THE AMERICAN CIVIC ARCHITECTURE OF THE PANAMA CANAL ZONE,
1910-1920

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ABSTRACT

The scope of this dissertation is to discuss the United States-constructed civic architecture of the Panama Canal Zone and its role in developing an identifiable American presence there, and to examine the particular messages about the US that the architecture conveyed. This is accomplished by close examination of six representative civic buildings: the Panama Railway Station, Administration Building, Balboa School, YMCA, Gorgas Hospital, Balboa Union Church and the landscaped Prado mall area surrounding the buildings, all constructed during the period 1910-1920. The study examines, describes and evaluates the significance of American architecture in the Canal Zone by focusing on these six exemplary buildings, in the area which came to be known as Balboa. By observing the buildings as artifacts, their origins, creators and styles are considered within their geographical, cultural, political, temporal and iconographical contexts.

This presentation reflects an interdisciplinary approach to the synthesis of research from a wide variety of sources including US architectural history, US and Latin American history, political history, construction diaries and the examination of over 500 architectural plans and photos.
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PREFACE

The interest with which I began this project resulted from the intersection of two events. As a young health professional bound for the San Blas archipelago off the Atlantic coast of Panama, I spent the time awaiting further transport to the remote islands provisioning and gathering supplies in Balboa, Panama Canal Zone. The compact municipality, with the regularity of its tree-lined Prado, bordered by red-tile roofed civic buildings, residences, a baseball field, a theater, and commissary, gave me a sense of comfort and security. Following the sight line along El Prado, my gaze was uplifted to the stately Administration Building atop Ancon Hill, seemingly keeping a steadfast watch over the affairs below. I found the order, efficiency, and standards for municipal services appealing and compelling, especially in contrast to the jungle that edged one side of Balboa and the urban cacophony of Panama City, the other. There were no traditional barrier demarcations of the town such as gates or fences, nor even sanctioned languages. Although the official language of the functions of the town was English, conversations in Spanish and Kuna could be heard drifting across the public spaces. However, I clearly perceived that Central and South America were places somewhere outside of and other than this town. During repeated return visits while gathering supplies and then six years later, the town seemed distinctly civilized to me, and perceptibly, above all else, American; I had no idea why.
This event came to mind years later, when I began an investigation of American architecture built on foreign soil for a semester project in a graduate course, *America and the World*. The topic was the American construction of the Philippine summer capital city of Baguio, built in 1905. Designed by renowned architect and city planner, Daniel H. Burnham, the layout for Baguio was based on a reduced-size plan of the Washington, D. C. Mall. The city was built with much effort in the rugged mountains of Benguet Province. During the research for the project I found that there were other of these built environment artifacts from the United States’ colonial period—in Cuba, Puerto Rico, Hawai’i, and Guam, among others. Though the Canal Zone architecture is contemporary with these, it was not mentioned in any account of the collection of American architecture abroad. I reflected on my experience of the Canal Zone buildings and the civic center of Balboa, and wondered if there was intent to civilize or Americanize behind their design. My earlier experience in the Canal Zone left me with a clear impression of among other qualities, the American identity of the space. Now I had the opportunity and methodology to understand why.

In the last hour of the twentieth century, the United States of America handed over the ten-mile wide parcel of land, 4,297 buildings and 265,000 acres known as the Canal Zone, to the nation of Panama. The US had built, owned and maintained the buildings from the beginning of US construction of the Canal in 1904, one year after Panama became a nation. Late in 1999, their life as administration buildings, residential dwellings, hospitals and power plants belonging to and serving the US ended. From the century’s beginning to its end, the value of the Canal enterprise had gone from supreme
to an expendable diplomatic symbol: Senator Claude Swanson, said in 1919, "This canal, with the exception of our home territory, is the most valuable possession we have."¹ In 1999, President Bill Clinton stated, "At the edge of a new century, [the hand-over of] the canal, long a symbol of American power and prestige, now also symbolizes the unity and common purpose of the democratic nations of the Americas."²

When the Panamanian government assumed control of the Canal, the future for the civic buildings was uncertain and potentially endangered as their occupants departed for the US. Little had been documented on them since their original construction and further recording was made difficult by the political situation at the time of the hand-over. Because of my previous experiences in Balboa and the unique opportunity to contribute to knowledge on the subject, I began this investigation of the history and meanings of the American civic architecture of the Panama Canal Zone.

Panama is an S-shaped country of 30,193 square miles, 553 square miles of which was the Canal Zone. The Zone land lay five miles on each side of the Canal, which extends from the Pacific to the Atlantic Ocean. Residential communities with origins relating to the machine shops, dredging headquarters or labor they provided during construction are situated along the 51 mile waterway. Some of these scattered settlements existed before the Canal era; others served the military and railroad areas. The two major towns of Balboa, at the Pacific Port of Balboa, and the more commercial center of

¹ Senator Claude Swanson, speech to congress delivered July 14, 1919.
² President Bill Clinton, speech December 20, 1999.
Colon and Cristobal, at the Atlantic Port of Cristobal, are of different origins. Balboa, in the area known as Ancon, was constructed as the civic center and housed the great majority of civic functions for the Canal Zone. Colon was founded by the Panama Railroad company during the Gold Rush in 1850. Its two Canal civic buildings and the Washington Hotel, built by the American architect Bertram Grosvenor Goodhue, are not located on Canal Zone land proper. Because they are not integrated within the rest of the
civic landscape, they are not included in this study. Cristobal became the mostly residential US area of Colon.

Covering approximately five square miles, Balboa was designated as the only civic center of the Canal Zone. The town existed to insure the smooth operation of the Canal. As a consequence the *raison d'être* of each of the buildings of Balboa was to support that goal. In the Administration Building, dignitaries were received, payrolls were prepared and engineering maintenance plans developed. Churches, clubs and ball fields helped keep the workforce moral and occupied. The judiciary, schools, a bank, the commissary, the post office, the hospital, residences and the railroad were all within walking distance to guarantee the ease and rapidity of communication of Canal matters. The architecture of Balboa is similar to the civic centers and county seats of towns built across the United States in the late nineteenth and early twentieth century. The landscape and urban plan has commonalities with New York Central Park, Boston's Emerald Necklace, Washington D. C., Chicago's Grant Park and the Group Plan for Cleveland, Ohio. Further, the plan for Balboa resembled both Baguio and Manila, American projects in the Philippines. Each of these plans was based on the classic and Renaissance values of balance and symmetry.

A major focus of the analysis was to determine the extent to which the planners carried American culture in the form of architecture to the Canal Zone to represent an American imperial presence there. A common argument is that the establishment of the town was simply an act of imperial dominance to reiterate a powerful American presence.
in a foreign land. But what I came to understand was that the Canal Zone is testimony that the American colonial experience was more of an expression of what was prevalent on the US mainland at the time. It was more like other colonial architectural experiences where the founding nation looked to the colonial organization as a reflection of its achievements. The Canal Zone civic architecture was also a self-presentation to the rest of the world.³

I propose that the construction of the Panama Canal, a fusion of innovation in science and technology, was the purest contemporaneous articulation of the qualities of United States’ national identity and agenda as a world power. By extension, my thesis is that the civic architecture and landscape of the Panama Canal Zone, constructed between 1910 and 1920, convey symbols of a national identity characterized by resolute efficiency and progress, and an accompanying national agenda of aiding the rest of the world with these strengths. It was an exemplar of the distinctly American colonial experience, and had association with US imperialism exercised in relation to Panama.⁴ But more than this, it was an expression of progressivism and civic planning. In the Canal Zone, American City Beautiful aesthetic goals and values advanced with “city practical” utility. Because it was built outside the US in a created space, it offered a tabula rasa to give the most complete picture of American civic ideals in the early twentieth century. It was all displayed in a functionally efficient community, the image of which, conveyed American idealism, exceptionalism and as historian Frank Ninkovich states, “the American way of

⁴ For this study I utilize Ninkovich’s definition in The United States and Imperialism: “Imperialism exists when an important aspect of a nation’s life is under the effective control of an outside power.” (5).
life as the nation's chief export... an empire of ... the way of life, the empire of modernity.”

Beyond being supremely functional, the built environment of the Canal Zone was a microcosm of what was considered as the best that the nation had to offer. Ideas of planning aesthetics and efficiency, displayed at a succession of World's Fairs and expositions staged from 1876 to 1916 to present technological and scientific innovation, were adopted in cities and towns throughout America. With these innovations came renewed optimism, an image of a cohesive, ordered community and a doctrine of progress.

The civic environment of Balboa and other parts of the Canal Zone became an instrument of American modernizing method. The development in Panama also performed a hegemonic function in propagating and reinforcing American political, social, cultural and economic values in a foreign land. Practices and functions that took place in this environment ritualistically affirmed faith in the American institutional way of establishing order. These buildings and the landscape surrounding them evoke the symbols and meaning that characterize the nature of the world power that the United States would project and the immense self-esteem with which the country would progress. The civic effort in the Canal Zone was a partial response to Theodore Roosevelt's challenge:

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We have no choice, we people of the United States, as to whether or not we shall play a great part in the world. That has been determined for us by fate, by the march of events. We have to play that part. All we can decide is whether we shall play it well or ill.6

This dissertation is a study of the civic architecture of the Panama Canal Zone. First, it is a close analysis and early history of the civic buildings and landscape of Balboa. Second, it is an exploration of their meaning as a symbol and record of American national identity as a fledgling world power at the dawn of the 20th century, within the specific context of the Panama Canal enterprise.

Review of Sources

My investigation of American civic architecture in the Panama Canal was organized around the evaluation of the buildings and landscape within four contexts: the history of Panama up to the point of the buildings' finished construction; Panama's role in the framework of American expansion; the context of civic improvement put forward at the World's Columbian Exposition of 1893 and in the City Beautiful Movement; and the way in which buildings mean and have meaning as a prologue to examination of the buildings as texts. It involved library and archival research, interviews and correspondence with Historic American Building Survey personnel, Panamanian architects, engineers and others knowledgeable about the buildings and area of focus.

The research included consultation of architectural as-built plans, blue prints, photographs, published reports, legislation, correspondence and secondary sources. On-site research, including photography, inventory tours of Canal Zone buildings and sites, some measurements of buildings and in-depth observation of Canal operation, followed guidance provided in the Secretary of the Interior’s Standards and Guidelines for Architectural and Engineering Documentation (1990) and HABS/HAER Guidelines for Historical Documentation.

The investigation of the Canal era history began at the National Archives in Greenbelt, Maryland. The preponderance of relevant documents is organized in Record Group 185, Records of the Panama Canal, 1848-1984. The most helpful of these thorough documents included the records of the second Isthmian Canal Commission, 1904-1916, and related health and sanitation records. The collection includes correspondence, photographs, annual reports, maps and some architectural and engineering plans. The original Files of the Commission of Fine Arts, from 1903-1910, located in Record Group 66, were also informative.

In order to prepare for the portion of the study that would give appropriate historical context to the architecture of the Canal Zone, I kept mainly to references produced during the time of concentration. After checking corroboration of dates and other data, a sort of immersion in the historical discourse of the time aided the goal of understanding and evaluating context. Thus, I utilized Canal historian Ira Bennett’s comprehensive History of the Panama Canal, published in 1913, as both a primary and
secondary source. Bennett includes chapters from some of the central figures in Canal
decision-making and construction to supplement his thorough chronicle of the period. His
work includes invaluable construction documents and appendices not otherwise currently
available. *The Panama Gateway*, published in 1913 by Joseph Bucklin Bishop, secretary
of the Panama Canal Commission was consulted in much the same manner. It was
helpful to examine these documents as well as works by other contributors to the treaty
process, as Philippe Bunau-Varilla's *Panama: The Creation, Destruction and
Resurrection* published in 1920 and *The Great Adventure of Panama*, written in 1914 and
Harmodio Arias’s *The Panama Canal: A Study in International Law and Diplomacy,*
published in 1911. George W. Goethals’s document, written for the National Geographic
Society, entitled *The Panama Canal*, is a detailed description including anecdotal
information on his work in Panama during construction. His record of facts and
impressions is valuable for recreating the historical context.

*The Canal Record* was the Canal Commission's official newspaper from 1907
through 1999. The weekly publication carried formal notices and news of the
construction as well as social life and other activities of the Zone. Therefore, it is a most
useful source of information on the realities of life for Americans and others in the Zone,
as well as reporting the anticipated construction and general account of new buildings
during the period 1900-1920. Full sets of these documents are located at the National
Archives and in Panama at the Canal Zone Information Center. The Canal Zone
Information Center in Balboa holds a full set of the *Annual Report of the Governor of the
Panama Canal* for each year of operation. The annual reports of the Panama Canal
Commission (PCC) provided detail on engineering and architectural projects, financial data and some limited commentary by current officials. A full collection of these are available at the Panama Canal Zone Information Center. Other useful journal and newspaper articles included features in the *Saturday Evening Post* and *Smithsonian*, obituaries in the *New York Times*, and architectural and urban planning journals.

Original architectural plans drawn on canvas were consulted in the Plan Files section of the engineering section of the Autoridad del Canal de Panama, Balboa, Panama. The balance of these are archived there as digital images. Two articles by architects of the civic architecture reveal their design intent and understanding of the site: “Architecture on the Isthmus of Panama” (1914), by Austin Lord, appeared in *Architecture* and “The Ancon Hospital, Ancon, Panama Canal Zone” (1919), by Samuel Hitt, in *The American Architect*. Faith Reyher Jackson’s *Pioneer of Tropical Landscape Architecture: William Lyman Phillips in Florida* (1997) provides not only a biography of the landscape architect for the Canal Zone project, but fine detail on the Prado area construction. Many of Jackson’s primary sources are held in her private collection.

The greater source of original photographs of the Canal Zone area, including the buildings is located in the Library of Congress, American Memory collection and the Historic American Building Survey section of the Prints and Photograph Division. Much of the information on the Panama Canal, including many original architectural and construction records, was recently received by the National Archives and Library of Congress. However, much of this information remains unprocessed and inaccessible.
For the analysis of US expansion vis a vis Panama, Harvard historian and diplomat, Archibald C. Coolidge’s *The United States as a World Power* (1908) contains theory regarding the dynamics of national power. The most insightful and instructive model for this section of analysis was *The United States and Imperialism* (2001) as Frank Ninkovich conceptualizes American imperialism “as an element of the geopolitics of modernity.”7 *American Ideals, and Other Essays, Social and Political* (1903) by Theodore Roosevelt contributed to an understanding of the pervasive progressive political outlook of the referent time.

Stephen Frenkel’s dissertation, *Cultural Imperialism and the Development of the Panama Canal Zone, 1912-1960* (Syracuse University, 1992) presents a geopolitical study with the thesis that Panama was developed in the American consciousness, as America’s “other.” In relation to this, my topic invokes an integration of ideas from architectural theory and meaning to articulate that which was the “not-other.” Juxtaposed against the “other” of the jungle, the Zone stood alone: neither Panamanian nor US mainland, but projecting an American civic presence.

The charters and layout maps for the World’s Columbian Exposition of 1893 reprinted in Reid Badger’s *The Great American Fair. The World’s Columbian Exposition and American Culture* were the major documents for my assessment of the scope of the Exposition.

7 Ninkovich 246.
To structure the analysis of meaning, four sources were utilized. Two of philosopher Nelson Goodman’s theoretical works, *Ways of Worldmaking* (1978) and the other written with Catherine Elgin, *Reconceptions in Philosophy and Other Arts and Sciences* (1988) guided my analysis for meaning in Canal Zone civic architecture. Kevin Lynch’s *The Image of the City* (1993) asserts a model for imageability, which provides theory useful in assessing the Canal Zone civic center’s perceptibility, visual and otherwise. Employing a socio-cultural approach to analysis of the manifestations of imperialism, *Imperial Cities. Landscape, Display and Identity* (1999) edited by Felix Driver and David Gilbert, explores the effect of imperialism on the landscapes of cities. This work presents the idea that classical styles are the architectural medium through which empire is historically apprehended. *Meaning in Architecture* (1969) edited by Charles Jencks and George Baud was useful for a theoretical guide in the process of determining meaning in the Canal Zone civic architecture.

**Review of Chapters**

Having introduced my general argument, I will outline the content of the dissertation to serve as a guide as to how the argument is addressed in the text. The first chapter introduces my theoretical structure and general methodology for development of the argument. The concepts of ‘meaning in architecture’ and of ‘political architecture’ are treated in order to provide a theoretical foundation for the analysis and conclusions that follow. This is also to offer justification and background for the concentration on material, architectural artifacts as bearers of meaning relating to early US involvement in
Panama. A greater exposition of the way in which architecture may be treated as material culture prefaces the utilization of the interpretive methodology of material culture studies to reveal sociopolitical meaning. A contextual consideration of the origins and development of the contributing historical, political, social, and economic dynamics that effected the creation of the architectural artifacts follows.

The second chapter supplies a historical account in order to appreciate the setting and conditions in which the civic architecture of the Panama Canal Zone was built. The development of the contextual placement of the architecture follows the idea that like the mola textile art of the San Blas, each layer of the history of the land and people is contributory. As in mola construction, the first layers of historical fabric laid down are distinctly, though perhaps minimally, present in the final art. I concentrate on the historical narrative of a collection of mostly foreigners who, though they lived generations apart, are unified by their ultimate relation to the realization of the Canal project. The chronological narrative follows significant events and actors, from European contact through the first recorded mention of an isthmian waterway to the completion of the Canal. Upon its completion, the Canal would serve both commercial and national military agendas, just as was registered four hundred years before.

The third chapter provides a context of relevant contemporaneous socio-cultural and architectural historical activity taking place in the United States. These include a discussion of the influence of the architectural style and fervor of the World’s Columbian Exposition of 1893, the City Beautiful Movement, the American Academy in Rome, and
the influence of technological innovation and advancement on architectural and urban design of the period. It is essential in the development of my argument that the Panama architecture was an important exemplar of its contemporary civic improvement philosophies and projects as demonstrated at the World’s Columbian Exposition of 1893 and carried on as the City Beautiful Movement and the Garden City Association. The chapter provides a guide in understanding commonalities and connections with the ideals that were manifested in the Canal Zone civic center.

In the fourth chapter the six civic buildings, including the Panama Railway Station, Canal Zone Administration Building, Balboa School, YMCA, Gorgas Hospital, Balboa Union Church, and El Prado landscape are studied, analyzed and presented. After close examination of each building, I present a narrative description, history and discussion of the significance of each of the six representative structures and the Prado landscape, utilizing the official Historic American Building Survey format as specified by the US Department of the Interior. Each of these structures is a share of the “spinal column” of this dissertation, for only in accurately knowing the buildings and landscape can their meanings be discerned. This section will follow the chronological order of the construction of the structures.

The fifth chapter is an analysis of what the architecture and landscape of the civic architecture of Balboa means. After the elements of their form and design are isolated, I will look to their interpretation and meaning through time, from creation, to full-function, through changing political climes, to change in ownership and context.
The analysis of the origins of the elements and style of the buildings will include a discussion of the influence of the City Beautiful Movement, the use of the Beaux-Arts style and its relation to the American Academy in Rome. The building interpretations will involve a discussion of the classical style developed in early democracies. The elements’ meaning will be situated within and related to the promoted and perceived United States’s developing national identity, intent and aspiration of that era. The discussion will include an examination of the connotation of ‘Panama’ to the US at the time.

The meaning of Balboa civic center is addressed by applying Kevin Lynch’s concept of *imageability* for evaluation of city forms. Nelson Goodman’s notion of *worldmaking* is utilized to provide a model for understanding the composition of worlds vis-à-vis the American civic center, Balboa, created inside the nation of Panama. He identifies the use of symbols and style to understand the world which is represented. As these have been discerned in an earlier chapter, this discussion turns to their role and meaning in the ultimate presentation of an unambiguous, recognizable American identity of the world of Balboa.

