MAKING A MODEL MUNICIPAL FACILITY:

A CASE STUDY OF EAST POTOMAC PARK GOLF COURSE

by

MICHAEL MCCARTIN

(Under the Direction of Scott Weinberg)

ABSTRACT

The golf course is the largest and most visible product of the 1903 McMillan Plan's goal to create an exemplary public playground at Potomac Park in Washington, DC. The facility's current decayed state, however, belies the ambition behind its construction. The objective of this thesis, therefore, is to fulfill the goals of the McMillan Plan by making East Potomac Park into a model municipal golf course. Prevailing practices in the golf industry are examined and several successful municipal golf courses are analyzed with an eye toward maximizing the enjoyment of municipal golfers while minimizing their costs. This thesis determines that affordable golf and interesting, strategic architecture are not mutually exclusive, and the means to achieve that end have beneficial consequences for the game itself – resulting in better playing characteristics and more environmentally sensitive golf courses. The findings are synthesized into a redesign of the East Potomac Park golf course.

INDEX WORDS: Golf, Golf course architecture, East Potomac Park, Municipal golf

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MICHAEL MCCARTIN

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MICHAEL MCCARTIN

Major Professor: Scott Weinberg

Committee: David Spooner
David Berle
Shane Robichaud

Electric Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
May 2008

# DEDICATION

Though I know that everything I do is tinged with his memory, as this may be the only chance I ever get to dedicate anything in print, this thesis is dedicated to my brother, John McCartin.

# ACKNOWLEDGEMENTS

I would like to thank my major professor, Scott Weinberg, as well as the members of my reading committee: David Spooner, David Berle, and Shane Robichaud. I would also like to express my gratitude to my parents, who took time out of a very busy schedule to read through each chapter as I finished them, and Sara, who kindly put up with me throughout the whole process.

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# CHAPTER 1

# INTRODUCTION

## Problem

Municipal golf usually conjures in the mind of a golfer images of ragged fairways and inexperienced hacks (Saslow, 2007). Municipal golf courses are widely considered the bottom rung of the golfing ladder, limited in potential by inadequate budgets and basic designs. In general, expectations for municipal golf courses are very low. They are usually the least expensive option for golfers, and the quality of the course reflects that (*National Audit of Scotland's Golf Courses and Ancillary Facilities*, 2003). The golf course at East Potomac Park in Washington, D.C. is a case in point.

This was not always the case. East Potomac Park was conceived in the late nineteenth century as an integral part of a plan to establish vital parkland in the core of the nation's capital. The McMillan Plan of 1902 called for the creation of a 'Potomac Park' in the city bordering the Potomac River that would both serve as a civic center for the nation, hosting national monuments and memorials, as well as provide a hub for the active recreation of local residents. West Potomac Park is now the site of several iconic national landmarks, including the Lincoln Memorial and Reflecting Pool, the Jefferson Memorial, and the Vietnam Veterans Memorial. East Potomac Park was considered an important counterpoint to the national scope of West Potomac Park and, as outlined in a 1916 plan, conceived as a "model public playground" that would provide first class facilities for locals to enjoy golf, tennis, baseball, swimming, and croquet, among other activities. Though the golf course was one of only a few features to be

implemented from that plan, its initial form featured a highly strategic and interesting design consistent with the city's aspirations for the park.

As a result of several major changes to the layout and years of neglect, the initial design of the golf course has been eroded beyond recognition. Though the facility does provide golf at affordable prices to Washington, D.C. area residents, it lacks the benefit of interesting architecture and certainly does not call to mind a model playground.

Purpose

As the most visible remnant of the 1916 plan for East Potomac Park, the golf course is an excellent candidate for a redesign that would fulfill the park's original mission statement. At the same time, an effective redesign could create a model facility to serve as an example for municipal golf course operations throughout the country.

Municipal golf courses, like the facility at East Potomac Park, are uniquely situated in the world of golf. At a time when the costs of golf are spiraling upward, municipal courses are inexpensive to play and accessible to the general public. Consequently, they are the only affordable option for many golfers and also the likely locations for new golfers to take up the game. The bland architecture and poor conditioning of most municipal courses, however, stands in stark contrast to the more polished designs and playing characteristics of more expensive public and private courses. It is the contention of this thesis that interesting architecture and affordable, playable golf are not mutually exclusive. This thesis develops a model delineating the factors most critical to the improvement of the municipal golf course experience.

Argument and Questions

The central question of this thesis is how to fulfill the McMillan Plan's goal by making East Potomac Park into a model municipal golf course? The thesis operates on the assumption

that an ideal municipal golf course maximizes the golfer's enjoyment of the game while at the same time minimizing his or her costs. Therefore, in order to effectively redesign East Potomac Park's golf course into a model municipal facility, this thesis will address the following questions: "what traits ensure a pleasurable municipal golf experience; how can those traits be implemented while maintaining the necessary affordability of municipal golf; and what implications do those answers have for the game of golf itself and its immediate future?

Assertions

The major determinants of success for a municipal golf course are its location, design, maintenance, and management. This thesis contends that interesting architecture is the most important factor in a golfer's enjoyment of a municipal golf course, despite the fact that municipal courses are generally not known for their quality of design.

Furthermore, prevailing inefficient practices in design, maintenance, and management of golf courses in the United States offer important opportunities to reduce costs. These inefficiencies are fed by American golf priorities that are incompatible with the production of high quality courses affordable for the general public. In most cases, particularly with regard to course maintenance, cheaper alternatives also have tremendous side benefits, requiring fewer ecologically harmful inputs and resulting in better playing characteristics for the golf course and, therefore, a more enjoyable experience for the golfer. As a subset of golf courses with a vested interest in promoting affordability, municipal facilities can also serve as a vehicle for the golf industry to adapt practices that embrace a new and more viable set of priorities that are not only more economically and environmentally responsible, but also enhance the golf experience.

The redesign of the East Potomac Park golf courses proposed herein synthesizes these ideas, producing a model municipal golf facility that would provide an enjoyable architectural experience while remaining affordable.

Process

Chapter one examines the history of East Potomac Park and its surrounding area, establishing the significance of East Potomac Park's location and its integral relationship with its more famous neighbor, West Potomac Park. Based on this research, the thesis proposes that East Potomac Park must address the gulf in design quality and lack of connectivity that has developed between the two parks, making the golf facility an important candidate for renovation.

In chapter two, the thesis considers the history of the East Potomac Park golf course specifically. The initial design of the golf course is evaluated for architectural merit based on aerial photos depicting the course in its completed form in 1927. More aerial photos are used to track changes made to the course over time. Finally, the current state of the course is described and related to the typical municipal golf experience in the United States.

Chapter three provides a detailed case study analysis of three well-known municipal golf courses. First, the history of the Bethpage State Park and Torrey Pines complexes, as well as the experiences of their regular users, helps establish architectural quality as the most important determinant of what makes a municipal golf course pleasurable. Then, the architectural features of the Old Course in St. Andrews, Scotland are distilled into a set of ideal principles for the design of a municipal golf course.

In chapter four, the prevailing practices in the design, maintenance, and management of golf courses in America are critiqued with an eye toward minimizing costs. The chapter begins by examining reasons for the dearth of architecturally interesting and affordable municipal golf

courses, including an investigation of the priorities of American golfers. The thesis demonstrates that those priorities are incompatible with producing quality, affordable municipal golf, and offers compatible alternatives. Particularly with regard to design and maintenance, added benefits of these alternatives for the environment and the playing characteristics of the golf course are explored.

Chapter five applies the architectural principles derived from chapter three and the cost-conscious approaches to design, maintenance, and management outlined in chapter four to a redesign of the East Potomac Park golf courses to produce a model municipal golf facility.

# CHAPTER 2

# HISTORY, EAST AND WEST POTOMAC PARKS

## Introduction

Occupying a large tract of land adjoining the National Mall, East and West Potomac Parks are important both as a showcase for many of this country's most well known civic memorials and as a place for locals to enjoy the outdoors and participate in various other forms of recreation. The parks contain such iconic commemorative elements as the Lincoln Memorial, Jefferson Memorial, Korean War Memorial, FDR Memorial and Vietnam Veterans Memorial visited by millions of tourists each year, in addition to open parkland and countless ball fields used daily by locals seeking a break from the stresses of work. The parks are home to large gatherings – hosting popular annual events like the Cherry Blossom Festival and Fourth of July festivities, and serving as the primary location for civil rights and anti-war demonstrations – as well as smaller, weekly get-togethers for barbeques or sports leagues (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999). The dual purposes of the parks, functioning both as a symbolic civic center for the nation's capital and haven for those that live there, make them significant and unique in this country and their success is a testament to the vision and planning that guided their development.

## Origination

The land that today comprises East and West Potomac Parks was originally underwater, unnavigable shoals or useless swamp land. At the time, the Potomac River flowed much farther north of its current path, winding its way close to the base of the Washington Monument.

Beginning in 1834, some of the land was reclaimed in order to build a solid ground approach for a new railroad bridge crossing the Potomac River. The approach causeway was constructed on shallow shoals with fill from the dredging of river channels, one of which, the Washington Channel, was cleared near the causeway to provide an open, safe harbor for river craft. By the late nineteenth century, the area of the parks had filled with silt, resulting in a low marshland known as the Potomac Flats. As the destination for much of the city's sewage, the flats became a problematic source of malaria and disease. Reclamation of the land was deemed necessary to address the resulting public health concerns and improve navigation on the river (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

In 1879, U.S. Army Major William Twining devised a plan to create a park on the reclaimed land around a reserve of water that would serve as both a recreational element and the means to flush the Washington Channel. Army Major Peter C. Hains modified this plan in 1882, introducing the Tidal Basin, which takes advantage of fluctuating water levels in the Potomac to create a natural flushing action that keeps the channel free of silt and mud. An Act of Congress, dated August 2, 1882 officially authorized reclamation of the Potomac Flats and excavation of the Tidal Basin, appropriating $400,000 for the project (*East and West Potomac Parks National Register of Historic Places Inventory - Nomination Form*, 1973). The reclamation work, undertaken by the U.S. Army Corps of Engineers, was carried out in stages from 1882 until 1913 under the direction of Major Hains (see Figure 2-1). Stone seawalls that retained the massive earthen fills were constructed to line the Tidal Basin and form the perimeter of the East Potomac Park peninsula. For the most part, the seawalls remain intact to this day, with only portions

rebuilt as a result of construction projects undertaken over the years (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

Figure 2-1. Reclamation of East Potomac Park (Library of Congress)

As the reclamation work progressed, another Act of Congress, issued March 3, 1897, made the ultimate fate of the new land official, declaring, “the entire area formerly known as the Potomac Flats, and now being reclaimed, together with the tidal reservoirs, be, and the same are hereby, made and declared a public park, under the name of the Potomac Park, and to be forever held and used as a park for the recreation and pleasure of the people” (*East and West Potomac Parks National Register of Historic Places Inventory - Nomination Form*, 1973) In all, the

reclamation process would create 639 acres of new parkland, with the resulting area of Potomac Park totaling 730 acres. This area is bounded to the south and west by the Potomac River, the north by Constitution Avenue, and the northeast by 17th Street and the grounds of the Washington Monument. The easternmost section of Potomac Park is a crescent shaped peninsula that comes to a point at its east end – named Hains Point for the major who supervised the park's reclamation. Surrounding the peninsula is the Washington Channel to the north and the Potomac to the south and east. In the early twentieth century, the peninsula came to be called East Potomac Park. The existing railroad bridge, visible in Figures 2-1 and 2-2, marked the boundary line between the 330 acres of East Potomac Park and the 400 acres of West Potomac Park (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

Figure 2-2. Railroad Bridge Divides East and West Potomac Park – Tidal Basin Visible in Foreground (Library of Congress)

Park Planning

In the first quarter of the twentieth century, three plans were central to the development of East and West Potomac Parks. The first, known as the McMillan Plan, was formulated by a multidisciplinary commission at the behest of the US Senate beginning in March of 1901. The commission, headed by Michigan Senator James McMillan, also included noted architects Daniel H. Burnham and Charles F. McKim, landscape architect Frederick Law Olmsted, Jr., and sculptor Augustus St. Gaudens. This all-star collection of experts was charged with devising a plan to improve Washington's park system. The scope of the final report, issued in early 1902, dealt with the city and region as a whole, but the core of the commission's recommendations centered on the mall and the new Potomac Park (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

The McMillan Plan focused on recapturing important lost elements of Pierre L'Enfant's seminal 1791 plan for the city and, where possible, expanding on L'Enfant's vision. To this end, one of the more important aspects of the plan involved integrating the new Potomac Park into L'Enfant's framework for Washington. The nature of the commission's designs for Potomac Park is evident in this excerpt from the McMillan Plan:

> "The mall of the original city will be connected with the new Potomac Park and form an integral and important part of an extensive park area. The blemishes upon the appearance of the mall through disfiguring railroad tracks will not, however, be permitted by the public to be duplicated in the case of the new reservation. The latter will, in pursuance of the declaration of the law, be forever held and used as a public park, for the recreation and pleasure of the people. . . If a fraction of the proposed uses of this area is realized the public welfare will be wonderfully promoted. The park will be transformed into a thing of beauty by the landscape gardener's art; an improved and enlarged bathing beach and bathing pool will contribute to the public health; for the recreation of the people there will be provided baseball diamonds, play grounds, tennis courts, golf links, and special areas, including piles of sand for the little ones; upon water basins will be rowboats and naptha launches; here will be laid out in an elliptical shape a sidewalk, a carriage drive, a bridle path, a bicycle path and a speedway, and enclosed within the ellipse will be an area suitable for races and field sports. Tree-lined roads and bridle paths will afford attractive

> vistas of land and water" (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999, p73).

As the quote begins to suggest, the McMillan Plan's recommendations for Potomac Park had three main goals: to seamlessly connect the park with the axial open lawn areas and formal, civic character of the adjacent mall and Washington Monument; to construct beautiful, naturalistic outdoor spaces for passive enjoyment; and to provide facilities for several different types of active recreation.

The McMillan Commission synthesized these goals by anchoring their final plan around formal landscape elements in West Potomac Park near the central area of the mall, seen in Figure 2-3, and transitioning from there to more informal, naturalistic landscapes toward the river, Tidal Basin, and East Potomac Park. The transition from formal to naturalistic landscapes in the park was designed to roughly correspond with a shift in visitor usage from passive to active recreation (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999). Formal, civic spaces that would encourage reflection and a certain degree of seriousness appropriately were designed to give way to more picturesque areas that would harbor the exuberance and bustle of ball fields, bathing beaches and playgrounds.

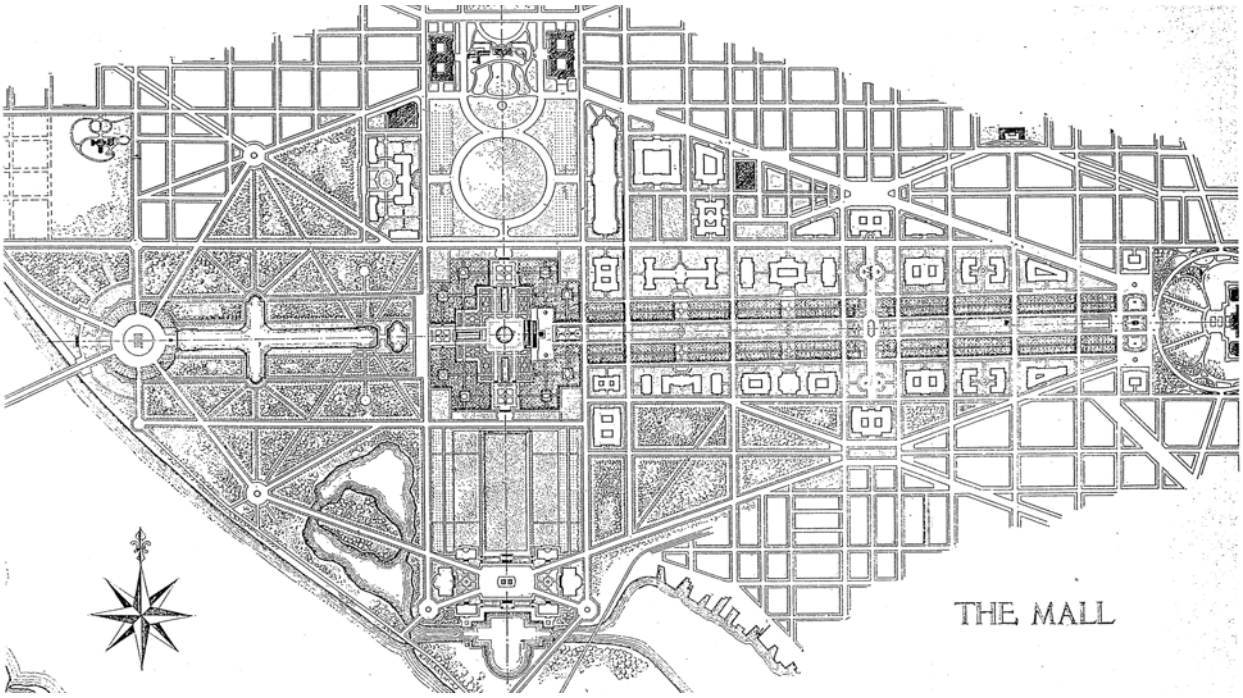



Figure 2-3. The McMillan Plan for the Mall (1999 NHR Nomination)

The formal elements in Potomac Park proposed by the McMillan Plan are now some of the iconic spaces and memorials associated with the nation's capital. The document called for extending L'Enfant's formal plan for the mall on axis with the Capitol building and the Washington Monument by the addition of a long, linear water element (now the Reflecting Pool and Rainbow Pool) terminating at the site for a major memorial (see Figure 2-4). The Lincoln Memorial was built on this site between 1913 and 1922, and its construction was a significant step toward ensuring that the McMillan Commission's designs were seen through in later years. Further formal elements in the plan for the new park included the designation of another site for a major memorial at the east edge of the Tidal Basin on axis with 16th Street and the White House (the Washington Monument was originally intended to be on axis with theses elements also, but was built in the wrong location). The placement of this memorial, later to become the Jefferson Memorial (1938-43), completed a generally cruciform framework for the formal,

monumental core of the city defined by the Capitol building to the east, the Lincoln Memorial to the west, the White House to the north, the Jefferson Memorial to the south, and the Washington Monument in the center (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

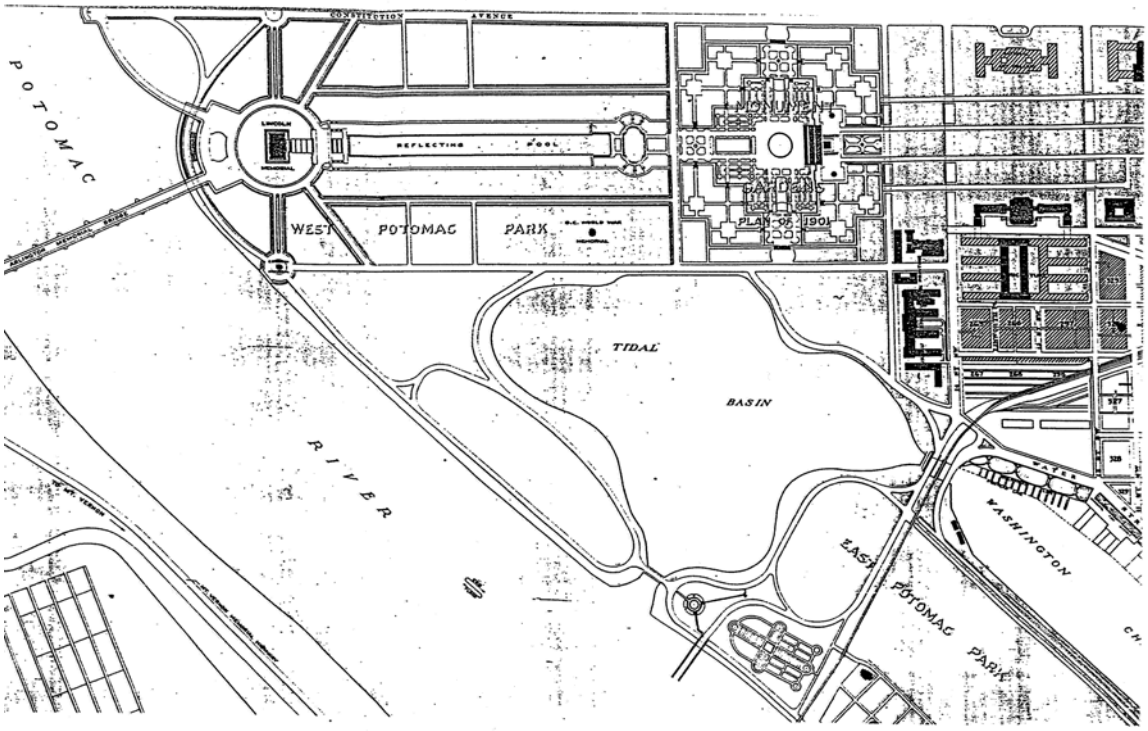



Figure 2-4. Olmsted's General Plan for the Mall – 1931 (1999 NHR Nomination)

The McMillan Plan is credited as the first large-scale manifestation of the City Beautiful movement in the United States. The majestic, civic spaces and axial relationships of the plan are reminiscent of the broad avenues and monumental focal points found in European cities and reflect the Beaux-Arts planning made popular in America by the "White City" of the 1893 Chicago World's Columbian Exposition. This should come as no surprise, considering three of the commission's members, Burnham, McKim, and St. Gaudens, were instrumental in the design

and execution of the Columbian Exposition. . The Washington, D.C. plan is particularly noted for softening the monumental formal spaces with more naturalistic surroundings. The plan helped to jumpstart city planning efforts across the country and served as a splendid example of how to adopt the spirit of a historic plan to address the concerns of the early twentieth century (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

The two other significant early twentieth century plans addressed West Potomac Park and East Potomac Park separately; each included much more detail than the broad brushstrokes of the McMillan Plan. Since reclamation of the parkland proceeded generally from west to east, West Potomac Park was the first section of Potomac Park to be turned over to the Washington, D.C. Office of Public Buildings and Grounds by the U.S. Army Corps of Engineers. In 1906, Frederick Law Olmsted, Jr. was contracted to continue his involvement in the evolution of the park by drafting a development plan for a large area west of the Tidal Basin. The plan, featuring riverside drives and walkways bordered by open lawns dotted sparsely with deciduous trees, was completed in 1907 and installed over the next ten years by the Office of Public Buildings and Grounds (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

The third major plan of the early twentieth century focused on East Potomac Park. The first "comprehensive plan for the development of East Potomac Park as a pubic recreation ground" was undertaken following completion of reclamation work in 1911 and the park's transfer to the Office of Public Buildings and Grounds in 1912. The final plan was devised by city planner James Langdon, working in cooperation with William W. Harts, Chief of the Army Corps of Engineers, and Frederick Law Olmstead, Jr. due to his position as a landscape architect

member of the Commission of Fine Arts. Titled, *Development of East Potomac Park*, the plan was presented to Congress in April 1916. (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999)

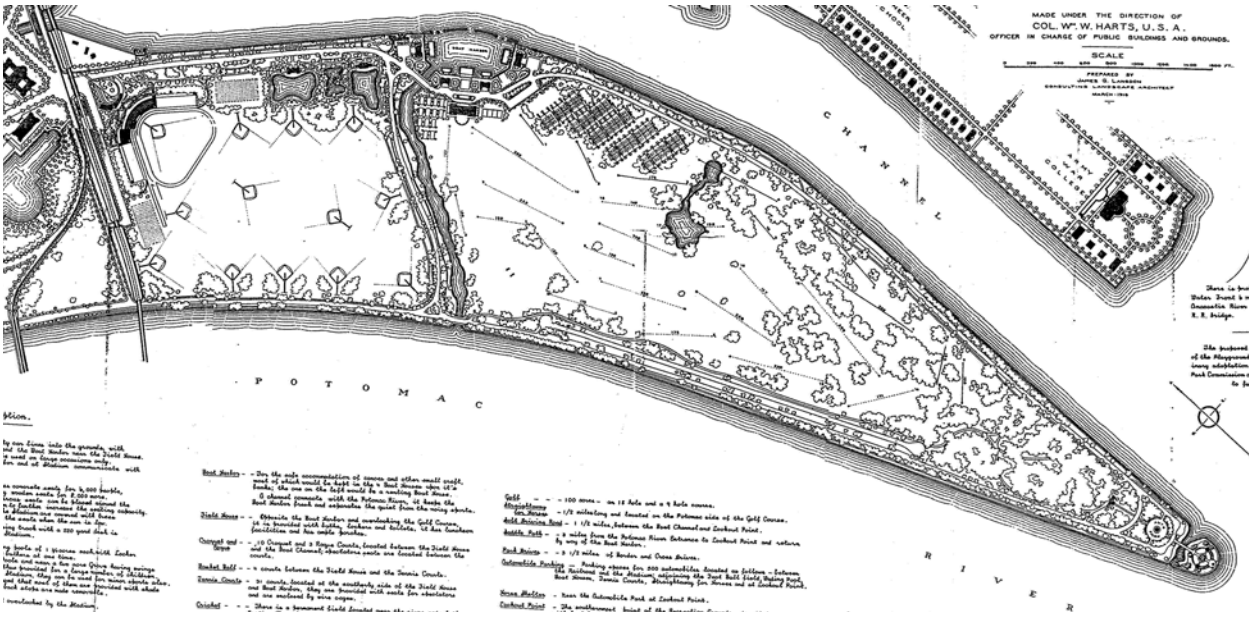



Figure 2-5. The 1916 Plan for East Potomac Park (1999 NHR Nomination)

As suggested by the earlier McMillan Plan, the 1916 plan for East Potomac Park, seen in Figure 2-5, was designed to accommodate more active recreation than its monumental counterpart. Given its proximity to the nationally significant features of West Potomac Park, the development plan crafted by Langdon, Olmsted, and Harts was intended to be a 'model "public playground"' that would match the lofty standard set by its neighbor (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999, p76). Ambitious and comprehensive in scope, the plan proposed a wide variety of recreational uses. Included in the plan was an open-ended, 14,000 seat baseball stadium at the west end of the park that partially enclosed a one-third mile running track. The stadium site overlooked a sixty-acre

parade ground, which contained room for two football fields and thirteen baseball fields, most with shade nearby for spectators. Nearby were to be "two sand beach bathing pools of 1.75 acres each with Locker Houses accommodating 800 bathers at one time," supplemented by a wading pool and two-acre playground in between to satisfy "a large number of children." The recreational facilities also included ten croquet and three roque courts, four basketball courts, thirty-one tennis courts, and one cricket field, most of which were to be accompanied by spectator seating. An eighteen hole and a nine-hole golf course was to be built on 100 acres in the central portion of the park, overlooked by a field house "provided with baths, lockers and toilets…luncheon facilities…and ample porches." Provisions were made for a wide variety of modes of transportation, both within the park and as a means to get to and from the surrounding city, including horses—3 miles of saddle paths, a half mile straightaway and a horse shelter on site; automobiles—one and a half miles of "soft driving road" and parking spaces for 500 cars; boats—a boat harbor "for the safe accommodation of canoes and other small craft" complete with boat houses for both storage and rental of equipment, and a channel through the park that would connect the Washington Channel with the Potomac River and "separate the quiet from the noisy sports;" and walkers—a network of paths and picnic areas within the park, as well as an extension of city streetcar lines and new ferry service to the park from the city (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

Installing all the features of the bold 1916 development plan for East Potomac Park would have cost approximately $1.5 million dollars. With the United States preparing to enter into World War I, a Congressional appropriation for that large a sum was not a realistic proposition given the more pressing demands on the country's resources. As a result, the full

scope of Langdon and company's plan was never realized, though several key features of the plan were implemented in the years after the war, namely the golf course, the field house, and the swimming pool, insuring the character of the park as a haven for active recreation would remain consistent with the goals of the McMillan Plan (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

West Potomac Park Evolution (1900-present)

The first major memorial built in West Potomac Park was the Lincoln Memorial. Designed by Henry Bacon in the form of a Greek temple, the building draws inspiration from elements of the Parthenon. Inside, a 19-foot tall statue of Lincoln, the product of sculptor Daniel Chester French, looks out over the mall. The monument was intended from the beginning to both commemorate the president and serve as a visual representation of the Union forged by Lincoln between northern and southern states after the Civil War. Prescribed by the McMillan Plan, its location at the west end of the park reinforces its symbolic importance, as it is on axis with the Washington Monument and United States Capitol (see Figure 2-6). The linear Reflecting Pool, built contemporaneously with the monument from 1919 to 1922, visually reinforces this axial relationship. The Reflecting Pool is framed by a formal double row of Dutch Elm Trees planted in 1915-16 under the direction of Frederick Law Olmsted, Jr. The Arlington Memorial Bridge, built between 1926 and 1932, ups the symbolic ante of the Lincoln Memorial, connecting the Lincoln Memorial with Arlington National Cemetery in Arlington, Virginia where a large number of Civil War veterans and casualties are buried. (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999)

Figure 2-6. The Lincoln Memorial - Washington Monument Axis in 1927 (National Archives)

The cruciform framework of the monumental core proposed by the McMillan Plan was completed in 1947 with the dedication of the Jefferson Memorial. The structure is on axis with the White House and 16th Street as it passes through the grounds of the Washington Monument (See Figure 2-7). Originally conceived by architect John Russell Pope, the monument draws inspiration from the Roman Pantheon; its circular, open-air dome is supported by rows of columns. Inside is a bronze statue of Thomas Jefferson, sculpted by Rudolph Evans, showing the president holding a copy of the Declaration of Independence (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

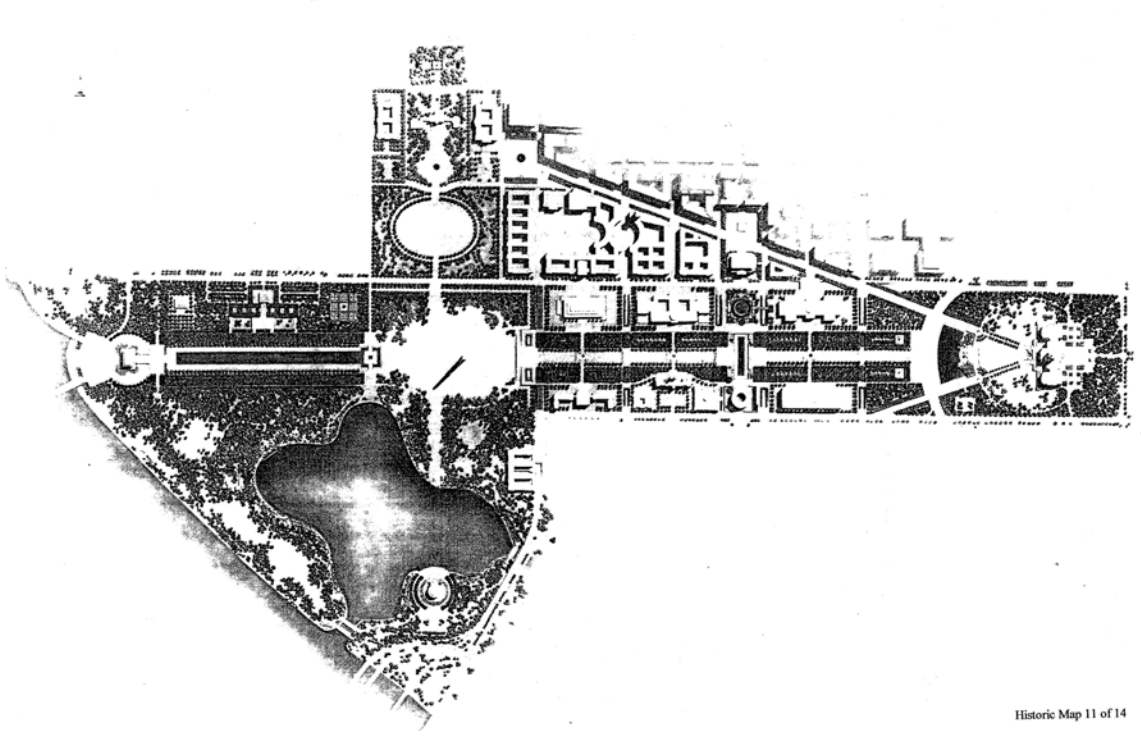



Figure 2-7. Axial Relationships in West Potomac Park (1999 NHR Nomination)

The Lincoln and Jefferson Memorials, as cornerstones of the McMillan Plan, established the essential character of the developing park and set a high standard for future monuments to meet. The two memorials have become nationally recognized icons of the city's landscape, commemorating two of the most significant figures in United States history, and symbolically representing the ideals upon which the country was founded.

