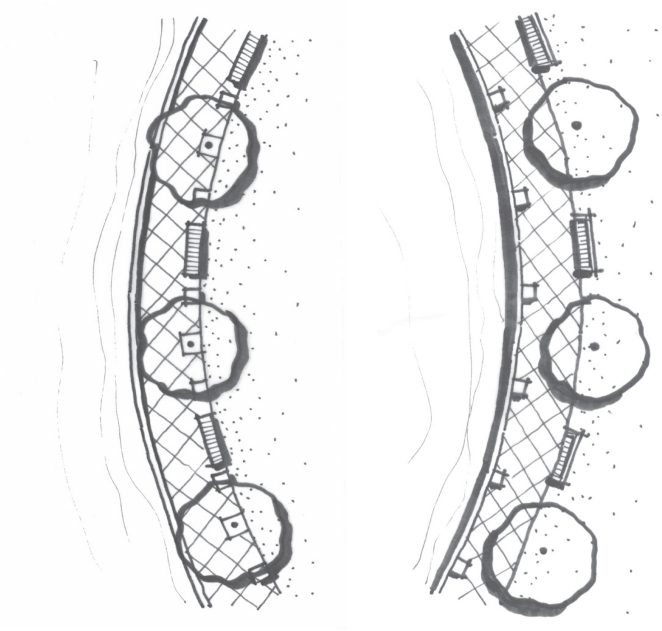


Key Concepts:

- Engage water visually and physically whenever possible
- Incorporate a littoral shelf into canals, ponds and lakes
- Control direct stormwater runoff into water bodies with pre-treatment areas designed into the landscape open space composition
- Carefully consider elevation change from accessible areas to water surface to insure the water is visible from a path or vantage point, and to make sure the height is not a hazard or a maintenance concern due to water fluctuation
- Consider existing and anticipated water table to assure long-term stability of local ecology

Landscape Ordering Framework
landscape features

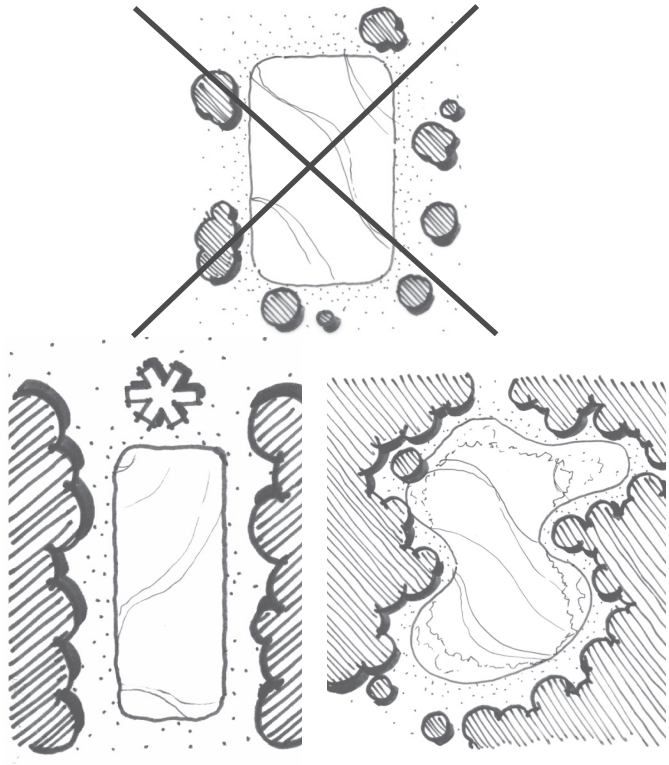
seating



Key Concepts:

- Seating and site furnishings located on a convex curve allows users to sit and look at water body while pedestrians can walk along edge. (left image)
- Seating located on a concave curve allows views to water body and lighting along the water's edge (right image)

layout



Key Concepts:

- The shape of the pond or lake should be derived from the overall park design concept
- Curvilinear or "naturalistic" designs should include a variety of vantage points for framing views across the water (bottom right image)
- Water edge plantings should complement the geometry of the pond
- Rectangular ponds should be used to frame a vista, visually reinforced by orthogonal edge plantings, not planting "clumps" (bottom left image)

4.1.12 Courts, Athletic Fields, Outdoor Stages Orientation

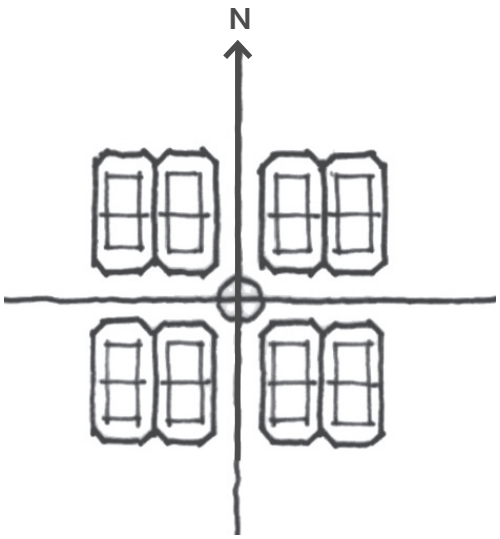
Orientation of programing is a significant aspect to planning a park for it to be successful. The following guidelines are for optimum orientation of facilities used for tournament play or professional use. For each optimum orientation there is a range which should be utilized in respect to circulation and vegetation constraints. Courts, soccer and football fields should be aligned in a north to south orientation to avoid glare from the sun interfering during games or matches conducted at dusk or dawn.

Baseball or softball athletic fields should be optimally aligned with a line running from home plate to second base facing northeast. This, however, is not the only orientation that is acceptable for athletic fields. In general, baseball and softball fields should not face directly west due to the glare from the setting sun interfering with hitters and catchers.

Outdoor Stages are another form of park programming in which proper orientation must be maintained in order to ensure successful use of the facilities. Outdoor stages in south Florida should optimally face northwest with the stage anchoring the southeast area of an open space and the audience facing southeast. This orientation allows for the least glare for the audience for afternoon and evening shows as the summer solstice sun sets at a 120 degree angle.

Example of a court oriented north to south at Jaycee Park, Coral Gables, Florida

sport courts

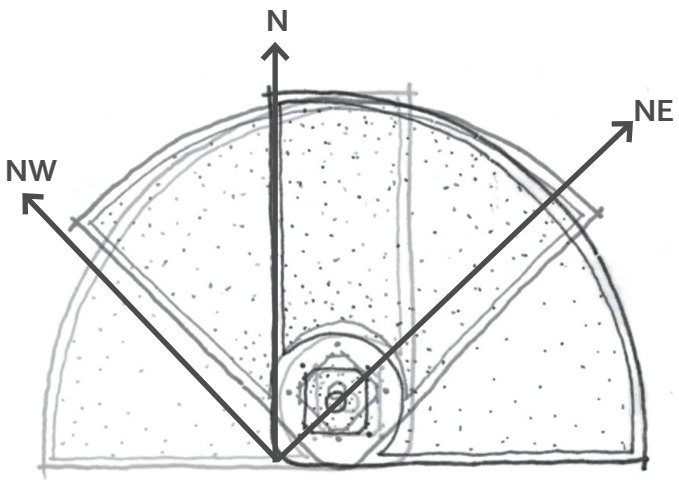


Key Concepts:

Courts, soccer and football fields are aligned north/south to avoid background glare at dawn or dusk. A range from northeast to northwest oriented courts is acceptable.

Landscape Ordering Framework
landscape features

athletic fields

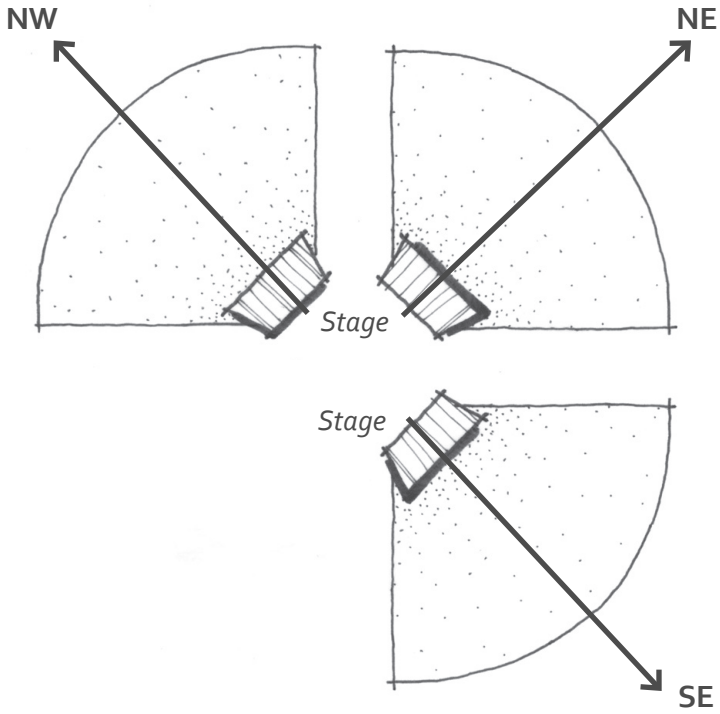


Key Concepts:

Optimum orientation is to locate home plate so that the pitcher is throwing across the sun and the batter is not facing it. The line from home plate through the pitcher's mound and second base should run east-northeast. A range of orientation for athletic fields exists and should take circulation patterns and vegetation into consideration when designing an athletic field.

The image above identifies a range of up to 90 degrees which is the optimum range for tournament quality baseball or softball fields.

outdoor stages



Key Concepts:

Outdoor stages aligned to direct sound away from neighboring uses, for visitors to view the stage with a stable, attractive backdrop, and aligned to avoid glare for the audience during late afternoon events. In south Florida a northwest facing stage is an orientation offering the best balance for the audience and performers, although there are numerous examples of stage alignment throughout the region in response to the surrounding context.

A range of orientations exist for outdoor stages and include, in descending order of preference; stage facing northeast with audience facing southwest; and lastly, the stage facing southeast with the audience to facing northwest, however, summer use may not be optimal with this layout in south Florida.

4.1.13 Internal Park Building Siting

Deflection

The deflected view is one in which a building or marker is approached not axially, or head-on, but rather along a curving or sinuous path. The effect produces gradually unfolding scenery and is also flattering to buildings that have both attractive side and front façades, as the deflected view reveals the building in an oblique way. The landscape which best corresponds to such a view is characterized by irregular groupings of plants and trees. Generally, designs which feature a denser understory heighten the sense of mystery by revealing the building or constructed feature only at the last moment. This type of view is described by landscape architects of the English Garden Movement and by architects such as Camillo Sitte. The idea is to draw the viewer in by purposefully hiding the goal along most of the pathway.

Terminate

In the case of a terminated view, the building or marker is framed by a perspective of trees that converge upon it. In contrast to the deflected view, the effect is one of purposeful visual connection between two points in the park rather than the gradual unfolding scenery produced by the deflected view. Generally, trees and plantings should be regularly spaced but spaced widely enough to frame the entire front façade or the portion of the façade or tower which is the focus of the view. The terminated view is organized by the "one point perspective." French gardens, specifically those of André Le Nôtre employ allées, or corridors of trees to achieve this affect, but also may employ parterres, or low-level planting beds or hedges, to produce a different sense of spatial enclosure that an allée provides. Either way, the idea is to draw the viewer in by making the goal visible along the entire pathway.

Anchor

When a clearing or field is anchored by a building, it may also terminate the view; however the one-point perspective is not the main organizing thought of the scene. Rather, the landscape frames the building but is usually wider than the building. In the case of rectangular clearings or fields, the building may anchor either the long or short end of the space, forming one of the "walls" of the "outdoor room," with trees forming the remaining three walls. The implication of this type of composition is that axial movement toward the building is less important (or of no importance at all) and rather the building itself contributes to the spatial definition or enclosure of the clearing or field. When buildings are short or transparent (as in the case of an open-air pavilion), it is often necessary to insert a layer of taller and denser vegetation behind and to the sides of the building, in order to reinforce that sense of spatial enclosure. The exception to this is where the transparency of the pavilion is deliberate, if there is an attractive view such as a body of water that is meant to be glimpsed beyond the pavilion.

Datum (along a path)

In some cases, a building or pavilion may line a path without deflecting or terminating a view. In this case the building (along with trees, shrubs, light poles, kiosks) is merely part of an ensemble of elements that define the path. The path itself is the organizing element which provides access on either side. The building or pavilion does not seem to act as a visual goal, but a place to pause before continuing elsewhere in the park. This type of visual relationship is most successful when the building fronts a straight pathway, or at least a section of mostly straight pathway. As soon as the pathway is too sinuous, then the effect may come to resemble that described for "deflected views."

Landscape Ordering Framework
landscape features

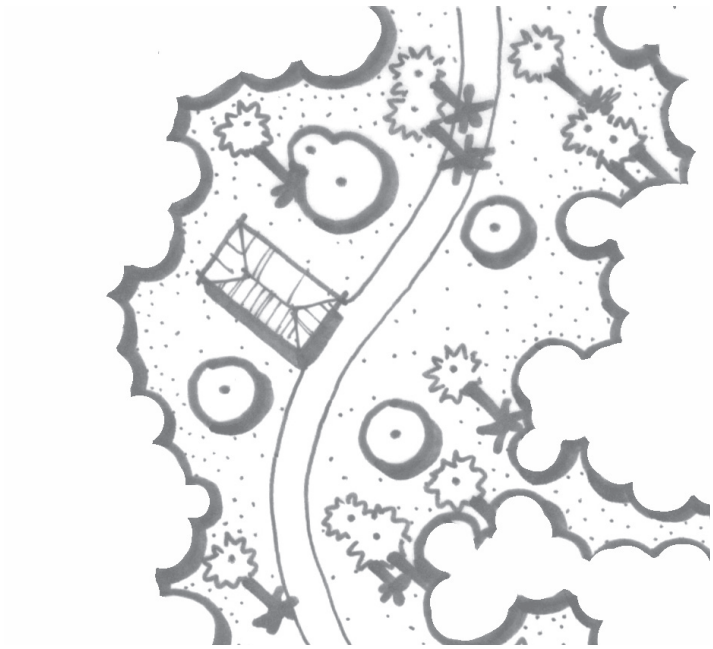
Example of park facility based on the deflection principle with a curving approach by vehicle at Matheson Hammocks Park

Example of the anchor siting principle at the Vizcaya Museum and Gardens, Miami, Florida

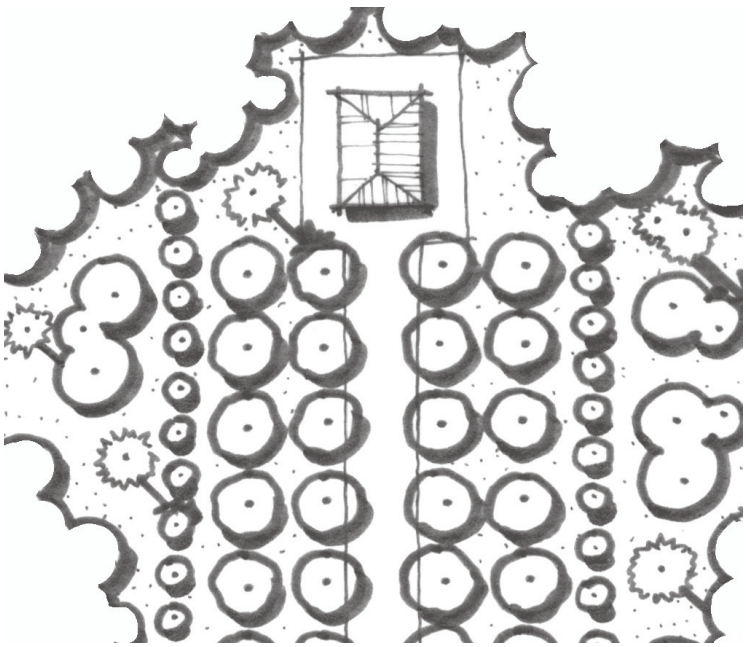
Example of park facility based on the terminating siting principle as the northern path terminates with the structure at Crandon Park

Example of a park pavilion sited using the datum principle which deflects a view to the lake behind at Matheson Hammocks Park

deflection



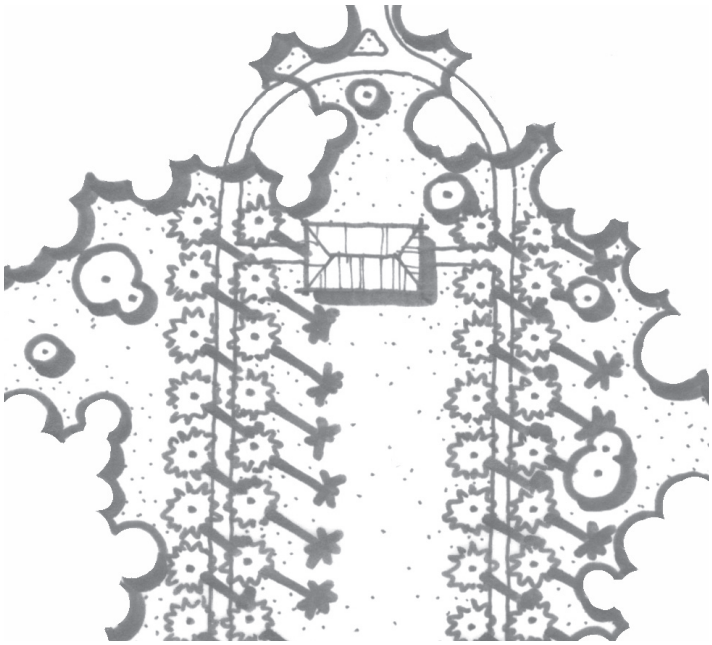
terminate



Landscape Ordering Framework
landscape features

anchor

datum



4.1.14 Mounds and Overlooks

Mounds are a unique element in South Florida parks with the Mound at Greynolds serving as the best example of just how popular a mound can be with park users. Elevation changes within South Florida are limited, leading to man-made mounds as the most like source of an elevation change. Multiple benefits should be considered when planning for a mound, with seating, viewing slopes or an amphitheater being incorporated to take full advantage of the mound.

Overlooks, particularly overlooks to a body of water are popular design elements in many South Florida parks. Overlooks can serve as the terminating feature of a vista or in a sequence of views. They may be adjacent to circulation routes or the overlook may be located away from a main circulation route, allowing users to explore the surroundings.

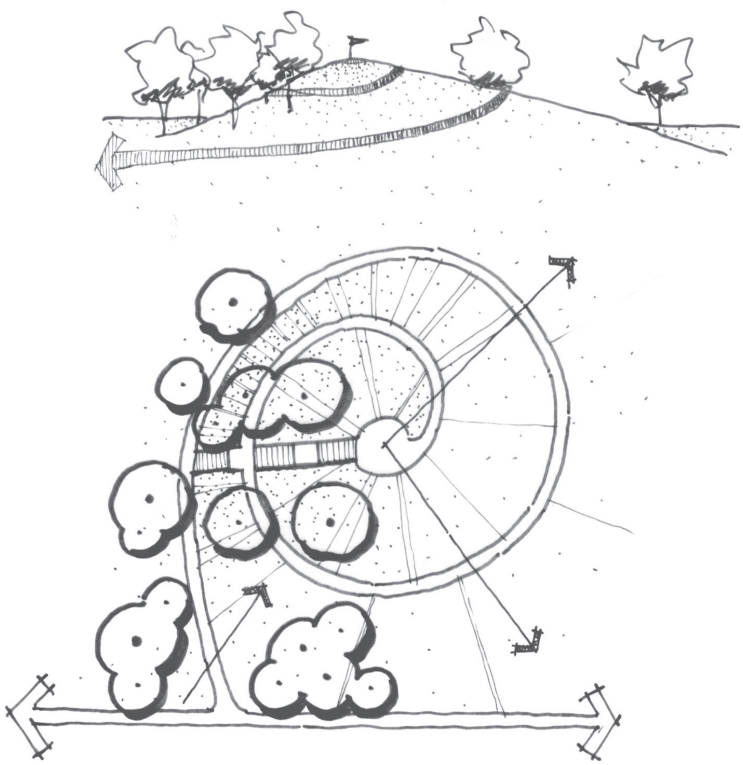
Mound on Chicago's lakefront, with stairs and access ramp traversing the slope to the top.

Small waterfront overlook off main path in West Palm Beach.

Overlook incorporated into trellis structure and seating area on main path. In West Palm Beach. Note the light fixture location on the inland side of the path to avoid obstructing views to the water.

Landscape Ordering Framework
landscape features

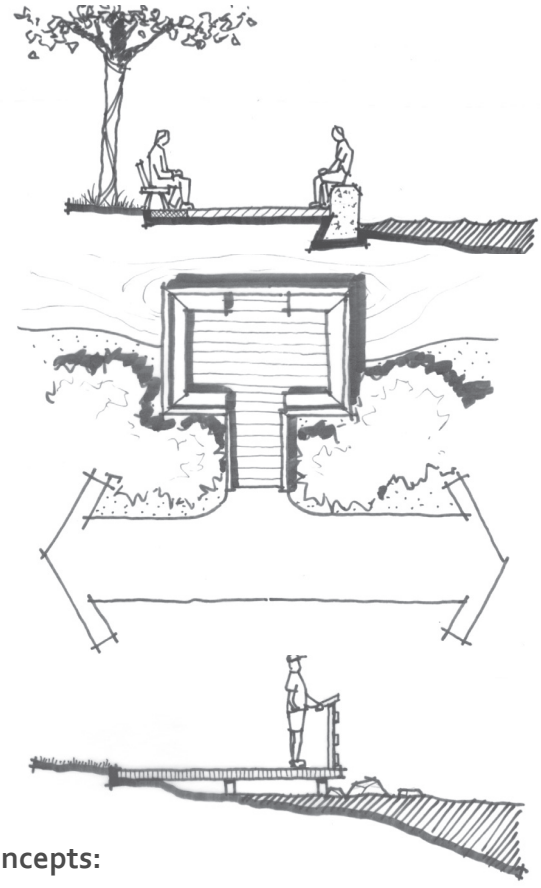
mounds



Key Concepts:

Mounds are a focal point or landmark in the park, and a prospect point for panoramic views. Natural landforms are not as common throughout most of Florida, however, mounds can best be treated as an "artificial" or sculptural element, and part of an amphitheater or viewing slope.

overlooks



Key Concepts:

A focal point such as an overlook or mound should take into account the long-term viability of the view to the surrounding landscape.

4.1.15 Elevation Changes

Elevation changes within parks can add a sense of separation or be used to tie elements together with the use of a ramp. Each elevation change, however, should be carefully planned and designed to utilize each opportunity to its best use.

Use steps to extend the lines of buildings into the landscape. In areas where a gentle slope occurs it may be possible to gather contours in front of a park building or feature to visually exaggerate the actual grade change, giving the foreground lawn or ground plane less prominence in the visual composition. Steps can also be used to visually accentuate grade changes. One important principle to consider when designing ramps is to keep all walks sloped at 5% [instead of wheelchair ramps] whenever feasible to reduce the need for railing.

Except in the case of an ADA accessible ramp at the maximum slope of 1:12, adjust the grade whenever space permits to raise the elevation of the surrounding grade to allow a sloped walk at 1:20 (5%) or less. A ramp should be designed to be an inviting option to negotiate steep grades, not a hidden necessity.

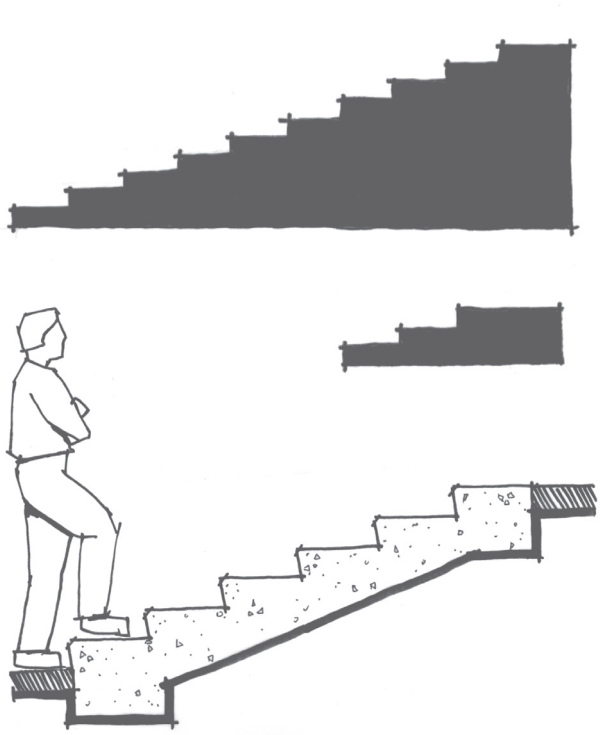
The ramp above at West Palm Beachs' Waterfront Commons shows a successful design without the use of railing

The restroom above could have avoided the cost and visual clutter of handrails facing a busy street if the slope of the walk was reduced to 5%

The image above is of a successfully integrated ramp and stairs with a Florida Vernacular style building

Landscape Ordering Framework
landscape features

stairs

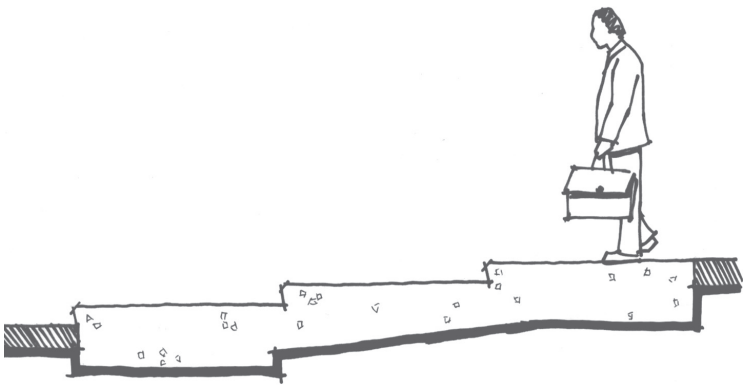


Key Concepts:

Exterior stairs scaled to a gentle rise/run ratio such as 5.5":15" (typical ratio is length of 2 risers plus the length of one tread equals approximately 26" -28").

Where landings are necessary between flights of stairs, keep the height of the flight to 4' or less for safety purposes and to add visual interest. An uneven number of risers is needed if the desire is to have users start and finish with same foot. A minimum of two steps should always be used if a ramp is not feasible. Railing should be used per code with reference to the appropriate architecture style in Chapter 5.

stair ramps



Key Concepts:

Step-ramps should have treads no shorter than 5' or no longer than 6'

4.1.16 Water Features

A water feature for the purpose of this report is any manner in which the display or the capture and conveyance of water is used in the public landscape. This includes fountains, rain gardens or stormwater.

Types of fountains:

1. Aerators
2. Splash Play
3. Mist
4. Runnells
5. Basin Jets
6. Cascade
7. Waterfall

Fountains may be useful in highly selective locations to:

- animate a space with the water feature itself, and the people attracted to the space by the water feature
- provide an alternative to recreational swimming pools
- cool the surrounding air
- add visual interest

Fountains may be part of the stormwater runoff system for conveyance, bio-retention or storage in cisterns for reclamation. Interactive fountains will require meeting all health department regulations regarding water quality, location, and height of spray must be calibrated with width of basin, and take into account the direction of prevailing breezes. Level of maintenance required should be considered during the design phase for any water feature.

Locate the fountain such that the water is visible in the sunlight, to allow the fountain to be seen in contrast to its surroundings. Fountain pumps must be carefully hidden from view, either in a remote building or vault accessible by service vehicles.

All fountains are to follow Florida state and local health and safety codes.

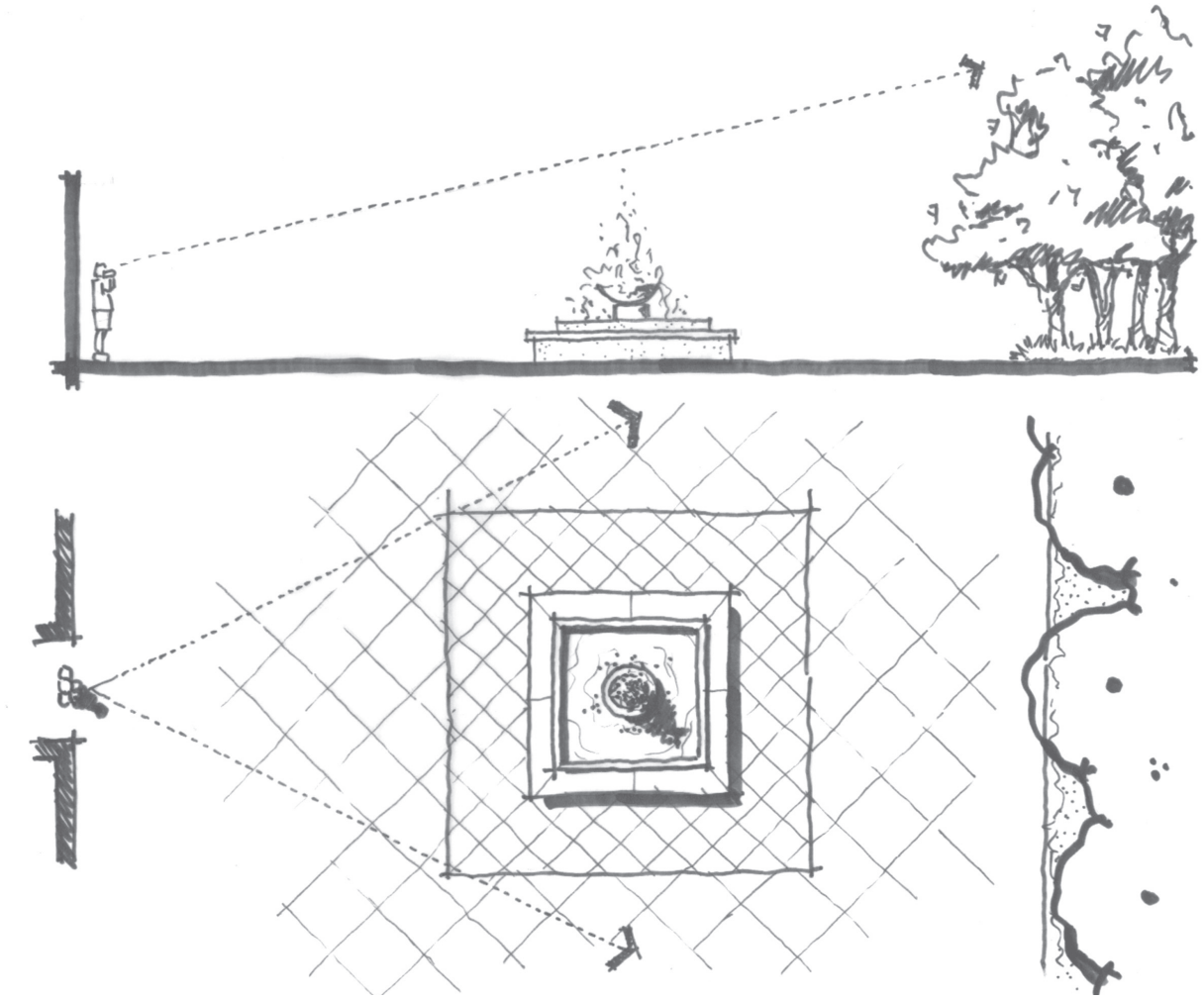
By locating these fountain jets in a sunny location, the water appears to sparkle in contrast to the surrounding landscape and built context

Centennial Fountain in West Palm Beach is an excellent example of an interactive fountain which achieves each goal to the left

An example of a symmetrical entrance fountain with simple jets and littoral plantings at Vizcaya Museum and Gardens, Miami

Landscape Ordering Framework
landscape features

fountain layout



Key Concepts:

- Scaled for visibility within a space, and at least one principal or "postcard" view of the fountain
- A backdrop of vegetation extending above the tallest spray of the fountain jet will make the fountain stand out better in contrast with the surroundings, and may allow a smaller fountain to be used to achieve a similar effect.

4.1.17 Gardens

Gardens are spaces designed to visually and physically engage visitors through multiple senses (sight, sound, touch, smell and even sometimes taste). Gardens may engage visitors intellectually as an educational tool, as a symbolic puzzle for visitors to decipher, or to entertain by triggering a cognitive association in visitors to an event, person, place, mood, story, etc.

Whether a naturalistic or an orthogonal geometric composition, a park garden should complement the landscape when viewed from a distance, but reveal additional layers of detail and meaning when viewed at a personal scale while sitting in it, or walking past or through it. Gardens combine visual aesthetics with other senses to reveal an aspect of things encountered everyday by viewing them in an idealized or contrasting context.

Common park garden types include:

- Butterfly garden
- Sensory garden
- Healing garden
- Sculpture garden
- Water garden
- Rain garden
- Flower garden
- Vegetable garden
- Children's garden
- Botanical garden

The above garden at Leu Gardens in Orlando show an example of a botanical garden in the Florida environment

Morikami Gardens is a representation of a Japanese garden within a botanical garden in the south Florida environment

The North Miami Beach Monastery garden is an ideal flower garden in South Florida

Landscape Ordering Framework
landscape features

Morikami Gardens is a representation of a Japanese strolling garden within a botanical garden in the South Florida environment

The above flower garden, located at Leu Gardens in Orlando, shows an ideal Florida layout

The above image is an example of a french garden parterre at the Vizcaya Museum and Garden, Miami

4.1.18 Allees

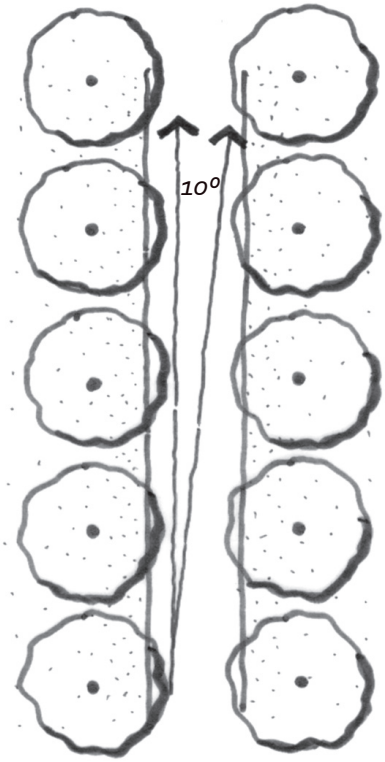
To attain a strong sense of direction, a well defined allee in cross-section may be proportioned several different ways.

A typical allee is vertical in proportion, and in South Florida palm allee's are part of the region's landscape identity. Few places in the country have the range of palm species that South Florida has, that can attain the height and form to create a dramatic allee.

The french gardens at Vizcaya Museum and Gardens in Miami contain a 1:1 scale allee of shade trees and columnar shrubs

Example of an allee of palms as a transition space, Hollywood, Florida

proportions

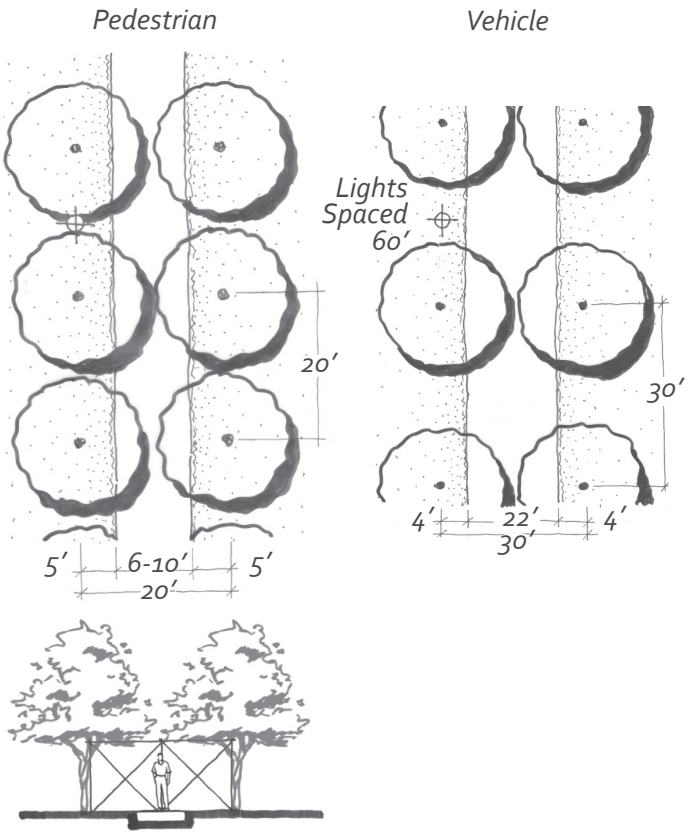


Key Concepts:

Highlight the direct corridor to a major destination or space. Shade tree allees are typically more square or horizontal in proportion. In South Florida, however, native species are generally rounded in character and low in height.

Landscape Ordering Framework
landscape features

dimensions

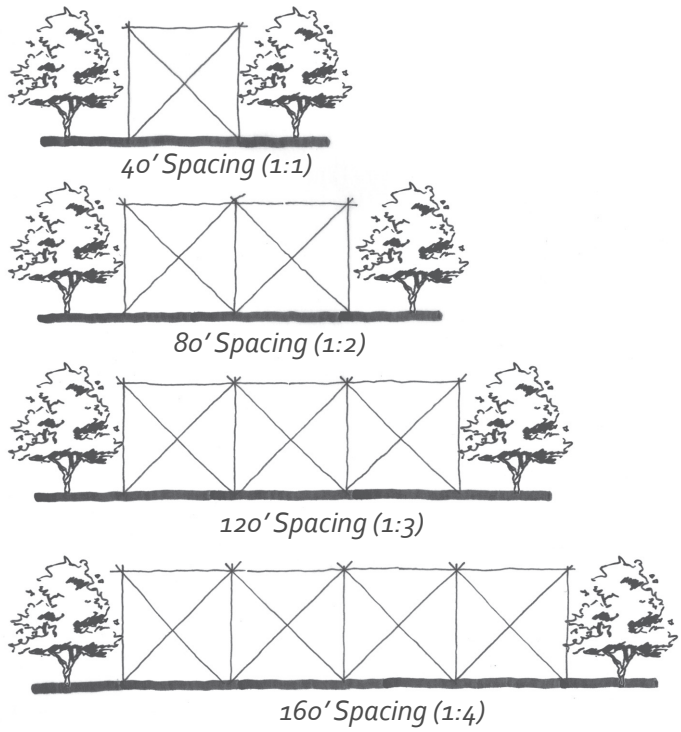


Key Concepts:

When the canopies touch, the allee will be somewhat horizontal in proportion; approximately 3 to 4 times as wide and as high as the underside of the canopy, depending on the density of the enclosing canopy, and the spacing of the trees. This limits the usage of an allee to pedestrian trails or low-speed park access drives.

- Creates a ceremonial route for cars or pedestrians, and is a signature feature in the park
- Provides a sharply delineated edge for surrounding spaces

spacing



Key Concepts:

If canopies do not touch, a less than 1:1 cross-section ratio measured to the top of the trees is needed for a well-defined allee. As the allee proportional width increases, the space between the tree trunks in perspective begins to diminish the sense of enclosure and direction that defines an allee.

4.1.19 Groves

Groves can create a shaded destination or the setting for a path or road to weave through or can help form the spatial definition to an area. Often groves can be of one species of canopy tree or palm, creating veiled and constantly shifting views of the surrounding open spaces.

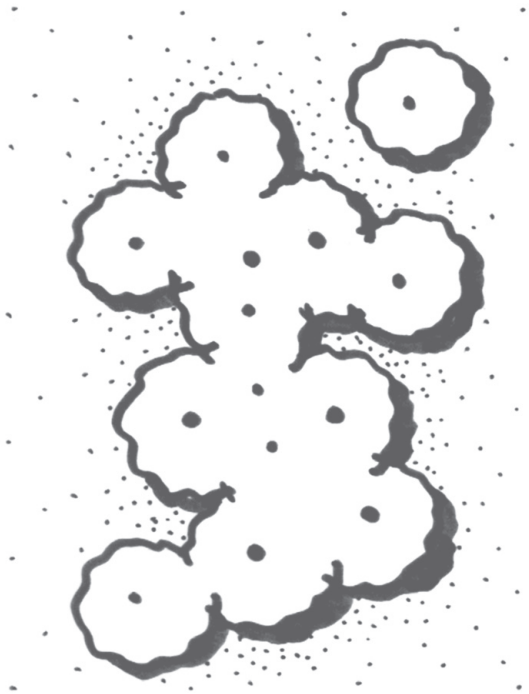
Example of a coconut palm grove at Peacock Park, Miami

Example of a royal palm grove

Example of a live oak grove at Matheson Park, Miami

Landscape Ordering Framework
landscape features

layout



Key Concepts:

Randomly placed canopy trees or palms with no understory shrubs, spaced to allow the canopies to visually and/or physically touch to enclose the "roof" of the space.

Distance between each tree or palm is dependent on species and variety.

4.1.20 Bosques

A bosque (the American landscape colloquialism of the Portuguese bosque and the French bosquette) is defined as an evenly spaced grouping of canopy trees, typically of a single species, configured in a square or diagonal grid (quincunx) pattern with a clear understory.

The heavy shade, personal scale of the trunk spacing, and the resulting orderly sense of enclosure created by a bosque make this a versatile means for enclosing or defining the edges of open park spaces. From within the bosque some consideration should be given to views to the surrounding open spaces or features framed by the evenly spaced trunks.

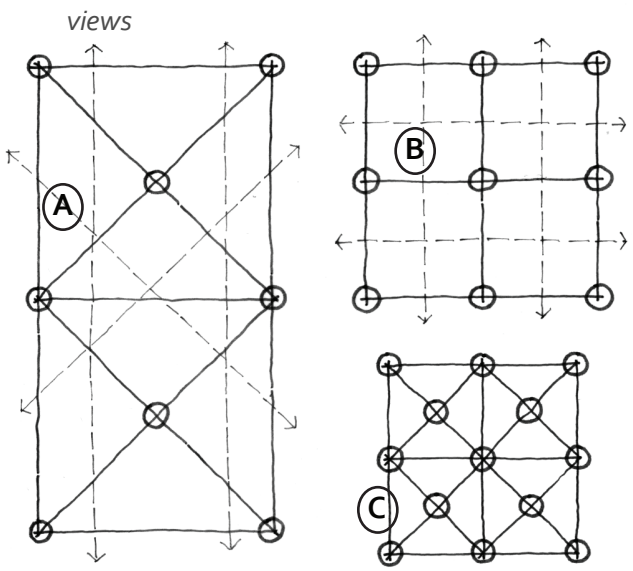
Square grid plant spacing creates framed views outside the bosque in four different directions, whereas the quincunx frames views in six different directions. From outside the bosque it appears as a solid vegetated edge. Bosques are useful as a contrasting landscape feature to a grove or other curvilinear plantings, or as the compositional foundation of a rectilinear park layout. Bosques are also climate responsive as shaded space or seating can be located adjacent to open space.

Charleston, South Carolina; square gridded bosque that accommodates seating and movement through the space

landscape design patterns

Landscape Ordering Framework
landscape features

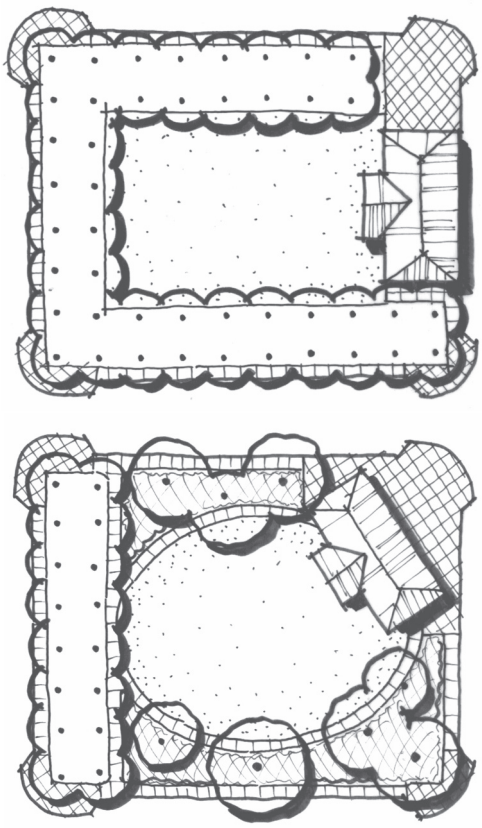
proportions



Key Concepts:

a. Canopy tree spacing between 16 and 24 feet
b. Canopy tree spacing for a grid should be between 14 and 20 feet
c. Palm spacing should be 16 to 24 feet with quincunx pattern or 14 to 20 feet with grid pattern.

patterns



Key Concepts:

The top image shows a bosque used to frame the perimeter of an urban park or plaza space

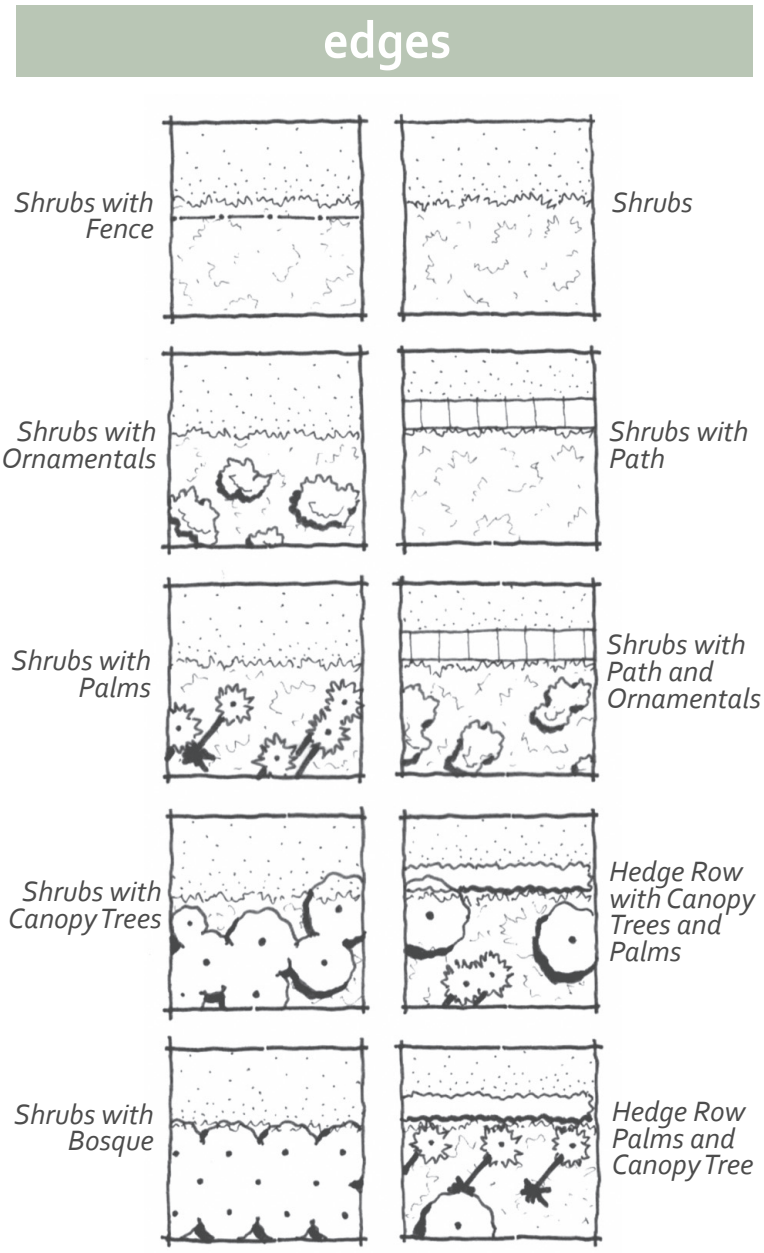
The bottom image shows a bosque as a signature feature that defines one side of a small park

4.1.21 Plant Massing

Plant massing and composition applies to tree and palm canopy in addition to shrub and ground cover placement. Several items to consider when massing plants include: transitions between buildings and landscape or park programming, screening of unattractive views such as utilities or parking, framing attractive views, or defining space.