In the sixth chapter conclusions to the investigation are offered. Because architecture is such an expressive and reflective material artifact and because the civic architecture of the Canal Zone was on display as part of the unparalleled (US) civil engineering accomplishment, it contributed to the formulation of US identity. The new identity as a world power was characterized by the use of technology and innovation to
produce or deliver results with efficiency, democracy, progressiveness and modernization.

Finally, with the background of the narrative of the documentation of these American cultural icons recorded, a transition from the past, into the present: The world of an American Balboa ended officially on December 31, 1999. A question arose repeatedly in personal interviews with individuals, both Panamanian and American, who had personal and professional knowledge of the civic architecture of the Canal Zone during the early research for this project. They wondered about the future for this built environment. One Panamanian security guard was prepared to draw a gun in response to my photography of an unoccupied building. It was as if he knew he was there to protect something very important, but in reality, had a difficult time defending why an abandoned building was not to be photographed. Other new-owner Panamanians stated that the buildings and landscape carried much historical meaning for them; Americans, too, some fourth generation Zonians, felt a connection and responsibility for these civic buildings that were the site of a unique phase of American history. Although their reasons may not be the same, representatives of both nations have interest in the structures’ preservation as part of their own heritage. The civic architecture is part of a shared cultural site. The built environment of Balboa has evolved from the site of supremely important US activity into a partially occupied enigma, possessed by Panama.

The related international dialogue demonstrates how preservation projects function as cultural diplomacy in international relations, especially in the situation of
shared cultural sites. Future research could develop this perception and situate it within the general definitional context of public, specifically, cultural diplomacy, political architecture, and the circumstances of Panama-US diplomatic relations. I suggest that there is a role that the architecture's preservation might play to re-define and re-construct that which many Panamanians have understood as a colonial relationship. It remains to be seen what type of goals for the integrity and authenticity of the structures might be maintained. Additionally, the appropriate governing body must be determined to broker and manage such projects. Certainly, the HABS and HAER documentation projects, mediated by ICOMOS have contributed to this understanding. Further research would contribute to the utilization of preservation projects as tools of public diplomacy.
CHAPTER 1

INTRODUCTION

The Study Overview

The civic center of the Panama Canal Zone has been seen as an exemplar of American imperial presence. Closer examination of the architecture and landscape composition reveals that it is much more complex. The architecture of imperialism is rich in subject matter: there are traditions in English, French, and Spanish colonies. A general assumption by social and political historians is that it conveys a sense of authority of power sources on new continents. America did share in this tradition of expansion—for example, achieving trade and residence concessions in China in 1844, Midway Island in 1867, deep-water harbor rights at Pago Pago in 1872, Hawai‘i in 1893, and a presence in the Philippines that did not end until 1946. The greatest experience of US imperial action of this kind was during this period. However, the Panama Canal Zone, and the architecture there, was intended to be a civic improvement defined project not typical of nineteenth century imperial endeavors.

There is coincidence in the presence of neoclassical and classical architecture during times of US imperial expansion. Sometimes architectural features were used to display imperial wealth or a hierarchy in power is denoted with a hierarchy in buildings.

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10 Dudden 10.
However, just because this architecture looked like a symbol of power, does not mean it was a material manifestation of imperialism, imperial power or an architecture of dominance. Architectural historian, John MacKenzie observes in *Imperial Cities, Landscape, Display and Identities* that imperial culture including architecture often seems to be most imperial just at the time when an empire is waning. Perhaps an explanation for this is that national images for replication have finally become recognizable enough over time for use in cultural images. Alternatively, the nation might be simply attempting a final cultural initiative to promote or stress the nation’s status. Neither of these scenarios is within the context of early Canal Zone architecture. This architecture is example of an exception to usual expressions of imperial power. It is monumental architecture built for the purpose of civic improvement for Americans living in the Canal Zone, versus the use by an oligarchic power exercising control over a colonized people.

The Balboa civic center, built between 1909-1920, was an exemplar of American ingenuity, involving mangrove draining, earthmoving and grading, surveying, concrete pouring, the latest technology in sewer and water delivery systems, electric street lights, subterranean power lines, paved streets and steel structure construction, all arranged in a unified plan. It also included six principal buildings and their landscape, carefully situated to exploit the climatic advantages and provide the most modern facilities to benefit the workers who made possible the efficient function of the Canal.

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12 Felix Driver and David Gilbert, eds. *Imperial Cities. Landscape, Display and Identity* (Manchester, UK: Manchester UP, 1999) xi.
The architectural style employed is a composite of Beaux Arts and Academic Neoclassicism, combining classical architecture of ancient Greece and Rome with the axes forms of the Renaissance. The Beaux Arts style is characterized by order, symmetry, ornamentation, grandiosity and formality, as its French translation “fine art” suggests. It is often identified with the architecture of empire because of its emphasis on a grand scale, its use of large arches and columns, and decorative detail (medallions, shields) often associated with aristocracy. Architects involved in the buildings' design and construction included Austin W. Lord of the firm Mead, McKim and White, William L. Phillips, of the Olmsted Brothers partnership, Samuel M. Hitt and H. E. Bartlett.

However, the most important aspect was how this civic architecture adhered to the civic ideals of the US mainland City Beautiful Movement. Civic improvement throughout the US was said to have been inspired and begun with the Columbian Exposition of 1893. The exhibition initiated organized interest in high design and improvement in parks, the use of outdoor art and monuments, streetscapes and sanitation systems. The Balboa plan was a preeminent example of this as the layout included parks, a sanitation system, streetscapes, all focused around the largest building in Panama, the Administration Building.

The Balboa civic architecture also conveyed an expression of American colonialism. It imposed a western architecture, strange because American architecture was not specifically known to the area, though the influence of colonnaded Spanish and
Second Empire French styles had already been established. As part of sensitivity to the local environmental needs, Mediterranean-like features appeared in the design as they were popularly utilized in the tropics. In terms of an ultimate requirement for the civic architecture, the goal and measure of the day was its efficiency and functionality.

A critical understanding of the Balboa civic center requires situating it first in a context of the multiple agendas of the development of the Canal Zone by describing its function and role there, and second, in the context of civic architecture in the US mainland. A major enterprise in American engineering proficiency, the civic center of Balboa was exemplar of the current modern technological competence—not an effort to develop Panama as an American colony. The civic center of Balboa was not destined to become the colonial capital of Panama. It was to remain as it was built, the administrative center of the Canal effort.

The American architects working there imported a North American tradition—based on the Beaux-Arts style and demonstrated the increasing interest in the US to affect civic change. An initiative to construct municipal centers to support democratic civic participation spread throughout all regions of the US. A large collection of railway stations, state capitols, museums, and court houses, all occupied with civic business that required grander buildings, were constructed throughout the 1890s and early 1900s. Balboa civic center is a similar expression—not a second-hand interpretation of this, but among the best of these renditions.

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Research Methods

My approach to investigate the information of such a pre-eminent location as Balboa, is to examine a representative sample of buildings. This study concentrates on six selected buildings and their landscaped mall in great detail. Close analysis of each significant building has not been carried out before. The architecture says much about the administration of the Canal Zone, the planners who developed it, and the socio-political circumstances of the US at the turn of the twentieth century. A follow-up to such detailed architectural analysis requires a more thorough analysis of the meanings it suggests.

This dissertation is based on primary architectural analysis of buildings visited during the preparation and assembly of information, Record Group 185 at the US National Archives Records Administration, discussions with relevant individuals, newspaper accounts, architectural plans and photographs, and secondary sources. The investigation of the civic architecture of Balboa, Panama Canal Zone required inspection of over 550 original architectural plans and related archival quality photographs from the time of construction. The analysis of the buildings is guided by Historic American Building Survey format methodology. Based on the close examination, and the context of a history of Panama and the histories of the contemporaneous American city improvement and City Beautiful Movement, conclusions will be drawn on the place and meaning of the civic architecture of the Canal Zone.
Methodologies of the disciplines of architectural history, linguistics and cultural anthropology (material culture) are utilized to understand the results of the analysis of the buildings within their context and reach the conclusions. They include semiotic analysis, a history of styles of architecture and their meanings, users' perceptions of the effects of the Balboa architecture, and an evaluation of the Balboa civic center urban form, applying Lynch's criterion of *imageability* and Goodman's process of *worldmaking*.\(^ {15} \)\(^ {16} \)

**Historic American Building Survey (HABS) Format Methodology**

The method of analysis of the six buildings and landscape of Balboa follows the critical narrative format of the US Department of the Interior Historic American Buildings Survey (HABS). Established by the United States National Park Service in 1933 in order to compile a record of America's historically and architecturally significant buildings, this method directs analysis through written documentation. The method requires examination of architectural measured drawings and large-format photography to produce a written report. The HABS format supplies a sort of code-breaking instrument for analysis of the primary source material of the architectural drawings and photographs. Analysis consists of examination of the component parts or elements of the building's structure within a context of its history, relationships to people and events, and setting. The evaluation for significance of the buildings is based on architectural features, design by an important architect, the presence of innovative structural systems


and/or important historical events or persons related to the site. The method involves both scholarly and professional participation.  

The HABS is a program of the US National Park Service for the purpose of systematically collecting and compiling accurate graphic and written records illustrating the characteristics of historic buildings, sites, structures or objects significant in the nation’s history. Documenting the historic built environment since 1933, it is the oldest federal preservation project in the US. The program documents relevant architectural, engineering, and industrial sites throughout the continental United States and the territories. Founder Charles E. Peterson expressed the intent to preserve records of “buildings which knew the beginning and the first flourish of the nation...If the great number of our antique buildings must disappear through economic causes, they should not pass into unrecorded oblivion.” The mission statement includes:

...the survey shall cover structures of all types from the smallest utilitarian structures to the largest and most monumental. Buildings of every description are to be included so that a complete picture of the culture of the times as reflected in the buildings of the period may be put on record. 

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19 National Archives and Records, RG 515.
The Historic American Building Survey (HABS) documents tangible evidence of the nation’s past. The archived data provide primary source material for historical research.

The American Institute of Architects provides professional counsel, while the National Park Service sets qualitative standards and directs preparation of records to be placed in the Library of Congress for public access. Along with the related Historic American Engineering Record (HAER) and the Historic American Landscapes Survey (HALS), the HABS collection is archived at the Library of Congress in the American Memory collection, Built in America section.

The Department of the Interior maintains this archive of America’s architectural heritage. The archive contains graphic and written records that explain and illustrate the significant characteristics of architectural and engineering structures and the technology that produced them. The purpose of documentation is to explain and illustrate; documentation is the last means of preservation of a property. If the property is going to be substantially altered or demolished, appropriate records of the site must be created and stored in the Library of Congress as historical resources.

The narrative of architectural and landscape history provides information on the ways and means of life in earlier generations. The purpose of monumental places is to inform citizens of the nation’s collective character and the American experience through

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20 In 1916 Congressional legislation created the National Park Service of the Department of the Interior of the United States, following a concept originated by Theodore Roosevelt, partially in purpose to conserve the scenery and the natural and historic objects. (National Park System Organic Act, 1916).
relevant venues or potential repositories. The National Historic Preservation Act of 1966 states:

The Congress finds and declares:

(a) that the spirit and direction of the Nation are founded upon and reflected in its historic past;

(b) that the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people;

(c) that, in the face of ever-increasing extensions of urban centers, highways and residential, commercial, and industrial developments...present governmental and nongovernmental historic preservation programs are inadequate to insure...future generations a genuine opportunity to appreciate and enjoy the rich heritage of our Nation...²²

The preoccupation of the records of American buildings and landscape heritage is to provide information to benefit and inspire the American people. Because the subject buildings have been constructed with Federal funds, they are assumed to be in the national interest.

Principal HABS architect John A. Burns states that historic structures are important tangible evidence of history. Buildings may be significant to the nation's history for their characteristics and features and association with people and events, but they must first be closely examined to determine their status. A complete HABS survey consists of measured drawings, large-format photographs and written history of the site. The process begins with observation, recording and analysis of data and ends in the site's placement within a context in order to evaluate significance. The both historical and descriptive analysis begins to develop building context. Context gives meaning to the building or site and this then can be evaluated for significance. However, context cannot be explored without an accurate and authentic understanding of the location during a specific time of relevant focus.

Measured drawings of the site, or alternatively, as-built architectural drawings, document the structural information. They also yield explanation on how the site functioned or as base drawings for restoration work. The photography portion of the survey records texture, detail, and spatial relationships. Produced with large-format cameras, the perspective-corrected black-and-white photographs also position the site within a physical context. These two processes provide integral support for the story to be told in the written history.

The written history portion of the survey explicates the context. It focuses on the origin of the building, considers associations with distinguished people or events and

places the structure in relationship to regional and national trends. It requires collection of historical information and graphic documentation, analyzing the site or structure in question, and then synthesizing the data to construct a contextualized critical narrative, identifying the building as an artifact.\textsuperscript{24} Because of its multiple aspect approach for examining the history and meaning of structures or sites, I chose to employ the HABS model as most appropriate for research on the civic architecture of the Canal Zone.

An expanded collection of photographs and architectural plans for the subjects of the study of civic architecture of the Canal Zone are filed in the appendix. The following HABS outline format reports document the architectural analysis of the Panama Railway Station (1913), Administration Building (1914), Balboa School (1914), Y.M.C.A. (1914), Ancon/Gorgas Hospital (1915) Balboa Union Church (1917) and the Prado mall landscape (1914). Because this is not strictly a report for HABS purposes, some liberties with the absolute format are taken. As the subject of this investigation is the buildings and the context and meaning of their construction, the analysis relates to the “as built” structures in the circumstance and environment of their initial construction. A standard HABS report references the status of the building over time, including up to the present. Each site report includes the outline-format analysis, architectural drawings and photographs of the civic building.

\textsuperscript{24} Blaine Cliver, then Chief, HABS, conversation, July 2002.
A Semiological Approach

A full semiological exposition is not the concern of this dissertation. However, in order to postulate and exploit the assumption that architecture bears and gives out meaning, some hermeneutic consideration is required to advance the argument. Signs are the link between our own consciousness and the phenomenological world; signs are the first tools of every language of communication. Architectural theorist and historian, Charles Jencks states that (1) every object, act and statement that one perceives is meaningful, and (2) meaning is always in a state of collapse and paradox. This implies that although all objects have meaning, there are no ultimate meanings. The semiological triangle indicates that all symbol must pass through a medium of (being capable of) thought before it can acquire or be embedded with meaning. After the meaning is received, the flow can and will proceed through a shorter route, avoiding thoughtful consideration on each perception.

Thought (content, concept, signified)

Referent (percept, denotatum, thing)  
Symbol (form, word, signifier)

Figure 1. Semiological triangle, adapted from Ferdinand de Saussure's semiological models.²⁵

The aim of this triangle borrowed from linguistics is to illustrate the relation and association between language, thought and reality that brings meaning. As the diagram

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indicates, the relations are dynamic and not absolute. After meaning is received, the flow of recognition can and will proceed through a shorter, more abbreviated route, avoiding repetitive consideration on each perception.

Just as linguists analyze for basic units communicating verbal meaning, so one may examine architecture. It has been suggested that as linguists isolate fundamental ‘meaning units’ called phonemes and morphemes architectural interpretations should cite formemes, funcemes and techemes to be used in a field known as archistics.  

Behaviorists, Osgood, et al, advance this dialogue to plot, measure and quantify the dimensions of meaning on a matrix in The Measurement of Meaning.

Because architecture is a ‘sign behavior’, it conveys meaning by opposition or association—context and metaphor. From Greek language, metaphor is the incorporation of meta (with, after, beyond) and pherein (to bear or carry). Western architecture, drawing from its Greek ancestry, is primarily accessed through metaphor. Norwegian architect Christian Norberg-Schulz asserts “…the meaning of an object consists in its relations to other objects, that is, in a structure. The meaning of an architectural element, therefore, also consists in its relations to the other elements… (and to its inner elements)...Meaning presupposes the repetition of a limited number of elements and relations, which should allow all the combinations necessary to cover all important life-situations.”

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(1924) articulates the notion of "empathy" as a constituent of 'meaning': "Our aesthetic reactions are limited by our power to recreate in ourselves, imaginatively, the physical conditions suggested by the form we see; to ascribe its strength or weakness into terms of our own life..." and "We transcribe into terms of ourselves. This is the humanism of architecture." 29

In architectural and artistic terms, empathy is that process whereby persons endow humanity to forms without souls. Constantin Brancusi referred to architecture as "inhabited sculpture."30 In the mid-late nineteenth century, critics thought empathy was the highest poetry that architecture could achieve.31 The concept of empathy is upheld by Roland Barthes' assertion that beyond the informational (literal) and symbolic (signification) content, there is a "third meaning" for images or forms.32 He refers to the third meaning as "signifying"—referent to the field of the signifier. This meaning is "obtuse." To follow a geometric model, the obtuse is more revelatory and can contain more meaning than a straight on "right-angle" interpretation. The obtuse also extends beyond culture, knowledge and information, and therefore is compatible with the wide bounds of the concept of empathy. Roland Barthes refers to it as the "disguise" quality of meaning. By approaching through a different medium, such as architecture, more of the narrative may be revealed or the introduction to a counter-narrative may result.

A modern contemporary example of this dynamic exists in the latest alterations of the surrounds and approaches to the civic buildings in Washington, D. C. In order to refit them adequately as a response to terroristic threats, barriers, bars, and blockade walls have replaced the original open access. These replace features that Frederick Law Olmsted designed into a landscape he envisioned to support an almost spiritual view of the Capitol building. Although the narrative presented by the architecture of Washington D.C. and McMillan Plan originally conveyed democratic values, the present reality as counter-narrative is that the alterations reflect a different message of suspicion of all approaching and denied access to the government and highest judiciary of the land. The structural changes to the architecture and landscape record amendments in how these same democratic values are treated at present. Though the theoretical message of freedom and justice for all has not disappeared from the nation's tenets, the antagonistic communication emitted by the new built environment carries a different and opposite significance.

Material Culture Methodology

A basic theory of material culture studies is that human beings may be understood through their creation of institutional systems and structures. Henry Glassie asserts that when human beings produce architecture, they disrupt space to "divide it into useful, comprehensible pieces... (which) brings meaning to the spatial dimension." So, it is reflexive, as they bring meaning to the space, they also denote meaning of themselves.

Glassie continues, “Buildings, like pots and poems, realize culture...meanings that lie in the selection of (building) materials are social and economic as well as environmental.”

The assigning of meaning to architecture began within the ancient Greek intellectual tradition of seeking meaning associated with any occurrence. It is consistent to see the classical humanist notion of ‘man as the measure of all things’ as the premise of material culture and therefore, meaning in artifacts. Platonists held form and meaning “inseparable and codependent.” Buildings are artifacts and form; therefore they are linked up or associated with meaning.

The built environment is an element of the material culture that defines and documents a people in time. In The Allegory of Love (1936) C. S. Lewis says: "Humanity does not pass through phases as a train passes through stations...whatever we have been, in some sort we are still." Material culture is the totality of tangible artifacts in a culture:

- the vast universe of objects used by humankind to cope with the physical world, to facilitate social intercourse, to delight our fancy, and to create symbols of meaning. The underlying premise is that objects made by humans, consciously or unconsciously, directly or indirectly, reflect the belief patterns of individuals who made or used them.

35 Glassie, Material Culture, 227.
The ideas regarding these objects and the behavior required to manufacture them and the built environment landscape is all a part of material culture. For the purposes of this discussion, "culture" shall be limited and defined as those socially transmitted roles for human behavior or shared experience that entail ways of thinking and doing things and encompassing patterns of belief and concepts of value. These ideas are developed over time, through use and experimentation. The artifacts and landscapes objectively represent a group's subjective vision of custom and order.