The high standards set by the Lincoln and Jefferson Memorials have carried through to the other major monuments since erected in West Potomac Park. Although Congress authorized a memorial to Franklin Delano Roosevelt in 1955, and selected its site near the Tidal Basin in 1959, the memorial itself was not completed until more than 40 years later after a long and fitful process marked by periodic design disagreements and a general lack of funding. Designed by Lawrence Halprin and finally completed in 1997, the memorial consists of four, soon to be five,

outdoor rooms each depicting one of Roosevelt's four terms in office (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

The monuments to individual presidential lives share space in West Potomac Park with tributes to the collective sacrifice of soldiers in war. Three of the other major memorials in the park deal with the major wars of the twentieth century involving the United States. The first of these, the Vietnam Veterans Memorial, seen in Figure 2-8, was the product of a national design competition staged in 1980-81. Maya Lin's design features two long slabs of black, polished granite built down into the ground that meet in the shape of a "V." Initially this design proved to be extremely controversial, particularly among veterans, but it has since earned substantial popular approval and become one of the most visited sites in West Potomac Park. More recent additions to the park include the Korean War and World War II Memorials, dedicated in 1995 and 2004, respectively (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

Figure 2-8. The Vietnam Veteran's Memorial (www.democraticunderground.com)

The wars of the twentieth century had implications involving West Potomac Park other than the construction of memorials. Both World Wars led to the annexation of large portions of the parks by war-related entities, beginning with a large grouping of buildings, eventually known as the Navy and Munitions Buildings, erected in the area between Constitution Avenue and the Reflecting and Rainbow Pools between 1916 and 1918 (see Figure 2-9). The buildings were meant to be temporary facilities for use during World War I, but they were not torn down until 1970-71 at the urging of President Richard Nixon. World War II saw similar encroachment into the parkland. In 1942, numerous dormitories and office buildings were built on the other (south) side of the Reflecting Pool, later to be demolished in 1965. That same year, the Polo Grounds were paved over completely and utilized as a parking lot by the War and Navy Departments for a short time. (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999)

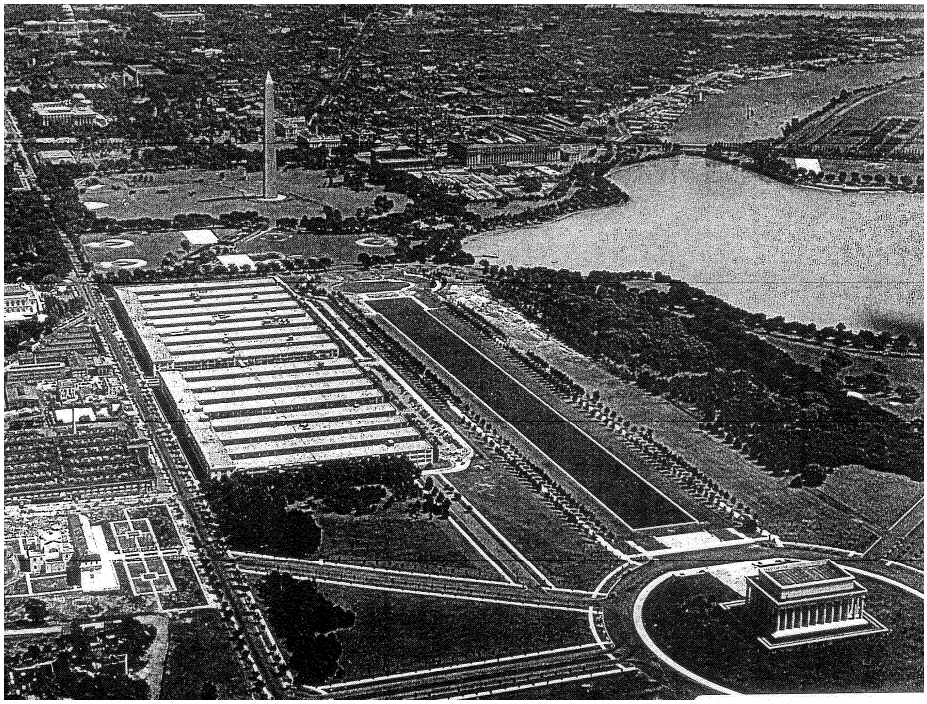


Figure 2-9. The Navy and Munitions Buildings (1999 NHR Nomination)

As the major monuments and other structures discussed above were built, the park's landscape design was evolving as well. Historian David C. Streatfield characterizes the execution of the McMillan Plan up to the mid-1960s as, "…one of progressive simplification that was a pragmatic response to low budgets and more detailed ecological information. In this process the picturesque nature of the Capitol grounds had been married to a simple formal treatment on the Mall. New plans, proposed in 1964 and 1965, represented more a return to the formality of the McMillan Plan than an evolving interpretation of that plan's principles and those of L'Enfant's design, which Olmsted had sought to practice" (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999, p91). The plans referenced by Mr. Streatfield were proposed as part of a new master plan for the mall, but went largely unimplemented. One aspect of the new plans involved redesigning the area north of the Reflecting Pool that housed the Navy War and Munitions buildings with a "varied series of formal bosks evoking the character of a baroque woodlands" (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999, p92). While the plan was not installed, the World War I buildings in that area were demolished in preparation for the 1976 Bicentennial celebration and replaced with a heavily wooded area centered around a six-acre curvilinear lake. Called Constitution Gardens, its naturalistic style contrasts with the formal components of the Mall but has succeeded as host for several memorials, including the Vietnam Veterans Memorial (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

The use of West Potomac Park for various types of active recreation has undergone an evolution of its own, influenced by spatial pressure from the ever-increasing number of monuments and new definitions of ecological acceptability. As dictated by the McMillan Plan,

from the start the outer areas of the park were set aside for active recreation. Early facilities included the large Polo Grounds, graded in 1908, and numerous ball fields and tennis courts. The Tidal Basin was popularly used for public swimming and bathing as early as 1900, including a municipally operated bathing area for white swimmers opened in 1918, complete with a sizeable sand beach and facility to treat the river water with chlorine for safety. A planned bathing area for black swimmers was abandoned in 1925 when Congress deemed all swimming in the Tidal Basin to be inappropriate, resulting in removal of the existing facilities. In the mid-1920s, a golf course and clubhouse were constructed in West Potomac Park for black golfers. The course was not maintained well, resulting in numerous lost balls in the long grass and it was eventually abandoned in the late 1930s when a new, segregated course was opened in another part of the city (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999). Around this same time, there also existed a nine-hole course with sand greens in the park for white players ("Public Golf Courses Start Play at 5 A.M.", 1926).

Today, West Potomac Park continues to provide facilities for the active recreation of Washington, DC area residents. Still scattered about on the outer edges of the park are thirteen softball fields, twelve volleyball courts, and several individual football fields. The Polo Grounds are used for organized kickball, football, and Frisbee leagues, as well as other spontaneous pursuits. The Tidal Basin currently hosts a paddleboat concession, maintaining a boating tradition on that body of water that has included swan boats, speedboats, and replications of Venetian Gondolas over the years. The park also sees its share of unintended recreational uses. The Rainbow and Reflecting Pools have been utilized for wading, ice skating, model boat racing,

and fly-casting contests (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

The significance of West Potomac Park to the United States is not limited to the iconic status of its monuments or the grand sweep of its parkland. One of the unique and important aspects of West Potomac Park is that the symbolism of those defining features has actually manifested itself in the gatherings and events that have taken place there. This relationship is clearly evident in the role the park has played in the history of the nation's civil rights movement. In fact, many scholars have identified Marian Anderson's Easter Sunday concert in 1939 from the steps of the Lincoln Memorial as the birth of the modern civil rights movement. The event was put together as a reaction to Mrs. Anderson being unable to perform at nearby Constitution Hall due to the "white artists only" policy of the Daughters of the American Revolution. The concert drew an integrated crowd of 75,000 people (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999). The Lincoln Memorial steps were also the site of the most well known moment of the civil rights movement. In August of 1963, Martin Luther King, Jr. delivered the "I Have A Dream" speech before a gathering of 400,000 people. The speech was the centerpiece of the March on Washington for Jobs and Freedom that was organized to promote racial cooperation in support of civil rights. The Lincoln Memorial and Reflecting Pool area has also been the location of choice for countless other civil demonstrations, including those involving the Vietnam War, abortion rights, fetal rights, gay rights, housing discrimination, world hunger, missing soldiers in Vietnam, hostages in Iran, victims of drunk drivers and AIDS (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

West Potomac Park is also home to a number of annual festivals including, appropriately, the Fourth of July fireworks display in which hundreds of thousands flock to the area for a celebration of our nation's freedom and those who helped make it possible. The National Cherry Blossom Festival has been held in West Potomac Park annually since 1935, with the exception of World War II, primarily to herald the beginning of spring and commemorate the donation in 1912 of 3,000 flowering Japanese Cherry trees. A gift to the people of Washington, D.C. from Japan, the cherry trees were planted in both parks—the first two of which were ceremonially placed in the ground by the wives of President Taft and the Japanese Ambassador to the United States. In the 1960's, Lady Bird Johnson accepted 3,800 more cherry trees from Japan for the area around the Tidal Basin and raised money herself to plant 1,800 more around the perimeter of East Potomac Park. Today, the two-week-long festival annually attracts over one million tourists to the Washington area in late March to marvel at the spectacular concentration of blossoms in the parks ("History of the Trees and the Festival").

The cherry trees are not the only symbol of Japanese-American relations in the two parks. The Japanese Lantern, a tribute to a dead warlord made in 1651 (its twin still stands on the grounds of a temple in Tokyo), was arranged adjacent to the two original cherry trees on the northwest bank of the Tidal Basin in 1954. Also an official gift from Japan, the lantern is ceremonially lighted each spring to officially start the Cherry Blossom Festival. Finally, in 1958, the Japanese Pagoda was constructed near the Tidal Basin. These gifts were a meant as a sign of understanding and amicability between Japan and America after World War II (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

East Potomac Park Evolution (1900-Present)

The development of West Potomac Park can be characterized as a successful ongoing interpretation of the McMillan Plan's goals to integrate the park with the national mall. The development of East Potomac Park can also be viewed as successful, but it has to be considered a dilution of the park's lofty original intent. The 1916 *Development of East Potomac Park* plan proposed a "model playground" that was to provide top-notch facilities to local residents in a variety of active pursuits including boating, swimming, tennis, golf, croquet, roque, baseball, football, and cricket, in addition to a 14,000-seat baseball stadium. Due to budgetary constraints and bad timing, East Potomac Park never achieved that ambitious scope; however, several significant components of that plan were implemented, helping to ensure the park's character would always be tied up with active recreation.

The first major pieces of the 1916 plan to be constructed were the golf course and Field House, built contemporaneously in 1917. The golf course, discussed at greater length in the next chapter, was the city's first municipal golf facility. The initial nine holes, designed by Walter Travis, opened for play in 1920, and a second nine designed by a different architect opened in 1923. The configuration of the golf holes and related facilities has been changed many times through the years, resulting in a course that does not bear much resemblance to its origins.

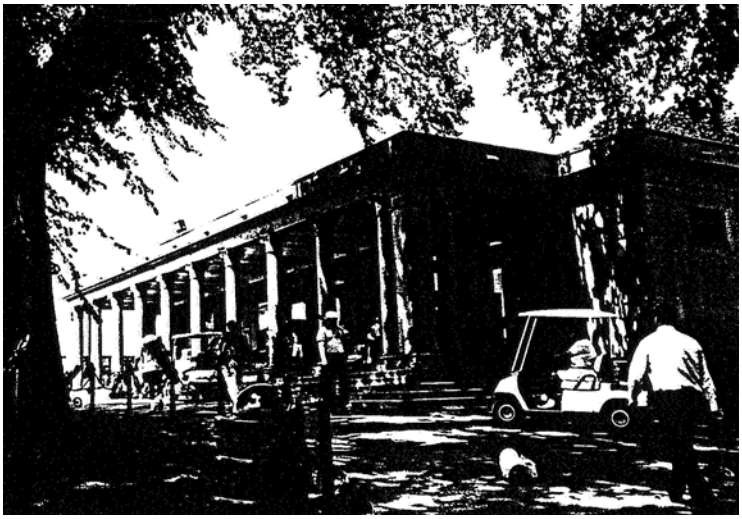


Figure 2-10. East Potomac Park Field House (1999 NHR Nomination)

The East Potomac Park Field House, designed by Horace Whittier Peaslee, was conceived as a set of three buildings—two L-shaped wings and a square, central building arranged in the shape of a U around a courtyard ("CONTRACT AWARDED FOR ATHLETIC HOUSE," 1917). Only the two wings were ever built. The architecture of the buildings, seen in Figure 2-10, reflects the neo-classical quality of the monuments nearby; an attractive portico supported by columns with ornate capitals encloses the entrance to each wing, the decorative, exposed-aggregate concrete used in its construction lends the buildings a suitably formal quality, and the buildings' location on a relative high-point in the park adds a measure of stature to their comparatively modest size (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

The Field House has had several different uses throughout its history. The facilities at East Potomac Park were intended to be on par with those of a modest country club: the east wing of the Field House originally contained the men's locker rooms, a dining room, a lunchroom, the golf professional's shop and storage areas, the west wing housed women's locker

rooms, offices, storage space, and a laundry, and the central portion was to accommodate a large assembly room and a dining hall with counter and table service. Both wings of the Field House were modified in 1936 as an element of a greater Public Works Administration scheme that also included construction of the East Potomac Park Swimming Pool, after which the golf course and swimming pool concessionaires shared the two wings with their basements used as changing rooms for the new pool. This arrangement persisted until 1978 when the D.C. Recreation Department built a bathhouse in the open area between the wings. Currently, the east wing of the Field House contains the golf pro shop, offices for the golf course concessionaire, and a food service concession. The west wing serves as the District One Sub-station for the U.S. Park Police (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

Other components of the 1916 development plan to be constructed include a swimming pool and some unknown number of tennis courts. Although not quite the complex of two "sand beach bathing pools" and separate "wading pool" with "locker houses" as specified in the plan, the swimming pool constructed at East Potomac Park in 1936 was nevertheless considered to be "the show pool of the city." The largest of six public pools built in Washington with Public Works Administration money, the pool has a capacity of 2,500 swimmers. Like the golf course, the pool was initially segregated and intended for white swimmers only. The area between the two wings of the Field House, now occupied by the bathhouse, was originally a grassy area used for sunbathing. The extent of the original tennis facility is not known, but today it comprises 24 courts on the west end of the peninsula, five of which are enclosed by a tennis bubble erected in 1974 (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

Even if it was not a component of the plan, the miniature golf course, constructed just to the east of the Field House during the mini golf craze of the early 1930s, was certainly in the spirit of the eclectic 1916 development plan. Built and opened in 1931, the course is deemed by many to be the longest continuously operated miniature golf course in the country and it is currently the only mini golf course in the District of Columbia (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

The history of the development of East Potomac Park for active recreation is marked by competition for the use of its open green space from a variety of sources. As was the case in West Potomac Park, World War I saw the construction of temporary buildings within the park. A total of 98 wood-frame barracks were built in 1918 all at the north end of the park in two main clusters, one on the Potomac River side and one on the Washington Channel side of the peninsula (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999). Most of the barracks were demolished in 1921-22, but their creation led to one of the most significant challenges to the intended use of the park.

In 1921, a six-acre tourist camp for tent camping was founded in the old barracks area to provide accommodation for a growing horde of tourists coming to the city by automobile. One of the barracks was renovated to provide toilet and bath facilities for the visitors. Though the tourist camp was intended to be a temporary provision until a better site could be procured, its excellent location near the attractions of the national mall, the recreational facilities of the Potomac Parks, and a primary transportation artery into the nation's capital made it an extremely popular and inexpensive option for visitors (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999). A 1927 *Sunday Star* article detailed its appeal:

"Washington's tent city is popular because of its facilities, police protection, sanitation and attractive surroundings. Tourists from everywhere in this country who pass through the National Capital follow the "tips" of more experienced motorists and stop by as long as possible in the Government camp. Swept by cooling breezes from the Potomac, set down amidst a wealth of verdure, with excellent facilities for golf, baseball, tennis, fishing, bathing, boating and sightseeing close at hand, the East Potomac Park camp is a mecca of cross-country travel" (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999, p86)

By 1926, the tourist camp had expanded to 60 acres and, by 1927, the camp contained 20 cabins and cottages, a great deal of tents and camping sites, a laundry, bathhouses, a playground, and a community building (see Figure 2-11). Later it would even include a 56-unit trailer court (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

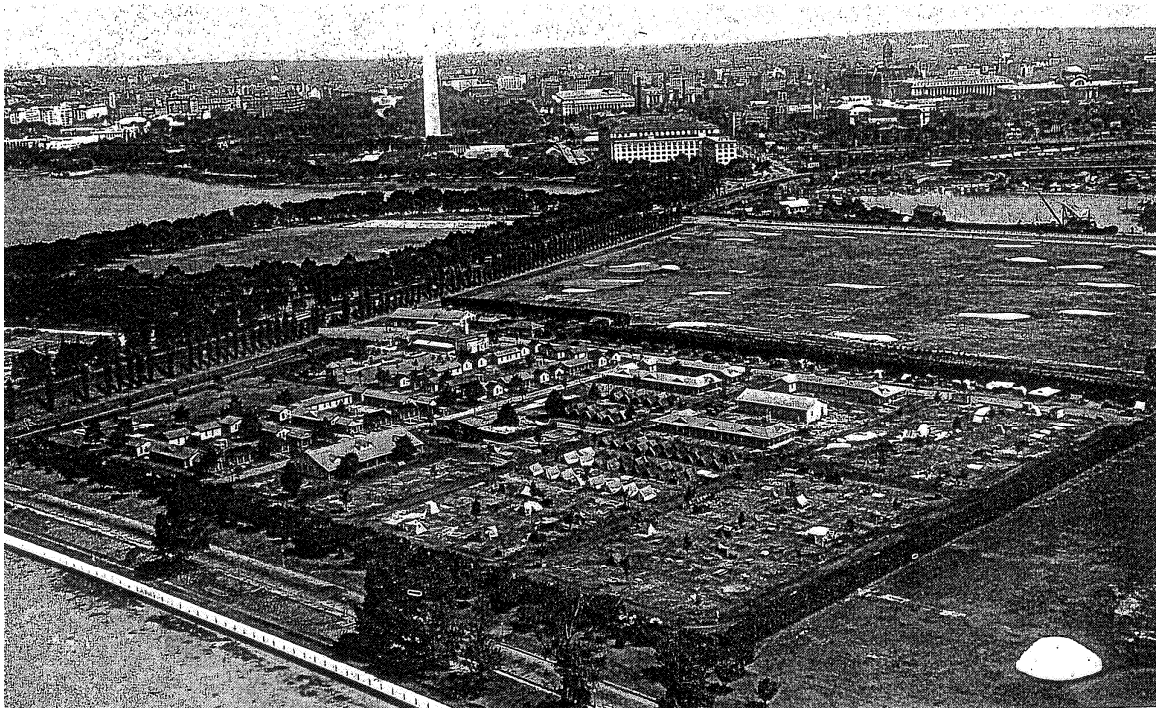


Figure 2-11. Tourist Camp at East Potomac Park (1999 NHR Nomination)

Around this time, the planners in charge of East Potomac Park's development began to see the tourist camp as a legitimate threat to the future character of the park. In 1926, the

Commission of Fine Art's vociferously opposed construction of the brick community building designated for the tourist camp by Congress. The Commission viewed the tourist camp as an inappropriate use of parkland and an eyesore in such a prominent location easily visible to those approaching Washington from the south. For a complex that was supposed to be temporary, the brick construction seemed a little too permanent for their liking. The community building was erected, but the Commission's objection to the camp initiated years of debate about suitable uses for federally owned parkland ((*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999; "Poaching on Recreation," 1946)). In 1963, the tourist camp was finally destroyed and moved to Prince William Forest Park, 25 miles south of Washington (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999).

Unfortunately, in place of the tourist camp, the development of this area of East Potomac Park did not return to active recreation. Instead, modernist office buildings were put up to house the National Park Service National Capital Region Headquarters and the U.S. Park Police Headquarters, occupying all of the vacated 60 acres (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999). Though the parkland had seen several unintended uses, namely the World War I barracks and the tourist camp, up until that point fulfillment of the goal to reserve East Potomac Park entirely for active recreation had been a possibility. The construction of permanent office buildings in the park, even if tangentially related to the park's governance, put an end to that opportunity.

The new office buildings also proved to be one of the final blows to any semblance of connectivity between East and West Potomac Parks. Even though the Long Bridge that carried rail traffic across the Potomac divided the two parks dating all the way back to the initial land

reclamation, the "Potomac Park" was conceived under the McMillan Plan as a coherent swath of green space stretching from Constitution Avenue under the tracks through to the peninsula of East Potomac Park. Construction of the four-lane "Highway Bridge" next to the Long Bridge in 1906 opened the span to local traffic—though by today's standards not much traffic at all. In 1908, the average daily passage over the bridge totaled 52 electric trolley cars, 201 two-car trains, 103 automobiles, 780 double-animal teams, 370 single-animal teams, 543 pedestrians, and 8 equestrians. The 1916 development plan for East Potomac Park and aerial photographs from the 1920s and 30s reflects this light use—the two bridges take up very little space in the parks (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999). The Highway Bridge and Long Bridge both touched down at ground level almost immediately upon reaching the parkland, providing a basically uninterrupted visual connection between the two parks, as well as an easy walk or drive across the roadway and tracks.

The rapid growth of the automobile would severely compromise this connectivity in the post-war years. 1950 and 1962 saw the addition of two four-lane bridges in the area that connected Interstate-395 to downtown D.C. The Highway Bridge was removed in 1967, replaced by a new four-lane automobile span for express lane traffic in 1972. The latest link to the city is a two-way rail bridge for the Washington Metro system built in 1983. So now between the Jefferson Memorial area and East Potomac Park, once crossed by a single set of railroad tracks and a ground-level parkway, rise five cacophonous, elevated roadways and railways comprising four train tracks, twelve lanes of automobile traffic, and the attendant web of exit and entrance ramps (Figure 2-12). As of 2001, the auto bridges alone carried almost

250,000 vehicles each weekday (Kozel, 2004). Naturally, the new bridges obliterated any visual connectivity that once existed between East and West Potomac Parks.

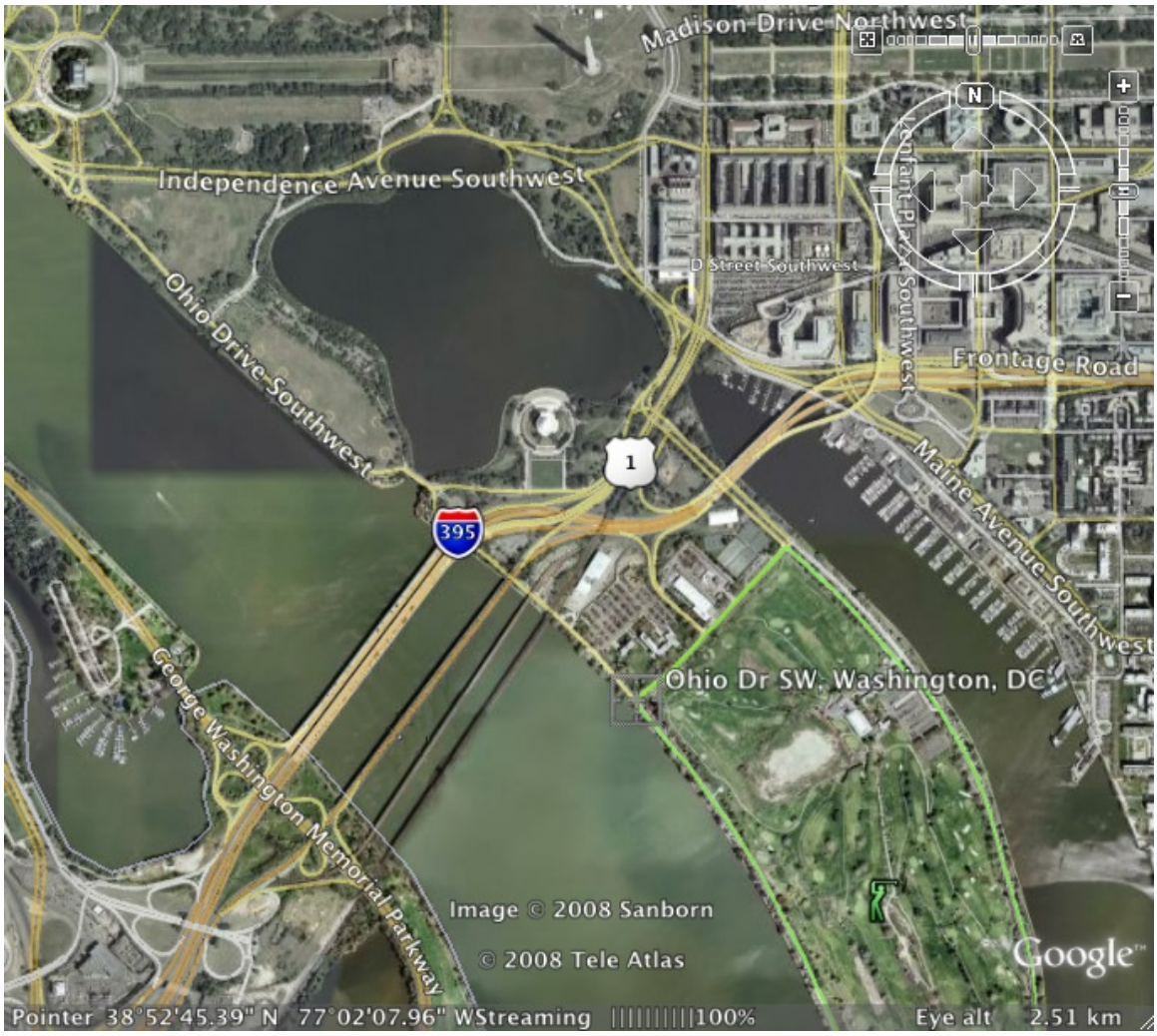



Figure 2-12. Bridges Hamper Connectivity Between the Two Parks (Google Earth)

Any other form of physical connection between the two parks was severed with the construction of the National Park Service and U.S. Park Police Headquarters in 1967. On Ohio Drive, the primary means of automobile and pedestrian circulation between East and West Potomac Park, the drive or walk from parkland around the Jefferson Memorial under the bridges

to East Potomac Park is met with a view of modern office buildings instead of the open green space close behind. Even the entrance to East Potomac Park from the I-395 exit ramp flows immediately into the office space. Today, without the shared name to remind them, visitors would never guess that the two parks are connected in any way. How could they with so much concrete and steel clutter standing in the way?

Connectivity between the two parks was an important part of the early twentieth century development plans and its loss a significant blow to the character of the area. East and West Potomac Parks were designed to complement one another within a large, contiguous green space; the monumental core of West Potomac Park, meant as a space for national gathering and reflection, giving way to areas of active and passive recreation for the local residents. In many ways, this relationship is symbolic of the capital city that serves as a figurehead for the country but also must be lived in. It is impossible to have one without the other and the union of East and West Potomac Park into a continuous whole makes that connection apparent. The phalanx of bridges and traffic in partnership with the office buildings, however, constitute what may as well be a grand canyon between the two parks, minimizing the bond that makes them special.

Beyond visual and physical connectivity between the two parks, implicit in the McMillan Plan and the 1916 *Development of East Potomac Park* is the idea that the two parks would share the same high standard of design. This is certainly evidenced by the eminent committee members who put together those original plans, as well as their inventive and ambitious ideas. Despite these intentions, today East Potomac Park does not exhibit near the same overall design quality as its neighbor. As detailed above, this inequality can partly be attributed to the haphazard nature in which the 1916 plan was implemented. It can also be credited to slow erosion of initial quality design through years of neglected maintenance. Though not necessarily

confined to East Potomac Park, as a more natural and vulnerable designed landscape, the lack of required care over time affected the defining characteristics of East Potomac Park to a much greater extent than the more permanent memorials of West Potomac Park. This is particularly true of the East Potomac Park Golf Course, which will be examined in the next chapter in great detail.

## Conclusion

The comparative developments of East and West Potomac Parks are worthwhile as an exercise in the necessary flexibility and long-term vision required to see a master plan through to completion. West Potomac Park is the felicitous product of a century of architects, planners, and landscape architects, all working together within the McMillan Plan's organizing framework to make the park a cohesive whole despite some unplanned wartime construction. It has become an icon of the Washington landscape and symbolic of our nation's democratic ideals, both in the commemorative nature of the monuments as well as the demonstrations and annual events that take place there. East Potomac Park, within the sphere of active recreation, was conceived with similarly high aspirations as a worthy complement to its monumental neighbor. Its evolution, however, despite initial success in construction of the golf course and field house, was co-opted by competing land uses and a lack of funding that hindered fulfillment of its development plan, severed its important connections with West Potomac Park, and eventually led to the park becoming a watered-down version of its promising beginnings. Nevertheless, the park is a large, green, open area in downtown Washington, D.C. with great potential for improvement that provides both active and passive recreation to a local population that sorely needs such facilities.

# CHAPTER 3

# HISTORY, EAST POTOMAC PARK GOLF COURSE

## Introduction

The 'Potomac Park' envisioned in the McMillan Plan was representative of the dual functions of Washington, DC: to be both the seat of the national government, complete with its attendant ceremony and symbolism, and a livable major city, with the infrastructure and amenities necessary for the workers that live there. The creators of the McMillan Plan recognized the necessary and complementary relationship between those functions, designing a core of monuments and sweeping civic spaces to act as a physical manifestation of democracy and the nation's history for visitors to the city, and surrounding it with open parkland and active recreation for the local citizens to enjoy on a daily basis. The close proximity of those uses was not insignificant – local workers using the park for recreation could look to the majestic symbols of government and be reminded of the nobility of their jobs and their city; and, just as importantly, tourists going to see the monuments could admire the leisure facilities of the city and take that example back to their local governments. As discussed in the last chapter, the realization of the McMillan plan must be considered a mixed success: West Potomac Park, home to several iconic memorials and other well-known features, has, by and large, achieved the grand vision conceived by the McMillan Commission; its complement, East Potomac Park, however, has fallen short of the model playground ideal that was intended to guide its development.