Example of tree canopy, shrub and palm massing around a pavilion at Matheson Park, Miami

Palm and shrub massing at South Pointe Park, Miami Beach



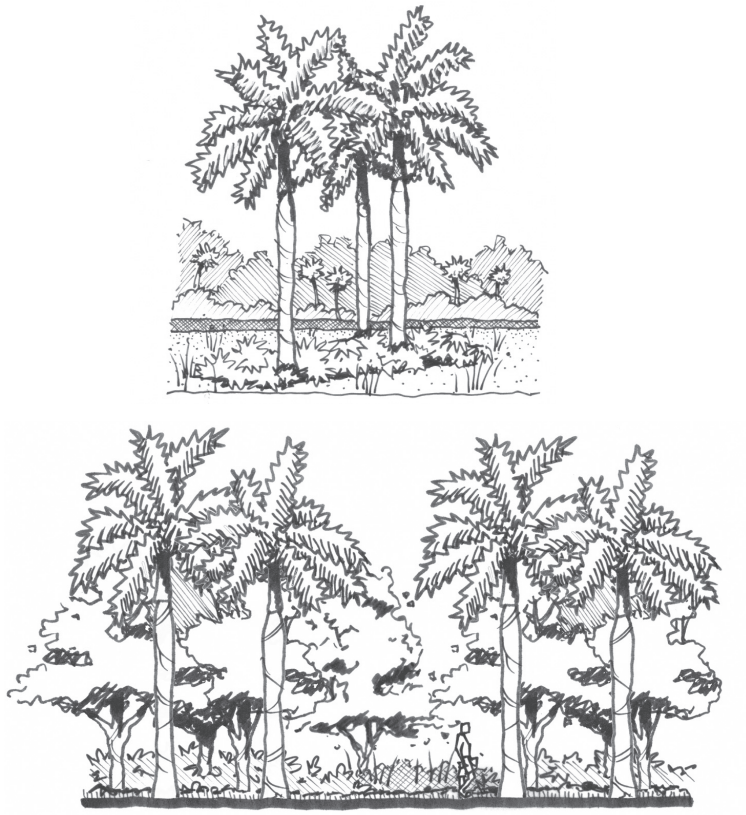
Landscape Ordering Framework
landscape features

screening

Key Concepts:

Useful for obscuring or hiding the view of parking or utilities. Species selection is crucial to allow shrubs to maintain the desired height at maturity for the intended use and to allow the plant form to be viewed in it's most natural state, thereby minimizing sustainability and maintenance costs.

massing



Key Concepts:

Canopy trees and shrubs are useful for concealing chain link or other unattractive yet functional fences from view.

Crime Prevention through Environmental Design (CPTED) concerns should limit the scale and extent of shrub beds in all but the most rural context, to locations with visibility from all sides, especially in urban areas.

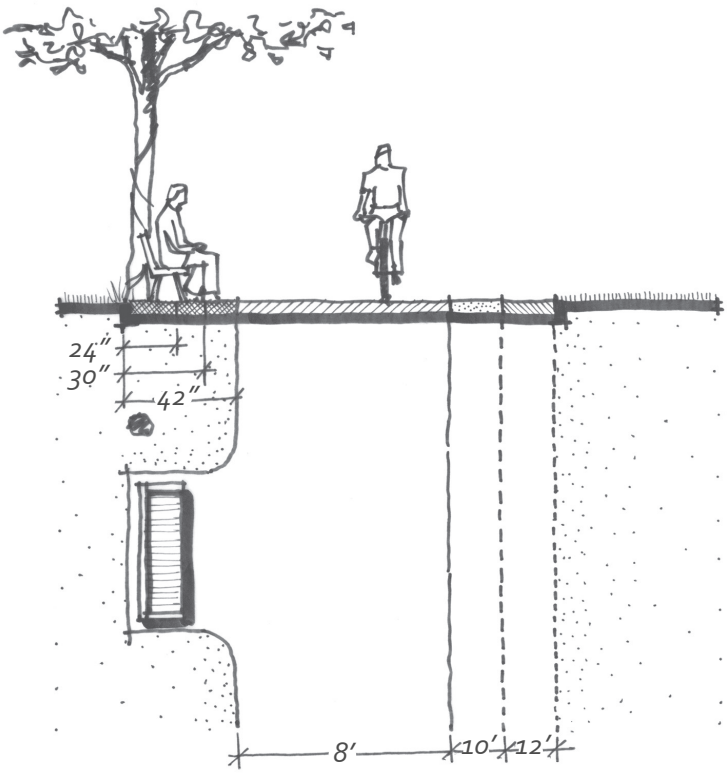
4.1.22 Seating and Site Furnishings

Anytime a human body is in direct contact with furniture, careful attention must be given to the most minute details in and surrounding that furniture because "touch" is one of the most refined and immediate human senses. For example, the paved surface in front of a bench or seatwall should be a surface uninterrupted along the length of the bench by changes in the pavement texture. This is to help delineate a "personal" space for the seated persons by allowing the users' feet to "rest" on a surface without distracting bumps or edges that they can feel. In addition, when a change in tactile surface occurs just outside this seating zone, the tactile delineation helps reinforce the sense of "personal" space that the user may experience while seated.

Charleston, South Carolina; conversational seating area adapted to individual use and small groups

Highline Park, New York City; conversational seating adapted to the design concept and a respect for personal space when used by strangers

seating

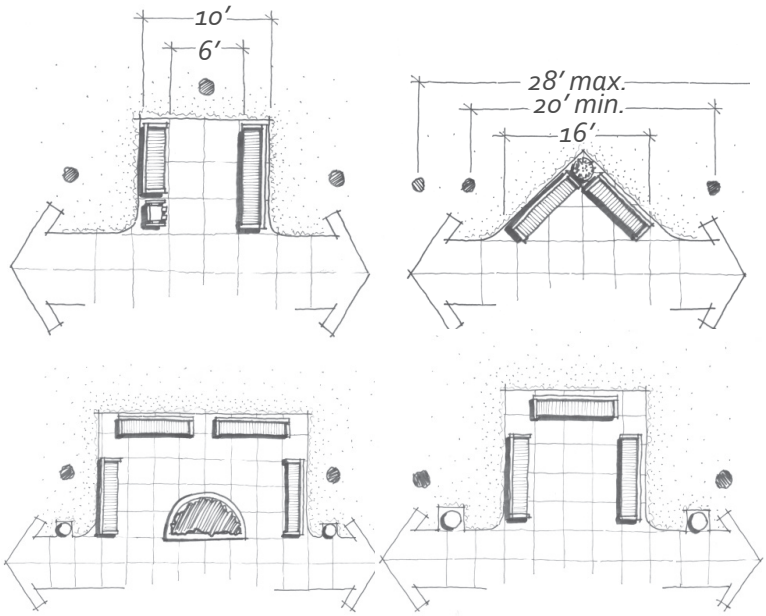


Key Concepts:

Fixed seating should be oriented to a view, arranged for a small group to converse, or used as a space-defining feature or an accent. Seatwalls are useful to help define a plaza, courtyard, or building entryway in conjunction with landscaping as a backdrop. When a rubble or gravel surface is included in front of a seatwall, the desirability of the wall as a skate surface is eliminated or decreases substantially.

Landscape Ordering Framework
landscape features

conversational seating

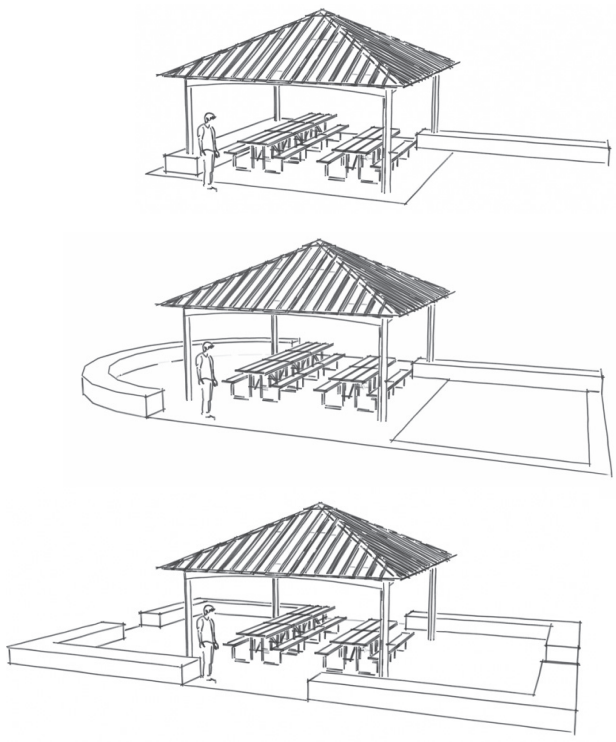


Key Concepts:

Conversational seating areas should be scaled to accommodate individuals and small groups comfortably, located adjacent to main paths or plazas.

Incorporate the seating areas into the overall composition of trees, lights and other furnishings. Fixed seating should be designed so that most users of average or less than average height may rest their feet squarely on the ground in front of the bench. A paved surface measuring at least 18" wide is desirable, 12" wide at a minimum is needed in front of a seating area for foot room and to avoid inconveniencing others using the adjoining walk or path.

pavilion seating



Key Concepts:

Seating options for pavilions include extending the space for expanded use. Seatwalls, incorporated with the pavilion, can extend out into the landscape and provide additional seating space along with space for barbecuing and play. The South Florida climate allows for year-round use of the uncovered space as long as canopy cover is provided by nearby landscape.

Another deterrent for skates and skateboards is the placement of posts or other furnishings in front of the wall, making it awkward for the skater to approach and dismount the wall.

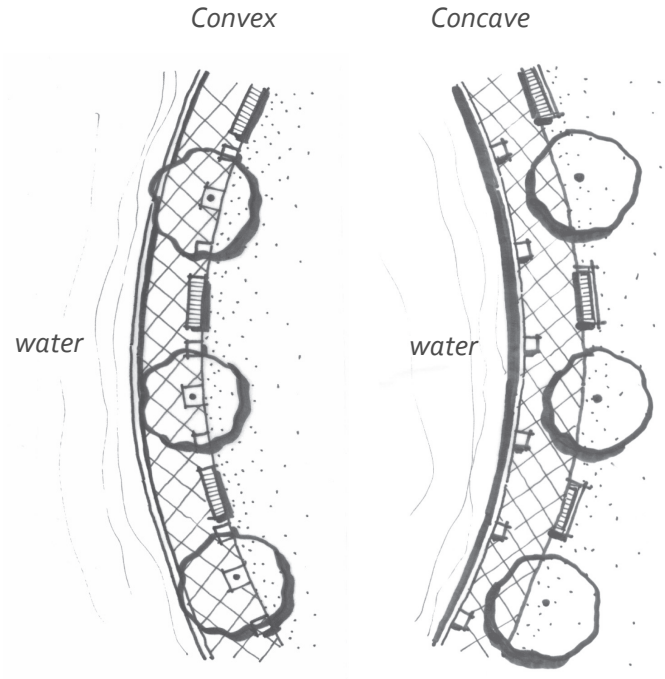
4.1.23 Lighting

Lighting within parks can be provided in respect to the intended use of a space. For athletic fields lighting may be provided to extend the hours of use, however, respect to neighboring land uses should be used. Parking lots should be lit to provide a safe environment for park users, while select circulation routes may be lit to provide safe routes for users to travel to areas of interest. Gateway features should be lighted to highlight entrances and provide a safe setting.

Generally, circulation routes should not be adjacent to athletic field lighting as shown in the diagram on the opposite page. The higher the pole, the wider a space is needed between paths and light features.

Light fixture style should be coordinated with architecture when fixtures are part of the transition space between building and open park landscape.

water edges



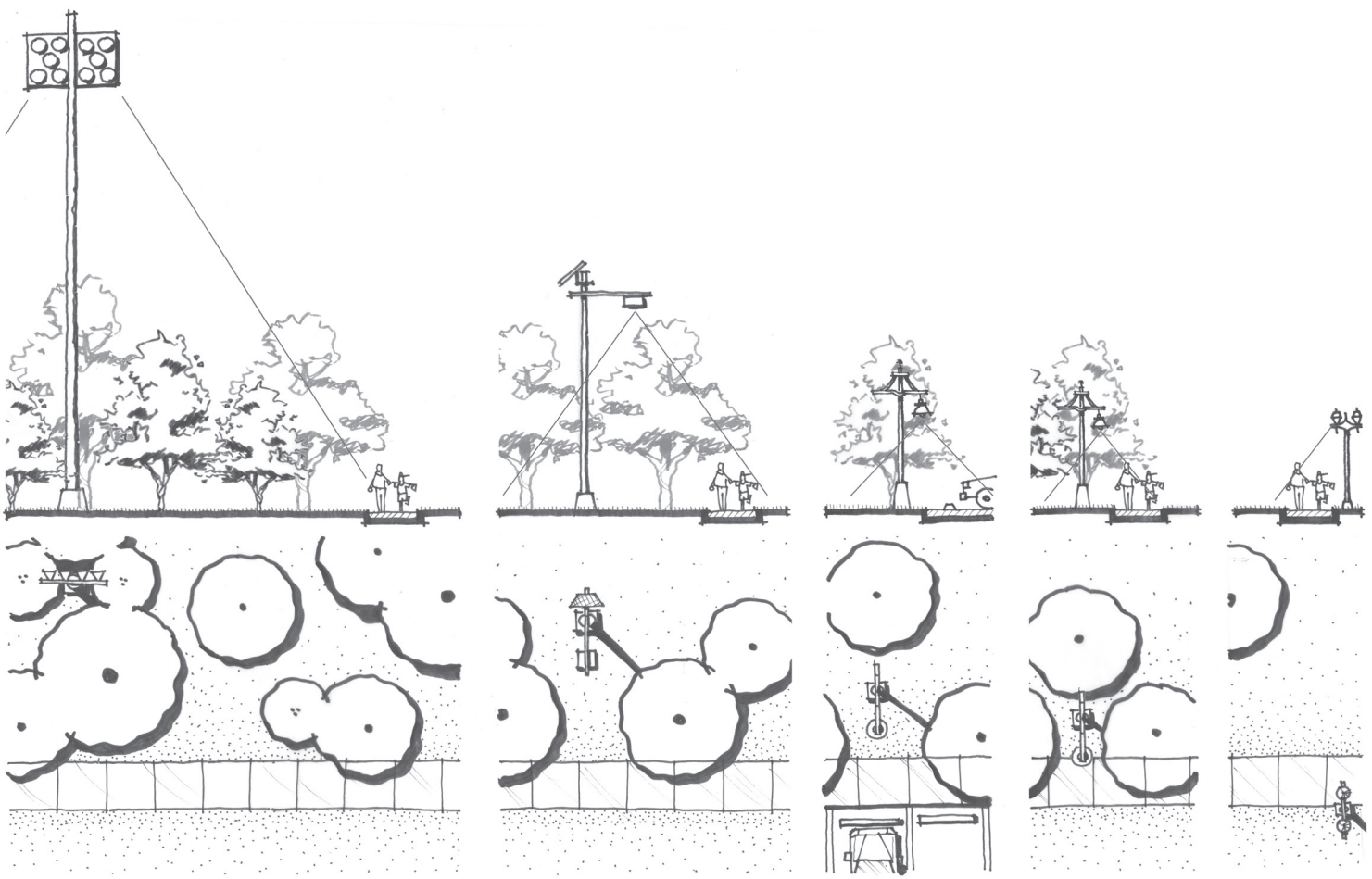
Lighting along this paths is located to the left side in landscape beds and is outside of primary views; a terminating light feature is located at the end of the path. South Pointe Park, Miami Beach

Key Concepts:

Place light posts along water's edge or any other wide open space only if the fixtures are high-quality and ornamental, the fixtures frame views across the space, or if the scale of the landscape is vast and the light fixtures help add an intermediate scale feature to the foreground.

Landscape Ordering Framework
landscape features

hierarchy of lights



Athletic Field Lights

Service Light

Parking Light

Pedestrian Light (Utility)

Signature Light

Key Concepts:

Light fixture height and spacing must be scaled to provide even illumination. Maintain a consistent height and setback from walks and roads. Locate poles outside primary views to park features or destinations. As the image above progresses from left to right the light fixture's setback from circulation is reduced. Therefore the lights progress from hidden to being included within the park view.

4.1.24 Signage Siting

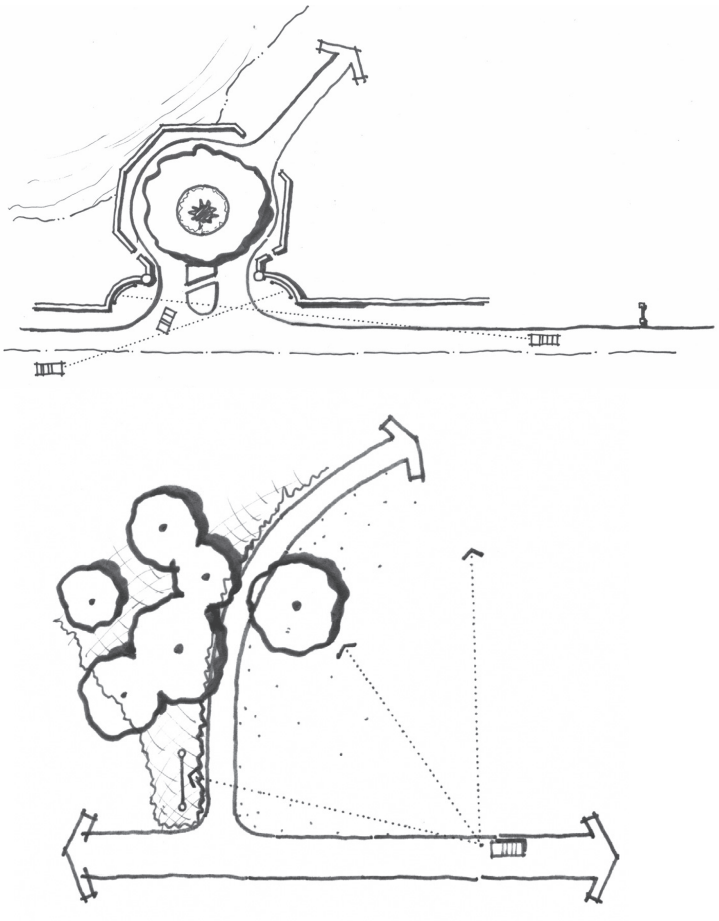
Locate park directional, information and regulatory signage outside the main views to natural areas or landmark elements, but close to travel routes for visibility. Consolidate signs to a single pole whenever practical to reduce clutter.

Example of entrance signage concept for Greynolds Park showing simplified pin set letter on an existing entrance feature

Entrance sign for Samson Oceanfront Park in Sunny Isles with a landscape backdrop and streetside presence

Landscape Ordering Framework
landscape features

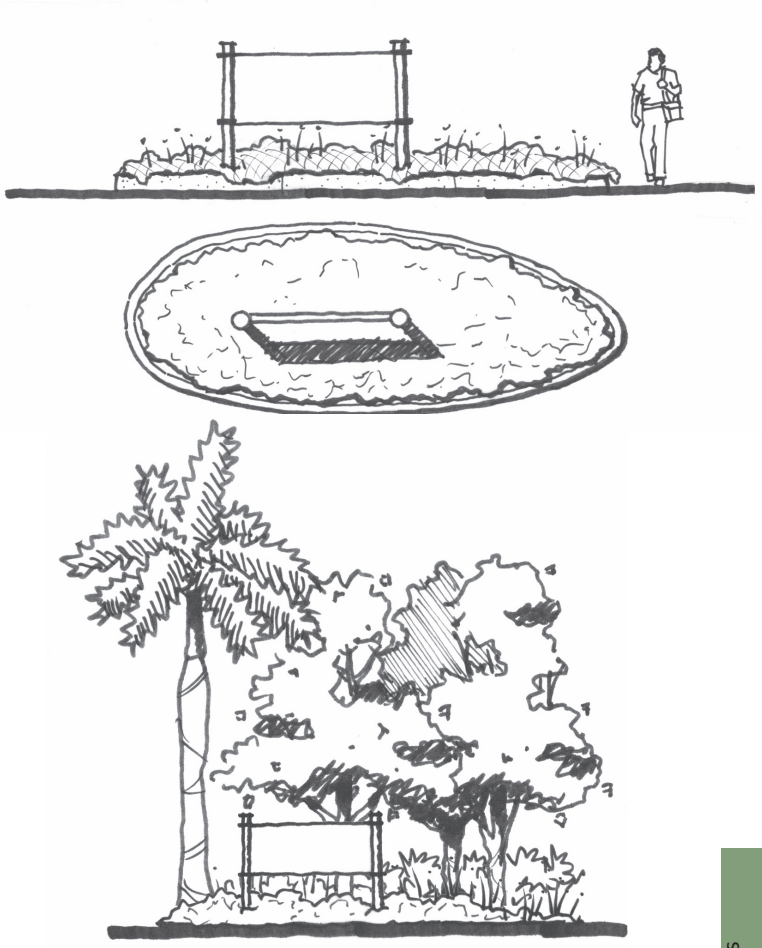
approach to entry signage



Key Concepts:

Locate park directional, informational and regulatory signage outside the main views to natural areas or landmark elements, but close to travel routes for visibility.

signage landscape

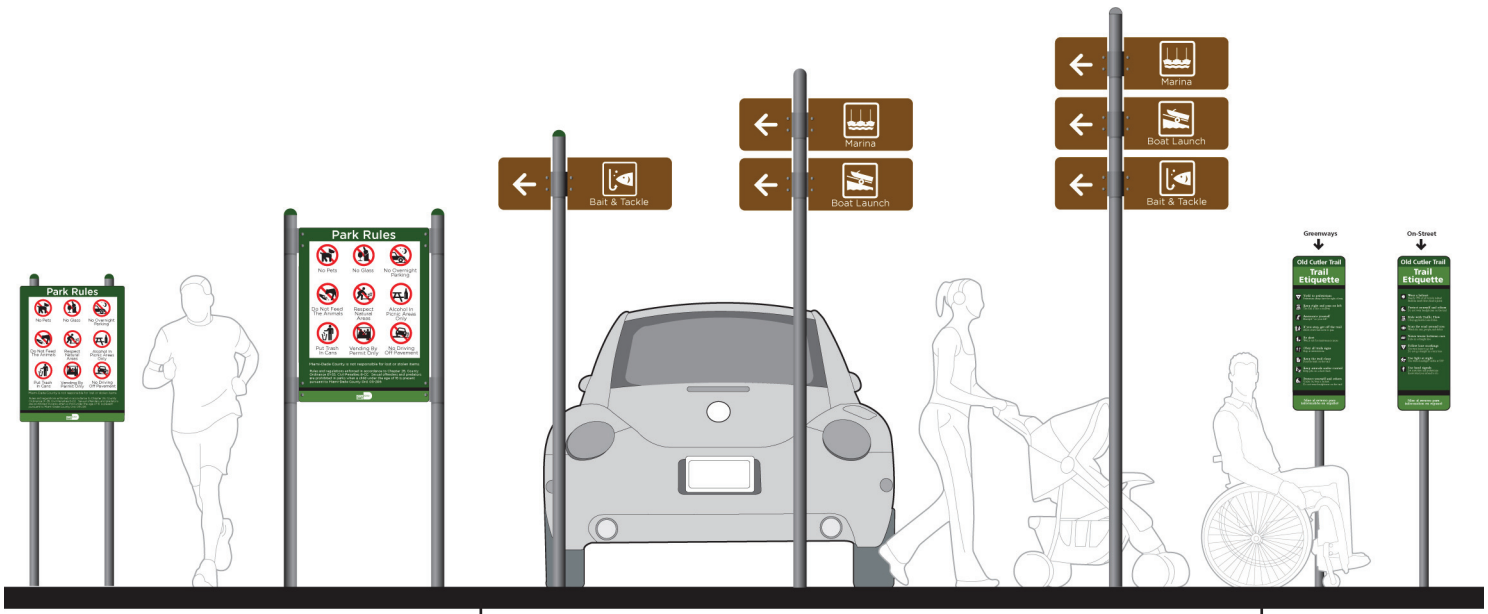


Key Concepts:

Freestanding facility identification signs should be either:

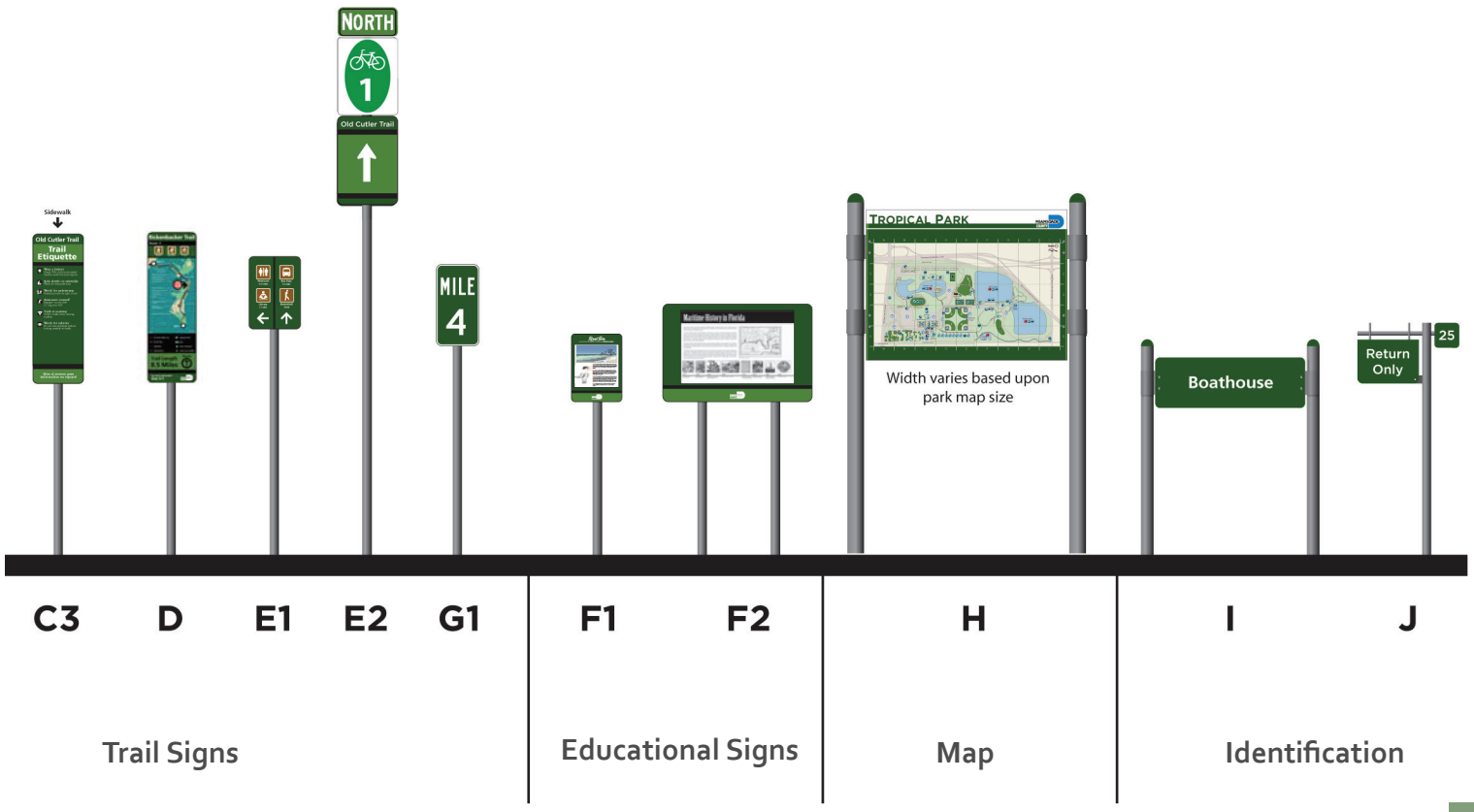
- incorporated into a planting bed that is connected to landscape around a building/structure
- part of a larger planting area incorporated into the larger landscape context, or
- located in a low planting area to partially conceal sign lighting, and at least three times as wide as the face of the sign
- Oriented so that the principal view to the sign shows a visible backdrop of landscape

signage palette



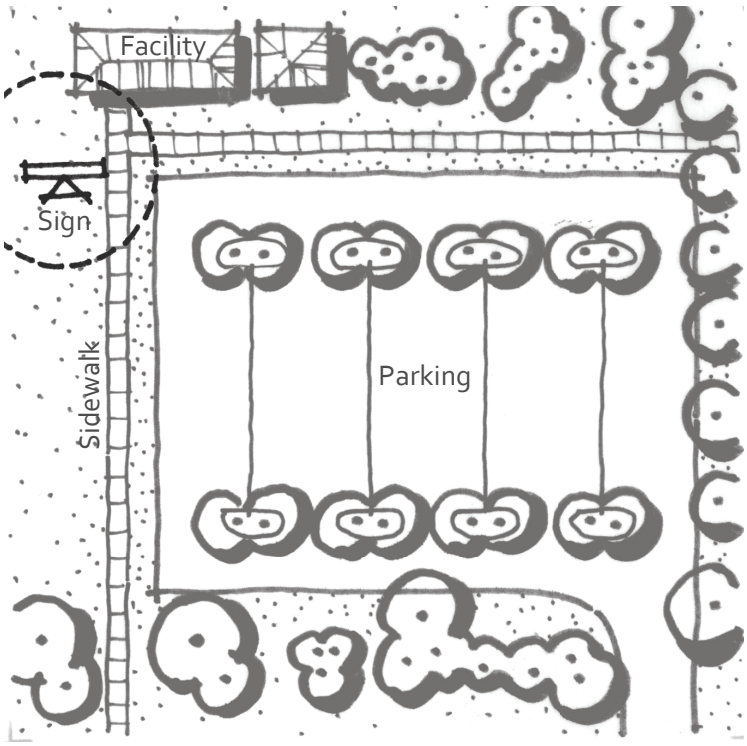
Landscape Ordering Framework
landscape features

signage palette



See the Miami-Dade County Park and Recreation Department Sign Implementation Manual for further information on signs and system wayfinding.

A1 - park rules sign - pedestrian



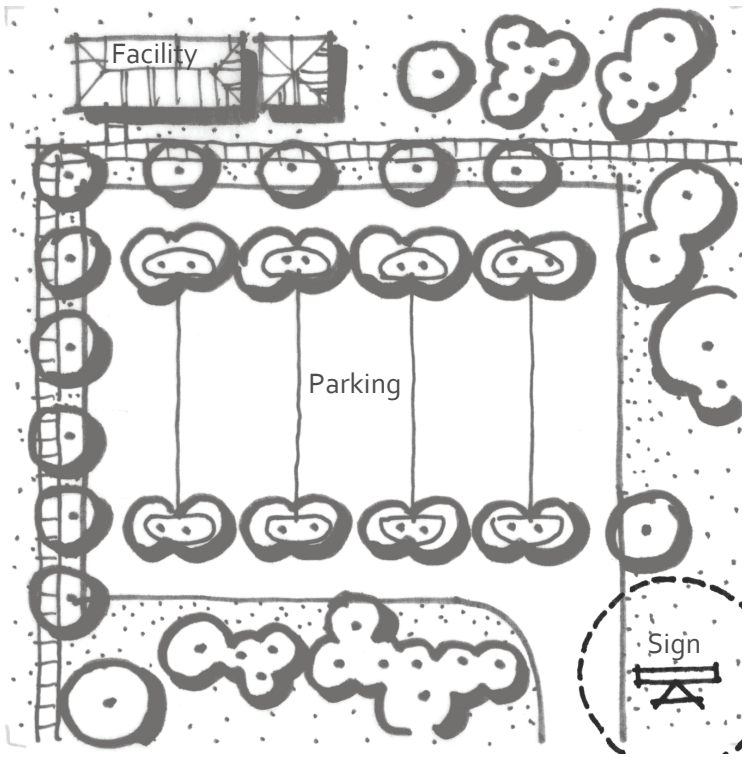
Key Concepts:

The rules sign displays information to the facility user about site specific rules, county ordinances, what activities are not permissible. This sign is designed to a scale appropriate for pedestrian walk-up traffic. The sign content is fixed and communicates the rules that are standard to all Miami-Dade County park facilities.

Criteria:

- Signs must face pedestrian access such as a sidewalk
- Adjacent to a parking lot or a path that funnels visitors to facilities
- Near a major gathering area or area with a concentration of activity to ensure visibility
- Major entrances that are pedestrian only i.e. sidewalk paths.

A2 - park rules sign - vehicular



Key Concepts:

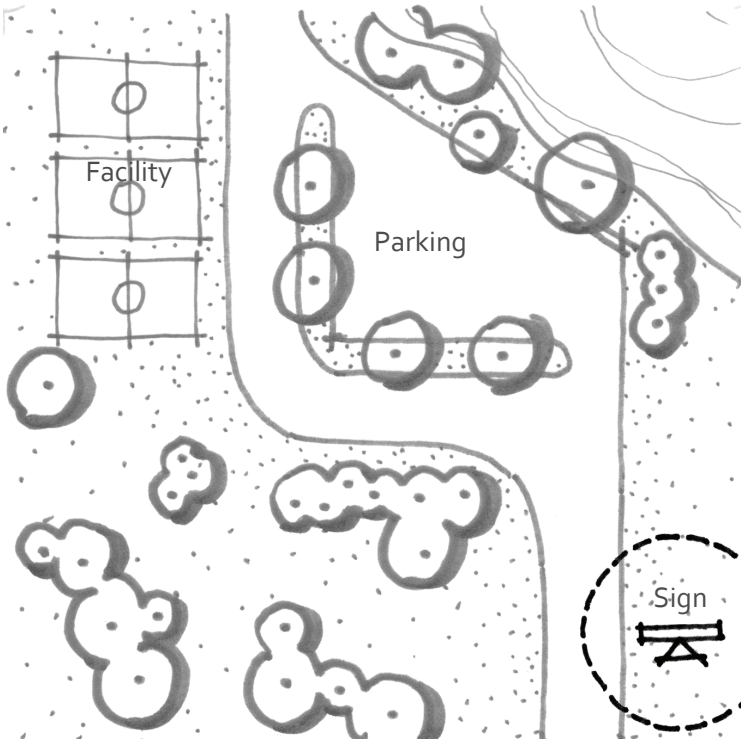
The rules sign displays information to the facility user about site specific rules, county ordinances, what activities are not permissible. This sign is scaled appropriately for vehicular traffic. The sign content is fixed and communicates the rules that are standard to all Miami-Dade County park facilities.

Criteria:

- Signs must face vehicular traffic at major access points following the facility gateway
- Locate signs on the right side of the road 3' minimum from edge of pavement; facing travel lanes entering facility

Landscape Ordering Framework
landscape features

B1-3 vehicular directional



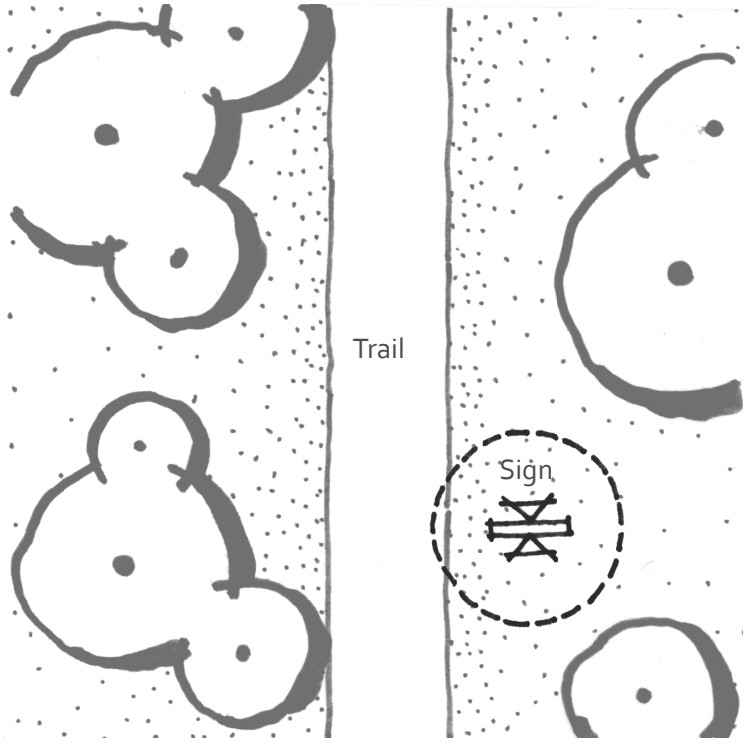
Key Concepts:

These signs are intended to direct vehicular traffic to a desired destination or activity. They direct to and provide ease of access to top destinations. Signs can direct to three destinations.

Criteria:

- Signs must be placed a minimum of 50' in advance to an intersection where visitors will need to turn to reach facilities or parking
- Keep sign quantity to a minimum by using a multi-destination sign when possible
- Use signs to direct to top destinations only
- Locate signs on right side of road 3' minimum from edge of pavement, facing travel lanes entering facility
- These signs shall be located adjacent to the right-of-way of major access routes within a facility

C1-3 trail etiquette



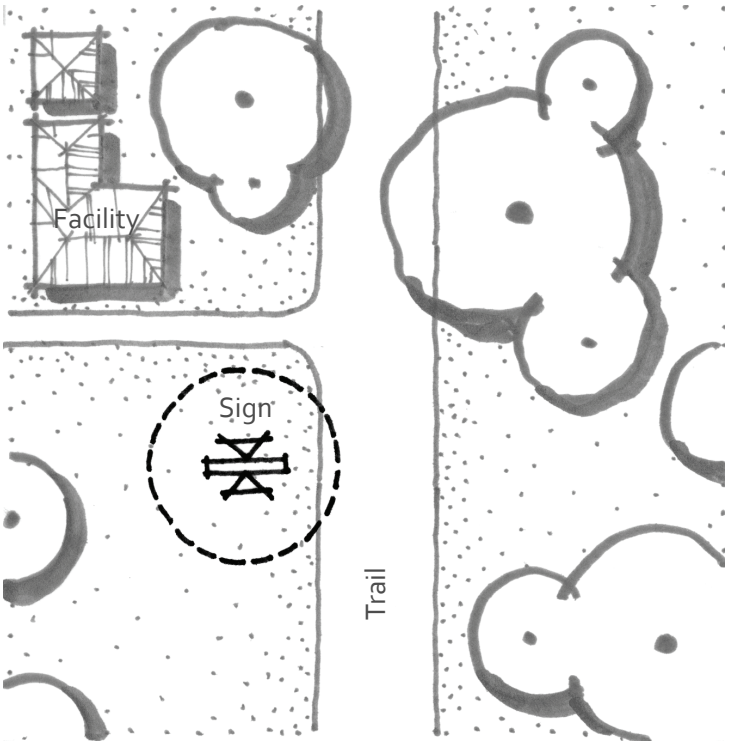
Key Concepts:

The trail etiquette sign displays safety rules for paths, trails, greenways and on-street bike lanes. These signs contain information specific to three trails types, greenways, on-street bike lanes and sidewalks. Most trails within parks will be greenways, which are separated paths with a landscape buffer.

Criteria:

- Locate signs 3' minimum from edge of trail/pavement
- Sign should be placed near trail access points from parks/marinas or streets
- Sign may be placed on either sign of a trail, however, placement must be consistent with other signs on the trail

E1 - pedestrian directional



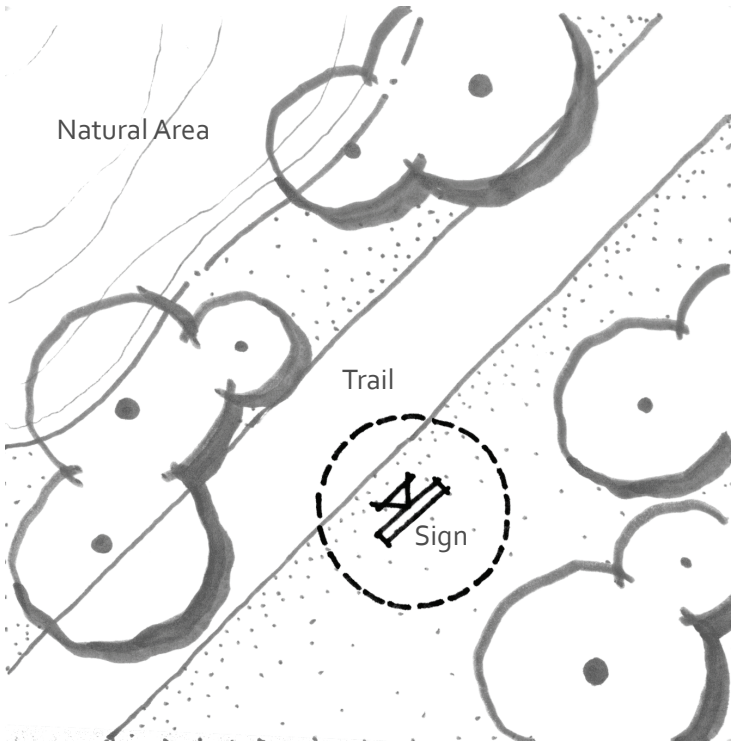
Key Concepts:

This sign in intended to direct pedestirans and cyclists on a trail or sidewalk towards adjacent facilities/amenities by communicating through graphic icons, text and arrows.

Criteria:

- These signs shall be located adjacent tot he paths/ sidewalks within a facility
- Locate signs 3' minimum form edge of trail/pavement
- Signs should be placed at decision points as trail approaches facility/amenity
- Sign may be placed on either side of a trail, however, placement must be consistent with other signs on the trail.

F1-F2 - interpretive signage



Key Concepts:

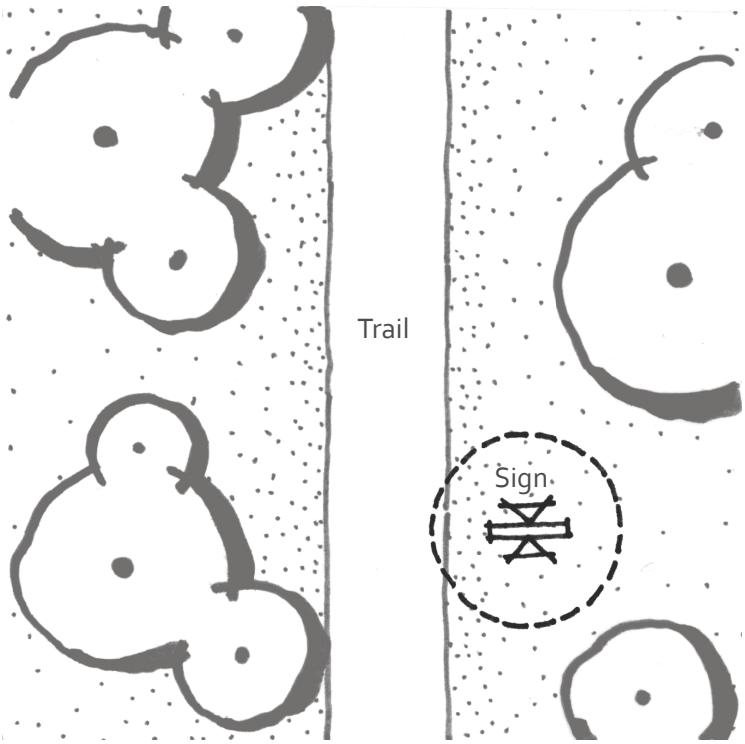
This sign provides information about cultural, historic or ecological attributes of a destination. Educational/ interpretive signs provide answers to questions and help people appreciate park attributes and area amenities. The artwork and content of this sign should be engaging and creative so that visitors are encourage to learn. A successful educational sign has 75% graphics and 25% text. Text should be limited to less than 200 words.

Criteria:

- Situate near subject described on sign, i.e. historical site, natural area, educational area
- Point from where subject of sign may be experienced, i.e. natural area, historical area, educational area

Landscape Ordering Framework
landscape features

G1-2 mile marker/trail crossing



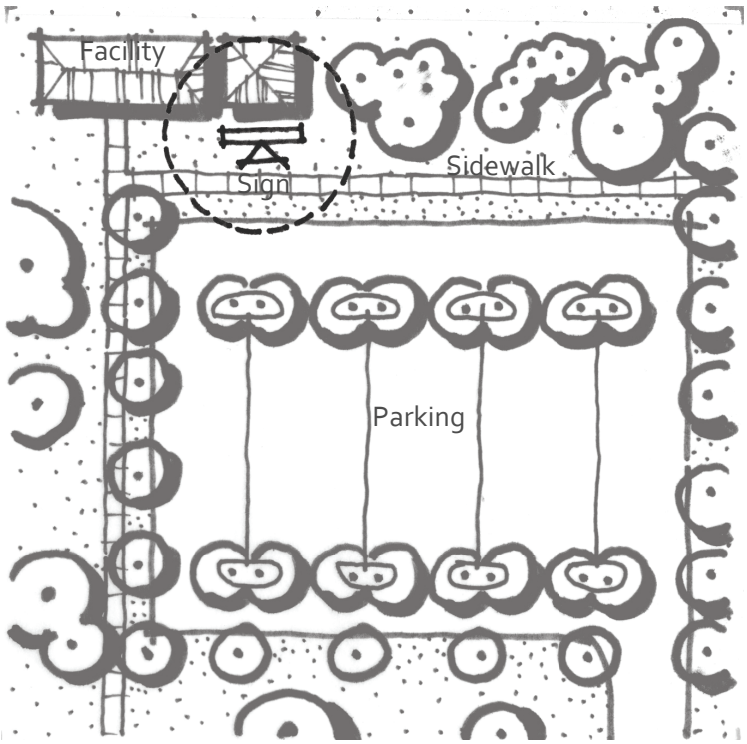
Key Concepts:

The mile marker sign provides visual navigation to trail users by communicating trail mileage, acceptable trail activities, north arrow, route number, and trail name. The mile marker are double sided. The trail crossing sign makes the trails safer to use by warning visitors about up-coming vehicular traffic.

Criteria:

- These signs shall be located adjacent to a trail, path or on-street bike lane
- Place mile markers every half mile.
- Locate signs 3' minimum from edge of trail/pavement
- Signs may be placed on either side of the trail, however, placement must be consistent with other signs on the trail

H-J - map/identification



Key Concepts:

The facility map kiosks help pedestrians orient themselves within a facility and help users locate a destination on a plan view map.