Artifacts are inherently more powerful than words in illuminating the belief systems, values, attitudes and assumptions of a particular society. They are testimony of their creators and users, enriching the analysis of the physical world. Buildings as artifacts are visible proof of traditional customs, superstitions and ceremonies. For the work at hand, our artifacts are the collection of early twentieth century buildings. How far the buildings as objects of ordinary life can be pressed or deconstructed to yield relevant understanding of life, thought, or society is unknown. By the nature of the model, the limits will remain untested, though it does not discount the value of the process of investigation and association. 38

In his comprehensive work, Folk Housing in Middle Virginia: A Structural Analysis of Historic Artifacts, Henry Glassie approached the building as artifact via the paradigm of twentieth century structuralism, as articulated by Noam Chomsky and Claude Levi-Straus. From the linguist Chomsky, Glassie borrowed the concept that "culture is pattern in the mind; the ability to make things like sentences or houses to come

to an artifactual grammar." He has subsequently worked toward the assembly of an "alphabet" of meaningful units related to the built environment. Glassie's work follows the 1936 publication of a categorization of *Louisiana House Types* by their features and elements as identified by Fred Kniffen. After identifying these house types, Kniffen utilized them as an element of culture possessing great diagnostic value, denoting regional differentiation. Glassie takes the process further with the incorporation of the structuralist paradigm application. He, too, cautions that it remains to be concluded whether this approach will yield knowledge of the universal patterns that unconsciously structure the human conscience.

In *The Power of Things*, Del Upton considers that a social historical approach is beneficial as it presumes that architectural forms vary with the social and economic structures of society from some causal point. The next step is to identify the meaning of the causal. The word concept "meaning" is notorious for its multiplicity of meanings. Wittgenstein termed it an "odd job" word called upon for a variety of tasks. Earlier, in 1923, Ogden and Richards wrote an entire reference book about what meaning means. But perhaps the best insight into "meaning" of human phenomena is supplied by Max Weber and related to intention. The meaning of a human act is the agent's intention, purpose, motive, or reason for doing the act. An artifact's design crystallizes its maker's purpose.

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Significance and Meaning of Buildings

Buildings are bearers of meaning and embodiments of critical cultural values. They are as useful to our minds as they are to our bodies...those elements which have the most important physical roles are also often the most important psychologically...posts, pillars, and columns which have assured people of their buildings' structural stability have been just as critical in resolving other uncertainties and anxieties. 41

Thus begins John Onians' exploration of the role of architecture in the formation of Classical Greek culture and mind. He further posits that architecture, or built practice, is a realm in which actions are the result of complex thought processes that are neither formulated nor expressed in words. Buildings may provide a "three-dimensional history book reflecting the comings and goings, successes and failures of real people." 42 It is the purpose of this paper to apply this thesis in examining the Civic Architecture of the Panama Canal Zone and suggest the embodiment of cultural values in the architecture and built practice of that time.

Meaning is also interpreted in terms of its consequences. Philosopher and historian of culture, Wilhelm Dilthey says artifacts belong to the category of "objectifications of life" or the "mind-affected world"—everything human beings have created and in which they have embodied their thoughts, feelings and intentions. The

42 Ibid.
intrinsically meaningful entity to which he refers is "objectifications of life or mind-affected world is nothing other than the complex whole that anthropologists call Culture."43

The practice of "putting significance into form" is comprehensively illustrated in the European ecclesiastical architecture of the middle ages when meaning that could be conveyed by the architecture was more important than its function or beauty. This was because of the hallowed station that cathedrals were ordained to hold and the orientation of the masses to learning by illustration.44 Early 13th century Europe experienced one of the world's most prolific ages of building with a dozen-plus grand cathedrals constructed around Paris alone, as well as four hundred churches, thousands of bridges, castles, town walls and houses. As clerics attempted to communicate religious truths and teachings to an illiterate public, symbology rose to bridge the lingual breach. Parishioners of the time learned they could seek meaning when they encountered the cathedral. Emile Male said of the Cathedral of Our Lady at Chartres: "Other cathedrals of the Christian world have not known how to say so many things, nor how to say them in such splendid order...Chartres is the very spirit of the Middle Ages made manifest."45 Symbol, providing an alternative to word-language, was available for observation and interpretation within the interior and exterior structure of the cathedral, as well as in the resident art and music. The parishioners' process of finding meaning followed the Greek

43 Wilhelm Dilthey, quoted in Alan Hansen, Meaning in Culture (Boston: Routledge, Kegan Paul, 1975) 114.
44 John James provides superb documentation of the "reading" of the Cathedral of Chartres in Chartres: The Masons Who Built a Legend, considers the role of materials, craftsmen and design.
intellectual tradition to assign meaning related with occurrence. Meaning from the symbol is grasped only in relation to the other; meaning is created within structure.

In the fifteenth century, the revisited words of Roman architect and engineer Vitruvius (active ca. 46-30 BC) strengthened the discourse regarding the ‘meaning of architecture’ for Renaissance builders. He wrote, “In all matters, but particularly in architecture, there are these two points:--the thing signified, and that which gives it significance.” There is the allusion that his ‘significance’ becomes ‘meaning.’ 46 For the work of this dissertation, I build on his assertion to include a third point: the meaning transfers via the object and then manifests effects on surrounds. There is ‘meaning’ that creates the building and then ‘meaning’ that emanates from the building.

Meaning is absorbed into significance. For Jean-Paul Sartre, consciousness is itself the fact, the signification and the signified.47 Meaning arrives with a specific or privileged view of the past or former reality from which it contrasts. A community has rights to consensus on views and for a time and there is a discrete selection of meaning. This associative nature of architecture meaning may not exist as final, independent meaning. Therefore, for the work of this dissertation, “architectural meaning,” is assumed as dependent on context and catalysts.

Contemporary architect Arata Isozaki comments, “Architecture is a machine for the production of meaning.” If architecture generates meaning, there must be language as an instrument to communicate units of the meaning. This language may act both as the unit words and as connections of a thought, as a spoken language does. Architect and historian Leon Vaudoyer gave the term *l’architecture parlante* to his explanations of buildings. Seeing them as three-dimensional metaphors that could contribute to accepting progress in the industrial age, he articulated a linguistic-like structure for their interpretation. In the twenty-first century, linguistic terms such as ‘syntax, grammar, and vocabulary’ are commonly used in architectural parlance. Perhaps because architectural structure is by nature systemic and relational, a syntactical model is used in its elucidation. Architecture then acts both as “the communication of structure and the structure of the communication (or language).” The limitation of this use is in comprehending architecture as language when its concepts are already linguistic. The solution is that it must function as both.

Social philosopher Michel Foucault has these observations regarding language: It “does not say exactly what it means...[it has] a lesser meaning that shields, restrains, and despite everything transmits another meaning, the meaning underneath it...what the Greeks called *allegoria* and *hyponoia*” and “there are many things in the world that speak, and that not all are language. After all it might be that nature, the sea,...faces,

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50 Jencks notes in *The Language of Postmodern Architecture*, 1977, that as in verbal language, “Antonym, asyndeton, elision, etymology euphemism, synonym, rhetoric and simile are also found in description of architecture.”
masks, crossed swords all speak...Perhaps there is some language articulating itself in a way that would not be verbal...the *semainon* of the Greeks."

Charles Jencks emphasizes precisely how architecture serves as a language: "(a post-modern building) is one which speaks on at least two levels at once: to a concerned minority who care about architectural meanings, and to the public at large who care about traditional building and a way of life...The architects can read the implicit metaphors...whereas the public can respond to the explicit metaphors and messages of the sculptors...everyone responds somewhat to both codes of meaning." It has been noted that "a perplexing aspect of architecture is that we cannot avoid using linguistic terms in discussing it at almost any level." The impulse to speak of buildings as texts is evidence of the desire by human beings to retrieve their meaning and achieve a social comprehension through them. Buildings serve as the "built texts" from which human beings and their institutional systems may be understood. Therefore, the paramount primary sources for this dissertation research are the six buildings and the Prado themselves.

The study of the meaning of the civic built environment of the Canal Zone is approached like one of material artifacts that have become “cultural products.” The analysis proceeds, utilizing the methodology of material culture, informed by the architectural theory that all architecture consists of form, function and technique. Isolation of text and context serves to order the endeavor. By privileging context, "interrelation" replaces the "isolation and emptiness" of arbitrariness. The examination of

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54 Johnson, Paul-Alan, 421.
55 Vale 11.
the fundamental elements of the architecture is guided by these preparatory questions in order to isolate patterns:

- What is the object?
- Of what is it made; who is the creator?
- What is its use? Why was it made?
- Where did it originate?
- What effect did it have on its related environment?
- How may elements be compared, contrasted, and associated?

Observed patterns imply intention and thereby carry the artifact toward meaning. Pattern comes to meaning within the structures of contrast and association.56

In his work on the philosophy of aesthetics, Nelson Goodman identifies and posits the ways that buildings possess meaning before advancing to the question of what they mean. Further, he isolates ways in which public architecture "means." He notes that "A building may mean in ways unrelated to being an architectural work—may become through association a symbol for sanctuary, or for a reign of terror, or for graft."57 That meaning is determined by some manner of reference-making. He suggests these four categories of referencing: denotation, exemplification, metaphorical expression and mediated reference. The first is directly "denoted"—a plaque is engraved or quotations

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56 Glassie 47-67.
of an honoree are displayed within the building. Names are applied or a description included. The scripted message is then open for interpretation.

A reference associating the building to properties it possesses is the second way of meaning-making, or exemplification. The location of the building may epitomize or exemplify an urban design gesture. The position of the Lincoln Memorial, for example, at the end of the Washington D.C. Mall draws attention to itself as a focal point. A "chain of referential links" follows through to process meaning for the monument in this location to comment that it speaks of the precedence that equality and civil rights take as an American ideal. Third, a building may also emanate meaning through the expression of metaphor; metaphor itself being a transference of meaning. A deity-sized Abraham Lincoln sits in hallowed regality to connect with and super-empower his words engraved in the walls. Denotation, exemplification and expression are relatively simple types of symbolization, but a fourth way of meaning may be more complex. "Mediated reference" expands from meaning based on metaphor. This is meaning imparted by association, associative value or allusion. A sequence of associations proceeds from the metaphoric quality of a person or event to transform into broader values. Vale offers the example of the Lincoln Memorial becoming the site of civil rights rallies. In the case of "mediated references," the construction process for meaning often passes a circuitous route far from the architectural structure itself. Goodman states, "Even when a building does mean, that may have nothing to do with its architecture. A building of any design may come to stand for some of its causes or effects... historic event that occurred in it or
on its site, or for its designated use."\textsuperscript{58} Metaphor and mediated reference are the most accessible ways to behold buildings, as they are not necessarily premised on advanced architectural knowledge. He cautions that the meaning, which corresponds to a structure when it was built, may be re-defined in a later era; a building does not always express the nostalgia it evokes. A building may or may not evoke the same meaning that it expresses.\textsuperscript{59}

The question of exactly what public buildings mean inspires a different discourse. Vale states that government buildings "...serve several symbolic purposes simultaneously." These originate with the source of the order to build, the designer's vision, and the place in a broader acculturation that this structure assumes. The mostly neoclassical architecture of Washington, D.C. is unconsciously perceived as "metonymous reinforcement of an idealized and stabilized democratic government, worthy of ...tacit trust."\textsuperscript{60} Political scientist, Murray Edelman argues that government buildings "catalyze the common search for clarity, order and predictability in a threatening world."\textsuperscript{61} During the turbulent years between the end of Reconstruction and the First World War, the United States experienced a great quest for order in all facets of national life. This manifested a brisk campaign of constructing federally sponsored architecture, organized by the office of the Supervising Architect, with aims to affect a more coherent urban landscape.\textsuperscript{62} The repetition of style and form of these buildings

\textsuperscript{58} Goodman 43.
\textsuperscript{59} Goodman 44.
\textsuperscript{60} Vale 7.
\textsuperscript{61} Edelman, quoted in Vale 8.
nationwide was to establish order or at least a sense of perceived order, generate camaraderie and promote a sense of settled well-being.

The answer to what the buildings mean may be observed in the effects they elicit. One American author writes, “Washington, particularly the vast, open Mall, is the place I first felt like a citizen.” To the design and access changes in Washington, D. C., instigated by the devastating events of September 11, 2001, one citizen commented, “these schemes are largely anti-democratic and antagonistic to our ideals of open access and freedom of participation,” and “one used to enter the Capitol through the front door like an owner; now one will slink in through the basement like a servant. What message does this send about the contemporary definition of American democracy?” In summary, the meaning of buildings depends upon the perspective of the observer and upon the temporal context in which it is perceived. Buildings can serve as cache of information, particularly when the observers are acculturated to seek and extract specific messages. In The Lost Meaning of Classical Architecture, Heresy writes of “recovering” these meanings. If meaning is wrapped in the context of its creation, the truth of classical architecture could only be understood by recovering culture and life lived classically. The meaning is therefore, not as “truth”, but “meaning-as-application.” This ‘meaning’ dwells within present interpretive circumstances and intentions.

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According to cultural historian Ron Robin, the term *political architecture* describes, “A mode of monumental construction that openly demands some sort of privileges for its patrons by distinguishing the particular dimensions of their power from those of rival political entities.”\(^{66}\) Within the symbolic associations of these constructions dwells an articulation of national identity. Robin’s definition indicates that political architecture need not clearly articulate a specific national identity. It does achieve, however, a national distinctiveness from those political entities or states that surround the space in which the referent entity lies. The national identity that is communicated is usually characteristic of a ruling elite. There is the attempt in political architecture to translate principles into graphic symbols; there is also the overwhelming realization of the difficulties in “encoding an American creed into a concise and universal iconographical formula.”\(^{67}\)

Monumental architecture finds its greatest communicative successes in the hands of despots, as was noted by art historian and theorist, Gregor Paulsson:

If we look closely into the question of when the monumental quality was particularly sought for we find it was in anti-democratic times. Democratic Greece did not aim at the magnificent in dimensions and outlay; on the contrary, its temple buildings are strikingly intimate. Monumentality arose with the Helenistic princes...The monumental, ...must be identified with Imperialistic...Monumentality is able to have

\(^{66}\) Robin 9,10.
\(^{67}\) Robin 174.
this social function because it is an expression...of domination, of arrogance...or its inversion, fear."68

Therefore, it is predictable that the message of monumental US architecture in a foreign land might fail in clarity of communication. There are mixed messages to be imparted from an enclave of a democratic nation embedded in foreign soil with restricted access. A failure to communicate clearly may be vindication of American political ideals, indicator of a functioning democratic culture where many diverse voices have the right to speak. Nevertheless, political architecture manipulates space and form to be used in national image-making. As President of France, Francoise Mitterand said in an Atlantic Monthly interview “an epoch is inscribed in its monuments...one creates for eternity...architecture is not neutral. It expresses political, social, economic, and cultural finalities.”69

The value of the Canal Zone civic landscape as political architecture is best understood by way of the close relation between the goals of the City Beautiful Movement and a newly developing American foreign policy. These two have in common the idea that careful planning and design can affect or change societies, be they domestic or foreign. In order to enlist architecture as an iconic abstraction of American political intention, certain style, design and pattern repetitions are followed in order to make the messages accessible and identifiable. It will be seen that the goals of the City Beautiful as

manifested in the Canal Zone contributed to an identity of the United States as it was becoming a world power.

Issues, Scope and Rationale

This study addresses the early civic architecture (ca. 1910-1920) of the Panama Canal Zone by first evaluating its form or text, subtext and context. After a process of observing, recording and describing the components of the architecture and landscape, a signifying-system is identified, throughout which a socio-political system was communicated, reproduced and experienced. In the investigative method of material culture an interpretive analysis of these results reveals evidence of the structures as bearers of American meaning. It will be seen that a permanent and public exhibit of American ethos and aspiration of the time are articulated in the creation of these structures. They remained as artifacts of the time spent advancing from an agenda of self-containment and establishment of the nation to becoming a world power. The civic architecture of the Panama Canal Zone can be seen as a reflection of the Roosevelt Corollary in foreign policy and the Progressivist mentality and political philosophy that permeated American economic life, social structure, political behavior and patterns of thought. President Theodore Roosevelt ultimately called the effect, “Americanization.” Based on the evidence, it is my thesis that the American civic architecture of Balboa, Panama is a unique installation of early twentieth century American public civic planning, which can be further understood as a collective artifact of the United States’s

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mission, ambition and envisioned identity during her introductory years as a world power
nation.

In architectural and artistic terms, empathy is that process whereby persons
endow humanity to forms without souls. The sculptor Constantin Brancusi referred to
architecture as "inhabited sculpture." In the mid-late 19th century, critics thought
empathy was the highest level of artistic achievement. The concept of empathy is
upheld by Roland Barthes's assertion that beyond the informational (literal) and symbolic
(signification) content, there is a "third meaning" for images or forms. He refers to the
third meaning as "signifying"—referent to the field of the signifier. This meaning is
"obtuse." To follow a geometric model, the obtuse is more revelatory and can contain
more meaning than a straight on "right-angle" interpretation. The obtuse also extends
beyond culture, knowledge and information, and therefore is compatible with the wide
bounds of the concept of empathy. Roland Barthes refers to it as the "disguise" quality of
meaning. By approaching through a different medium, such as architecture, more of the
narrative may be revealed or the introduction to a counter-narrative may result.

A specific example of this dynamic exists in the latest alterations of the surrounds
and approaches to the civic buildings in Washington, D. C. In order to refit them
adequately as a response to terroristic threats, barriers, bars, and blockade walls have

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replaced the original open access. These barriers replace features that Frederick Law Olmsted designed into a landscape he envisioned to support an “almost spiritual view” of the Capitol building.\footnote{Paul Bennett, “Instead of Olmsted.” \textit{Preservation} March/April (2003): 38.} Although the narrative presented by the architecture of Washington D.C. and McMillan Plan originally conveyed democratic values, the present reality as counter-narrative is that the alterations reflect a different message of suspicion of all approaching and denied access to government process and judicature. Though the theoretical message of freedom and justice for all has not disappeared from the nation’s tenets, the antagonistic communication emitted by the new built environment carries a different and opposite significance.

\section*{Implications for the Panama Canal Zone}

Based on the evidence, it is my thesis that the American civic architecture of Balboa, Panama is a unique exhibit of early twentieth century American public civic space planning which can further be understood as a collective artifact of the United States’s introduction to an identity as a world power nation, on the pulse of world leadership aspirations.

The scope of this dissertation is to discuss the United States-constructed civic architecture of the Panama Canal Zone, c. 1910-1920, and its role in developing a North American civic center situated within a country in Central America. This will be accomplished by examining its origin, creators, style, geographical, cultural, political and temporal context, and the iconographical meaning. This course of study examines,
analyzes, describes and evaluates the significance of American architecture in the Prado area of the Canal Zone by focusing on six exemplar buildings and the landscaping of their surrounds, constructed between 1910-1920 in the area that came to be known as Balboa.

The Ancon Hill area which became Balboa, its Prado and surrounding permanent civic buildings replete with City Beautiful values, were executed between 1910-1920 under the artistic direction of three major architects. They were guided by design principles proposed and promoted at the American Academy in Rome with counsel from the Fine Arts Commission in Washington, D.C. Almost a century later, this built environment, now on Panamanian soil, functions as a repository of artifacts and ideas, of ethos and cultural forms of the United States. The steel construction and hollow Natco block walls become bearers of cultural meaning.75

There are other of these built environment artifacts from the United States' preamble to world power: in the Philippines (Manila, Baguio, 1905-1914), Cuba (Old Capitol Building, 1929), Puerto Rico (San Juan Capitol, 1929), Hawai’i (Pearl Harbor Shipyards, c. 1913, Army Barracks and Quarters, 1914) and Guam (1915) (Crain). However, the Panama Canal Zone public architecture bore (and bears) a somewhat different meaning. Here the United States enabled the birth of a nation, completed a transportation system to change the spatial structure of the world and created land on

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75 Natco tile, was made of clay mined in New Jersey, patented by National Fireproofing Company of Pittsburg, P.A. Recognized as the finest innovation in fireproof construction available from ca.1912, it was used in most American construction projects. Because of this, its presence became synonymous with an American presence. National Fire Proofing Company. Fireproof Construction ... Natco Hollow Tile (Pittsburgh, PA: 1912).
which to build the town. Vale states that the establishment of a built environment proclaims the worthiness of the incoming regime and advances its status. One goal of such government buildings is to forge and project national identity and/or national unity.  