The golf course at East Potomac Park "is the oldest extant recreational feature in the two parks and most fully represents the intended use of East Potomac Park for public recreation" (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999). And, as by far the largest component of the park, it is also the most visible indication of the park's quality. The golf course, therefore, is an important symbol of the McMillan Plan's objectives. But, far from setting an example for other municipal golf courses to follow, it instead typifies the current deteriorated state of municipal golf in America. This was not always the case, as the original eighteen holes was considered one of the finest public courses in the country, even hosting the second United States Public Links Championship in 1923. By the late 1920s, the facility featured twenty-seven holes representing the cumulative product of at least two famous and talented golf architects. At its peak, the course featured a highly innovative, strategically interesting design that certainly was a worthy complement to its monumental neighbor. The current dilapidated and diluted state of the course, however, belies its promising origins.

This chapter will trace the development of the golf course at East Potomac Park to the present day, stopping along the way to evaluate the design merit of the course near its peak in 1927. It will conclude with an analysis of the course's current state and its relationship to the typical municipal golf course in America.

## Early Development

As early as 1913, the land being reclaimed in Potomac Park was identified as a potential site for a municipal golf course. Initially, the golf course and clubhouse were to be located near the throughway under the railroad line in the northwest portion of the park. The site was chosen for its central location and accessibility to area residents – all city streetcar lines would transfer

to within three blocks of the course for a total fare of 5 cents. Preliminary plans listed the course at 2,300 yards ("FAVOR POTOMAC PARK," 1913). Its construction, however, was postponed because that area of the park was being used as an experimental farm by the United States Department of Agriculture ("PUBLIC GOLF COURSE PLANS," 1913).

After years of public agitation for a proper municipal links, construction began in 1917 on the East Potomac Park golf course in conjunction with the field houses ("CONTRACT AWARDED FOR ATHLETIC HOUSE," 1917). Noted architect and top amateur golfer, Walter Travis, designed the course (*East and West Potomac Parks Historic District Revised National Register of Historic Places Nomination*, 1999). Also an accomplished writer, Travis was the founder and editor of *The American Golfer* magazine, where he established himself as a harsh critic of the penal school of architecture, then the favored style of design in the United States (Shackelford, 1999). His best known designs, including Garden City Golf Club and Westchester Country Club in New York, and Ekwanok Golf Club in Vermont, eschewed the repetitive cross bunkering and geometric hazards popular in golf architecture at the turn of the century in favor of more natural designs with wild roughs and small, deep bunkers placed in strategic locations. (Shackelford, 1999; Doak, 1996) Travis' design style was deeply influenced by similar features found on the golf courses of the British Isles, where he became the first non-British golfer to win the British Amateur Championship in 1904. (Shackelford, 1999)

The course designed by Travis for East Potomac Park and first opened for play in May of 1919 was distinguished by another characteristic gleaned from British links. The nine holes featured ten separate greens, which, in combination with the gentle topography of the reclaimed land, made it possible for the direction of play to be reversed on a weekly basis in order to reduce wear on the turf (Keller, 1919). In that respect, Travis was undoubtedly influenced by the Old

Course at St. Andrews, perhaps the only other course in the world at that time which was similarly reversible. The other features of the links, as detailed in a March 1919 article in the Washington Post, reflected Travis' views on design:

> "In laying out the course, every effort was made to obtain a natural effect rather than the formal construction seen in so many club links. Winding hazards conforming to the general topography of the field have been built and sand traps, carefully located, will be added this spring" (Keller, 1919).

Figure 3-1. 1922 Birds-Eye Photograph of the Original Nine Holes

(Library of Congress Online Collection)

The design proved to be extremely popular among golfers in the city, attracting scores of new devotees to the game ("300 LOCKERS FOR GOLFERS," 1921). In 1920, 16,324 rounds of golf were played at East Potomac Park. In 1921, that number exploded to 65,345 rounds – for a

nine-hole facility, the equivalent of 31,500 eighteen-hole rounds (Dougan, 1928). The course's proximity to downtown proved to be especially attractive for government employees, who were known to crowd the course in the mornings and late afternoons before and after work. The East Potomac Park links were patronized even by the most well known of government workers, as recounted by the New York Times in April of 1921:

> "President Harding deserted the links of the Chevy Chase Club this afternoon in favor of the municipal golf course in Potomac Park. The President paid his 25 cents fee, like any other golfer on this course, and engaged in a spirited foursome with Senators Hale, Frelinghuysen and Elkins" ("Harding on Public Golf Course," 1921).

President Harding and other knowledgeable golf observers viewed East Potomac Park, and particularly the quality and condition of its greens, as on par with the private country clubs in the area ("Harding Pays His Quarter To Golf On Public Links", 1921).

The popularity of the course led to expansion of the facility. The initial plans for golf course development in the park, with the field house located near the railroad underpass, were abandoned for the comprehensive 1916 development plan. The new location of the field house near the Washington Channel provided ample space for more starting and finishing holes to radiate out from its central location. The initial nine holes extended southeast out and back along the length of the channel. Parallel to those holes, on the Potomac side of the peninsula, five holes were added to the course in 1921 and four more over the winter of 1922 ("PUBLIC LINK TITLE TOURNAMENT HERE," 1922). All of the new holes were built in the same reversible configuration as the initial nine. The two directions of the first nine were known as the A and B courses, and the two directions of the new holes were called the C and D nines.

The overall quality of the full eighteen-hole course led the USGA to select the facility as host of the second United States Public Links Tournament in 1923 ("PUBLIC LINK TITLE TOURNAMENT HERE," 1922). The championship continues to this day, held annually at the

finest public golf courses in the country for golfers that are not affiliated with a private club. The tournament, contested over the A and C nines and measuring 5,890 yards, was considered a success, cementing its reputation around the country as an exemplary municipal course ("WILL DIRECT PLAYERS IN NATIONAL CLASHES," 1923).

In order to meet increasing demand, over the winter of 1924-5, nine more holes were added the facility in conjunction with some unknown amount of reconstruction or redesign work on the existing eighteen holes ("More East Potomac Holes Open Saturday," 1925). Records show that golf architect William Flynn, designer of Shinnecock Hills in New York, Cherry Hills in Colorado, and the Cascades Course at the Homestead in Virginia, may have carried out this work, though it has not been confirmed. (1999 NHR doc) Regardless of the architect, aerial photographs indicate that the general plan and many of the features from the original eighteen holes were retained. The new nine holes, located to the north of the field house, continued the reversible tradition and were known as the E and F courses. The popularity of the facility continued to increase after the addition – the courses hosted 155,318 nine-hole rounds in 1927 (Dougan, 1928).

1927 Design

The twenty-seven holes at East Potomac Park in 1927, coming only two years after the expansion and renovation work, represent close to the high point of the golf course's design quality – the bunkering scheme of the E and F courses, however, would not be completed until the next year ("PUBLIC GOLF LINKS OPEN TOMORROW," 1928). The golf holes, as seen in Figures 3-2 and 3-3, occupy basically the same total area as they do today. The entry road runs under the railroad, parallel to the speedway that circles the perimeter of the peninsula, and into a parking lot between the two wings of the field house. To the right of the entry road, near the

clubhouse, is the driving range. Pivoting clockwise around the field house, the green closest to the driving range tee is the ninth of the B course. The fairway extending away from the green is the ninth of the B course or the first of the A course, depending on the direction of play. The second green below the driving range is the ninth hole of the A course or the tee area for the first hole of the B course. Continuing around the field house, the next green serves as the ninth green for both the C and D courses. The fairway closest to the A and B courses, with the bunker complex extending at a diagonal across its length, is the first of the C course and the ninth of the D course; therefore, making the next fairway, which is in line with the angle of the entry road as it meets the parking lot, the first of the D course and the last of the C course. The next hole over is the first and ninth of the E and F courses, respectively, followed by the dogleg finishing hole of the E course and first hole of the F course. The last two fairways, parallel to the entrance road, are the sixth of the E course and fourth of the F course; and, lastly, the fifth of both the E and F courses. The A and B, C and D combination of courses was considered the primary eighteen, consisting of longer and more difficult holes. E and F courses were intended for less skilled golfers, as well as overflow and nine-hole play.

Fig 3-2. 1927 Aerial View of A/B and C/D Courses (The National Archives)

Reversible golf courses have been extremely rare in the world of golf, though the origin of such courses can be traced back to the home of golf at the Old Course in St. Andrews, Scotland. It is fairly safe to assume that at the time and, perhaps, in golf's history, East Potomac Park was the only twenty-seven hole complex in the world with three reversible nines. Today, differences in golfer's values, and, most of all, the standardization of golf courses have essentially caused any historic reversible layouts to settle on only one direction for everyday play. Even the Old Course has largely abandoned its heritage – the clockwise routing is only played one week each year, beginning with April Fools Day – principally due to pressure from tourists who wish to play over the course as it is set up for the Open Championship.

Fig 3-3. 1927 Aerial View of E/F Course and Western End of the Peninsula

(The National Archives)

Reversibility, however, is more than an historical footnote. It has a few major benefits relative to conventional golf courses. Principal among these is variety. Travis was enthralled by this consequence of reversibility. The concept was first brought to his attention in 1915 by George Crump, developer of Pine Valley Golf Club in New Jersey, who desired his course to be played in reverse. In an August, 1915 article for *The American Golfer,* Travis gushed that an

"unparalleled forward step has been taken by the projectors [of Pine Valley] in arranging to make this the first course in the country capable of being played two ways—the regular way and in reverse order, making practically two distinct courses in one" (MacWood, 2005). A twenty-seven-hole complex, such as East Potomac Park, comprised of three nine-hole reversible courses is, therefore, the equivalent of six separate nine-hole courses, or fifty-four holes total. And while it is definitely not feasible to use all fifty-four holes at the same time, an impressive amount of day-to-day variety is made possible by the diverse experiences derived from playing a course 'forwards' versus 'backwards,' coupled with the many different permutations of separate nine-hole courses that make up an eighteen-hole round.

Furthermore, reversibility ensures golfers will generally enter and exit each green in a different location depending on the direction of play. This spreads out the inevitable wear and tear on a golf course and, most importantly, its greens, allowing the course to recover from such stresses more naturally and without intensive treatment by the maintenance staff. This is particularly important on a busy municipal course where the effects of a large volume of golfers often must be addressed by a minimal maintenance budget.

The major problem unique to designing a reversible course is a consequence of two directions of play over the same ground. In order to create an effective reversible course, the architect must ensure to the greatest extent possible that there is no marked difference in quality between the two directions of play. This can be a complex process, requiring the architect to consider how a feature designed to challenge golfers' tee shots on one day might affect the second shots of golfers the next day when the hole plays in the opposite direction. A significant component of that process involves making sure that many of the hazards on the course are visible to golfers playing in both directions.

Evidence of the course's reversibility is visible in Figures 3-2 and 3-3. Most of the fairway bunkers are grouped in clusters or rows. This indicates that the bunkers were built into a central mound or artificially raised ridge, with the bunker, or bunkers, on each side of the mound visible to one direction of play and blind from the other. Other fairway bunkers have grassy mounds within their borders to indicate the hazard to golfers from both directions. Greenside bunkers, on the other hand, stand alone because they are either relevant to only one direction of play (usually bunkers in the general area of the green, but not abutting its surface) or visible to both directions by virtue of the raised nature of the greens' surfaces (bunkers very close to the greens' edge). The mowing lines of the course are also indicative of its reversibility. On almost every hole, the fairway lines make a wide pass around both the front and back of the green so that approaches can run onto the green's surface from either direction.

Reversibility aside, the general design characteristics of the East Potomac Park golf course in 1927 were reflective of the ideals championed by Walter Travis and other golf architects of the "Golden Age" of golf design. During this period, marked by the opening of the National Golf Links of America in 1911 and the completion of Prairie Dunes in 1937, an overwhelming majority of America's current top courses were constructed (Shackelford, 1999). Several factors united the designs and architects of the golden age. The period was initiated by a reaction against the jarringly geometric and penal designs prevalent at the turn of the twentieth century. Architects of the Golden Age generally sought to emulate the more natural look of the traditional British seaside courses, and, above all, they endeavored to emphasize the mental as well as the physical aspects of game. This concept, in golf, is known as strategy (Shackelford, 1999).

For a golf architect, the building blocks of strategy are hazards. Hazards come in many shapes and sizes; from the obvious – sand traps, lakes, and streams – to the not so obvious – grassy hollows and swales, mounds, other abrupt contours in the topography, and even minor undulations that make for awkward stances. The importance of well-placed hazards on the lasting enjoyment of golfers is well stated in this quote from Robert Hunter's book, *The Links*:

> "…without well-placed hazards, golf would fail to arouse and to satisfy man's sporting instincts. Hazards – how well chosen the name! They are risks; and penalties must come to those who take risks and fail…Hazards make golf dramatic; and the thrills that come to one who ventures wisely and succeeds are truly delectable. Without hazards golf would be a dull sport, with the life and soul gone out of it. No longer would it attract the lusty and the adventurous, but it would be left to those who favor some form of insipid perambulation, suited to the effeminate and the senile" (Hunter, 1926).

The architect's job is to create engaging strategic problems by utilizing the location of natural hazards or constructing artificial ones such that the golfer has an incentive to challenge the hazards in order to gain some kind of advantage. This is often done in combination with other design elements, such as the angle or tilt of a green, which might encourage approaches to be played from an angle that brings the hazards into play (Doak, 1992).

The following quote, an excerpt from George Thomas' 1927 book, *Golf Architecture in America*, eloquently sums up strategy and its importance to golf:

> "The strategy of the golf course is the soul of the game. The spirit of golf is to dare a hazard, and by negotiating it reap a reward, while he who fears or declines the issue of the carry, has a longer or harder shot for his second…yet the player who avoids the unwise effort gains advantage over one who tries for more than in him lies, or who fails under the test" (Thomas, 1927).

Thomas' quote emphasizes two very important characteristics of the strategic school of design practiced by the Golden Age architects. First, that hazards are to be challenged – either carried or played near – to gain an advantage; and, in order to do so, hazards must be placed in the direct line of play from tee to green or guard the most desirable angle into a green. Second, that the

most immediate and severe penalties accrue to those who dare those hazards and fail, whether by misjudging their own abilities or hitting a poor shot. Wayward golfers and those that play away from the hazards by choice or because of lesser ability face a delayed tax in the form of a longer or harder shot to the green. As Thomas states, "The strategy of golf is the thing which gives the short accurate player a chance with a longer hitter who cannot control his direction or distance." Contrary to the penal courses of the turn of the century, which encouraged thoughtless golf by punishing any shot not hit straight ahead with the distance and accuracy of a professional, the strategic school of design allowed poor and feeble golfers plenty of room to avoid hazards while, at the same time, requiring better golfers to challenge the hazards in order to attain a good score.

Though it is difficult to judge the design of East Potomac Park's golf course solely on the basis of aerial photographs, it is nevertheless possible to get a sense of the general strategies involved by analyzing its bunkering (at the time of the photograph, however, only the A/B and C/D nines were fully bunkered). The first characteristic of the bunkering that jumps to mind is the great number of bunkers located fully within the margins of the fairway. These bunker complexes compel the golfer to constantly make decisions about whether to carry, lay up to, or play around them. In many cases, the hazards seem to encourage playing toward the margins of the fairway in order to avoid centrally located bunkers or gain the best angle to the green. John Low, a writer very influential to the Golden Age architects, endorsed that design tactic:

> "The trick of the thing is to make the ground dictate the play. The shot from the teeing ground is nearly always far too wide: it is a case of driving anywhere straight ahead. The good architect will see to it that the hole proclaims that you must keep well to the left, or well to the right, as the case may be. And so in each stroke in the round there should be some special interest which demands some special maneuver." – John Low (Shackelford, 1999).

Figure 3-4. Hole #2, C Course – Plays left to right (The National Archives)

The second hole of the C course (Figure 3-4) is a case in point. A three shot hole, measuring approximately 533 yards, the orientation of the green and the two bunkers short and left of its surface dictate that the preferred angle of approach is most likely from the extreme right side of the fairway. In order to achieve that position for the third shot, the golfer must negotiate a cluster of bunkers positioned just at a distance that might be a difficult carry for a second shot. At the same time, there is plenty of room to avoid those bunkers, but at the expense of a more difficult approach. That is textbook strategic golf.

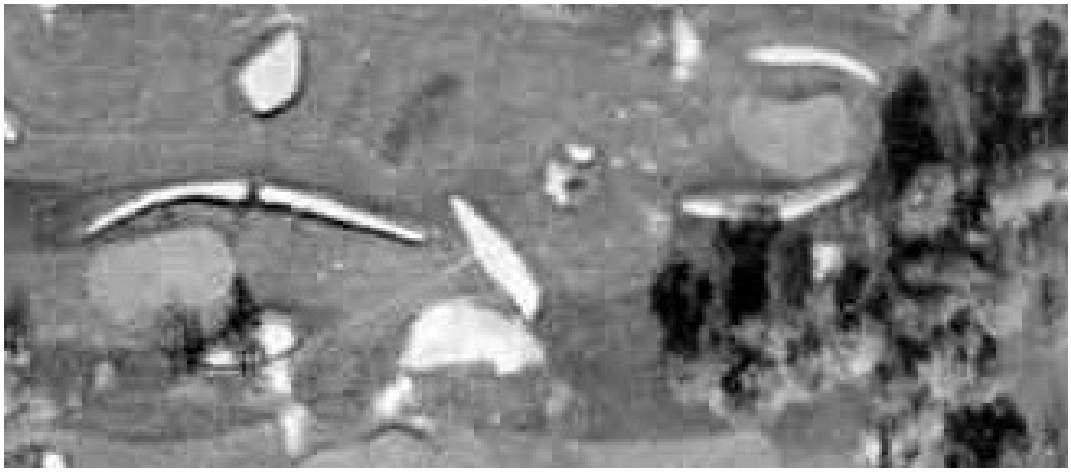


Figure 3-5. Diagonal Bunker Fronting 6th Hole, A Course (The National Archives)

The design of the East Potomac Park course exhibits another important strategic gambit frequently employed by Golden Age architects – the diagonal hazard. This feature, which is particularly apparent on the first hole of the C Course and the fourth hole of the A course, is used throughout the course on a variety of scales. Diagonal hazards usually reward golfers who play closest to the hazard or make the longest carry. In true strategic fashion, the golfer must choose an appropriate line of play based on his own abilities and the risks he is willing to take. The slashing diagonal bunker that cuts in front of the long par three sixth hole on the A Course illustrates the concept well (Figure 3-5). The direct line to the green surface from the tee involves taking on the longest carry over the right side of the bunker. A golfer who attempts that carry, but at the last second hedges his bet a little to the left, would most likely end up in the left greenside bunker. Meanwhile, a golfer who accurately judges and executes the shorter and easier carry over the left side of the bunker is left with a relatively easy shot down the length of the green.

Perhaps because they lacked the major earthmoving equipment available to modern architects, Golden Age designers preached the importance of utilizing each site's natural features

and topography in the strategy of the golf course to the greatest extent possible. Alister MacKenzie emphasized the importance of the natural to golf, stating: "I have endeavored to conserve the existing natural features and, where they were lacking, to create formations in the spirit of nature herself. In other words, while always keeping uppermost the provision of a splendid test of golf, I have striven to achieve beauty" (Mackenzie, 1995) East Potomac Park's location alongside the Potomac River and Washington's monumental skyline is indeed beautiful, but the site itself was flat as a pancake and apparently without natural features of which to take advantage. Walter Travis, however, recognized that the property's flatness was actually its greatest asset; the lack of topography ensured the visibility necessary to create a reversible design. In this way, the reversibility itself can be viewed as maximizing the potential of the featureless site.

The East Potomac Park golf course visible in the 1927 aerial photograph (figure 3-2) features many of the distinguishing characteristics that have made Golden Age golf courses so well regarded through the years. The course was constructed to mimic natural formations, it included classic strategic problems highlighted by interesting bunkering, and even made very interesting use of flat and featureless terrain. In short, it could be said that the golf course design in 1927 realized a standard of design potentially equivalent to that of the monuments and civic spaces constructed concurrently next door in West Potomac Park.

Evolution to Present

There are significant differences between the golf courses at East Potomac Park today and the 1927 complex. The evolution of the facility from a unique, nationally recognized showpiece to a typical, run down, architecturally vapid municipal course was marked by several important events or decisions that significantly impacted the course, as well as a slow erosion of

original features caused by years of inadequate maintenance budgets and neglected capital improvements.

The popularity of the golf course continued to grow after 1927, peaking in the early 1930s. In order to meet the increasing demand, nine additional holes were constructed in 1931 near the railroad line and tourist camp in the northwestern section of the peninsula ("The Public Linksman," 1932). The new nine, most likely a shorter, executive-length course, brought the total number of holes in East Potomac Park to thirty-six, with, “every inch of space on the peninsula…part of a fine golf layout” ("The Public Linksman," 1932). The expansion nine proved to be short-lived, however, as it was eliminated in 1941 by the Department of the Interior to make room for “tennis courts, softball fields, and other athletic grounds” that were displaced from the site of the new Jefferson Memorial abutting the Tidal Basin (Munhall, 1941).

The significant alteration to the golf course was brought about by the decision to move the driving range from its 1927 position, north of the first hole on the A course, to its current location on the former site of the first holes of both the D and E courses – or the ninth holes of the C and F courses, depending on the direction of play. This change is visible in the 1964 newspaper diagram and 1965 aerial photograph reproduced in Figure 3-6, but it is difficult to pin down an exact date for the move. Several items in the Washington Post indicate the change had been made as of the early 1950s and a 1946 Post article suggests the new range site may have opened at that time ("Ed Gravely Wins In Baltimore Golf," 1946). The new location was presumably chosen to increase the capacity of the range, which was, and still is, a popular and profitable asset of the park, particularly for beginner golf lessons and workers with only a short time to spare before or after work. The new facility was also equipped with floodlights that allowed golfers to practice as late as ten at night (“Golf Clinic Opens Monday”, 1951). In place

of the old driving range, a new nine-hole, executive-length course, known as the G course, was built.

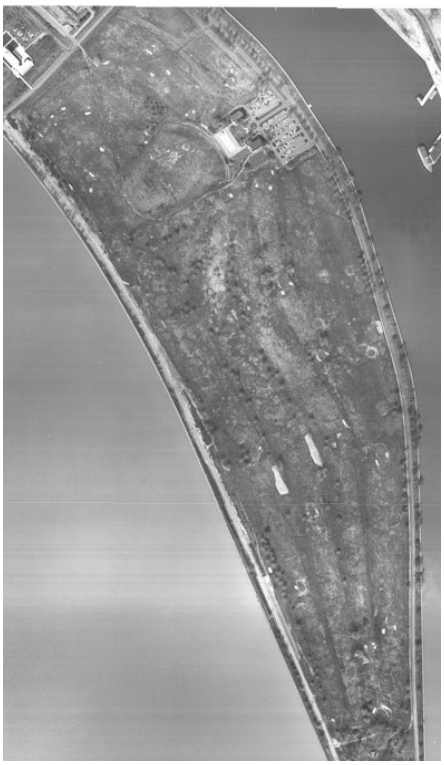


Figure 3-6. 1965 Aerial Photograph – Driving Range Visible in Upper-Left
(National Parks Service)

Construction of the new driving range necessitated several major changes to the existing golf courses in East Potomac Park, many to the detriment of facility. Most importantly, eliminating the first holes of the D and E courses ignited a chain reaction that required the routings of the C and D courses, as well as the E and F courses, to be altered dramatically. The lost holes had to be made up for on each course despite the fact that there was no extra room for expansion. As a result, all of the holes on the E and F courses, and at least four of the holes on the C and D courses, were either significantly modified or completely reworked in an effort to shoehorn the new holes into the tight property. The changes sacrificed a lot of the width that

enabled the strategic options of the original layout and resulted in awkward situations – the new par three first hole of the F course with its tee significantly further away from the clubhouse, tucked past the new first tee of D course and alongside the driving range – and cramped conditions – the new par three second tee of the D course set dangerously close to the landing area of the par five third tee shot. On top of that, the changes probably forced the reversibility of the courses, made possible by carefully considered relationships between the holes in the original design, to be abandoned. By 1965, courses B, D, and F had become the standard directions of play for the three nines.

Another major change evident in the 1965 aerial photograph is the disappearance of almost every single fairway bunker and many of the greenside bunkers from the 1927 golf course. Some of the bunkers were no doubt eliminated when the reversible concept was abandoned, considering many would have been invisible or irrelevant when only played in one direction. The sheer number of bunkers removed during that time span, however, went beyond only the irrelevant hazards and ripped out the strategic heart of the course. With no fairway bunkers to speak of and greenside hazards reduced to a flanking bunker here and there, no longer were there any impressive hazards to challenge, nor did the course require the golfer to "keep well to the right or well to the left" in order to gain advantage, as advocated by John Low. These changes, perhaps carried out to reduce maintenance costs or in a mistaken belief that an easier course would produce faster rounds and, therefore, greater revenue, rendered the course perilously akin to the one described in this quote taken from Thomas' *Golf Architecture in America*:

> "Place the golf course on a level plane; have no traps of any kind; let every fairway be flat; the green unprotected and without rolls; let there be no rough; nothing between the tee and the green but perfect fairway, and the green itself absolutely level; and what would be the result? – a thing without interest or beauty, on which there is no thrill of

> accomplishment which is worth while; a situation untrue to tradition, and apart from the spirit of golf as it was given birth among the rolling sand dunes of Scotland" (Thomas, 1927).

The 1965 course had become a shell of the 1927 design, lacking the interesting problems that are the lifeblood of strategic architecture.

The driving range relocation and bunker removal were carried out by the management company of Severine Loeffler, who took over as concessionaire of East Potomac Park's golf course in 1921 when it was just a nine-hole facility. He oversaw and helped finance the expansion of the golf course to thirty-six holes by the early 1930s and established himself as a staunch proponent of public golf in Washington, DC, acquiring the leases to the other city municipal courses and routinely offering free golf clinics to help get newcomers interested in the game. East Potomac Park was a profitable concession for Loeffler until he died in 1977 (Laureat, 1952). By the late 1940s, however, he was facing criticism and even a Congressional investigation regarding his maintenance practices and capital improvement program, which observers viewed as insufficient to sustain the quality of his courses (Walsh, 1949). Charles Burns, a visiting golf course consultant, harshly criticized the condition of the course and the obsolete equipment used to maintain it; his colorful conclusion follows:

> "I've played and inspected municipal courses in Toledo, Cleveland, Chicago, Dayton and New York among other places. I believe if you asked those golfers to play the courses in the District of Columbia, they'd give up the game…Well, maybe that's too strong. I'd guarantee, though, they'd raise a terrific storm of protest" (Walsh, 1949)

Burns goes on to comment that, after interviewing large numbers of Washington's municipal golfers, "They all seemed to tell me there's been an investigation going on and more work has been done in the last 90 days than in a year" (Walsh, 1949). That kind of neglect can lead to rapid deterioration of golf courses, which require steady flow of capital in order to maintain their designed features.

The significant value of East Potomac Park's land, a result of its close proximity to downtown Washington, D.C. and its setting on the river, means that it constantly is identified as a potential location for almost every new amenity or project proposed by the government for the city; the elimination of nine holes by the Department of the Interior in 1941 being a case in point. Most of these development proposals prove inconsequential, but on two occasions they have posed a very serious threat to the future of the golf course. The first such incident occurred in 1962, when the Department of the Interior earmarked the eastern end of East Potomac Park as the site for a national aquarium. The plan would have eliminated eight to ten holes at that end of the course, effectively crippling the facility (Fitzgerald, 1962). The aquarium generated strong protests from golfers, which included a scathing editorial in the Washington Post written by the paper's cartoonist. In the editorial, the cartoonist challenged the Secretary of the Interior to a golf match over the doomed links (Lardner, 1964). The golf outing proved effective, as later that year the Secretary unveiled modified plans that abandoned elimination of any golf holes in favor of much more minor changes limited only to the F course (Lardner, 1964). Eventually, due to an overly complicated and expensive scheme involving a Ponte Vecchio-type bridge, the aquarium plans were tabled.

The most recent threat to the course was much more serious. In January of 1983, the National Park Service went so far as to completely level the F course in order to increase the number of parking spaces on the peninsula, build a new road to improve traffic circulation, and provide the park with more baseball fields and picnic areas. After work was nearly completed, a small, but passionate group of elderly golfers that regularly enjoyed the executive (2,400 yards) layout organized in opposition to the changes and persuaded Congress not only to stop the

National Park Service work, but also to put federal money aside to rebuild the F course from scratch. The course reopened two years later at a cost of $325,000 (Evans, 1984; Rimer, 1985).


Figure 3-7. Current Aerial View of Blue and Red Courses (Google Earth)

Current Conditions

A comparison of aerial photographs reveals the current layout of East Potomac Park's golf course, seen in Figures 3-7 and 3-8, to be largely the same as it was in 1965. The B and D

nines have been grouped together to form the “championship” eighteen-hole Blue Course geared toward experienced golfers, measuring 6,599 yards, par 72. The executive length F course has been renamed the White Course, and is listed at 2,505 yard, par 34. A very short, three-hole practice facility and the nine-hole Red Course for beginners, measuring 1,311 yards at a par of 27, now occupy the land of the former G Course. The three courses, along with the driving range – still lighted, but now on two decks and heated – offer a range of options to suit most ability levels.


Figure 3-8. Current Aerial View of Field House, Driving Range, and White Course (Google Earth)

Like the overall layout, the design characteristics of the current facility are not materially different from the strategically bastardized course visible in the 1965 aerial photograph (Figure 3-6). The Blue Course does not have a single bunker that requires any strategic thought on the part of the golfer. All of its hazards are relegated to the edges of the holes, where only a poorly played shot gets penalized – a very far cry from the centerline bunkers and angled hazards that characterized the original course. Even the short Red Course has at least a couple of bunkers that impinge on the direct line from tee to green. The White Course is the most strategically engaging of the three, with several greenside bunkers, particularly on the fourth and eighth holes, that give a distinct advantage to a golfer placing his tee shot on the correct side of the fairway. The course also has the only true fairway bunkers on the property that actually ask golfers to make a decision off the tee. Interestingly, the bunkering scheme of the White Course is different from the 1965 aerial, indicating it may have been altered when the course was rebuilt in 1984.

In general, the greens of the Blue and White Courses provide more interest than their bunkering schemes. Though several are relatively flat, close to the ground, and unremarkably contoured, more than a few are located atop small plateaus that prove to be elusive targets for approach shots. These green complexes, featuring attractive fall-offs and tricky recovery shots are easily the most appealing design element of a round at East Potomac Park.

By far the biggest asset of East Potomac Park is its location. Golfers are treated to panoramic views of the Potomac River, as well as the monumental skyline of the capital city. On multiple holes, the Washington Monument provides the ideal line for a tee shot or approach shot. The off-course views give East Potomac Park a special visual connection to the city that is rare among municipal golf courses.

The on-course views, on the other hand, are not so spectacular. The topography of the park is extremely flat, consisting of a gradual slope from the center of the peninsula out to its edges. What undulations there are on the property appear obviously man-made and serve little strategic or aesthetic purpose. Looks aside, the flat topography has a more significant consequence: throughout the history of East Potomac Park, the golf course has suffered severe drainage problems. When the area was being filled, engineers devised a subsurface drainage plan for the peninsula consisting of "large fissures [in the reclaimed earth] which widen downward and quickly carry off surface water" (Keller, 1919). By 1950, however, the golf course land had settled between three and six feet, rendering the drainage system ineffective and creating "unexpected water holes that fill up to knee level after a heavy rain" (Walsh, 1949; Carper, 1950). To remedy the situation, the National Capitol Parks Service proposed plans in 1950 and 1955 to pump four hundred thousand cubic yards of fill onto the west end of golf courses from the river. Both proposals were rejected due to fierce opposition from golfers, who did not wish to see the golf course closed for the three-year long projects, and management, who believed the project "would 'ruin' the two courses [B and D] without doing anywhere near a thorough job of preventing the sinking and the flooding during storms" ("Landfills May Close Hains Pt. Golf Course, 1955).