Criteria:

- Signs should be facing and visible from a major pedestrian area or point of congestion
- Must be set in an area that is accessible to a group of visitors to view together
- Should not be obstructed by vegetation or architecture

4.1.25 Public Art in Parks

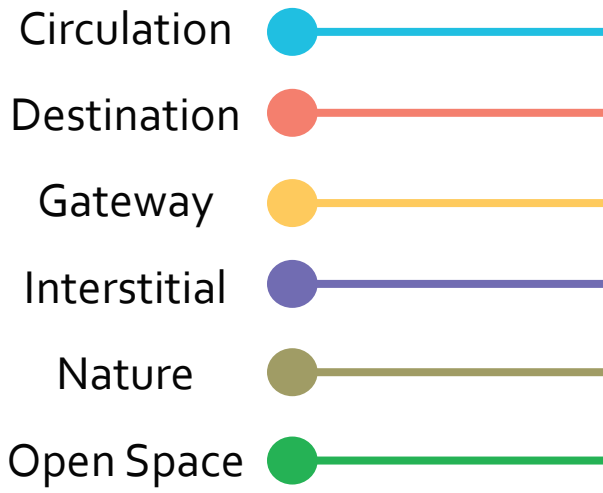
Each site offers its own thematic keys or clues to historical, cultural, and/ or ecological themes through research, site visitation and investigation, and patron interviews. Research should include coordination with the Historical Museum of Southern Florida and Miami-Dade County Park and Recreation Department to access the most relevant and accurate information for each place. During site visits, park staff and patrons should interviewed to gain a better understanding of what public values each place offers.

Locating art should be a derivative from careful considerations related to site specific features, including; the habitat types in each park, vehicular and pedestrian circulation, programmed and unprogrammed space, viewsheds, gateways, destinations, as well as any other unique site specific characteristics. Overlaying the analysis of each site with its respective thematic key provides locations to maximize the relevance, visibility, and fit of each piece within its context.

The type of art to be placed at each location is another important consideration. Six art typologies have been identified; circulation, destination, gateway, interstitial, natural, and open space and are not meant to be prescriptive. Most art pieces will share characteristics from each typology. These typologies create a common language to identify the potential audience for each piece. By identifying the art piece's environment, a better understanding of an audiences' visual, auditory, and physical interaction potential can be weighed. Furthermore, these typologies give artists a point of beginning when thinking about the possibilities of scale, materials, presentation and interaction.

For further information on Public Art in Parks, please refer to the Miami-Dade County Public Art in Parks Master Plan.

art typology



Key Concepts:

These six typologies help assist park officials and artists in their discovery to describe the type of environment and style of interaction for each art piece.

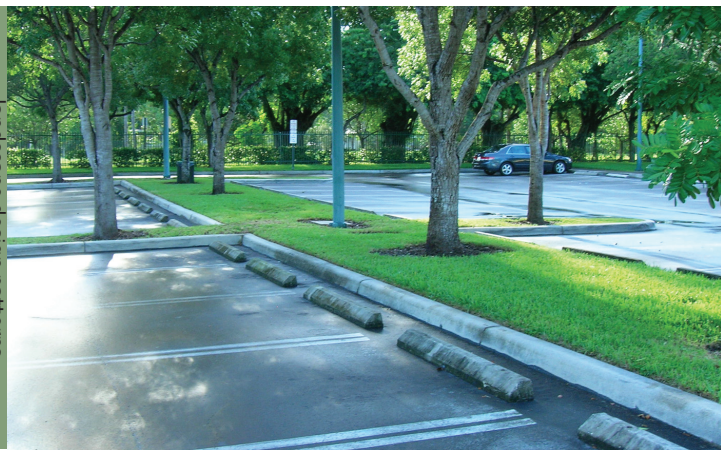
landscape design patterns

Landscape Ordering Framework
landscape features

4.1.26 Parking Configuration

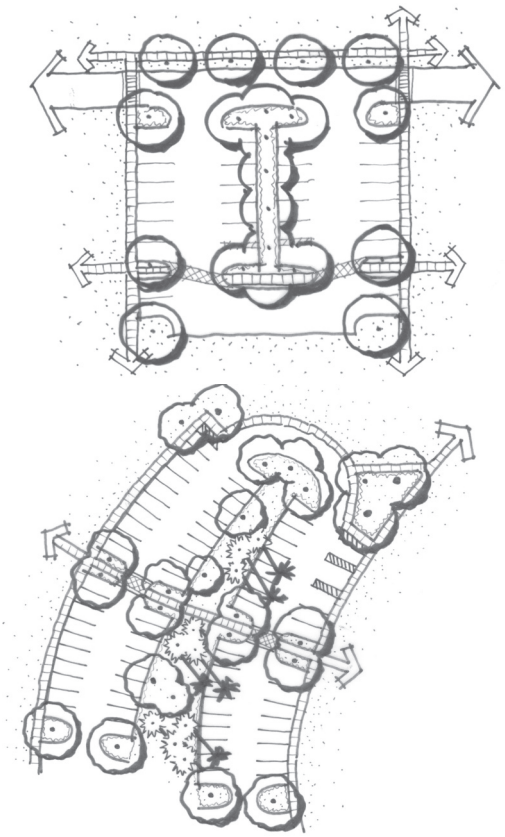
The presence of parking lots is encouraged to be limited in parks, while mass transit and walking, biking or other modes of travel are encouraged for users to access parks. In the case that parking is needed within a park all efforts should be made to limit the visual impacts by using landscaping for screening and proper placement of the lot. Parking lots should be generally limited to one to two parallel parking bays without a bioswale or landscape buffer. Parking lots should be formed to the natural setting. This can be achieved by preserving specimen trees or forming the parking lot to be responsive to natural areas by curving.

Example of grass overflow parking stalls at Evelyn Greer Park, Pinecrest, Florida



Example of two parallel parking bays with a landscaped median and heat islands, Evelyn Greer Park,Pinecrest, Florida

parking lot configuration

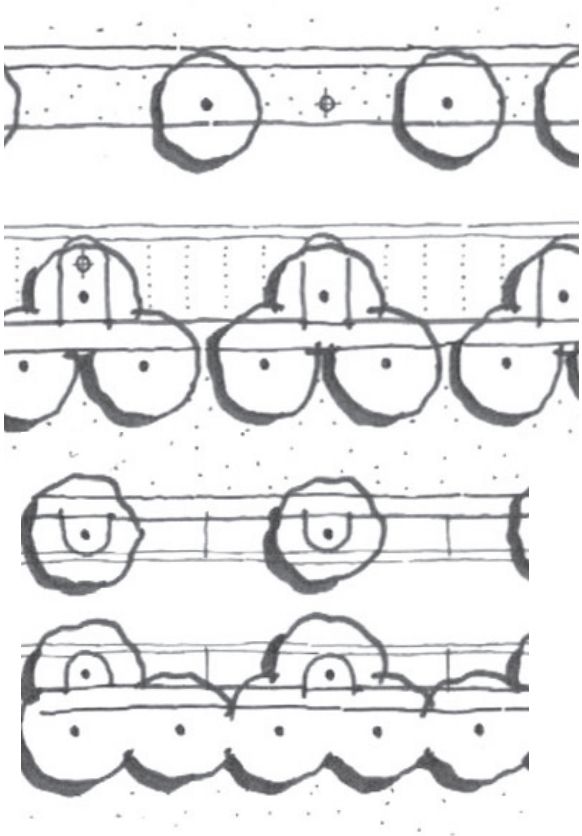


Key Concepts:

Terminate aisle when possible in a landscape view. Curvilinear parking areas to be used to integrate with existing landscape and topography, and designed with a terminating view in landscape islands.

Landscape Ordering Framework
landscape features

on-street parking

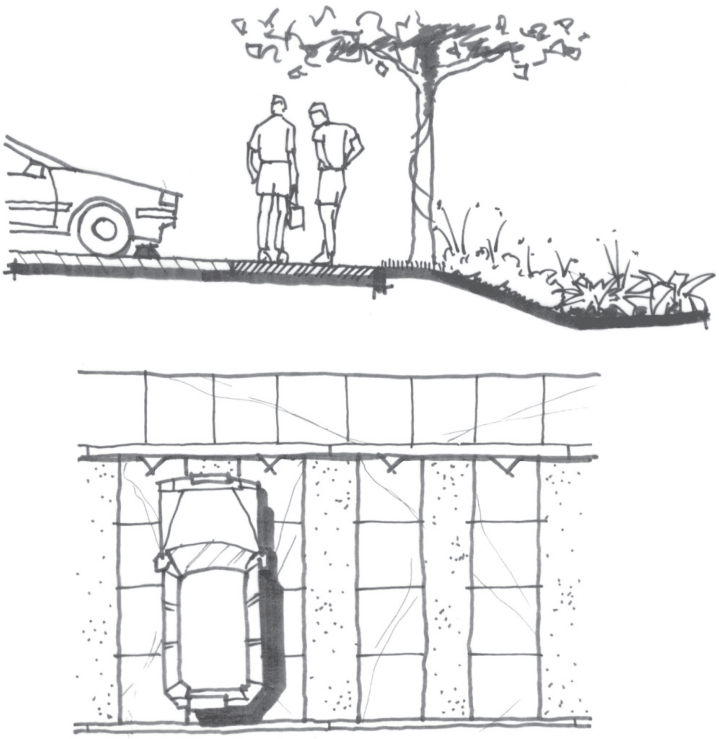


Key Concepts:

In rural to sub-urban contexts on-street parking can be parallel to the street within a grass swale. Street trees should be placed within curbed island to ensure root damage does not occur (top image).

In sub-urban to urban conditions or along streets with narrow right-of-ways, on-street parking should be parallel to the street. Spaces should be limited to 2-3 between trees. Street trees should be placed in bulb-outs or curbed islands to ensure damage does not occur to roots (bottom image).

parking bays



Key Concepts:

Incorporate pervious material (gravel, reinforced turf, ground covers) into parking spaces, in particular, areas with low to moderate use. Limit the amount of parallel parking bays to no more than two without a bioswale or buffer strip.

4.1.27 Utility Siting

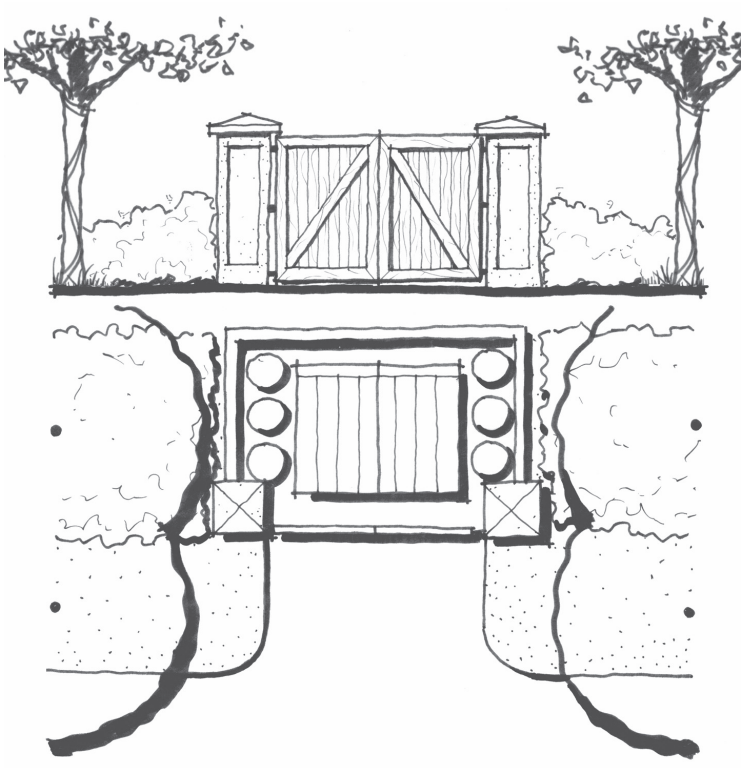
Utility siting should be in a way as to not distract from the natural beauty of the landscape and park space. Generally, all above ground utilities should be located away from direct view from the street, principal building façades, and main park views or vistas. One potential way to accomplish this is by locating electric meters, pump stations, backflow preventers, and other near-ground appurtenances within enclosed structures as shown in section 4.2. When planning a new park structure, utilities should be incorporated into the building whenever feasible. Dumpsters and maintenance corridors should be hidden from view or fully enclosed when close to public areas.

Example of a utility yard at Evelyn Greer Park,Pinecrest, Florida

Vegetative screening of a lift station at Jaycee Park, Coral Gables, Florida

Landscape Ordering Framework
landscape features

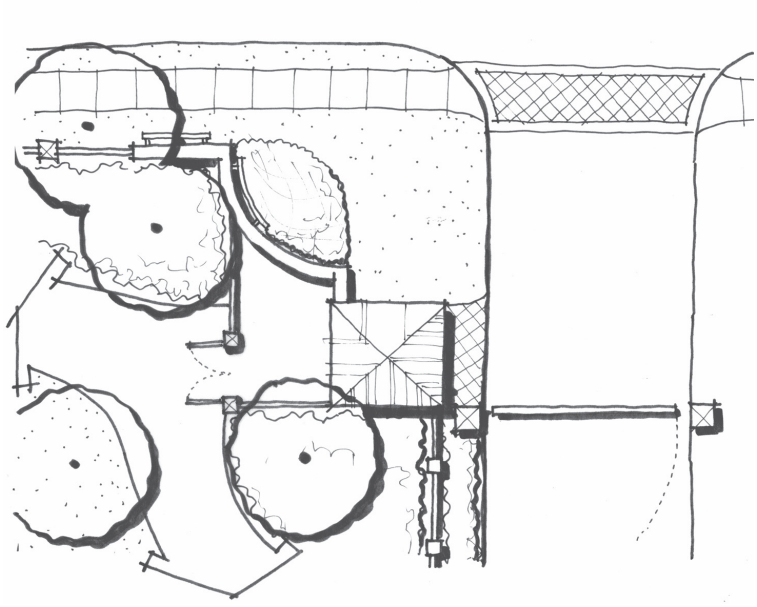
enclosures



Key Concepts:

Hide dumpsters and maintenance corridors from view, fully enclose when close to public areas.

entrances



Key Concepts:

Locate all above ground utilities away from direct view from the street, a principal building façade, and the main park views.

4.1.28 Trails

The following are standards for the design of successful and safe trails in Miami-Dade County. A methodical approach has been conducted to develop trail design guidelines for Miami-Dade County and can be referenced in the Miami-Dade County Trail Design Guidelines and Standards: Ludlam Trail Case Study.

Trail Alignment:

A trail's alignment should take full advantage of the corridor width. Large radius curves of 1,000 feet or more should be planned into the design of the trail to help reduce speeds of trail users and allow for visual changes. All trail elements should be a minimum of five (5) feet from property limits to allow for landscape screening and fencing. Designs should include open green space near neighborhood connections for recreational activities. Examples of this can be found along the Burke-Gilman Trail in Seattle and Seminole-Wekiva Trail in Seminole County, Florida.

Edge Treatments:

Edge treatments are recommended to include a combination of existing fences and barriers where applicable and fences appropriate to the the trail's context, per section 4.2.2 of this document, in locations where encroachment issues exist. Adjacent property owners should be permitted to install privacy fences and gates as needed. Native landscape hedges and shade trees species should be used for screening in addition to fencing.

Trail Width:

The ideal trail scenario is a twelve (12) to fourteen (14) foot paved multi-purpose trail for cyclists and skaters, with a separate six (6) to eight (8) foot shared-use asphalt trail for walkers and runners. AASHTO requirements indicate a minimum ten (10) foot bicycle trail width while Florida Department of Transportation calls for a minimum twelve (12) foot trail width. For a separate bicycle trail, the width needs to allow for passing and maintenance resulting in a twelve (12) foot trail width made up of two (2) six (6) foot lanes separated by a dashed center stripe. A separate pedestrian trail, where right-of-way width allows, should be a minimum six (6) foot in width to allow for two (2) side-by-side pedestrians or two (2) people to pass one another. Combining these two trail components results in eighteen (18) feet of overall pavement width.

At points of constraint such as bridges, tunnels, trail junctions and roadway crossings, bicyclists' may be expected to travel single file allowing for a minimum eight (8) foot trail width along with a minimum six (6) foot pedestrian lane. A two (2) foot shy zone is recommended for the outside bicycle lane at bridges and tunnels for a total trail width of sixteen (16) feet.

Trail Access Barrier Treatments:

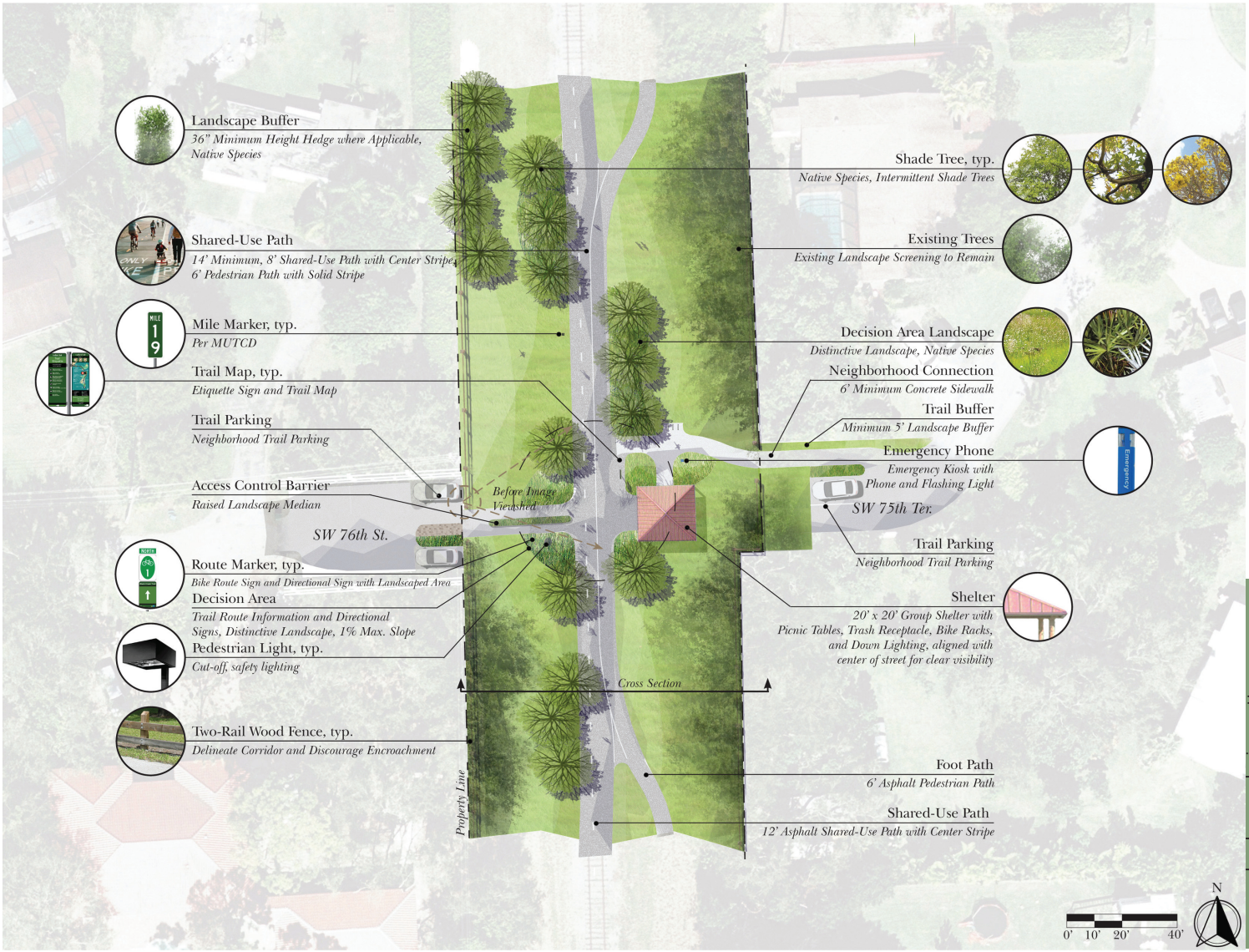
A single bollard is recommended (in the center of the trail) where some type of barrier is absolutely essential; emergency vehicles simply drive around the bollard when necessary. At trail crossings, a raised landscape median in the trail serves as a traffic control device which can be driven over in the case of an emergency. This is sampled after successful access control devices along the Seminole-Wekiva Trail in Seminole County, Florida.

Trail Relationship to Parking:

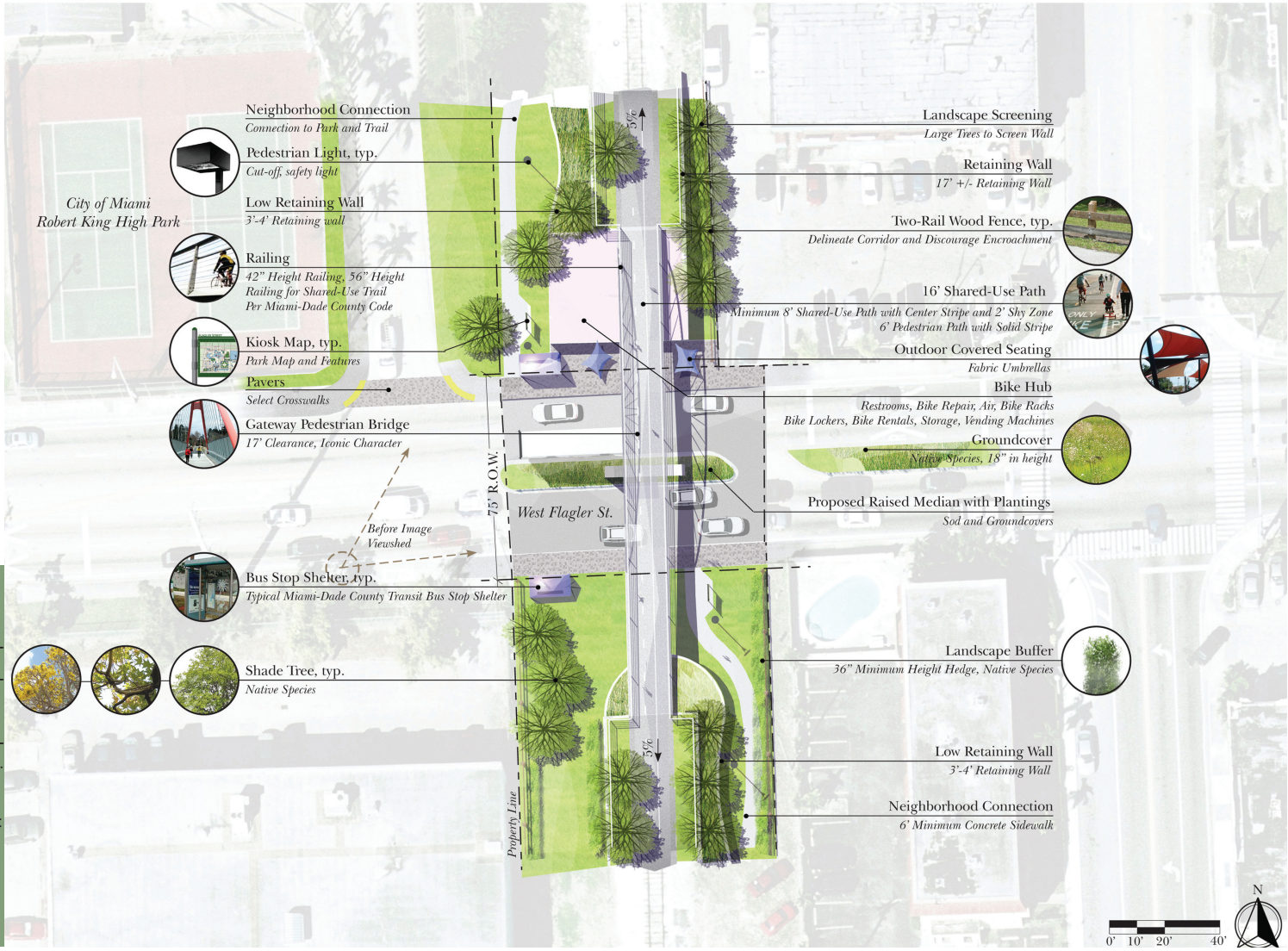
Parking areas do not have to be associated with a dedicated trailhead. Parks, city halls, libraries and other civic sites can provide parking; ideally, a number of spaces are dedicated for trail use. Dedicated parking should be made through the formation of a joint-use agreement. A parking study should be conducted to understand a trail's impact on nearby existing parking facilities. Other commercial sites such as office parks and shopping centers can also be used for trail parking through joint-use agreements with the property owners.

Parking at trailheads, rest areas and institutional properties should have a direct access route of a minimum six (6) feet in width to the trail. This encourages trail users to park at existing facilities and offers a safe ADA accessible route to the trail.

Landscape Ordering Framework
landscape features



The above image depicts a typical neighborhood connection for a trail. Trail width and alignment are identified with access control barrier and relationship to parking within residential areas. The plan also identifies a typical trail rest area.



The above image depicts a typical above-grade arterial street crossing with transit connections via bus stops located within the trail corridor and a bike hub. Wayfinding, outdoor seating, trail material, and park access are also identified within this image.

Landscape Ordering Framework
landscape features

Trail Relationship to Transit:

It is desirable to provide seamless connections between various modes of travel including bikes, buses, transit and automobiles. Transit information and directional signs should be placed at all trailheads, including bus/transit schedules if possible. Directional signs throughout a trail corridor should identify the locations of the nearest bus/ transit stops; and signs at the transit stops should inform riders regarding how to access the trail. Amenities should be provided to encourage multi-modal use. Bicycle parking should be provided at transit stops, along with transit shelters and benches.

Trail Surface Materials:

Asphalt is the most commonly used trail surface material among the studied trails and is recommended for trails within Miami-Dade County due to its lower costs, smooth surface and ease of repair. Asphalt patches can be used to repair small areas that have cracked or become worn; the entire trail should be re-surfaced approximately every ten (10) years, depending on the level of use. Several choices in trail material are available and depend on level of maintenance and construction funding available.

Concrete can be considered, but is generally more expensive than asphalt, has a rougher surface, and has expansion joints that make skating less enjoyable and potentially more dangerous. Asphalt is also preferred by joggers and runners because it has more "give" than concrete allowing for less joint impact. Specialty concrete pavers or stamped asphalt should be utilized at all at-grade crossings, with a high level of color contrast for vehicular and trail users identification. Pavers should identify pedestrian priority zones and trail alignment as identified along the Fred Marquis Pinellas Trail.

Many walkers and hikers prefer a softer, more natural trail surface such as compacted clay or crushed aggregate. These trails are more difficult to maintain than asphalt; grass and weeds must be continuously trimmed or removed, and the trail materials must be periodically replenished. Therefore, use of natural material should be limited for most trails.

Trail Lighting:

Trails are generally treated as linear parks, open from dawn to dusk, and closed at night. Most trails are not monitored at night; therefore, most trails are not lit. Low level/ security lighting should be provided at trailheads, parking lots and crossings to discourage loitering and undesirable behavior, to allow passers-by and law enforcement to observe the sites at night, and to make people aware of the presence of the trail. Lighting should be limited to within fifty (50) feet of decision making areas (intersections, trailheads, etc.) or one-hundred and fifty (150) feet of crossings.

Trail Signage and Wayfinding:

All trails should incorporate standard MUTCD markings and signage at all intersections and crossings. These represent basic requirements to maximize user safety throughout the corridor. Beyond required safety signs and markings, each trail should provide informational signs along the corridor that inform users about distance to trailheads, points of historical/ cultural/ environmental interest along the corridor, and adjacent uses. Signs should be consistent with the Miami-Dade County Park and Recreation Sign Implementation Manual wayfinding program for trails.

Ideally, wayfinding signs will also identify nearby destinations including neighborhoods, parks, civic sites and commercial centers informs trail users about the history of the areas. While it is not desirable to "litter" the corridor with signs, the goal is to integrate the trail corridor into the fabric of the adjacent land uses.

Trail Furnishings and Amenities:

Trail furnishings and amenities for Ludlam Trail should allow trail users the opportunity to sit in a shaded space, provide access to drinking fountains and inform the user of trail destinations and features. At the very minimum, the following trail furnishings should be included along the trail corridor:

- Directional/informational signs
- Shaded benches or seating areas at nodes
- Grab rails for skaters
- Mileage markers
- Low level pedestrian lighting in select areas

Other desirable amenities to consider include:

- Air stations
- Dog watering stations
- Picnic tables
- Picnic shelters
- Shade trees and landscaping
- Playgrounds
- Interpretive signs and exhibits – historical/ environmental
- Food, beverage and/or rental (bike, skate) concessions
- Public art and sculpture
- Fountains
- Decorative lighting

Trail furnishings and amenities can make the difference between a heavily-used and little-used trail. Designers should provide the most comprehensive amenity "package" that they can afford to install and maintain. Because of the costs of regularly monitoring and maintaining trails, site furnishings and amenities should be constructed of sturdy, weather-resistant and vandal-resistant materials.

Trail Rest Areas:

Within medium-high density areas, rest areas should be spaced one (1) to two (2) miles apart at neighborhood, school or park connections to maximize the opportunities for trail users and nearby neighborhoods to use such facilities. In lower density areas trail rest areas may be spaced at a two (2) to five (5) mile interval.

Trail Corridor Vegetation:

Corridor vegetation should be limited to native species of the South Florida region. In addition, close attention should be paid to the various micro-climate conditions along the corridor such as near canals, roadways and existing vegetation.

Native low groundcover plantings should be utilized at roadway crossing areas, within the dividing medians of the trail. There is an opportunity within this area for colorful planting to create additional attention to the intersection by both drivers and trail users. Shade trees should be planted in clusters intermittently along the trail at a minimum distance of four (4) feet to edge of pavement to provide shade with no more than 150 feet between clusters. Palms should be used to define spaces and as an identifying feature at decision making areas such as intersections, crossings, and rest areas.

Trailheads should be well landscaped around parking areas, which in some cases, such as the Seminole-Wekiva Trail, are adjacent to the trail. Plantings in these areas should follow CPTED (Crime Prevention Through Environmental Design) principles with few shrub plantings and open views between two (2) and six (6) feet. Surrounding neighborhoods and schools should be active in the selection of final plants and could help in the maintenance of select areas.

Trailheads:

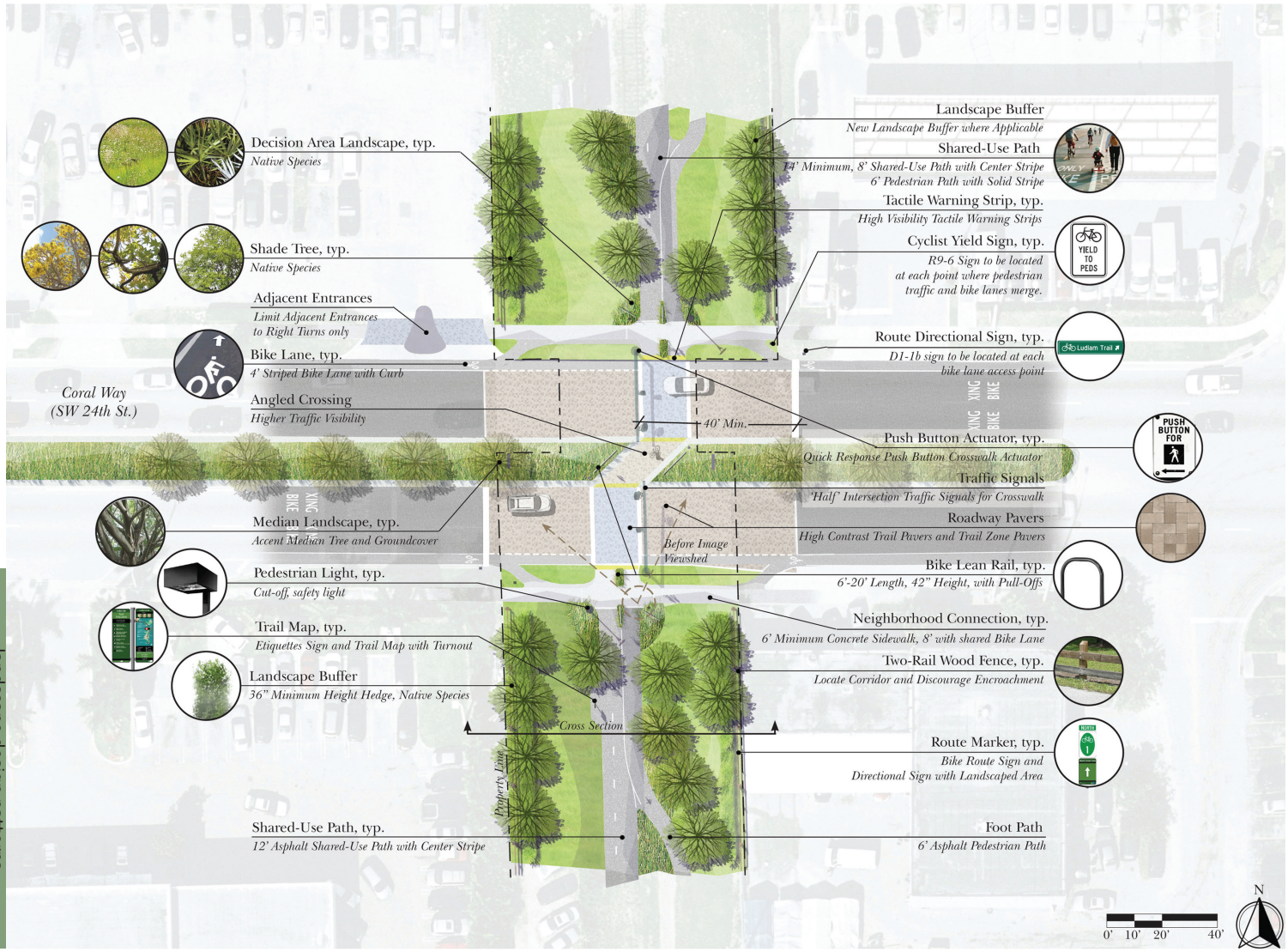
Trailheads are the 'front door' to most trails. Either located at a community park or civic space, trailheads should offer the following items:

- Information sign or kiosk
- Shaded benches or seating areas
- Drinking fountain or spigot
- Restroom facility
- Parking
- Security lighting

landscape design patterns

Landscape Ordering Framework
landscape features

The above image depicts a typical trailhead. Trailhead furnishings and trail connections are shown along with lighting and parking requirements along with typical native vegetation.



The above image depicts a typical at-grade collector or minor arterial street crossing. At-Grade crossings should be considered first when planning a trail crossing and should address trail and vehicle safety needs and provide bike lane connections when possible.

Landscape Ordering Framework
landscape features

Trail Intersections:

Trail intersections should follow best practices for intersections with the planning of trail roundabouts. Intersections are typically high traffic areas of trails with an increased level of potential conflict, similar to typical roadway intersections. By planning a trail roundabout, trail users will be able to easily merge with other trail traffic and make smooth turns into and out of neighborhood connections and other trails.

Each trail roundabout should consist of a minimum twelve (12) foot wide trail roundabout with minimum trail standards of fourteen (14) feet in width and minimum eight (8) foot school connections and six (6) foot neighborhood connections radiating out.

Street Crossings:

At-grade crossings should be considered first when planning a roadway crossing. As roadway conditions deteriorate either by high levels of vehicular traffic, signal proximity, driveway access points, or high trail volumes, above-grade crossings and lastly below-grade crossings should be considered. Below-grade crossings should be considered only when roadway viewsheds or favorable topography permit ease of construction.

At-Grade Crossings:

For at-grade crossings the trail should be divided and made into single lanes by a raised median at the crossing, a lean bar, and an area to turn around between the curbed median and the roadway. Striping should continue across the roadway and be bold enough to denote the crossing area to vehicular users or be highlighted by contrasting pavers. Trail crossing warning signs should be installed at the crossing and one-hundred and fifty (150) feet prior to the crossing on either side of the trail intersection in accordance with all MUTCD and local/ state requirements.

Above-Grade Crossings:

Above-grade crossings for trails should be ADA-compliant, with a maximum five (5) percent slope as well as continuous handrails along the crossing. Bulbouts should be provided along the bridge area to provide rest-stops as permitted. The trail bridge width should have a minimum of sixteen (16) foot clearance. Bike lanes adjacent to railings should have a two (2) foot shy zone. Space below the bridge should be used for trail purposes, such as a rest area or to incorporate a structure or transit stop.

Below-Grade Crossing:

Below-grade crossings for trails should have a trail width through the tunnel of a minimum fourteen (14) feet with a clearance of twelve (12) foot minimum. The tunnel opening should include a two (2) foot shy zone on both sides of the trail to allow trail users to travel away from the tunnel walls. Users should be able to clearly see the other end of the tunnel from the entry to the tunnel. Safety/security lighting should be provided within the tunnel. Skylights should be used in roadway medians to provide additional natural light into the tunnel and to create a sense of openness. The tunnel inside surface should be textured to prevent vandalism and graffiti.

School Connections:

School connections should be a minimum eight (8) foot in width and directly connect to each trail. A secured area for student bike parking should be located near the school and trail. Pedestrian low-level lighting on twelve (12) foot poles, should be located at each school connection.

Park Connections:

Trails should connect to each park within 250' of the corridor with an eight (8) foot minimum paved path. The main trail to park connection should tie into the park's trail network or perimeter path. Park connections should be made near a point of activity such as a visitor or recreation center, or a maintenance area where park staff are present and can provide additional trail security. Six (6) foot paved paths should connect to any nearby parking facilities. Natural areas within parks adjacent to a trail should be fenced to prevent trail users from disturbing natural resources.

4.2 Park Design Elements

The following recommendations for rural, suburban and urban contexts include a family of materials that vary in finish refinement based upon location within the Built Environment Transect, with the coarsest finish materials reserved for rustic or informal settings in rural contexts, progressively increasing in refinement in materials and finish in urban contexts.

The following Park Design Elements will be addressed in this section:

Perimeter Signage (pg. 162)
Perimeter Walls and Fences (pg. 164)
Paving (pg. 170)
On-Site Energy Generation (pg. 171)
Passive Design Considerations (pg. 172)
Stormwater Management (pg. 173)

LANDSCAPE DESIGN ELEMENTS

- Perimeter Signage
- Perimeter Walls and Fences
- Paving
- On-Site Energy Generation
- Passive Design Considerations
- Stormwater Management

Park Design Elements

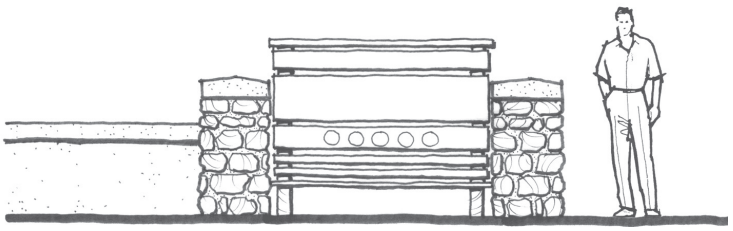
rural	sub-urban	urban
Perpendicular or angled to street, panel incorporated into entry wall or gate	Parallel to street, panel incorporated into entry wall or gate	Parallel to street, incorporated into entry wall or gate
Low limestone rubble wall and split rail (chain link permitted if screened with vegetation when viewed from public areas)	Stone and metal bollards, wrought iron fence, low stone/masonry wall	Stone and metal bollards, wrought iron fence, low walls
Asphalt, gravel, coquina, pervious paving, open cell pavers, reinforced turf	Asphalt, gravel, coquina, pervious paving, open cell pavers, reinforced turf	Pervious paving for high-traffic
Solar array, integrated solar panels, geothermal/geoexchange, wind turbine	transitional	Integrated solar panels, compact wind turbine integrated to building, geothermal/geoexchange
Cross ventilation, large overhang, porches & verandas, natural lighting, high albedo roof & pavement, etc	transitional	Cross ventilation, large overhang or cornice, loggia & arcade natural lighting, high albedo roof & pavement,vertical landscape system, etc
Ponds, bio-swales, rain garden, depressed fields, rain barrel, cistern, vegetative roof (per code)	Ponds, bio-swales, green streets, rain garden, depressed fields, rain barrel, cistern, vegetative roof (per code)	Green streets, rain garden, depressed fields, rain barrel, cistern, exfiltration trench, vegetative roof (per code)

4.2.1 Perimeter Signage

The park perimeter signage is a signature feature representing the community within the neighborhood, and as such should present an attractive view of the facilities within or the landscape to passersby and adjacent properties. In general, material for park perimeter signage transitions from a rough dry stack or wood sign in rural settings to a more refined rough cut stone or metal sign in sub-urban conditions and then finally a cut stone or metal sign in urban conditions.

rural

Park Rules Sign
(Pedestrian Gateways)



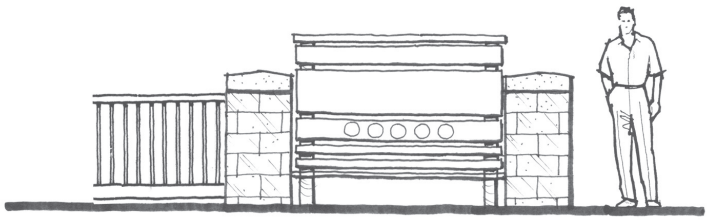
Park Entrance Sign
(Vehicular Gateways)

Key Concepts:

In rural settings park perimeter signage should be perpendicular or angled to street and the signage panel incorporated into entry wall or gate

Park Design Elements

sub-urban

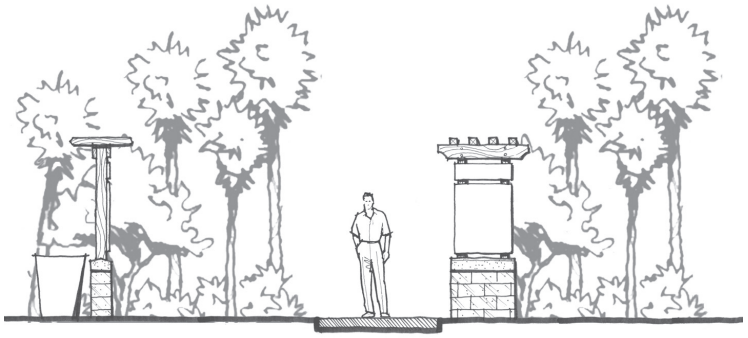


Park Entrance Sign
(Vehicular Gateways)

Key Concepts:

In a sub-urban setting park perimeter signage should be parallel to the primary street with the signage panel incorporated into an entry wall or gate, but may be site specific with a perpendicular siting possible.

urban



Park Rules Sign
(Pedestrian Gateways)

Key Concepts:

In an urban setting park perimeter signage should be similar to the sub-urban guidelines with the sign parallel to the primary street and the signage panel incorporated into an entry wall or gate.

4.2.2 Perimeter Walls, Fences and Bollards

The objective of enclosing the perimeter of park properties is to secure the park from vandals by preventing motor vehicles from entering the grounds, and in some instances it is also for public safety to deter trespassers from walking into the facility when the park is closed.

Whenever feasible the perimeter should be left open to accentuate the natural appearance of the park. Such instances include when the adjoining street is curbed, or if trees or other plant materials serve as a natural barricade to prevent vehicles from entering. When swales and tree spacing are an insufficient deterrent, a natural topographic change supplemented by constructed earth forms may be possible depending upon the drainage conditions.

If a perimeter enclosure is deemed necessary, the following vocabulary of bollards, fences, and walls should be designed to fit as seamlessly as possible into the existing natural environment and settlement context as they relate to their location within the Built Environment Transect. For example, the stone wall along Old Cutler Road at Matheson Hammock Park gently jogs and in one instance incorporates an abrupt curve to quickly avoid an existing tree before continuing with the original alignment.

Perimeter treatment at Evelyn Greer Park in Pinecrest, Florida, includes a metal fence, 30" hedge, sidewalk and a wide tree lawn

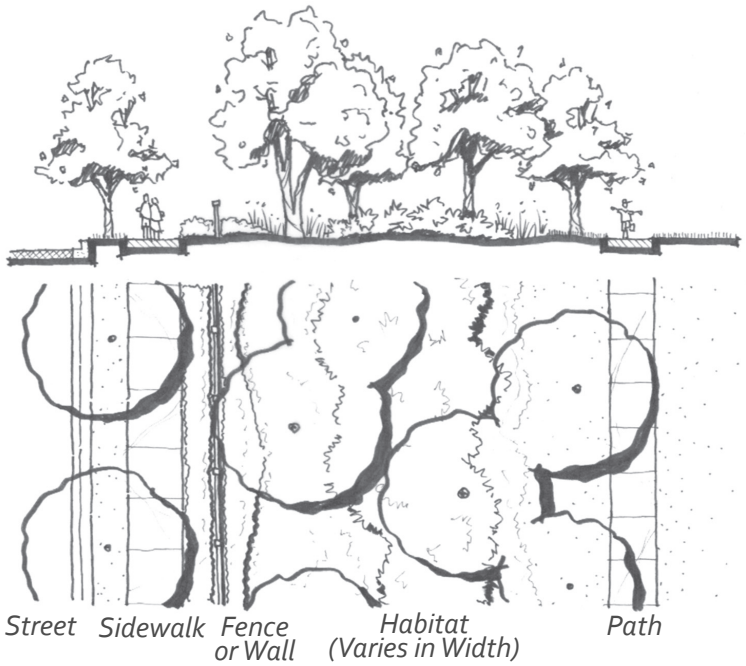
rural

Key Concepts:

The rural park edge can be varying in width to accommodate perimeter habitat's size and existing site context. Provide for limited views into the park from perimeter. Parking can be provided for within the swale per Florida Department of Transportation and/or Miami-Dade County Public Works Department approval.