Although it might be possible to argue that the area stands as a symbol of an oppressive, autocratic empire, I propose that the architecture and plan for Balboa was an expression of the preeminent technology and training of the times. It was the best with which the US was equipped to innovate and lead the world. It also functions as political architecture as these artifacts utilize a mode of construction “that openly demands some form of privilege for patrons by distinguishing …particular dimensions of …power from those of rival political entities.”

The handful of architects assembled for the task of constructing Goethals’s planned community were chosen for their experience in the neoclassical academic architectural style and City Beautiful values. Here was a blank canvas on which to express the strengths of American City Beautiful philosophy then widely exhibited at national expositions, particularly the Columbian Exposition of 1893, and executed in other American enclaves; here was the opportunity to create something new on a terrain newly re-created in the massive public works project.

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76 Vale 10.  
77 Robin 8.
The architects' assignment was to create an ideal civic center, inspiring civil order and unity, distinguished in function, orientation and philosophy from company town and military station. The requirements for Goethals's civic center were met with a timely plan, incorporating design values of beauty and harmony with a practicality and humanitarianism expressed as sanitized, streamlined, and technology-run, Americanized modernity. The neoclassical architecture adapted for the needs of the tropics was an expression of the City Beautiful Movement, versus a declaration of imperial grandeur. A survey of commentary on the American monumental architecture being built at the time indicates that an ideal was to evaluate and claim the construction of the time as "buildings of the highest character and the most modern, up-to-date equipment." It was a statement to the 'folks back home' as well as the local population and the rest of the world. The designs incorporated indigenous motifs and climatic concessions in the official buildings, signaling an informed respect for the local culture. I contend that the Canal Zone's built environment at this time was an expression of American national identity that was driven by the use of new technologies to answer the demands of development and expansion. It was an articulation of modern, practical and civil efficiency. During the early years of involvement in the Canal Zone, the US achieved high levels of medical and technological accomplishment, military capability, the economic viability of commerce and new horizons for "Progressives." 

In this location nine degrees north of the equator, an appropriate built
environment was needed to “fend off the tropics-induced indolence and self indulgence...
relaxing the moral fiber.” As cultural geographer, Stephen Frenkel has discussed in his
work, Cultural Imperialism and the Development of the Panama Canal Zone, 1912-1960,
the jungle was seen as a savage threat to the markers of civilization, “…encroaching upon
all cities and towns on the Isthmus and it is a continual fight to keep them back a few
hundred yards.” As Ancon Hill and Balboa were to be the geographic administrative
center of power for the Canal enterprise, the structures there needed to convey a sense of
modern technological defeat of the primitive and savage jungle. The business of the civic
center was foremost to make possible the efficient administration, operation and
maintenance of the Canal. While making sure of the successful operation of the Canal, it
would also bring a civilizing force. The residual effect was the influence these buildings
and their configuration had on residents’ lives. This was an opportunity to test the City
Beautiful philosophy that if a physical environment were designed to include beauty and
organization, it would bring about the ethical behavior of individuals living in the
environment.

Upon completion, the civic center conveyed what Goethals had requested: “The
Canal and the community connected with its operation are the finest expression of
American thoroughness in engineering, public health and community life...It is a model
of sureness and efficiency and an example to the world of the capacity of the American

80 Samuel Gompers, President of American Federation of Labor, speech, 1924.
81 Stephen Frenkel, “Cultural Imperialism and the Development of the Panama Canal Zone, 1912-1960,”
diss., Syracuse University, 1992, 209.
82 Gompers.
people." Beyond the domestic influence, a greater scope was projected: [by the modern example of the Canal Zone] "the American spirit of energy, health, self-reliance and order thus spreads through Central America from our Canal Zone." Theodore Roosevelt called the process "Americanism." 85

The historian Claude Bragdon commented early in the recorded architectural history of the United States that "architecture images at all times a nation's character...is the mirror of the national consciousness." Landscapes act as a signifying system throughout which a social system is communicated, reproduced, experienced and explored. 87 It is my contention that by design, the permanent architecture and landscaping features of the Panama Canal Zone were bearers of meaning and makers of order for an American civic presence. As political architecture, they conveyed the spirit, intent and aspiration of US expansionism present at the time. These forms and their composition gave expression to a burgeoning national identity directed by a mission to benefit the world, and Progressivism. They also distinguished a particularly American landscape. Now, as in its early years, this built environment is a rich source of information as symbolic illustrations of the United States's civic ambitions of the early twentieth century. Because they were in place since the early days of the Canal's operation by the United States, the civic buildings carried these messages and symbols as political architecture.

83 Canal Record 67 C 30/1924.
84 Canal Record 8 D 3/1921.
87 Duncan, 1990 in Frenkel.17.
Symbols of the United States’s power, security, organization and goals for order and civil behavior were projected in the classically landscaped and designed Prado, and six buildings. These are: Railway Station (1913), Administration Building (1914), Balboa Elementary School (1914), YMCA (1914), Ancon/Gorgas Hospital (1915) and Balboa Union Church (1917). The Academic neo-classical architectural style reflected the design values of the City Beautiful Movement, the momentous philosophy of urban planning then cresting in popularity in the United States. As the civic center became a showcase of innovation for life in the tropics, companies and governments in Venezuela, Australia, South Africa, Fiji, Greece and Ceylon petitioned for the sharing of plans. These building designs were utilized for other American enclaves in the Philippines, Cuba and Hawai’i. Eventually, a selected collection of plans, illustrations and instructions were made available for this purpose; it was a virtual tropical town-in-a-box.

This dissertation reflects an interdisciplinary approach to the synthesis of research from a wide variety of sources including architectural history, US and Latin American history, American diplomatic history, political history, architectural plans and construction diaries. Because artifacts such as maps and pictures are not ideologies to be stared at, but texts to be read”, interpreting the Canal Zone through the architectural artifacts and the political and ideological information that they retain offers insight into a time past and present. Because they are part of a shared past, the preservation of these buildings can function as a tool of cultural diplomacy in relations between Panama and the United States.

Clifford Gertz 135.
The HABS and HAER Panama Project for documentation of the buildings and the
Canal engineering is an example of cultural public diplomacy to be observed and
analyzed. The objects to be surveyed serve a unifying task, making fluid a common
discourse that progressively brings about a convergence of international thought. In the
final chapter I will explore the use of historic preservation projects as tools of public or
cultural diplomacy between nations, specifically as in the case of Panama, when there has
been a change in national ownership of properties.

Political historian, Ron Robin has written:

As historical documents, the (foreign) federal architectural activities
transcend the ...field of foreign affairs. They denote significant foreign
policy transitions and important international transformations in the
nation's character...yet historians ignore these very bold articulations of
global objectives and their social and cultural foundations. This neglect
derives in part from the interdisciplinary nature of the subject
matter...American political architecture in foreign lands does not fit into
any narrowly defined discipline...⁸⁹

In reflection of these comments, the investigation brings together the revelations of
correspondence, interviews, oral history, architectural plans, engineering records,
American diplomatic, political, cultural and technological history, art and architectural

history, the methodology of material culture analysis and a knowledge of architecture. Because American civic and political architecture in foreign lands does not fall into one discipline, this dissertation reflects an inter-disciplinary approach to the subject, exemplified by American Studies.
I. Panama

The vibrant *mola* of the Kuna of the San Blas islands, Panama, present a delicate richness of color and craft. In a distinctive intricacy of reverse appliqué, cut channels reveal a foundation fabric of Colombian cotton, showing through to define the final complex product. Often the first fabric will either delineate a figure or create a pattern.
to be continued throughout the piece. The sometimes confusing history of Panama is like the mola. Just as the original layers of fabric are evident in the final mola composition, so the early Panama saga reveals the context of the later canal period. Each layer is significant, though varying amounts will finally show through. The composite appearance of a mola is not truly appreciated without first removing the ordered, outer tiers to recognize the layers beneath.\(^\text{90}\)

In the same manner, the consequences of the events of Panama's early history must be examined as lasting evidence of the social and political milieux, showing through before and during 1910-1920. The mola method of layering provides insight and technique for understanding the historical and social context into which the Panama Canal and its American civic architecture was conceived and built.

**Panama before Panama**

The very idea of a waterway to connect the two seas stretches back for centuries before it was realized in 1914.\(^\text{91} 92\) The first layer of this history begins with indigenous people, now collectively referred to as the Carib. The Carib have been characterized as peaceful agricultural, with little hierarchical organization and, possibly, practitioners of cannibalism.\(^\text{93}\) One Carib group, the Kuna, allied themselves to the Spanish, after the

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\(^{93}\) Howarth 277.
first Spanish incursions into the area. The expedition of Rodrigo de Bastidas in 1500 is accepted as the first known European contact with the inhabitants and land now known as Panama.

One of Christopher Columbus’s principal aims on his fourth and final voyage, which took place in May 1502, was to discover a narrow water passage running westward between what he believed to be two great land masses, Cuba and Paria, or the Panama end of South America.\(^94\) Columbus assumed that this waterway would lead from the Atlantic to the Indian Ocean. Sailing with his brother and his son in four ships, Columbus made landfall at Almirante Bay, Panama. Although Bastidas, sailing from the west, had first discovered the isthmus, Columbus may be called the first European colonizer in the area.\(^95\) \(^96\)

Following Columbus’s death in 1506, King Ferdinand divided his *Tierra Firme* \(^97\) into two provinces, Nueva Andalucia and Castilla del Oro. Alonso de Ojeda and Diego de Nicuesa became governors. Ojeda sailed out with stores and livestock in an expedition of seven ships, with crew including Francisco Pizarro and Vasco Nunez de Balboa.

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\(^94\) Howarth 7.
\(^95\) Columbus died believing Cuba was part of China and recorded that he was somewhere in Malaysia when he was in the Darien region of Panama. Howarth 7.
\(^97\) *Tierra firme* was initially the term applied to that land which Columbus discovered. As real knowledge of this land materialized, it was applied particularly to the land between Cape de la Vela on the east and Cape Gracias a Dios on the west. After Columbus's death, King Ferdinand divided into two provinces, one Nueva Andalucia and Castilla del Oro.
Balboa later founded the colony of Santa Maria de la Antigua del Darien. He led a reconnaissance in September 1513, moving a brigantine and nine canoes sixty miles across the isthmus to Careta. In a dramatic and often recorded moment, on September 25 (also recorded as October 5) 1513, Balboa had his first glimpse of the Pacific Ocean—calling it the south sea. He was the first European to cross the isthmus. The King of Spain rewarded Balboa by making him governor of the province of Castilla del Oro. When he later became governor, his principal goal was to find a waterway to Peru.

By November 1520, Ferdinand Magellan successfully sailed through the straight at the tip of South America that bears his name into the sea he called for the first time, the Pacific. With these landmark findings, the search for breaks in the landmass of the Americas ended. The era of explorations was replaced by a period era of ruthlessly protected Spanish trade outposts along mixed overland and sea routes to carry shiploads of gold and silver from Peru. Methods for establishing order and securing the trade route included Catholic mission efforts. One contador of Hispanola, Gil Gonzalez Davila, converted 32,000 Indians and thereby returned with 112,000 pesos of gold without a fight or losing one of his campaigners.

Following an edict from Ferdinand of Spain to improve the trade route from Peru, Avila Pedrarias chose the site for a permanent settlement to be known as Panama.

“Panama City” was officially founded in 1517 at the site of an indigenous fishing village.

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99 During Pedrarias’ eighteen year reign of terror throughout Central America it is estimated that he was responsible for killing two million Indians.
100 Bennett 34.
The name “Panama” derives from Cueva language, meaning either the place “abounding in fish,” “land of butterflies” or “land far from here.” Charles V decreed Panama a city in 1521.101

In 1551 the historian de Gomara advised Charles V that a canal would be an important advantage for trade:

There are mountains, but there are also hands. Give me the resolve and the task will be accomplished...the Indies, to which the way is to be made will furnish them. To a King of Spain, seeking the wealth of Indian commerce, that which is possible is also easy.102

However, neither Charles V nor his son and successor, Phillip II, especially wanted an isthmian canal. Phillip II had ordered a preliminary engineering assessment in hopes of a Nicaraguan route, but the assessment proved that the enterprise would be almost impossible.103 Eventually, he held the position that a trans-isthmus waterway via a waterway might challenge Spain’s monopoly on South American resources. Sir Walter

101 Bishop 15.
102 Johnson 33.
103 Johnson 33.
Raleigh himself underlined this when he advised Queen Elizabeth to seize the isthmus and “wrest the keys of the world from Spain.”

Historical accounts show that Panama City grew briskly even without a canal. The historian Charles Anderson records that by 1610, the number of buildings increased to five hundred, although only eight of were recorded these constructed of stone and mortar. There were five convents, the cathedral, seven royal houses, and a prison. The city had three over three public parks and stone-paved streets covering one 150 acres. 300 “fine houses” were roofed with tile; 112 were straw shacks. A census records 548 citizens, 300 women, 156 children, 148 free Negroes, and 3,500 African slaves. The form of Panama City was fashioned on medieval European models, a grid of parallel and perpendicular streets surrounded by a wall and moat.

In 1644, fire devastated the city. The recovering town was repeatedly attacked by pirates, including Henry Morgan in 1671. The famous buccaneer and member of Morgan’s crew, John Esquemeling, was an eye-witness to the raids. He eventually became a recorder of the early development of the city. In 1678, Esquemeling noted “houses of cedar, of very curious and magnificent structure,” and “two thousand houses

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104 Bishop 30.
105 Charles Anderson 277.
106 Charles Anderson 278.
107 Bishop 22.
of magnificent building inhabited by vastly rich merchants and five thousand houses
more. ¹⁰⁸

**The English Encounter and Influence**

While Panama City was attacked, burnt and rebuilt, Englishmen Sir John
Hawkins and Admiral Francis Drake were making their famous voyages of exploration in
the 1570s. Both figures had become familiar with the Caribbean while sailing as English
slave traders. ¹⁰⁹ Anchoring in the Gulf of Darien, Drake made alliances with the
Cimaroones, who were organized groups of escaped slaves. Enlisting the Cimaroones’
cooperation as guides and labor, Drake led several expeditions and also effectively
challenged Spanish supremacy in the area. In his success against the Spanish, he
demonstrated the weaknesses of Spain in the American colonies. His campaigns,
especially the taking of Santo Domingo and Cartagena harbors in 1585 and 1586
respectively, carried on until his death from sickness in 1596.

The only attempt to colonize in the area of Panama by a country other than Spain
came a century later. In 1698, Scotsman and founder of the Bank of England William
Paterson conceived the ambitious Darien Scheme, the colony of New St. Andrew and
New Edinburgh. ¹¹⁰ Documented in the explorer and physician Edward Cullen’s 1853

¹⁰⁹ Howarth 59.
¹¹⁰ Anderson 15.
publication, *A Full History of the Scotch Colony of Darien*, Paterson’s ultimate goal was to establish economic hegemony over the area. \(^{111}\) Unable to secure the backing of either James II or other European monarchs, he funded much of the project personally. The Scottish parliament and some English merchants were able to force a special act for the foundation of the new colony under the “Company of Scotland trading to Africa and the Indies.” \(^{112}\) The scheme was supported by minor aristocracy, who saw a chance of sudden fortune. The initiative was also addressed as a “ministry to Scottish glory and to bring confusion and dismay to monopolists across the border.” \(^{113}\) However, after repeated attempts to fortify the original settlement, the colony was abandoned one year later, “in death, disaster and defeat.” \(^{114}\) No architectural ruins of this investment remain.

Panama City suffered three devastating fires in the mid-eighteenth century, in 1737, 1756, and 1771. Each fire destroyed a majority of the structures. Otherwise the city was little affected by the war. When it was rebuilt, as architectural historian Samuel Gutierrez states, it took the form of the first layer of what came to be called, “Spanish colonial.” \(^{115}\) The indigenous people of the region, especially the Darien, although decimated as native people by contact with Europeans, were little affected by the war. \(^{116}\)


\(^{112}\) Cullen 41.

\(^{113}\) Bennett 65.

\(^{114}\) King William III issued orders to the governors of Virginia, New York, New England, Jamaica and Barbados directing them to refuse any request for assistance to the Darien colonists. Bennett, p. 65.


\(^{116}\) Bennett 74.
At the end of the eighteenth century, the pearl industry experienced a revival from its earlier exhaustion. Additionally, gold mining interest began to be developed in the isthmus. Throughout this time, most trade commodities were in uncertain supply. Before the end of the eighteenth century, the mines were depleted; agriculture and manufacturing were almost non-existent. The Spanish government forbade the potentially lucrative trade between the Philippines and China and Panama because it led to a decrease in trade in within the Castilian kingdom. By 1748, the communication between Spain and her colonies was only by way of Cape Horn and no more fleets were dispatched to Panama.\textsuperscript{117}

The halcyon days of Panama were gradually at end. Only occasional British smugglers came to the Panamanian ports of call and local trade, especially with the Caribbean islands, continued. For three centuries, the Camino Real had carried the treasure trade of the isthmus. A new balance of world power and the means by which to achieve it soon were to revolutionize the notion of wealth and fortune.

\textbf{The Push for Independence}

During his Mesoamerican explorations in 1799-1805, Baron Friedrich H. A. von Humboldt noted the lack of accurate, relevant geographical knowledge of the area. Von Humboldt was strongly behind the idea of a canal, explaining that the construction

\textsuperscript{117} Mack Gerstle, \textit{The Land Divided, A History of the Panama Canal and Other Isthmian Canal Projects} (New York: Alfred A. Knopt, 1944) 96.
would "immortalize a government occupied with the interests of humanity." 118

Embracing his conclusions, in 1814, the Spanish Cortes, or national assembly, passed a decree for the building of such a waterway. 119

At the turn of the nineteenth century, many of the Spanish colonies, particularly Mexico and Central America, including Panama, and South America, began their steps toward independence. Underwritten by European participants of the Napoleonic Wars, in 1819, a congress chaired by Simon Bolivar constituted the Republic of Colombia, called for the forming of a new country of New Granada, incorporating modern Colombia, Venezuela, Ecuador and Panama. In 1821, the Isthmus of Panama declared herself independent of Spain. After briefly considering separate independence and then uniting with Peru, the republic became voluntarily annexed to the Republic of Colombia. Jose de Fabrega assumed the title of Jefe Superior del Istmo, a position charged with organizing a new government. 120

By 1823, all of the Spanish provinces in Central and South America had established their independence. In 1829 and 1830, respectively, Venezuela and Ecuador seceded from the Republic of Colombia. 121 Following an invitation by Simon Bolivar, the US sent delegates to attend the Panama Congress at Panama City in June 1826. There they would consider and plan for "hemispheric defense" as an extension of the Monroe

118 Bishop 30.
119 Bishop 31.
120 Mack 104.
121 Bennett 79.
Doctrine of 1823. Delegates from the North, South and Caribbean American states at this meeting also proposed an isthmian canal, but all discussion evaporated, due to lack of discernable funding. In this deliberation concerning the canal, its necessity was based on mobilizing defense forces.

America Takes A Central Interest

In 1835, the government of what was then known as Central America appealed to the US to open negotiations to set official treaties to secure neutral navigation rights upon payment of tolls if a canal could be constructed. By 1837, President Jackson declared the mission without merit. In the next year, a group of New York merchants posted an editorial on the importance of a canal. President Van Buren responded by sending engineer John L. Stephens to the isthmus to assess the possibilities. In 1839, the House of Representatives requested of the president, “a ship canal across the Isthmus...securing forever, by suitable treaty stipulations, the free and equal right of navigating such canal to all nations.”