The drainage problems continue into the present. With multiple low-lying pockets that retain water and extremely gentle grades throughout the park that are insufficient for effective surface drainage, the golf course is consistently soggy throughout the year to the detriment of its playing conditions (Reel, 2003). Golfers are constantly forced to take relief from standing water on the course and tee shots get no roll as golf balls routinely plug in the squishy fairways. The excess water also negatively affects turf health, the result being that "the roots of the Bermuda

grass and ryegrass have gotten fat and lazy. Instead of burrowing deep for moisture, they're content to hang out near the surface, where water is plentiful. At the same time, they aren't getting optimal oxygen into their systems because they are drowning in all the water (Reel, 2003)." This renders the grass very susceptible to a host of debilitating diseases. The drainage issues also make routine maintenance, such as mowing the turf, very difficult because such equipment is likely to tear up the soggy and shallow-rooted grass (Reel, 2003).

Effects of the drainage problems are visible in the day-to-day conditions of the golf course. Common complaints about the maintenance refer to the course's overgrown fairways, bunkers with too little sand, and sandy and wet greens that are akin to "putting along the bottom of a filled swimming pool (Saslow, 2007)." These issues are certainly not helped by the fact that 150,000 rounds of golf are played at East Potomac Park each year, which, "places an extraordinary amount of wear and tear on the course even when conditions are optimal (Myers, 2007)." The drainage and wear problems endemic to East Potomac Park make effective golf course maintenance there a very challenging proposition.

Maintenance of the East Potomac Park golf courses falls under the umbrella of its management company, Golf Course Specialists, Inc. In recent years, they have been responsible for some unfortunate errors. Groundskeepers employed by Golf Course Specialists killed the grass on the greens of all thirty-six holes at the course in 2007 by mistaking an herbicide for a fertilizer. The error forced the facility to lay new sod on all the greens at significant expense and use temporary surfaces for a significant amount of time (Myers, 2007). Overall, it is difficult to ascertain to what extent the maintenance problems at East Potomac Park stem from bad management, inadequate maintenance budgets, neglected capital improvements, overwhelmed or inexperienced workers, outdated equipment, poor maintenance practices, or factors beyond the

superintendent's control, such as drainage and excessive wear. Presumably, it is a combination of those factors. But it is clear that the typical course conditions at East Potomac Park are significantly below standard set by other golf courses in the Washington area.

Conclusion

The evolution of the East Potomac Park golf courses seems to be characteristic of many other municipal courses designed by Golden Age architects. The mission statement of Keep it Classic, a California nonprofit organization dedicated to the preservation and restoration of classic municipal golf courses, notes that:

> "Countless classic municipal courses are mere shells of their prior glory to the detriment of their city and residents. Some of these courses have been made "easier" in the mistaken belief that a lack of challenge will result in quicker play and more revenue." (Bergman, 2008)

The 1927 golf course at East Potomac Park featured engaging and strategic holes with countless centerline hazards and a reversible design that made for day-to-day variety unmatched at similar sized facilities. Over the years, that asset has eroded away into the vapid, wide-open, and poorly maintained golf course that exists today. Far from the model public playground envisioned by the McMillan Plan, East Potomac Park instead reflects the banal design and substandard maintenance of the stereotypical municipal golf course in America.

In order for the golf course at East Potomac Park to fit the description of a model public playground, it has to be more than the typical, well-used municipal facility. Such a golf course lacks a basic and extremely important trait of good golf architecture, explained below by Bobby Jones in his foreword to *The Spirit of St. Andrews*:

> "…we want our golf courses to make us think. However much we may enjoy whaling the life out of the little white ball, we soon grow tired of playing a golf course that does not give us problems in strategy as well as skill…In large measure, the popularity which the game of golf will enjoy in the future depends on the quality of the courses we provide for the players of the future. A great majority of the players, then as now, will be

> ‘average golfers.’ Our courses must be built for them as well as for the ‘scratch man’…It is entirely possible to construct a course that will provide interesting yet not unreasonable problems for every golfer according to his skill” (1995).

Clearly, the golf course at East Potomac Park falls short of the ideal, not only with regard to architecture but in its management and maintenance as well. The next chapter will investigate the factors that contribute to an ideal municipal course, and lay the groundwork for a plan to redesign the East Potomac Park golf courses into a facility that fully embodies the goals of the McMillan Plan.

# CHAPTER 4

# CASE STUDIES

## Introduction

A primary goal of redesigning the East Potomac Park golf course is to address the gulf in quality that exists between the attractions of West Potomac Park and those of East Potomac Park. In order to do so, the East Potomac Park golf course has to become a municipal facility of the highest order. But what attributes are most important for an ideal municipal golf course? Is it location? Ambiance? Setting? Course conditioning? Design? Difficulty? This chapter examines three of the world's most well known municipal golf courses in an attempt to shed light on the answer.

Bethpage State Park, Torrey Pines, and the Old Course at St. Andrews are all very successful public golf courses. Much of their current notoriety derives from heavily publicized professional golf tournaments that have exposed the courses to large segments of the golfing population. But it is the history and evolution of these courses, much of which came before those big tournaments, that proves most instructive.

## Bethpage State Park

When it comes to municipal golf in the United States, the preeminent course in the public's consciousness is the Black Course at Bethpage State Park. Though very well regarded, particularly by local golfers, since its opening in 1936, the Black stepped into the national spotlight in 2002 as the first ever non-resort, public-access course to host the U.S. Open. An impressive honor for any golf club – only a miniscule percentage of this country's courses are

even considered for the event, never mind the scant forty-nine clubs that have actually hosted it – but especially remarkable in this case. By the mid-1990s, the course had been beaten to a pulp by sixty years of relentless wear from close to 50,000 rounds each year, all while operating on a shoe-string, state-imposed budget woefully incapable of keeping up with damage caused by the golfing hordes (Pennington, 2002). The Black was in such perennially poor condition that the USGA was forced to abandon plans to stage the U.S. Public Links Championship there in the mid-1980s (Feinstein, 2003). So how did a municipal golf course with threadbare tees, patchy fairways, and sandless bunkers end up hosting the U.S. Open only fifteen years later? How did such a shoddy course even continue to remain popular? The answer to both questions is largely the same: location near a large population center and an enduring design that remained plainly visible despite the unflattering light cast by years of poor maintenance.

The success of the Black Course must be put into the greater context of Bethpage State Park. Originally the estate of railroad baron Benjamin Yoakum, in 1934 the parkland, which included an 18-hole private golf course called Lenox Hills, was purchased from Yoakum's heirs by New York state for $1,000,000 under the direction of visionary planner Robert Moses, then the president of the Long Island State Park Commission. The park sits on a large, wooded tract of land, 1,368 acres in all, which straddles the Nassau and Suffolk county line in central Long Island. Moses had ambitious ideas for the new park – plans included three new golf courses, hiking and biking trails, a polo field, and tennis courts – and the means to get the work done quickly despite the flagging economy of the Great Depression. Through the Work Relief Act he was able to employ 1,800 workers during construction of the golf courses and clubhouse (Shapiro & Barrett, 2002).

Moses saw Bethpage State Park as a chance to preserve important green space from future suburban development and provide quality recreational facilities to the public. The centerpiece of this plan was three new golf courses to be designed by Albert Warren (A.W.) Tillinghast. Tillinghast had already achieved a distinguished reputation as a golf course architect earlier in the century for such masterworks as Winged Foot and Quaker Ridge north of New York City, Baltusrol and Somerset Hills in northern New Jersey, and San Francisco Golf Club in California, but was happy to take on the work in the lean years of the Depression (Shapiro & Barrett, 2002).

Figure 4-1. Bethpage (Black) 4th Hole – Example of Dramatic Property (Golfclubatlas.com)

The excellence of the resulting courses is not surprising given the property's natural features (see Figure 4-1) and the track record of its architect. Tillinghast considered the

Bethpage property's sandy soil and varied, undulating contours ideal for golf. A 1934 article of his in *Golf World* sums up his affection for the land:

> "The three courses (Black, Red, and Blue) are of great excellence and charm. This could not well be otherwise, for the large tract of land offered unusual opportunities for the creation of golf holes. As a matter of fact it must be regarded as one of the most truly great golf properties in the world. This statement is inspired by no other sentiment than admiration and appreciation after many years of observation. The Bethpage tract is superb" (Tillinghast, Wolffe, Trebus, & Wolffe, 1998).

From the beginning, the Black Course was conceived as a supremely difficult test to rival the most challenging in the world of golf. The design features many excellent strategic holes, but the course's characteristic elevated greens, surrounded by rough and deep bunkers make it extremely difficult for average golfers. The fifth hole, seen in Figure 4-2, represents the character of the Black Course very well. The hole is strategically interesting – the longest carry from the tee over the right side of the diagonal fairway bunker yields the shortest approach and best angle to the green, while the longer approach after a shorter carry off the tee may be stymied by trees between the golfer and the hole – but the shot requirements are very exacting and beyond the means of many golfers – even the best tee shot on the hole still requires a long and tough approach to a ridgetop green surrounded by bunkers, rough, and steep slopes.

Figure 4-2. Bethpage State Park (Black) – Fifth Hole (Golfclubatlas.com)

The quality and severity of the Black Course brought instant notoriety to the park and avid golfers flocked from all over the region to challenge the course (Shapiro & Barrett, 2002). Importantly, however, Tillinghast was keenly aware of the need to accommodate a wide variety of skill levels at Bethpage:

> "Without doubt were the other courses at Bethpage as severe as Black the place would not have enjoyed the great popularity it has known since it was thrown open to the public. Yet thousands of 'weak sisters' undoubtedly will flock there insisting on at least one tussle with the Black Leopard, just to show they can 'take it'" (Tillinghast et al, 1998).

Though not as demanding, the Red and Blue were designed to the same high standard as the Black; all three taking advantage of the land's best features to produce charming, interesting golf. The Red Course, for example, has a similar, expansive feel to the Black Course and interesting strategic holes of its own, but it features many greens with open approaches that allow shots to bounce on from the fairway – thereby providing a margin for error not present on the

'Black Leopard.' Though golf architects are prone to hyperbole, Tillinghast was proud of the entire Bethpage complex, noting "it is quite probable that the Bethpage collection of seventy-two holes will take rank among the great Meccas of the golfing world…Certainly it represents a terrific endeavor to provide great golf to the public" (Tillinghast et al, 1998).

Over the next 60 years, Bethpage provided great golf architecture to the public and made considerable profits for the state of New York. Its success as a public golf course, however, was not reflected in its meager operating budget. The large revenue stream generated by the Bethpage courses was funneled into a general fund and used to subsidize state programs that had nothing to do with the park or its golf facilities. During the 1970's recession, the already thin operating budget was significantly slashed and the maintenance burden fell on only four or five groundskeepers who were powerless to keep up with the traffic created by the golfing masses (Feinstein, 2003; Shapiro & Barrett, 2002). Accordingly, conditioning suffered. And just as significantly, the courses' national reputation suffered as well. For many golfers, great conditioning is a prerequisite for great golf and the state of the Bethpage courses obfuscated recognition of their quality, save for local golf nuts and golf architecture enthusiasts aware of the Tillinghast pedigree. In fact, in 1982, *Golf Digest* "purposefully excluded" the Black Course from a list of the top fifty public courses in the country despite its "good design and rich tradition…because the reports on [its] current condition are negative" (Davis, 1982). The Black currently ranks fifth on that list and it is by far the top municipal entry ("America's 100 Greatest Public Golf Courses 07/08," 2007).

So, from the mid-1970s through the mid-1990s, with the state of the golf course in shambles by modern conditioning standards, why did it remain popular? The Black Course continued to do almost three times as many rounds per year as the typical private golf club.

Certainly the course's affordability and location contributed to its popularity. But several other municipal options, including Eisenhower Golf Club, literally next door, offered similar prices to Bethpage, and a few privately owned daily-fee courses nearby were no doubt in much better condition. Still, golfers in the New York area, including some country club members, would travel fairly long distances, well past their closest available option, for the chance to play the Black (Pennington, 2002). In fact, it was, and still is, a routine sight to see golfers camp out in their cars overnight in the Bethpage parking lot for the opportunity to grab one of the precious few available tee-times on the Black the next day (Feinstein, 2003). So what inspired this fanaticism? Excellent conditioning or low fees are not worth the stiff neck and aching joints that inevitably result from sleeping in the back seat of your playing partner's car. The key to the Black Course's enduring popularity is the high quality of its architecture. More important than the greenness of its fairways or the ambiance of the clubhouse or the low green fees, the draw to Bethpage is the experience of playing a truly world class design (Shapiro & Barrett, 2002).

It was the design that led to the Black Course hosting the 2002 Open. The catalysts that initiated the process, to a man, were thrilled by the golf course despite its presentation. George Zahringer, a prominent amateur golfer in the New York metropolitan area and a lifelong private club golfer, sums up their thoughts very nicely. Recalling his first round on the Black in 1989, he gushed, "Whatever I had heard about it couldn't begin to do justice to the real thing. It was sensational, just spectacular. Sure, it was beat up. But to me, it was like looking at a great house that's fallen into disrepair. You could see that the bones were there. It just struck me right away." Later in a letter to the United States Golf Association (USGA), Zahringer wrote, "The Black is as good as it gets. There is genius in the design" (Feinstein, 2003).

The USGA leadership agreed with Zahringer and saw hosting a U.S. Open at the municipal Bethpage facility as a chance to instill a more inclusive spirit into the traditionally stuffy world of golf (Pennington, 2002). A USGA grant paid for golf architect Rees Jones to restore the golf course to Tillinghast's original splendor and bring the course up to the green and pristine standards of modern conditioning (Pennington, 2002). The 2002 U.S. Open has to be considered a success by any measure, and the widespread exposure helped establish the course as a landmark for golfers across the world. But with such notoriety would undoubtedly come increased demand to play the course. To ensure local golfers would have continued, affordable access to the facility, a condition of the USGA's grant stipulated local greens fees for the Black remain at pre-U.S. Open levels ($31 weekdays, $39 weekends) for at least three years after the tournament (Shapiro & Barrett, 2002). Bethpage subsequently subsidized low rates for New York residents by charging closer to market rates for out-of-town play ("Bethpage State Park Golf Courses,").

The U.S. Open was certainly a great success, but in the context of municipal golf, it is not the most important thing to take away from the story of Bethpage. Instead, it is the driving force behind the U.S. Open, behind the Black's popularity and the popularity of the other courses there – the high quality of design. Great golf architecture can be appreciated, inspire fanatical dedication, and even be very profitable, despite horrendous conditioning and the absence of cushy facilities normally associated with high quality golf courses. The U.S. Open helped bring to light a realization that municipal golf did not have to be relegated to boring, basic, and easy courses. At Bethpage, even the "easier" courses are interesting architecturally, if not as difficult as the Black. Not every municipal course will get to host the U.S. Open, but every course can aspire to interesting design that captivates golfers and brings them back time and again.

Torrey Pines

An interesting comparison to Bethpage is Torrey Pines, a municipal facility owned and run by the city of San Diego. Prior to the U.S. Open at Bethpage, Torrey Pines may have been the most well-known municipal golf operation in the country, due in large part to television exposure derived from hosting a popular annual PGA Tour stop and its stunning natural setting on bluffs overlooking the Pacific Ocean. The Torrey Pines courses share many similarities with Bethpage. Both facilities have a large and loyal local following, a national recognition aided by important professional golf tournaments and reasonable greens fees for local residents but higher rates for visitors. Both the Black Course at Bethpage and the South Course at Torrey Pines even had the same architect, Rees Jones, do renovation work on the courses that eventually led to a future U.S. Open – Torrey Pines hosts the tournament in 2008 (Shipnuck, 2006). Each facility is successful, but there is one important difference between the two – the two courses at Torrey Pines do not have, and never have had, the architectural quality of the Bethpage courses. The significance of that difference was made particularly apparent after the redesign by Rees Jones.


Figure 4-3. Routing of Torrey Pines – South Course (www.torreypinesgolf.com)

The North and South Courses at Torrey Pines were designed by William Bell and opened for play in 1957. The course is routed over generally dull topography, mostly a steeply tilting plane toward the bluffs, and the architecture fails to improve upon its shortcomings (Doak, 1996). Golf course architect Tom Doak sums up the merits of Torrey Pines and its property nicely in his book *The Confidential Guide to Golf Courses*, stating, "Until I saw Torrey Pines, if someone had called me and told me they wanted to build a golf course on clifftops overlooking the Pacific Ocean, I'd have thought I had it made. But it turns out that if the cliffs are of a certain height, you don't dare get close to them, and all you can build is a fairly dull layout with a view" (218). The design is fairly basic, characterized by narrow, linear fairways and flattish

greens flanked by two bunkers guarding the entrance. Visible in Figure 4-3, hazards are relegated to the margins of the course, encouraging thoughtless golf with little strategy outside of hitting the ball straight. In short, the design of the course conforms to the stereotype of the typical, bland municipal golf course – nothing great but not offensive either. Its popularity, relative to other area options, can therefore be attributed primarily to its beautiful setting and the notoriety accumulated from its annual PGA Tour event.

Average, inoffensive golf in a spectacular environment was a recipe for success at Torrey Pines for over forty years, but the lure of hosting a major championship would lead to change at the facility. In 2001, the San Diego city council unanimously approved plans for Rees Jones to renovate the South Course in order to make the course suitable for a future U.S. Open (Shipnuck, 2006). Unlike at Bethpage, however, the aim of the renovation was not to restore lost features of the original design – the original architecture remained basically intact – instead, the changes were geared specifically toward making the course harder for professionals (Shipnuck, 2006). While the redesign did achieve its goal, it had unanticipated consequences for the local golfers who called Torrey Pines home.

What was previously a pleasant, moderately challenging, if uninspired design had been made monstrously difficult with narrower fairways, deeper and more plentiful bunkers, and longer rough. For the seniors and ladies who comprise most of Torrey's day-to-day play, the changes had turned an enjoyable round of golf into an unpleasant slog over a design now beyond their abilities. The length of time to finish a round on the South Course increased due to the added difficulty (Shipnuck, 2006). Even PGA Tour professionals expressed disappointment with the changes. Tom Pernice voiced the opinion of many pros regarding the changes to the South Course, stating, "They ruined the course. It was an old, traditional seaside course. Now it looks

as if it was built in 2003. It's a typical piece-of-junk Rees Jones design" (Shackelford, 2005). To fund increased maintenance for the course, green fees for locals on the South were raised to $40 on weekdays and $45 on weekends (visitor fees are upwards of $200), compared to $29 and $34 for the North Course, which remained the same (Shipnuck, 2006). It is not surprising, therefore, that the North became the preferred layout for local golfers. This was made particularly apparent in 2004, when city officials proposed a Rees Jones renovation for the North Course to address the "imbalance" in quality between the two courses. The proposal met vociferous public opposition, especially from regular golfers at Torrey, and was unanimously rejected by the city council in 2005 (Shipnuck, 2006).

The South Course continues to be attractive to visiting golfers who wish to walk the same fairways as the best PGA Tour professionals and, as such, it has become a destination resort for golfing tourists. The U.S. Open will further cement the course's reputation and bring in an estimated $100 million in revenue to the local economy, so the renovation work can hardly be called a failure (Shipnuck, 2006). But the changes have divorced the course in some ways from the central mission of a municipal golf course -- to serve local golfers. To a certain extent, the same can be said for Bethpage, though the Black Course was always intended to be brutally difficult and the effect of increased visitor play at the Black is muted somewhat by the four other quality options available at the park. The most important difference between the two renovations, however, is simple: the work at Bethpage involved rehabilitating an existing quality design to make it better, while the work at Torrey Pines involved taking an average design and making it harder.

The Old Course

The Black Course at Bethpage and the South Course at Torrey Pines, irrespective of their design quality, are meant to be very difficult courses for professional golfers, appropriate for hosting the U.S. Open. But the type of difficulty exhibited by the typical U.S. Open course is decidedly not ideal for a municipal facility that must host golfers with a wide spectrum of skill levels. Particularly for average to beginning golfers, the narrow fairways and long rough at those courses lead to numerous lost balls and inevitably long rounds –the normal trek at the Black Course approaches six-hours compared to four for the average course. Alister MacKenzie encapsulates this idea in his book on golf architecture, *The Spirit of St. Andrews*:

> "Certain kinds of difficulties, however, should be eliminated. Into this class we can, I think, put long grass, narrow fairways, and small greens, because of the annoyance and irritation caused by searching for lost balls, the disturbance of the harmony and continuity of the game, the consequent loss of freedom of swing, and the production of bad players." (1995, p123)

The same features that provide the difficulty for good players at Bethpage Black and Torrey Pines South make those courses infinitely more difficult and less fun for average golfers, and hardly suitable for everyday play. An ideal municipal course would be just the opposite – the features that provide difficulty for good golfers would actually be easier to negotiate for average golfers relative to their own games. Happily, such a model exists – the Old Course at St. Andrews, Scotland.

It is a well-worn cliché to cite the Old Course as ideal architecture. Modern golf course architects are known to gush over the idea that the course was designed by nature, with hazards evolving over time and scattered randomly across the land lacking preconceived notions of strategy. Its famous double greens have been copied throughout the world and hailed as 'Scottish-style' architecture. But for the most part these gestures merely pay lip-service to the

course and fail to get to the heart of why it has remained relevant, challenging, and fun throughout its more than 500 years of existence. This is made apparent by the fact that no course built post World War II looks even remotely like the Old Course, and, more importantly, very few play like it. It is true that the setting and tradition of the course cannot be recreated, but its essential principles can be distilled and adapted to appropriate sites.

The fundamental characteristics of the Old Course are a byproduct of its interesting evolution. There are a lot of questions surrounding the actual date that golf was first played there – most agree that the game just evolved over time – but there is no doubt it had reached a certain level of popularity by 1457 when a royal Act from King James II banned golf and football because they were taking time away from required archery practice (Jarrett, 1995). The game began over the town's common land, called links; in this case a peninsula of moderately sized sand dunes covered by fine fescue grasses and prickly gorse bushes that "links" the arable land south of the city to the long beach north of the city. Worthless as farmland, the links were used by the town as grazing area for livestock (Jarrett, 1995). The sheep, cows, and rabbits kept the grasses on the links relatively short, a maintenance service that made it possible for the shepherds or sailors, or whoever were the game's pioneers, to hit a ball around the area and find it easily (MacKenzie, 1995).

Golf at St. Andrews has always been a very natural game. Early golfers located holes on the smoothest and most consistent stands of grass to make for easier putting; usually this ended up being well-draining natural plateaus, a distinctive feature of the course today. Sand hazards evolved in places where sheep sheltered from the ever-present winds and ate away the grass, exposing sandy patches that would be scoured out when the wind shifted. These natural sandy pits were eventually formalized into the bunkers that dot the terrain of the Old Course. Attempts

to stabilize the form of the bunkers, battling the effects of wind in such a changeable landscape, has led to the stacked sod (revetted) walls that characterize today's "pot" bunkers (Doak, 1992). In this vein, most, if not all, of the standardized elements that comprise modern golf courses – fairways, greens, tees, bunkers, water hazards – are direct descendants of what has evolved at St. Andrews.

Even the standard round of eighteen holes finds its origin with the Old Course. As of the mid-1700s, the course was composed of twenty-two holes laid out in a very narrow corridor defined by gorse bushes (also called whins) to either side. Golfers would play eleven holes out from the town then turn around and play to the same holes on the way back. In 1764, the first four holes were combined into two, leaving nine holes out to the end of the course and nine holes back. The final number of holes settled at those eighteen and, soon after, that number would become the archetype for all other courses (Jarrett, 1995). Later, as golf's popularity grew, other fundamental changes occurred to the links. The number of golfers squeezed into the narrow track through the gorse caused the course to become crowded and dangerous with golfers playing to the same hole from different directions. To remedy this situation, two holes were cut on each green, one marked with a white flag for golfers playing out away from the town and one with a red flag for those playing back in. Around the same time, a substantial amount of gorse was removed from the links, considerably enlarging the hole corridors to further spread out play. By the late nineteenth century, the course looked largely the same as it does currently (Jarrett, 1995).

Today, St. Andrews is the Mecca for golfers from around the globe. As the site of twenty-seven Open Championships (commonly referred to in America as the British Open) dating back to 1873, the Old Course exudes a powerful sense of history and tradition unique to

the world of golf. Nearly every famous golfer, from Old and Young Tom Morris to Bobby Jones to Jack Nicklaus to Tiger Woods has walked its fairways (Jarrett, 1995). But this nostalgia often obscures the fact that the Old Course remains one of the world's great courses on the merits of its architecture and not its history. The complex strategies and hidden hazards of the course do not reveal themselves the first several times around, thus visiting golfers, most of whom only play the course once or twice, fail to understand its challenges and must rely on a caddy for direction (Doak, 1996). But for those who are lucky enough to learn its intricacies, the Old Course proves to be an ideal ground for golf; challenging and interesting for the good player, while remaining playable and exciting for the average golfer.

The ability of the Old Course to accommodate different classes of golfers equally well is a product of a few interconnected characteristics that, taken as a whole, are unique to the course. These qualities are extremely wide playing corridors, penal hazards, complex strategies, intricate contours manifest on a variety of scales, the importance of the recovery shot, and the ever-present wind.

Figure 4-4. The Old Course Routing (http//courseportraits.com)

The expansion of the Old Course from a single, narrow track through the gorse to a wide area able to accommodate two hole locations on every green and thus two directions of play,

ensured the course would be playable for most classes of golfers. As seen in the course's routing (Figure 4-4), the playable width of each hole is, in effect, two holes wide. For example, a golfer teeing off on the third hole has the full area of the third fairway as well as the entire sixteenth fairway to play his shot into. In most cases, that translates into about one hundred yards of playable width for each shot, maintained for the most part as fairway or light rough with only the occasional outcropping of gorse. As a result, even the most inconsistent of golfers can address each shot confident that they will be able to easily find their ball.

Of course, that does not mean the course is easy. Sprinkled judiciously throughout that playable area is a set of deep and nasty pot bunkers (see Figure 4-5). The important thing about pot bunkers is that the consequence of finding one is generally the same regardless of a golfer's skill level. The typical American, or inland, bunker with a low front lip and wide bottom poses little threat to scratch golfers who can count on making solid contact and are able to advance the ball great distances if necessary. Those same bunkers, however, are the source of great frustration for average and beginning golfers who can extricate the ball only a short distance from the sand. Pot bunkers, on the other hand, with their steep faces and generally small areas, require scratch and average golfers alike to pitch out close to the bunker. In effect, finding these bunkers amounts to a one-stroke penalty. Thus, pot bunkers are hazards to be avoided at all costs for good players whose score can be drastically affected by finding a few during the course of one round, while for average players the penalty imposed by a pot bunker is just part of a normal day on the course.

Figure 4-5. A Typical British Links Pot Bunker (www.golfclubatlas.com)

The pot bunkers, and their severity, play a crucial role in the complex strategies that the Old Course is famous for. Originating from the whims of livestock on the links, the bunkers are scattered basically at random across the field of play. This might mean there is a group of hidden bunkers in the middle of a fairway right at the distance of a good drive, as at the twelfth hole, but it is the golfer's job to know their locations and choose the route that will yield the lowest score. The pot bunkers function to break up the wide playing corridors into much smaller areas. Invariably, the most desirable approach angles are closely guarded by fearsome bunkers; the epitome of strategic golf.

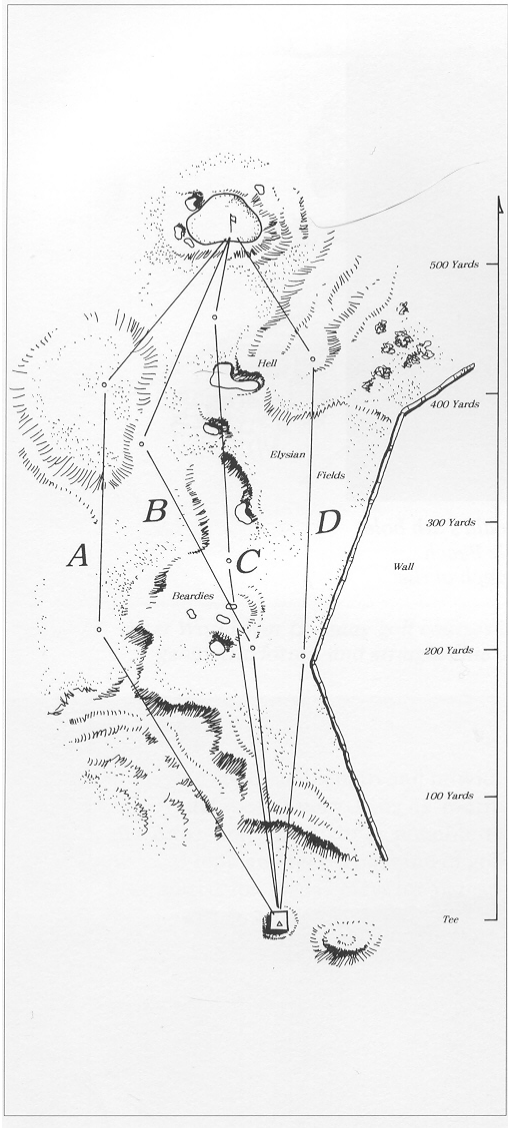



Figure 4-6. MacKenzie's Diagram of the 14th on the Old Course (Mackenzie, 1995)

Depending on a golfer's specific set of skills and the weather conditions, the "correct" strategy for a hole may vary widely from person to person and day to day. Alister McKenzie, in his book *The Spirit of St. Andrews*, diagrams the typical route taken on the great par five fourteenth hole by each member of his regular foursome (Figure 4-6). Despite possessing similar skill levels, each player takes wildly different paths to the green. This phenomenon is by no means unique to the fourteenth hole. The strategic decisions to be made on every hole

generate thought and interest for both scratch and average golfers. The wide corridors give plenty of leeway for the average golfer just trying to get his ball around the course, while the treacherous pot bunkers lend teeth to misjudgments or errors in execution by scratch golfers.

Figure 4-7. The 14th/4th Double Green on the Old Course (Michael McCartin)

The large double greens of the Old Course comprise another important part of its appeal to all levels of golfers (see Figure 4-7). Located primarily on natural plateaus, most of the greens are open in front and surrounded by fairway, thereby accepting approach shots and chip shots that run along the ground. The upslopes in front of the greens tend to deflect long approaches, particularly when played from the wrong angle, and make it difficult to get shots close to the hole from long distances. This challenges the good golfer to execute outstanding approach shots in order to get close enough to the hole for low scores while marginally affecting the average golfer who normally cannot control his approaches and may not be able to reach the green in regulation anyway. At the same time, short-range shots around the green, as seen in Figure 4-8, typically consist of nothing but fairway between the golfer and the hole, making it possible for

the average golfer to putt the ball over the slick fescues if he so chooses. While he may not always get the ball very close to the hole in this manner, the execution of the shot is within the abilities of even the beginning golfer. The better player, who has at his disposal a wide variety of short-game shots, may encounter some crippling doubt on those same shots due to the number of usable options available to him.