Park Design Elements

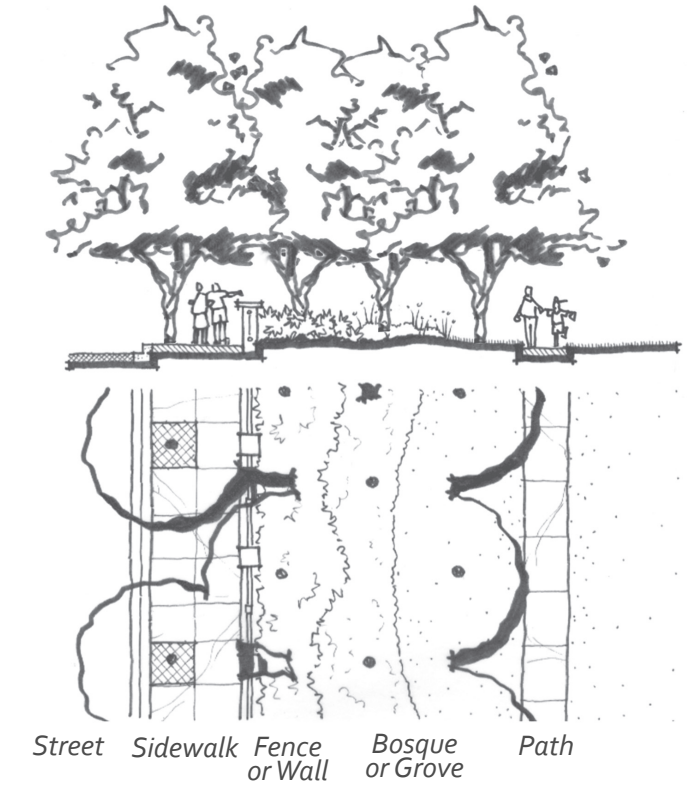
sub-urban



Key Concepts:

Street may be curbed or small swale provided with on-street parking. Separate sidewalk from fence/wall with plantings or grass. Provide for multiple views into park with a variety of habitat plantings available such as, groves, bosques, orchards, scrub or existing vegetation.

urban



Key Concepts:

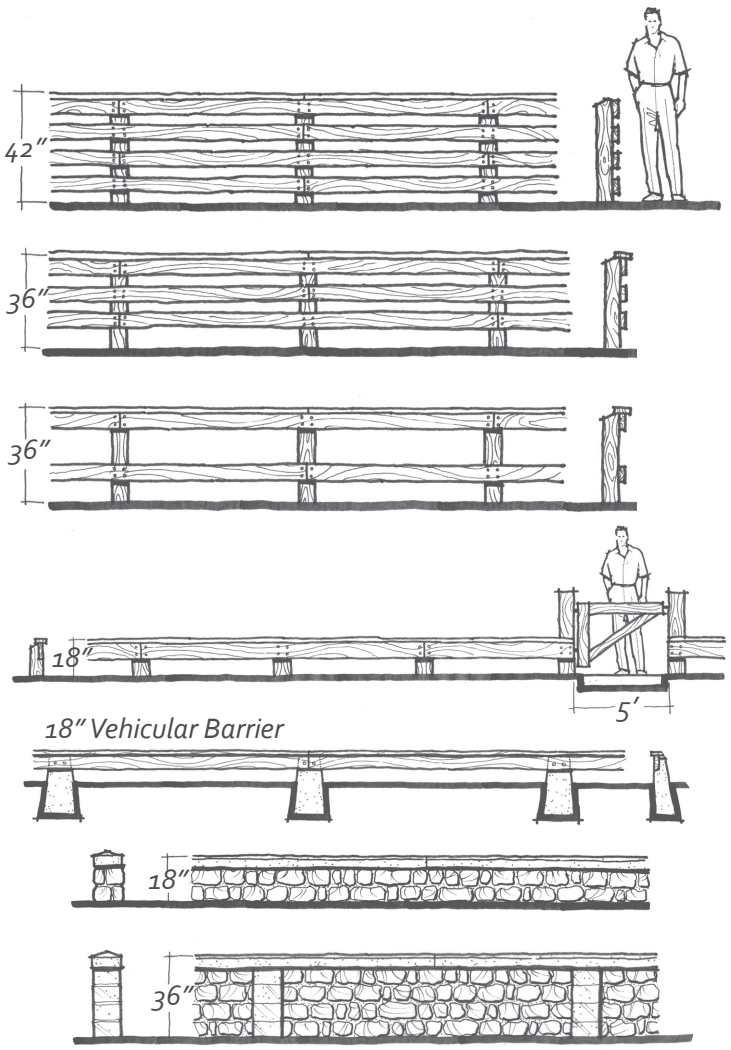
Street conditions may require use of tree grates or parkway with a tree lawn. Sidewalk may be adjacent to fence or wall with a perimeter habitat of low shrubs or groves, or bosques of typically 30-40 feet in width.

A sub-urban park edge condition with a low metal fence with bike racks located adjacent to the gated entrance, Coral Gables, Florida

Example of a stucco wall with coral stone cap at Vizcaya Museum and Gardens, Miami

Example of coral wall at Matheson Hammock Park, Miami-Dade County

rural



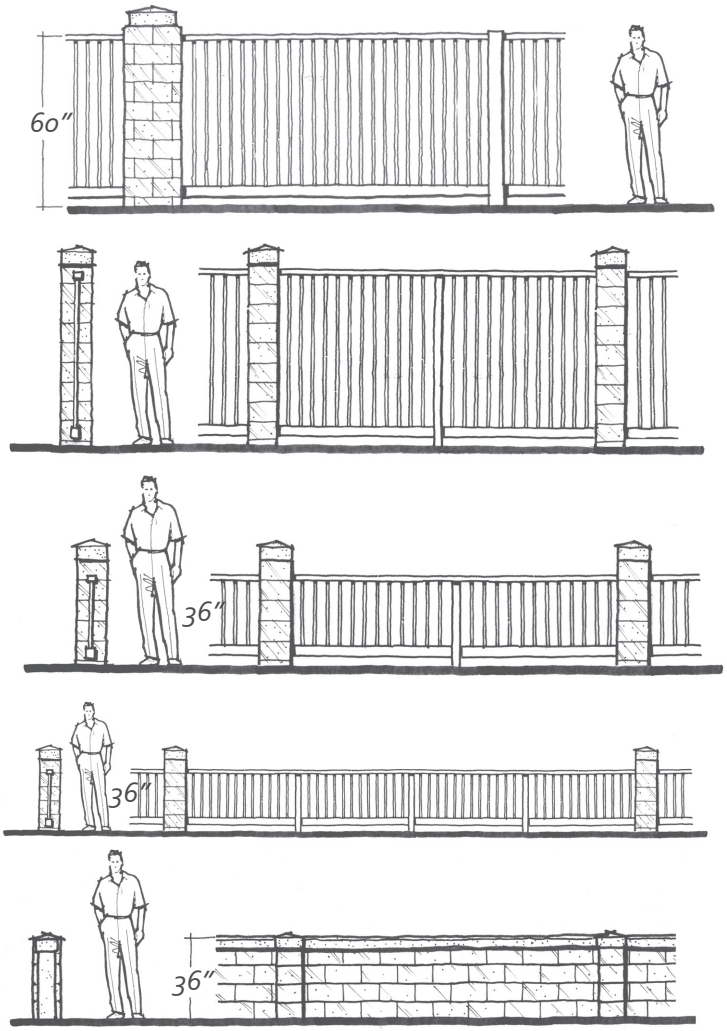
Key Concepts:

Hierarchy of material:

- Low natural coral rubble wall
- Split rail fence
- Dimensioned lumber fence
- Chain link fence (permitted if screened with vegetation when viewed from public areas)
- Wood bollards

Park Design Elements

sub-urban

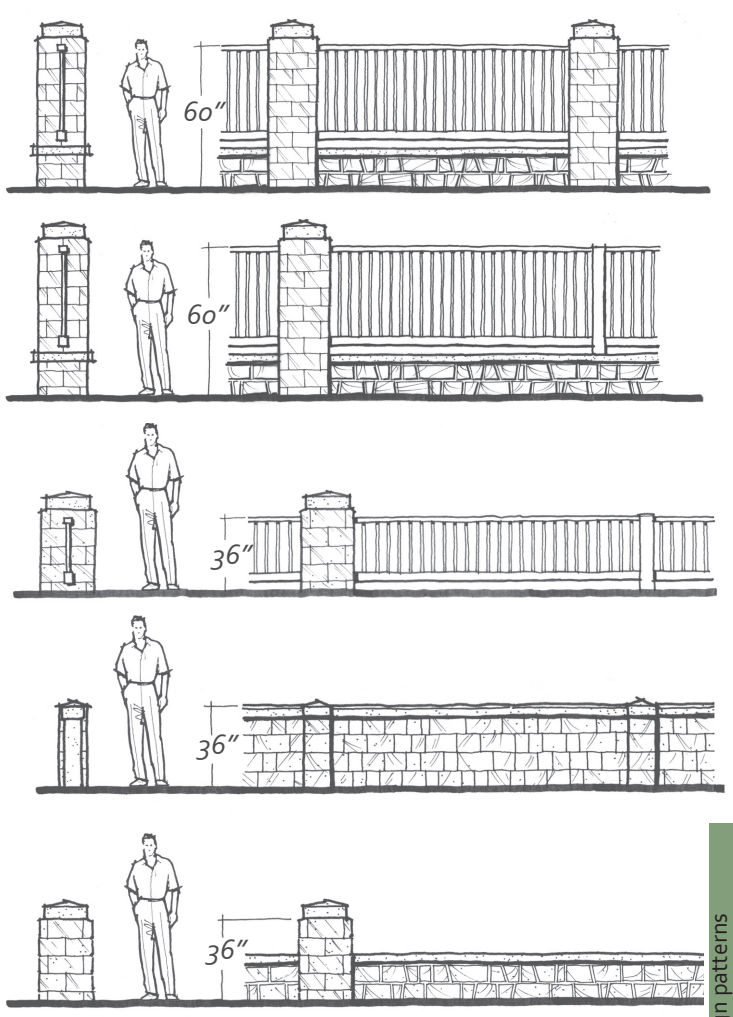


Key Concepts:

Hierarchy of material:

- Concrete, natural coral and metal bollards
- Ornamental metal fence
- Low natural and cut coral/masonry wall

urban



Key Concepts:

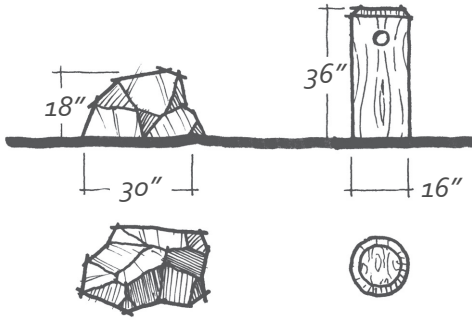
Hierarchy of material:

- Stone and metal bollards
- Ornamental metal fence
- Low cut coral/masonry walls

4.2.2 Perimeter Walls, Fences and Bollards *(cont.)*

An overall cross section of the family of materials and how they relate to the Built Environment Transect is illustrated in this vocabulary of bollards. Starting with roughly shaped boulders at the most rustic and concluding with dimension cut masonry and ornate metal castings or fabrications for urban contexts.

rural



Boulder *Log*

Boulders at A.D Barnes Park are used as bollards for vehicular traffic control

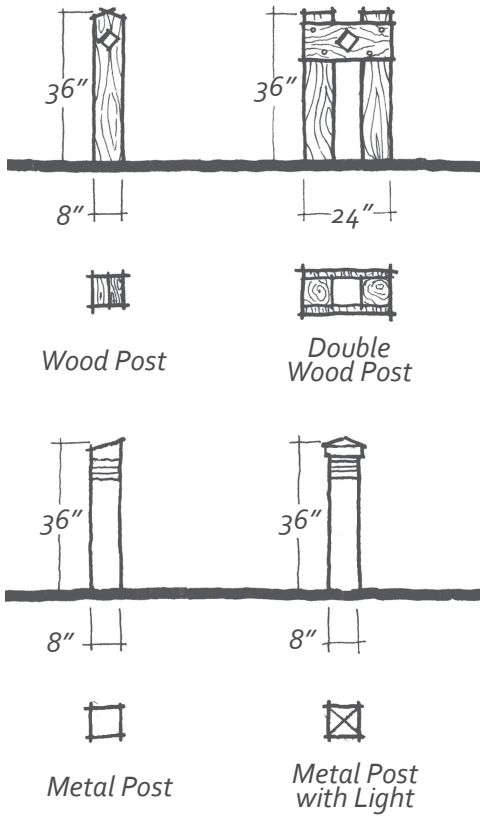
Key Concepts:

Boulders should be used sparingly and with attention given to the consistency in size and shape, and avoiding boulders with sharp angled faces near pedestrian zones.

Boulders are useful for delineating portions of service routes or as a warning signal for a hazardous condition for pedestrians.

Park Design Elements

sub-urban

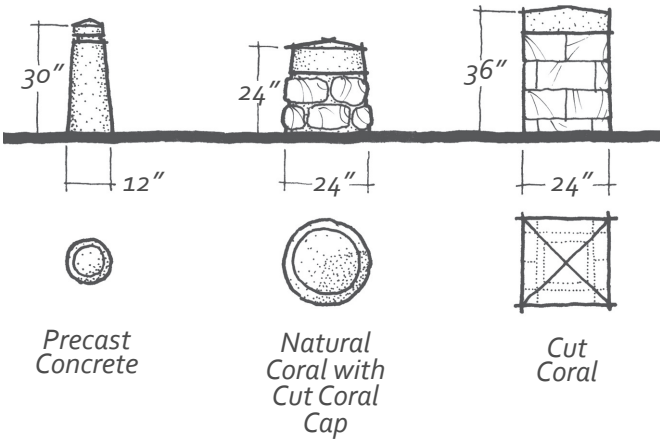


Key Concepts:

Logs and wood post bollards may require a reflector badge in some instances, and a reflective banding

The double wood bollard is useful in large, open landscapes where a single post may be out of scale to the context, or where additional stability is needed such as near high traffic areas or where larger vehicles may occasionally travel.

urban



Key Concepts:

Stone and precast concrete bollards need to meet all Florida Department of Transportation requirements for break away in case of a vehicular accident while still providing the highest level of vehicular barrier.

4.2.3 Paving

Paving material with parks must first meet the intended requirements for which the surface will be used for such as asphalt or reinforced turf for vehicle parking, asphalt for jogging or walking paths, or ADA compliant compacted gravel or pervious paving for lower traffic areas.

The general principle is to have the highest level of pervious pavement within a park which will still meet daily uses. For an example, a parking lot for a community center may have driving lanes and a limited number of parking stalls paved in asphalt, while lesser used parking stalls further from the building could be pervious paving or open cell pavers. Furthermore, additional parking or overflow parking near the community center could be reinforced turf intended for occasional use. This principle should be applied to rural and sub-urban conditions.

In urban conditions, pervious pavers should be used in high traffic areas while open cell pavers or gravel used in lower traffic areas. Reinforced turf should not be considered as overflow parking and is typically not of a concern in urban parks as most parking is provided by on-street spaces or within structured parking garages.

Compacted limerock gravel path with stabilizer added for additional resilience; a steel edge adjacent to planting areas is added to prevent the material from shifting

Key Concepts:

The use of compacted gravel in certain low traffic areas adds variety and character to paths, especially in gardens. With adequate compaction in higher volume traffic areas and the use of a stabilizer, an ADA compliant surface is attainable.

Rural and Sub-Urban:

In rural or sub-urban conditions, paving should be limited to only high traffic areas or when not in a high traffic area, be of a highly pervious material such as gravel or coquina which meets ADA requirements. Typical material includes:

- Asphalt
- Gravel (with stabilizer)
- Coquina
- Pervious paving
- Open cell pavers
- Reinforced turf

Urban:

In urban conditions, an emphasis on maximizing pervious paving should be given. All paved surfaces should have a consideration towards providing the highest level of pervious area as possible. Typical materials include:

- Pervious paving for high traffic
- Asphalt
- Gravel (with stabilizer)
- Coquina
- Open cell pavers

4.2.4 On-Site Energy Generation

On-site energy generation should be encouraged in all County parks, however, potential sources of energy generation need to be sensitive to contextual surroundings of each park.

Within rural and sub-urban conditions, such energy generation devices as solar arrays or wind turbine may be highly appropriate, however, in urban conditions they may not work due to the visual impact and space requirements for such devices. In general, on-site energy generation should be planned for and designed into each new park building and park within Miami-Dade County.

Key Concepts:

Rural to Sub-urban:

- Solar array
- Integrated solar panels
- Geothermal/geoexchange
- Wind turbine

Urban:

- Integrated solar panels
- Compact wind turbine integrated into building
- Geothermal/geoexchange

Example of on-site energy generation within a park at New Town St. Charles, Missouri

4.2.5 Passive Design Considerations

Passive design considerations should be incorporated into each new park plan or when a retrofit of any existing park or park structure is conducted. In South Florida general passive design techniques center on cooling structures and surfaces. Generally, this may be achieved by providing cross ventilation, large overhangs and porches as individual park architectural style permits. Another passive design consideration is providing a high level of natural light within structures to limit energy needs.

As design or site constraints increase, generally in more urban conditions, additional techniques may need to be considered including: high albedo roof and pavement, and vertical landscape systems. Green-walls, or vertical landscape systems, can also be incorporated as screening devices for unattractive sides of buildings or other facilities or used to screen utility equipment.

Key Concepts:

Rural to Sub-Urban

In these conditions, more freedom is provided to design park structures to incorporate passive design features such as:

- Cross ventilation
- Large overhang
- Porches & verandas
- Natural lighting
- High albedo roof and pavement

Urban:

In more urban conditions, more cost prohibitive techniques may be needed due to site or design constraints. These techniques include the follow:

- Cross ventilation
- Large overhang or cornice
- Loggia & arcade
- Natural lighting
- High albedo roof & pavement
- Vertical landscape systems

Example of a building utilizing cross ventilation, large overhangs, natural light, high albedo roofing material as passive design techniques.; Polk County Nature Discovery Center

4.2.6 Stormwater Management

Stormwater management techniques should be planned and designed for each new park or retrofit to an existing park. Many of the County's parks lay next to or near an interconnected system of bays, lakes and canals. Treating stormwater runoff from parking lots, building roofs and athletic facilities is key to improving water quality as stated in Section 2.4 of this document.

Within rural settings, many options are available to not only provide for stormwater management but to utilize these management techniques as features of a park such as a pond or rain garden. Depressed athletic fields or overflow parking can also provide large amounts of additional stormwater storage for most parks while still also providing fill for new park features.

As the surrounding conditions become urban, stormwater management techniques become limited due to site and design constraints. Additional management techniques, however, are gained with the potential to use green streets or streets with pervious pavement, rain gardens and tree canopy. In only the most urban of conditions should an exfiltration trench be considered due to the extreme costs.

Example of a rain garden on a green street in Portland, Oregon

Key Concepts:

Rural:

In rural conditions many stormwater management techniques exist and include the following:

- Ponds
- Bio-swales
- Rain garden
- Depressed fields
- Rain barrel
- Cistern
- Vegetative roof (per code)

Sub-Urban:

In more sub-urban conditions limited space due to site and density constraints may limit opportunities to the following:

- Ponds
- Green streets
- Rain garden
- Depressed fields
- Rain barrel, cistern
- Vegetative roof (per code)

Urban:

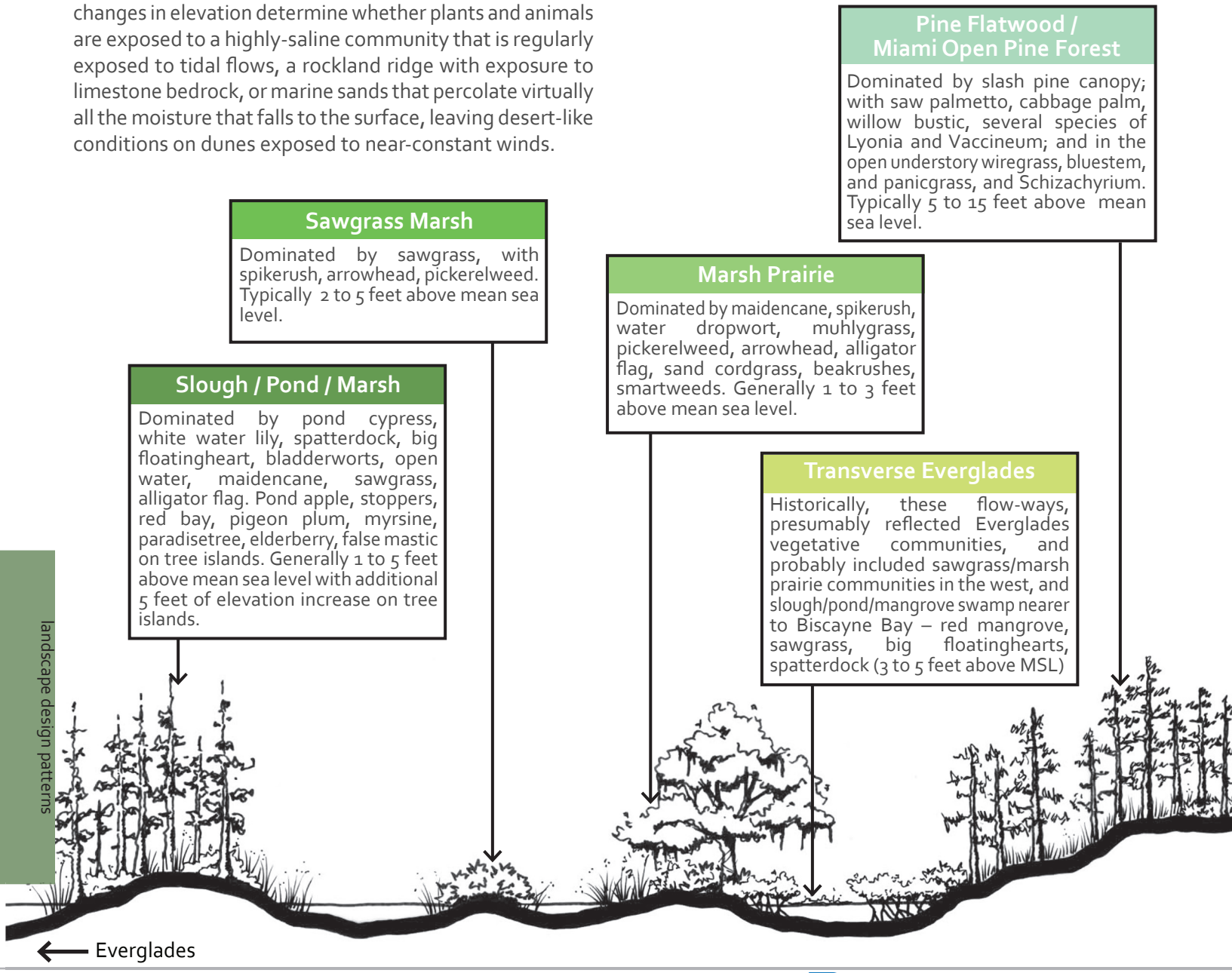
In urban conditions site limitations are the large constraints in providing the stormwater management. Combined with the appropriate paving material the follow are examples of techniques within an urban setting:

- Green streets
- Rain garden
- Depressed fields
- Rain barrel, cistern
- Exfiltration trench (vegetative and gravel)
- Vegetative roof (per code)

4.3 Ecological Communities

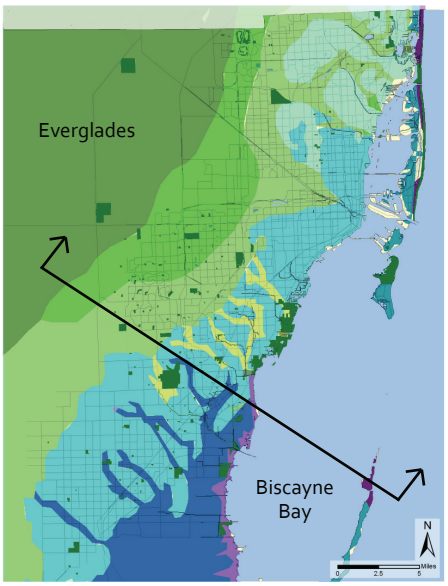
An overall ecological transect, and several cross-sections of specific communities were created to illustrate the natural communities that would have occurred in Miami-Dade County 100 years ago. These cross-sections are purely illustrative and may be compressed horizontally or vertically, or they may depict abrupt vegetative changes in community types for areas that would have had broad transitional zones between them. These transects reflect the significance that salinity, hydrology, topography and soils have on natural communities in south Florida. Slight changes in elevation determine whether plants and animals are exposed to a highly-saline community that is regularly exposed to tidal flows, a rockland ridge with exposure to limestone bedrock, or marine sands that percolate virtually all the moisture that falls to the surface, leaving desert-like conditions on dunes exposed to near-constant winds.

These transects represent the conditions that influence plant diversity and abundance in Miami-Dade County. They depict plant communities that are unique, and frequently dominated by species that are endemic to south Florida, or tropical in their occurrence. These transects are representative of the communities that would have dominated the south Florida landscape 100 years ago, and they should serve as a guide for plantings and historical relationships between plants soils, variable water levels, topography and salinity.



landscape design patterns

Ecological Communities



Miami-Dade County Ecological Communities Map
Section reference for approximate location only

Pine Rockland

Populated by slash pine canopy; saw palmetto, silver palm, white indigoberry, varnishleaf, snowberry, willow bustic, buckthorn, coontie, lacy bracken. Generally 5 to 15 feet above mean sea level.

Coastal Hammock

Dominated by live oak, gumbo-limbo, pigeon plum, wild tamarind, royal palm, mahogany, false mastic, stoppers, marlberry, satinleaf, wild coffee and epiphytic orchids. Typically 3 to 10 feet above mean sea level.

Southern Coastal Marsh

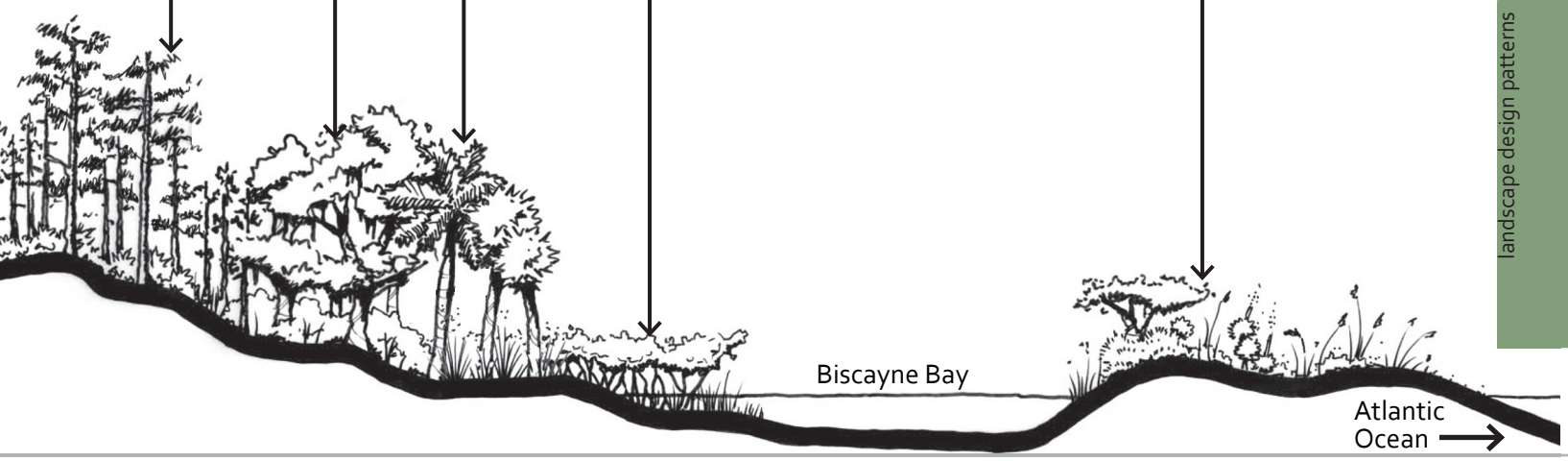
Dominated by cordgrass, black needlerush, saltwort, saltgrass, sawgrass and muhly grass. Typically 1 to 5 feet above mean sea level.

Coastal Dunes

Dominated by sea oats, railroad vine, dwarf sea grape, Spanish bayonet, inkberry, bay bean. Typically 3 to 10 feet above mean sea level.

Mangrove Swamp

Dominated by black, white, red mangrove; buttonwood. Typically 1 to 3 feet above mean sea level.



4.3.1 Slough, Pond, Marsh (with tree island)

Slough environments are found at the edge of fresh water bodies throughout Miami-Dade County, however, they are associated most with the Everglades. Home to emergent grass, sloughs typically include the formation of tree islands.

Tree islands are considered to be the key indicators of the surrounding environment's health due to their sensitivity to flooding and drought. Though the creation of new tree islands is highly questionable due to the complex nature of their formation, many projects are currently underway to determine restoration guidelines.

Sources:
* South Florida Information Access (SOFIA) website
** Everglades Wildflowers; Hammer, Roger
*** The Everglades Handbook: Understanding the Ecosystem; Lodge, Thomas

Example of a Slough area with tree island in western Miami-Dade County

Plant Pattern

Edges of water bodies or within water bodies. Emergent grasses limit recreation uses of water.

Sustainable Practices

Remove nutrients from runoff and to polish water when needed. Remove invasive exotics.

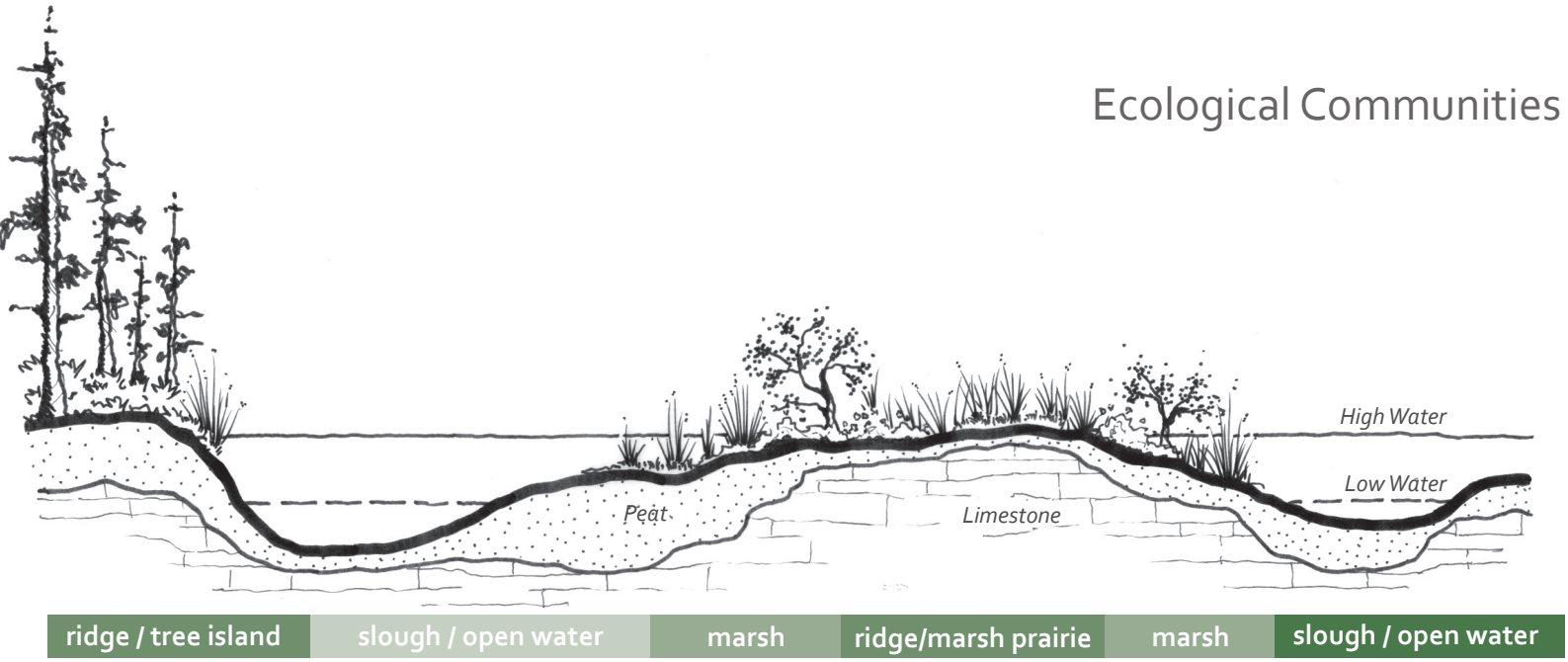
Visual Characteristic

Open views occasionally interrupted by tree islands.

Edge Definition

Poor spatial enclosure due to open water and limited tree island formation.

Ecological Communities



This cross-section is an illustration of vegetation zones, and water levels and soils that historically dominated the Everglades in south Florida. It is a composite of figures and text from the Everglades Handbook by Thomas Lodge.

Plant Palette

Canopy

Bald cypress (*Taxodium distichum*), open water, red bay (*Persea borbonia*), pigeon plum (*Coccoloba diversifolia*) on tree islands

Understory / Shrubs

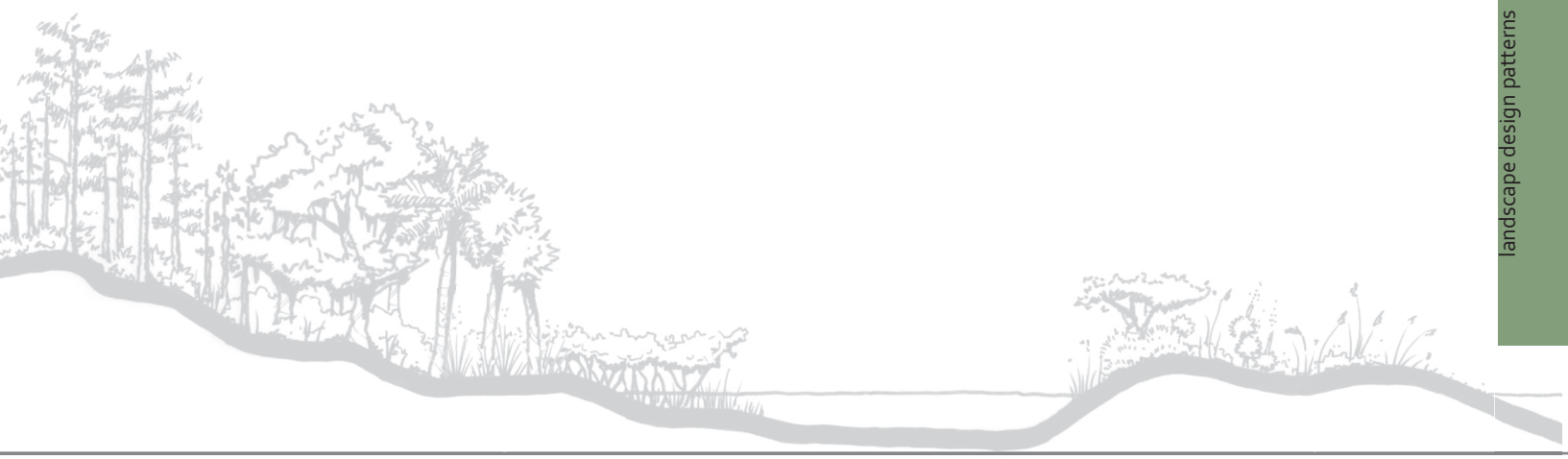
Pond apple (*Annona glabra*), stoppers (*Eugenia spp.*), pigeon plum (*Coccoloba diversifolia*), myrsine (*Rapanea punctata*), false mastic (*Sideroxylon foetidissimum*), elderberry (*Sambucus canadensis*), paradise tree (*Simarouba glauca*) on tree islands

Ground Covers

White water lily (*Nymphaea odorata*), spatterdock (*Nuphar lutea*), bladderworts (*Utricularia spp.*), big floatingheart (*Nymphoides aquatica*), maidencane (*Panicum hemitomon*), sawgrass (*Cladium jamaicense*), alligator flag (*Thalia geniculata*)

Palms

Historically, none present



4.3.2 Sawgrass Marsh

Sawgrass marsh are formed over peat and thin layers of marl and occupy approximately seventy percent of the remaining Everglades. Most sawgrass marshes resemble wet prairie marshes in characteristics and generally form the barrier between slough and prairie marsh environment communities, the primary difference being the monoculture of sawgrass (*Cladium jamaicense*). In addition, sawgrass marshes typically occur on land slightly higher than sloughs or marsh prairies but lower than pine lands.

Water typically inundates the marshes during various periods of the year and ranges in depth from a few inches to several feet. Fire is a major factor of the success of sawgrass marsh and is a requirement to prune trees and brush from the area. If the marsh is dry during a fire the roots of the sawgrass may be damaged leading to the destruction of the community.

Sources:
* South Florida Information Access (SOFIA) website
** Everglades Wildflowers; Hammer, Roger
*** The Everglades Handbook: Understanding the Ecosystem; Lodge, Thomas

Example of Marsh Prairie in western Miami-Dade County

Plant Pattern

The dominant community in the "ridges" of historic ridge and slough system of the Everglades Plains, this community is virtually monotypic in its vegetative character.

Sustainable Practices

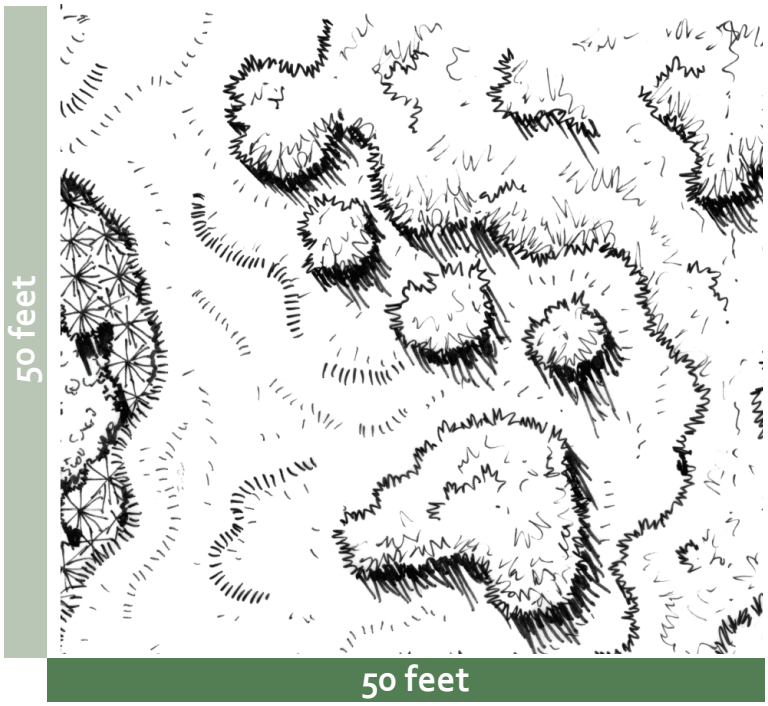
Sustain sawgrass communities through appropriate mixes of flooding, drought, and fire, and limit access to elevated boardwalks, or well-demarcated trails.

Visual Characteristic

Treeless systems with a monoculture of sawgrass growing to a height of 6 feet.

Edge Definition

Definitive boundary with tree islands, marsh prairie and open water based upon dynamic hydroperiods, soils, and fire.



Ecological Communities

(left) Sample planting pattern of a Marsh Prairie environment; dominating species shown include; sawgrass, spikerush, arrowhead and maidencane.

Plant Palette

Canopy

Historically, none present

Understory / Shrubs

Historically, none present

Ground Covers

Sawgrass (*Cladium jamaicense*) with occasional occurrences of spikerush (*Eleocharis spp.*), arrowhead (*Sagittaria lancifolia*), and maidencane (*Panicum hemitomon*)

Palms

Historically, none present

4.3.3 Marsh Prairies

Marsh prairies are seasonally inundated lands intermediate in depth and periods of flooding between sawgrass marshes and sloughs. Wet prairies include the algal components of periphyton, and a variety of vascular plants such as sawgrass (*Cladium jamaicense*), maidencane (*Panicum hemitomon*), beakrushes (*Rhyncospora spp.*), muhly grass (*Muhlenbergia capillaris*), pickerelweed (*Pontederia cordata*), arrowhead (*Sagittaria lancifolia*), floating hearts (*Nymphoides aquatic*) and alligator flag (*Thalia geniculata*). Soil in the prairies is usually a calcareous marl, which is precipitated, at least in part, by green and blue-green algae and other microorganisms in the periphyton. For an additional plant list, see Table 3.1 Representative freshwater marsh plants of the Everglades in The Everglades Handbook.

Marsh prairies occur throughout the Everglades, in parts of the Big Cypress Swamp, and in the sandy flatlands, particularly the Devils Garden area. In the Everglades they occupy large areas called "flats," which are extensive on the boundaries of Shark River Slough and the northwest Everglades. In the flatlands they are characteristically small areas associated with bedrock depressions in the pine forests and dry prairies.

Wet prairies have suffered alteration and destruction since 1900. About 500 square miles have been destroyed, including most of the wet prairies immediately west of the Atlantic Coastal Ridge (Birnhak and Crowder, 1974). Alteration, through drainage, water impoundment, and the spread of exotic plant species, has also been extensive in the remaining wet prairies. In the western Big Cypress Swamp, drainage for urban development has suppressed periphyton production and affected all levels of the food web dependent on this production (Carter and others, 1973). In the central Everglades, wet prairies have been affected recently as a result of changes in water impoundment in the conservation areas.

Sources:
* South Florida Information Access (SOFIA) website
** Everglades Wildflowers; Hammer, Roger
*** The Everglades Handbook: Understanding the Ecosystem; Lodge, Thomas

Example of Marsh Prairie in western Miami-Dade County

Plant Pattern

Broad plant diversity in herbaceous understory maintained by specific hydroperiods and fire; sensitive to human disturbance without elevated boardwalks.

Sustainable Practices

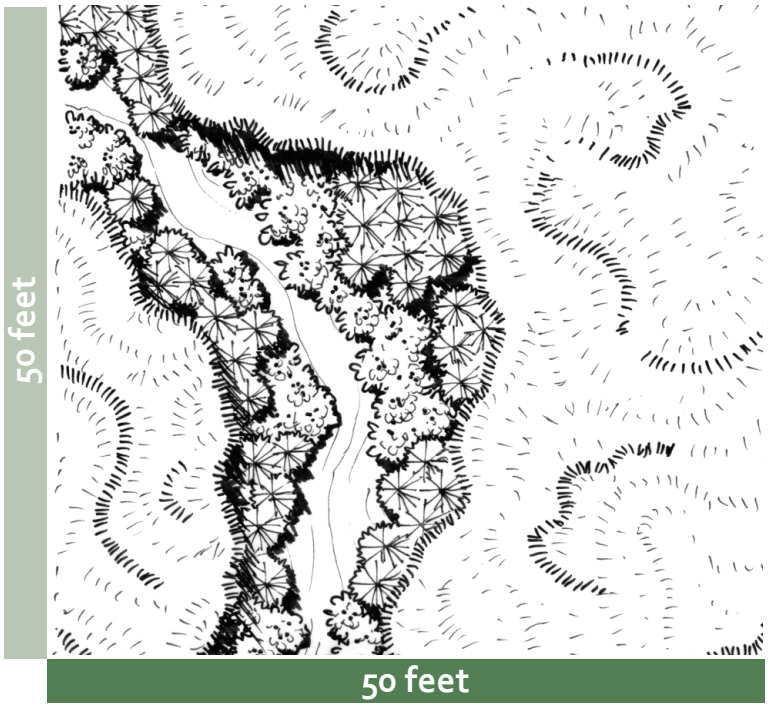
Limit circulation to elevated boardwalks and remove invasive exotics. Enhance or sustain appropriate hydrology, and conduct controlled burns where allowed.

Visual Characteristic

Typically treeless and shrubless; dense mat of herbaceous plants 1 - 5 feet tall.

Edge Definition

Frequently circular arrangement of marsh habitat depending on soils and topography; typically range from 1 - 5 acres if embedded within flatwoods communities.



Ecological Communities

(left) Sample planting pattern of a Marsh Prairie environment; dominating species shown include; maidencane, spikerush, muhlygrass, pickerelweed, arrowhead, alligator flag, and sand cordgrass

Plant Palette

Canopy

Historically, none present

Understory / Shrubs

Historically, none present

Ground Covers

A variety of vascular plants such as maidencane (*Panicum hemitomon*), spikerush (*Eleocharis spp.*), beakrush (*Rhynchospora spp.*), sawgrass (*Cladium jamaicense*), muhly grass (*Muhlenbergia capillaris*), pickerelweed (*Pontederia cordata*), arrowhead (*Sagittaria lancifolia*), floating hearts (*Nymphoides aquatica*) and alligator flag (*Thalia geniculata*)

Palms

Historically, none present

4.3.4 Transverse Everglades

The Atlantic Coastal Ridge, rising to 36 feet above sea level and ranging from 2 to 10 miles wide, is a dominant topographic feature in Miami-Dade County. The eastern fringe of the Everglades is bounded by this coastal ridge, interrupted by coastal rivers. This limestone ridge parallels the coast and historically kept the Everglades' water from flowing freely to the ocean. Occasional breaks in the ridge (in the form of rivers, springs, and transverse glades) historically allowed water to flow from the Everglades to Biscayne Bay during the wet season. Currently, canals have replaced the rivers, levees have blocked the flow, and the water table has been reduced enough to suppress the springs.

These transverse glades were a surface-shallow ground water drainage pathway that moved water out of the main Everglades Basin and controlled the Everglades water table. Transverse glades occurred in a radial pattern of drainage around the Everglades like spokes on a wheel. These glades were typically 1/2-1 mile wide, and 2-5 feet deep.

Sources:
* South Florida Information Access (SOFIA) website
** http://www.fws.gov/southeast/ecosystems/acrobat%5Cchp45.pdf

Plant Pattern

Historically, these flow-ways presumably reflected Everglades vegetative communities, and probably included sawgrass/marsh prairie communities in the west, and slough/pond / mangrove swamp nearer to Biscayne Bay

Sustainable Practices

Many efforts are on-going to recreate transverse everglade communities along canals.

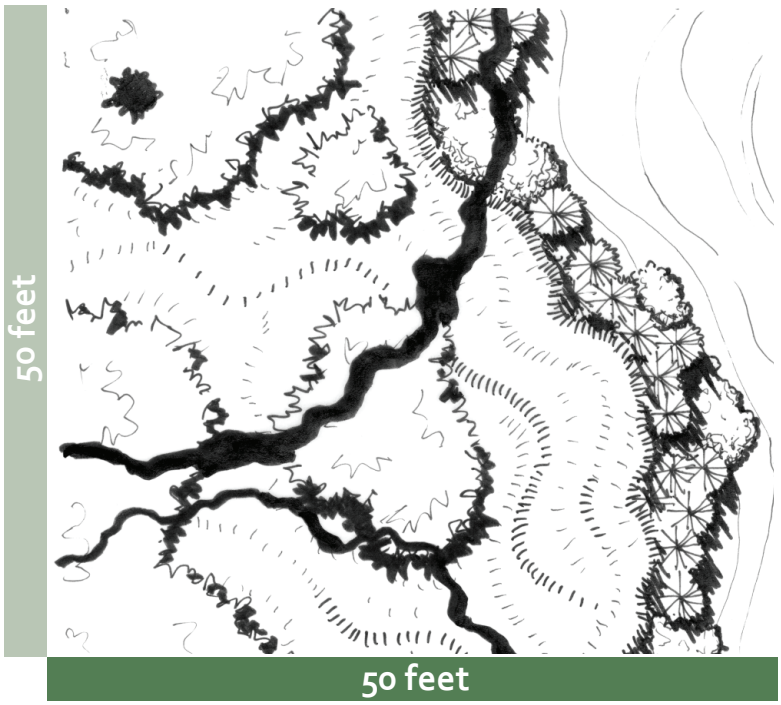
Example of what a transverse everglades environment might have appeared like, courtesy of www.trekearth.com

Visual Characteristic

Highlighted by the combination of open water, nearby marsh, tropical hammock and pine lands which brought spacial enclosure to linear systems.

Edge Definition

Historically defined by hydrology and soils, the edges of these systems in Miami-Dade County have been mapped as discreet flow-ways through the Atlantic Coastal Ridge. Re-creation of slough/pond systems in the urban context could metaphorically mimic the functions and ecology of these systems.



Ecological Communities

(left) Sample planting pattern of a Transverse Everglades environment; dominating species shown include; sawgrass, red mangrove, live oak, slash pine, big floatinghearts, and spatterdock

Plant Palette

Canopy, Understory Shrubs, Ground Covers and Palms

Open water, sawgrass, marsh prairie, mangrove swamp, pine land and tropical hammock communities were likely all reflected both across the topographical gradient (from the Everglades to Biscayne Bay) and a lateral transect (across these transverse systems).

4.3.5 Pine Flatwood / Miami Open Pine Forest

Pine forests occur on rock outcrops and sandy flatlands that are seldom flooded for more than a few weeks each year. The major areas of pine forests in south Florida are in the Big Cypress Swamp, on the Atlantic Coastal Ridge, and on the sandy flatlands north of the Big Cypress Swamp and northeast of the Everglades. In much of the Big Cypress Swamp the pine forests grow on small islands of limestone several inches to several feet higher than surrounding cypress forest land. In the northern Big Cypress Swamp, however, and in the flatlands to the north and northeast, these forests occur extensively on a relatively high sandy soil. Interspersed with the pines are prairies and depressions or low areas of marsh and swamp.