Throughout the development of the plan for the waterway, the reasons given for its construction varied: Under President Adams, Secretary Clay said in 1825:

\[ \text{122 Mack 108.} \]
\[ \text{123 Bishop 37.} \]
...that vast object (the canal) will be interesting ...to all parts of the world...but to this continent will probably accrue the largest amount of benefit...and to Colombia, Mexico, the Central Republic, Peru and the United States more...the benefits of it (vessel navigation) ought not to be exclusively appropriated to any one nation, but should be extended to all parts of the globe upon the payment of reasonable tolls.\textsuperscript{124}

In 1835, upon the Republic of Central America’s offer to grant the US the right to construct a canal, the senate passed a resolution stating, “...free and equal right of navigating such canal to all such nations, on the payment of such reasonable tolls...to compensate the capitalists who may engage in such an undertaking and complete the work.” \textsuperscript{125} The United States was to guarantee a “perfect neutrality” of the isthmus.

In Bogota, December 12, 1846, the United States signed the Treaty of Peace, Amity, Navigation, and Commerce was signed with New Granada (Colombia). This was the first of a small collection of treaties relating to interoceanic communications. The treaty, ratified in 1848, allowed for United States citizens, vessels and merchandise “all the exemptions, privileges and immunities, concerning commerce and navigation which are now...enjoyed by Granadian citizens, their vessels

\textsuperscript{124} Bishop 37. \\
\textsuperscript{125} Bishop 37.
and merchandise...and favors shall be made to extend ...to transit across the said territory, from one sea to the other.”

Meanwhile, President Bolivar of Colombia had commissioned a railroad survey lasting from 1827-1829. Together with the findings of this report and a British Navy proposal in 1845, the United States made a separate treaty with New Granada in 1846 for rights to right of way for any modes of communication that existed or might be constructed.126 William Aspinwall, contractor for the Pacific steamer carrying US mails to Panama, put forward the idea of a railroad to transit the isthmus in four hours and reach waiting Atlantic steamers. Backed by New York capitalist Henry Chauncy and the technical expertise of explorer John L. Stephens, the group signed a contract for construction of the railroad with the government of New Granada.127 In 1851, the railroad was pressed into its inaugural run when weather conditions prohibited road travel. By 1852, with new capital allotted for the completion of the line and passenger cars, the railroad was finished. The Atlantic terminus was named “Aspinwall,” though the New Granadans would forever refer to the town as Colon (Columbus). Soon afterward, a typical day’s haulage included the US mail, freight of three steamships and 1,500 passengers.128

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126 Johnson 57.
127 The government of New Granada was to have rights to purchase the railroad after twenty years of its service for $5 million.
128 Bennett 91.
On April 19, 1850, the United States signed the Clayton-Bulwer Treaty with Great Britain, essentially agreeing that “neither one nor the other will ever obtain or maintain for itself any exclusive control over the said Ship Canal.” Additionally, the treaty stipulated “that neither will ever erect or maintain any fortifications commanding...or occupy, or fortify, or colonize, or assume, or exercise any dominion over Nicaragua, Costa Rica, the Mosquito coast (Nicaragua or Costa Rica) or any part of Central America.”

The Clayton-Bulwer treaty was designed to insure “constructing and maintaining the said canal as a ship communication between the two Oceans for the benefit of all mankind, on equal terms to all.”

By 1869, President Grant began sending engineers and surveyors for systematic reconnaissance of the isthmus. He declined to enter into any other cooperative treaty for control of the potential canal effort. It was reported, “He regards it as an American enterprise, which he desires to be undertaken under American auspices, to the benefit of which the whole commercial world should be fully admitted.”

The French Become Involved

In 1878 the French, led by the efforts of engineer Lieutenant Lucien Napoleon Bonaparte Wyse, secured from Colombia the right to construct a waterway, subject only

130 Ibid.
131 Bishop 41. Secty of State Hamilton Fish writing for President Grant to S.A. Hurlbut, US Minister at Bogata.
to the existing rights of the Panama Railroad Company. The route of the canal was to be determined by an international commission including as members, knowledgeable engineers. In 1879 the commission voted for a sea-level canal from the Bay of Panama to the Gulf of Limon, projected to be completed in twelve years. The seventy-five year old creator of the Suez Canal, Ferdinand de Lesseps, began the massive project with private backing known as the **Compagnie Universelle du Canal InterOceanique de Panama**. Many French citizens invested their savings in the past-proven work of de Lesseps.

After seven years of construction, the original plan for a sea level canal was revised to include Gustave Eiffel-designed locks. Only one year later, the corporation became bankrupt. Rocked by devastating losses of unrecorded numbers of workers from disease and insanity, *la Compagnie* dissolved the effort with less than a quarter of the canal constructed in eight-and-a-half years. As often recorded, de Lesseps died tormented and mystified by the failure.

By the 1890s, some Americans believed that European threats to commercial markets in Latin America provided an adequate reason for involvement in the Venezuelan border crisis with the Germans in 1895. The Democratic Party leader argued

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132 The actual constituency of the voting commission was 55% French, 25% were engineers, 1 of whom had set foot on the isthmus
133 At minimum 20,000 individuals died; death rates were not kept accurately, especially for workers at lesser skilled jobs.
134 Johnson 98.
that England should be held suspect because of their intentions for Nicaragua and Venezuela,

We are a nation of producers; we need and must have open markets throughout the world to maintain and increase our prosperity... Whereas our interests in the early days were largely at home, our material interests today depend upon the markets abroad... our diplomacy should be alert to secure and protect favors and advantage from all peoples that buy and sell or have a port our ships can enter. 135

President Grover Cleveland added his support for constructing a canal in his annual message to congress, but reiterated it must be available for the "common use of mankind." 136

*New York Tribune* publisher Whitelaw Reid editorialized:

The views of the American people have grown with their growing empire... Today we produce of manufactures more than any two nations of Europe; of agriculture more than any three, and of minerals more than all together. The necessity for new markets is now upon us, and with it the

136 Bishop 40.
necessity for cultivating close commercial relations with the rapidly
growing nations of South America and Australia and the newly awakened
empires of China and Japan. As a prime condition of this extending
influence, the duty of controlling the Isthmian routes is clear to every
intelligent mind...To render than control sufficient, the sovereignty of
Caribbean and of Hawaii is absolutely necessary.\textsuperscript{137}

The United States experienced dramatic economic and social extremes in the
nineteenth century: the century began with a well established independence from Great
Britain and moved on through boundary expansion, exploration, Civil War, presidential
assassination, financial panic, reconstruction, and the announcement of the “close of the
frontier.” The last quarter of the century, the years 1873-79, 1882-85, and 1893-97 were
marked by economic depression. Foreign markets for US goods were considered by
many policy makers to be the solution to economic, social and political problems created
by the developments of the industrial revolution. The competition for significant trade
with China also included the United States by the last decades of the nineteenth century.
Politicians and military scientists thought that the United States needed strategic military
bases in order to compete with European governments set up in Asia and Latin America.
Henry Cabot Lodge warned that the United States must not “give up their rightful
supremacy in the Western hemisphere.”\textsuperscript{138} Of the 1890s, the famous essayist Henry
Adams observed that “one hundred years of American history has fallen into place; the
US now dominates the Western hemisphere.” As expansionist Secretary of State William

\textsuperscript{138}LaFeber 248.
Seward had passionately hoped, the US was entering as a major power into Asia, "the chief theatre of events in the world's great hereafter."\textsuperscript{139} Frederick Jackson Turner articulated in his celebrated address to the American Historical Association at the 1893 Chicago World's Fair and Columbian Exposition:

For nearly 300 years the dominant fact in American life has been expansion, with the settlement of the Pacific Coast and occupation of the free lands, this movement has come to a check; that these energies of expansion will no longer operate would be a rash prediction, and the demands for a vigorous foreign policy for an interoceanic canal, for a revival of our power upon the seas, and for the extension of American influence to outlying islands and adjoining countries are indication that the movement will continue."\textsuperscript{140}

Turner warned that the growth of the early democracy depended in many ways upon the frontier, now exhausted on the continental United States. Turner thought that colonization was a pure expression of and succession in national growth. Even more specific and urgent was his thought that worker revolution would soon occur if the nation

\textsuperscript{139}LaFeber 417.
did not capture the markets of China. Therefore the need to expand otherwise was imminent: A Pacific Ocean frontier. A canal would function as a dynamic extension of the United States’s boundaries and also offer what socio-geographers refer to as a “spatial restructuring” of the world economy. A Panama canal route would significantly reduce sea transit times for trade and military voyages. With no canal, the journey from New York to San Francisco around Cape Horn was 13,135 miles; via a Panama canal the same passage is 5,252 miles. To put this into perspective: New York is 5000 miles closer to Yokohama, Japan and Liverpool, England is 6000 miles closer to San Francisco.

Figure 3. Trade routes through Panama Canal.

141 Zimmermann 96.
The Spanish American War

Writers of the period between 1910-1920 clearly indicate that the Spanish War of 1898 was thought to be a turning point in the identity of the nation of the United States.\textsuperscript{142} One foreign ambassador commented that he had seen two different republics during his short time in Washington: one United States nation before 1898 and another, a world power, after the Spanish war. This was also a pervasive opinion of the “American public feeling” as well.\textsuperscript{143} The origin and momentum of the country’s new identity was not a factor of the length or ferocity of the Spanish War. The young nation fought on an international stage and emerged suffering only light losses in personnel—eighteen Navy and four hundred and sixty nine Army casualties and the fighting fleet intact. As a result of the events during a short period of time, the US exited the scene as a world power.

With the four month war’s end, the United States gained a great deal of territory with few casualties in limited fighting. Americans also achieved a stronger strategic position in the Caribbean and Gulf of Mexico (Cuba, Puerto Rico). Also included were coaling stations in the Pacific (Guam and Hawai‘i) and a base in the Far East (Philippines). Following the Spanish War, the United States also acquired American Samoa (1899),\textsuperscript{144} annexed Wake Island primarily to be used as a cable station (1899),\textsuperscript{145} a

\textsuperscript{143} Coolidge 121.
\textsuperscript{144} In 1872, the United States gained exclusive use of the deep-water port of Pago Pago. After negotiating with England and Germany for some ten years, the United States signed a treaty with Germany in 1899, to acquire American Samoa.
\textsuperscript{145} Nearby Midway Island was annexed in 1867, primarily valuable for guano trade.
lease in perpetuity of Guantanamo Bay, Cuba (1903),\textsuperscript{146} practical positioning in the leased Panama Canal Zone (1903), and somewhat later purchased the Danish West Indies (1917). In giving up Cuba, Puerto Rico, Guam and the Philippines, Old World power Spain relinquished her ancient American Empire.

**A New Role for the United States**

Meanwhile, on the US mainland, national rhetoric asserted an ethics-laced position, expressing a responsibility and then willingness, to assume a role of keeper and guardian for “the interest of mankind.”\textsuperscript{147} The loose translation of the parameters of that role attracted support from religious, political groups and individuals. Nevertheless, throughout the 1890s, debate proceeded regarding the authenticity of this altruistic goal. Others questioned even the desirability of annexing another outlying possession.

The first Hay-Pauncefote treaty, to supersede the Clayton-Bulwer treaty, was rejected by Great Britain after ratification by the US Senate. A second version was accepted in November 1901, stating, “the canal shall be free and open to the vessels of commerce and of war of all nations observing these rules...no discrimination...traffic shall be just and equitable.” It was ratified and proclaimed in February of 1902.\textsuperscript{148} The

\textsuperscript{146} During the years 1906-1917, after withdrawing and dissolving presence as a interval government in Cuba, the United States landed troops in Cuba to control internal insurrection on three occasions.

\textsuperscript{147} Gardner, et al. 209.

plan was for a Nicaraguan canal if Colombia denied, within a reasonable time and price, full transfer of title to properties and rights that the French had acquired.

A memorandum, the Hay-Concha Agreement, was necessitated early in 1902, to signify Colombia’s consent to transfer the French concession and grant the United States right-of-way for an isthmian canal. Yet, at this point, the location of the canal had not been officially determined. The Senate was unable to reach a consensus. As a solution, Wisconsin Senator John Spooner favored a plan to empower the President to select the route. After rounds of delay and debate, the Senate and then later, the House of Representatives passed the bill. The Spooner Act became law in June 1902 as “an Act to provide for the construction of a canal connecting the waters of the Atlantic and Pacific Oceans.”

“Sec.2. That the President is hereby authorized to acquire from the Republic of Colombia for, and on behalf of the United States, upon such terms as he may deem reasonable, perpetual control of a strip of land…not less than six miles in width, extending from the Caribbean Sea to the Pacific Ocean, and the right to use and dispose of the waters thereon, and to excavate, construct, and to perpetually maintain, operate, and protect thereon a canal, of such depth and capacity as will afford convenient passage of ships of the greatest tonnage and draft now in use,

from the Caribbean Sea to the Pacific Ocean, which control shall include the right to perpetually maintain and operate the Panama Railroad, if the ownership thereof, . . . shall have been acquired by the United States, and also jurisdiction over said strip and the ports at the ends thereof to make such police and sanitary rules and regulations as shall be necessary to preserve order and preserve the public health thereon, and to establish such judicial tribunals as may be agreed upon as may be necessary to enforce such rules and regulations. The President may acquire such additional territory and rights from Columbia in his judgment and will facilitate the general purpose thereof."150

The US negotiations with Colombia had reached an impasse on amounts to be paid for rights to dig the canal. At the same time, Panamanians expressed a desire to end their perceived oppression by a corrupt Colombian government. On November 3, 1903 the Department of Panama declared its independence from Colombia and formed the Republic of Panama. Acting on Army intelligence of the anti-Colombian sentiment, forty-two US marines and sailors arrived to maintain a "peaceful transit" of the isthmus.151 Because Colombian troops were denied rail passage across the isthmus by American troops, they were unable to prevent the Panamanian revolution. On November

151 Mack 462.
6, 1903, the United States recognized the Republic of Panama.\textsuperscript{152} A revised understanding of the benefits of supporting Panama caused the US change from historical support of Colombia. In former times, the United States supported Colombia in thirteen revolutions by landing troops seven times to aid Columbia’s defense, and by occupying the area of Panama for two hundred days.\textsuperscript{153} A full account of the events of the purchase from Panama is given by Theodore Roosevelt in his own chapter, “How the United States Acquired the Right to dig the Panama Canal,” in Bennett’s chronicle of the Panama Canal.\textsuperscript{154}

Later in the month, the US and Panama signed the Convention for the construction of a Ship Canal, granting the US “in perpetuity...use, occupation and control” of the zone, for the construction, operation and defense of a ship canal, as well as “all the rights, power and authority within the zone...which the US would possess and exercise if it were the sovereign of the territory.”\textsuperscript{155} In return the US guaranteed Panama’s independence, paid initial compensation of ten million dollars and agreed to pay an annuity of $250,000 per year after the completion of the canal. The Hay-Bunau-Varilla Treaty marked these agreements as a 100-year treaty renewable only at the option of the US. The same terms were given Panama as were refused by Colombia. At the close of 1903, the US ended a unique period in dramatic territorial expansion that spanned from 1898.

\textsuperscript{152} Bishop 118.  
\textsuperscript{153} Zimmermann 429.  
\textsuperscript{154} Bennett 225.  
\textsuperscript{155} Bishop 137.
An Independent Panama

The news of Panama’s secession from Colombia evoked a variety of responses from American and international sources. Soon to be Panama’s president, Dr. Amador declared on behalf of Panamanian troops, “Yesterday we were but the slaves of Colombia, today we are free....President Roosevelt has made good...Long live President Roosevelt. Long live the American Government.”

Supporters of the Nicaraguan canal, including Admiral Mahan, were deeply disappointed. Some other Americans were suspicious of the US involvement in Panama’s independence. An understanding of the involvement of J. P. Morgan and other financiers in the incident is chronicled in *How Wall Street Created a Nation: J. P. Morgan, Teddy Roosevelt, and the Panama Canal* by Ovidio Diaz Espino.

Colombia threatened war on the United States because of the actions. Roosevelt and his administration were denounced at home and abroad, including in South America. Roosevelt’s visit to Panama and Secretary of State, Elihu Root’s three-month long tour of Latin American countries, in 1906, were planned to help alleviate their distrust. Roosevelt promoted his concept of the US as Latin America’s “good neighbor,” a phrase Root coined in 1907.

Political historian Warren Zimmermann notes that in his

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156 Qtd. in David McCullough, *Path Between the Seas: The Creation of the Panama Canal, 1870-1914* (New York: Simon and Schuster, 1977) 373.

157 Zimmermann 473.
memoirs, Roosevelt wrote that his actions in Panama were the most important foreign policy achievement of his entire presidency. 158

The Canal Project Begins

Roosevelt followed up the controversy late in 1904 with a special message, explaining the agreement to the Senate:

It specifically provides that the United States alone shall do the work of building and assume the responsibility of safeguarding the canal and shall regulate its neutral use by all nations on terms of equality without the guaranty or interference of any outside nation from any quarter. 159

and to the Secretary of War:

We have not the slightest intention of establishing an independent colony in the middle of the State of Panama, or of exercising any greater governmental functions than are necessary to enable us conveniently

158 Zimmermann 437.
159 Theodore Roosevelt speech to US Senate, December 7, 1903.
and safely to construct, maintain and operate the canal, under the rights
given us by the treaty.\textsuperscript{160}

At almost the same time he presented the Roosevelt Corollary to the Monroe
Doctrine. The president thought it important to declare the special case of Latin America
as within the US purview of influence, authority and if required, control:

\begin{quote}
...chronic wrongdoing, or an impotence which results in a
general loosening of the ties of civilized society, may in
America...ultimately require intervention by some civilized
nation...may force the US, however reluctantly in flagrant
cases of such wrongdoing and impotence to exercise an
international police power.\textsuperscript{161}
\end{quote}

Roosevelt presented less impassioned, more thoughtful reasoning than his “I took
the Isthmus” approach in a chapter chronicling the process.\textsuperscript{162} Written upon completion
of the construction, his piece noted that if the United States did not proceed with this
canal, “the doing...by anyone else would have been not merely a bitter mortification but
a genuine calamity to our people.” He further explains that “It must be a matter of pride
to every honest American...that the acquisition of the canal and the building of the canal

\begin{flushright}
\textsuperscript{160}Theodore Roosevelt correspondence to Secretary of War, October 18, 1904.
\textsuperscript{161}Roosevelt Corollary qtd. in Wiebe 245.
\textsuperscript{162}Theodore Roosevelt, “How the United States Acquired the Right to Dig the Panama Canal”, in Bennett, 225.
\end{flushright}
in all their details, were as free from scandal as the public acts of George Washington and Abraham Lincoln."