Figure 4-8. A Shot From Short of the 2nd Green on the Old Course (unknown)

Figure 4-9. Shadows Show the Undulations of the 3rd and 16th Fairways on the Old Course (www.golfclubatlas.com)

Once again, the fact that the Old Course appears to have user-friendly features does not mean it is easy for good golfers. Perhaps the most superlative aspect of its linksland terrain is the range and intricacy of natural undulation that exists on a variety of scales (see Figure 4-9). From fifteen-foot high dunes down to miniscule micro-contours, the Old Course is draped in a heaving sea of dunes formations that extend throughout the playing corridors and into its large greens. Golfers must take into account the bounce and roll of their shots on the firm St. Andrews turf, and, as a result, those undulations add a whole new level of interest and strategic thought to the game. Some contours may be used to help a well thought out shot maneuver around a deep bunker, while others may shove a ball struck slightly off its intended line into that bunker.

Putting from on and around the greens, while doable for any golfer, requires a keen eye to judge the contours and a deft touch to get the ball close to the hole.

The ubiquitous winds that played such an important role in shaping the character of the Old Course, from its dunes formations to the shape and location of its bunkers, also constitute a large portion of the course's difficulty. Strong winds make it very hard for good players to control the direction and length of their regular shots. In order to minimize the effect of the wind, the ball must be played at a lower trajectory than normal, or even along the ground, thereby bringing the ground contours and hazards even more into play. Once again, the average player who manages his game can take advantage of the wide playable area to minimize the effect of strong winds on his typical scores. At the same time, the wind can wreak havoc with the scores of good players, who rely much more on the accuracy of each shot.

All of the above mentioned qualities are indicative of the importance of the recovery shot on the Old Course; not only recovery from trouble, of which the pot bunkers and gorse provide plenty, but also recovery from finding oneself in a different position than the intended target. The wide fairways, abundant hazards, undulating topography, and incessant winds mean the ball rarely finishes in its planned location. Since the necessary strategy for an approach shot changes, sometimes drastically, with a shift in approach angle of only a few yards, in this sense, a game at the Old Course consists almost entirely of recovery shots. Golf course architect Tom Doak sums up this phenomenon in his book *The Confidential Guide to Golf Courses*, observing that at the Old Course: "there are so many hazards that every time you (or your opponent) hit a shot, unless it finishes within ten yards of where you aimed it, you ought to reevaluate what you want to do with the next shot" (1996, p54). The Old Course continually asks golfers to rethink

their tactics according to their abilities and the requirements of the shot but rarely is the best option beyond the means of the average golfer.

The Old Course can probably be considered the oldest municipal golf course in the world, as throughout its history it has been a public course operated under the stewardship of local citizens. It is fitting, therefore, that it should exhibit characteristics that are ideal for a municipal course. The essential features of the Old Course – extremely wide corridors of playable area peppered with very penal hazards, contouring on a wide variety of scales, complex strategies, wind, and the importance of the recovery shot – maintain challenge and interest for good players while remaining eminently negotiable for the average golfer.

Conclusion

Traditionally, American municipal golf has been associated with bland, uninteresting golf courses that do not inspire from a design perspective. As a result, the primary means of differentiation between municipal courses have been peripheral to the golf course itself – e.g. course maintenance, service, the pro shop, etc. Great amounts of time and expense are dedicated to these issues at municipal courses. The Bethpage State Park golf courses, and the Black Course in particular, show that if a municipal golf course has high quality architecture, those issues become largely irrelevant. For many years, the Black inspired fanatical dedication and generated large profits for the state despite dreadful conditioning and a bare-bones operation. That is not to say that conditioning is unimportant, it is just not nearly the most important factor to the success of a course. The South Course at Torrey Pines is a case in point, as the renovation work there generated substantial discontent for its sheer difficulty and lack of interesting design, despite the increased maintenance budget necessary to prepare it for the U.S. Open.

The Bethpage and Torrey Pines courses also illustrate the need for municipal facilities to accommodate a wide variety of skill levels. Each facility has at least one course that can be played enjoyably by the seniors, ladies, and average golfers that comprise the majority of municipal golfers. The Black Course at Bethpage and the South Course at Torrey Pines would not be ideal on their own as municipal courses because of their extreme difficulty for average players and the long rounds, lost balls, and frustration that are a product of that difficulty. The ideal municipal golf course, as exemplified by the Old Course in St. Andrews, Scotland, preserves the architectural quality of the Black Course at Bethpage but manifests its difficulty for the good golfer in a way that is easier, relatively, for the average golfer. This type of architecture eschews the long rough, water hazards, and penal strategies of typically difficult golf courses in favor of features that are strategically interesting but more easily negotiable for the average golfer. The essential characteristics of the Old Course are ideal for application toward the design of municipal golf courses.

# CHAPTER 5

# COST MINIMIZATION

## Introduction

The case studies examined in the previous chapter helped to shed light on the issues that are fundamental to municipal golf courses. Bethpage illustrated the relative importance of quality architecture as compared to conditioning, Torrey Pines demonstrated the need for municipal courses to appeal to all classes of golfers, and the Old Course provided a model from which to derive the architectural principles of an ideal municipal course. Building on those lessons as well as other relevant issues will help distill the characteristics of an ideal, real-world municipal golf course.

The most important general factors for a municipal golf course are its location, architecture, maintenance program, management structure, and affordability. It follows that the ideal municipal golf course would be located near a suitably large population clustered in close proximity to the course, provide interesting architecture that is challenging for good golfers while playable and fun for beginners, be maintained to an appropriate standard, and responsibly managed for the long-term success of the operation. Most importantly, each of these factors must add up to a course that is affordable both for the municipality and the local population.

The basic components of an ideal municipal golf course seem obvious and, on the surface, readily attainable, but very few in the United States meet these criteria. The root of this scarcity seems to be one of extremes: courses either try too hard or do not try at all. There is a reason municipal golf is commonly associated with banal architecture and poor conditioning. It

is because municipalities have traditionally assumed that it is enough to provide only basic golf facilities to residents at the lowest cost to the city, thereby discounting the role engaging architecture plays in a golfer's enjoyment of the game and his desire to return to play again (Klein, 2008). In 1935, at the end of the initial push for municipal golf in America, Dr. Alister McKenzie got to the heart of this problem in an article for Golfdom Magazine, stating that:

> "…cities are inclined to figure that if they get nine or eighteen holes of golf course they have handled the job properly. There never has and never will be an outstanding municipal golf course construction along these lines. The false economy of saving one or two thousand dollars in expert advice frequently leads to the loss of hundreds of thousands of dollars in increased cost of construction and maintenance and in decreased popularity as estimated in terms of greens fees." (Shackelford, 1997)

The important lesson espoused by Dr. McKenzie is that a well designed golf course will ultimately prove more profitable than a basic course conceived by an inferior or inexperienced architect because any extra money put towards a quality design is more than made up for by the strategy and interesting challenges that hook golfers into repeat play. As detailed in the case study of Bethpage State Park, great architecture can maintain its attractiveness and profitability despite years of neglect and terrible conditioning. Local governments and the elected officials in charge of budgets for such facilities, however, almost by definition tend to be short sighted, hence the glut of bland municipal courses throughout the United States that subsist mostly on bare-bones budgets. In many cases, these courses do not make enough money to pay for their operation and must be subsidized annually from the municipal budget.

Recently, some municipalities have started to think bigger and consider the long-term benefits of investing in golf (Klein, 2008). But efforts to provide more than just basic golf are liable to go overboard, resulting in a sea of unnecessary extravagances that compromise affordability. The trend, popularized by country-club-for-a-day public, daily fee facilities, involves increasing green fees, and thus revenue, by providing "upscale" amenities that attract

golfers with more disposable income. Developers market the course as an “experience” complete with a myriad of attendant bells and whistles that have nothing to do with actually playing the game (Klein, 2008). The perception that high cost equals high quality has resulted in a segment of the golfing population that associates good golf with those accoutrements. From elaborate clubhouses containing huge pro-shops and fancy restaurants to curbside service, complimentary towels, and tricked-out golf carts complete with GPS units and stocked coolers, the “experience” of golf is emphasized over the actual golf course and playing the game itself ("City Golf Course Groundbreaking," 2005; Nitz, 2008). Quality design is rarely left to stand on its own terms.

The Crossings at Carlsbad is, perhaps, the poster child for this type of excess. Developed by the city of Carlsbad in southern California, the municipal complex features a fortress-like, 23,000 square-foot clubhouse, seen in Figure 5-1, that includes a 300-seat dining room, a restaurant with full service kitchen, wedding and banquet facilities, a large pro-shop, and “lush surroundings” ("City Golf Course Groundbreaking," 2005). The golf course, built on an extremely hilly site of questionable merit, required over 1.5 million cubic yards of earthwork and features five bridges, two comfort stations and two twenty-acre lakes complete with artificial waterfalls ("DUDEK -- The Crossings at Carlsbad,"). At a cost to the municipality of approximately $62 million, the project is widely recognized as the most expensive municipal golf course ever built in the United States (Henry, 2007). Not surprisingly, with such a high price tag, the course is not cheap to play – the weekend rate is $110 for non-residents and $80 for residents ("The Crossings at Carlsbad,"). And even to keep that “low” rate for residents requires that over half of the course’s daily play derive from non-residents (Henry, 2007). The price tag is beyond the means of most local golfers. The course is in reality intended mostly for tourists –

hardly the picture of an ideal municipal golf course. If the high prices and large clubhouse were necessary to make the financial aspects of the project work, then the project should not have been built in the first place – at least not by the municipality.

Figure 5-1. Clubhouse of the Crossings at Carlsbad (www.nctimes.com)

Regardless of the merits of such luxuries with respect to golf, there is definitely a market in the United States for "upscale" courses similar to the Crossings at Carlsbad. That market, however, is better suited to private developers and not local government. There is something inherently wrong with a municipality providing an amenity that is beyond the means of a large portion of its citizens. By the same token, the standard bland municipal course is just as flawed. Though inexpensive, there is no reason such courses cannot have excellent architecture that would attract and retain the interest of beginning and experienced golfers alike. Good golf

architecture and affordability are not mutually exclusive. Municipal golf courses need to feature quality design at a price locals can afford to play frequently.

The principles of an ideal municipal golf course are simple enough to state, but in reality municipalities engage in a balancing act that pits their priorities for the facility against real world monetary constraints. The deficiencies of most municipal courses exist because they were built and are maintained with misguided priorities – either building the course as cheaply as possible, thereby disregarding the architecture, or stressing appearance by adding inessential frills that compromise affordability. Fundamentally, it is a matter of forming rational priorities that will allow municipalities to maximize their resources in order to provide quality golf courses to the public. This chapter will examine the components of an ideal municipal golf course – location, architecture, maintenance, and management – and specify a set of priorities for each that makes the ideal achievable and affordable.

## Architecture

Municipal golf courses are important places in the world of golf, where countless people learn the game and play their first full rounds. As such, they present the perfect opportunity to hook the interest of new golfers. Yet the large majority of municipal golfers are relegated to courses offering little design merit. In no other sport is the design of the playing field so important to the pleasure derived from playing it. One can still enjoy the full experience of baseball or football on even the shoddiest sandlot field. But on the typical municipal golf course, the thought-provoking, strategic dimension of the game, which can attract new golfers and prove addicting over time, is largely missing. Thus, it would be most appropriate and beneficial for the future growth and health of the game for municipal courses to showcase the full extent of what golf has to offer by featuring high quality designs.

Good golf architecture is not definable in an absolute sense – like good design in general, it is site and project dependent, and there is never only one correct design solution for a given site. What is definable are the fundamental strategic principles that underlie the golf architecture of the world's best courses, which were introduced in the second chapter of this thesis. These principles can be applied in a variety of ways – a fact evidenced by the staggering diversity represented in the designs of the world's best courses. It is important, however, to establish the particular architectural principles or characteristics that apply most directly to the design of municipal golf courses.

Alister McKenzie neatly encapsulates the primary goal of municipal golf architecture, stating simply that good municipal design "provides the maximum amount of pleasure for everyone, including the beginner who rarely gets the ball off the ground" (Shackelford, 1997) The Black Course at Bethpage is unquestionably great architecture, but it is far from a model stand-alone municipal golf course because of its extreme difficulty for average and beginning golfers. While there can be a certain pleasure found in attempting a challenge beyond one's abilities, it is likely to wear thin quickly over the course of countless lost balls and interminably long rounds. The Black Course works well in a municipal setting because it is one option in a quintet of courses that offer a variety of quality challenges for all skill levels.

As detailed in the previous chapter, the Old Course exemplifies the ideal of municipal golf by presenting an interesting challenge to good golfers while remaining pleasurable and playable for everyone else. The unique features that combine to make that possible require very little modification to be applied effectively on almost any course and in any situation. Wide playable corridors with little long rough ensure playability for beginners and average golfers,

while strategically placed penal hazards and effective greens contouring create plenty of challenge and interest for good golfers.

Given the financial constraints central to creating affordable municipal golf, the key to successful application of those principles is restraint and efficiency in planning and construction (Shackelford, 1997). First and foremost, the natural features of the existing land should be used to maximum effect. The more varied and interesting strategies that can be created solely by utilizing the natural contours of the site, the less that needs to be created (and spent) during construction. In addition to making monetary sense, preserving the randomness of nature and the natural flow of the land almost always proves more attractive than constructed shapes (Hunter, 1926).

Failure to adhere to that principle has led to a huge amount of unnecessary expense and ugliness in many modern golf courses (Doak, 1992). Rees Jones unwittingly gave some insight into the flawed approach of some modern architects while singing the praises of Bethpage Black, stating, “It’s a great piece of land because it’s so natural. They couldn’t move any dirt because they didn’t have the equipment. That’s probably why Tillinghast used so much land in routing the course – he just found the holes as naturally as he could.” This statement suggests that Jones would not have bothered to use as much area as Tillinghast because with today’s earthmoving equipment he could impose a design on the land without the same regard for the natural contours. (Doak, 1992) Yet it is Tillinghast’s ability to make the most out of the outstanding natural undulations and massive scale of the Bethpage property that makes the golf course special. (Doak, 1996) In addition to the needless expense, which is eventually passed along to the paying customer, forcing a design onto land not suited for it requires large amounts of

grading and the creation of features (e.g. containment mounding and terracing) that do not mesh well with the existing surroundings. (Doak, 1996)

Effective golf architecture, particularly with regard to municipal golf courses and monetary efficiency, requires restraint on the part of the architect to let the land dictate a majority of the design. It also must take into account the cost to build and maintain various features of the golf course and utilize only those that are relevant to actually playing the game itself, specifically, the strategy of the golf course (Shackelford, 1997). Therefore, purely decorative or visual features, such as the highly landscaped out of play areas and unnecessarily large, man-made water hazards that are common to many golf courses, are wasteful and should be eliminated (Doak, 1992). Restraint is necessary with regard to the placement of hazards and the greatest thought needs to be given to maximizing the strategic impact of a prudent number of bunkers. Taking a page from the Old Course, small-scale fairways contours, inexpensive to build and maintain, can be just as effective as bunkering without being as penalizing to the beginning golfer (Shackelford, 1997).

Obviously there is a lot more to golf course design than what is discussed in this section, but the overriding consideration for municipal courses is to produce the best architecture for the least amount of money. The principles exemplified by the Old Course are by themselves enough to be pleasurable for all golfers and attract repeat play. They do not require augmentation in the form of ostentatious water features, beautiful landscaping, or artificial vistas. Excellent municipal architecture requires the use of existing land features as the primary strategic canvas for the golf course and the restraint to add only those finishing touches that enhance nature's composition.

Maintenance

Maintenance costs comprise the highest percentage of a golf course's total budget (Haydu & Hodges, 2000). Minimizing maintenance expenditures, therefore, offers an important opportunity to reduce the cost of the game for the paying public.

Golf architecture and golf course maintenance are inherently related. A design that includes a long approach to a green complex surrounded closely by bunkers requires the green surface to be kept soft and spongy enough for a ball to be carried onto the green and stopped quickly – something that would be impossible for most golfers if the superintendent kept the green firm and the ball bouncing upon impact. An architect incorporating a steep grade into the playing corridor of a given hole must know that the slope can only be maintained as rough because of the risk that fairway mowers will slip on it in wet conditions. Each feature of the golf course implies a certain type of treatment to accommodate the architect's design intent, ensure playability for the golfer, and permit maintainability for the superintendent (Doak, 1992).

It follows, therefore, that any attempt to produce an affordable golf course for the public should be designed with maintenance practices in mind. This does not mean the architect should gear his design to the comfort of the superintendent by creating only gentle slopes and shallow bunkers that are most easily maintainable by today's standards. That would lead straight to the typical boring municipal golf course, as impressive or challenging hazards and interestingly utilized slopes are the essence of strategic architecture (Thomas, 1927). Instead, the golf course should be designed to be playable and fun given less than ideal conditioning. Long, all carry approach shots, which even for the best players require perfect fairway lies and soft greens, should be discarded in favor of greens with open approaches – from at least one angle – that permit running shots to reach their surfaces (Doak, 1992). In that sense, really good golf

architecture is independent of course maintenance. Professional golfer and architect Tom Watson sums this up very simply, stating, “if a course needs to be in perfect condition to be played correctly, then the design strategy is flawed” (Doak, 1992)

Allowing for less than perfect playing conditions through good design is a significant step toward making such cost reductions possible. But a certain standard of conditioning is important to make it possible for a golfer to appreciate the architecture of a course instead of focusing on its bumpy greens or patchy fairways. The maintenance standards and budgets of municipal courses vary widely -- some can be compared favorably with wealthy private clubs, others are so poorly kept it is impossible to value their architecture. In order for municipalities to offer an affordable product, it is critical to recognize the maintenance practices that are essential to enjoying good design and those that are superfluous and excessive.

Today’s American golf course maintenance practices are a product of golfers’ expectations. The typical American golfer expects perfection—uniformly thick turf, brilliant green grass, and intensely manicured ornament—no matter the cost or time of year (Doak, 1992). Influenced heavily by the impeccably conditioned courses televised each week during professional golf tournaments, and particularly Augusta National, home of the Masters tournament and seen in Figure 5-2, most golfers see this aesthetic both as a requirement for acceptable playing conditions, a sign of turf health, and an indication of the quality of the golf course (Keast, 2001). Many golfers tend to dismiss poorly maintained courses, including many municipal courses, as inferior, regardless of their architectural merit, because of their less-than-polished appearance.

Figure 5-2. Augusta National Golf Club (University of Florida Turf Club)

In order to meet these expectations, American turf management is geared toward achieving a certain look regardless of the weather or season. Morris explains that:

> "Maintenance practices in the U.S….can be characterized by using the optimum inputs necessary to manage turfgrass and meet golfers' expectations … In order to meet these expectations, U.S. superintendents use all available resources, including the course's revenue potential, to condition and present the golf course according to specific maintenance standards." (Morris, 2008)

In other words, American golf course superintendents will utilize whatever means necessary to satisfy golfers that expect wall-to-wall stands of bright green grass. In order to sustain that green color throughout the year and permit the ultra-short mowing heights expected of greens and

fairways, considerable amounts of water, fertilizer, and chemicals are applied to American golf courses. Though the grass might look spectacular, appearances can be deceiving:

> "The verdant green courses garnering praise as being 'in great condition' are often living right on the edge of major turf loss. Healthy turf has deep roots, allowing it to pick up nutrients during times of stress. The more the turf is irrigated and the lower the grass is cut, the shallower the root system becomes and the more the grass is subject to damage from pests or encroachment from poorer grasses or weeds. In order to keep the driest spots green, the superintendent must overwater the grass around them." (Doak, 1992)

Such practices encourage unhealthy turf requiring intensive amounts of work to achieve the desired appearance.

One particularly expensive and disruptive consequence of America's emphasis on appearance is the practice of overseeding. Commonly undertaken by courses in the Southeastern and Southwestern regions of the United States that feature bermudagrass fairways – which goes dormant and brown in the winter – overseeding is the process of growing a cool season grass, usually rye, on top of the dormant bermuda in the fall so that the golf course stays green throughout the winter. By the late spring, warmer temperatures allow the bermuda to outcompete the ryegrass and reestablish itself throughout the course ("To overseed or not to overseed that is the question," 2005). Overseeding requires huge amounts of input and labor, but effects no meaningful improvement in turf health. A USGA newsletter article summarizes why courses overseed: "To call it a cosmetic practice would be accurate, but also simplistic. The economic viability of thousands of golf courses and the job security of those who manage them loom beneath the pretty green surface" ("To overseed or not to overseed that is the question," 2005). In short, golf courses overseed because they need to be green in order to be profitable.

Overseeding is widely practiced despite substantial costs to golf courses and the following benefits derived from declining to overseed:

> "*Water conservation* – Dormant bermudagrass uses far less water than overseeded perennial ryegrass.
>
> *Uninterrupted play in the fall* – Courses avoid the disruption and course closure often required for overseeding.
>
> *No spring transition problems* – Without competition from overseeded ryegrass, bermudagrass can green up earlier in the spring.
>
> *Ease of weed control* – It is easier to control annual bluegrass and weeds in dormant bermudagrass with selective and non-selective herbicides.
>
> *Sustain a stronger strand of warm season grasses* – Many courses experience a gradual decline of bermudagrass density after years of renovation and overseeding. Without overseeding, courses can build a strong strand of bermudagrass throughout the fall that will provide better density and playing quality the following spring and summer.
>
> *Lower maintenance costs* – Courses that do not overseed may save $750 to $1000 per acre by not purchasing seed. Overall costs are lower for water, fertilizer, and mowing; plus there is less wear on equipment" ("To overseed or not to overseed that is the question," 2005).

Overseeding also affects the playing characteristics of golf courses. Ryegrass must be kept wet throughout the winter in order to stay green and growing. The dormant bermuda surface, seen in Figure 5-3, stays firmer and drier throughout the winter, resulting in increased bounce and roll after shots hit the ground. An important attribute of strategic links golf courses like the Old Course at St. Andrews, firm ground adds another dimension to the usual aerial game played on American golf courses by rerquiring golfers to consider the ground contours on each shot. In addition, "tee shots often roll farther, different clubs and types of shots are required, and hazards that are usually unreachable may now come into play. All of this adds up to a course that provides variety and challenges as the seasons change" ("To overseed or not to overseed that is the question," 2005).

Figure 5-3. A Dormant Bermuda Fairway (R&A)

Overseeding involves significant expense and sacrifices healthy turf and playability in order to provide a green golf course year-round. It is a reflection of the costs required to achieve the highly manicured look of American golf courses. But are the green grasses, flawless fairways and uniform roughs standard to American courses necessary for pleasurable golf? An investigation into the British aesthetic shows those characteristics are hardly essential to the enjoyment of the game.

British golf course maintenance standards have evolved significantly from the game's beginnings on the scrubby links, while still preserving the spirit of its origins. Up through the nineteenth century, the rabbits, sheep and cattle feasting on the common land provided enough "maintenance" to keep the native grasses under control. With such crude lawnmowers, golfers

learned to expect conditions that varied from course to course, hole to hole, and shot to shot, and to accept, and even relish, the inconsistencies and role of luck in the game (Doak, 1992; Mackenzie, 1995).

These values, developed over hundreds of years dating from the origin of the game in St. Andrews, continue to inform current British maintenance standards. Golfers in the U.K. place the greatest emphasis on maintaining areas of the course most essential to playing the game. British greenkeepers recognize that the most critical components of a golf course are its greens (Doak, 1992). On a golf course with poorly maintained putting surfaces the importance of strategic architecture becomes moot. If the bumpiness and inconsistency of a course's greens reduces putting to a game of chance instead of skill, then the advantage gained by placing one's ball on the proper side of the hole is lost, and with it, any strategic incentive to do so. Tom Doak observes that "the British philosophy stresses the upkeep of the greens, where the condition of the turf has most effect on scoring, and the area to be manicured is small. The rest of the course is left largely to the devices of Nature, because it is simply too large an area to maintain affordably" (Doak, 1992) British golfers accept the less than perfect conditions in those areas, and the increased role of luck that results, as integral parts of the game.

The continued popularity of the Black Course at Bethpage State Park, despite terrible conditioning by American standards, indicates that such an approach is workable in America. Upon taking over the superintendent job at Bethpage in 1997, Craig Currier observed, "…the bunkers were almost all depleted. The cloth liners they'd put in there 15 years before were sticking out. The fairways were clover and weeds and crabgrass. The tees were half dirt. The greens were actually in pretty decent shape" (Shapiro & Barrett, 2002). Even though the rest of the course's conditioning was substandard, the greens were kept in reasonably good condition,

thus underscoring the importance of greens maintenance to the golfer's ability to appreciate and enjoy good architecture. While perhaps not a conscious management decision on the part of Bethpage, the popular acceptance of the course conditions there supports the natural approach to maintenance practiced in the U.K., which stresses the upkeep of the greens.

This natural approach to affordable maintenance requires British greenkeepers to approach "…course conditioning in the U.K. [as] an ecological system, requiring a long-term commitment to maintain a golf course with minimal inputs where soil is managed carefully and the turfgrass is adapted to its unique setting" (Morris, 2008). British golf courses typically consist of several types of grasses that function like a well-diversified portfolio of stocks, insulating the turf against stresses and disease. On a course with a sward of fescues, bents, and bluegrass, for example, the relative mixture of the grasses will vary naturally according to location and the time of year. The bents might thrive in the low areas, the fescues in the higher and drier spots, while the bluegrass may take over during unusually warm and wet times that would otherwise drown the fescues (Doak, 1992). The policy of minimal inputs – water, fertilizer, and chemicals – means the turf is extremely well adapted to its natural environment (Morris, 2008). In the height of the U.K summer, the deep root system cultivated by this management style allows the grass to go dormant and brown during dry spells – as in the photo depicting the sixteenth fairway at the Old Course shown in Figure 5-4 – and green back up when the weather changes. Overall, the British approach to turfgrass management is very natural and Darwinian – the grass is required to survive on its own and its appearance is dependent on the weather and the season.

Figure 5-4. Summer Dormancy on the Old Course (Michael McCartin)

The British approach to golf course maintenance is a viable model for municipal golf courses in the United States. By stressing the quality of the greens, maintenance efforts are focused on the areas most essential to a golfer's enjoyment of the course. By treating the rest of the course as an ecological system, as opposed to an artificially green and uniform showpiece, the turf becomes well adapted to its location and the golf course requires a minimum of inputs. The benefits of this approach, relative to the prevailing American practices, are manifested in the form of lower total maintenance costs, improved characteristics of the playing surface, and healthier turf that is maintained in a more environmentally sensitive manner.

Probably the most important benefit to American municipal golf courses is monetary. The British method of turf management affordably achieves a sufficient standard of maintenance for golfers to appreciate the course design, but typically use less labor and chemical inputs than American courses. Michael Morris, superintendent of Crystal Downs Country Club in Frankfort, MI explains that:

> "Greenkeeping in the U.K. is generally characterized by a small staff: six workers caring for a private 18-hole country club is an average staff – eight would constitute a large staff. In the U.S. a similar 18-hole facility might employ 16 to 20 workers on its maintenance staff during the peak season. Consequently, operating budgets for course maintenance are much lower in the U.K. than in the U.S…The membership and the clientele know exactly what to expect from this level of maintenance, including the different playing conditions they will encounter throughout the year. In the U.S., by contrast, our clientele expect our courses to look and feel the same all year and be in excellent condition during the peak playing season" (Morris, 2008).

Considering that labor costs average out to over fifty percent of the total maintenance budget, savings in that area alone would drastically reduce expenditures for American golf courses (*Maryland Turfgrass Survey - 1996: An Economic Value Study*, 1996).

A more natural approach to golf course maintenance also produces a generally firm playing surface that is superior to that of most American surfaces. The over-watering necessary to achieve the desired conditions of American courses encourages a one-dimensional game dominated by aerial shots that finish very close to where they land. That type of golf reduces the game to a relatively thoughtless point-to-point affair, which lacks the ground game options that are so important to the strategic complexity of links courses like St. Andrews. The British approach would therefore eschew the practice of winter overseeding, as the dormant condition of bermudagrass naturally exhibits ideal playing characteristics, much like the firm and fast summer dormancy of fescues embraced in the United Kingdom.

Finally, the ecological approach to golf course management is more sensitive to the environment and particularly relevant to water and chemical use restrictions that may be on the horizon. Recently, drought in the southeastern United States has led to drastic water use restrictions that wreak havoc with traditional American maintenance practices. Many areas of the country are currently considering limiting the use of chemical inputs on golf courses or even banning them entirely (Klein, 2007a, 2007b). As water resources become ever more valuable, and protecting the watershed from fertilizers and chemicals a priority of utmost importance, some form of water and artificial input restrictions would appear inevitable (Klein, 2007a). The British priorities with regard to golf course maintenance would thrive under such restrictions by focusing intensive turf management only on the greens' surfaces. By taking a more ecological approach to turf management for the rest of the course, "the chemically maintained area of the course could be decreased by as much as 90 percent" (Doak, 1992). Reducing chemical use makes has significant economic benefits as well – chemical expenses for many courses amount to around 5% of the maintenance budget, meaning a course with a $1 million budget could potentially save $45,000 per year (Hilbun, Mio Country Meadows). Golfweek editor, Brad Klein, in an article considering the future of golf course management in America, recognizes the relationship between environmental sensitivity and the economics advantage, observing that:

> "…courses must have more maintenance flexibility built in, including more naturalized rough and less dependence upon high-nitrate, high-phosphate inputs. To some golfers, the shift from lush, dense green turf cover to a more varied surface is a problem. But for a growing generation of smart managers, that's the better path to sustainable ecology and sound business" (Klein, 2007b).

To date, very few American golf courses have attempted to implement the British tradition of turfgrass management. This may be due to the fact that such a survival-of-the-fittest approach takes time to establish a full and consistent playing surface (Morris, 2008). In addition,

the British climate and soil types are very conducive to growing the fescues and bents that have naturally thrived there for centuries. American climates and soil types are different, so it is not simply a matter of transporting British practices across the pond. But the British approach is a philosophy of turf management, not a set of rigid directions to be followed to the letter in every location. Instead, it is a "…low-input, ecology-driven approach to turfgrass maintenance [that] strives to promote grasses that are naturally adapted to low-input maintenance practices – grasses that thrive with almost no input at all" (Morris, 2008). The key is that the grasses used become adapted to the unique properties of each golf course without the aid of chemicals and fertilizers, or excessive amounts of water.

A few courses built recently have pioneered the effort to apply the British approach to maintenance in the United States. The three courses at Bandon Dunes Resort located in the sand dunes on the Oregon coastline enjoy a climate very similar to that of the British Isles and, as a result, employ similar grass varieties and maintenance techniques to the traditional British links courses. Ballyneal, located in the chop hills of eastern Colorado, makes for a more interesting study. The boiling hot summers and cold, snowy winters experienced in that climate have required restraint and patient management over the course of several years in order to develop a sward able to withstand such extremes (Walsh, 2008). The ability to create a successful playing surface in those conditions, with drastically fewer inputs than the typical American course, is a testament to the flexibility of the British approach. Its success in any climate or soil conditions depends primarily on selection of the right type of grasses and the patience to establish a hardy stand of turf with a minimum of water, fertilizer, and chemicals. In more extreme climates or heavier soils, the standard of fairway maintenance may have to be lowered in order to ensure healthy and durable turf. Nevertheless, the economic, environmental, and playability benefits of

such an approach make it ideal for municipal golf courses, whose standards were already lower than the typical American course.