On the Atlantic Coastal Ridge, generally 3 to 7.5 m (10 to 25 ft) above sea level, pines grow on extremely rough and solution-pitted oolitic limestone. Interspersed within the pine forest are numerous hardwood hammocks and small areas of swamp associated with solution holes. Organic soils are thin or absent in the pines of the Atlantic Coastal Ridge but thicken in the hammocks, solution holes, and the transverse glades. The pines on the ridge once formed a more or less continuous band from Miami southwestward into Everglades National Park. Most of this forest outside the park, however, has been destroyed.

Presumably most Miami Open Pine Forest communities would have been flatwoods or rockland communities exposed to frequent fire, and therefore characterized by a park-like understory with an extremely high diversity of understory plants. The accounts of frequently-burned rockland habitat in *Ecosystems of Florida: South Florida Rockland* provide the best guide to the plant diversity and structure in these communities. These communities occurred in northern Miami-Dade County where a greater preponderance of sand covers the rock surface.

Sources:
* South Florida Information Access (SOFIA) website
** Ecosystems of Florida; Myers and Ewel, editors

Pine Flatwood following a prescribed burn in northern Miami-Dade County

Plant Pattern

Presumably, pine rockland communities exposed to frequent fire, these areas would exhibit the extremely high understory species diversity in a parklike scenario, with sparse coverage by south Florida slash pine.

Sustainable Practices

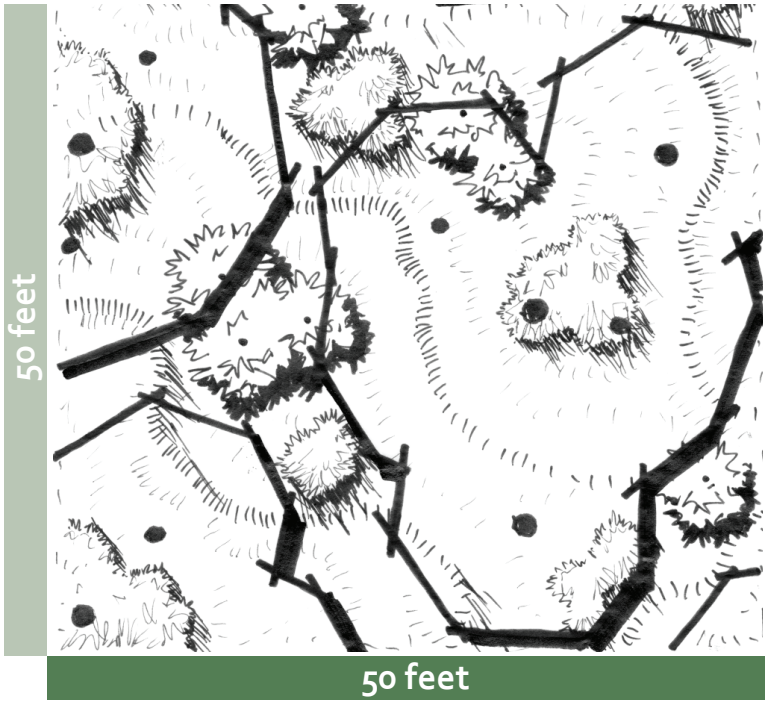
Implement fire management practices, or as a poor alternative, use mechanical, or chemical means to sustain vegetative diversity and structure.

Visual Characteristic

Sparse canopy with limited shade; midstory dependent on patterns of fire; highly diverse understory.

Edge Definition

Edges naturally defined by breaks in fire patterns, soils and hydrology; this system needs separation from fire-intolerant communities.



Ecological Communities

(left) Sample planting pattern of Pine Flatwoods and Miami Open Pine Forest environment; dominating species shown include: slash pine, saw palmetto, cabbage palm, and wiregrass

Plant Palette

Canopy

Slash pine (*Pinus elliotti*)

Understory / Shrubs

Generally, south of Miami tropical trees and shrubs such as *myrsine* (*Rapanea guinensis*), tetrazygia (*Tetrazygia bicolor*), marlberry (*Ardisia escallonioides*), willow-bustic (*Dipholis salicifolia*), varnishleaf (*Dodonaea viscosa*), satinleaf (*Chrysophyllum oliviforme*), and coontie (*Zamia pumilla*). West and north of Miami are gallberry (*Ilex glabra*), wax myrtle (*Myrica cerifera*), staggerbush, rusty lyonia (*Lyonia ferruginea*), shiny blueberry (*Vaccineum myrsinites*), and running oak (*Quercus pumilla*)

Ground Covers

Same as pine rocklands for mesic to xeric conditions; with respect to hydric flatwood conditions, understory includes: ferns (*Nephrolepsis, Osmunda, Thelypteris spp.*); a wide variety of grasses (*Agrostis, Andropogon, Aristida, Dichanthelium, Eragrostis, Muhlenbergia, Panicum, Paspalum, Schizachyrium*, and *Sporobolus spp.*), a high diversity of sedges (*Bulbostylis, Carex, Cyperus, Dichromena, Eleocharis, Fimbrystylis, Rhynchospora, Scirpus, Scleria spp.*); yellow-eyed grasses (*Xyris spp.*); pipeworts (*Eriocaulon spp., Lachnocaulon spp.*, and *Syngonathus flavidulus*); day-flowers (*Commelina spp.*); rushes (*Juncus spp.*); *Aletris, Crinum, and Hymenocalis spp., Iris hexagona*, cannas (*Canna spp.*). Epiphytes are also common, including airplants (*Tillandsia spp.)*; ferns (*Ophioglossum, Phlebodium aureum, Polypodium*, and *Vittaria spp.*); and orchids (*Encyclia tampensis)*

Palms

Cabbage palm (*Sabal palmetto*), silver palm (*Coccothrinax argentata*)

4.3.6 Pine Rockland

Pine rocklands are unique to southern Florida and the Bahamas. In Miami-Dade County, the community is associated with the Miami Rock Ridge, a limestone formation which extends for 70 miles from northeastern Miami-Dade County to the Mahogany Hammock region of Everglades National Park (DERM 1993, 1994). The elevation of the Miami Rock Ridge varies from greater than 15 feet above sea level in the Miami area to less than 5 feet above sea level in the Long Pine Key area. The depth and composition of pine rockland soil varies from almost nonexistent in the Long Pine Key area, to very little exposed rock found in the Northern Biscayne pinelands. Pine rocklands have been heavily impacted by outright destruction, conversion to agriculture, fire suppression, exotic plant and animal invasions, collecting pressure on plants and animals, and alterations to hydrology.

Pine rocklands are dominated by a single canopy tree, South Florida slash pine (*Pinus elliottii var. densa*), a diverse hardwood and palm subcanopy, and a very rich herbaceous layer that represents one of the most floristically diverse plant communities in Florida. While significant areas of pine rocklands are now protected within preserves such as Everglades National Park, Big Cypress National Preserve, and the National Key Deer Refuge, pine rockland fragments are still threatened on the Miami Rock Ridge and in the Florida Keys. Pine rocklands once dominated the landscape in eastern Miami-Dade County and were associated with a mosaic of marl prairies which transected them. Other communities such as swale and coastal marsh surrounded them, and other habitats such as tropical hardwood hammocks were embedded within them.

It is a fire maintained community, requiring periodic fires to eliminate invading hardwoods, assist in nutrient cycling, and to reduce understory layers. Under conditions of fire suppression, hardwoods will invade pine rockland and eventually shade out pine rockland understory species. For this reason, this plant community has been termed a fire subclimax community, since hardwood development is kept in check by fire (FWS 1988b; DERM 1994, 1995).

Sources:
* South Florida Information Access (SOFIA) website
** Everglades Wildflowers, Hammer, Roger
*** Ecosystems of Florida; Myers and Ewel, editors
**** Thomas Lodge's The Everglades Handbook: Understanding the Ecosystem

Pine Rockland located near Zoo Miami

Plant Pattern

Single canopy tree (slash pine) over shallow soils and limestone near the surface, characterized by a diverse understory, historically maintained by fire. Good for supporting trails. In the absence of fire a healthy pine rockland needs a fire surrogate such as hand weeding in order to keep it from being invaded by exotics or turning into a hardwood hammock.

Sustainable Practices

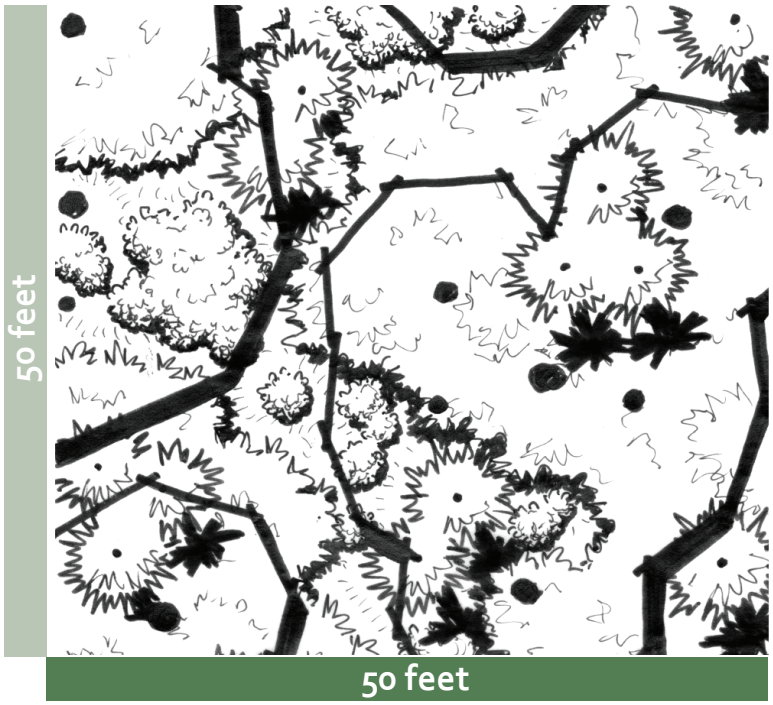
Seek ways to incorporate fire management, protect endemic plants, control access and the extent of trails. Remove invasive exotics.

Visual Characteristic

Sparse canopy with limited shade; midstory dependent on patterns of fire; highly diverse understory, particularly including grasses on the floor.

Edge Definition

Relatively narrow communities along the Atlantic Ridge; long-term protection enhanced by fire or weeding.



Ecological Communities

(left) Sample planting pattern of a Pine Rockland environment; dominating species shown include: slash pine, saw palmetto, silver palm, willow bustic, buckthorn, and coontie

Plant Palette

Canopy

Slash pine (*Pinus elliotti var. densa*)

Understory / Shrubs

Saw palmetto (*Serenoa repens*), swamp-bay (*Persea palustris*), wax-myrtle (*Myrica cerifera*), white indigo berry (*Randia aculeata*), buckthorn (*Sideroxylon reclinatum*), dahoon holly (*Ilex cassine*), varnish leaf (*Dodonaea angustifolia*), locust berry (*Byrsonima lucida*), pineland croton (*Croton linearis*), pineland strongback (*Bourreria cassinifolia*), and wild sage (*Lantana involucrata*)

Ground Covers

Typical widepread herbs and graminoids include *Schizachyrium sanguineum*, *S. gracile*, *Andropogon longiberbis*, *A. glomeratus var. pumilus*, candyweed (*Polygala grandiflora*), creeping morning-glory (*Evolvulus sericeus*), pineland heliotrope (*Heliotropium polyphyllum*), rabbit-bells (*Crotalaria rotundifolia*), and thistle (*Cirsium horridulum*)

Palms

Cabbage palm (*Sabal palmetto)*, silver palm (*Coccothrinax argentata*)

4.3.7 Coastal Hammock

Coastal (tropical hardwood) hammocks are shady, humid forests that are dominated by broad-leaved, tropical trees that are typically spared from frequent fires because of the micro-climate they, in part, create. They are widely distributed and grow in most terrains where conditions of favorable land elevation and fire protection occur. Hammocks grow on land slightly higher than that of surrounding marshes, wet prairies, cypress forests, or mangrove forests. Tropical hammock forests are among the most diverse systems in south Florida, containing more than 100 species of trees and shrubs. Prevalent trees include live oak (*Quercus virginiana*), sugarberry (*Celtis laevigata*), gumbo-limbo (*Bursera simaruba*), mastic (*Sideroxylon foetidissimum*), wild tamarind (*Lysiloma latisiliquum*), lancewood (*Ocotea coriacea*), and pigeon plum (*Coccoloba diversifolia*).

Hammock forests represent a climax community that has developed in the absence of fire. Areas surrounded by deep water or areas of dense vegetation that retain high humidity and soil moisture are protected from fire and thus may favor the growth of these forests. Soils in tropical hardwood hammocks are primarily composed of organic material which has accumulated directly on top of mineral substrate, and are moist, but rarely inundated. Temperature and water salinity, in addition to fire, influence hammock development and diversity. Frost restricts some tropical species, and coastal spray or tidal flooding, especially during storms, inhibits species near the sea.

Because hammocks are on higher land, they have long been sites of human occupation. Hammocks have also been affected both by lowered water levels, which increase the chance of severe fires but which also favor hammock growth in areas formerly flooded, and by exotic species which have invaded some areas. Hammocks on the Miami Rock Ridge and in Big Cypress National Preserve can be described as rockland hammock "islands" on limestone substrate in or on the edges of pine rockland or marl prairie communities as compared with Keys rockland hammocks, coastal berm hammocks or tree island hammocks in the Everglades.

Sources:
* South Florida Information Access (SOFIA) website
** Everglades Wildflowers, Hammer, Roger
*** U.S. Fish and Wildlife Service. 1999. South Florida Multi-Species Recovery Plan. Atlanta, Georgia. Pp. 3: 122, 124-127.
**** Thomas Lodge's The Everglades Handbook: Understanding the Ecosystem

Coastal Hammock within Matheson Hammock Park

Plant Pattern

Mature canopies provide shade, potential for trails; historically diverse plant communities included mid-and understory plant diversity.

Sustainable Practices

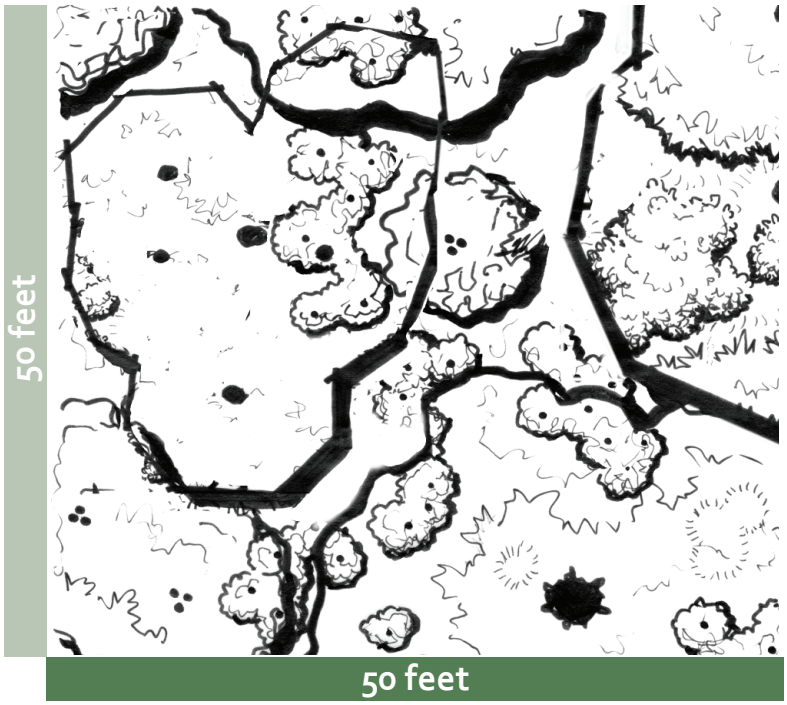
Minimize impacts to canopy trees, increase mid and understory diversity. Remove invasive exotics.

Visual Characteristic

Dense ceiling formed by multi-species canopy; mid- and understory structure highly variable; shaded environment with shrubs, vines, epiphytes arranged in a complex structure underneath. On the Miami Rock Ridge, a mature hammock will have a closed canopy at 18 m (60 ft) or less.

Edge Definition

Maintaining canopy conditions for a single tree may require protection of a 100 foot diameter circle, though these canopies can tolerate adjacent disturbance; multi-species canopies warrant protection from fire, flooding with 50 foot minimum buffer



Ecological Communities

(left) Sample planting pattern of a Coastal Hammock environment; dominating species shown include: live oak, gumbo-limbo, pigeon plum, wild tamarind, royal palm, mahognay, false mastic, and marlberry

Plant Palette

Canopy

Live oak (*Quercus virginiana*), sugarberry (*Celtis laevigata*), gumbo-limbo (*Bursera simaruba*), paradise tree (*Simarouba glauca*), mastic (*Sideroxylon foetidissimum*), wild tamarind (*Lysiloma latisiliquum*), lancewood (*Ocotea coriacea*), and pigeon plum (*Coccoloba diversifolia*)

Understory / Shrubs

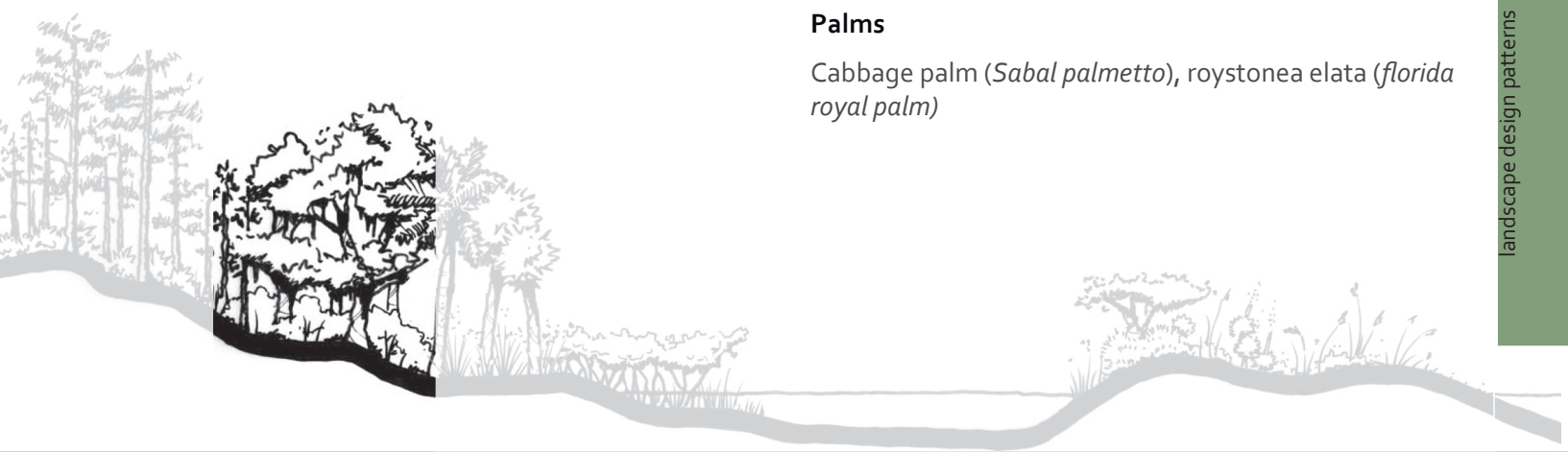
Black ironwood (*Krugiodendron ferreum*), inkwood (*Exothea paniculata*), lancewood (*Ocotea coriacea*), marlberry (*Ardisia escallonoides*), wild coffee (*Psychotria nervosa),* satinleaf (*Chrysophyllum oliviforme*), and white stopper (*Eugenia axillaris*)

Ground Covers

Tropical hammocks are notably deficient in herbaceous plants, but two grasses are common: *Panicum dichotomum* and *Oplismenus setarius*, along with *Lasiacis divaricata*, a viny grass; Boston fern (*Nephrolepis exalta*), sword fern (*Nephrolepis biserrata)* and *Thelypteris kunthii*. The most widespread terrestrial orchids are *Eulophia alta*, several species of Spiranthes, and *Centrogenium setaceum*. An extensive array of epiphytes is abundant in the canpoy, including several species of Tillandsia, several species of Encyclia orchids, resurrection fern (*Polypodium polypodiodes*) and golden polypody (*Phlebodium aureum*). Vines include pull-and-hold-back (*Pisonia culeata*), *Tournefortia hirsutissima*, and *T . volubilis*

Palms

Cabbage palm (*Sabal palmetto*), roystonea elata (*florida royal palm)*



4.3.8 Southern Coastal Marsh

Salt marshes exist along the coast, where fresh water and marine water meet. These areas are at least occasionally inundated with salt water and contain non-woody, salt-tolerant plants. Marshes generally contain few, if any, trees and shrubs. Most of the animals in coastal salt marshes can tolerate variable water depth and salinity. Animals that may be found in these areas include small mammals, juvenile and adult fish, shellfish, and birds.

These herbaceous and shrubby wetland communities occur statewide in brackish waters along protected low energy estuarine shorelines of the Atlantic and Gulf coasts. Salt marshes are sometimes interspersed within mangrove areas, and also occur as a transition zone between freshwater marshes and mangrove forests such as in the Ten Thousand Islands area along the southwest Florida coast. Plant distribution within salt marshes is largely dependent on the degree of tidal inundation, and many large areas are completely dominated by one species. Generally, smooth cordgrass (*Spartina alterniflora*) typically occupies the lowest elevations immediately adjacent to tidal creeks and pools, while black needlerush (*Juncus roemerianus*) dominates less frequently inundated zones. The highest elevations form transitional areas characterized by glasswort (*Salicornia spp.*), saltwort (*Batis maritima*), saltgrass (*Distichlis spicata*), sea ox-eye daisy (*Borrichia frutescens*), marsh elder (*Iva frutescens*), and saltbush (*Baccharis halimifolia*). Sawgrass (*Cladium jamaiscens*), muhly grass (*Muhlenbergia filipes*) and *Schizachyrium rhizomatum* also occur along high marsh gradients in historic systems associated with marl prairies of the Everglades.

Sources:
*Florida Fish and Wildlife Conservation Commission Land Cover Classification System (found at http://www.dep.state.fl.us/water/wetlands/feri/fwcchabitats.htm#Marshes)
**Davis et al. Southern marl prairies conceptual ecological model. Wetlands, Vol. 25, No. 4, December 2005, pp. 821-831.

Southern coastal marsh located near Flamingo Visitor Center at Everglades National Park.

Plant Pattern

Extremely productive systems at the interface of fresh- and tidal waters; these systems are characterized by dense growths of oftentimes singular species of herbaceous plants.

Sustainable Practices

Limit disturbance to elevated boardwalks and remove invasive exotics.

Visual Characteristic

Treeless, frequently patchy assemblages of shrubby vegetation within vast areas of dense herbaceous plants up to 4 feet in height.

Edge Definition

Driven primarily by highly-specific freshwater and tidal interaction, and separation from mangrove and shrub marsh vegetation that could shade or preclude growth patterns of dominant salt marsh plants

Ecological Communities

(left) Sample planting pattern of a Southern Coastal Marsh environment with open water; dominating species shown include: cordgrass, black needlerush, saltwort, marsh elder, sawgrass, and cabbage palm

Plant Palette

Canopy

Historically, none present

Understory / Shrubs

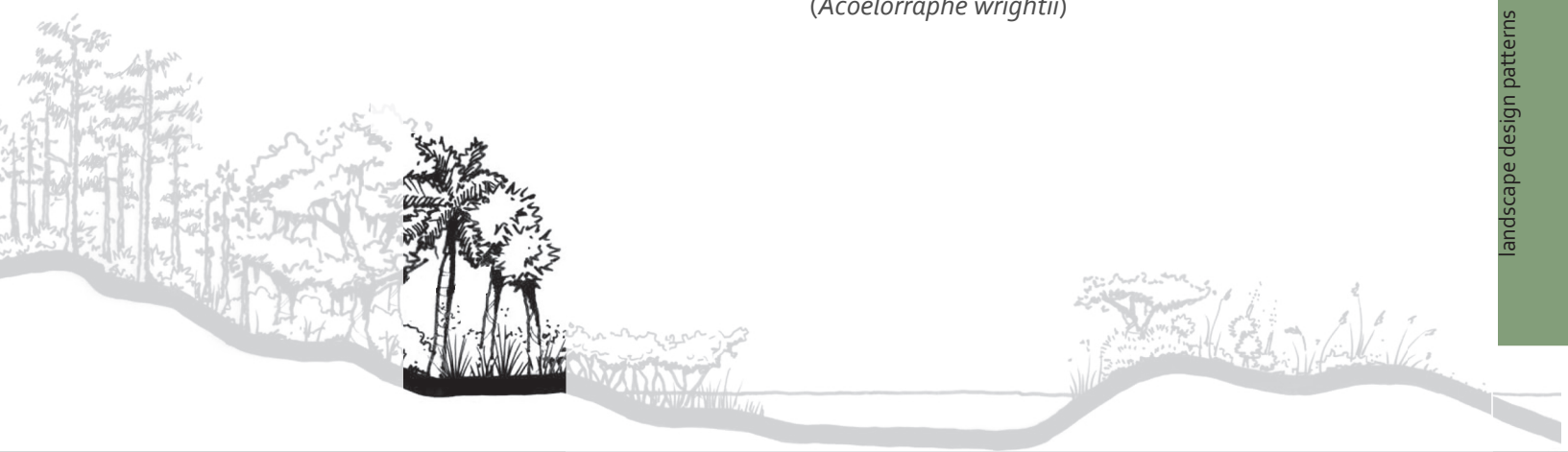
Marsh elder (*Iva frutescens*), and saltbush (*Baccharis halimifolia*)

Ground Covers

Smooth cordgrass (*Spartina alterniflora*) typically occupies the lowest elevations immediately adjacent to tidal creeks and pools, while black needlerush (*Juncus roemerianus*) dominates less frequently inundated zones. The highest elevations form transitional areas characterized by glasswort (*Salicornia spp.)*, saltwort (*Batis maritima*), saltgrass (*Distichlis spicata*), sea ox-eye daisy (*Borrichia frutescens*). Sawgrass (*Cladium jamaiscens*), muhly grass (*Muhlenbergia filipes*) and *Schizachyrium rhizomatum* also occur along high marsh gradients in historic systems associated with marl prairies of the Everglades

Palms

Cabbage palm (*Sabal palmetto*), paurotis palm (*Acoelorraphe wrightii*)



4.3.9 Mangrove Swamp

Mangrove forests and associated salt marshes form a crescent-shaped region around the south tip of Florida. This region ranges in width from a thin fringe of trees along the rivers and behind coastal dunes to mangrove flats and thickets that spread as much as 24 km (15 mi) inland.

Plants that grow in the saline mangrove zone are adapted to varying degrees of tidal inundation. The black mangrove (*Avicennia germinans*) and the white mangrove (*Languncularia racemosa*) require periodic saltwater inundation. The red mangrove (*Rhizophora mangle*), which is the dominant mangrove species, can grow in salt, brackish, or freshwater, but seedlings must be covered by water until they are 3 years old. Because of the red mangrove's tolerance to freshwater, it extends farthest inland; however, it seems to be most susceptible to storm damage. Perhaps for that reason, mature mangrove forests and shorelines are dominated by large old black mangrove trees. Another common tree in the mangrove zone, the buttonwood (*Conocarpus erectus*), prefers higher and drier ground. It grows along riverbanks, embankments, old tree islands, and marl prairies where layers of hurricane mud have raised the ground elevation. Openings and transitional areas in mangrove swamps sometimes contain glasswort (*Salicornia spp.*), saltwort (*Batis maritima*), and other salt marsh species.

Sources:
* Everglades Wildflowers, Hammer, Roger
** Florida Fish and Wildlife Conservation Commission Land Cover Classification System (found at http://www.dep.state.fl.us/water/wetlands/feri/fwcchabitats)

Example of mangroves near Matheson Hammocks Park

Plant Pattern

Extremely dense growth of mature canopy and root structure limits human intrusion without boardwalks.

Sustainable Practices

Limit intrusion to elevated boardwalks and remove invasive exotics.

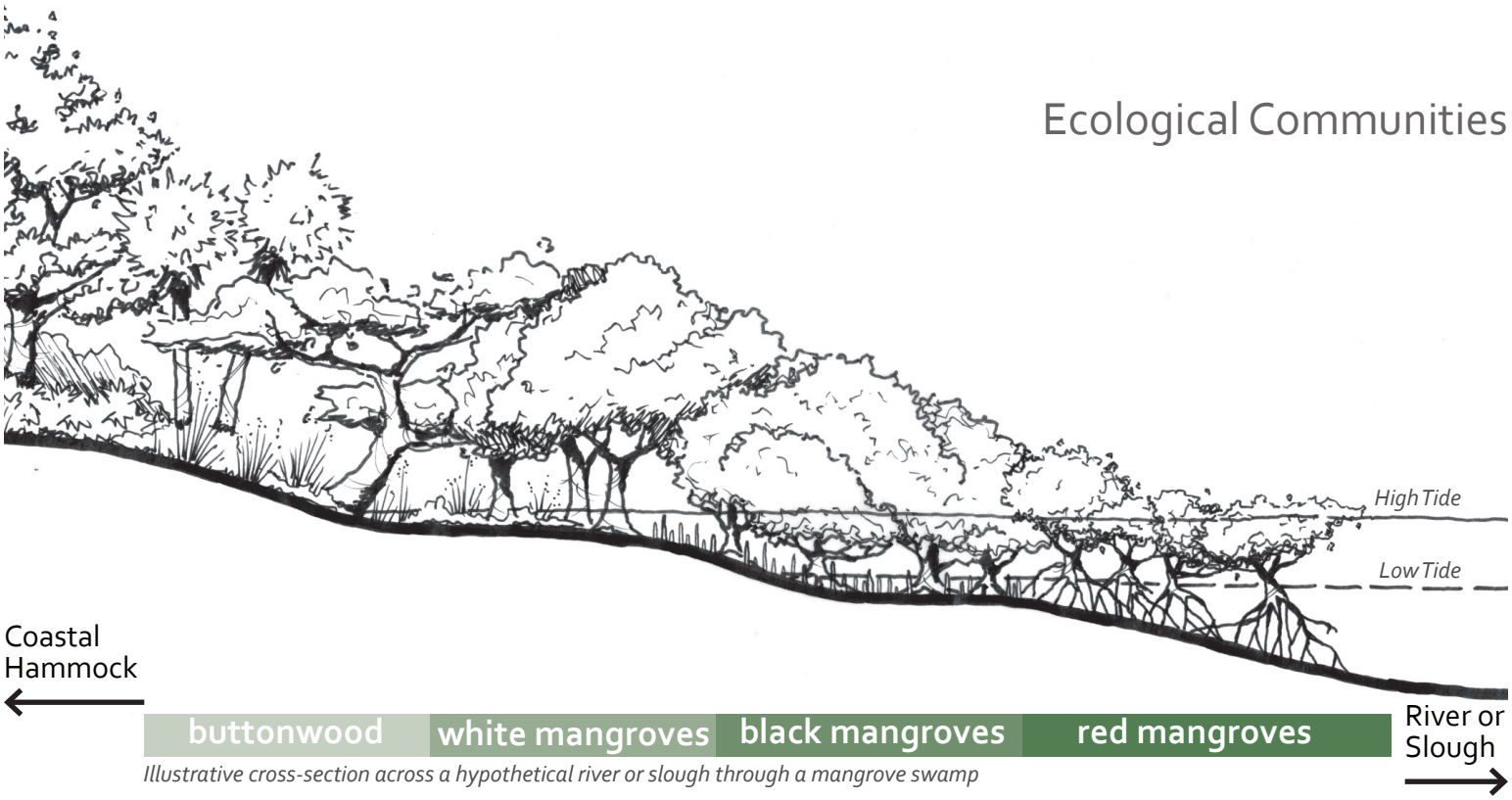
Visual Characteristic

Mature forest of black or red mangrove with a consistent ceiling of 30 - 50 feet; dense array of stems arranged in natural symmetry; dense floor of prop roots (for red), or pneumatophores (for black).

Edge Definition

Defined primarily by limits of flooding and salt concentration; should be protected from uncontrolled human intrusion completely.

Ecological Communities



Illustrative cross-section across a hypothetical river or slough through a mangrove swamp

Plant Palette

Canopy

Black mangrove (*Avicennia germinans*), white mangrove (*Languncularia racemosa*), red mangrove (*Rhizophora mangle*) and buttonwood (*Conocarpus erectus*)

Understory / Shrubs

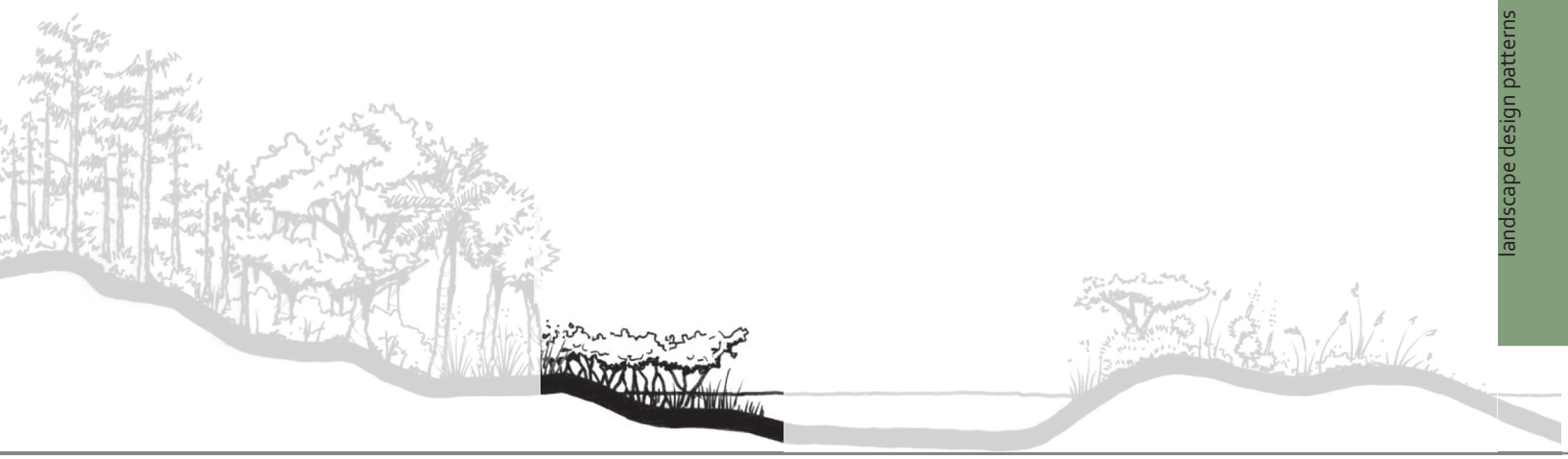
Same species as canopy

Ground Covers

Openings and transitional areas in mangrove swamps sometimes contain glasswort (*Salicornia spp.*), saltwort (*Batis maritima*), saltgrass (*Distichlis spicata*) and other salt marsh species.

Palms

Historically, none present.



4.3.10 Coastal Dunes

Littoral sands have been compared to deserts because of the relatively low diversity of marine animals and plants living there. Vegetation forms zones along the Atlantic sandy coasts. The sea oats zone is closest to the shoreline where the sand is least consolidated and is marked by grasses like sea oats (*Uniola paniculata*) and low shrubs and vines like burrowing four-o'clock (*Okenia hypogaea*), inkberry (*Scaevola plumieri*), bay bean (*Canavalia rosea*), and railroad vine (*Ipomea pes-caprae*). They grow on the seaward slope and on top of the first beach dunes. In exposed areas the upward-slanting dwarf sea grape (*Coccoloba uvifera*) occurs behind the sea oats dune. Between the sea grape and sea oats may be a zone of Spanish bayonet (*Yucca aloifolia*), agave (*Agave decipiens*), and prickly pear (*Opuntia stricta*). A saw palmetto zone frequently occurs on the landward side of the dunes and in depressions behind the dunes. This zone may form impenetrable thickets of saw palmetto, dwarf seagrape, cocoplum, and wax myrtle (*Myrica cerifera*).

Sources:
* Everglades Wildflowers; Hammer, Roger
** Johnson and Barbour; 'Ecosystems of Florida'

Plant Pattern

Plant community highly adapted to hostile environment, sensitive to excessive human disturbance.

Sustainable Practices

Maintain trash free root system. Minimize active uses through and remove invasive exotics.

Example of coastal dunes at Haulover Park

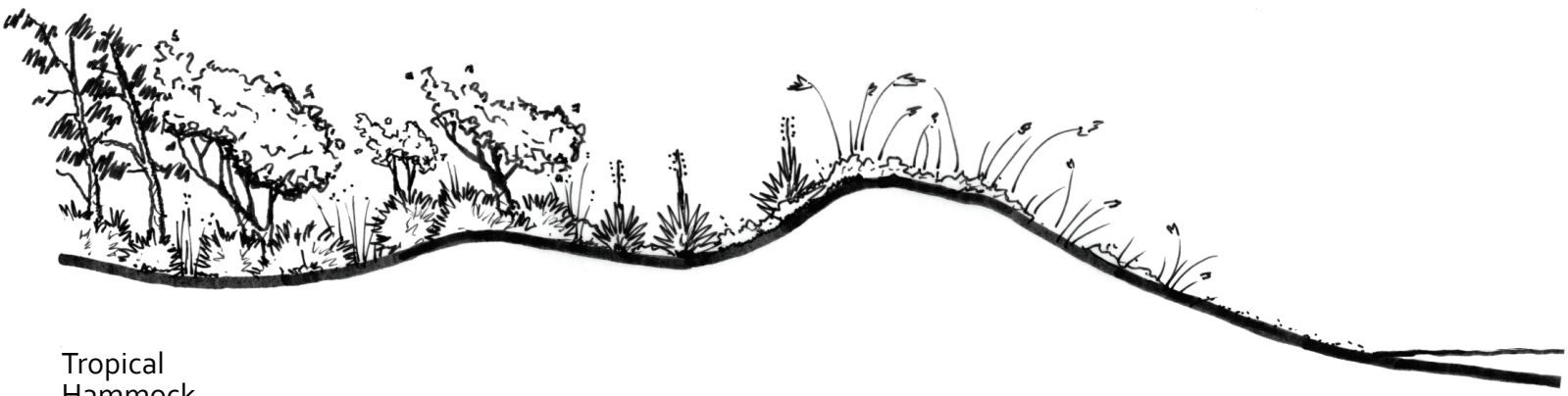
Visual Characteristic

Typically treeless, primary dunes with a carpet of various vines and short perennials; secondary dunes with dense shrubby character, that transition to an abrupt wall of coastal hammock.

Edge Definition

Narrow, discreet zone heavily influenced by wind and wave action, dynamic soils, and salt concentrations; transition to coastal shrub and hammock reflects abrupt changes in these environmental factors.

Ecological Communities



This cross-section is for illustrative purposes, and it is intended to reflect potential vegetation zones along a historical beach and dune system in Miami-Dade County.

Plant Palette

Canopy

Historically, none present

Understory / Shrubs

Dwarf sea grape (*Coccoloba uvifera*), Spanish bayonet (*Yucca aloifolia*), agave (*Agave decipiens*), saw palmetto (*Serenoa repens*) and prickly pear (*Opuntia stricta*)

Ground Covers

Sea oats, (*Uniola paniculata*) railroadvine (*Ipomea pes-caprae*), burrowing four-o'clock (*Okenia hypogaea*), inkberry (*Scaevola plumieri*), bay bean (*Canavalia rosea*),

Palms

Cabbage palm (*Sabal palmetto*)

chapter V

"True ornament is not a matter of prettifying externals. It is organic with the structure it adorns, whether a person, a building, or a park."

- Frank Lloyd Wright

5.0 Architectural Patterns Overview

The challenge to designers of buildings in Miami's Heritage Parks is re-learning the language of our architectural forbearers. This also presents a privilege for new generations of architects to impact civic life where it intersects with one of our most basic instincts: to re-connect with nature through our parks. The buildings and structures in our Miami-Dade County Heritage Parks set the bar quite high, not because they were extraordinary works of civic art, although they were, but because the act of building just a few decades ago, in the earlier part of the 20th century, assumed that structure was built to last. Every wall, every pavilion, every building was not only functionally beautiful in its direct simplicity but also built with pride with local stone, concrete and timbers by skilled local artisans. Also, the buildings stood as humanely scaled jewels in the landscape, whether to be seen as objects at a distance or, by their grouping, creating pleasant and intimate spaces for people to inhabit. For many years the memory of creating such objects and conditions has been lost.

The good news is that many of these heritage structures still remain. These are the best examples to emulate: the oolitic rock picnic shelter at Matheson Hammock Park with its habitable sun roof terrace, the log and oolitic stone boat house at Greynolds Park, William Lyman Phillips' graceful entry gates and caretaker's house at Fairchild Tropical Gardens, and the list goes on. One has only to consciously look, and in fact, it is the habit of looking that has been to a great degree lost, at least until now.

The images, text, and associated bibliography in this pattern book are merely the first step for a designer. In order to create the architecture that our future heritage parks and cities deserve, one must learn from varied experiences with design and construction, and cultivate a lifelong habit of observing from the best building examples, both built and drawn.

Image: Dock Master Building at Haulover Park, Miami-Dade County, Florida

5.1 Architectural Massing and Scale

In reflecting the volumetric standards for buildings for Miami-Dade County's Heritage Parks Pattern Book, we consolidated the recommendations of the following sources. We encourage each of the following texts to be a staple in every designer's library if possible:

- For climate responsive proportions and orientation for buildings, *Design With Climate*, Victor Olgyay
- For dimensional criteria of buildings, general criteria for exterior courtyards, and building volume, A *Pattern Language: Towns, Buildings, Construction*, Cristopher Alexander
- For proportional criteria for courtyards, *Hegemann and Peets American Vitruvius*, Werner Hegemann and Elbert Peets
- For building roof criteria, *Get Your House Right*, Marianne Cusato

Building massing should follow as much as possible a 1:3 proportion, with the short sides facing east and west. The maximum size of a building should be no longer than 90', therefore the ideal corresponding short dimension should be no larger than 30'. The short dimension is consistent with the criteria that at no point in a building is one farther than 15' from an exterior wall or window. Exceptions include buildings such as gyms, which need larger footprints. In those cases, include skylights or other strategies to incorporate natural light; additional programs subordinate to these larger buildings incorporate as wing appendages if possible.

Colonnades and/or landscaped trellises should shade southern and western facing building sides. Awnings, and other shading strategies, including colonnades and trellises, can protect the northern sides of buildings from the summer sun. It is encouraged to line all sides of courtyards, entryways, and other conditions conducive to a public realm, with colonnades and trellises, as they readily allow the interaction of interior and exterior spaces. Colonnades should be no shallower than 10'; trellises no shallower than 8'.

While the normative scale of park buildings are one story, additional building program can be incorporated adding additional floors to the main building, up to four stories. Minimum heights of rooms shall be 9', although heights of up to 12' are encouraged. Generally, the ground floor is higher than the second floor; windows should also follow the hierarchy of taller windows on the ground floor. In assembly rooms, ideally make the height of the room ¾ the short room dimension or equal. Additional program can be added using "wings"; Christopher Alexander calls this a "cascade of roofs." Wings are generally lower than the main building and their short building dimension are to be less or equal to the short dimension of the main building.

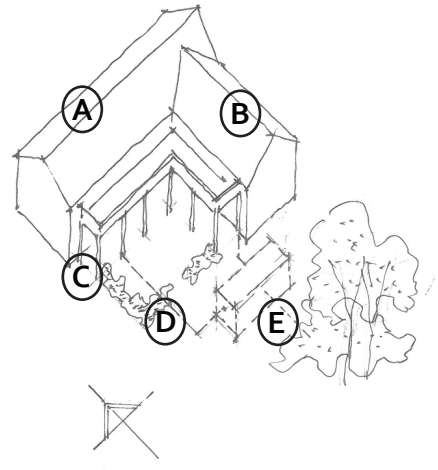
It is required that a building with wings or an assembly of separate buildings form courtyards, or positive open space. Wings are to be generally lower than the main building. Courtyards ideally are oriented to the south, but are encouraged in conditions to reinforce the public realm. The dimension of the open space is relative to the tallest building in a grouping, or the tallest element in a building. Ideal ratios for courtyards based on height are 1:1 up to 1:3. Therefore if a building wall is, say 10' high, then the courtyard in plan can be 10' x 10', up to 10' x 30'. Variant courtyard plan dimensions can vary based on this combination of minimum to maximum range: 10' x 20', 20' x 20'; 30' x 30'; 20' x 30', etc. One suggestion that Alexander makes, however, is that in every courtyard there is ideally a view to a larger space beyond. This can be accomplished, for example, by making the third and/or fourth side of a courtyard a low wall, an open trellis, or a partial building and wall combination. The options are open to the designer.

For a larger program, or groupings of buildings, one needs to consider how the building or buildings (figure) and the resultant adjacent open spaces and plazas (ground) form an interconnected pattern, or grid (geometric or loose) resulting in pleasant and humane sequences of indoor and outdoor spaces. This achieves a greater interaction with our tropical climate. For additional criteria, refer to section 5.1.

It is recommended that roofs of buildings be used for habitable terraces whenever possible. Outdoor terraces should be adjacent to the room or rooms they serve, and be roofed or trellised. Other encouraged uses of roofs include rain water collection systems in either rain barrels or cisterns for reuse and solar panels for power generation.

Roof slopes should be 5:12 or higher to shed water. For Mediterranean Revival, typical pitches are 5:12 and 6:12. Generally avoid 45 degree roofs, as the effect can be static.