In his push to acquire rights for the canal, Roosevelt recorded that he knew it would begin the end of his public life, however, “…the only thing which makes it worth while to hold a big office is taking advantage of the opportunities the office offers to do some big thing that ought to be done and is worth doing” and “Every action taken was not merely proper, but was carried out in accordance with the highest, finest, and nicest standards of public and governmental ethics.” He opined that both the French and Colombian governments received fair remittances, noting that if the US had not stepped in, the French would have abandoned the Isthmus with little or nothing accomplished. It was upon Colombia’s rejection of compensation through a tripartite treaty that the US initiated with the then Department of Panama and the Republic of Colombia that the US began to consider a relationship with the remaining principal. He emphasized that the US assumed complete responsibility for and guaranteed building, and also the explicit direction to “police and protect…which incidentally means to fortify…” the canal. Roosevelt defends intervention to “put a stop to what can legitimately be called government by a succession of banditti.” The United States would have shown itself criminal, as well as impotent, if it had longer tolerated this condition of things.” Analogously, he maintained that the Panamanian people wanted the United States to build the canal and were neglected by Colombia as their parent nation. Roosevelt

163 Theodore Roosevelt, “How the United States Acquired the Rights to Dig the Panama Canal,” in Bennett, 225.
164 By 1903, the Isthmus had witnessed or hosted 53 revolutions in 57 years.
measured a “unanimous desire for independence,” saying “the isthmus was seething with revolutionary spirit.” He suggested that this desire for independence was compatible with US goals: “The people of Panama now found themselves in a position in which their interests were identical with the interests of the United States…”

A seven-member Isthmian Canal Commission, selected by Roosevelt, began their task in March 1904. Calling them his “best-fitted” selections, the President warned that he expected resignations if there were any doubts about the work. There would be a rigorous supervision of expenditures, yet the best talent for the job was to be hired. In demonstration of Roosevelt’s emphasis on sanitation standards for the canal workers and their living quarters, experienced tropical medicine physician, Dr. Claude C. Pierce was dispatched to begin reconnaissance in December 1903. The Commission arrived on the Isthmus in April 1904, accompanied by Colonel Dr. William Crawford Gorgas, veteran malaria and yellow fever battles in Cuba, now selected chief sanitary officer for the Canal Zone. Initial headquarters were established in Colon in the same building so erected for De Lesseps.

Acquisition Day was May 4, 1904 and Roosevelt subsequently placed the Commission, along with other civil works on rivers and harbors, under supervision by the Secretary of War. Major General George Davis, former Military Governor of Puerto Rico, became governor of the Commission. The US gained 2,148 French buildings,

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165 Roosevelt, Bennett, 227.
166 Roosevelt, Bennett, 225.
usable excavating equipment, the diminutive Belgian locomotives, dump cars and other assorted properties, the total inventory estimated at a value of forty three million dollars. At the end of May 1904, steamers of US engineers were arriving to survey for proper locations of dams on the Chagres River and make preparations for construction. Colonel William Gorgas instigated sanitary interventions of boiling all drinking water, sleeping under mosquito nets, and the addition of waterworks and sewer systems for Colon and Panama City.

In early 1904 Roosevelt had said to Congress:

> If ever a government could be said to have received a mandate from civilization to effect an object the accomplishment of which was demanded in the interest of mankind, the United States holds that position with regard to the interoceanic canal.\(^{169}\)

Historians suggest Roosevelt knew that the language of the agreement to construct the canal had to stipulate absolute American control in order to have it funded by the American congress and citizen stakeholders.\(^{170}\)\(^{171}\) Otherwise, it would seem an uncontrollable gift for which there was unknown return on investment. To a public lead

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\(^{168}\) Bennett 113.
\(^{170}\) Bennett 233.
\(^{171}\) Mack 470.
by a generation of industrialists and investors, Roosevelt and others felt an agreement stating anything less than “operation and control in perpetuity” would be nonsensical. 172

A second railroad engineer, John F. Stevens, became the first combined chief engineer as well as chairman of operations in July 1905, facing “about as discouraging a proposition as was ever presented a construction engineer.” 173 His first priority was to increase morale and confidence of the dispirited workforce, exhorting them that the greatest of the three diseases on the isthmus, yellow fever, malaria and cold feet, was the later. 174 Stevens initiated company-provided housing, established commissaries, adopted sanitation measures with employees and double-tracked the Panama Railroad. He finished his commitment in April 1907, advising the president that his successor must have absolute local power. His promotion of a high level lake-lock-type canal was the most profound of his abundant accomplishments. In a chapter written for Bennett’s history of the canal, Stevens denied all allegations that he did not work well with Roosevelt and the Secretary of War. He credits his fellow workers in the “wonderful enterprise” and states that they will be given the “true place in history to which his work entitles him.” 175 He stated his reasons for resigning were “purely personal and for nothing whatever in regard to the canal...” 176

174 Bennett 130.
176 Bennett 223.
A Third Commission was nominated by the president in March 1907, upon Stevens’s departure. Roosevelt heeded his counsel in appointing his successor, a military man who could not quit: Colonel George Washington Goethals, West Point-trained Army engineer became chief in April 1907. Eventually known as the Canal Czar, or as some of his detractors put it, his Brahmin Highness, Goethals executed his job with the best of regimented control. In the first Goethals biography, written by his contemporary, Joseph Bucklin Bishop, he was described as “the benevolent despot”, both allegiant to and demanding of his workers. It has been observed by Bennett that the project itself was a supreme example of paternalism and despotism:

...paternalism because the United States did everything for the people; from giving them free rent free light, free medicine and free amusements, to providing them with government without taxation. There was despotism, because the power of the Chief Engineer, Colonel Goethals, was all sufficient and autocratic...his word was law and there was neither appeal nor repeal.

Goethals directed the construction effort through dissention, strikes, the changing disposition of the Chagres River, and what he called “the enemy”, the Culebra Cut. Under his control, the Canal opened six months ahead of schedule and under budget. There was never evidence of profiteering, scandal or corruption during his command.

178 Bennett 119.
The president made a popular inspection tour of the Panama Canal in 1906 during the rainy season. As he delighted in emphasizing, it was the first time a United States president stepped on foreign soil since George Washington. Biographer Edmund Morris writes that as H. G. Wells observed, Roosevelt "was incapable of seeing negatives except in positive translation. The sheer extremity of Panama's challenges—meteorological, technological, geological, psychological was wine to his head…"179

The campaign by Roosevelt to reinforce the importance of sea power, including a Panama canal, materialized in the voyage of "The Great White Fleet," an event spanning from December 1907 to February 1909. Well described by Robert Hart in his book, The Great White Fleet..., the sixteen battleships and 14,000 sailors traveled from Hampton Roads, Virginia, down the coast of South America and up the west coast of the United States. From San Francisco, they steamed on to Honolulu, Auckland, Sydney, Yokohama, Manila, Colombo Ceylon, the Suez Canal, and Gibraltar.180 This exhibition of sea power was in fulfillment of the tenets put forward by Admiral Alfred Mahan. In his Sea Power (which was also studied closely by British and German navies), Mahan's words were consummately instructive to then Secretary of the Navy, Roosevelt, and virtually became policy for him once he became president. Mahan's thesis warned the United States that world trade and security could only be built on sea power. This concept was to pair naval readiness and defense with the constructive use of sea lanes to

foster communication and generate national wealth: Secure freedom and wealth by mastery of the Oceans.

The notion of an assertive world presence at sea stirred controversy and uneasiness to a young nation with memory that the navy had even avoided the title of admiral because of its imperial overtones. In order to refute overseas ambition, the first battleships of the new Navy were designated coastal defense battleships, for fending off European expansion and protecting harbors. The voyage of the Great White Fleet functioned not only as effective public relations strategy, but the powerful steel ships persuasively carried their message of military might in both Oceans. The itinerary also spectacularly traced activities of the United States following the end of the Spanish American War.

A New Decade

By the end of 1910, the United States’s wealth and world power had increased substantially, surpassing that of most old world powers. The excitement generated by the Great White Fleet further buoyed support of the Canal construction process. In 1912, Congress instituted the Panama Canal Act providing for the “opening, maintenance, protection, and operation of the Panama Canal and sanitation and government of the Canal Zone.” On May 20, 1913, two ninety-five ton, trench-digging, Bucyrus steam shovels met, each having laboriously advanced from opposite directions. After four hundred years, the canal idea was realized.

181 Bennett 509.
Twelve days later, the official finish was fêted with a cruise by dignitaries on the workship Ancon. The festivity of the event was overshadowed by the escalating international upheaval. Nevertheless, when the Panama Canal was opened to traffic on August 15, 1914, newspapers and journals of the time reported a great sense of satisfaction, pride and honor in the accomplishment. Editorial commentary stated the national mood clearly:

The building of the Panama Canal, one of the greatest engineering feats in the world was indeed a monumental unprecedented achievement...Its subsequent success in peace and war, entitle all who in a significant manner, participated in its planning, construction, sanitation and civil administration to highest honor.

And

The Canal and the community connected with its operation are the finest expression of American thoroughness in engineering, public health and community life...It is a model of sureness and efficiency and an example to the world of the capacity of the American people.\(^{182}\)

The project required ten years, the involvement of 70,000 workers, the expenditure of 400 million dollars and 5,609 American-effort deaths, as well as some 20,000 deaths during the French effort. The Canal was completed as the grandest

construction project in the nation’s history. The supply system, as centralized by Colonel Goethals, became the radical new model for mobilizations by the US Army Office of the Quartermaster. Additionally, it was a unique American endeavor on foreign soil. The project employed the widest collection of US suppliers as more than 3,000 American firms provided and invented equipment and provisioned what became known as the Big Dig. The inventions ranged from Bucyrus steam shovels and dredges to C. W. Post’s, Grapenuts, to Stetson company hats, exemplifying “the best that American industry and commercial ability affords.”183 This involvement is more developed in Appendix D.

Precisely coordinated with the opening to traffic in August, the main construction of the civic center to be known as Balboa was complete and ready to support the next layer in Canal history: efficient daily operation. Temporary construction camp towns were phased out as the responsibilities of the workforce changed. The first of five Canal Zone municipalities completed, Balboa was to be the seat of the government the medical center of the Canal Zone, and eventually the residence of a large proportion of the Americans on the Isthmus. The civic center of Balboa was planned to eventually include some twenty-seven steel-framed buildings, all in support of the administration of the Canal and needs of all canal workers. Structures to replace the French hospital and additional residential areas were scheduled. Concentrated at the Pacific end of the Canal in a previously uninhabited area of Ancon cove, the townsite was arranged “for the sake of economy and the convenience of the general public which has business with the Canal.”184

183 Bennett 435.
184 The Canal Record 8 (12/30/1914): 181.
Benefiting from all the construction advances utilized for the Canal, and modern US building technology, the initial phase of new town buildings were sited around the Administration Building. They included Balboa School, buildings of Gorgas Hospital, churches, a post office, clubs, a police station, a court house, a commissary and others. A later chapter presents a close examination of a representative sample of seven of these in order to better understand their meaning as artifacts, and to add to the body of knowledge on the Panama Canal Zone structures and material culture. The history of how they came to exist has been traced. Now the discussion turns to the larger context of the cultural and socio-political history of the US at the time of their construction. This is essential background in order to discern the origin of their style and then, to draw conclusions as to what meanings they projected.

Finally, the United States's fulfillment of the four hundred-year-old, multinational dream of a trans-isthmian canal carried much meaning for the identity of the young nation. American diplomatic negotiations, inventions, engineering, health science, management and money had made the task an achievable modern reality. The successful completion of the Canal was the first proof of what federal effort could accomplish; all subsequent western United States dam projects directly applied the innovations. The construction project was also the first tangible expression of US willingness to assume the privileges, power and responsibility as a patron of a great collective good. The public good of this new waterway allowed a more innocuous paradigm and symbol of the United States's developing identity than that of the US as guardian, as in the Philippines.
II. The Chicago World's Columbian Exposition of 1893

The architecture of Balboa was expressive of the US presence in the Canal Zone. It was permanent architecture, attractive, formal, and neoclassical. It seemed out of place in Panama, but in sequence with what was occurring in the US. More important to realize, is that it was a clear experience, an unadulterated expression, of American design interests, representing the outcome of nearly two decades of civic, architectural and engineering ideals. These became available in the 1880s and were exemplified at the 1893 Columbian Exposition and in the 1901 McMillan Plan. The monumental architecture that was produced carried an expression not strictly imperial but one that certainly represented much more.

Promoters of the Columbian Exposition of 1893 circulated the idea that just as Christopher Columbus had identified "the future" in discovering the new world of America, at their Fair the future could be seen. Approximately four hundred years after Columbus, the nation's destiny was being refined in an urban-industrial Midwest. They also promoted "The Columbian" as the "Great American Fair" because it was commissioned by act of Congress to express the essence of the progressive American civilization, and to present a new reality in mankind's comprehension and control of nature with technology. It was also to celebrate the achievement and expansion of those four hundred years. In the language of the congressional charge to the exposition's

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Committee on Grounds and Buildings, the exhibition was to “stand before the world as the best fruit of American civilization.”\textsuperscript{186}  

Whether it hit this high mark or not, the Columbian Exposition was clearly reflective of American cultural ambitions of the time. William Wilson states that this fair’s special significance had lain in its very “American-ness, its size, beauty, celebration and organization.”\textsuperscript{187} In other words, it projected “America.” The years of 1880-1890 comprised a decade of great architectural vitality. Louis Sullivan (1856-1924), Henry Hobson Richardson (1827-1895), the firm of William R. Mead (1846-1928), Charles Follen McKim (1847-1909) and Stanford White (1853-1906), John Wellborn Root (1850-1891) and Daniel Burnham (1846-1912) were all important contributors. In the early 1890s, Burnham was charged with devising a plan for the fair, grand enough to project and celebrate the commercial, industrial and artistic advancements of the nation.

Historian of the World’s Fairs, Robert Rydell, asserts that all the great fairs and expositions were distillations of nationalism and had an agenda and mission to support that. They were (and are) triumphs in hegemony:

(They) propagated the ideas and values of the country’s political, financial, corporate and intellectual leaders and offered these ideas as the proper interpretation of social and political reality...far from simply

\textsuperscript{186}Congressional “Memorandum of December 9 to the Committee on Grounds and Buildings” reprinted in Reid Badger, \textit{The Great American Fair. The World’s Columbian exposition and American Culture} (Chicago: Nelson Hall, 1979) 189.

reflecting American culture, the expositions were intended to shape that
culture...and left an enduring vision of empire. 188

These superlatives are all punctuated with moral authority; one, as Rydell argues, was
legitimately inherited from the expositions’ lineage dating to early church masses:
“fairs”—Latin feria. 189 Contemporary historian Henry Adams observed in 1900 that the
fairs offered visitors a “symbolic universe,” one that ritualistically affirmed faith in
American institutions. 190 At the fairs, a parade of technological and social achievements
mirrored the nation’s growing self-confidence and awareness of power. They were
display cases for inventions, machinery, educational advancement and agricultural
production. The government supported the fairs because they offered a natural backdrop
from which to foster the invention of symbols through which to establish American
identity and encourage patriotism.

On the day before his assassination on September 6, 1901, President McKinley
addressed the Pan American Exposition at Buffalo with his assessment:

“Fairs are the timekeepers of progress. They record the world’s
advancement. They stimulate the energy, expertise and intellect of the
peoples and quicken human genius. They go into the home. They broaden
and brighten the daily life of the people...open mighty storehouses of

188 Rydell, 3.
189 Rydell 237.
information to the student…every exposition, great or small has helped this onward step.”

In the oratory, he also urged that the United States could no longer remain isolationist—a presentiment for the century to follow.

Many historians and commentators have observed that the great fairs’ architecture provides a record in artifacts and index to the “spirit of the age,” the attitudes, goals and aesthetic traditions of contemporary society. The Columbian Exposition offered a vision of neo-classical, rational, ordered community. The material culture and artifacts expressed values of individualism and democracy envisioned for a future America. These were supported by a substructure of exhibits by foreign countries. They demonstrated the value that there should be dialogue between the US and foreign countries. However, the latter should be regarded as the “other,” originating from outside the cohesive, ordered US.

After experiencing the Columbian Exposition, art and architecture critic Mariana Van Rensselaer wrote that Edward Bellamy’s utopian vision was realized there:

"Beautiful groups, beautiful perspectives, a stupendously beautiful architectural panorama is what the Fair will show us. It will be the first real object-lesson America has had in the art of building well on a great

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191 President McKinley, “President McKinley Favors Reciprocity,” New York Times, 6 September 1901, 1.
scale; and it will show us how, on a smaller, but still sometimes a very
large scale, our permanent streets and squares ought to be designed.”193

Her observation was commentary on the power of utopian ideals. As Richard Hofstadter, Eric Hobsbawm, Paul Boyer and others have fully demonstrated, the belief that science, order and rational planning could support happy population centers and make life better for the masses was an emergent idea: a step in progress toward utopia. The fairs were an opportunity to construct a contained utopian world of the future—good for all people—one that implied Americans or some group desiring exactly the same utopia attained by the same means as demonstrated at the Columbian Exposition.

By Daniel Burnham and his committee’s choice, the collection of buildings on the grounds of the Columbian Exposition was clad in white-painted plaster, known as staff.194 Therefore termed the White City, it was an expansive challenge to the viewer. C. C. Buel wrote of the exposition, “It was indeed worth a journey of a thousand miles...if any fault is to be found with this Columbian Exposition, it will be on account of the inability of the human mind to compass and appreciate it.”195 The underlying purpose of the built landscape was to produce beautiful scenes, directed by Daniel Burnham, on a grand scale. Contemporary historian Hubert Howe Bancroft felt that the most elegant presentation of

the fair was the architecture itself, "Greatest of all the exhibits... are the Palaces which contain them, forming a display more superb and imposing than any of their contents."\textsuperscript{196}

The act of selecting a neoclassical architecture that was an adaptation of classical Rome, Venice, Paris and contemporary Europe was in itself American. It is metaphor for the assemblage of nationalities who had united to become America. Architectural historian, Christopher Tunnard says that though most of the designers trained in France, the architecture they produced was not simply replication of Continental models, nor was it being built anywhere in Europe.\textsuperscript{197} Relating to the philosophical vernacular of the time, it was a progressive act to evolve the old, inherited forms into another, favoring function. As architects attempted to define a national style, classical and neoclassical forms were given new articulations to become what contemporary architectural historian A.D.F. Hamlin termed neoclassical academic—a mélange of Beaux Arts detail and identifying features.\textsuperscript{198} Recombining it in a unified plot became a display case of American urban possibilities.\textsuperscript{199}

Historian Henry Steele Commager wrote that "The significance of the architecture of the Fair did not lie in its direct influence on the culture. The Fair was not a beacon to the future, but reflected the confusing variety of cultural patterns characterizing the

\textsuperscript{196} Hubert H. Bancroft, \textit{Book of the Fair} (Chicago: Bancroft Company, 1895) 2:799-800.  
\textsuperscript{197} Christopher Tunnard, \textit{The Modern American City} (Princeton, NJ: Princeton UP, 1968) 47.  
\textsuperscript{198} A.D.F. Hamlin, "The Influence of the Ecole des Beaux-Arts On Our Architectural Education" \textit{The Architectural Record} Vol. XXIII (April 1908) 244.  
period...a watershed of American history." 200 Not entirely bound together, but the exposition was able to project a certain sense of unity. Three influences, most historians agree, contributed: (1) The Burnham, et al. grand plan (2) Frederick Law Olmsted’s landscape conception (3) Projecting the blended values of the (manmade) picturesque and the scenic in order to make the exposition site, including landscape, a fairgoer’s scene to behold.

Ultimately, it is observed that the real brilliance of the fair was that a project of such gargantuan scale could indeed be accomplished. The dynamic action of the process of organization and efficiency to deliver such a grand product was just the momentum required to push the disequilibrium of distrust of technology and urbanization to progress into a new century. The gospel of the possible was the way out of the watershed period. Daniel Burnham’s credo captures the essence of the period: “Make no little plans, they have no magic to stir men’s blood.” 201

As previously mentioned, Frederick Jackson Turner delivered his milestone speech, The Significance of the Frontier in American History, at the American Historical Association meeting in Chicago during the fair. He expressed an awareness of Americans’ apprehensiveness regarding the unknowns that approached. As has long been understood, Turner held that previously the frontier experience had suggested qualities to make up a national character myth. In his famous argument he explained that

as the frontier closed, so ended the first period of American history. He continued to make clear that some version of active colonization had to carry on as a verification of national growth. If American values were united with 'the frontier', the future of democracy, freedom, equality, opportunity and a self-confidence that accompanied these ideals as a part of perceived national character might be in jeopardy. The very continuity of an American way of life was in question unless there was transition. Twentieth century expansion needed to be reconfigured from its nineteenth century forbearer.