Establishing a hardy sward of turf using the British approach to management, as at Ballyneal, is one process; converting existing turf that is babied by typical American maintenance practices is another, and potentially more difficult, process. The Green Course at Bethpage State Park recently made an effort to test low-input maintenance practices by conducting a three-year study on its greens surfaces in response to pending legislation in Suffolk County that could potentially ban use of all pesticides and fungicides. Under the direction of turf scientists from Cornell University, researchers divided up the greens on the course into groups, each treated to a different management scheme ranging from no chemical applications to free use of all available chemicals (Klein, 2007a). They discovered that the short mowing heights and high traffic on the untreated greens caused them to succumb to debilitating diseases such as dollar spot ("Site of U.S. Open at Bethpage Is Sharply Reducing Pesticide Use With Such Techniques As Removing Dew and Vacuuming Weevils," 2002). But encouragingly:

> "…they quickly found out that 'light' chemical use was almost as successful as an unlimited use of chemicals. When you added in particular cultural practices and the use of organics to control the disease and pest pressures on turf, the conclusions were fascinating. What they learned was by selecting certain 'lower toxicity' products and limiting the spraying to a minimum and increasing certain cultural practices they could meet green expectations of around 9 feet and take the environmental impact down up to 90% from the unlimited approach." (Andrew, 2008)

So, in addition to reducing the chemically maintained area of the golf course by up to 90% focusing on greens maintenance using the British approach to turf management, on the 10% of turf that is chemically maintained, the Bethpage results indicate that, given the right approach, chemical use can be trimmed another 90% and still preserve quality playing conditions. Furthermore, the researchers found that increasing the mowing heights of greens leads to

healthier turf that can withstand more traffic and requires less chemical input ("Site of U.S. Open at Bethpage Is Sharply Reducing Pesticide Use With Such Techniques As Removing Dew and Vacuuming Weevils," 2002). This research, therefore, bodes well for managing fairways, which see less concentrated traffic than greens and have a much higher mowing height.

For municipal courses, the ecological approach to turf management is relevant primarily because it makes economic sense. It focuses maintenance efforts on the components of a golf course that are essential to enjoying the course design, thereby accomplishing the basic goal for municipal courses to maximize the golfer's enjoyment while minimizing overall costs. At the same time, the benefits in playability and environmental sensitivity are not to be discounted. The firmer, healthier turf and the resulting importance of ground-level contours brings into play an important and fun extra dimension to the game not found on overwatered American golf courses. The ecological benefits of minimal inputs means municipal golf courses could be an environmental pioneer in the industry, setting an example and providing valuable experience for other, wealthier golf courses to learn from in the future as environmental regulations become increasingly stringent.

Management

Effective management and decision-making are essential components of any successful business. Management must make crucial decisions given a business' fundamental goals and the constraints of the marketplace. Municipal golf management is no different. As detailed above, the fundamental objective of a municipal golf course is to maximize the quality of the golf course while minimizing costs to the golfer. But, as a municipal facility, this must be done without an undue burden to local taxpayers. Successful municipal golf course management, therefore, must work within these parameters to provide an affordable and pleasurable municipal

golf experience to the subset of the citizens that are golfers without adversely affecting the majority of local citizens that do not play golf.

Such a charge is often a tightrope not easily walked by municipalities, and there is no universal solution easily applied to every situation. Whether it is the number and type of golf courses owned by the municipality or the scope and breadth of union benefits due its employees, each situation is unique and requires its own thorough analysis to determine the best course of management (*City of Ann Arbor Business Plan: Golf Operations*, 2007). In general, municipalities have three options for managing their golf courses: overseeing the operation of the courses themselves, which can be accomplished in a variety of ways; farming out operations to a private company that specializes in golf course management; or managing through a private, nonprofit corporation organized specifically for the purpose. Each option has unique advantages and disadvantages, and each can be attractive to municipalities given the right circumstances (Cook, 1996).

Until fairly recently, most municipalities managed their golf courses themselves, and many still do. Municipalities traditionally have had several important advantages derived from the resources of the local governments that have allowed them to offer lower rates than private competitors for an equivalent product. Most municipal golf courses pay no real estate taxes, have no land acquisition costs, retain little or no debt, have access to credit at a below-market rate, obtain water from the municipality for free or at a highly discounted rate, and are not required to charge sales tax on greens and cart fees (*City of Ann Arbor Business Plan: Golf Operations*, 2007).

These advantages for municipal golf courses, however, do not ensure economic success, as they are negated to an extent by inefficiencies that also are a result of their relationship with

local government. The slow-moving political process typically determines budgetary allocations only once per year, meaning municipal golf courses cannot react quickly to address necessary capital improvements, which often take years to garner approval at the expense of deteriorating course conditions. Moreover, municipal golf course revenues are typically put into a general fund, enterprise fund, or revenue authority controlled by politicians that do not always have the best interests of the golf courses at heart (Cook, 1996). Golf course revenues are commonly used to finance other programs, even while the course itself is underfunded. The fact that, "a golf course is a living organism that requires constant reinvestment in the greens, tees, fairway, bunkers, and roughs," is often lost on politicians who see currently acceptable conditions as evidence of future success (*City of Ann Arbor Business Plan: Golf Operations*, 2007). Money that is allocated for capital improvements and other projects is subject to a time-consuming bidding process that makes it difficult to negotiate the best price with the most qualified vendor (*City of Ann Arbor Business Plan: Golf Operations*, 2007). In addition, municipal golf courses are often burdened with labor costs that far exceed their competition by employing more full-time workers that receive sizable mandatory benefits packages as government employees (Cook, 1996). Many of these workers are union members with work rules and overtime restrictions that can also increase expenses (*City of Ann Arbor Business Plan: Golf Operations*, 2007). Finally, municipalities may not have employees that are sufficiently experienced in operating golf courses, which requires a variety of highly specialized skills (Youhn, 2000).

Up until the late 1980s, municipalities generally were able to offset these inefficiencies by capitalizing on their advantages over private golf courses. In this way, they were able to provide affordable golf to local citizens that was profitable, or at least not unprofitable, for the

municipality. As evidenced by the following statistics, the post-World War II era saw a rise in the construction of privately owned, public, daily-fee golf courses that peaked in the 1990s:

> "In 1950, 62% of all courses were private. By 2005, private courses constituted only 27% of all golf courses, as daily fee facilities increased from 23% to 58% of all golf courses. While the number of municipal courses remained constant at 15%, the competition to attract the public golfer increased 250%" (*City of Ann Arbor Business Plan: Golf Operations*, 2007).

The increased competition has driven greens fees down across the board and, in light of increased maintenance and other operating costs, it has made it more difficult for municipalities to make money or break even on their golf operations. Currently, a significant number of municipalities annually lose money, into the hundreds of thousands and even millions, on their golf course operations (Youhn, 2000). And while golf operations may never have been allocated the necessary funds for adequate capital improvements and day-to-day maintenance by many municipalities, losing money only leads to budget cuts that exacerbate the problem. As a result, the condition of the golf course, its facilities, and equipment suffers at the expense of the golfer's enjoyment and the course's revenues. "The combination of overpriced and underfunded is a perilous mix that will lead to long-term losses without a substantial risk of investment" (*City of Ann Arbor Business Plan: Golf Operations*, 2007) Such a downward spiral forces municipalities to review their role in golf course management and perhaps look elsewhere for management help (*City of Ann Arbor Business Plan: Golf Operations*, 2007; Cook, 1996).

Many municipalities have addressed this problem by leasing their golf courses to a private company that specializes in golf course management. "Between 1987 and 1995 (the last year data were available), the number of cities contracting for golf-course services increased by almost 67 percent, bringing the total percentage of cities contracting for golf-course operations to around 25 percent" (Snell, 1999). In exchange for a rental payment, the municipalities transfer

control of the golf course and its revenues to the private company (Youhn, 2000). This type of agreement can have several advantages for municipalities over operating golf courses in-house. Most importantly, private companies provide experienced golf course management personnel and a proven track record of turning around struggling facilities. In addition, they relieve municipalities of the financial burden of subsidizing unprofitable golf courses. Private companies also bring necessary capital to undertake projects that municipalities could not or would not fund, providing the opportunity for municipalities to "invest" in their property while receiving a steady income stream from the lease agreement (*City of Ann Arbor Business Plan: Golf Operations*, 2007; Youhn, 2000). Often the playing conditions, service levels, and overall golf experience of the operation are quickly improved upon leasing a municipal golf course to a private management company (*City of Ann Arbor Business Plan: Golf Operations*, 2007).

Earning money from a lease that requires municipalities to do very little in return may seem like a no lose proposition, but there are several major drawbacks to such agreements. Private management companies are not in the business to turn around the failing golf courses of municipalities solely out of the goodness of their hearts; instead they do so to make a profit off of municipalities' inefficiencies. There is nothing inherently wrong with that, but the profits are inevitably divided three ways: between the management company, taxes, and the golf course. Regardless of the way profits are split up, a large percentage leaves the municipality (Cook, 1996). Furthermore, any large capital improvement projects undertaken by management companies require reasonable rates of return that typically either take the form of leases that strongly favor the management company or greens fee increases, which can turn off existing customers and price potential customers out of the market (*City of Ann Arbor Business Plan: Golf Operations*, 2007; Youhn, 2000). Profitability, for management companies, is made

possible in part by streamlining operation of the golf courses. In most cases, this comes at the expense of the existing labor force, most of which must be let go because of their large benefit packages. These former government employees are then left jobless as a result of privatization (*City of Ann Arbor Business Plan: Golf Operations,* 2007).

In addition to the above, lease agreements entail a loss of control for municipalities over their valuable assets. Such leases usually are good for a period between five and ten years, with some lasting significantly longer (up to fifty years) (Youhn, 2000). And, "as long as the lessee is not causing 'asset degradation' or violating the terms of the agreement, the municipality has no power to dictate how it wants things done" (Youhn, 2000) Leases, moreover, are difficult for inexperienced municipalities to negotiate and, consequently, there are many examples of one-sided leases that are disproportionately beneficial to the lessee at the expense of the golf course and the value of the municipality's asset. As a result, it is extremely important that a lease is carefully drafted to reflect exactly the expectations of the municipality for the lessee and it is equally vital that the municipality monitor the management company's compliance with the lease (Youhn, 2000).

Both leasing to a private management company and managing the golf courses in-house can be effective options for municipalities. But each option also has drawbacks that can potentially compromise the long-term viability of golf course operations. A third alternative, managing golf courses through a nonprofit corporation created specifically for the purpose, combines many of the best features of the previous two options while minimizing the negative aspects. The nature of such a nonprofit, also known as a 501(c)3 corporation, requires it to put all operating income back into the golf courses themselves. Consequently, no money leaves the municipality and everything earned in excess of normal operating expenses can be utilized for

capital improvements. And for large capital projects, financing can be obtained through the private sector and tax-deductible donations without using any tax dollars (Cook, 1996). In fact, the role of politics is almost entirely eliminated with a nonprofit because they are typically controlled by a board of directors whose composition, once established, cannot be altered except by a vote of the board itself. The sole goal of the nonprofit and its board is, "to manage golf course operations on behalf of the citizens of the municipality" (Cook, 1996). Other benefits of this approach include local management that can respond quickly to problems and expediently address budget concerns. Finally, all golf course workers are employees of the nonprofit corporation and not civil servants or union workers (Cook, 1996).

Baltimore, Maryland formed the first nonprofit management corporation in 1986. Lynnie Cook, in a comprehensive analysis of this pioneering effort, describes the circumstances that led to its creation:

> "Baltimore, like many municipalities, had experienced financial and operational problems trying to manage its five golf courses. During the late 1970s and early 1980s, Baltimore lost more than $500,000 annually on the operation of its five municipal golf courses. The lack of profitability resulted in a reduction of the funds allocated to the golf courses by the City Council and Parks Departmetn. This reduction of funding resulted in the facilities falling into total disrepair…Budget reductions also caused the playing conditions to deteriorate" (1996, p1).

Led by Mayor William Donald Schaefer, the municipality formed a committee to consider its problems and recommend a solution. After reviewing all of the alternatives, the committee advocated the formation of a nonprofit 501(c)3 corporation – the Baltimore Municipal Golf Corporation (BMGC) – to oversee the golf courses. The committee also identified several potential problems that would need to be addressed. Among those issues was the newly formed corporation's lack of assets – solved by the municipality by issuing a small loan to cover the first month's expenses and a line of credit to replace badly worn maintenance equipment (paid back

over a five-year period). Another issue concerned the fate of existing employees – addressed by ensuring all existing golf course personnel would remain employed by the city if they chose to do so and allowing the BMGC to offer contracts on their own terms to any employees it wished to retain (Cook, 1996).

A ten-member Board of Directors composed of prominent business leaders, the president of the Park Board, and average golfers provides the BMGC with strong business acumen free of political influence while remaining grounded in the wants and needs of the golfers that frequent the courses (Cook, 1996). The first steps taken by the corporation in the late 1980s addressed a few major problems with the existing operation. The golf professionals had enjoyed lucrative contracts with the municipality that included revenue from city-owned property, such as cart rentals. The professionals became employees of the corporation and now receive a performance-based salary that more properly reflects their contribution to the operation. Under municipal control, wages had swelled to 85% of the whole operating budget despite an industry average of 57%; the benefits package totaled 50% of the labor budget. The city employed 120 full-time workers and no seasonal or part-time workers, resulting in too many workers in the off-season and too few in the high season. The BMGC was able to trim labor costs to 56% of the operating budget by reducing full-time staff to 65 employees, hiring seasonal workers as needed (over 300 total in the summers), and reducing the benefits package to 35% of the labor budget (Cook, 1996). Several other problems that plagued the municipal operation, including insufficient funding and political meddling, were taken of by nature of the nonprofit management structure.

The decisions made by the BMGC have proven to be very successful. In its first ten years of operation, the BMGC saved the city of Baltimore over $5,000,000 and was able to effect more than $4,200,000 in capital improvements without the use of tax dollars or bond issues. Revenue

from greens fees provided the funding for operational costs and capital expenditures (Cook, 1996). At the same time, citizens of Baltimore enjoy well-maintained golf courses featuring the lowest greens fees in the Mid-Atlantic region – currently about $25 for 18 holes ("A Legendary Past. A Model for the Future.,"). In 1992, the BMGC established an activities fund that enables local youths to compete in regional and national tournaments to which it contributes $225,000 annually (Cook, 1996). On top of that, the BMGC has donated over $4,000,000 to other Baltimore youth programs. Such achievements have earned the BMGC numerous awards, including the Reilly Award recognizing the best ideas for change in the realm of American parks and recreation ("A Legendary Past. A Model for the Future.,").

Cook sums up the appeal of the private, nonprofit approach thusly: "…[it] works because it is operated and managed like a business. One that is sustained by the very people it is chartered to serve…the golfing public" (1996, p3). This statement is not necessarily true for the other management options. If a municipality is making money off of its golf operation by managing it in-house or leasing to a private, for-profit company, then it is possible nothing needs to be changed. But the nonprofit management model has all of the advantages inherent in municipal management without its political inefficiencies and potential burden to taxpayers. Nonprofit corporations can be run like a business, just as specialist private management companies, but they can do so without significant revenue leaving the municipality. Therefore, everything else being equal, nonprofit management offers municipalities the best opportunity to run an economically sustainable golf operation that provides affordable golf to local citizens without costing taxpayers a dime.

Conclusion

The problem of municipal golf can be viewed as a mathematical equation with variables representing architecture, maintenance, and management. Given an assumption derived from case studies of significant municipal golf courses – that architecture is the most important determinant of a golfer's enjoyment so long as the course meets basic maintenance criteria – it is reasonable to solve for each of the variables such that the golfer's pleasure is maximized, while his costs are minimized. The conclusions reached in this chapter regarding architecture, maintenance, and management represent the ideal solutions to the municipal golf problem.

Minimizing costs requires municipal courses to forgo the excesses of many modern golf courses and focus on the essence of golf itself – the fun derived from playing the game. From an architectural perspective, this means designing efficiently to make the most of the land and its natural features without resorting to splashy waterfalls, excessive grading, or other gimmicky features. With regard to maintenance, this entails implementing a management regime that affordably achieves conditions that do not detract from the architecture. The chemical restrictions that threaten the staggeringly expensive maintenance standard in America cannot be addressed solely by engineering new types of grasses or more accurate irrigation systems, though such innovations can help; instead it is a matter of recognizing that green and pristine conditions are not necessary for golfers' enjoyment and actually detract from courses' playability. Municipal golf facilities, by adopting the maintenance principles of British turf managers, can set an example for other courses to follow. Finally, such a different approach requires that management understand these priorities and transmit them into every aspect of its operations. More than the other management options, a nonprofit corporation is most able to do so by always acting with the interests of its golfers and golf courses first in mind.

# CHAPTER 6

# EAST POTOMAC PARK GOLF COURSE REDESIGN

## Introduction

The goal of the McMillan Plan and subsequent proposals for Potomac Park was to provide a model public playground for citizens of Washington, D.C. that would be a worthy and necessary complement to the grand monuments also planned for the park. As it exists today, however, the largest and most visible component of East Potomac Park – the golf facility – instead epitomizes the typical bland municipal golf experience in the United States. It is affordable golf, but the course has little architectural merit, is in shabby condition, and is managed without the long-term health of the operation as first priority. But it does have potential: the facility has a history of profitability, a large existing customer base, a rich history that once included an interesting and strategic golf course, and it is conveniently located a mile or two from the heart of the city's business and government workers, as well as within easy reach of countless residents of the District, Maryland, and Virginia. This chapter proposes a plan to redesign and restructure East Potomac Park's golf course to mine its untapped potential.

The goal of the redesign is to fulfill the original mission statement from the McMillan Plan by creating a facility that can serve as a model for other municipal operations throughout the country – one that proves interesting strategic architecture and affordable golf are not mutually exclusive. The redesign will synthesize the architectural principles derived from the well-known and successful municipal facilities investigated in chapter three with the cost-conscious architectural, maintenance, and management characteristics of an ideal municipal

course explored in the fourth chapter. Consequently, this chapter not only focuses on a redesign of the golf course, but also addresses the management structure and maintenance practices for East Potomac Park that will enable the facility to maximize architectural quality at a minimum of cost to Washington area golfers.

Site Organization

As discussed in chapter two, the 1927 design of East Potomac Park's golf course exhibited the strategic principles characteristic of the most highly regarded and enduring designs of that era. At that time, therefore, it is possible to say that the golf course realized the ambitions of the McMillan Plan. So why not rebuild the course exactly how it existed in 1927? There are several reasons why such a restoration would not be the best course of action. First, and most importantly, the original course did not drain well at all, resulting in hazardous, water-filled sinkholes and generally wet and soggy conditions that have plagued the maintenance of the course throughout its history. Second, the 1927 design relied too much on bunkers for its strategy. In order to create an interesting set of strategic problems for a reversible course on a very flat piece of property, Walter Travis and subsequent architects scattered almost 150 sand hazards about the site. Grouped in clusters and featuring a variety of fascinating, but contorted shapes to ensure visibility from two directions, the bunkers must have been difficult and costly to maintain, which most likely led to their removal. For the same reasons, the original bunkering scheme would be impractical for the operating budget of an ideal municipal golf course today. Finally, restoring the 1927 layout would require moving the driving range from its current location back to the portion of the site now occupied by the red course. This too would not be practical, as the size of driving range has increased from its original dimensions, rendering the site of the red course too narrow to support the current number of stalls.

The original location of the driving range on the site of the red course may not be feasible anymore, but its current location is decidedly not ideal (see Figure 6-1.) Its position in the central portion of the peninsula, enclosed by an unsightly wall of netting, creates three new, man-made boundaries within the property. The netting is visible from both the blue course and the white course, but more importantly, the boundaries divide the site into awkward parcels, thereby cramping together the routing of the blue and white courses so that the two opening holes of the white course can play around the range to reach the body of the course.

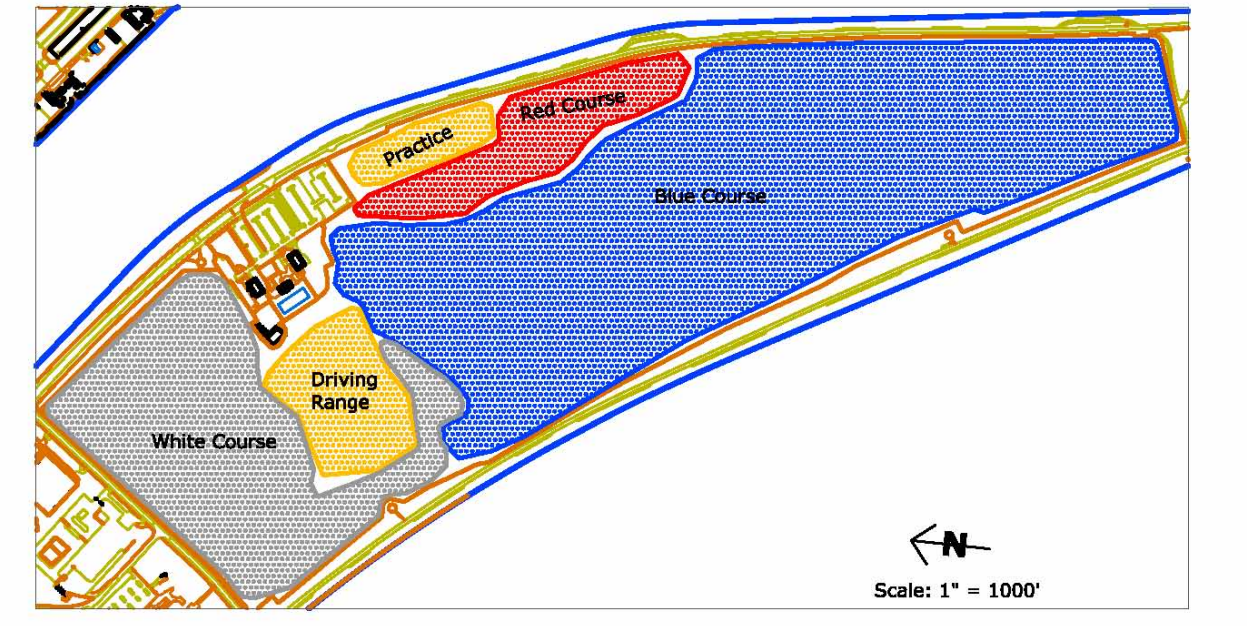



Figure 6-1. Existing Organization of East Potomac Park

In light of this problem and in an effort to make best use of the property, the redesign organizes the primary components of the East Potomac Park facility in a different way (see Figure 6-2.) The driving range will move to the northwestern corner of the peninsula, where the sixth through ninth holes of the white course are currently located. This new location utilizes

three existing boundaries – the northern and western property lines, and the field house and maintenance buildings – therefore requiring only one wall of netted fencing to enclose the range. The new netting boundary will be visible solely from the white course and only one hole will play alongside it. Both the white and blue courses will expand into the area currently occupied by the driving range. Overall, the area of the blue course will increase to its original size, while the white course's area will be reduced slightly. The location of the red course will stay the same, though it too will be made a bit smaller in size.

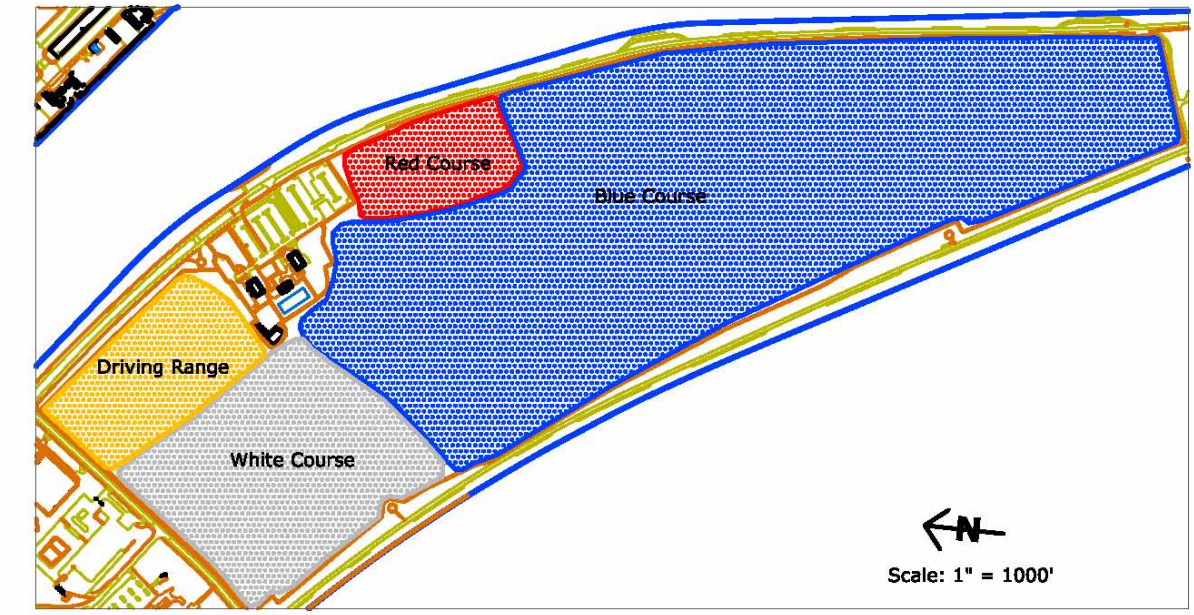



Figure 6-2. Proposed Reorganization of East Potomac Park

Relocating the driving range to the proposed position will unify the area of the site occupied by golf courses into an uninterrupted whole. The first and last holes of each course, in addition to the driving range, will be within an easy walk of the field house (an improvement over the current situation where the first tee of the white course is uncomfortably squeezed in

between the range and the tenth tee of the blue course). Furthermore, the expanded area of the blue course gives it the width necessary to restore the most distinctive feature of the 1927 design – its reversibility – and the room to accommodate the increased length of modern golfers. Unfortunately, the size of the new parcels for the red and white courses are not large enough to be reversible, but that will not affect the target skill levels for the redesigned courses: the red course will continue to be geared to beginners, the white course to seniors and juniors, and the blue course to better players.

Drainage

Transforming the East Potomac Park golf course into an ideal public playground is a unique problem. As detailed in the two previous chapters, the architecture of an ideal municipal course would capitalize on the natural features of its property to create a strategically interesting design that is playable for golfers of all abilities and maintainable to a reasonable standard at a minimum of cost. The only natural feature of the East Potomac Park site, however, is its flatness, which was used effectively in the original design to create a reversible golf course. But its flatness is also the root the course's most significant problem – poor drainage.. Figure 6-3 shows the existing topography of East Potomac Park – the gentle slopes are insufficient for surface drainage and the numerous depressions cause the course remains perpetually soggy. The wet conditions are a maintenance and playability nightmare. It may be possible to fix the situation with an extensive network of underground piping at great expense, but the issue of poor drainage can be tackled most practically as an integral part of the design process.

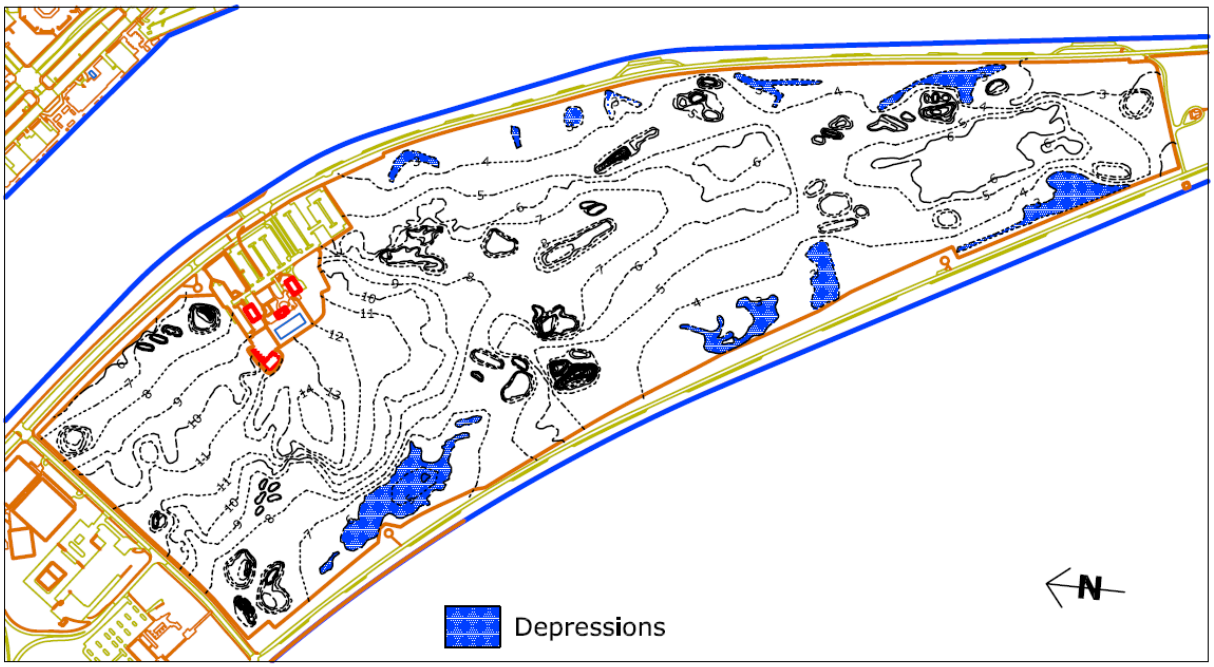



Figure 6-3. Existing Topography of East Potomac Park – 1 Foot Contour Interval (Scale 1"=1000') (National Parks Service)

The first and most important issue for a successful redesign of East Potomac Park's golf course, therefore, is drainage. To drain well, the entire site needs to be recontoured with fill so that the course will shed water and remain dry throughout, thereby facilitating its maintenance and enhancing the health of the turf and the playability of the surface. But just as importantly, the new topography, if conceived creatively, can be used as the driving force for the routing and architecture of the redesigned course. If the issue is to be solved completely, the fill required to ensure good drainage needs to be of a sandy, and therefore well-draining, nature. While sandy soil may be more expensive, it will require less fill overall to create minimum, well-draining grades and any additional cost will likely be recouped by reduced maintenance costs over time.

The redesign will transform the East Potomac Park golf course from a low lying, poorly draining, obviously man-made fill pad into a well-draining, cohesive landscape reminiscent of

naturally occurring islands in the Potomac River. Specifically, the redesigned topography of the golf course is loosely patterned after Roosevelt Island – a naturally occurring landmass near the Virginia bank, just upriver from East Potomac Park. The island features a general upslope on its upriver side and the side closest to the shore that builds to a high central plateau, some forty feet above river level, which traverses the length of the island. On the downriver side and the part of the island facing the river, the plateau drops abruptly to a low plain that is drained by a narrow inlet of water that feeds into the river.

The same general landforms, but on a smaller scale, were used to create the new topography for East Potomac Park, visible in Figure 6-4. Given the financial constraints of a municipal project, the flatness of the surrounding land, and the cramped nature of the site, it would be impractical to build features on the scale of Roosevelt Island. The current topography of East Potomac Park ranges from thirteen feet above river level around the field house and in the western portions of the peninsula gradually down to two feet at the edges of the course at the eastern end of the site. The redesigned topography for the park uses the current field house elevation and those along the property boundaries as fixed starting points from which to build out. The primary feature of the new landscape will be a long plateau originating in the central portion of the blue course and extending eastward almost to the end of the property. Like Roosevelt Island, the slope up to the plateau is much gentler on the river side of the peninsula and steeper on the channel side. The plateau will generally rise to an elevation of about fifteen feet above river level, building to as high as twenty feet in places. Moving west from the plateau, the land will drop down into an existing low before building gradually back up to the high area around the field house and a series of smaller plateaus on the land reserved for the white course.