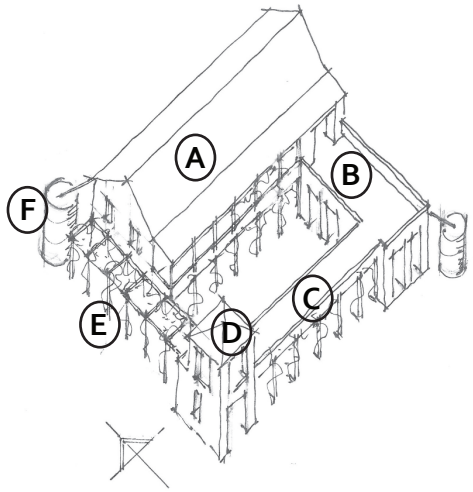
one story



Key Concepts:

a. Main building with colonnade
b. Building wing
c. Colonnade
d. Landscaping delineates courtyard
e. Underground Cistern / Reclaimed water for irrigation/ reuse

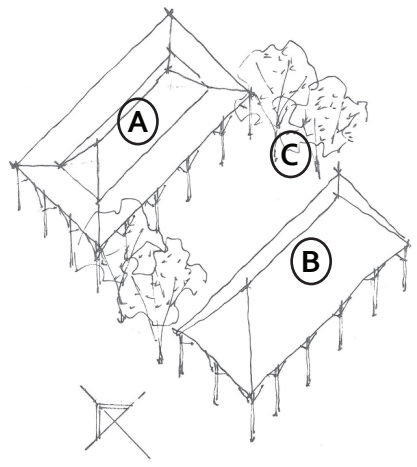
two story



Key Concepts:

a. Main building with colonnade
b. Building wing with roof terrace
c. Free standing colonnade
d. Tower overlook
e. Trellis with vines
f. Rain water storage tank

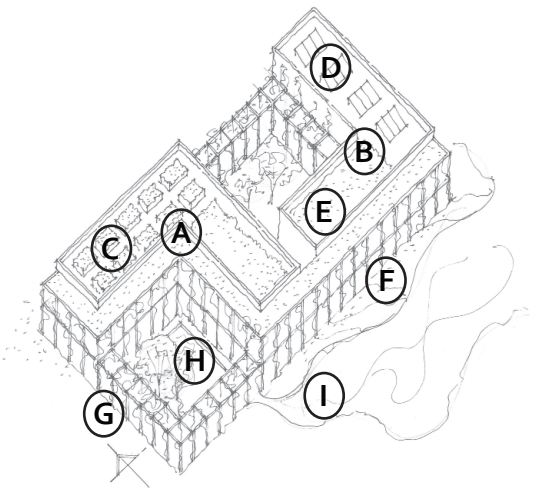
building and shelter



Key Concepts:

a. Main building with wrap around veranda
b. Pavilion
c. Trees frame courtyard

buildings in sequence



Key Concepts:

a. Building One
b. Building Two
c. Raised bed roof garden
d. Solar collectors
e. Green roof
f. Colonnade with green roof
g. Trellis with vines
h. Rain water collection in courtyard
i. Lake/water body linked to rainwater collection

5.2 Architectural Style

The following pages include a sample selection of drawings, historic postcards and photographs, intended to guide the architects designing park buildings in the future. These are in turn grouped under six architectural styles chosen because they are most loved and embedded in our collective mind as belonging to South Florida architecture and its heritage parks: Florida Vernacular, Mediterranean Revival, Great Camp/WPA, Streamlined Moderne/Art Deco, and Miami Modern commonly known as MiMo. Included are recommendations to the designer regarding where each style is appropriate.

The idea of the Transect is analogous to wearing the correct attire for a given situation: one wears a tuxedo or evening dress for a formal event, business attire at the office, and camping attire for a trip to the woods. The same principles apply to architectural syntax: Art Deco and MiMo are recommended for urban areas (T-4 to T-6) and beach settings; Mediterranean Revival is appropriate in most conditions (T-1 to T-6); Florida Vernacular is generally acceptable in all conditions other than urban (T-1 to T-4); Great Camp is generally recommended for rural or internal park settings (T-1 and T-2).

ARCHITECTURAL PATTERN ELEMENTS	Florida Vernacular	Great Camp/ WPA	Mediterranean Revival	Art Deco/ Streamlined Moderne	Miami Modern/ MiMo
Doors	pg. 208	pg. 222	pg.236	pg.252	pg.266
Windows	pg. 209	pg. 223	pg.237	pg.253	pg.267
Roofs and Eaves	pg. 210	pg. 224	pg.238	pg.254	pg.268
Walls and Materials	pg. 211	pg. 225	pg.239	pg.255	pg.269
Columns, Piers and Arches	pg. 212	pg. 226	pg.240	pg.256	pg.270
Porches, Loggias and Arcades	pg. 213	pg. 227	pg.242	pg.258	pg.272
Awnings, Canopies and Shutters	pg. 214		pg.243	pg.259	pg.273
Tower Elements	pg. 215	pg. 228	pg.244	pg.260	pg.274
Railings	pg. 212	pg. 226	pg.241	pg.257	pg.271
Gateways			pg.245		pg.268
Bridges		pg. 229	pg.246		
Art Work	pg. 216	pg. 230	pg.247	pg.261	

5.3 Florida Vernacular

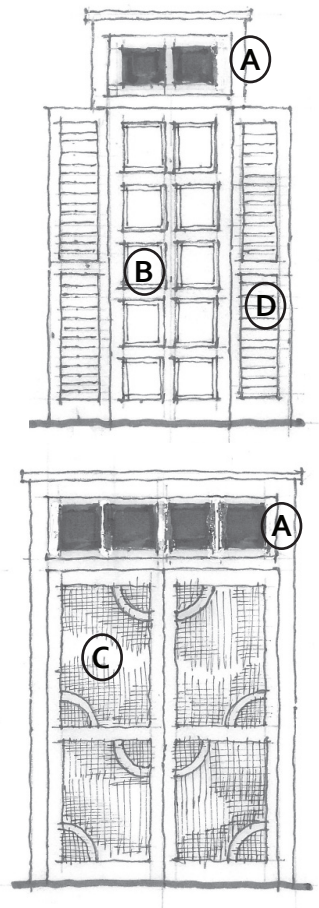
Florida Vernacular is among the humblest of building traditions, evoking the initial act of homesteading in the wilderness and in our nascent communities. Since these structures are the by-products of our first settlers, a Florida vernacular building can be as aboriginal as the chickee hut in the Everglades, the conch houses built by shipbuilders in Key West, the cracker houses in central and northern Florida, as well as Commodore Munroe's beloved residence, the Barnacle in Coconut Grove.

These simple structures, built of local and readily available low cost materials, were tailored to withstand the Florida heat and humidity by simple, direct methods. South and west facing deep porches shaded the walls and windows while allowing the southern and ocean breezes to flow through; roof vents and turrets allowed the hot air to escape; shutters on the windows and doors allowed for privacy, light control and hurricane protection. Most rooms had openings on two walls to allow for cross ventilation. Screened rooms and doors provided protection from insects while allowing air to circulate.

These combined traditions have been revived more recently in the town of Seaside in the Florida panhandle, where a hybrid, more refined aesthetic has emerged, and has since become the preferred language for buildings at Dade County's parks.

Appropriate for most transect conditions; limit use in urban T-6.

architectural patterns



5.3.1 Doors

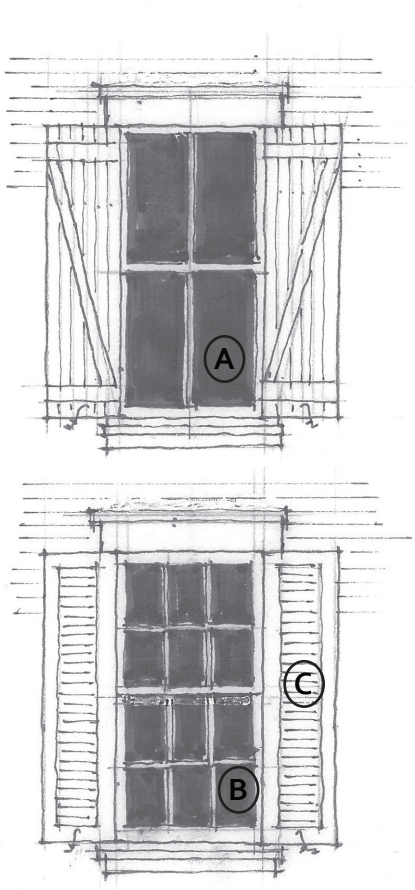
Door openings should be vertically proportioned.

Transoms above the door for ventilation are typical; if used, these should be a minimum of 12" high (a).

Doors may be wood or metal; typical detailing includes inset panels (b), screens (c) or window lites (a).

Doorway shutters are common; if used, shutters should be sized appropriately to cover the door opening, and are encouraged to be fully operational (d).

Florida Vernacular

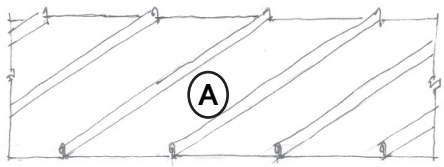


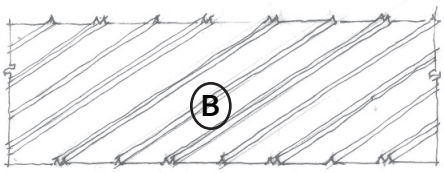
5.3.2 Windows

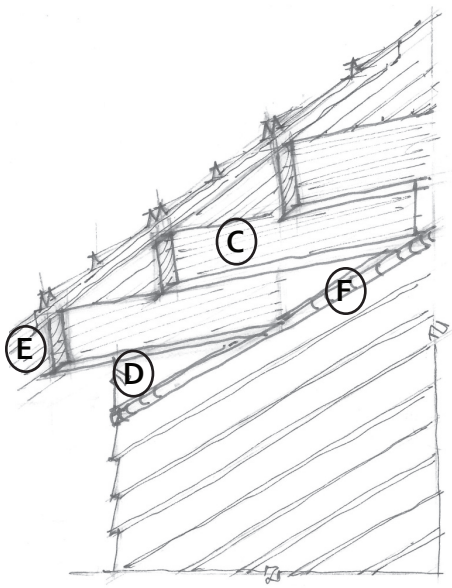
Windows should be vertically proportioned. Typical window configurations include single, double, or triple hung.

Window lites should be 1:1 or vertically proportioned; mullions should be dimensional on the exterior. True divided lites are encouraged. Typical configurations include 2 over 2 (a) and 6 over 6 (b).

When used, shutters should be sized appropriately to cover the window opening, and are encouraged to be fully operational (c).







5.3.3 Roofs and Eaves

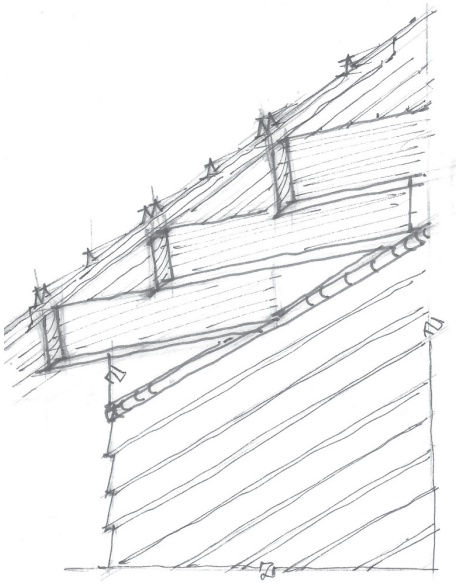
Typical roof forms include gabled, hipped, and shed. Pitched roofs should be sloped no less than 5:12 (excluding porches and sheds, which may be sloped less).

Standing seam (a) or 5V crimp metal (b) are the materials commonly used for Florida Vernacular roofs. Light reflective colors should be chosen to deflect sunlight.

Commonly found eave details include exposed rafter tabs (c), vertical soffit board (d), bead under soffit board (f) and v joint decking (e).

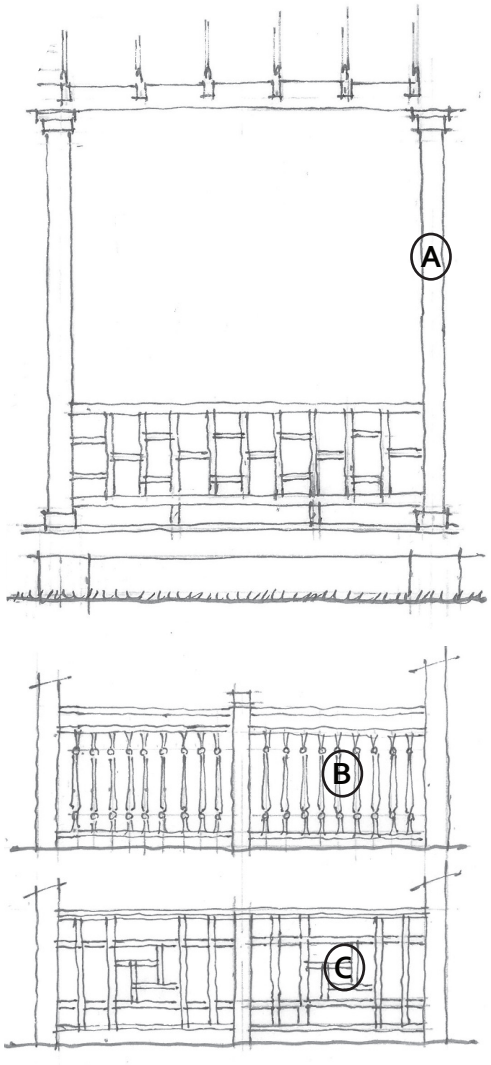
Florida Vernacular

5.3.4 Walls and Materials



Building walls should be:

- Stucco, with a smooth finish and painted (as used in Anglo-Caribbean building types); or
- Wood siding (horizontal lap, or vertical board and batten). All siding should incorporate vertical corner boards on outside building corners of a minimum 3" in width. Composition board (such as Hardiplank) may also be used.



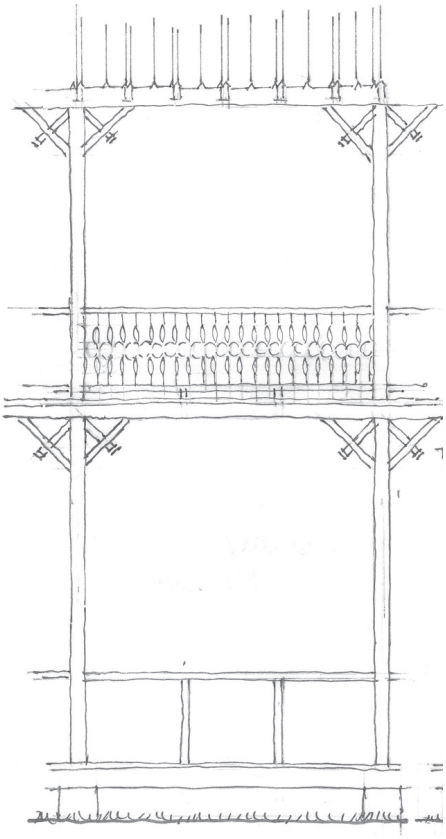
5.3.5 Columns, Piers and Railing

Columns should be arranged such that they appear to support the weight of the building above; opening should always be at a 1:1 or vertically proportioned (a). Columns should be square or wood turned. Columns are typically constructed of wood.

Piers support walls, porches, and columns. Since they serve as a point of foundation, they should be constructed of concrete, stone, or brick. Piers should be square or rectangular in section. When used on porches, piers typically align with columns above.

Railings are typically constructed of wood; typical configurations include square, turned finials (b), and decorative panels, such as Chinoiserie constructed panels (c).

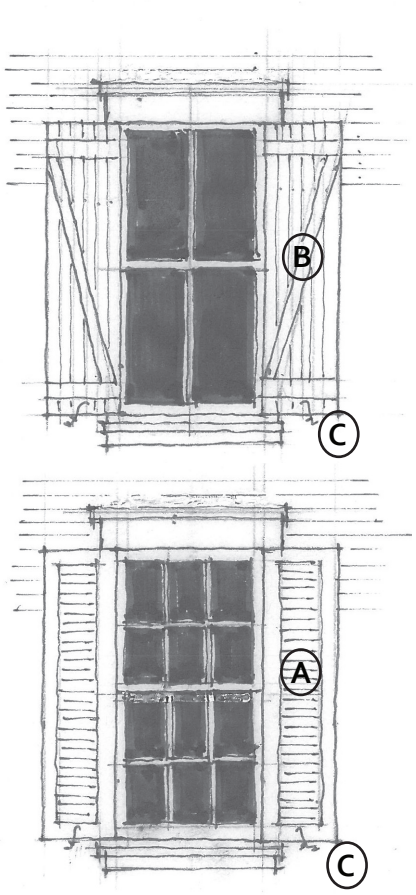
Florida Vernacular



5.3.6 Porches

Porches should be 10' deep minimum (measured from face of building to inside column face).

Multi-story porches may be used; the ground floor should be taller than the upper floor. Upper floors should have a 1:1 column spacing to height proportion.



5.3.7 Awnings, Canopies and Shutters

Shutters are commonly found in Florida Vernacular style, on doors and windows. Common configurations include Bahama (anchored at the top) and Colonial (anchored at the sides).

Common detailing includes louvers (a) and planks (b). A shutter dog is also typical (c).

Where possible, shutter types specified (Bahama or Colonial) may be impact-resistant, to meet Florida Building Code requirements for hurricane protection. As an alternative, if windows specified are impact resistant, shutters may be decorative only.

Florida Vernacular

5.3.8 Tower Elements

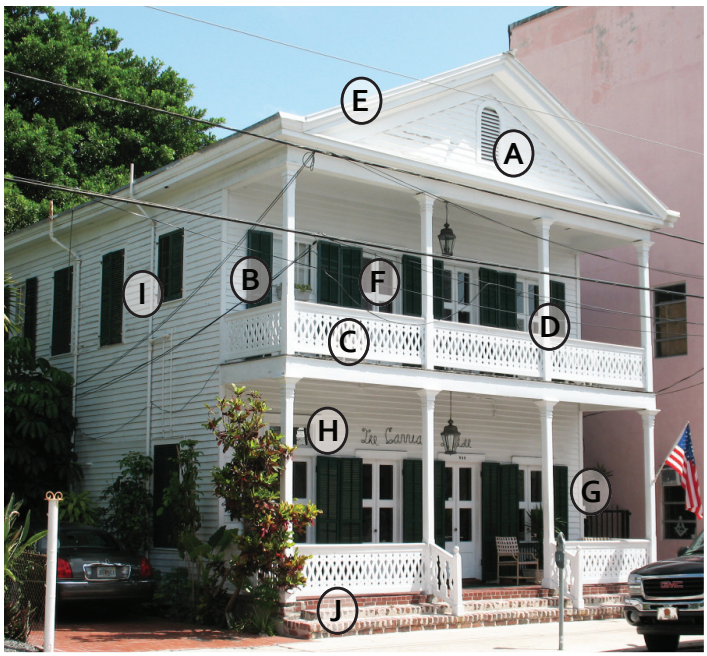
Tower elements can be used to create a visual punctuation in a building. These elements can also be used to terminate an important vista.

Tower elements include Cupolas and Lanterns. The overall proportion should be vertical.

5.3.9 Artwork

There is a great tradition of incorporating artwork into the façades of vernacular buildings through the use of decorative columns, railings, and brackets. A simple structure can become quite ornate through just the addition of a few craftily designed details. This type of building decoration is appropriate for civic structures in park settings.

Florida Vernacular

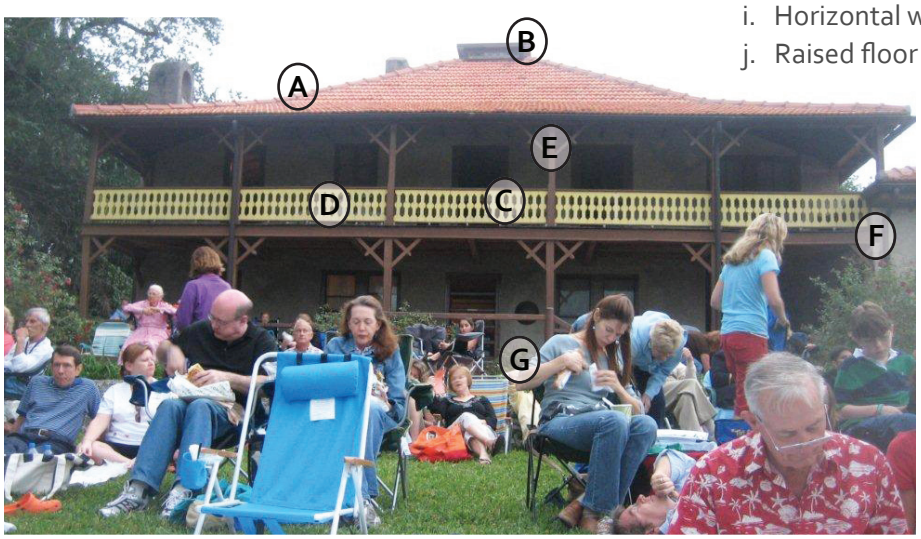


5.3.10 Florida Vernacular Holistic Images

The following image shows how the elements of the Florida Vernacular style are assembled together to create a complete building. The sample pavilion and park building show one way these elements could be combined to create a new structure in a Miami-Dade County Park.

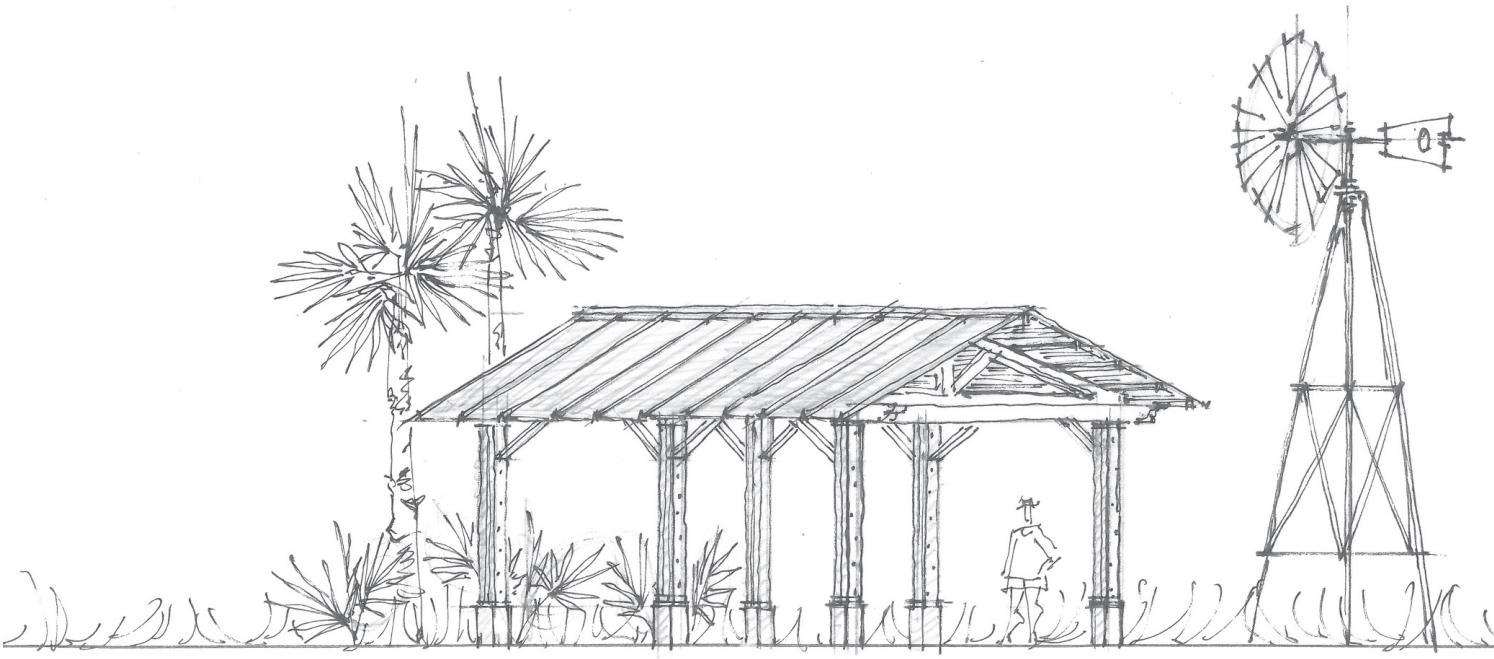
Key West Conch House Florida Vernacular Elements:
(top left image)

a. Louvered vent
b. Operable shutters with louvers
c. Wood picket or wood slat railing
d. Wood columns
e. Gable roof – 5 ½ : 12 or greater
f. Single/double hung window with vertical proportions. Lites square or vertically proportioned.
g. Deep porch, square or vertically proportioned
h. Door with transom
i. Horizontal wood slats
j. Raised floor on stone or concrete block piers

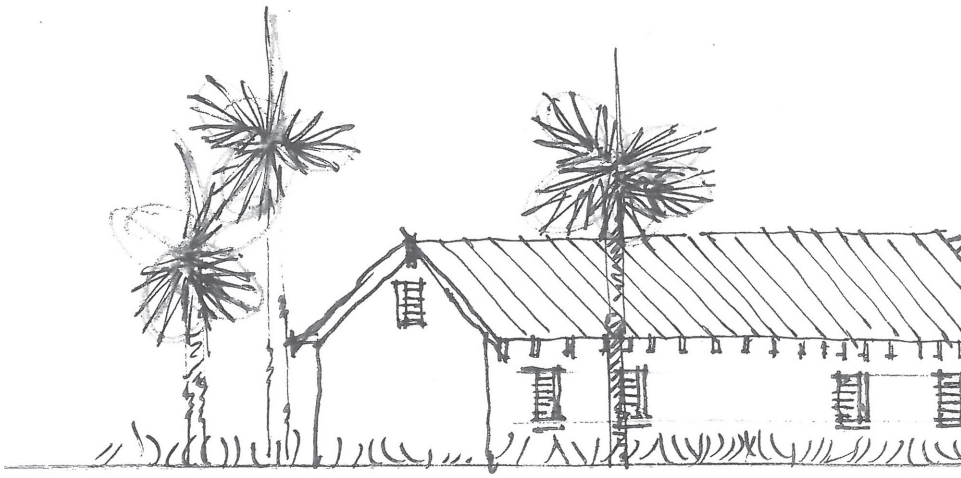


The Barnacle Florida Vernacular Elements:
(bottom left image)

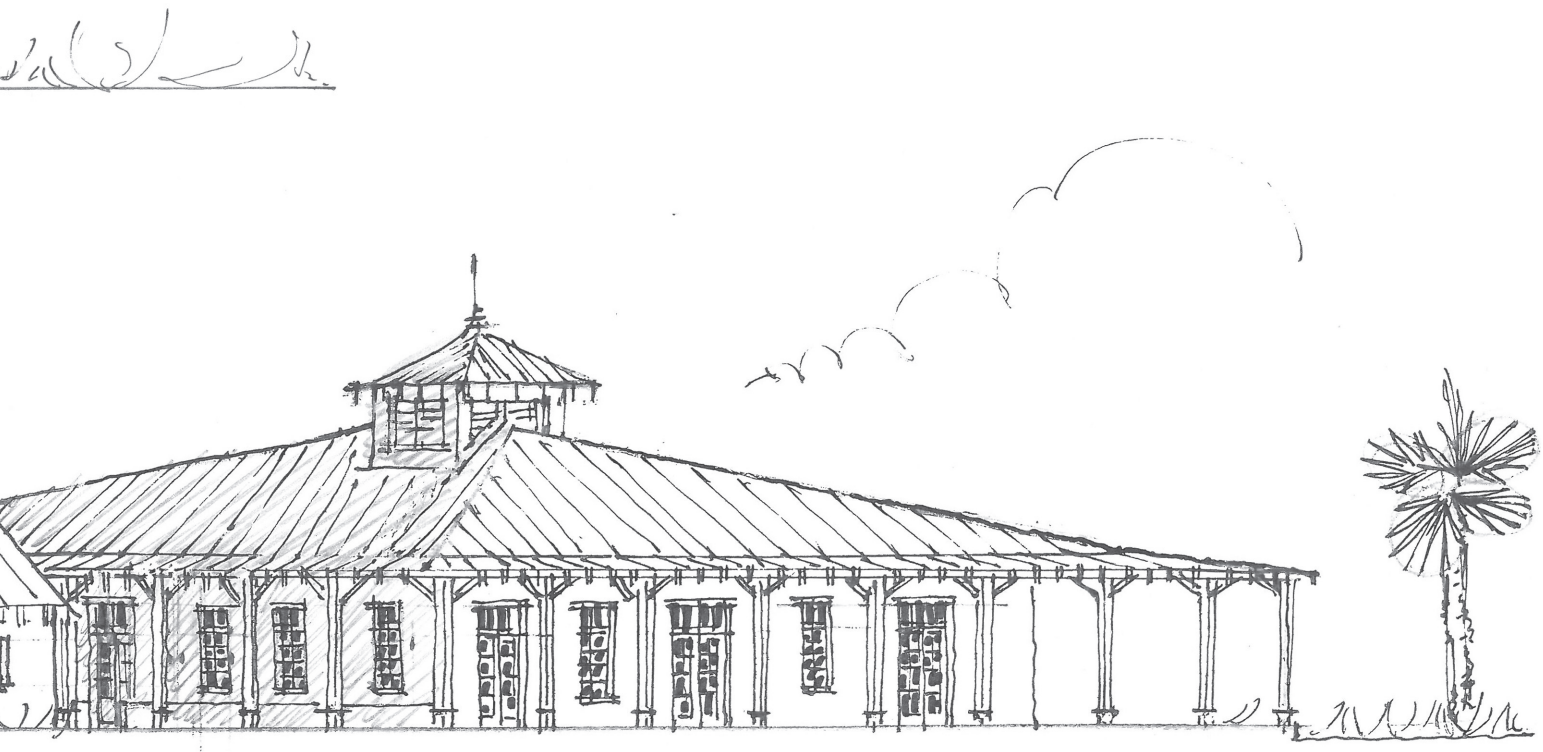
a. Modern pitch roof
b. Cupola for lighting and air exhaust
c. Deep porch
d. Railing of wood slat or wood pickets
e. Wood columns (braced brackets)
f. Stucco or wood slat
g. Raised foundation: oolitic limestone



Florida Vernacular Open Air Structure Holisti



Florida Vernacular



Florida Vernacular Enclosed Structure Holistic Image *(above)*

5.4 Great Camp/WPA

The Works Progress Administration (WPA) was the largest federal jobs program in U.S. history and the most famous program of the New Deal of President Franklin Delano Roosevelt. The program was in effect from 1935-1943, and in those eight years 8.5 million workers worked on over one million projects, including 651,087 miles of roads, 124,031 bridges, 125,110 public buildings, airport landing fields, and 8,192 parks and recreation buildings.*

The works were of enduring design and included such landmarks as New York City's Central Park Zoo, North Carolina's Blue Ridge Parkway, Kansas City Hall, University of Florida's Student Union, Sarasota's Municipal Auditorium and more locally, Key West Overseas Highway, Upper Keys oolitic limestone schoolhouses, the Miami Orange Bowl, and the park structures, entryways, shelters and bridges at Greynolds and Matheson Hammock.

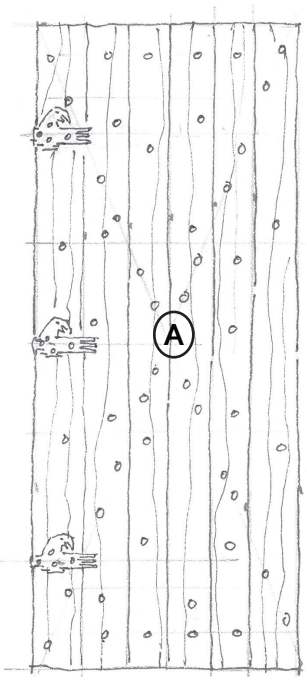
As is the case with National Parks Service Structures, the Dade County's WPA buildings are humanly scaled and have a rugged elegance. The main park structures at Greynolds and Matheson Hammock are both made of oolitic limestone, concrete, and at Greynolds also include Dade County pine logs. The stone walls of the Greynolds boat house taper to meet the ground, such that the building emerges from the earth. At the main pavilion at Matheson Hammock, the floor surface is the same oolitic limestone as the pavilion columns, with some columns having integral stone seats. On occasion volunteer ferns and moss symbiotically attach to the porous stone surfaces.

In addition, the WPA Public Works of Art Project employed artists to have their creations adorn public buildings. Many of these projects were murals that beautified post offices, schools, and libraries. Those that remain are considered national treasures.** Local examples of WPA art in Miami include the mural, "Law Guides Florida Progress" by Denman Fink, and in the courtroom of the same building a cast stone bas relief "Love and Hope" and "Wisdom and Courage" by Alexander Sambugnac. The Miami Beach post office displays the mural "Episodes from the History of Florida," by Russell Hardman.***

Most appropriate in T-3 and lower transect zones.

*Ganzel, Bill. , http://www.livinghistoryfarm.org/farminginthe30s/money_16.html
** Nagin, Rick. ,www.peoplesworld.org/75-years-later-wpa-is-sorely-needed-again
*** www.wpamurals.com/florida.htm

PARK
OFFICE



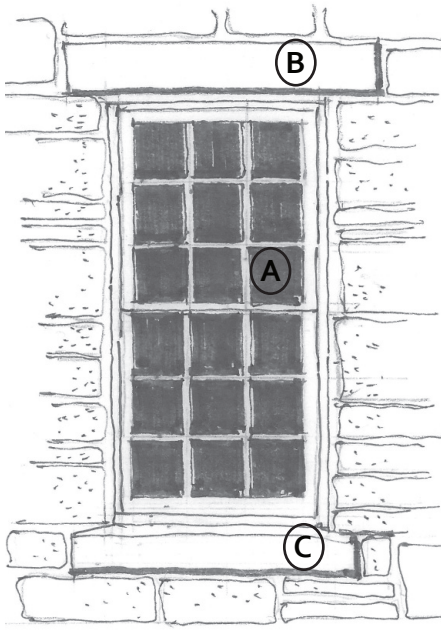
5.4.1 Doors

Door openings should be vertically proportioned.

Doors should be constructed of wood; detailing includes cedar planks (a) and vision panels (b). Vision panels should have true divided lites or raised mullions.

Great Camp/WPA

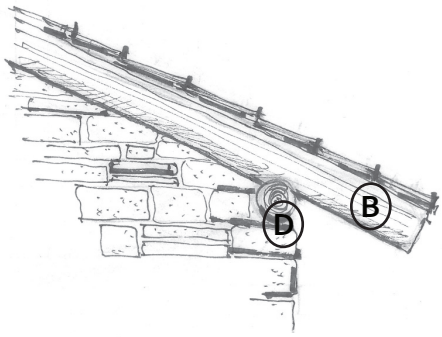
5.4.2 Windows

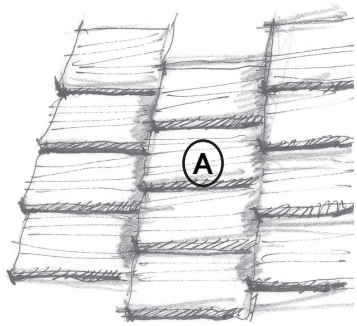


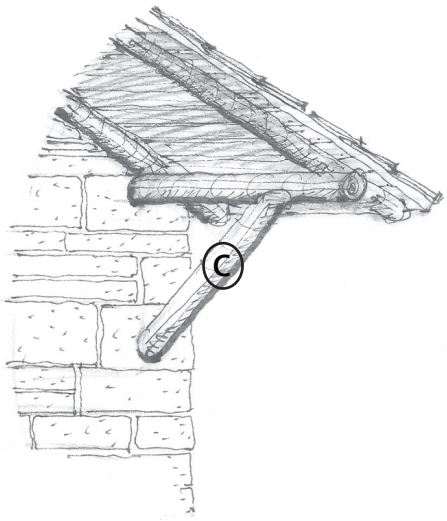
Windows should be vertically proportioned. Typical window configurations include single or double hung.

Window lites should be 1:1 or vertically proportioned (a); mullions should be dimensional on the exterior. True divided lites are encouraged.

A concrete or stone lintel should be provided above windows, 8" min. in height (b). A concrete or stone sill should also be provided (c). The lintel and sill should project from the wall surface a minimum of ½ inch, and should be slightly wider than the window opening.







5.4.3 Roofs and Eaves

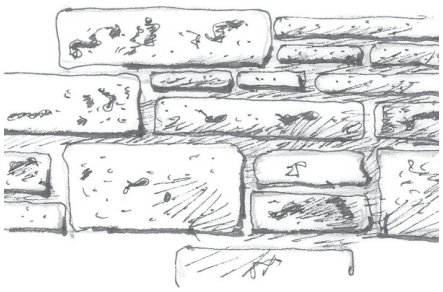
Typical roof forms include gabled, hipped, and shed. Pitched roofs should be sloped no less than 5:12 (excluding porches and sheds, which may be sloped to a minimum 4:12 pitch).

Roofs are commonly constructed of wood shingles (a).

Eaves are to be exposed rafters or logs (b). Brackets should be used to support gable ends (c). A log may be used as rafter plate (d).

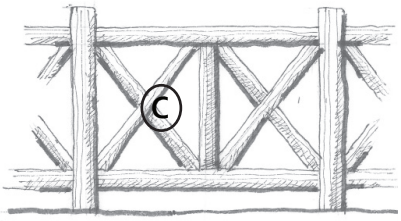
Canopies are to be integral with the roof or made of the same roof material.

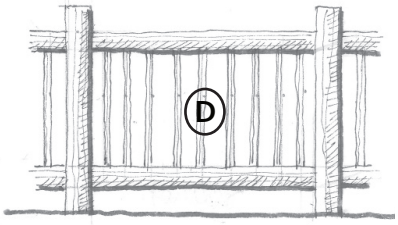
Great Camp/WPA

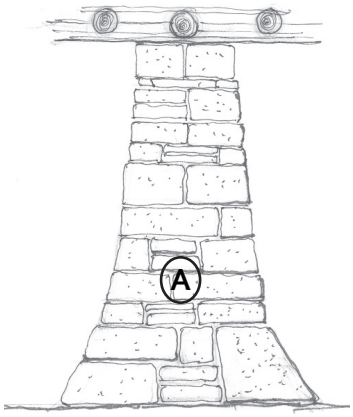


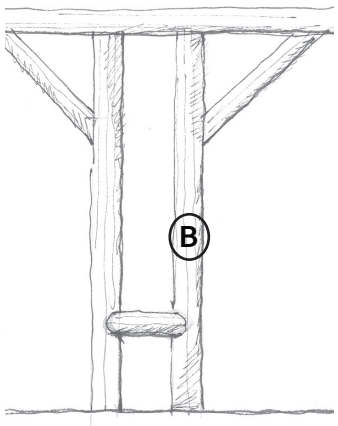
5.4.4 Walls and Materials

Walls are to be constructed of rough stone with irregular coursing, wood logs or rough wood planks, or stucco.







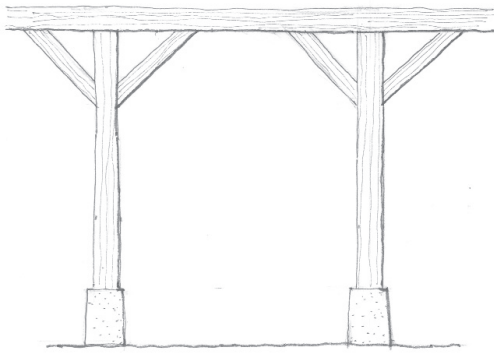


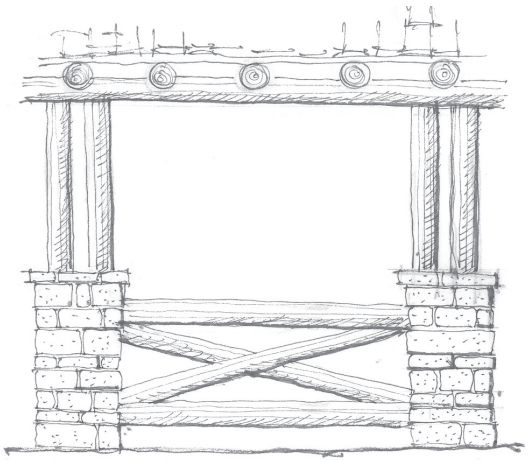
5.4.5 Columns and Railing

Columns are to be made of stone (a) or logs (b). Local materials should be used whenever possible.

Railings are to be rustic, made of stone, logs or a combination of the two. Detailing for wood railings can include braced logs (c) or wood pickets (d). Where railings are used to separate changes in grade, a wire mesh may be installed behind stone or log elements, as necessary, to meet building code requirements for permitted spacing between railing components.

Great Camp/WPA





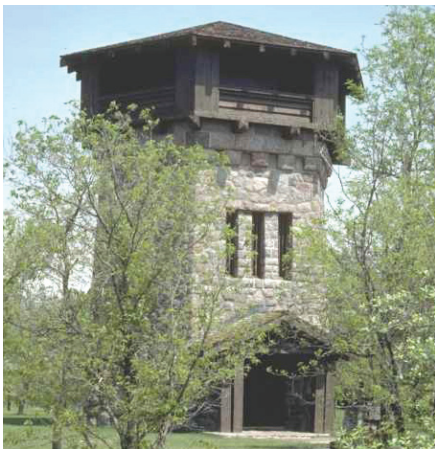
5.4.6 Porches and Trellises

Porches and trellises are to be made of wood logs, timbers, and stone. Bays should be 1:1 or vertically proportioned.

5.4.7 Tower Elements

Tower elements can be used to create a visual punctuation in a building. These elements can also be used to terminate an important vista.

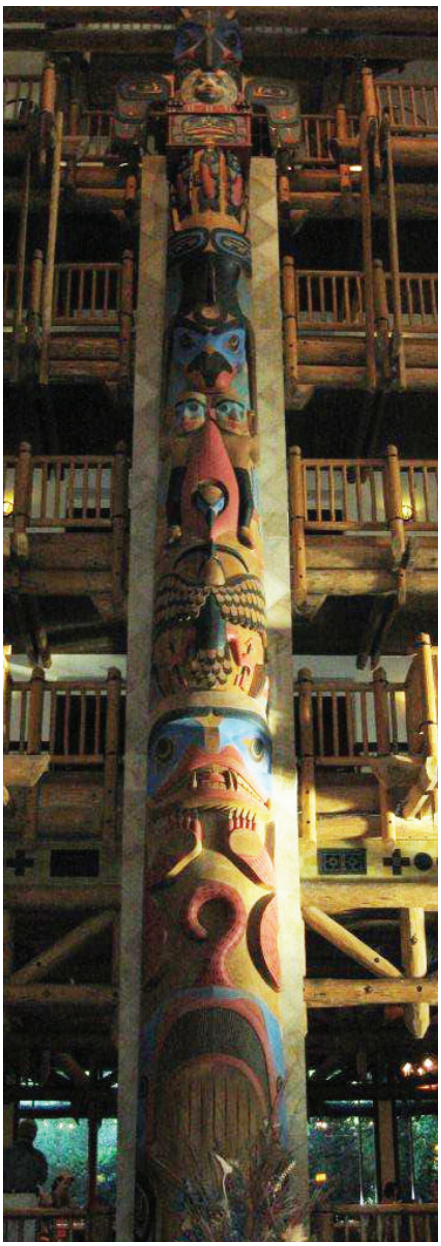
A local built example of a Great Camp tower element is the stone tower at Greynolds Park. The overall proportion should be vertical. Rustic materials, including wood planks, wood logs, and stone should be used.



Great Camp/WPA

5.4.8 Bridges

Bridges in Great Camp settings should be finished with natural, rustic materials including wood planks, wood logs, and stone. Bridges may be covered or uncovered.



5.4.9 Artwork

Artwork can be easily incorporated in Great Camp settings, made up of rustic, natural materials, such as wood carvings and stone mosaics. Because of this use of native materials, Great Camp style is well-suited to incorporate artwork from indigenous cultures; local examples could honor the Tequesta, Miccosukee, and Seminole tribes. An example from our national parks is the Desert View Watch Tower on the south rim of the Grand Canyon, bottom center and right images.

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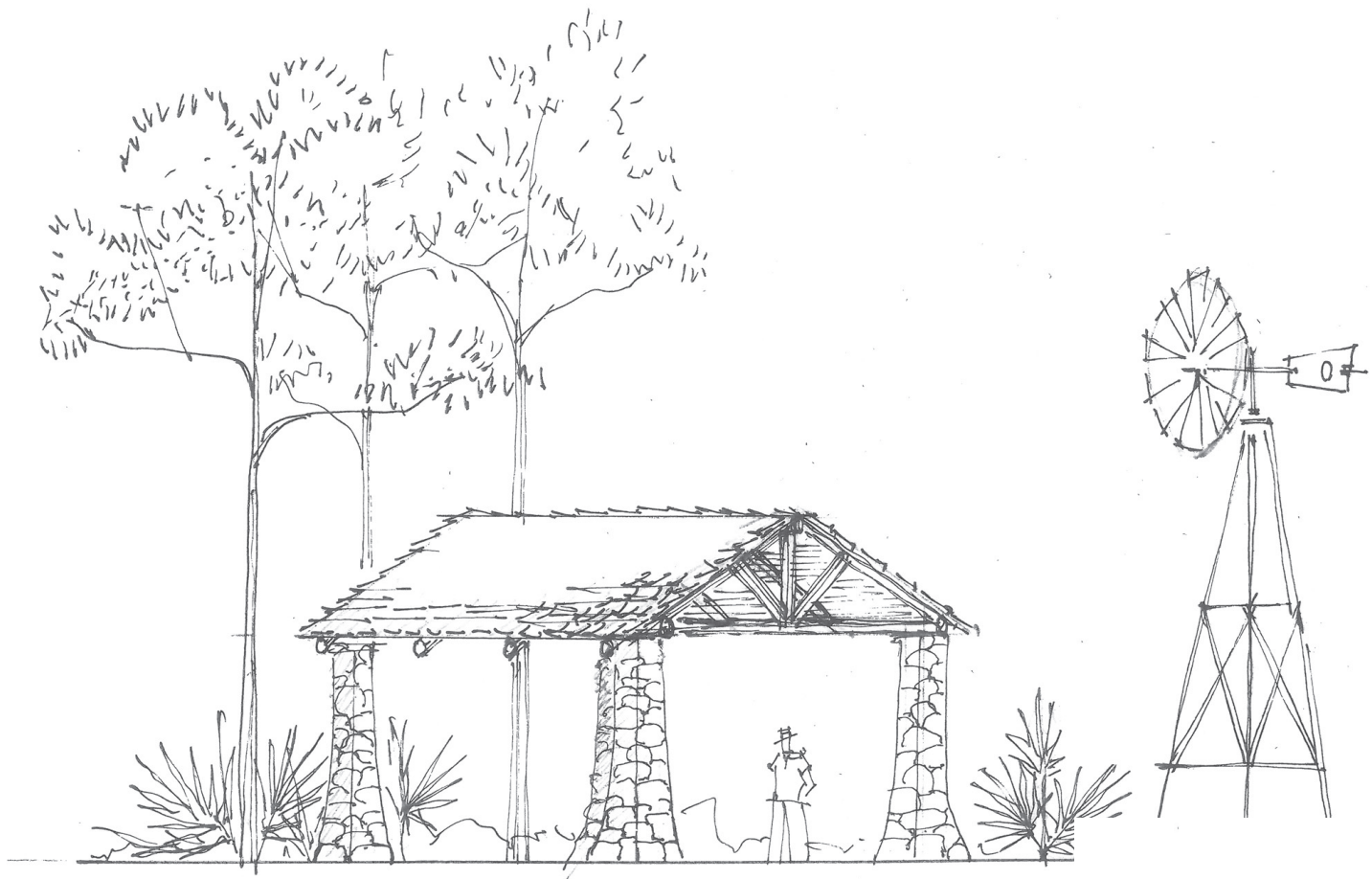
Great Camp/WPA

5.4.10 Great Camp/WPA Holistic Images

The following images show how the elements of the Great Camp /WPA style can be composed to create a park pavilion and park building.