An image of cultural unity and self-confidence emerged during the Columbian Exposition to meet the American citizen in need of reassurance. After appropriating this, the stakeholders could judge for themselves after seeing the possibility associated with the gospel of progress. A new way of thought, infused with an application of the general principles of evolution involving a change for survival, yielded momentum.

**Influence on Seeking a New Frontier**

The Columbian Exposition influence extended into themes for national expansion in a reconfigured frontier in at least two fields. First, the American exhibits of the mechanical arts and sciences demonstrated the nation's superiority in these fields—a reflection of the triumphant celebration of the machine age. Advances in mines, metallurgy, electricity and appliances, engineering, transportation, horticulture and manufactures were among the classifications displayed. Increased involvement in international commerce was made possible by these achievements. Chicago businessman
and developer, Ferdinand Peck wrote in 1899, "...more American firms have been able to form connections abroad and extend their foreign trade since 1893 than ever before...to the Columbian Exposition might easily be traced the beginning of negotiations which have led to ...large orders for American goods." Newfound strategies for marketing and preparation of the goods for export were put into action to match the demand. Cooperation was demonstrated with the revelation of America’s latest battleship equipped with the largest military cannon ever cast—a product ironically contributed by the German Essen Iron Works.

Another effect of the Columbian Exposition was the realization by politicians and urbanists of the subsequent idea of the aesthetic in municipal life. In addition, the fair had the result of encouraging collaboration among designers. Remnants of the exposition’s design influence were present when the US carried out construction projects abroad in following years. The significance of the Columbian Exposition in the choices made to determine the built environment in Panama relates to the fair’s expression of particular characteristics of American cultural development during a time of rapid change. The belief in progress and the search for order guided nineteenth-century American thought. The synthesis of the two as a quest *cum* philosophy was the working premise by which to acknowledge and accept the reality of a great sweep of national change, and then ascertain how to control it. A philosophy promoting ‘progress as good’ prevailed among policy makers. Among other influences, abstractions of Darwin’s theories were revolutionizing thought. With the integration of evolution-inspired

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intellectual constructs, a paradigm shift occurred. The twin gods of progress, civilization and science, could be followed for the improvement of mankind. Change or transformation for survival and thus, technology and progress, became comfortable ideas. Fairs, including specifically symbols apparent at the Columbian Exposition, provided reinforcement of the intellectual scaffolding for the shift. The dynamic moral imperative to share America’s progress was contributed by industrial capitalists such as anti-Imperialist, Andrew Carnegie, who sincerely believed that the ideals of the new Republic were the future of the world. In reality, this specifically meant US economic expansion.

The great expositions have been called the “world’s universities” by journalists and historian of their time. The fairs brought to the public monuments, frescos, sculpture, murals, painting, like never before experienced by Americans, save a trip to Europe. For the 21,477,272 visitors, the Columbian Exposition reinforced utopian goals, symbolically represented in art, architecture, landscape, displayed in exhibits, reiterated in speeches and unified in purpose.  

**Influence on Architecture**

Famously recounted by Sullivan historians, contemporary architect Louis Sullivan lambasted the use of the neoclassical style at such a high profile event. He felt the choice had retarded American architectural progress, writing that “the damage will last for half a century from its date, if not longer. It has penetrated deep into the constitution of the

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Footnote: 

203 Badger 131.
American mind...” As architect and cultural historians now generally argue, his assessment missed the great appeal of the unified Columbian plan where redux classical styles were popularized and enjoyed. Most important, his comment elucidates the influence of the Fair’s architectural forms, whether they were liked or not. Architectural historian Talbot Hamlin remarked, “It was the compelling effect of its formal plan, rather than the accident of its superficial style, which was largely responsible for its popularity.” The lessons learned from the plan of chief designer, Daniel H. Burnham, consulting architect, John W. Root, consulting landscape architect F. L. Olmsted, and consulting engineer, A. Gottlieb, related to the vast arrangements of buildings and landscape architecture. Charles Eliot Norton commented, “The real art work—the design—was in the ensemble.” The Columbian Exposition affirmed the possibility of making cities beautiful through artful and mindful planning. When the nation’s attention became focused on building in the Panama Canal Zone, the lessons were applied.

The Columbian Exposition’s Administration Building, designed by Richard Morris Hunt (1827-1895), had as its chief purpose, beyond the practical, to symbolize and proclaim “the immensity and dignity of the Fair, and its builder’s regard for beauty; to proclaim that our Fair has been organized for the glorification of art even more than that of science and industry.” In staid neoclassical, monumental style, it was to be an appropriately identifiable, imposing, magnificent entranceway to the Fair, its dominating

206 Burg 119.
dome expressing the leadership of the government. Sculptor Augustus Saint-Gaudens remarked after a long day of planning for the building in the company of Hunt, Charles McKim, George Post Charles B. Atwood, among others, “Look here, do you realize that this is the greatest meeting of artists since the fifteenth century!” The architectural design was ennobled by décor and the addition of sculpture and murals, all unified in an immense common art project. Mary Cassatt, Mary MacMonnies, Frank Millet, J. Alden Wier, Robert Reid, J. Gari Melchers and George W. Maynard were among the artists commissioned.

Architecture however was the predominant art of the Columbian with painting, sculpture and murals in support. The type of architecture showed the highest achievement of the time in monumental and commercial buildings. The scale of classical form in architecture was better suited to buildings of great magnitude. As historian Christopher Tunnard pointed out the classical lines provided a “flexible style, which could make unity of a building by combining a boldness of plan with refinement of detail”...“It made possible the handling of entirely new building types, frequently of great scale, that a growing democracy required. These were to be the new state capitols, the railroad stations and the public libraries, which are part of America’s contribution to world architecture.”

The impact of the Columbian Exposition can be summarized in five direct results. First, it specifically provided inspiration and prototype for the colonial and neoclassical

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208 Cited in Moore 47.
revival in architecture—symbol of an integration of the colonial past and technological future. A majority of the State and US government buildings were colonial-neoclassical revival; all the Exhibition Buildings were in the Beaux Arts style. Because of the fair, Russell Sturgis concluded, “...the day is not far distant when our art shall worthily stand beside that of any other country.”

Second, the Columbian Exposition, as well as being the most visited American fair to date, an attendance not to be bettered until the next Chicago World's Fair in 1933-34, was widely photographed. The photography and building plans were made available and circulated and a design fashion trend was begun throughout the country. Related, architectural historians, Virginia and Lee McAlester state that the World Columbian Exposition is responsible for the revival of interest in the neoclassical form. The classical colonnade around a central court was revived with an American manipulation of space and order in mind.

Fourth, though the Chicago Movement in architecture did not shift immediately after 1893, but somewhat later around 1905-1910, when the demands for Chicago architects moved from commercial to public buildings. The fifth and perhaps most significant legacy of the Columbian was its "unity and triumph in ensemble." It was this experience that historian David F. Burg says led to the City Beautiful Movement, "an attempt to translate into the forms and environments of the twentieth century American cities, the aestheticism and coherence that Root and Burnham had deemed inherent in the White City...symbolic of the kingdom of God on earth."

Immediately after returning home from the fair, poet

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212 Burg 308.
Katherine Lee Bates returned home inspired to write the lyrics to “America the Beautiful.”

In 1904, American “national genius”, as William Dean Howells had referred to the current achievement, was requisitioned to support the building of the Panama Canal. Called the world’s greatest engineering and construction achievement, the effort involved contracts with some 3,000 American businesses. The essence of the meaning of this American technological innovation and application is incorporated into the messages projected by the civic architecture and landscape of Balboa. In Appendix D, a discussion of these innovations is pursued because of their direct and indirect contributions to the architectural structure, design and function of the civic center of Balboa.

Influence Toward a Planned Future

French novelist Paul Bourget said that the White City was the promise of progress in American art and the host city a “prophecy of the urban future…there was the promise that an environment satisfying, clean and habitable could be achieved”…”a city with honest and intelligent management could be kept clean!” Essayist Henry Adams commented that the lessons were: hire the best people for the job, recognize the worth of comfort, beauty, safety and always relate cause and effect. He concluded that this was the

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213 Qtd. in Badger, 25.
215 Paul Bourget, “A Farewell to the White City,” Cosmopolitan 16 (December 1893) 135.
“first expression of American thought as a unity”, especially significant within a context of urban diversity.\textsuperscript{216}

In \textit{The Search for Order} Robert Wiebe discusses the fundamental change in the nation’s values from agrarian-small town in the 1880s to a “bureaucratic-minded middle class” by 1920.\textsuperscript{217} From 1860-1910 the United States population had increased from 31.4 million to 91.9 million, with 46 percent living in cities (towns of 2,500+ population) by 1910. Jacob Riis records that in 1890 three-fourths of the population of New York City lived in the tenements. Elites had moved households to the bucolic suburbs, leaving a mass of full-time residents in increasingly dire social and environmental straits. This plight became the matter of progressive reform movements, most founded on the message that a planned environment provided a healthy, spiritually uplifted and strong populace.

The White City presented a gleaming outcome of the acceptance of a philosophy of progress as good and noble, and exploitation of progress as a catalyst. It functioned as a reassuring display of beautiful rewards for the application of professionalism, planning and technology.

\textbf{III: \ The City Beautiful Movement}

Most of the buildings of the Columbian, except for the Palace of Fine Arts, were lost in an arsonist’s fire in 1894 when the fair grounds had deteriorated from White City

\textsuperscript{216} Henry Adams, \textit{The Education of Henry Adams} (Boston: Houghton Mifflin, 1927) 343.
to an abandoned dwelling for vagabonds. But, the memory of their style and the surviving plans for these buildings were at the axis of the second legacy of the Fair, which was city planning—vanguard of the City Beautiful Movement.

Planners and architects of the Columbian had presented the first reproducible positive urban American physical form. This monumental, conceptual cultural movement expanded the precepts of art and design as William H. Wilson has written in his comprehensive treatment. Philosophically, the City Beautiful Movement promoted an ideal of community ownership, allegiance and city service to “create a new citizenship” heretofore not understood in the United States; it was an effort toward teaching Americans how to become good citizens. Burnham’s plan became translated into a model for the unified ‘civic center’; civic buildings integrated with park and street systems, water features, tree-lined boulevards, transit stations, public benches, street lights. The values of dignity, beauty and convenience embodied in the built White City, were the guiding principles of the designs promoted. Beauty and utility should be synthesized to yield a “beauty” which could not be dissolved. Cities should arise, not merely from single buildings, but from organic precepts. All civic space conceptions would include orderly arrangement of extensive public grounds and buildings and the spirit of *communitas*. Progressive Governor Woodrow Wilson advised a New Jersey meeting of municipal reformers, “Don’t you see that you produce communities by creating common feeling? ..What really counts is feeling.” Pioneer city planner Charles Mulford Robinson referred to “one brotherhood in the joyous and earnest new crusade for

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beauty of town and city."  
Cohesiveness would be inspired by each individual’s personal recognition of and commitment to the morally uplifting value of beauty, and to the rest of the congregation of the citizenry.

Burnham theorized that for a city, the direction to prosperity and stability

“lies in making the city convenient and healthful for its citizens; that civic beauty satisfies a craving of human nature... that the orderly arrangement of fine buildings and monuments brings fame and wealth to the city; and that the cities which truly exercise dominion rules by reason of their appeal to the higher emotions of the human mind.”

He advocated that the city should embody a fulfillment of the entire ensemble in the Court of Honor of the Columbian. It was understood by most architects after the White City that landscape must be included as a design element. Burnham’s concept of the White City was not simply in imitation of past styles. Rather, it was an extrapolation of their order and aesthetics. A civic center would only be successful when:

The character of the architecture displayed in the buildings themselves, in their harmonious relations with one another, and in the amount of space in which they are placed...the attainment of harmony, good order, and

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beauty is not a question of money cost, for in the end, good buildings are far cheaper than bad buildings.\textsuperscript{222}

Burnham stressed more the establishment of coherence and visual order whether or not the classical model was followed. His later detractors, such as planner and city planning critic, Jane Jacobs, argued that planning action disrupts the natural matrix and organic progression of a city. The Columbian plan first articulated the necessity of wedding landscape with municipal realities and requirements—perhaps a more useful understanding as the population stresses presented. Additionally, the approach was uniquely useful as Americans built new, confined communities both at home and abroad.

A third legacy of the Columbian, related directly to Burnham’s directive, was that its success proved that a massive, organized, readily accessible, inter-disciplinary building effort could be planned and completed in a scheduled time. Inspired by the organizational scheme of the 1889 Paris exposition, the committee set a remarkable pace from planning to operation in less than three years. When it was accomplished the White City had provided a channel for the integration and application of the newest technologies within a pragmatically and aesthetically organized public space.

In the last decade of the nineteenth century and the early years of the twentieth, Americans faced questions of self-determination and self-identity. They struggled to define themselves vis-à-vis each other, and the rest of the world. Historian Harold Faulkner observed that Americans,

\textsuperscript{222} Burnham 117.
witnessed the passing of the frontier and the rise of the United States to a position of world power and responsibility which was to make return to her old isolation increasingly impossible...the Industrial Revolution, if not completed, had gone so far as to make turning back to the ways of a simpler agrarian society out of the question.\textsuperscript{223}

In all areas of life, change came so rapidly and radically that few could comprehend more than a fraction of what was happening. In the interlude before the cataclysmic twentieth century, the time of the Columbian Exposition was a prime time for inspiration and hope, and gaining national confidence. The following, Figure 4, provides an illustration of the interrelationships of institutions and socio-political movements relevant to this discussion.

**Progressivism**

In order to understand the system that interrelated to the City Beautiful Movement in this discussion, it is important to integrate the role of the political momentum contributed by the socially optimistic, Progressive Movement of 1889-1920 with which it coincided. As an interest group working within the two major established parties, the Progressives campaigned with a spirit of reform or “forward thinking” goals to improve

\textsuperscript{223} Harold U. Faulkner *The Decline of Laissez Faire, 1897-1917*. 1951(White Plains, N.Y.: M. E. Sharpe, 1977) 68.
the social, economic and political condition. In the view of the Progressive Movement, government run by experts informed by science would bring order, opportunity, further progress and cohesiveness. For Progressives, the government as agent of social change could be said to have displaced the church. These believers were generally addressing the maladies produced by the swift industrial growth. They rejected Galton's Social
Darwinism ideology with the position that the lot in life for all within society could be improved. In Contemporary political historian, S. J. Duncan-Clark wrote:

Assuming this class fluidity and by striving for the welfare of the people...the Progressive movement is stimulating and fostering a new and truer spirit of democracy...(the intention of the Progressive Movement is) to conserve and direct the great forces of industrial and political life so that they may contribute of their best to the happiness and prosperity of the people.²²⁴ ²²⁵

Theodore Roosevelt called it a “new nationalism”—the only way the government could be used for real efficiency. Woodrow Wilson took the idea further, fostering an advanced farm program and the formulation of plans for public power and regional developments, calling his program “new freedom.” In a nation founded upon a Puritan heritage, Progressives found moral indignation a logical tool against public corruption, smoke-blackened skies and factory-dumped refuse on the countryside. Paul Boyer writes:

The process of urbanization functioned as a potent catalyst for social speculation and social action...social thinkers, reformers, philanthropists and others whose assumption and activities seemed otherwise very different were often linked by a shared preoccupation with the city and,

²²⁵ Duncan-Clark 30.
more specifically, by a common interest in controlling the behavior of an increasingly urbanized populace. 226

Some of the initiative toward a stricter social order was motivated by fear of the increasingly hopeless and violent ways of the city. This group mostly believed philosopher Herbert Spencer’s social translation of Darwin’s popular theories. They maintained that the logic of Spencer’s phrase “survival of the fittest” was expressed in the high disease and death rates of the urban poor. A correlation was accepted between poverty and moral and civic deficiency. Likewise, they embraced the idea in the support of capitalism, imperialistic-driven aggression on foreign shores.

The Reformers

Historian Paul Boyer observed:

Common to almost all the reformers... was the conviction—explicit or implicit—that the city, although obviously different from the village... should nevertheless replicate the moral order of the village. City dwellers, they believed, must somehow be brought to perceive themselves

226 Boyer vii.
as members of cohesive communities knit together by shared moral and social values.\textsuperscript{227}

The reformers of the City Beautiful Movement held this belief in the rendering of moral and civic virtue by creating cohesive urban order. Also, beauty itself would evoke a regenerated civic life. Progressives, as with the proponents of the City Beautiful Movement, were criticized for being upper and upper-middle class with limited exposure to the real problems facing business, farmers or immigrants.

As the chief designer of the World’s Columbian Exposition, Daniel H. Burnham was an originator of the City Beautiful Movement. He linked efforts with Progressivism to say a reform “of the landscape... (would) complement the burgeoning reforms in other areas of society.”\textsuperscript{228} City Beautiful proponents believed that a beautiful city would inspire inhabitants to civic virtue and moral rectitude. “The reform movement in America, which had largely been concerned with corruption in local government, exploitation of labor...and other social causes...quickly embraced the concept of the city beautiful as an American goal.”\textsuperscript{229}

Nationalism, national destiny and collective national achievement could also be packaged to provide an appropriate goal for progressive reforms. The tools of progress, science and civilization, were compatible with the aims of both the Progressive Movement and the City Beautiful Movement philosophy. The political symbol and classical form became solidly linked during the City Beautiful Movement. A publicist for the adoption of the City Beautiful inspired Chicago Plan said of the social vision, “Every generation has its burdens, to this is given the duty of curbing the individualism and establishing the collectivism of Democracy” and in the city, citizens would be “inspired...into devoted action for the public good.”

Finally, the discourse on the City Beautiful Movement includes recognizing its performance as an urban social-control effort. Environmental aesthetics could be an effective social control device: Wilson states, “When they trumpeted the ameliorative power of beauty, they were stating their belief in its capacity to shape human thought and behavior.” The idea is based on the assumed link between the physical and moral state. Charles Mulford Robinson explained simply that a “lovely and uplifting” urban environment is essential “to the forward ...movement of the race.”

The Solutions

Historians overwhelmingly agree that the heightened clash of urban modernity and village folkways began in the United States during the Jacksonian Era, 1820-1840.

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230 Boyer 276.
231 Wilson 80.
232 Boyer 265.
Each era had its way of bridging these differences. At mid-century they were met by solutions in church Sunday Schools, the Young Men’s Christian Association and Young Women’s Christian Association and by the charity organization movements. At century’s end, progressive city planners projected solutions. They proposed that a City Beautiful could restore the social balance by recreating the former moral order of the village within the modernity of the city.

The civic center’s beauty would “reflect the souls of the city’s inhabitants,” inducing order, calm, and propriety therein—it would be a salvation experience. The citizen’s presence in the center together with other citizens would strengthen pride in the city and awaken a sense of community with fellow urban dwellers.233 Daniel Burnham wrote:

After all has been said good citizenship is the prime object of good city planning...(and) planning must contribute to the transformation of the intellectual, social, moral and aesthetic conditions of the city...It is a fact that public buildings badly designed depress and injure the artistic sense of the whole people, instead of inspiring a better taste as good ones would. The national structures are the landmarks of our professional horizon, they are most prominent when men are gathered together, and no one can help but see them. So for good or ill, we are all profoundly affected by them...we design to produce a condition.234

233 Wilson
234 Proceedings of the 21st Annual Convention of the AIA, 1887.
Burnham’s belief in the power of emotional engagement with architectural forms is noted by his assistant, Edward Bennett, saying that a guiding philosophy of his life was “his belief in the infinite possibilities of material expression of the spiritual.”

The Use of Beaux-Arts Style

The Beaux-Arts style, named for the Ecole des Beaux-Arts in Paris from which it originated, provided a powerful idiom for the City Beautiful Movement. The architecture emphasizes unity, expressed in a clearly articulated floor plan, as does symmetry in windows, doors and arrangement of building wings. Exterior and interior features of the buildings are embellished with period detail, often the work of other artists. The first American graduate of the Ecole des Beaux-Arts was Richard Morris Hunt. Beaux Arts architects worked in a range of revival styles, using historic detail to express the new derivative style.