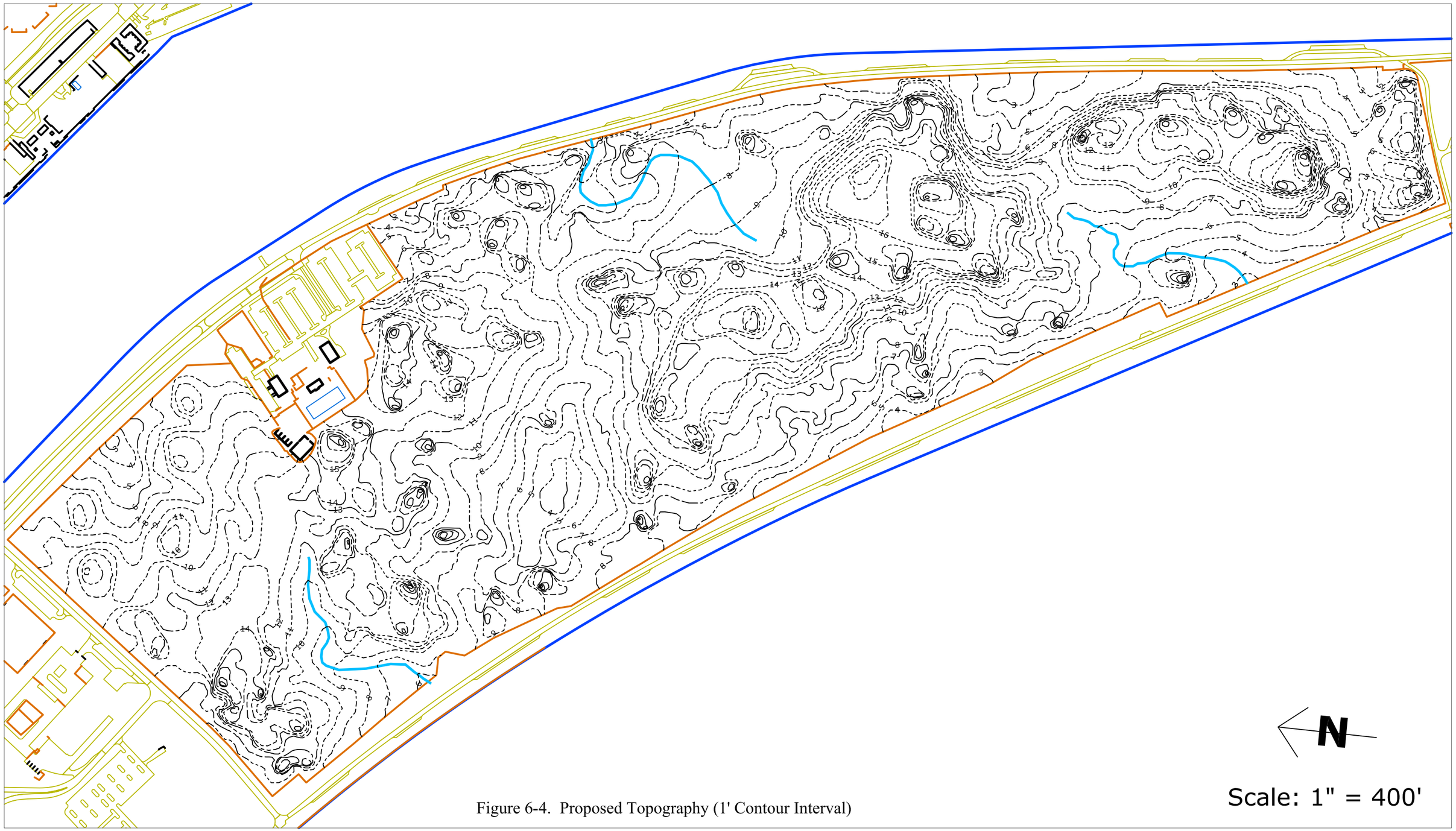



Figure 6-4. Proposed Topography (1' Contour Interval)

The redesigned topography will resolve the perpetual drainage problems of the East Potomac Park site by creating slopes around the playing areas of the course that enable sufficient surface drainage for it to remain relatively dry after a rain event – the minimum slope is one percent, but most areas of the course will be 2% or more. Successful drainage is accomplished in different topographic ways across the property. The main plateau breaks up the land east of the field house into two large watersheds and a few smaller ones. Drainage in each of the largest watersheds is facilitated by a formalized, artificial swale running through the lowest point of the area. The swales will be two feet deep and five feet wide with steep sides. Their sides and bottoms will be vegetated and the grass inside will be allowed to grow to a longer height than the rest of the course. The end result will look similar to the swales used at Plainfield Country Club in New Jersey seen in Figure 6-5.

Figure 6-5. Plainfield Country Club Drainage Swale (Golfclubatlas.com)

The swales will serve an important functional purpose – their bottoms can be wet and will slope at .5%, thereby enabling the watersheds to be larger and more topographically interesting than what would be possible if the entire course had to surface drain, as well as requiring less fill overall to adequately drain the site – in addition to being utilized as a primary strategic element in the golf course redesign. In the central portion of the peninsula, an existing low area will be expanded to receive water falling between the field house and the western end of the plateau. The bottom of the depression will be an out-of-play area that can remain wet and relatively unmaintained, thus minimizing its impact on the playability and maintenance costs of the golf course. The area west of the field house, to be occupied by the white course and driving range, will be divided into two watersheds: one consisting of most of the white course and drained by another formalized swale running between two small plateaus; the other made up of a small portion of the white course and all of the driving range and collecting water in a series of gentle, more natural swales that facilitate golf ball retrieval.

Architecture

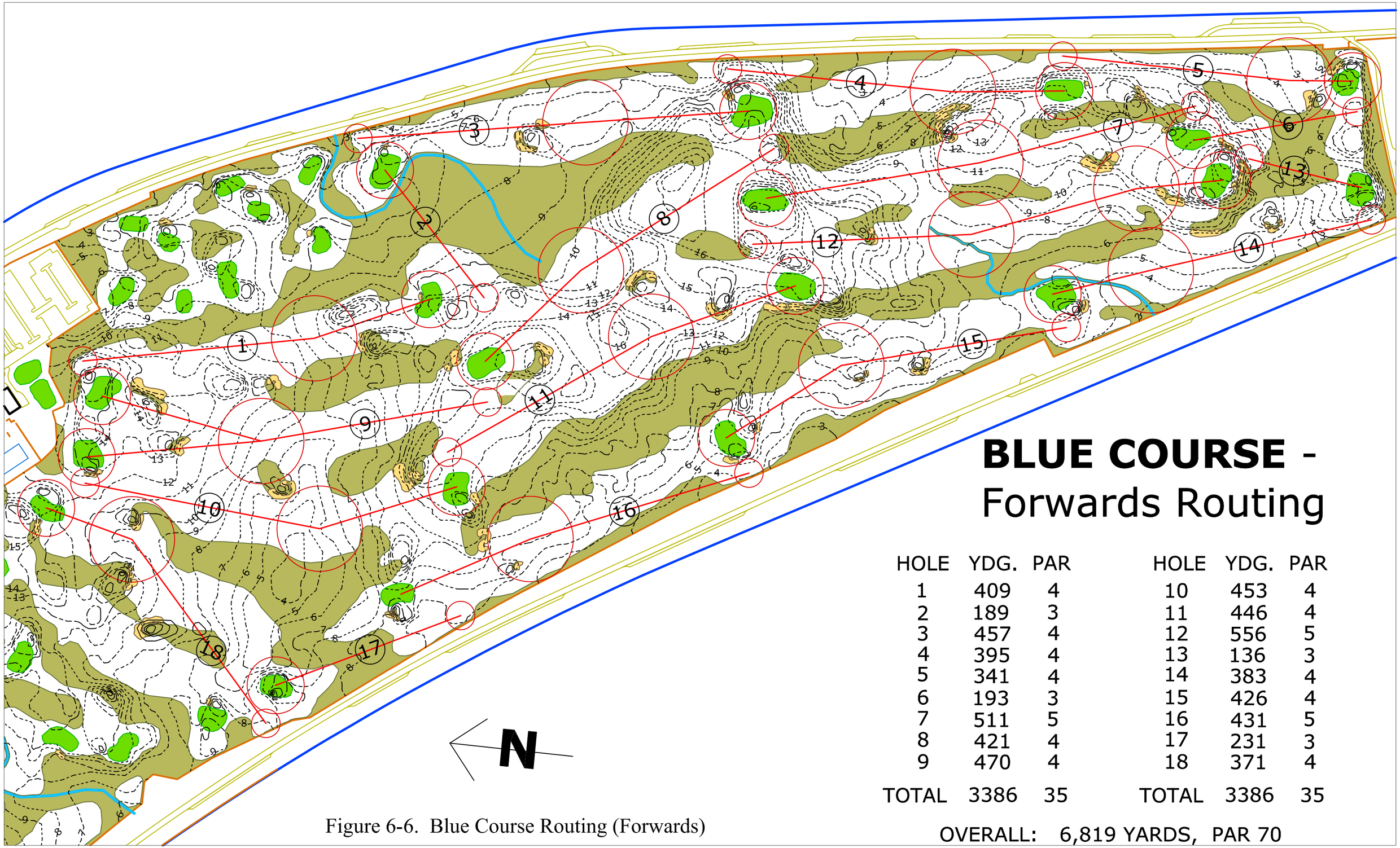
The redesigned topography of the East Potomac Park site was conceived with more than just drainage in mind – it will also be the creative inspiration for the routing and architecture of the new course. One of the major impediments to restoring the 1927 design was the unwieldy amount of bunkers that were necessary for its strategies. As a result, the redesigned course will minimize the total number of bunkers by utilizing the new contouring of the property for its strategy where feasible. Furthermore, the bunkering that is used will have relatively simple shapes, instead of some of the contrived geometries featured in the original course, thereby minimizing maintenance costs and making it more likely that the bunkering will survive lean budgetary times.

**Blue Course**

The blue course will be the flagship layout of the redesigned East Potomac Park facility. As mentioned earlier in the chapter, the new course will again be reversible, thereby recapturing the most distinctive feature of the 1927 course and making the facility stand out amongst all other courses in the United States. In addition to the reversibility, the architecture of the blue course will attempt to emulate the principles of the ideal municipal course gleaned from the Old Course in chapter three. To that end, the course will be strategically interesting and challenging for the best players, while remaining playable and fun for beginners.

The most difficult part about creating a reversible golf course is the routing, which needs to play equally well in both directions and be safe for golfers using each of the different combinations of nine holes. To that end, the overall layout of the course will basically follow the 1927 routing, with the hole corridors generally parallel to one another in order to fit onto the narrow east end of the peninsula (see Figures 6-6 and 6-7.) The new topography helps to separate the holes – for the most part, a single file row of holes run along the outside of the peninsula along the river and channel, and below the main plateau, upon which sits a corridor of suitable width for two rows of holes. Most of the greens are located atop small ridges, plateaus, or knobs to ensure visibility from both directions. The course will feature three greens around the field house that can be used alternately depending on the direction of that day's play.

The nature of the blue course routing, with many parallel holes and the requirement to accommodate reversibility, lends itself to the design characteristics of the Old Course described in chapter three. Thus, the redesign attempts to capture those general characteristics – extremely wide corridors of playable area dotted with very penal hazards, contouring on a wide variety of scales, complex strategies, and the importance of the recovery shot – in the architecture of the




# BLUE COURSE - Forwards Routing

| HOLE | YDG. | PAR | HOLE | YDG. | PAR |
|---|---|---|---|---|---|
| 1 | 409 | 4 | 10 | 453 | 4 |
| 2 | 189 | 3 | 11 | 446 | 4 |
| 3 | 457 | 4 | 12 | 556 | 5 |
| 4 | 395 | 4 | 13 | 136 | 3 |
| 5 | 341 | 4 | 14 | 383 | 4 |
| 6 | 193 | 3 | 15 | 426 | 4 |
| 7 | 511 | 5 | 16 | 431 | 5 |
| 8 | 421 | 4 | 17 | 231 | 3 |
| 9 | 470 | 4 | 18 | 371 | 4 |
| TOTAL | 3386 | 35 | TOTAL | 3386 | 35 |

OVERALL: 6,819 YARDS, PAR 70

Figure 6-6. Blue Course Routing (Forwards)

# BLUE COURSE - Backwards Routing

| HOLE | YDG. | PAR | HOLE | YDG. | PAR |
|---|---|---|---|---|---|
| 1 | 491 | 4 | 10 | 358 | 4 |
| 2 | 401 | 4 | 11 | 198 | 3 |
| 3 | 546 | 5 | 12 | 430 | 4 |
| 4 | 146 | 3 | 13 | 418 | 4 |
| 5 | 340 | 4 | 14 | 391 | 4 |
| 6 | 400 | 4 | 15 | 162 | 3 |
| 7 | 452 | 4 | 16 | 484 | 4 |
| 8 | 177 | 3 | 17 | 509 | 5 |
| 9 | 420 | 4 | 18 | 464 | 4 |
| TOTAL | 3373 | 35 | TOTAL | 3314 | 35 |

OVERALL: 6,787 YARDS, PAR 70

Figure 6-7. Blue Course Routing (Backwards)

new course. The Old Course – the earliest municipal course – has been the original and enduring example for new courses to follow throughout the history of golf. It therefore serves as a particularly appropriate prototype for the redesigned East Potomac Park facility, which must anchor the redevelopment of the park into the model public playground envisioned by the McMillan Plan.

Like the Old Course, the design of the new blue course will feature interesting and sometimes complex strategic problems located within extremely wide playable corridors. The topography of the property, deep bunkering, and a small amount of rough will be the primary factors that determine the correct line of play. Also comparable to the Old Course, a golfer will be able to end up almost anywhere without fear of losing his ball, but only correct placement of the tee shot will yield an approach that is easy to get near the hole. Oftentimes, a golfer that is out of position will find himself with a shot where nothing but fairway stands between him and the hole, but the contours of the ground alone will conspire to make the approach shot extremely difficult to hold the green. In most cases, such is the nature of a reversible course – contours designed to help an approach from one direction, repel a shot from the other direction. Each green on the new course, however, is designed so that there is a way for a golfer to use the contours to his advantage, provided he position himself correctly for his approach. The seventh green of the front nine played forwards is a case in point **(**see Figure 6-8.) Tee shots must be placed on the right side of the fairway (position A) to utilize a knob at the back of the green that will help hold uphill approaches. Playing to that green in reverse on the second hole of the backwards front nine, that same knob becomes a downslope, which repels approaches attempting to hold the narrow green from the right side of the fairway (position B). Consequently, the best strategy on that hole is to play well out to the left with the tee shot (position C) so that the

approach can play down the length of the green and even use the knob to help stop the ball on the surface.

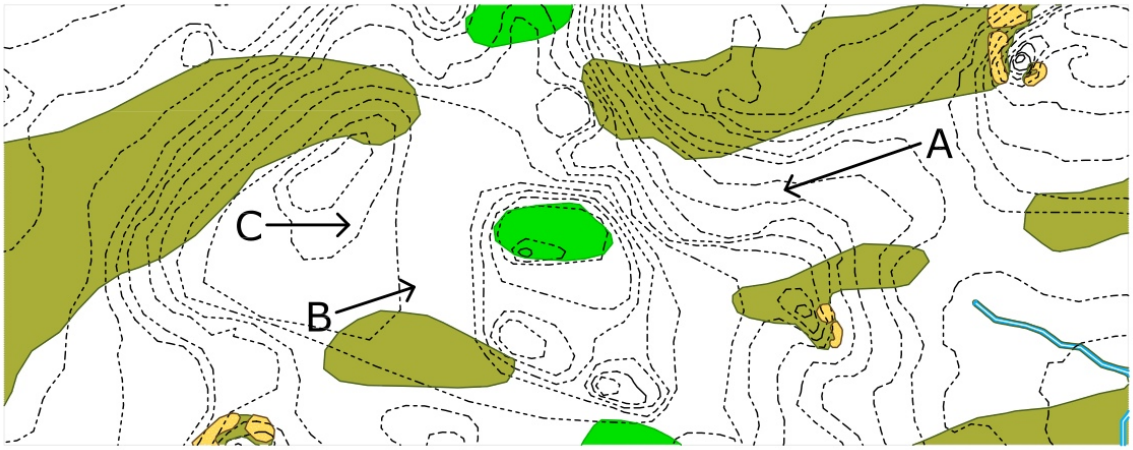



Figure 6-8. Blue Course – Importance of Approach Shot Angle, Hole 7 Fwd/2 Bwd (Scale 1”=300’)

Similarly, the same set of fairway hazards can play completely differently depending on the direction of play and the given hole location. The sixth hole of the back nine forwards is a good example (see Figure 6-9.) Depending on the hole location the hole could be played two totally separate ways. If the hole is on the left side of the green, the easiest approach will most likely be from the left side of the fairway (position A) so that the golfer avoids playing over the knob onto the downslope that protects the front-middle of the green. But the preferred left-hand line off the tee will require the golfer to skirt the central fairway bunkers and flirt with the out of bounds property line that borders the fairway. On the other hand, when the pin is on the right side of the green, the less risky right side of the fairway will be the preferred line (position B), but in order to stop the ball on a green that slopes gently away from the line of play, the golfer must thread an approach to land in the small opening between the central knob and a ridge that

extends down from the main plateau – otherwise the contours will help shed approaches away from the hole and off the green. Played in the other direction as the fourth hole of the backwards back nine, the fairway bunkers will pose an entirely different set of problems. Set at a diagonal from the tee, instead of dividing the fairway in half as they do playing the other direction, the bunkers force golfers to 'bite off as much as they can chew' to get the shortest approach into the green. For most hole locations on the green, the middle-left hand side of the fairway (position C) is ideal to approach parallel to the drainage swale guarding the left side of the green. For left, front hole locations however, the right side of the fairway (position D) may be preferred in order to use the slope at the right-front of the green to feed balls close to the hole. Each direction of play epitomizes the directive of John Low to make strategically sound holes that 'proclaim you must keep well to the left, or well to the right' so as to gain advantage (Shackelford, 1999). So will go the entire course, as golfers will constantly be forced to determine the ideal strategy for a hole by analyzing the position of hazards and the contouring of greens relative to the day's hole location. Yet the out of position golfer, given the wide fairways and playable rough, will always have a chance at recovery, albeit sometimes only with a spectacular shot.

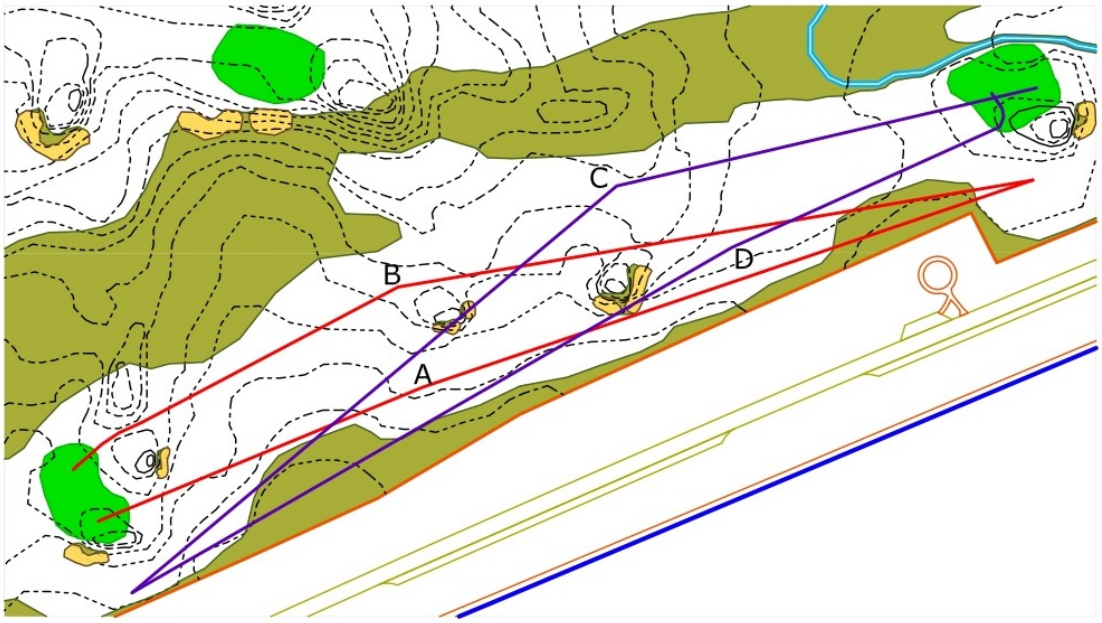



Figure 6-9. Blue Course – Fairway Hazards, 15 Fwd/13 Bwd (Scale 1”=300’)

One other byproduct of the wide fairways of the reversible design and the narrow overall width of the peninsula is that there will be no room for cart paths. Consequently, the course will only allow walkers, including those with pull carts, except for those with medical reasons to do use carts. Such a walking-only policy might be a problem for many golf courses, particularly those that rely heavily on cart rentals for revenue, but the flat nature of the current site leads the vast majority of golfers to walk the course anyway. The proposed topographical changes to the property, though able to drain the site thoroughly, are still relatively gentle and not likely to change the status quo. Additionally, there is a strong demand for well-designed, walking-only golf courses – a fact demonstrated by the continued success of the Black Course at Bethpage despite a very hilly piece of property, as well as the golf courses at Bandon Dunes resort in Oregon and the new Chambers Bay course in Tacoma, Washington. As an alternative for those that would take a cart, the facility could initiate a caddy program for local students to participate

in during the summers and on weekends throughout the year. Furthermore, no carts means no ugly cart paths to mar the golfing landscape.

As stated above, the architecture of an ideal municipal course capitalizes on the natural features of its property to create strategically interesting design that is playable for golfers of all abilities and maintainable to a reasonable standard at a minimum of cost. The new design for the blue course synthesizes a need to address the current course's drainage problems with interesting terrain for a golf course. The resulting routing maximizes use of the new topography for strategic purposes. By doing so, the number of bunkers will be kept to 65 in total – less than half of the 145 found on the 1927 design. And at 6,800 yards with a par of 70 from the back tees in either direction, the course will be long enough to accommodate the increasing length of today's golfers, while the wide fairways and playable rough will allow even the worst players to get around in one piece and have some fun. The redesign of the blue course, therefore, will prove to be maintainable at a reasonable cost without the chronic drainage problems that plague the current site, while at the same time providing a strategically challenging test of golf for good players that is eminently playable for beginners and average golfers.

**White and Red Courses**

Both of the redesigned white and red courses will provide a scaled down version of the design elements of the blue course. The white and red courses are geared toward less-skilled golfers, while still designed to remain stimulating and enjoyable for better players. Like the blue course, the two courses also have been designed with maintenance costs in mind – the white and red nines feature nine and three bunkers respectively, as well as open, gently sloping fairway areas that can easily be maintained with large mowing equipment. Neither course is reversible, due to the nature of their smaller sites.

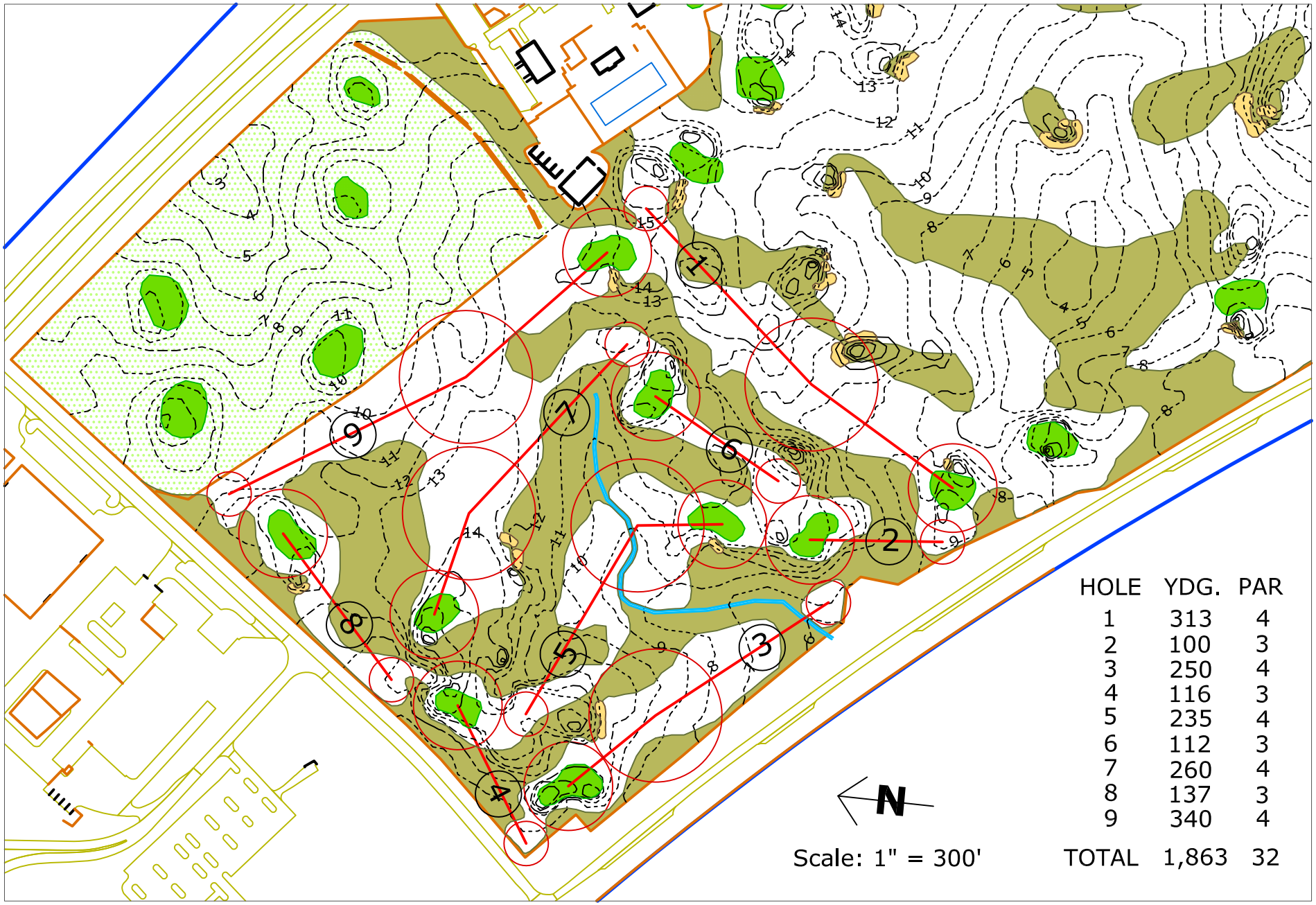



Figure 6-10. White Course and Driving Range

The nine-hole white course occupies the area west of the blue course and south of the driving range (see Figure 6-10.) The routing of the course will make the most of two medium sized and well contoured plateaus that define the edges of the area's main watershed – six of the nine greens will be located atop the plateaus. The layout is comprised of four par threes and five par fours, totaling a par of 32, and the holes will range in length from 110 to 330 yards.

Most of the strategic problems posed by the white course will be focused on the abilities of many senior, junior, and female golfers that hit the ball between 100 and 200 yards off the tee. Diagonal slopes and hazards will be encountered throughout the course, allowing golfers of all skill levels to play to their strengths, though many better players will be able to drive many of the par fours in one shot. To keep things interesting for those players, much of the challenge of the course will revolve around its green complexes. Fairly significant contouring of the greens' surrounds mowed at fairway height, coupled with considerable movement within the greens, will require creative short game shots that are doable for the beginner, but still engaging for better players. As with the blue course, the greens on the white course will dictate the golfer's strategy from the tee, of which the new fifth hole is an excellent example (see Figure 6-11.)

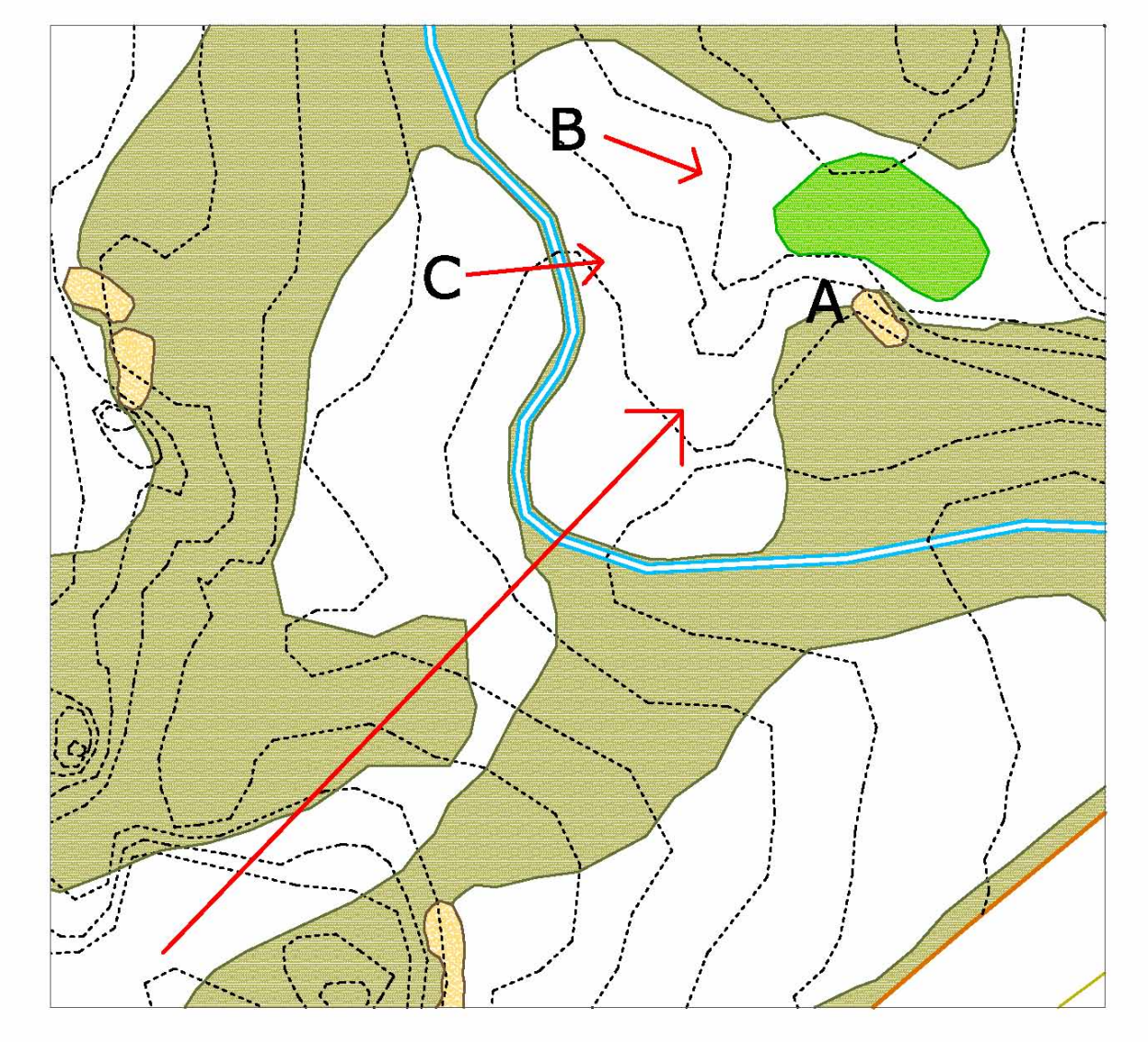



Figure 6-11. White Course – 5th Hole (Scale: 1"=100')

A very short par four of about 240 yards, the fairway will be bisected at a diagonal by a formalized drainage swale. The direct line to the green actually requires the shortest carry over the swale, but that route will bring the bunker and slope short right of the green into play (position A), from which getting the ball close with the next shot is very difficult. Taking the longest carry out to the left (position B) will open up the best angle into the long, narrow green and potentially offer the best chance at a good score on the hole. For those that will not be able

to carry the creek with their tee shot, the option exists to play short of it, but still have a good angle into the green (position C). In the best strategic fashion, this hole will challenge golfers of all skill levels to think their way through the hole and determine the best option for their own abilities. In this way, the short-hitting golfer that plays within himself may gain advantage over a longer golfer that takes the direct line and fails to execute the very difficult shot required to hold the green.