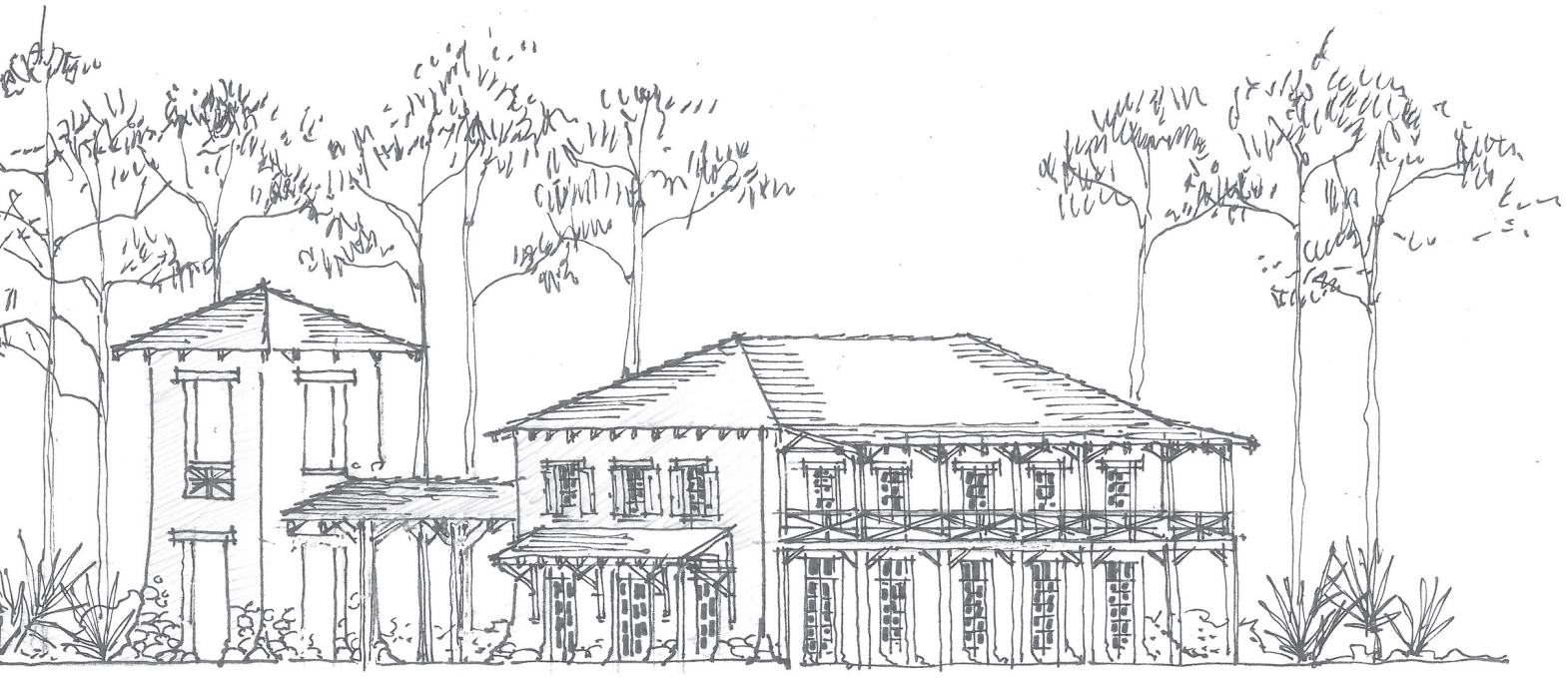
Greynolds Boathouse Great Camp / WPA Elements:

a. Log horizontal railing
b. Wood shake roof with low pitch
c. Exposed log / timber eaves
d. Exposed lintel
e. Vertically proportioned windows
f. Log timber brackets
g. Rough stone walls and base
h. Log columns
i. Log railing
j. Tapered stone base



Great Camp / WPA Open Air Structure Holistic Image *(above)*

Great Camp/WPA



Great Camp / WPA Enclosed Structure Holistic Image *(above)*

5.5 Mediterranean Revival

The fantasy of Florida during the boom years of the 20's included a tropical American Riviera made up of romantic Mediterranean and Moorish-inspired buildings. In historic photos one can see elegant flappers lounging by the courtyards of the Biltmore or the Roney Plaza Hotel. City founder George Merrick created one of the first planned cities in the country, Coral Gables, exclusively with an architecture based on the Mediterranean revival. This style evoked the old world and blended nicely with a sophisticated style for the middle and leisure class in a tropical setting of play and leisure.

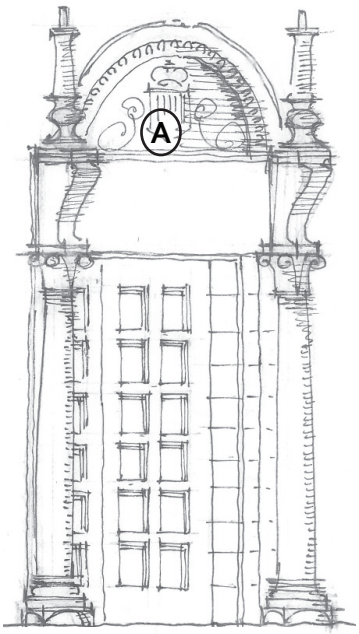
The Mediterranean Revival is executed in South Florida using locally made concrete block and concrete finished with smooth stucco walls, which could more readily combat the Florida termite and hurricane forces. The Moorish influence included the colonnaded courtyard, oftentimes with fountains. Courtyards allowed activities to flow easily from interior to exterior, and like the vernacular porch, protected the building from direct sun while allowing breezes to flow through the building's doors and windows. The language also included parapet roofs for outdoor terraces and trellises.

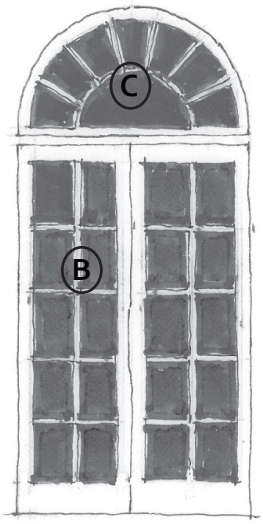
Artwork was readily integrated in buildings through the delicately ornate iron grillework used in railings, carved or cast column capitals, terracotta flooring, walls, and mosaics, and sculptural finials, Chirriguresque and Plateresque door and window surrounds, wall murals, bas-relief and sculpture.

Notable Mediterranean revival architects of the period include Phineas Paist, Denman Fink, Addison Mizner, Shultze and Weaver.

Appropriate for most transect conditions.

architectural patterns





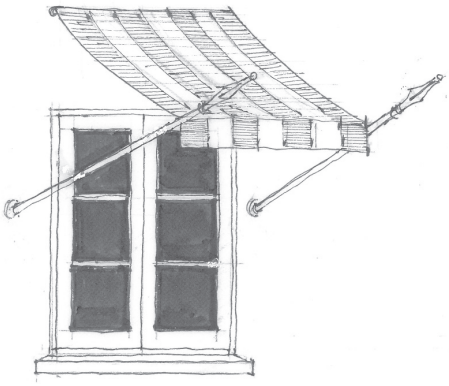
5.5.1 Doors

Door openings should be vertically proportioned.

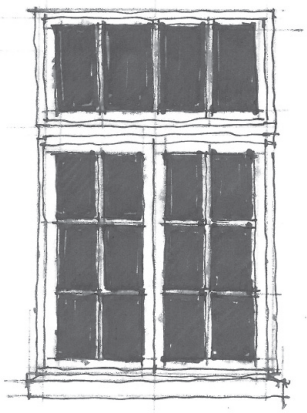
Doors may include carved or cast stone surrounds (a).

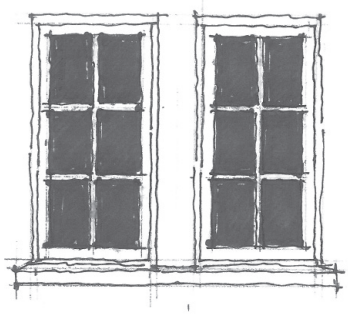
Doors may be wood or metal; French doors should have square or vertically-oriented lites (b). Mullions should be dimensional on the exterior; true divided lites are encouraged.

An arch-shaped transom may be found above the doorway (c).



Mediterranean Revival



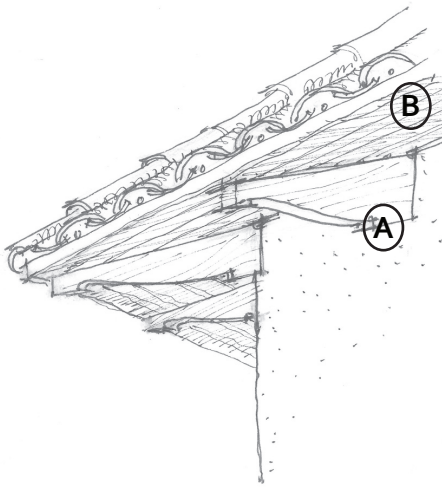


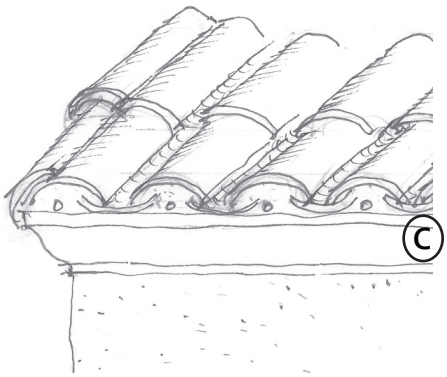
5.5.2 Windows

Windows should be vertically proportioned. Typical window configurations include single, double, triple hung, and casement. Fixed glass may be used in shopfronts or small (less than thirty-six square feet) accent windows.

Window lites should be 1:1 or vertically proportioned; mullions should be dimensional on the exterior. True divided lites are encouraged.

When used, shutters should be sized appropriately to cover the window opening, and are encouraged to be fully operational.





5.5.3 Roofs and Eaves

Typical roof forms include gabled and hipped. Roof slopes should be from 4:12 to 7:12. Common pitches are 5:12 and 6:12.

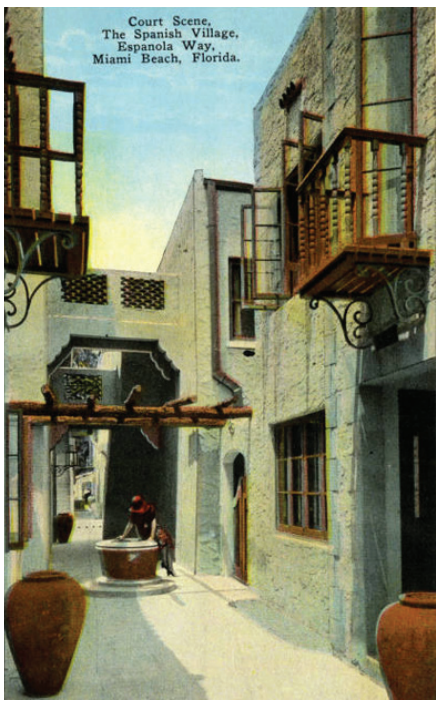
Roofs are commonly composed of barrel or clay tiles. Roofs may be parapeted, especially for use with habitable terraces.

Common eave details include sculpted brackets (a), exposed wood deck (b) and concrete or stucco eave moulding (c).

Mediterranean Revival

5.5.4 Walls and Materials

Walls are to be smooth stucco or include a troweled raised texture.



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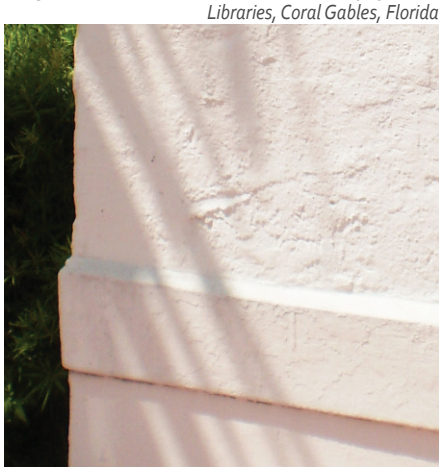
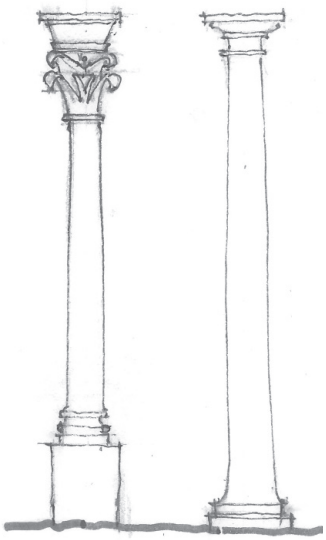
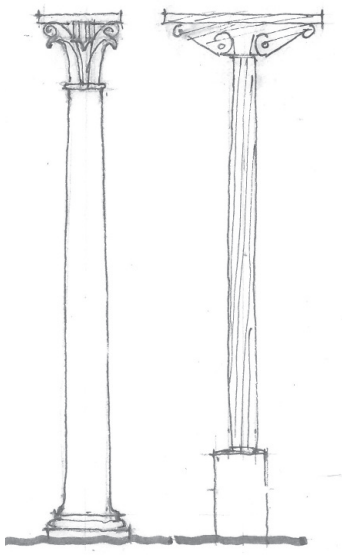


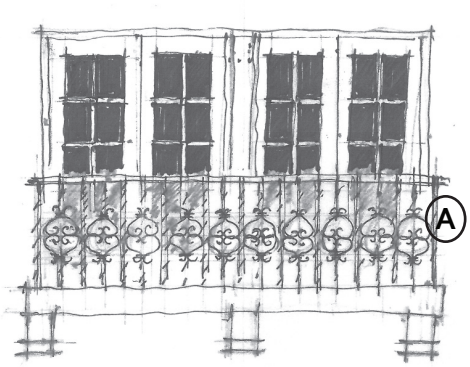




5.5.5 Columns, Piers and Arches

Columns should be arranged such that they appear to support the weight of the building above; opening should always be at a 1:1 or vertically proportioned.

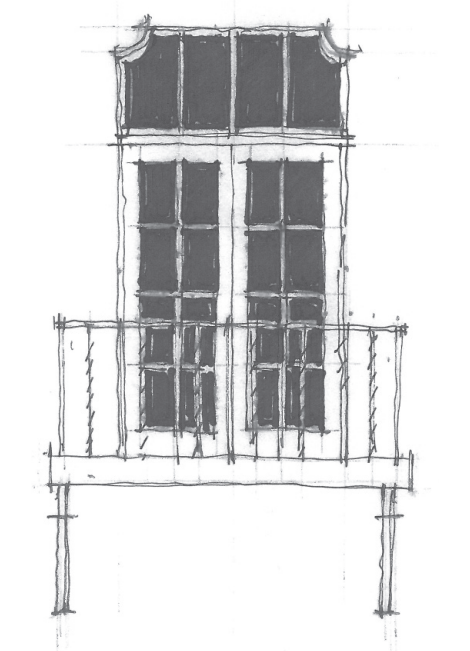
Columns can be concrete, stone or wood. Precast applications in columns and capitals with visible seams should be avoided.

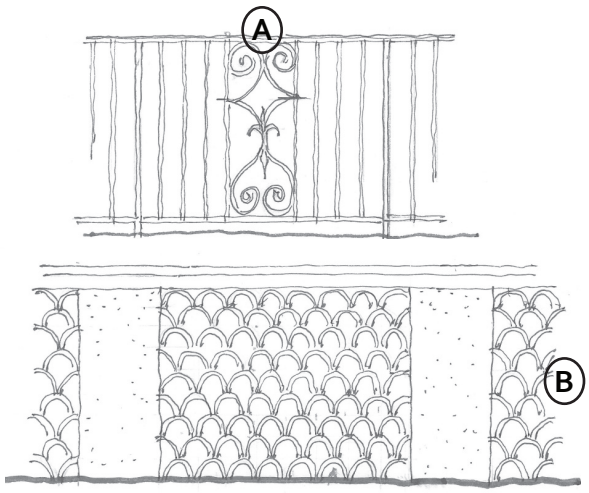


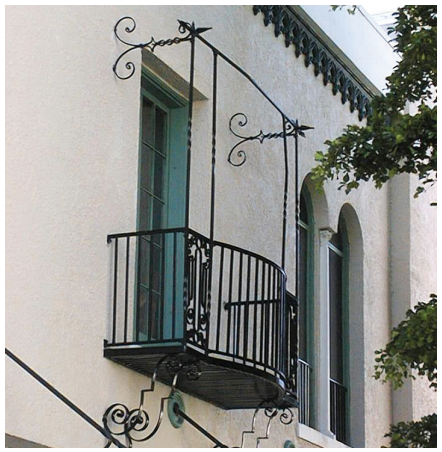
Mediterranean Revival

5.5.6 Railing

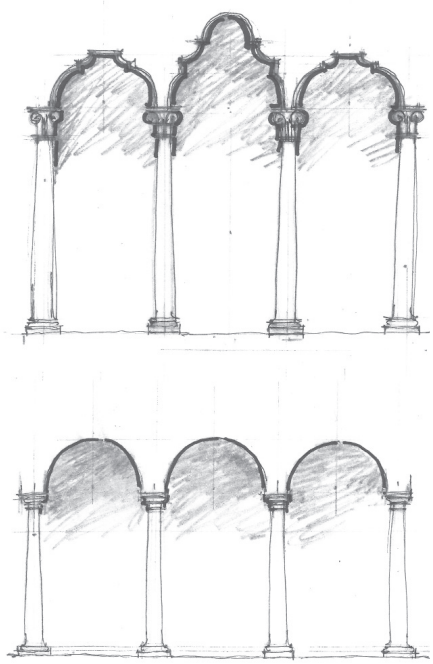
Railings can be wrought iron, stucco, concrete, or terra cotta. Detailing can include decorative scrollwork (a) and stucco piers with terra cotta panels (b).







5.5.7 Arcades



Porches and outdoor rooms in the Mediterranean Revival style are often in the form of Arcades. Arcades should be 10' deep minimum (measured from face of building to inside column face).

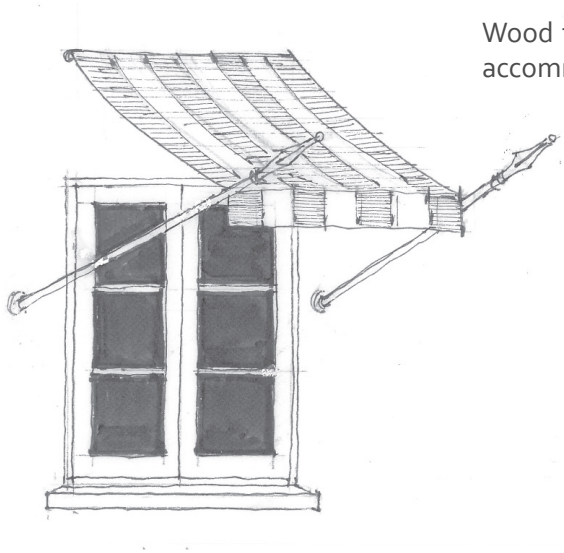
Heights should be equal or greater than distance between columns, not including arch height.

Mediterranean Revival

5.5.8 Awnings

Awnings should be canvas with finial frames ideally; sides should be open.

Wood trellises can also be used to provide shade and may accommodate vines.



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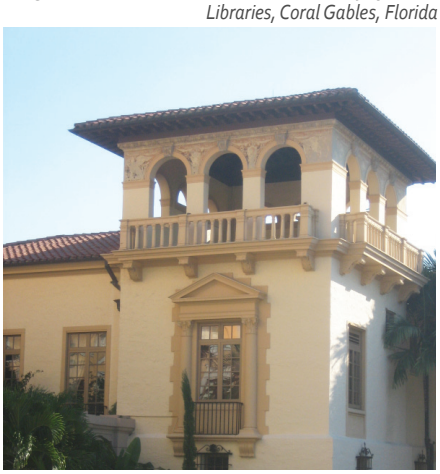
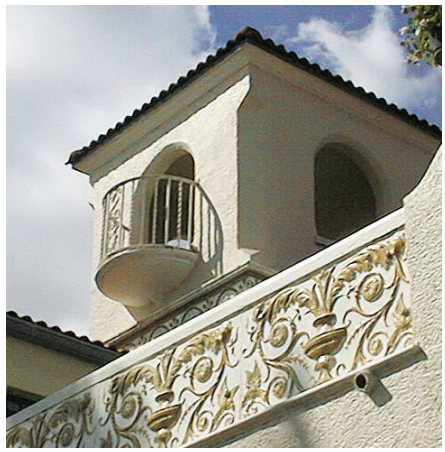
5.5.9 Tower Elements

Tower elements can be used to create a visual punctuation in a building. These elements can also be used to terminate an important vista. The overall proportion should be vertical.

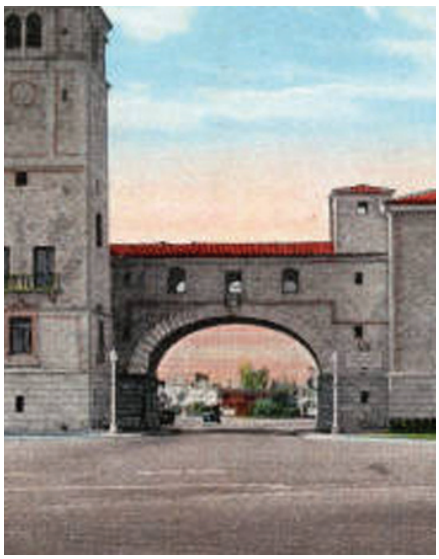




Mediterranean Revival

5.5.10 Gateways

Gateway elements can be as simple as two piers, or more complex and integrated to a building. Gateways may act as a bridge connecting separate building wings.



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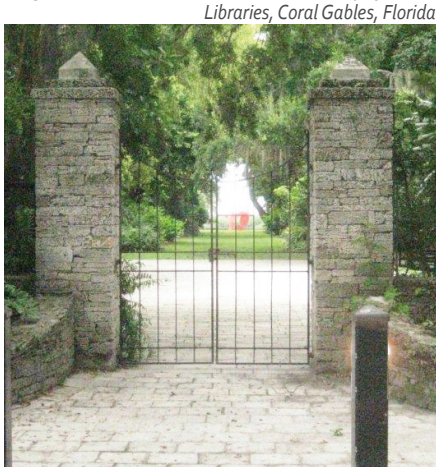


5.5.11 Bridges

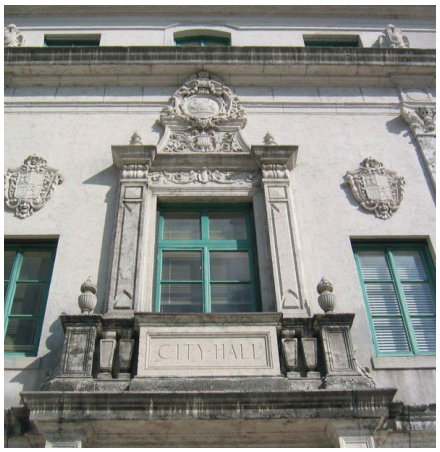
Bridges are to be made of stone or concrete with stucco. Pedestrian bridges may be used to connect portions of buildings.

Mediterranean Revival

5.5.12 Artwork

One way for artwork to be included in Mediterranean Revival buildings is through use of sculptural elements on the building façade. Historically, these are found constructed of stucco or stone and can be used to frame windows and doorways.

Other elements integral to the building or structure such as column capitals, ornamental ironwork, or woodwork can also add art craft.

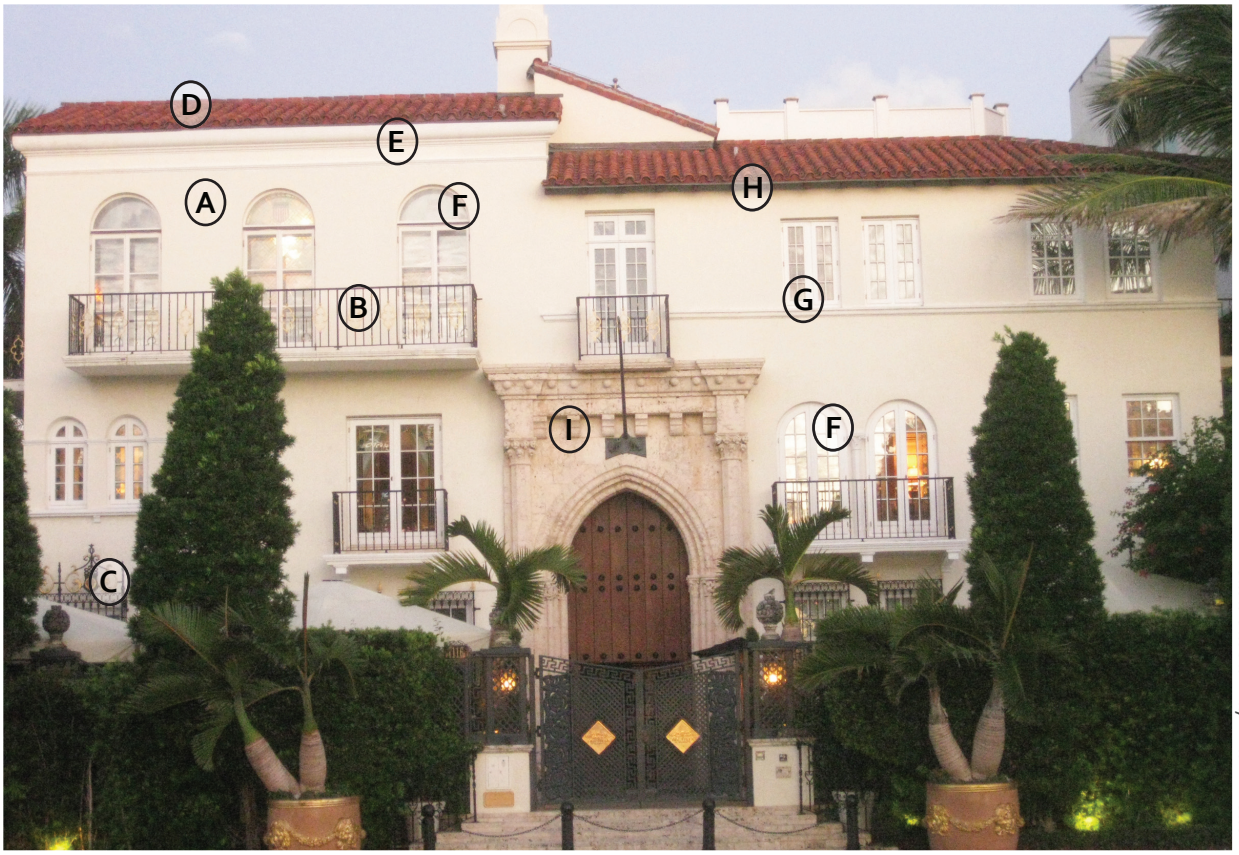


5.5.13 Mediterranean Revival Holistic Images

The following image shows how the elements of the Mediterranean Revival style are assembled together to create a complete building. The sample pavilion and park building show one way these elements could be combined to create a new structure in a Miami-Dade County Park.

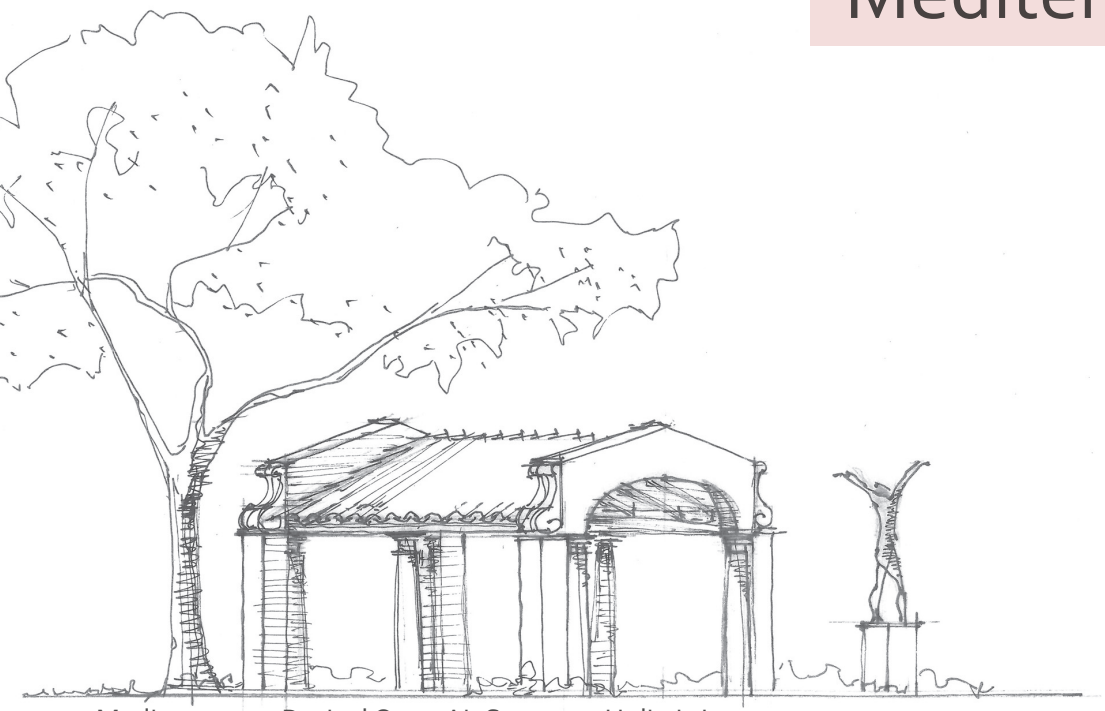
Mediterranean Revival Elements:

a. Stucco walls
b. Wrought iron railings
c. Wrought iron window grill
d. Barrel tile gable with hip, low pitch roof
e. Slight projecting stucco eave
f. Arched doors and window accents
g. Vertical casement windows
h. Exposed wood brackets
i. Carved, low relief accent door/window sumonds



Casa Casuarina, Miami Beach

Mediterranean Revival



Mediterranean Revival Open Air Structure Holistic Image *(above)*

Mediterranean Revival Enclosed Structure Holistic Image *(above)*

5.6 Art Deco / Streamlined Moderne

Miami Beach, once a mangrove swamp, was transformed to a tropical paradise through the combination of efforts by Henry Lum, who had planted coconut palms south of today's 14th Street for his palm plantation; Carl Fisher, who had cleared the mangrove coastline, dredged sand from Biscayne bay and laid the pristine sand on the beachfront; and John Collins, who connected the island of Miami Beach to Miami.

Fisher kick-started the building boom in the beach catering to wealthy northern tourists. He bought a billboard on New York City's Fifth Avenue and Forty Second Street in the winter with the teaser slogan, "It's June in Miami."*

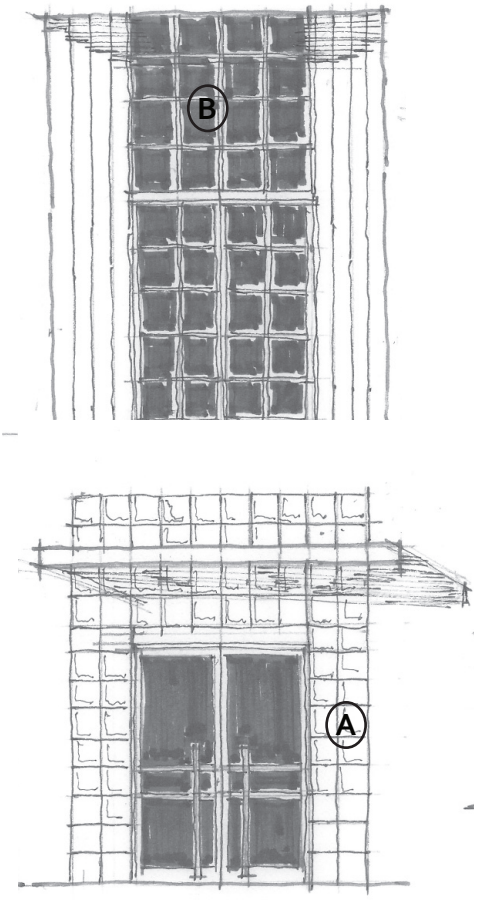
Despite the 1926 hurricane, and later, the Great Depression, tourism flourished. Streamline Moderne, or Art Deco, became the aesthetic of choice for hotels, apartments, residences and public buildings during the 30's and 40's in this new winter playground. Influenced by the 1925 Paris Exposition Internationale des Arts Decoratif, buildings took a streamlined, machinist look that was also highly decorative. Images of the ocean, of the flora and fauna, geometric, and even Egyptian patterns were folded into the parapets, turrets, and interiors of buildings. Circular windows evoked ship portholes; curvilinear elements hinted of airplanes, trains, and ocean liners. The dockmaster and lifeguard stations at Haulover Beach are illustrative of this style.

No doubt the whimsical lightheartedness of the buildings afforded a welcome escapism from the economic hardship of the Depression, and continues to inspire and draw visitors from all over the world today. L. Murray Dixon and Henry Hohauser designed most of the resort district of South Beach,** which contains the largest concentration of Art Deco buildings in the world,*** and is among the largest districts included in the National Register of Historic Places.

Most appropriate in Miami Beach and T-4 and higher transect zones.

***Kennedy, Patricia. Miami Beach in Vintage Postcards. p.8. Arcadia Publishing, 2000, p.8.
**Shulman, Allan T, et al. Miami Architecture. University Press of Florida, 2010, p.5.

architectural patterns



5.6.1 Doors

Door openings should be vertically proportioned.

Doors may be sheltered by an eyebrow.

Doors are made of metal, and contribute to an "oceanliner" aesthetic. Doors may be surrounded by glass block (a), bas relief, or vertically striated panels.

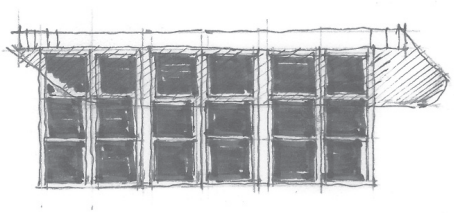
Doors should have square or vertically-oriented lites, but transoms may be horizontally proportioned (b). Mullions should be dimensional on the exterior; true divided lites are encouraged.

Art Deco/Streamlined Moderne

5.6.2 Windows

Windows should be vertically proportioned as individual units. When window openings in the masonry wall are horizontally proportioned, they should be composed of groupings of vertically proportioned casement windows. Windows are often protected from the sun by an eyebrow or cantilevered concrete element.

Corner windows are common, and are usually accompanied by a corner eyebrow feature. Windows inserted in curved walls are common. Though the solid part of a curved wall may have a smooth curve, the window opening may be composed of straight, standard casement windows, so that the overall effect is that of a faceted curve.

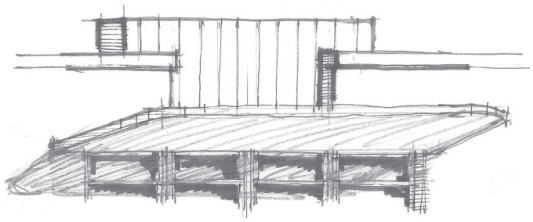


Most windows are casement, and glass blocks may add additional light to the interiors without sacrificing privacy. Porthole windows contribute to the nautical look of some buildings. Fixed glass may be used in shopfronts or small (less than thirty-six square feet) accent windows.

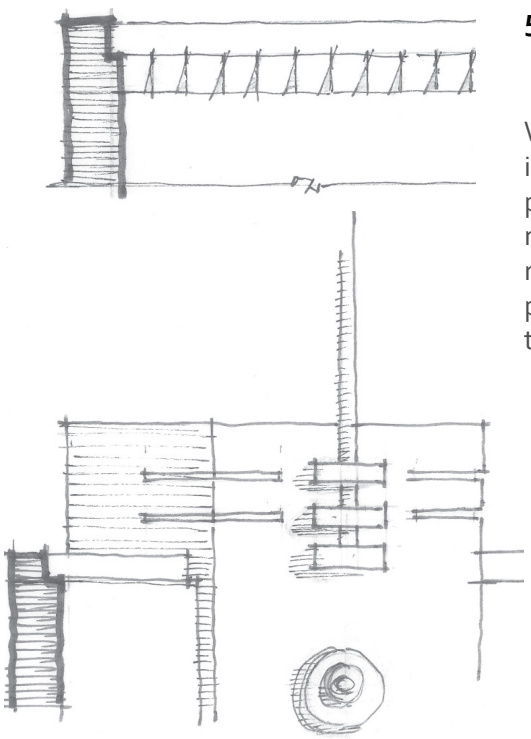
Window lites should be 1:1 or vertically proportioned; mullions should be dimensional on the exterior. True divided lites are encouraged. Generally, vertical members of the casement window are slightly thicker than the horizontal mullions. Transom windows may be horizontally proportioned.

5.6.3 Roofs and Eaves

Roofs are typically flat. Roofs may include a parapet wall, which may vary in height to give ornament to the roofline.

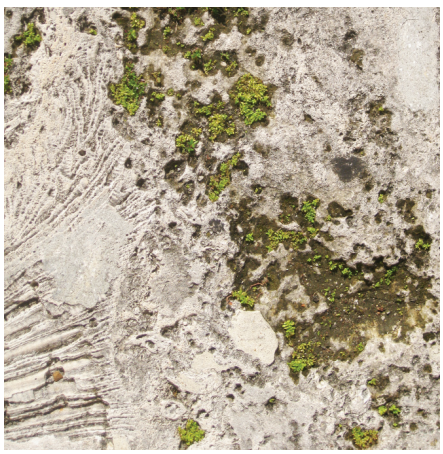


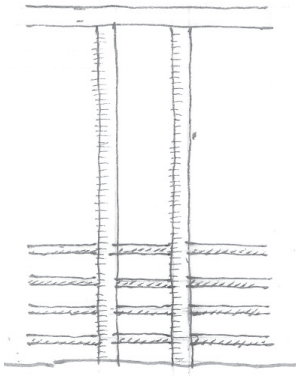
Art Deco/Streamlined Moderne

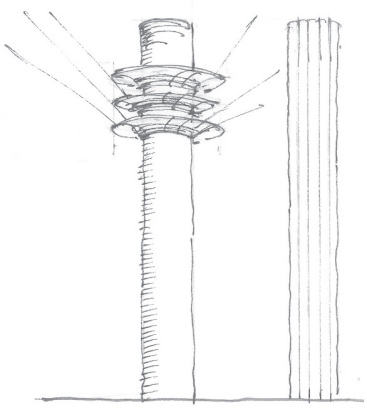


5.6.4 Walls and Materials

Walls are of smooth stucco finish. It is encouraged to integrate bas relief and vertical or horizontally striated panels and expression lines. Panels with abstracted floral/ nautical motifs are also common. On occasion, walls can be made of oolitic limestone (image bottom right), as in the pavilions at Matheson Hammock Park, or the Museum of the City of Coral Gables (Old Fire Station).







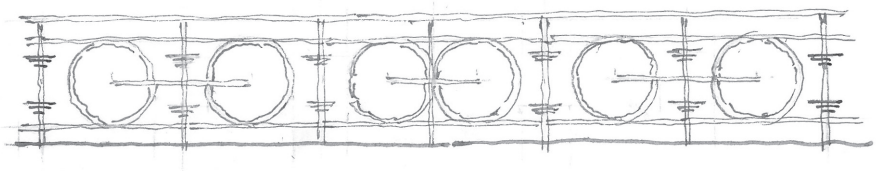
5.6.5 Columns and Piers

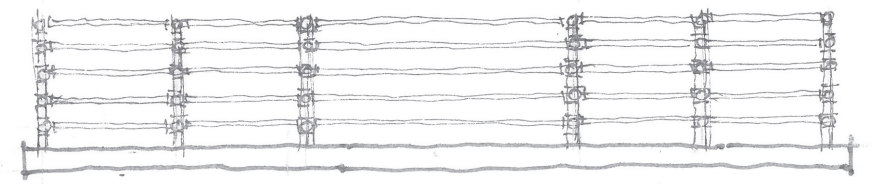
Columns can be pipe steel columns or concrete. Concrete columns are often fluted, but without entesis. Columns may be faceted or be rendered as striated prisms. The column is often located several feet behind the edge of the eyebrow in order to deemphasize the verticality of the façade.

Art Deco/Streamlined Moderne

5.6.6 Railings

Railings can be pipe metal, stainless steels, or concrete. It is encouraged to use railings as building art with floral or nautical themes. Often, railing resembles that found on the prow of a ship, emphasizing the nautical aesthetic. Railings usually have horizontal proportions. Where railings are used to separate changes in grade, a wire mesh may be installed behind railing elements, as necessary, to meet building code requirements for permitted spacing between railing components.





5.6.7 Porches

Porches can be as minimal as a cantilevered eyebrow. Columns are optional and are included if structurally required.

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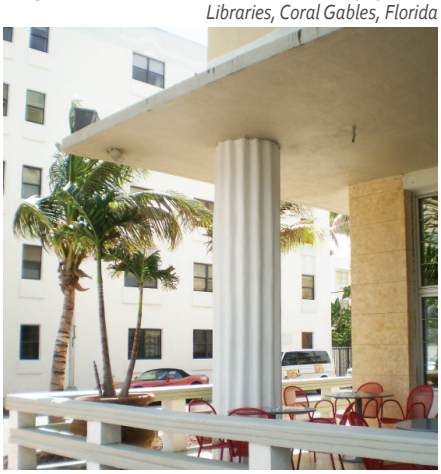
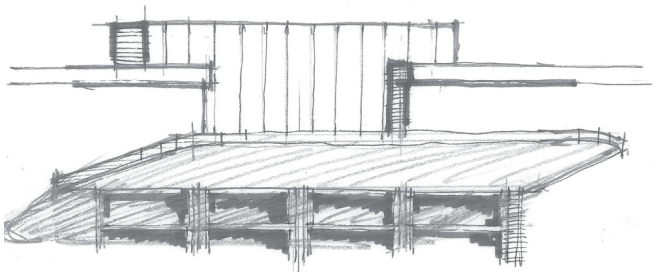


Art Deco/Streamlined Moderne

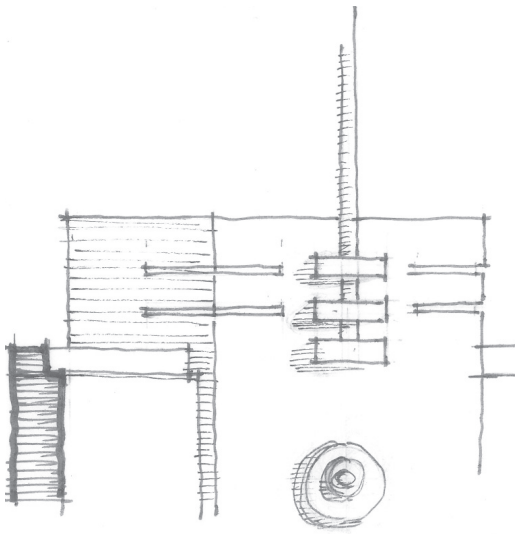
5.6.8 Awnings and Canopies

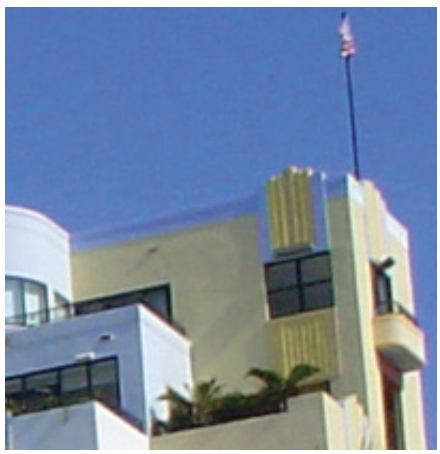
Generally, canvass awnings are rare above the ground floor. The preferred method for shading windows and doors is the concrete eyebrow, which cantilevers one or more feet from the façade of the building. Generally, an eyebrow is slightly wider than the window which it shades, and may run the entire length of a façade, shading several windows and segments of opaque wall. The overall effect emphasizes the horizontal lines of the building, and makes a façade of varying window sizes feel more united than it would otherwise feel.



5.6.9 Tower Elements

Tower elements can accommodate signage, art, lighting, and flagpoles. Art Deco / Streamlined Moderne is particularly tolerant of neon signs, especially when these are rendered using a font that is of the 1920s and 30s. Towers, when they are located at the corner of the building, often have corner windows, whether these be curved or straight corners. When located at the center of a building, a vertically striated panel often punctuates the parapet, rising above it.





Art Deco/Streamlined Moderne

5.6.10 Artwork

The tropical and nautical elements of Art Deco architecture lends itself to elegant, stylized art ranging from integrated sculpture, cast concrete, stone and metal work, bas relief, and garden sculpture.

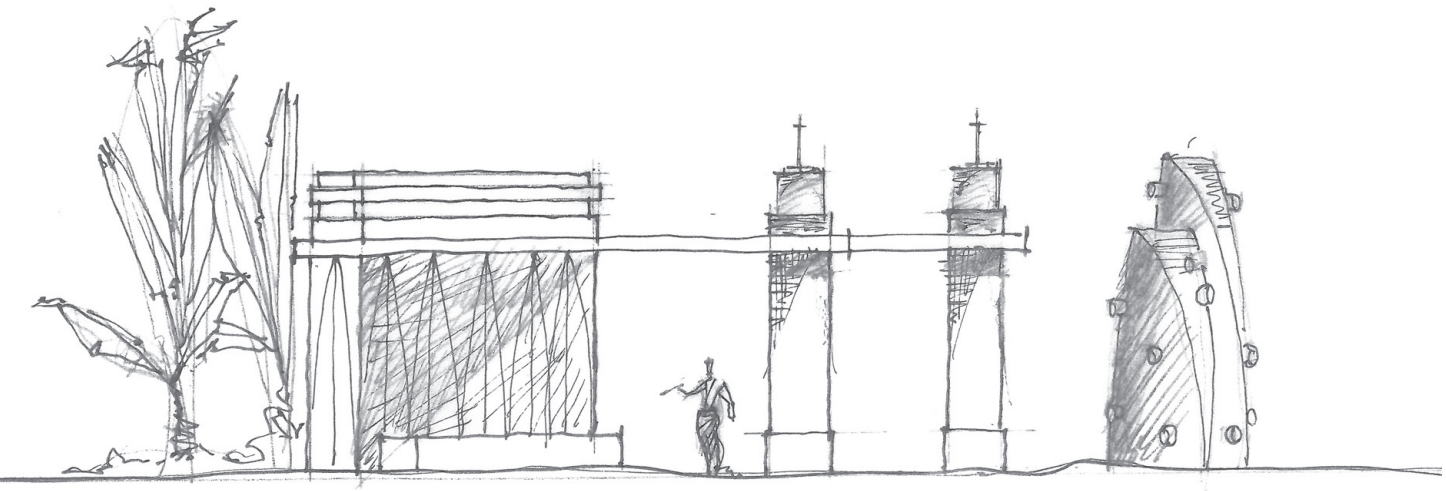
5.6.11 Art Deco/Streamlined Moderne Holistic Images

The following image shows how the elements of the Art Deco/ Streamlined Moderne style are assembled together to create a complete building. The sample pavilion and park building show one way these elements could be combined to create a new structure in a Miami-Dade County Park.

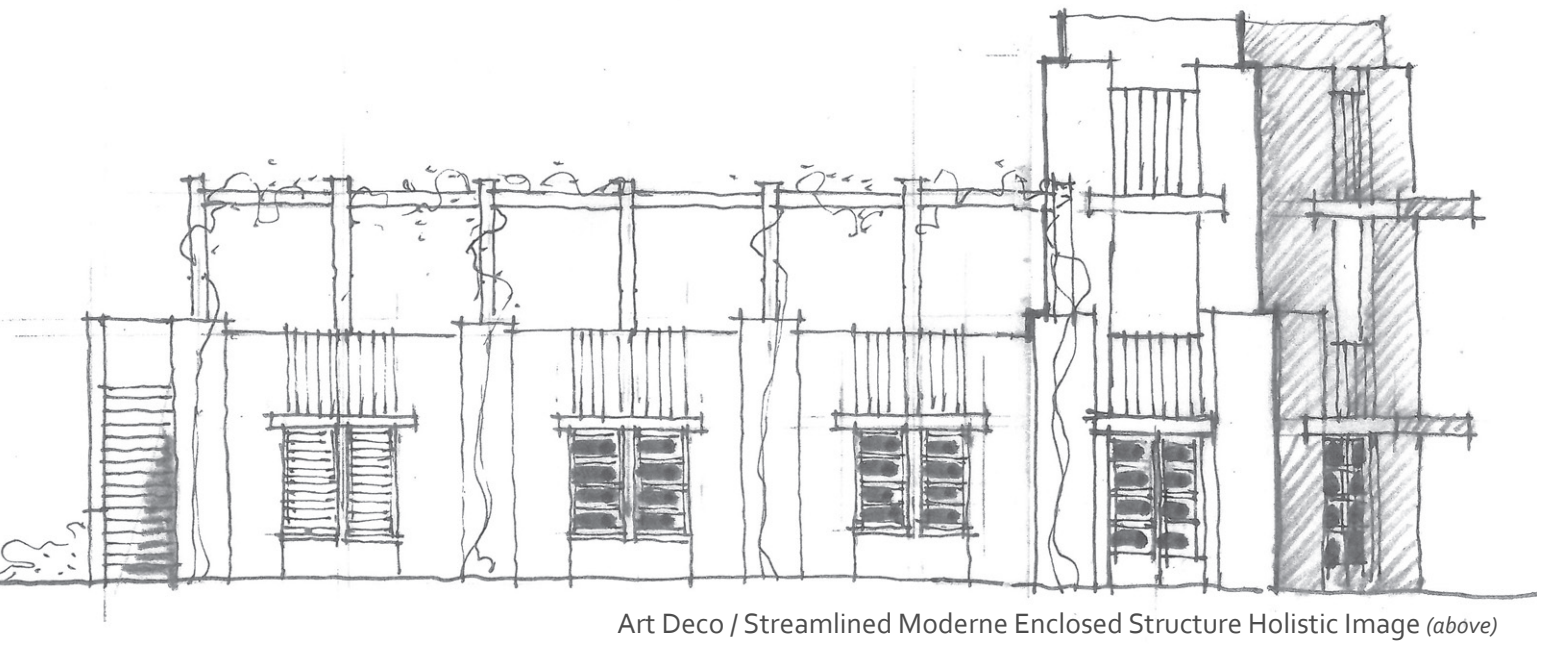
Art Deco/Streamlined Moderne Elements:

a. Vertical accents
b. Stepped parapet
c. Vertically proportioned casement windows in horizontal grouping
d. Eyebrows
e. Vertical telescoping on horizontal surfaces
f. Relief of tropical motifs *(not shown)*
g. Rounded corners *(not shown)*
h. Geometric relief or stylized sculpture *(not shown)*
i. Circular accent windows *(not shown)*
j. Glass block *(not shown)*

Art Deco/Streamlined Moderne



Art Deco / Streamlined Moderne Open Air Structure Holistic Image *(above)*



Art Deco / Streamlined Moderne Enclosed Structure Holistic Image *(above)*

5.7 Miami Modern/MiMo

Throughout the 50's and 60's modernity evolved, losing the literal ornamentation of the deco period to a more simplified aesthetic that was looser, more freeform and structurally exuberant than was common in the prior years. Mimo could be characterized as preferring asymmetrical forms, cantilevered slabs or vertical fins; porthole openings in brise-soleil, or eyebrows; use of steel tube columns, often sloping; folding or dramatically cantilevered slab roofs; and large expanses of glass.

A central figure of Miami Beach mid-century design was Morris Lapidus, who with his 1953 Fontainebleau Hotel's baroque flourishes projected a "spirit of fantastist leisure that found full expression on the interior, where amoeboid rooms were astonishingly stocked with French-themed period furnishings."*

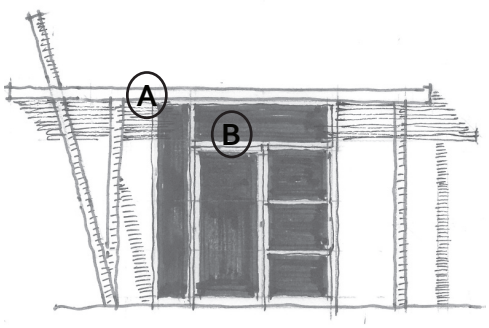
Other strands of this tropical modernism included artful elements which doubled as climate responsive geometric screens. These could function as privacy screens and shading devices allowing breezes to flow through a building or space. Such screens can be found in the cabanas at Crandon Park.

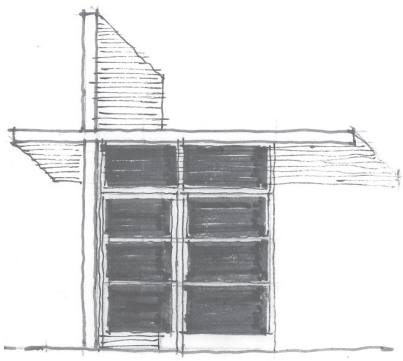
Other notable examples of MiMo include Hilario Candela's Miami Marine Stadium, with its cantilevered folded concrete canopy, and the Bacardi Building on Biscayne Boulevard, by Enrique Gutierrez, whose white and blue super graphics mosaic by Francisco Brennand remains one of Miami's iconic synthesis of art with architecture.

Most appropriate in northernmost Miami Beach and T-4 and higher transect zones.

*Shulman, Allan T., et al. *Miami Architecture*. University Press of Florida, 2010, p.9

architectural patterns





5.7.1 Doors

Door openings may be horizontally proportioned. Usually, Doors and window surrounds are vertically proportioned (a), even if the overall opening is horizontal.

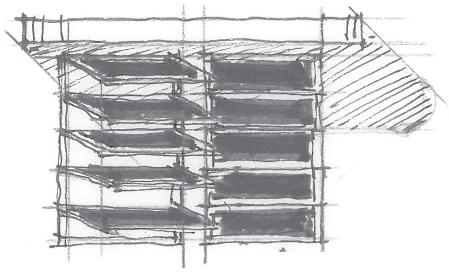
Doors may be positioned in a breezeway rather than from the front façade.

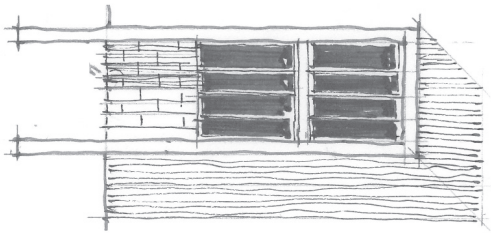
Doors may be sheltered by an eyebrow.

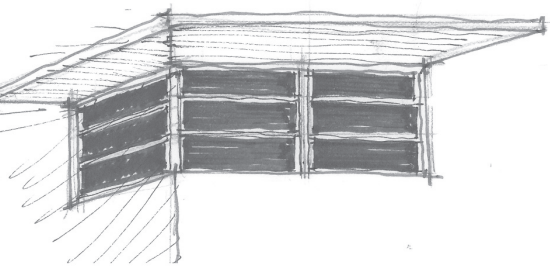
Doors are made of metal. Entrances may incorporate glass block.

Doors should have horizontally-oriented, square, or vertically-oriented lites, but transoms are usually horizontally proportioned (b). Mullions should be dimensional on the exterior.

Miami Modern/MiMo





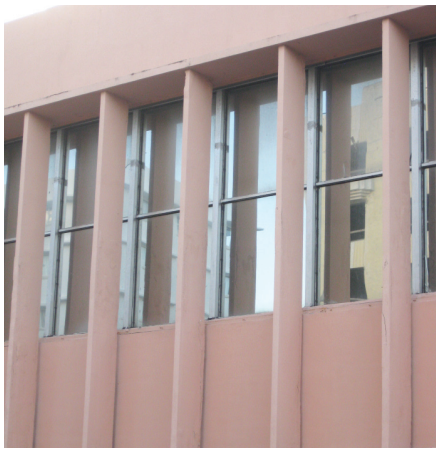


5.7.2 Windows

Windows may be vertically or horizontally proportioned and are often protected from the noon sun by an eyebrow, "egg crate," brise soleil, or other cantilevered concrete element. Corner windows are common, and are usually accompanied by a corner eyebrow feature. When corner windows are employed, they often project forward of the main façade. Eyebrows often run both horizontally and vertically, grouping windows into horizontal bands. Often the wall between the windows is brick or stone, in contrast to the smooth stucco façade.

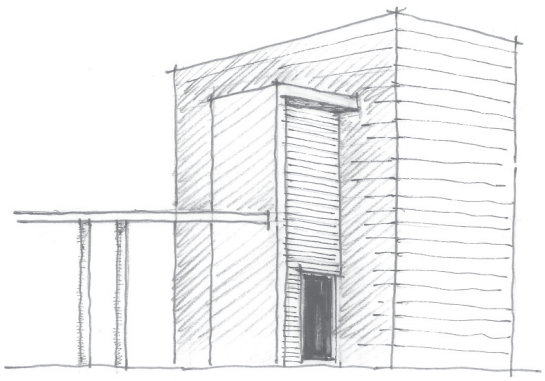
Common windows are awning, casement, and curtain wall. Porthole windows contribute to the nautical look of some buildings. Fixed glass may be used in shopfronts or small (less than thirty-six square feet) accent windows.

Generally, vertical members of the casement window are slightly thicker than the horizontal mullions. Transom windows should be horizontally proportioned.



5.7.3 Roofs

Roofs are generally concrete slab or parapeted. Slab variations include folded slab and curved shall structures. Unlike the art deco/streamlined moderne traditions that preceded MiMo, the roof slab may be angled or gabled, but with deep overhangs produced by reinforced concrete cantilevers. Often the underside of the eaves have a subtly convex profile.



Miami Modern/MiMo

5.7.4 Walls and Materials

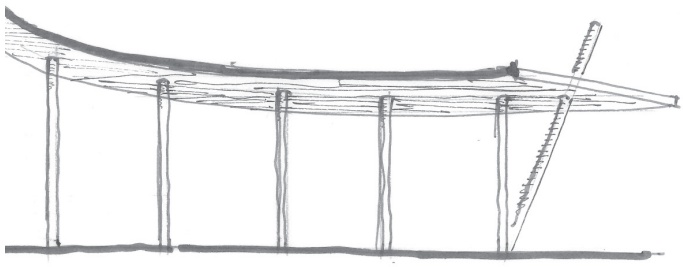
Walls are usually of smooth stucco finish. Most MiMo buildings, however, incorporate expanses of brick, ashlar, rustic stone, or striated concrete. These accents are usually placed in a concrete and stucco frame. Such a frame may even merge with a horizontal expression line or cantilevered eyebrow. Brick when used, may have a random or regular projection of certain bricks to create shelves and shadows.

The use of curtain walls or continuous voids of window lend itself to the building as a pattern (as the Fontainebleau Hotel) or a composition of forms and transparencies.

Travel, Tourism, and Urban Growth in Greater Miami: A Digital Archive, Special Collections, University of Miami Libraries, Coral Gables, Florida

5.7.5 Columns

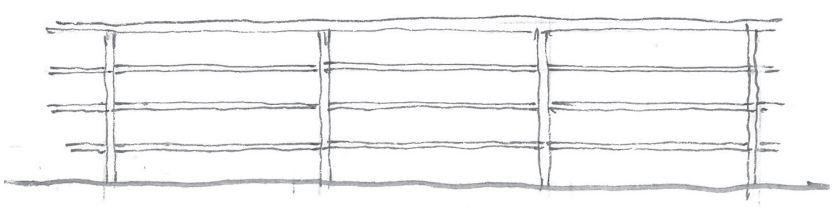
Steel tube columns or concrete fins are typically used. Steel columns are found in a variety of shapes and configurations. Often, columns are slanted and may seem to puncture the concrete canopy or roof that they support. Some columns are grouped in two, three, or four. If grouped in circular formats, these may converge or spread, and are held together by metallic tension rings, welded to the columns. If straight, they may also be grouped, with or without tension members. These extremely elongated columns are referred to as "bean pole" columns and are unique to this style.

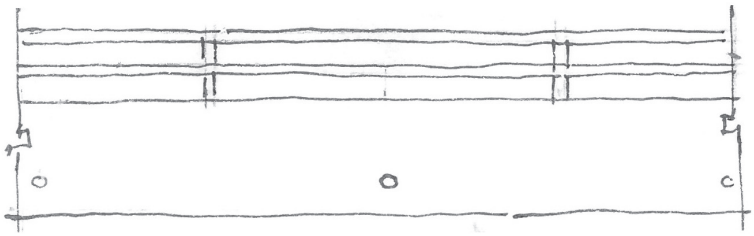


Miami Modern/MiMo

5.7.6 Railings

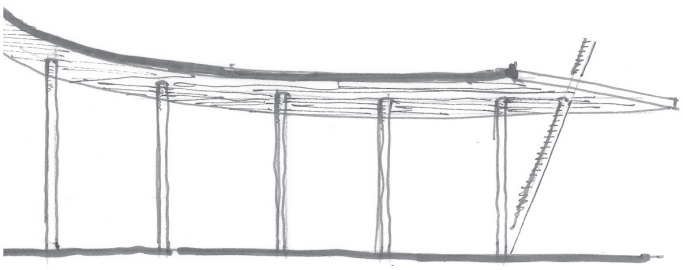
Railings can be pipe metal, concrete or glass. Metallic railings often have a "floating square" that contains a mesh. Railings are almost always horizontally proportioned. Railings are usually independent of the columns, but may be attached to columns. Where railings are used to separate changes in grade, a wire mesh may be installed behind railing elements, as necessary, to meet building code requirements for permitted spacing between railing components.

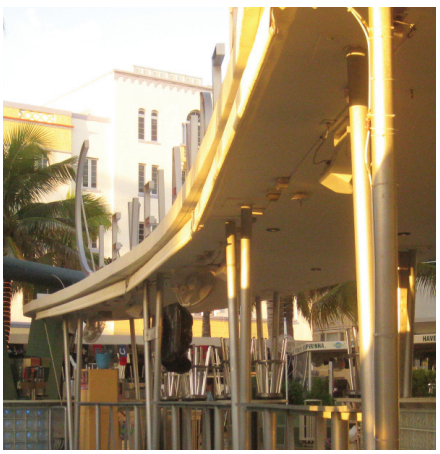




5.7.7 Porches and Walkways

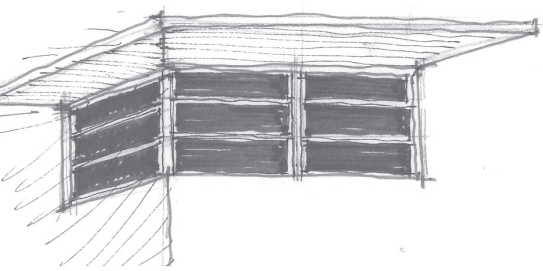
Porches, breezeways, and catwalks are ways that MiMo offers covered outdoor space to its users. Porches are elevated more than a foot, and often, several feet above the ground. Planters are sometimes integrated into the porch or base of the building to blur the line between indoors and outdoors. Columns are thin in order to maximize views into the vegetated courtyard, or waterbody which the porch faces. Sometimes there are no columns at all, as the porch is sheltered entirely by a cantilevered concrete roof or even a cantilevered upper floor.





Miami Modern/MiMo

5.7.8 Canopies

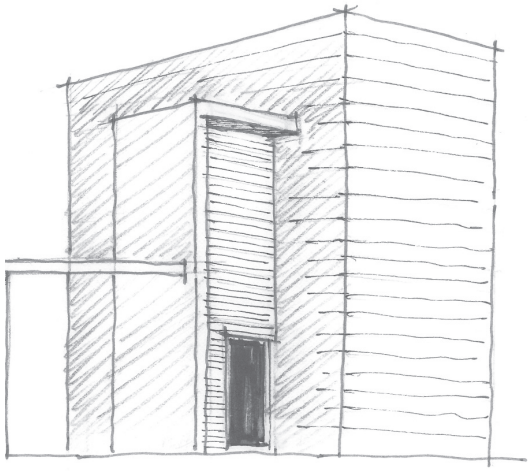


Windows, entranceways, and balconies are sheltered by concrete eyebrows, eggcrates, brise-soleil or other geometric screens. These may employ sharp angles in plan and in elevation, which differs from the sedate forms of the art deco/streamlined moderne styles. Also, the eyebrows may employ curves and may even have cut-outs for palm trees to grow through the building.

Concrete overhangs may be supported by bean pole columns or oversized, diagonal, concrete brackets. Also, they may be cantilevered without any visible means of support. Such concrete shading projects may return or change course on the building, become a vertical fin or unite other windows in unexpected ways. Free-standing canopies can act as sculptural objects such as the image at bottom left.

5.7.9 Tower Elements

Like the art deco/streamlined moderne, tower elements can accommodate signage, art, lighting, and flagpoles. MiMo is also tolerant of neon signs, especially when these are rendered using a font that is of the 1940s, 50s, and 60s. Towers, when they are located at the corner of the building, often have corner windows. When located at the center of a building, a vertical fin often rises to the side of other panels, creating an asymmetrical and dynamic composition. Tower elements often contain geometric screens for windows behind. The composition of MiMo towers often conveys a cubist and jagged composition. Due to the concrete screens, and other sun protection devices, there is a certain ambiguity to the solidity of the tower elements and other building volumes.



Miami Modern/MiMo

5.7.10 Artwork

The exuberance of MiMo can readily integrate fanciful elements, as illustrated by Franciso Brennards's building scale tile mural in Miami's Bacardi Building (image to left).

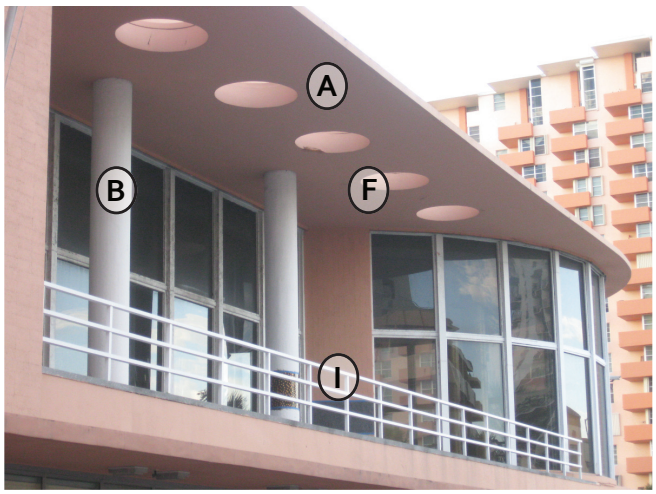
Fluid forms such as discs, the bubble screens at the the Fontainebleau Hotel, and bas-relief integrate and complement MiMo buildings as shown below from left to right .

5.7.11 Miami Modern / MiMo Holistic Images

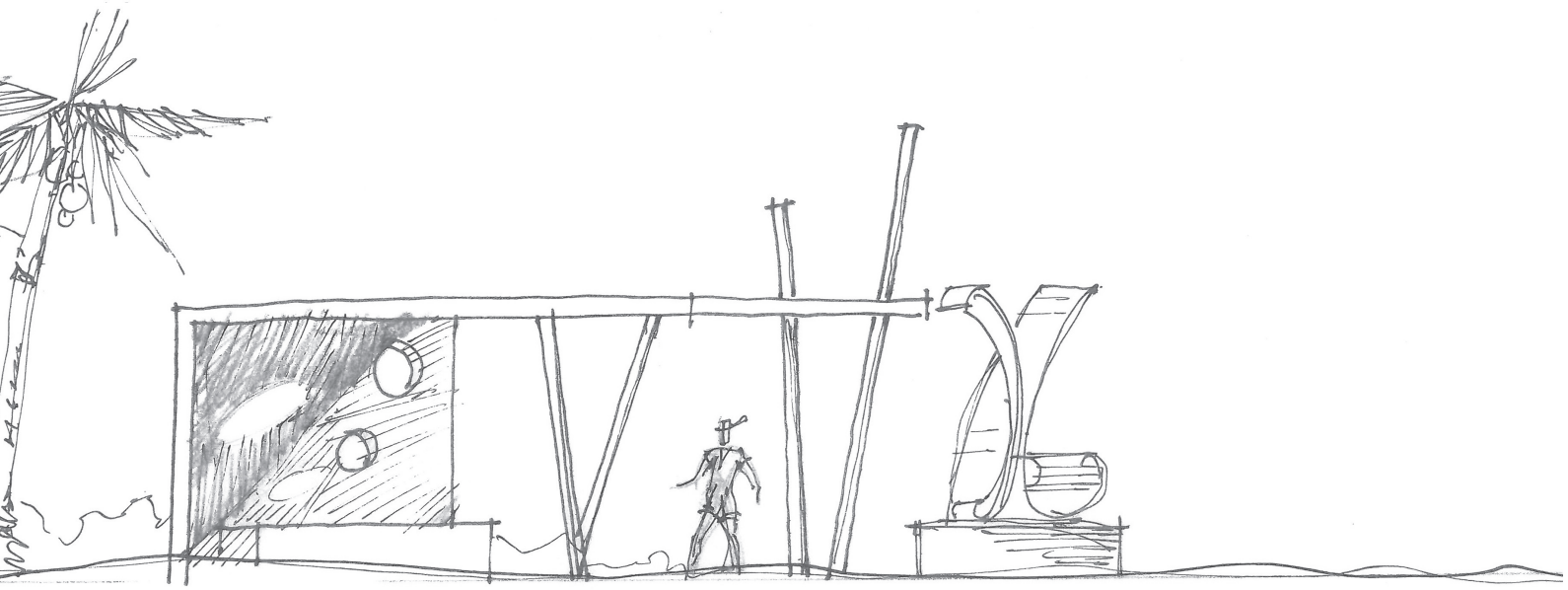
The following image shows how the elements of the MiMo style are assembled together to create a complete building. The sample pavilion and park building show one way these elements could be combined to create a new structure in a Miami-Dade County Park.

Miami Modern / MiMo Elements:

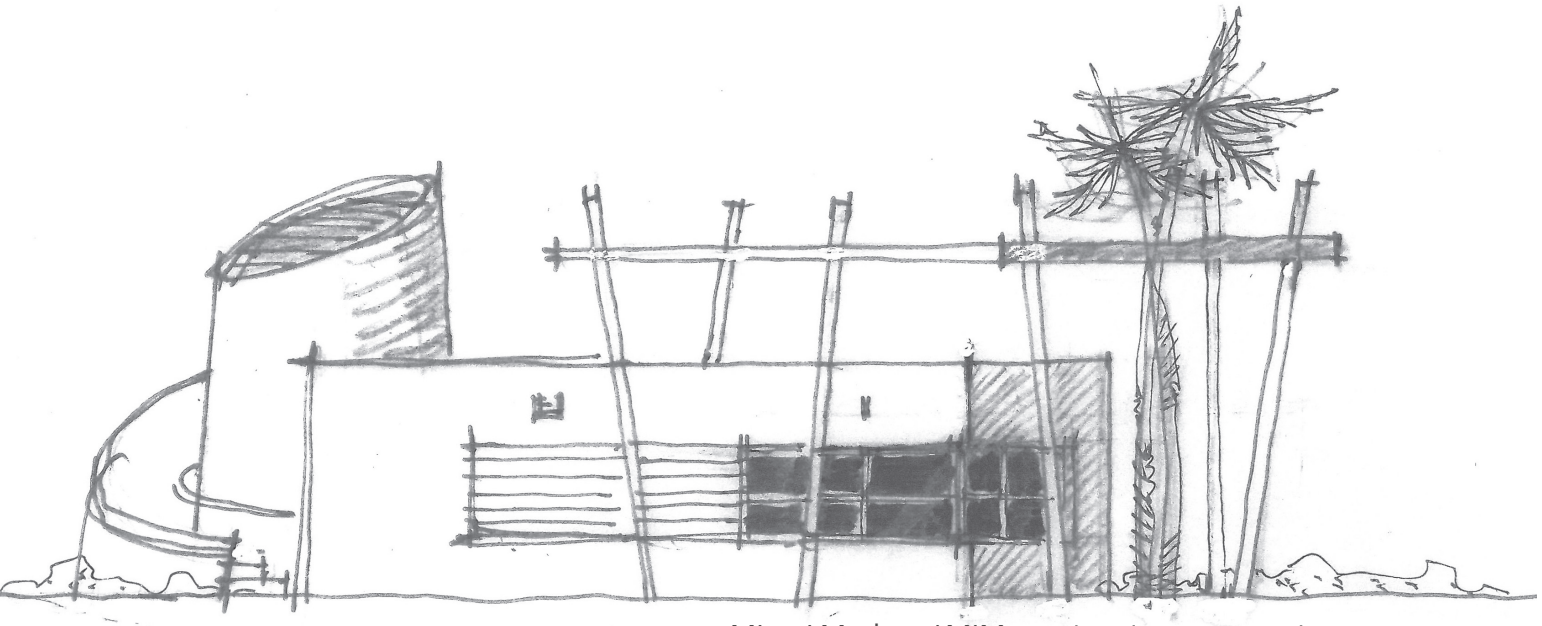
a. Concrete cantilevered slab roof
b. Steel tube columns
c. Eyebrow or egg-crate projections
d. Unadorned concrete and occasional brick/textured volumes as an accent *(not shown)*
e. Casement of awning windows
f. Circle or boomerang geometries in walls and eyebrows
g. Tilted roofs
h. Tilted pipe columns *(not shown)*
i. Steel tube railings



Miami Modern/MiMo



Miami Modern / MiMo Open Air Structure Holistic Image *(above)*



Miami Modern / MiMo Enclosed Structure Holistic Image *(above)*

"Always design a thing by considering it in its next larger context; a chair in a room, a room in a house, a house in an environment, an environment in a city plan." - *Eliel Saarinen*

conclusion

Image: Jaycee Park, Coral Gables, Florida

6.0 Conclusion

Intended to be used by all professionals involved with the design and/or retrofitting of Miami-Dade County Parks, the Miami-Dade County Park Structure and Landscape Pattern Book is a comprehensive resource for urban design, landscape and architectural design elements from formation of ideas through the planning and design of new and existing parks and park facilities. Each team member involved with a design or retrofit project should reference this document in the following manner:

1. Identify the Knowns

- Ecological Systems
- Programmatic Needs

Through on-site and data research and referencing this document historic and existing ecological systems can be identified. Programmatic needs, identified by the form and function of park facilities and programs, are identified by the Park Planning Program Plan. See the Park Planning Process section for a description of this step on page 7.

2. Site Design (Begin to Reference Document)

Chapter 2, ***Principles***, identifies six guiding principles that exist in the planning and design of the parks within Miami-Dade County and include the following:

- Design parks in accordance with proven, historic principles of design
- Design parks in accordance with lessons learned from existing Miami-Dade County parks
- Design parks to accomplish guiding principles of the Miami-Dade County Parks and Open Spaces System Master Plan
- Design parks to be sustainable
- Design parks in respect to management and stewardship design practices
- Design parks in respect to ecological and built context

Each principle has been established with a specific goal in mind. Designing parks in accordance with proven, historic principles of design centers on the essence of design theory and are rooted in several historic periods. From Italian Renaissance gardens to the Sustainable Parks of today, park design is still highly linked to the aesthetic composition influenced by the Italian, French and English schools of design applied to the American landscape.

Designing parks in accordance with lessons learned from existing Miami-Dade County parks and open spaces is rooted in the ideas and principles of one man, William Lyman Phillips. The County enjoys many parks and spaces designed by great landscape architects and artists, but Mr. Phillips has had the biggest and longest impact because of the following principles he instilled in his works:

- The priority in design is on form; plants and other materials should then be selected to best realize the intention of the form
- Buildings and other structures should be in harmony with the landscape, not in competition
- Emphasis on careful composition of space—objects should not be placed haphazardly
- Focus on character, individuality of the site
- Attention to wind, sounds, light and shadows
- Use of water
- Every detail should be in harmony with the overall concept
- Celebration of variety and contrast
- Importance of connectivity

Design parks to accomplish guiding principles of the Miami-Dade County Parks and Opens Spaces System Master Plan, completed in 2008. The master plan envisons that great parks, public spaces, natural and cultural areas, streets, greenways, blueways and trails can form the framework for a more livable and sustainable community. This objective can be accomplished by incorporating six guiding principles into every project; equity, access, beauty, multiple benefits, seamlessness and sustainability.

Designing parks to be sustainable can be achieved on a macro and micro scale. Through the application of ten practices common to all parks, incremental action can be made. Ten common sustainable practices which every park design or retrofit project should incorporate include:

- Make parks easily accessible for pedestrians, cyclists, boat users, transit riders and where appropriate, drivers
- Consider the landscape context
- Consider resiliency in design
- Use renewable and locally-generated energy
- Seeks ways to improve water quality
- Source sustainable construction materials
- Restore native habitats
- Build and retrofit structures to be energy efficient
- Decrease light pollution
- Reduce, reuse, and recycle

Design parks in respect to management and stewardship design practices is a driving force for landscape designers, architects, planners and other members of a design team to consider actions taken by Miami-Dade County to establish a more sustainable community. In additions to approved County legislature, consideration should be given to the design and subsequently maintenance needs of ground plane materials, hardscape layout and design, maintenance edges, and pathway layout and design.

The last guiding principle allows for the greatest interpretation by designers. Designing parks in respect to ecological and built context is a call to designers to acknowledge the historically unique blend of vegetative communities and the various densities and functions of the human habitat in all parks and park structures. The ecological transect identifies historic limits of various vegetative communities across Miami-Dade County from the Atlantic Ocean to the Everglades, while the Built Environment Transect identifies a cross section of a classification system describing the density of the built human environment. In identifying which ecological community and built environment a park or structure is located in, an appropriate response can be designed.

Chapter 3, ***Urban Design Patterns***, provides guidance on design of the built environment, including placement of buildings, design of streets, location of parking, and the interface of the park with the surrounding city. This chapter is divided into two sections: Urban Design Framework, which apply in all settings, and Urban Design Contextual Elements, which are guidelines specific to certain Built Environment transect zones. This section is the first section that should be reference when siting a new structure or parking within a park.

Chapter 4, ***Landscape Design Patterns***, provides guidance on the design of the landscape. This chapter is divided into three sections: Landscape Ordering Framework (Composition and Features), which apply in all landscape design; Park Design Elements, which are guidelines specific to certain Built Environment transect zones; and Ecological Communities, which provide typical characteristics and planting patterns for each ecological community commonly found in South Florida. When planning a new park or retrofitting any existing space, the complete chapter should be referenced to gain knowledge of potential design considerations, built environment factors and impacts to ecological communities, existing and historic.

The final chapter, Chapter 5, ***Architectural Patterns***, was prepared to provide architects and landscape architects with guidance on the design of buildings and park structures. Instruction on how to compose building elements in one of five appropriate styles found in South Florida:

- Florida Vernacular
- Great Camp/WPA
- Mediterranean Revival
- Art Deco/Streamlined Moderne
- Miami Modern/MiMo

The architect or landscape architect should determine the appropriate style for buildings and park structures based on input from County staff; this decision will usually be based upon study of the traditions found in surrounding neighborhoods, and identification of the style of existing buildings (if adding to an existing park).

By referencing all chapters of this document and incorporating all six guiding principles, each new park or retrofit of existing green space or structure will contribute to the betterment of our community through the development of thoughtful parks and spaces.

"Placemaking and a good English garden depend entirely on principle and have very little to do with fashion" - Capability Brown

7.0 Appendix

The appendix includes the following items for reference by professionals during the design of parks or park facilities:

- Park Design Reference Documents (7.1)
- LEED for New Construction and Major Renovations Project Checklist (7.2)
- Bibliography of reference material (7.3)

Image: Fuchs Park, Coral Gables, Florida

7.1 Park Design Reference Documents

Document	Description	Location
Miami-Dade County Parks and Open Space System Master	A 50-year unifying vision for a livable, sustainable Miami-Dade County.	http://www.miamidade.gov/greatparkssummit/overview.asp
Miami-Dade County Trail Design Guidelines and Standars: Ludlam Trail Case Study	Provides specific guidelines for the design and development of non-motorized urban shared-use trails and greenways throughout Miami-Dade County; provides specific guidance for the design and development of Ludlam Trail.	Miami-Dade County Park and Recreation Department
Wayfinding and Signage Implementation Manual	Wayfinding and gateway sign design, style and placement for transportation related signs, see latest edition of Manual on Uniform Traffic Control Devices (MUTCD).	Miami-Dade County Park and Recreation Department
Art in Public Parks: A Master Plan	Ordinance 94-12	www.miamidade.gov/publicart
Architectural Design Standards	Building prototypes-floorplans, plaques, enclosures, panels, windows treatments.	Miami-Dade County Park and Recreation Department
Landscape Ordinance	Miami-Dade County rules for planting of vegetation. Natural Forest Communities Section 24-49; no obstruction of views, Section 33-11; landscape under powerlines see ANSI Z133.1 standards.	Miami-Dade County Code of Ordinances, Part III, Chapter 18A, www.municode.com
Aesthetic Master Plan	Community Images Advisory Boards Street Tree Master Plan, and Gateway and Landscape Maintenance Standards.	http://www.miamidade.gov/image/library/aesthetics_master_plan.pdf.

appendix

Codes, Ordinances and Plans Associated with Park Planning and Design

Document	Description	Location
Miami-Dade County Comprehensive Development Master Plan	Miami-Dade County's local plan for development	http://www.miamidade.gov/planzone/CDMP/asp
Miami-Dade County Strategic Plan	Miami-Dade County's strategic plan for delivery of services	http://www.miamidade.gov/stratplan/home/asp
GreenPrint Sustainability Plan	A plan that integrates with other Miami-Dade County plans and evaluates the sustainability of the County's operations.	http://www.miamidade.gov/greenprint/
Article 7: Miami-Dade County Code of Ordinances	Acquisition and conservation of County park land, rules.	Miami-Dade County Code of Ordinance, Part I, Article 7
Chapter 25B: Miami-Dade County Code of Ordinances	Park and Recreation standards for conveyances, safe neighborhood parks, covenants, parks purposes only.	Miami-Dade County Code of Ordinance, Part III, Chapter 25B www.municode.com
Chapter 26: Miami-Dade County Code of Ordinance	Park rules and regulations, programming partners, CBOs background checks.	Miami-Dade County Code of Ordinance, Part III, Chapter 26
Chapter 33H: Miami-Dade County Code of Ordinance	Park impact fee collections, acquisition, site improvements, rules.	Miami-Dade County Code of Ordinance, Part III, Chapter 33H
Public Works Department Typical Roadway Section and Zoned Right-of-Way Update	Public Works Department typical roadway sections and right-of-way update.	http://www.miamidade.gov/pubworks/
Planning and Zoning Department: Landscape Manual and Urban Design Standards	Landscape and urban design regulations and guidelines for Miami-Dade County.	http://www.miamidade.gov/planzone/lands/asp
Manual on Uniform Traffic Control Devices (MUTCD)	Federal Highway Adiministration traffic control device design guidelines.	jhttp://mutcd.fhwa.dot.gov/
Metropolitan Planning Organization 2035 Long Range Transportation Plan	Metropolitan Planning Organization long range transportation for the South Florida region.	www.miamidade.gov/mpo/m12-plans-lrtp.htm.
Metropolitan Planning Organization 2025 Bicycle Facilities Plan	Metropolitan Planning Organziation bicycle facilities plan for Miami-Dade County.	www.miamidade.gov/mpo/m12-plans-lrtp.htm.

7.2 LEED for New Construction and Major Renovations Project Checklist

The following is the U.S. Green Building Council LEED 2009 for New Construction and Major Renovations project checklist.

LEED 2009 for New Construction and Major Renovations

Project Checklist

Project Name

Date

Sustainable Sites — Points: 26

Y	?	N				Notes:
Y			Prereq 1	Construction Activity Pollution Prevention		
			Credit 1	Site Selection	1	
			Credit 2	Development Density and Community Connectivity	5	
			Credit 3	Brownfield Redevelopment	1	
			Credit 4.1	Alternative Transportation—Public Transportation Access	6	
			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1	
			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3	
			Credit 4.4	Alternative Transportation—Parking Capacity	2	
			Credit 5.1	Site Development—Protect or Restore Habitat	1	
			Credit 5.2	Site Development—Maximize Open Space	1	
			Credit 6.1	Stormwater Design—Quantity Control	1	
			Credit 6.2	Stormwater Design—Quality Control	1	
			Credit 7.1	Heat Island Effect—Non-roof	1	
			Credit 7.2	Heat Island Effect—Roof	1	
			Credit 8	Light Pollution Reduction	1	

Water Efficiency — Points: 10

Y	?	N				Notes:
Y			Prereq 1	Water Use Reduction—20% Reduction		
			Credit 1	Water Efficient Landscaping	2 to 4	
				Reduce by 50%	2	
				No Potable Water Use or Irrigation	4	
			Credit 2	Innovative Wastewater Technologies	2	
			Credit 3	Water Use Reduction	2 to 4	
				Reduce by 30%	2	
				Reduce by 35%	3	
				Reduce by 40%	4	

Energy and Atmosphere — Points: 35

Y	?	N				Notes:
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems		
Y			Prereq 2	Minimum Energy Performance		
Y			Prereq 3	Fundamental Refrigerant Management		
			Credit 1	Optimize Energy Performance	1 to 19	
				Improve by 12% for New Buildings or 8% for Ex. Bldg. Renov.	1	
				Improve by 14% for New Buildings or 10% for Ex. Bldg. Renov.	2	
				Improve by 16% for New Buildings or 12% for Ex. Bldg. Renov.	3	
				Improve by 18% for New Buildings or 14% for Ex. Bldg. Renov.	4	
				Improve by 20% for New Buildings or 16% for Ex. Bldg. Renov.	5	
				Improve by 22% for New Buildings or 18% for Ex. Bldg. Renov.	6	
				Improve by 24% for New Buildings or 20% for Ex. Bldg. Renov.	7	
				Improve by 26% for New Buildings or 22% for Ex. Bldg. Renov.	8	
				Improve by 28% for New Buildings or 24% for Ex. Bldg. Renov.	9	
				Improve by 30% for New Buildings or 26% for Ex. Bldg. Renov.	10	
				Improve by 32% for New Buildings or 28% for Ex. Bldg. Renov.	11	
				Improve by 34% for New Buildings or 30% for Ex. Bldg. Renov.	12	
				Improve by 36% for New Buildings or 32% for Ex. Bldg. Renov.	13	
				Improve by 38% for New Buildings or 34% for Ex. Bldg. Renov.	14	
				Improve by 40% for New Buildings or 36% for Ex. Bldg. Renov.	15	
				Improve by 42% for New Buildings or 38% for Ex. Bldg. Renov.	16	
				Improve by 44% for New Buildings or 40% for Ex. Bldg. Renov.	17	
				Improve by 46% for New Buildings or 42% for Ex. Bldg. Renov.	18	
				Improve by 48%+ for New Buildings or 44%+ for Ex. Bldg. Renov.	19	
			Credit 2	On-Site Renewable Energy	1 to 7	
				1% Renewable Energy	1	
				3% Renewable Energy	2	
				5% Renewable Energy	3	
				7% Renewable Energy	4	
				9% Renewable Energy	5	
				11% Renewable Energy	6	
				13% Renewable Energy	7	
			Credit 3	Enhanced Commissioning	2	
			Credit 4	Enhanced Refrigerant Management	2	
			Credit 5	Measurement and Verification	3	
			Credit 6	Green Power	2	

Materials and Resources — Points: 14

Y	?	N				Notes:
Y			Prereq 1	Storage and Collection of Recyclables		
			Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3	
				Reuse 55%	1	
				Reuse 75%	2	
				Reuse 95%	3	
			Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1	
			Credit 2	Construction Waste Management	1 to 2	
				50% Recycled or Salvaged	1	
				75% Recycled or Salvaged	2	
			Credit 3	Materials Reuse	1 to 2	
				Reuse 5%	1	
				Reuse 10%	2	
			Credit 4	Recycled Content	1 to 2	
				10% of Content	1	
				20% of Content	2	
			Credit 5	Regional Materials	1 to 2	
				10% of Materials	1	
				20% of Materials	2	
			Credit 6	Rapidly Renewable Materials	1	
			Credit 7	Certified Wood	1	

Indoor Environmental Quality — Points: 15

Y	?	N				Notes:
Y			Prereq 1	Minimum Indoor Air Quality Performance		
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control		
			Credit 1	Outdoor Air Delivery Monitoring	1	
			Credit 2	Increased Ventilation	1	
			Credit 3.1	Construction IAQ Management Plan—During Construction	1	
			Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1	
			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1	
			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1	
			Credit 4.3	Low-Emitting Materials—Flooring Systems	1	
			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1	
			Credit 5	Indoor Chemical and Pollutant Source Control	1	
			Credit 6.1	Controllability of Systems—Lighting	1	
			Credit 6.2	Controllability of Systems—Thermal Comfort	1	
			Credit 7.1	Thermal Comfort—Design	1	
			Credit 7.2	Thermal Comfort—Verification	1	
			Credit 8.1	Daylight and Views—Daylight	1	
			Credit 8.2	Daylight and Views—Views	1	

Innovation and Design Process — Points: 6

Y	?	N				Notes:
			Credit 1.1	Innovation in Design: Specific Title	1	
			Credit 1.2	Innovation in Design: Specific Title	1	
			Credit 1.3	Innovation in Design: Specific Title	1	
			Credit 1.4	Innovation in Design: Specific Title	1	
			Credit 1.5	Innovation in Design: Specific Title	1	
			Credit 2	LEED Accredited Professional	1	

Regional Priority Credits — Points: 4

Y	?	N				Notes:
			Credit 1.1	Regional Priority: Specific Credit	1	
			Credit 1.2	Regional Priority: Specific Credit	1	
			Credit 1.3	Regional Priority: Specific Credit	1	
			Credit 1.4	Regional Priority: Specific Credit	1	

			Total	**Possible Points:**	**110**

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

7.3 Bibliography

Design Principles

Ching, Francis D. K. *Architecture: Form, Space and Order*. Van Nostrand Reinhold: International Thomson Publishing, Inc.: New York, 1996.

Dondis, Donis A.. *A Primer of Visual Literacy*, MIT Press, Cambridge, 1973.

Mosser, Monique and Teyssot, Georges. *The Architecture of Western Gardens*. Cambridge: The MIT Press, 1991.

Schnadelbach, R. Terry. Ferruccio Vitale: *Landscape Architect of the Country Place Era*. New York: Princeton Architectural Press, 2001.

Wong, Wucious *Principles of Two Dimensional Design*, John Wiley & Sons, New York, 1972

Florida Vernacular:

Caemmerer, Alex. *The Houses of Key West. Sarasota*: Pineapple Press, 1992.

Haase, Ronald W. *Classic Cracker: Florida's Wood-Frame Vernacular Architecture.* Sarasota: Pineapple Press, 2008.

Mouzon, Stephen A. *A Living Tradition, Architecture of the Bahamas.* Miami: The New Urban Guild Foundation, 2007.

Valle, Erick. *American Urban Typologies: Key West, Florida (American urban typologies)*. Key West: Village Publishers, 1995.

Great Camp/WPA:

Kaiser, Harvey H. *Great Camps of the Adirondacks*. Jaffrey: David R Godine, 2003.

Kaiser, Harvey H. *The National Park Architecture Sourcebook. New York*: Princeton Architectural Press, 2008.

Mediterranean Revival:

Behar, Roberto M. and Maurice Culot. *Coral Gables: An American Garden City*. Norma Editions, 1997.

Dunlop, Beth. *Miami: Mediterranean Splendor and Deco Dreams*. New York: Rizzoli, 2007.

Millas, Aristides J. and Ellen J. Uguccioni. *Coral Gables: Miami Riviera: An Architectural Guide*. Gainesville: University Press of Florida, 2003.

Mizner, Addison. *Florida Architecture of Addison Mizner. Mineola*: Dover Publications, 1992.

Sully, Susan and Steven Brooke. *Casa Florida: Spanish-Style Houses from Winter Park to Coral Gables*. New York: Rizzoli, 2005.

Art Deco/Streamlined Moderne:

Baer Capitman, Barbara. *Deco Delights: Preserving Miami Beach Architecture*. New York: E.P. Dutton, 1988.

Cerwinske, Laura. *Tropical Deco: The Architecture and Design of Old Miami Beach*. New York: Rizzoli, 1991.

Dunlop, Beth. Miami: *Mediterranean Splendor and Deco Dreams*. New York: Rizzoli, 2007.

Lejeune, Jean-Francois, and Allan T. Shulman. *The Making of Miami Beach: 1933-1942 The Architecture of Lawrence Murray Dixon*. Bass Museum of Art, 2000.

Miami Modern/Mimo:

Giller Nelson, Sarah and Norman M. Giller. *Designing the Good Life: Norman M. Giller and the Development of Miami Modernism*. Gainesville: University Press of Florida, 2007.

Nash, Eric P. and Randall C. Robinson Jr. *MiMo: Miami Modern Revealed*. San Francisco: Chronicle Books, 2004.

appendix

Landscape / Plants:

Association of Florida Native Nurseries. *Xeric Landscaping with Florida Native Plants*. Hollywood: Betrock Information Systems Inc. 1991.

Barrick, William E. *Florida Sea Grant College: Salt Tolerant Plants for Florida Landscaping*. Gainesville: University of Florida, 1979.

Brookwell, Joan and Haehle, Robert. *Native Florida Plants: Low Maintenance Landscaping and Gardening*. Lanham: Taylor Trade Publishing, 2004.

Jackson, Faith Reyher. *Pioneer of Tropical Landscape Architecture*. Gainesville: University Press of Florida, 1997.

Nelson, Gil. *Florida's Best Native Landscape Plants: 200 Readily Available Species for Homeowners and Professionals*. Gainesville: University Press of Florida, 1997.

Rogers, George K. *Landscape Plants for South Florida: A Manual for Gardeners, Landscapers, and Homeowners*. Palm Beach Gardens: Palm Beach State College, 2009.

General:

Alexander, Christopher, et al. *A Pattern Language: Towns, Buildings, Construction*. New York: Oxford University Press, 1977

Ceo, Rocco, and Joanna Lombard. *Historic Landscapes of Florida*. Deering Foundation & University of Miami, 2001.

Cranz, Galen. *The Politics of Park Design: A History of Urban Parks in America*. Cambridge: The MIT Press, 1989.

Cusato, Marianne. *Get Your House Right: Architectural Elements to Use & Avoid*. New York: Sterling Publishing, 2008.

Hegemann, Werner Hegemann, and Elbert Peets. *The American Vitruvius: An Architect's Handbook of Civic Art*. New York: The Princeton Architectural Press, 1988.

McAlester, Virginia and Lee McAlester. *A Field Guide to American House*s. New York: Alfred A. Knopf, 1984.

Mouzon, Stephen A. *Traditional Construction Patterns: Design and Detail Rules-of-Thumb*. New York: McGraw-Hill, 2004.

Olgyay, Victor. *Design with Climate: Bioclimatic Approach to Architectural Regionalism*. Princeton, NJ: Princeton University Press, 1957.

Shulman, Allan T., Randall C. Robinson Jr, and James F. Donnelly. *Miami Architecture: An AIA Guide Featuring Downtown, the Beaches, and Coconut Grove*. University Press of Florida, 2010

Walker, Lester. *American Shelter. New York*: The Overlook Press, 1998.

Acknowledgments

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