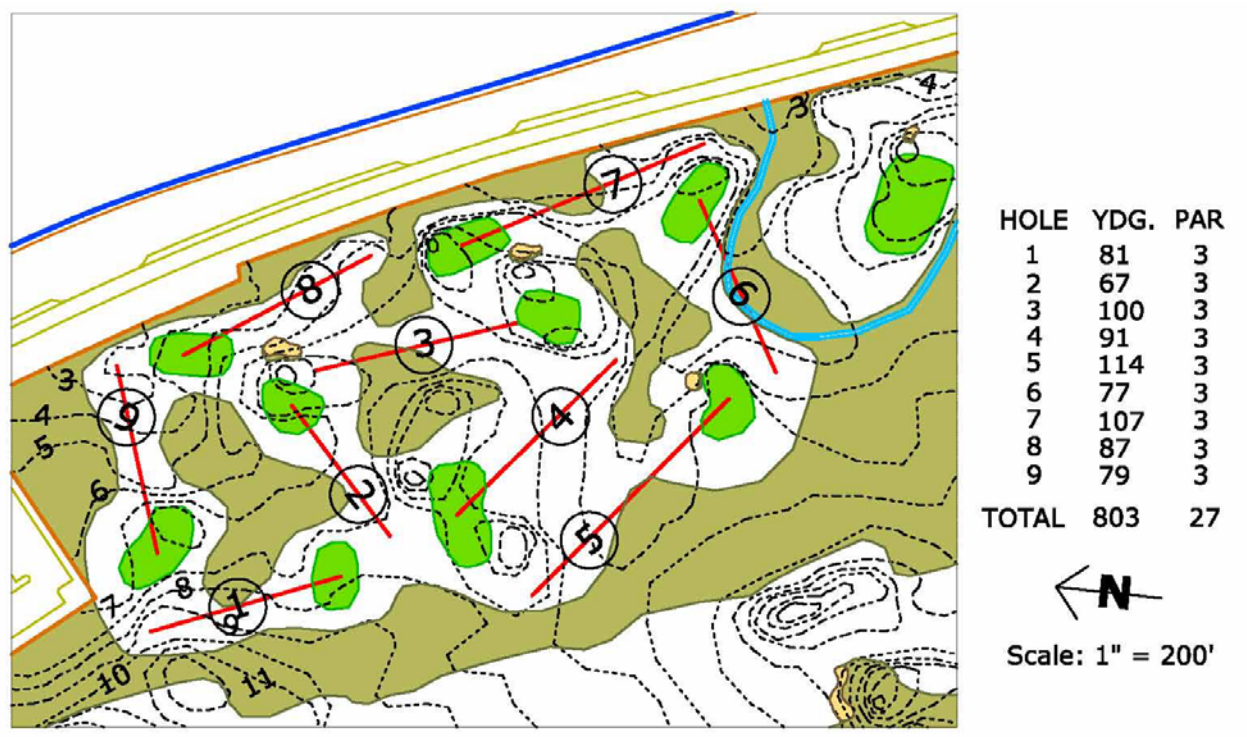



Figure 6-12. Red Course Routing

The new red course, bordered by the field house and parking areas to the west, and the blue course to the south and east, will remain a set of nine par threes like its current iteration (see Figure 6-12.) The course will be designed for beginners, with holes ranging from 75 to 120 yards in length. Overall, it will measure 803 yards. Like the white and blue courses, the greens

and their surrounds will provide a varied and interesting challenge for better players that is within the range of abilities of a beginner. The course will feature wide swaths of fairway and open approaches that will be accepting of typical novice shots that run along the ground. The sixth hole, played alongside the bend in the drainage swale, will offer bold golfers the chance to play directly over the swale to the right half of the green, while allowing beginners the chance to avoid the carry by aiming to the left side of the green.

Maintenance

The primary goal of the maintenance plan for a redesigned East Potomac Park golf course should be to achieve a reasonable standard of conditioning at a minimum of expense. The maintenance costs at East Potomac Park are probably already minimal relative to other courses, but the state of the course does not meet the reasonable standard. Instead, the course features inconsistent greens that are constantly soggy, sandy, and bumpy, as well as patchy fairways that are wet and difficult to maintain. As outlined in chapter four and reinforced by the following quote from a golfer visiting Washington in 1919, municipal golfers – and really golfers in general – do not need perfect conditions in order to enjoy the game;

> "There's a big difference between a golf crank and a man who merely loves to play the game. I like to play for the sake of the game. I don't need a fancy golf course, with billiard table putting greens and a special corps of barbers to keep the fair green trimmed in Psyche knots and all the other things the golfer claims must be, in order that golf shall be. All I want is a reasonably smooth place around the hole, no carriage ruts or bowlders, that will give me an even chance to keep the ball going in the direction I start it for a reasonable distance" ("Capital Again Dramatized," 1919).

A municipal golfer expressing an equivalent sentiment today would probably say that the condition of the fairways, roughs, and other areas of a course do not matter that much so long as its greens are in good shape, rolling smoothly and true. Accordingly, the British approach to turf management focuses maintenance efforts on the upkeep of green surfaces, thereby satisfying the

primary needs of the golfer, while minimizing costs by leaving the rest of the course to exist in a more natural state. Such an approach, would be ideal for application to East Potomac Park's golf course.

As stated in the previous chapter, the architecture and maintenance of a golf course are integrally related. As a result, many of the architectural features employed in the redesigned golf course help to minimize its maintenance costs. First, as was the case with the original design, reversibility spreads out the wear on well-used parts of the course, such as greens surfaces, approaches, and surrounds. Second, expensive bunker upkeep is minimized by the relatively small number of bunkers in the design, as well as their uncomplicated style reminiscent of the natural, grass faced pits found on some British links courses. Such bunkers only need occasional maintenance and, when they do, it is of a relatively uncomplicated nature relative to other bunker styles. Third, the wide fairways, comparatively few fairway bunkers, and lower standard of maintenance (i.e. higher mowing height) at East Potomac Park means the course's fairways could be mowed with a giant gang mower, thereby greatly reducing the time and expense required to mow fairways with smaller conventional equipment. Finally, though not necessarily an architectural feature, the walking only policy at the facility reduces the wear and compaction associated with the use of golf carts.

The maintenance practices associated with the British approach to turf management also may have advantages apart from minimizing costs – the environmental benefits of the approach can be used as a marketing tool for the golf course or as a way to promote the course as an example to other facilities. Also, the British approach, in combination with improved drainage, will produce firm ground conditions that enhance the playability of the golf course and increase the variety of shots available.

Management

Accomplishing and sustaining the redesign project detailed above requires both a substantial initial capital investment and an efficient and responsive management team that will always act with the best interests of the facility first in mind. Unfortunately, the present management system – as a public park in the District of Columbia, East Potomac Park falls under the purview of the National Parks Service (NPS) – has proven not to be conducive to the "long term maintenance and investment" necessary for a municipal golf course to be successfully operated (Lemke, 2007). Additionally, the unique constraints imposed by the NPS potentially thwart a redesign project of this scope. The most convenient management solution for East Potomac Park would theoretically involve working within the existing management system, but, as detailed below, the poor track record and restrictive nature of NPS management eliminates that approach as a workable alternative. Consequently, control of the park needs to be transferred from the NPS to another entity if the redesign is ever to be carried out.

The National Parks Service farms out the day to-day operation and maintenance of East Potomac Park to a private company, called a concessioner. This arrangement is typical of situations where the NPS must provide services to park visitors that are not normally provided by NPS personnel ("National Parks Omnibus Management Act," 1998). Each concessions arrangement with the NPS is subject to a competitive bidding process based on a prospectus that interested companies use to project returns over the length of the proposed contract, including such information as prior cash flows, expected growth, necessary building and grounds improvements, and monetary interest owed the previous concessioner (LeBel, 2007). The main component of potential concessioners' bids is called a franchise fee, a flat sum paid yearly or

monthly to the NPS that still allows the concessioner ‘a reasonable opportunity for net profit in relation to capital invested and the obligations of the contract’ ("National Parks Omnibus Management Act," 1998). In most cases, the ‘reasonable opportunity for a profit’ means that the concession’s projected net profit less the franchise fee should yield an internal rate of return equal to other investment opportunities in the same general field (LeBel, 2007). Paying a flat franchise fee—as opposed to a percentage of profits—encourages concessioners to efficiently run their operations, as a more efficiently run concession generates higher profits (Thomas, 2007).

The NPS has laid out in public law (National Parks Service Concessions Management Improvement Act of 1998) several guiding principles that govern the terms of contracts with concessioners. The most important states that the development of facilities within national parks should be limited only to that which is necessary and appropriate for public use and enjoyment of the park, a determination ultimately made by the NPS. To that end, the NPS focuses more on maintaining existing facilities than improvement through new construction (Thomas, 2007). The NPS has placed an emphasis on continuous access to their parks and facilities—meaning that any capital improvements built at a park should not infringe on a visitor’s ability to enjoy the park’s primary attractions (Parsons, 2007). The importance of access is further emphasized by the NPS with regard to rates and charges for the public use of a park’s facilities, goods, and services, which have to be reasonable and appropriate. Concessioners have the right to set those rates and charges subject to approval by the NPS Secretary ("National Parks Omnibus Management Act," 1998). The law also touches on the protection of concessioner investment, granting the concessioner a leasehold surrender interest in any capital improvements constructed under a concessions contract, guaranteeing to the concessioner at the end of a contract compensation

equal to the initial value of the capital improvement (adjusted for inflation) less depreciation ("National Parks Omnibus Management Act," 1998). The nature of a concessions contract, however, gives no compensation to the concessioner for the increased revenue generated by their capital improvements after the contract expires (Thomas, 2007). Overall, these guidelines highlight the supporting role concessioners and concessions facilities play to the attractions at national parks.

While the concessions system has proven to work well in traditional parks, where the main attraction in most cases is the natural surroundings, it does not seem to translate as well to golf courses, where the primary attraction is the concessions facility itself. For that reason, the guidelines laid out to govern concessions actually constrain the quality of NPS golf courses, as capital improvements laid out in the concessions contract must be done in a way that allows continuous public access to the golf course—thus limiting the potential range of improvement projects (Parsons, 2007). Furthermore, capital improvements not stated in the concessions contract are not allowed unless necessary for the safety and welfare of park users (Thomas, 2007). Golf courses are not natural attractions, where preservation is paramount for optimal public enjoyment (passive use of the land); the active use of golf courses and resulting wear and tear not only require the expected daily maintenance, but also necessitates\ projects of greater scope, many of which cannot be foreseen when writing a concessions contract that spells out the extent of allowable work over a twenty year period. In short, the NPS system denies concessioners the ability to effectively maintain a golf course by granting no flexibility to undertake necessary capital improvements not written into their contracts.

The Washington, D.C. public golf courses (all NPS-run) are all excellent examples of the concessions system's failure to effectively manage golf courses. The Rock Creek Park golf

course is seeing markedly decreased revenue due to poor fairway conditioning caused by the absence of an irrigation system. The concessioner cannot remedy the situation, however, since such a capital improvement was not written into its contract with the NPS and the poor conditioning does not affect the golfer's safety or welfare. There are annual reviews of the maintenance of the Rock Creek facilities, but the standards of evaluation are the same for all NPS parks and therefore much more lax than what would be considered acceptable at other golf courses. Another proposal for a large-scale project at Rock Creek—the addition of a driving range in an area starved for such facilities—has been denied for the same reasons (Thomas, 2007).

The recent history of East Potomac Park offers similar examples of inability to solve basic infrastructural problems. Drainage problems, as delineated in chapter two, have plagued the low-lying courses throughout their history. In the last twenty years, the NPS has prescribed a series of ineffective small-scale fixes to counter the issue. The drainage problems will continue, however, until a comprehensive improvement project is undertaken (Reel, 2003). But a thorough re-engineering of the site would require closure of the courses for perhaps a year of work to reshape the land and upgrade the drains and pipes to serviceable standards; a fact that makes such a project extremely unlikely given the insistence of the NPS on continuous public access to the facilities. The failure to adequately address the drainage problems at East Potomac Park suggests the NPS does not deem the capital improvements necessary and appropriate for public use and enjoyment of the park.

In light of the problems encountered addressing vital infrastructure issues in the past, the NPS concessions system is unsuitable to enact and, subsequently, manage the proposed redevelopment plan for the East Potomac Park golf courses. Based on their treatment of the

drainage issue, the scope of the plan outlined above would require capital improvements beyond what the NPS would likely categorize as 'necessary and appropriate,' in addition to going against the NPS's insistence on access by requiring an extended closure of the golf courses. And even if the NPS allowed such a project, the length of time necessary to implement such a plan, compared to the relatively short maximum contract length of 20 years in which to generate a worthwhile return on such a large investment, would likely depress or even eliminate the franchise fee paid to the government. Considering these significant obstacles, management of East Potomac Park must be changed from the current restrictive concessions system with the NPS to another form of management in order to make the redesign possible.

This issue is particularly relevant now, as a bill recently introduced in Congress could significantly impact the management of East Potomac Park's golf facility. The Golf Course Preservation and Modernization Act, sponsored by Washington, D.C.'s delegate Eleanor Holmes Norton, is specifically designed to allow the three District municipal golf courses to be leased by the NPS to a private operator after a competitive bidding process. The chosen lessee would pay the NPS, or some other government agency, for use of the land without the restrictions of a concessions contract. The bill would permit "one of the three courses to be renovated and operate at market rates, while the others would remain affordable to average golfers." (Lemke, 2007) Obviously, government officials recognize the shortcomings of the current system of management, as Norton exemplifies in the following quote:

> "The three courses together constitute an undervalued asset that has extraordinary potential as affordable recreational outlets, attracting significantly more golfers and perhaps even producing new revenue for the treasury if appropriately contracted. None of the courses has the appropriate amenities for golf courses today" (Lemke, 2007).

While Norton's statement is undoubtedly an accurate assessment of the city's municipal golf course situation, her Golf Course Preservation and Modernization Act has a serious flaw.

Upgrading the facilities and equipment at the three courses would require a significant investment from a potential private operator. In order to provide an appropriate return for that investment, the bill would permit one of the three courses to be renovated and operate at market rates. Therefore, as a result of the bill, East Potomac Park could potentially be renovated, but the upgrade would come at the expense of a significant portion of the local population, which would be priced out by "market rates" that are considerably higher than what is currently charged. Norton's proposal goes against a central tenet of this thesis that good architecture and affordable golf are not mutually exclusive.

As detailed in the previous chapter, the problem with Norton's plan is endemic to private operators in general. For projects such as East Potomac Park that require a significant capital investment, private management companies require a return on their investment made possible by higher greens fees or low lease payments. Additionally, all of the revenue earned by the company is not put back into the golf course, as a portion of it goes to the management company and some to taxes.

A more efficient system would involve organizing the three city municipal golf courses under the management of a nonprofit corporation similar to the one established in Baltimore. Under such a system, all of the revenue earned by the facilities would either be used to ensure that greens fees remain reasonable or plowed back into the courses in the form of capital improvements. In this way, the capital required for the East Potomac Park redesign project outlined in this chapter could be raised through the revenue earned in the day-to-day operation of the course. Other funds could be generated through tax-exempt donations to the nonprofit corporation and grants from organizations invested in the success of municipal golf, such as the USGA and Keep It Classic. Unlike the private lessee arrangement, nonprofit management would

not produce a direct revenue stream for the government. Instead, the nonprofit system puts the quality of its facilities and affordability for its users first, thereby meshing perfectly with the goal of the proposed redesign. Consequently, the best management option for a model municipal golf course at East Potomac Park – one which maximizes the golfer's pleasure while minimizing his cost – is the nonprofit corporation.

By the Numbers

The capital expenditure required for the redesign of East Potomac Park outlined in this chapter is substantial but necessary to accomplish the goal of affordable and pleasurable municipal golf. The redesign minimizes costs by using an economy of fill to address the site's chronic drainage problems – overall, the redesign will require an estimated 900,000 cubic yards of fill to produce the new topography. At approximately $3 per cubic yard, the cost of fill for the redesign will be about $2.7 million. The amount of material needed, and thus the cost of the redesign, could be substantially reduced by generating some of the required fill on site, which could be accomplished by digging a pond in the depression between the 10th, 17th, and 18th holes of the Blue Course forward routing. Furthermore, utilizing material dredged from the river could help reduce the cost of fill – a dredging operation could be set up basically on site, thereby eliminating transportation costs.

After the redesign, East Potomac Park would feature a much more strategically interesting and better-maintained golf course, which could operate successfully at the same affordable prices that it currently charges. Based on the current fee schedule reproduced in Appendix A, taking into account reduced rates for juniors and seniors as well as increased rates on the weekends, the course could reasonably expect to earn about $3 million annually from greens fees and related revenues assuming play remains at current levels (see Appendix B for a

detailed calculation of the estimated revenue.) The facility also produces a substantial amount of income from its driving range operation. These revenues are offset by East Potomac Park's major operating expense – its maintenance budget. Currently between $600,000 and $675,000, the course's maintenance budget is already quite low for a thirty-six hole municipal facility (Hilbun). After the redesign, the improved drainage and other design features will allow the maintenance budget to remain about the same but the standard of conditioning to improve significantly. Based on a limited amount of publicly available information, the maintenance budget of a municipal golf course appears to comprise around thirty percent of its overall expenses, thereby putting East Potomac Park's projected expenses after the renovation in the range of $2.25 million dollars. If correct, those expenses would be more than offset by the revenues from greens fees and the driving range, giving management a valuable source of funding for annual capital improvements. As a result, in addition to providing a more pleasurable golfing experience, the redesigned facility would remain both affordable for the local citizens and financially viable for its managers.

Conclusion

The existing golf facility at East Potomac Park is a shell of the peak it reached in the late 1920s; today it features a bland and uninteresting golf course plagued by chronic drainage problems that make adequate maintenance standards extremely difficult to achieve. In this way, the current facility typifies the current municipal golf experience in America – boring golf played over a poorly maintained course. By no means does that description bring to mind the image of a model public playground as prescribed for the park by the McMillan Plan. The redesign of the golf course and reorganization of the facility's management detailed in this chapter attempt to rectify that disparity, which has evolved over time.

The proposed redesign of the golf course employs the architectural characteristics of an ideal municipal golf course at a minimum of cost both in construction and maintenance over time. As an integral part of that process, the property's significant drainage problems will be resolved by reshaping its flat topography into a comprehensive new landscape that also functions as a suitably appealing canvas for a reversible golf course. The wide-open fairways, penal bunkering, topographical hazards, and engaging strategies of the redesigned blue course take a page from the features of the Old Course at St. Andrews. The new red and white courses will offer beginning to average golfers a smaller scale version of the design characteristics utilized for the blue course. All three layouts will expose golfers to thought-provoking strategic architecture, which is the backbone of a pleasurable golf experience and conspicuously missing from the current design.

In addition to creating strategically interesting architecture, the maintenance and management proposals put forth in this chapter ensure that the course will be made available to the public at an affordable price. The British approach to turf management minimizes maintenance expenditures by focusing intensive maintenance practices on the greens alone. In order to save money and promote healthier grass, the wide fairways of the course will be mowed at a relatively high height and cut with cost-saving gang mowers. The walking-only policy and reversibility of the redesigned course will spread out wear on the turf, thereby reducing maintenance costs, as will the minimal number of bunkers utilized in the design. Organizing the facility under the management of a nonprofit will ensure that the best interests of the golf course and the local golfers will always be first priority. Consequently, the redesigned course is likely to retain the balance of architectural integrity, quality maintenance, and affordability achieved in the redesign.

By proposing a facility that could provide pleasurable architecture at a minimum of cost, the plans put forth in this chapter to redesign and reorganize East Potomac Park's golf course create a model for other municipal facilities to emulate. Thus, such a redesign would reestablish the golf course at East Potomac Park as a worthy product of the McMillan Plan.

# CHAPTER 7

# CONCLUSIONS

East and West Potomac Parks are a product of over one hundred years of evolution that continues through the present – a fact belied by the feeling of stability and permanence, which characterize the familiar monuments that help give shape to Washington, DC's iconic skyline. Additions and other changes to the parks occur with regularity. The last five years have seen the construction and dedication of the National World War II Memorial at the end of the reflecting pool in West Potomac Park, as well as the removal of "The Awakening," a popular sculpture for residents and tourists that depicts a giant man emerging out of the ground, from the tip of Hains Point in East Potomac Park. The evolutionary process has not been always been one of continuous progress – over the years, extenuating circumstances have led to several compromises, such as the munitions buildings and offices built alongside the reflecting pool during World War I that were finally demolished in the early 1970s to make way for the more appropriate Constitution Gardens. Like the munitions buildings, most of the major incongruities have been rectified in the spirit of the guiding McMillan Plan. The deteriorating facilities at East Potomac Park and the absence of any connectivity between the two parks, however, are two significant issues that remain to be addressed.

Revitalization of neglected areas has recently become a major priority for the Washington, DC government. The city is now experiencing something of a renaissance in many historic, but previously run down quarters. A boom in construction and development guided by intelligent planning directives has led to the revitalization of the Gallery Place/Chinatown, U

Street, and Columbia Heights areas, among others. Much of this development has been initiated by the construction of city financed or planned public amenities, such as the MCI Center in Gallery Place and the new Metro station and urban mall in Columbia Heights (Schwartzmann, 2008). District officials expect the newly opened Nationals Park to be a comparable economic engine for the area near South Capitol Street and the Navy Yard (LeDuc & Duggan, 2008).

Renovating the golf course at East Potomac Park is an important opportunity to do the same thing for the city's parks system as has been accomplished in its neighborhoods. An exemplary golf facility could be the important initial step in a series of projects aimed at reconnecting East and West Potomac Parks, both physically and in terms of the quality of their component parts; and in doing so, begin the process of realigning the park's facilities with the goals of the McMillan Plan.

The redesign put forth in the previous chapter would transform East Potomac Park's golf course into a model municipal facility consistent with the McMillan Plan. The proposed changes to the course would greatly improve its architectural quality – complex, but playable strategies would make the redesign challenging and fun for all classes of golfers, and, therefore, more pleasurable than the flat, uninteresting, and soggy existing layout. Importantly, as befits a golf course located in a park directly associated with the nation's democratic ideals, the improved design would remain affordable, and therefore accessible, to its constituents – the local citizens.

The proposed redesign is a product of the principles derived in chapters three and four of this thesis. The proposal itself is site specific, purposefully designed to address the circumstances relevant to East Potomac Park, but the principles can be applied to any municipal golf course. The ultimate goal of a municipal facility is to maximize golfers' enjoyment of the game, while minimizing their costs. The case studies examined in chapter three support the

contention of this thesis that interesting, strategic architecture is the most important component of a pleasurable municipal golf experience. The essential characteristics of the Old Course in St. Andrews, Scotland, provide an architectural model for municipal facilities, which must accommodate a wide spectrum of skill levels. Minimizing costs necessitates an approach to design, maintenance, and management that puts the quality of the golf course – specifically, how it plays – ahead of competing concerns. In architecture, this means working with the land instead of imposing on it preconceived design ideas or splashy features for aesthetic purposes; it involves a more natural approach to maintenance, which improves turf health and the playing characteristics of the surface; and, finally, with regard to management, minimizing costs requires that the course be first priority, with revenues put back into its upkeep instead of siphoned off for other purposes.. The typical municipal golf experience in America is affordable, but the golf on offer is bland and uninteresting, and often in shabby condition. The principles derived in this thesis demonstrate that affordable golf and engaging, strategic architecture are not mutually exclusive.

The affordable and pleasurable municipal golf course, exemplified by the East Potomac Park proposal, could serve as a model, not just for other municipal golf courses, but also for golf in general. At a time when American golf courses are constantly being lengthened and toughened to challenge the top one percent of golfers, designing for the enjoyment of beginning and average golfers needs to be stressed more than it is. At the same time, lengthening courses requires more land to acquire and maintain, and more money to do both. Consequently, golf architects need to be thinking about other ways to challenge golfers besides the pure length, long rough, and narrow fairways that characterize U.S. Open-type courses and prove frustrating and overly difficult for everyone (Andrew, 2006). The components of an ideal municipal course set

out in this thesis – width, penal hazards, firm conditions, topography used to dictate playing angles – offer an alternative to the direction golf is going in America that is challenging for professionals, playable for average golfers, and fun for all of them.

Affordability is equally important to the success of municipal golf, and golf overall, in the United States. The total number of golfers in this country has declined or remained the same each year since the turn of the century, from 30 million in 2000 to 26 million today. In addition, the number of people who play regularly, defined as 25 rounds or more per year, fell by almost a third between 2000 and 2005. Many of the golfers surveyed cited the expense of the game as a major factor for their decreased play (Vitello, 2008). In order to turn those numbers around, golf courses need to be able to operate profitably while lowering their green fees. The architectural, maintenance, and management approaches to minimizing costs described in this thesis are, therefore, extremely relevant to the golf industry as a whole. Furthermore, beyond keeping those who already play the game, municipal golf courses, often located near dense population centers, offers the best opportunity to expand its base and by attracting and retaining potential new golfers – particularly people from lower economic backgrounds – provided the facilities are affordable enough.

In addition to the cost of the game, the environmental impact of golf courses is an issue looming on the horizon. It is important to understand that the environmental benefits outlined in this thesis are a natural result of a holistic approach to design and maintenance that stems from an appreciation of traditional links courses in the United Kingdom. The current ecological guidelines outlined by the USGA are a necessary first step toward golf courses becoming more compatible with the environment (Joyce, 1998/08). But those guidelines amount to nothing more than a well-intentioned checklist if there is no unifying set of values to tie them together.

Truly sensitive golf courses evolve from an overall approach that emphasizes the natural in golf and design – thereby seeking to maximize use of existing features and preserve the man-vs.-nature aspect of the sport that characterizes the ancient game still played on the British links. Through that approach, affordable golf and environmental sensitivity organically arise.

Municipal golf courses, driven by a need to reduce costs, may help to develop an appreciation of that approach to design and maintenance in America. Municipal facilities can implement the British approach to turf management without the burdensome expectations for "perfect" conditions that compel more expensive public and private courses to use chemicals and other products that are potentially detrimental to the environment. The enhanced playability that results from firmer, faster, and leaner turf conditions could help to change the current preference of American golfers for lush, green, and, therefore, over-watered courses. And, barring that development, municipal experiments with reduced or minimal inputs could prove to be extremely valuable when government restrictions make such practices mandatory. Regardless, municipal courses have the opportunity right now to be an engine for change in the golf industry with respect to the environment.

But most importantly, this thesis is about the potential of municipal golf in America. American golfers have very low expectations for their municipal courses. Countless facilities, like East Potomac Park, feature low green fees, but boring layouts and poor conditioning. There is no reason, however, for municipal golfers not to elevate their expectations – for the architecture, and not the price. Engaging, strategic design at an affordable cost brings the full potential of the game within the means of the whole country. The principles derived in this thesis can help raise the bar for municipal golf, without raising the cost.

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APPENDIX A

EAST POTOMAC PARK – CURRENT RATE SCHEDULE

| **Greens Fees (Monday-Thursday)** | **Price** |
|---|---|
| 9 Holes Red Course | $ 9.00 |
| 9 Holes White Course | $ 12.00 |
| 9 Holes Blue Course | $ 17.00 |
| 18 Holes Blue Course | $ 26.00 |

| **Greens Fees (Friday-Sunday/Holidays)** | **Price** |
|---|---|
| 9 Holes Red Course | $ 12.00 |
| 9 Holes White Course | $ 15.00 |
| 9 Holes Blue Course | $ 20.00 |
| 18 Holes Blue Course | $ 30.00 |

| **Greens Fees (Senior Discount) 60+ , Mon-Fri < 2:00pm** | **Price** |
|---|---|
| 9 Holes Red Course | $ 9.00 |
| 9 Holes White Course | $ 10.00 |
| 9 Holes Blue Course | $ 11.00 |
| 18 Holes Blue Course | $ 16.00 |

| **Greens Fees (Junior Discount) Ages 5-18, Mon-Fri** | **Price** |
|---|---|
| 9 Holes Red Course | $ 2.50 |
| 9 Holes White Course | $ 5.00 |
| 9 Holes Blue Course | $ 10.00 |
| 18 Holes Blue Course | $ 15.00 |

(www.golfdc.com)

# APPENDIX B

## ROUGH ESTIMATE OF PROJECTED REVENUE AFTER REDESIGN

Assumptions

150,000 total rounds are divided as follows:

| | |
|---|---|
| Blue Course: | 55,000 18 hole rounds |
| | 15,000 9 hole rounds |
| White Course: | 50,000 9 hole rounds |
| Red Course: | 30,000 9 hole rounds |

Equal amount of play each day of the week: 57.14% M-Th, 42.86% Fr-S

Seniors comprise 20% of overall play, Juniors 10%

20% of golfers will rent a pull cart

2% of golfers will rent clubs

Each round will yield an average of $2.05 in pro shop revenue

Rate Schedule Adjusted for Senior and Junior Play

| **Course** | **M-Th** | **Fr-S** |
|---|---|---|
| Red | $8.35 | $12.00 |
| White | $10.90 | $15 |
| Blue 9 Holes | $15.10 | $20 |
| Blue 18 Holes | $22.90 | $30 |

Estimated Revenue

| **Course** | **Day** | **# Rounds** | **x** | **Rate** | **=** | **Revenue** |
|---|---|---|---|---|---|---|
| Blue 18 Holes | M-Th | 31,427 | x | $22.90 | = | $719,678 |
| | Fr-S | 23,573 | x | $30.00 | = | $707,190 |
| Blue 9 Holes | M-Th | 8,571 | x | $15.10 | = | $129,422 |
| | Fr-S | 6,429 | x | $20.00 | = | $128,580 |
| White | M-Th | 28,570 | x | $10.90 | = | $311,413 |
| | Fr-S | 21,430 | x | $15.00 | = | $321,450 |
| Red | M-Th | 17,142 | x | $8.35 | = | $143,136 |
| | Fr-S | 12,858 | x | $12.00 | = | $154,296 |
| Golf Course Greens Fee Revenue: | | | | | | $2,615,165 |
| Pull Cart Revenue: | | 30,000 | x | $4 | = | $120,000 |
| Rental Club Revenue: | | 3,000 | x | $10.50 | = | $31,500 |
| Pro Shop Revenue: | | 150,000 | x | $2.05 | = | $307,500 |
| **Total Estimated Revenue:** | | | | | | **$3,074,165** |