Beaux-Arts architects and artists were trained in the necessity of achieving order, dignity and harmony in their work. The architects used historical research to academically support an eclecticism deriving from historical precedents. The style they produced also became known as academic neoclassical. In 1908, architectural historian A.D.F. Hamlin observed that American architecture had completed an evolution since the Columbian Fair at Chicago. “It has advanced along two lines, that of monumental planning and composition, thanks largely to the earlier influences of the Paris school and

schoolmen; and that of scientific construction as a result of wholly native American initiative.”236 John Welborn Root felt that even though American design had come from a background of no tradition, a new energy came to creation. He said:

A new spirit of beauty of beauty is being developed and perfected, and even now its first achievements are beginning to delight us. This is not the old thing made over; it is new. It springs out of the past, but it is not tied to it; it studies the traditions, but it is not enslaved by them. It is doing original work.237

An American Aesthetic

American architects and builders could also begin to understand themselves in relation to the rest of the world—the other. An American aesthetic became distinguishable in the material culture. Historian of American history, Reid Badger comments, “Nationalism countered the inherent divisiveness and confusion of rapid change by offering a unifying principle which was not so abstract as to be beyond the popular understanding.”238 The first true World’s Fair, the extravagant Hyde Park Fair in 1851, introduced the practice of promoting grand scale exhibition of a nation’s products.

236 Hamlin 244.
238 Badger 4.
At the time of the fair, there was yet lingering concern to institute a national style of architecture. The Philadelphia Centennial of 1876 had spurred interest in the recognition of a national architecture. The pre-eminent architects of that time, Mead, McKim, White and Bigelow journeyed about the New England countryside to critique Georgian and Adamesque styles until they typed a Colonial Revival style for a truly American vernacular for residential architecture. By 1893, the Columbian Exposition displayed a public testimonial for the closely related neoclassical style and Beaux-Arts influences. The controlled display of the Columbian Exposition produced a model for a monumental civic center comprised of Beaux-Arts buildings intended to inspire simply by their beauty. American architects enthusiastically applied the style, eventually known as “academic classicism,” to most public building projects of the American federal architecture program. One distinguished architect of the period, Theodore Wells Pietsch, noted:

Our too great prepossession for the picturesque...has been tempered, and we have been taught to consider more wisely the values of mass and proportion. This is a healthy check to an active and robust imagination, and far from blighting our natural individuality, will serve to nourish and cultivate the same, along firm and mature lines, and prepare the way for the coming of that day that shall print upon the face of our buildings as clearly as upon our bales or merchandise, the words of national stamp: “Made in America.”

The vital movement, a blended construct of artistic values and engineering technology and guided by political ideals focused on these general objectives articulated by Wilson:

- To centralize services and related uses in such a way that a hierarchical land use structure was achieved;
- To establish convenient and efficient commercial and civic center districts;
- To establish hygienic urban conditions, especially for residential areas;
- To express the individuality of towns through exploitation of scenic features;
- To treat composition of building groups as a more important functional and aesthetic concern than architectural design;
- To create focal points in the streetscape to visually unify the city;
- To integrate regional circulation systems into a clear hierarchy;
- To treat open spaces as critical urban needs, emphasizing active rather than passive recreation: Parks were to be laid in relation to public buildings;
- To preserve some historic urban elements;
- To provide a unified system for incorporation of modern urban features, as industrial facilities and skyscrapers, into existing cities.\textsuperscript{240}

When municipal building projects began again, the journal \textit{Municipal Affairs} headlined the words of New York architect Charles R. Lamb on its December 1899 cover, exhorting the realization of “The Dream of the Idealist, THE CITY BEAUTIFUL.” He

\textsuperscript{240} Wilson 586.
simply publicized the aesthetic philosophy of New York artists and art critics who adopted the term from the sensibilities of the Arts and Crafts Movement in England. In 1893 and 1895 sculptors and mural painters had created national societies based in New York. In 1895 the major art societies formed the Fine Arts Federation to facilitate united decisions on art acquisitions of the city. They also took direction from the 1897 published lectures of T. J. Cobden-Sanderson, colleague of William Morris, *Art and Life, and the Building and Decoration of Cities*. Additionally, as effects of the depression cleared, citizens groups committed to municipal art such as the National Sculpture Society, the Reform Club of New York, Municipal Art League of Chicago and Art Society of Baltimore, both in 1901 and the Architectural League of America became known. Much of their inspiration harkened to members’ travels abroad and referenced civic landscapes of Europe. These were compared to the gritty, artless urban realities of America. Additionally, the English Garden City Movement, inspired by the writings of Sir Ebenezer Howard, especially *To-morrow: A Peaceful Path to Real Reform* published in 1898 influenced US urban development. The originally British movement promoted the building of self-contained economic and cultural centers surrounded by a protective belt of non-industrialized land. Surrounding the residential, commercial and industrial areas was an agricultural and recreational greenbelt, for the first time considered an integral part of the town. The English Garden City Movement was articulated in Howard’s plan for what were to be garden cities, including his prototype of Letchworth in 1903. Popularly applied in Europe as well, planning historian F. J. Osborn states that the influence in the US was manifested in the establishment of suburban residential

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241 Scott *American City Planning Since 1890*. 88.
areas.\textsuperscript{242} In 1906 Ebenezer Howard and a group of community leaders to advise industrialists on how to plan appropriate new towns surrounding their work areas formed the Garden City Association of America. Because of the financial crisis of 1907, no garden cities as Howard conceived them were established. However the basic ideas contributing to the open layout of garden cities became significant features in modern city planning.\textsuperscript{243}

The mix of these influences would become a characteristically American lifestyle and thought: the association of physical improvement of the material (architecture, landscape, the human body) with moral improvement of the citizenry. There was also a conviction that a more livable and attractive urban environment would summon civic loyalty and reverse the decay of social and moral cohesiveness. The social goals of the movement implied the overall assumption that the behavior of ordinary people could be controlled by means of an uplifting, symbol-bearing architecture.

**The American Academy in Rome**

The 1880s and 1890s were vibrantly productive years in American architecture, featuring the leadership of Mead, McKim and White, Louis Sullivan, Henry Hobson Richardson, Richard Morris Hunt, J. Welborn Root and Daniel Burnham. For standards in public architecture of government and civic buildings, the Office of the Supervising


\textsuperscript{243} Scott 90.
Architect of the Treasury took charge. This office continued until the late 1930s. As well as demonstrating leadership in style and technical standards, it also supported local cultural projects as requested by residents. With architectural interest and momentum building in the 1890s, McKim again promoted the quest of a national architectural tradition, one national in character, and maintained by individual architects. He proposed a study context of Rome for American architects because, “Rome contains for the architect the greatest number of typical examples.”

Inspired by the successes of the White City, in 1894 McKim enlisted Burnham, Augustus Saint Gaudens (1848-1907) Richard Morris Hunt (1827-1895), Charles Eliot Norton (1827-1908), and Edward Simmons (1852-1931) to found the American School of Architecture in Rome. A year later the American School of Classical Studies was added in Rome by the Archaeological Institute of America. In 1913, the two schools united to become the American Academy in Rome. By 1905, the Academy was incorporated by act of congress as a national institute. The founders requested Austin W. Lord, a young architect in McKim’s firm as the first director. Lord had recently completed foreign travel and study as the first recipient of the Rotch scholarship, the oldest architecture grant in the US. The school was to address the ten years of reconstruction after Civil War devastation. The situation was described by a Columbia University historian as “architecture floundering in the lowest depths of tastelessness and
artistic poverty." The lack of direction was not surprising as the architectural profession in the United States began at this time.

The new American organizations of arts, humanities, libraries, museums and educating circles, recalling the academies and ducal courts of the Renaissance, were to be served by the Academy. The American Academy in Rome was created out of a manifestation of a belief in the kinship of the arts and the attainability of a higher standard of civilization through the collaboration of arts and humanities. There the merger of art and scholarship could refine "gentlemen of instinct and breeding." McKim wanted it to be a type of finishing school, providing advanced education for the best talent, chosen through competitions. Lord believed that Paris with its atelier culture taught the technique; Rome, with its monuments conveyed the culture. Rome also best displayed both ancient and Renaissance forms and principles in architecture. The educational philosophy offered students was "not as the art which dazzles, but the art which shines enduringly." Following their interest in naturalistic themes, City Beautiful designers utilized neoclassical architecture as it offered an adaptable, flexible and functional style.

At the American Academy in Rome, the curriculum immersed students

246 Between 1537 and 1631, the first four Medici grand dukes supported of the arts and sciences, exemplified by the pioneering achievements and dominant legacy of Michelangelo.
248 Wilson 88.
in the environment of Palladian “golden proportions,” the philosophy and mechanics behind the clarity, adaptability and attraction of the neoclassical form and architecture. The significance of the shapes of the “golden proportions” is that in these perfect divisions, the objects are stable and not changing when reflected, rotated or translated. This aesthetic ideal was to be learned from the most authentic classical examples of the past. The work of the late Renaissance architect, theorist and humanist, Andreas Palladio (1508-1580) was fundamental to the message of the Academy. Based on “beautiful and harmonious proportions,” his organization of architectural theories to achieve Vitruvius’ *symmetria* was the foundation of modern classicism in built form, including architecture, landscape and furniture.
At the American Academy instructors and students shared a “sense of idealism and spirituality…intensely nationalistic and moralistic bearing and belief in the existence of perfect historical models that could serve as a proper source of inspiration for America and foster the creation of an American Style of art and architecture.” A generation of the leading architects had attended the French Ecole des Beaux Arts in Paris, learning the neoclassic. In the past architects learned by studying various published plan books; concentration at the Ecole des Beaux Arts reiterated the use of symmetry, with classically proportioned elements drawn from the Renaissance and the ancient world. The dignity, order and harmony conveyed by the Beaux Arts style were being introduced during a period of disharmony and disorder in the United States. Now, the American expression in architecture set during the Fair could be embraced, taught and practiced.

In many artistic circles, the American Academy in Rome was known as the most venerable American institution on foreign soil devoted to the pursuit of humanistic scholarship as well as the fine arts. McKim directed the curriculum; Burnham was the school’s tireless fundraiser. Baltimore art collector and philanthropist Henry Walters (1848) and novelist Edith Wharton (1862-1937) were major contributors in fundraising efforts to establish the Villa Mirafiore in Rome as the academy’s home. J. P. Morgan made possible further expansion in the acquisition of the Villa Aurelia, the Villa Chiaraviglio and the Villa Belacci.  

Other Institutional Address of Architecture

With the Columbian Exposition’s display, Burnham noted that Americans were “no longer ignorant regarding architectural matters. They have been awakened…”\(^{251}\) In 1892, contemporaneous with President Harrison’s approval of federal support for the Columbian Exposition, Congressman John Tarsney introduced legislation, known as the Government Architecture Reorganization bill from the House Committee on Public Buildings and Grounds, so that “the stranger in looking for the government building will not be directed to look for the worst architectural monstrosity in the vicinity, but to one which the citizen may well point with pride.”\(^{252}\) The Tarsney Act did not become implemented until 1897, by Lyman J. Gage, then Secretary of the Treasury and board member of the Columbian Exposition.

William Martin Aiken (1855-1908), Supervising Architect of the US Treasury in 1896, held to a clear description of proper civic building design:

...thorough but simple construction, using the most substantial and fireproof materials permissible within the limit of appropriation,

\(^{251}\) Daniel Burnham qtd. in Antionette Lee 166.
\(^{252}\) The Inland Architect, 20 (December 1892) 48.
elaboration of design being of secondary importance, and the use of local material...taken into consideration whenever suitable for the purpose.\textsuperscript{253}

Burnham's ideas addressed a different aspect of proper civic building design:

It is a fact that public buildings badly designed depress and injure the artistic sense of the whole people, instead of inspiring a better taste as good ones would. The national structures are the landmarks of our professional horizon, they are most prominent when men are gathered together, and no one can help but see them. So for good or ill, we are all profoundly affected by them.\textsuperscript{254}

Burnham implies the possibility and responsibility of educating the masses through their public architecture. The return to classicism by design leaders was a reemergence of the Jeffersonian theme that a classic style best expressed the humanistic ideals of democracy embraced by the nation as a Western spiritual heritage.\textsuperscript{255} The new classicism was enabled by the Columbian Exposition and flowed onto a broader canvas with the Progressives and the City Beautiful Movement.

\textsuperscript{254} Daniel Burnham, "Suggestions toward the best and speediest methods for harmonizing and utilizing all the architectural societies in the United States" Proceedings of the 21st Annual Convention of the AIA, October 19\textsuperscript{th}-21\textsuperscript{st}, 1887, 115-116.
The last decade of the nineteenth century was a time of some anxiety regarding the future of the 100-year-old democracy. A few industrialists and investors had amassed great wealth by the century’s end. A religious community, which previously exhorted Americans to make money as a religious obligation to the nation, began to warn parishioners of the evils of materialism. After the publication of Jacob Riis’s *How the Other Half Lives* in 1890, social concern and intervention became the pulpit theme. In the presence of an ambivalence characterized by crises in faith, individuals cast about for answers. Many of means, including Henry James and Henry Adams, relocated to European sanctuary to contemplate the convulsions of change. Leading a literary response, Edward Bellamy shifted to a vision of the future, after William Dean Howells’ novels too vividly chronicled the present; Henry George articulated an adversarial rhetoric as solution to the political and social disenchantment. Within this environment the aesthetic, technological, organizational and utopian values that were expressed at the Columbian Exposition were re-mixed, fused and then practiced from 1899-1910, the zenith of the monumental social, philosophical and urbanist movement. So it was that the germinal seeds of leadership and ideals made material and public at the Columbian Exposition lasted through deep nation-wide financial panic and the worst-yet economic depression of 1893-1898. The philosophy and momentum re-emerged and became sustained in the prosperity following the Spanish American War, as the City Beautiful Movement.

**Local Effects of the City Beautiful Movement**
The City Beautiful ideas were maintained in small-scale civic involvement of communities recognized and made public in the writings of Charles Mulford Robinson. This rendition featured the City Beautiful influences on decorative art, concepts of small town beauty and domestic landscape design. Robinson explained, “Social problems are to a large degree problems of the environment...with municipal art the utilitarian advantages and social benefits become so paramount that they are not forgotten...This art, which serves so many social ends, is municipal, in the sense of communal...It is not a fad. It is not merely a bit of aestheticism...Altruism is its impulse.”256 Home and Flowers magazine, with a representative subscription of 125,000, organized a convention of civic improvement associations in October 1900, responding to readers’ requests to “start a national movement for civic beauty.”257 This grass-roots initiative and others like it were also a source momentum for the City Beautiful Movement. It had its own philosophical origins in the rural improvement ideas popularized in the mid-nineteenth century by the designer Andrew Jackson Downing (1815-1852), who had promoted tree planting and “tasteful architecture” to inspire village improvement.

Public museums and art societies drew much participation through the end of the century. Energizing their cause was the crusade-like dogma “the gospel of beauty and the cult of the god sanitation.”258 The National League of Improvement Associations promoted the village ideal as cleanliness, order, and cultural activity all set in picturesque landscape. By 1902, at its third national convention, the renamed American League for

258 Good, 42.
Civic Improvement, finally known as the American Civic Association, created fourteen advisory councils in the areas of municipal art and reform, social settlements, sanitation and recreation. The goal of the federation was lofty: Individuals aiming to promote the higher life of American communities. Other improvement societies had similar goals, incorporating small-town beauty with order, cleanliness and moral strength. Outdoor art groups were inspired by Frederick Law Olmsted’s park designs and encouraged proper principles of park creation for the edification of all citizenry.

According to Robinson, there was the overwhelming, underlying belief in the: morally uplifting value of beauty, buoyed by the energies of the social optimism of the Progressive era. The progressives gained momentum from 1900 to 1910 during the strong years of City Beautiful popularity, but then faded from leadership about a decade before its demise. Robinson’s 1901 publication of The Improvement of Towns and Cities was widely read, known as the “bible of the believers in the city beautiful.” As well as being a complex cultural movement attached to building arts, classical and renaissance architecture and urban design, the City Beautiful Movement promoted strategies for municipal and outdoor art and civil improvement. Landscape historian Philip Pregill suggests that designs for these most often included these components: civic art, emphasizing unification by using consistent styles civic design, emphasizing monumental spaces reflecting community versus individual goals; civic reform, combining goals for social, political, humanitarian and moral transformation; and civic

259 Charles Mulford Robinson, Modern Civic Art or the City Made Beautiful (New York: The Knickerbocker Press, 1903) 267.
improvement, emphasizing the aesthetic value of a sanitized, organized community environment.\textsuperscript{261} The result of including all of these components was the unified context that planners proposed.

As a merger of the National League for City Improvement and the American Parks and Outdoor Association, the American Civic Association was formed to support these objectives in 1904. This Association promoted an elaborate, functioning model city at the 1904 St. Louis World’s Fair to provide an educational display of the features. An article in the 1901 \textit{Municipal Journal and Engineer} when the fair was yet in planning stages, attested to the value of the public’s actually being able to see a model of a “well-governed city...complete with model hospital, fire and police station.”\textsuperscript{262} The City Beautiful concept had progressed from an aesthetic idea at the Columbian Exposition to instructive models at the St. Louis World’s Fair.

Ultimately, the City Beautiful advocates had as a guiding ideal an ordered society in which dignified, cooperative citizens of all stations could live amidst scenes “suffused with beauty.”\textsuperscript{263} The philosophy approached catch-phrase popularity for discussions of beauty and the environment. Around 1902, however, the movement began to alter from its emphasis on beauty, to emphasize comprehensive city planning. As it shifted, the moral dimension was central, the City Beautiful sending a ‘heavy freight’ of social meaning into early urban planning. The crusade was directed by, in the words of a tract

\textsuperscript{261} Phillip Pregill and Nancy Volkman \textit{Landscapes in History. Design and Planning in the Eastern and Western Traditions} (New York: John Wiley and Sons, 1999) 584.
\textsuperscript{262} Municipal Art at the St. Louis Exposition.” \textit{Municipal Journal and Engineer}. 11 (October 1901):169.
\textsuperscript{263} Wilson 305.
from the National League of Improvement Association, "the gospel of Beauty and the
cult of the god sanitation" and the simple goals of order, cleanliness and moral uplift.

**The McMillan Plan**

A constant figure in construction leadership and vigor since his involvement with the 1893 Fair was Daniel H. Burnham. Personifying the grand-scale application of City Beautiful he was integrally involved in the shift toward city planning. In 1901, he was one of the presidentially appointed Senate Park Commission tasked to address development of the public park system, other Federal lands and the location of public buildings within the capitol city. The initiative originated with the resolve of a group of Washington, D. C. citizens and officials of the federal government meeting in 1900 to commemorate 100 years of their district as the nation’s capital. They pledged to upgrade “in a manner and to the extent commensurate with the dignity and resources of the American nation.”264 Chair of the Senate Committee, Senator James McMillan obtained approval to report plans for development of “the most beautiful capital city in the world.”265 With Charles Moore (1855-1942) as his architectural advisor, he assembled a commission, led by Burnham and including Frederick Law Olmsted, Jr. (1870-1957) named the intellectual leader of American city planning for the courses he instituted at Harvard, Charles McKim and August Saint Gaudens to complete a plan and strategy for Washington D.C. This was actually a revisiting of Thomas Jefferson’s choice of classical

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or renaissance style for public space and buildings as carried out in 1790 by French architect and engineer, Pierre-Charles L’Enfant (1754-1825). L’Enfant had already traversed the then woods and marshland to site public buildings and planning a capital city, having as his reference the actual plans of the capitals of Europe. He then superimposed his extrapolated European plan upon the space available in Washington. L’Enfant understood that the city was not a simple agglomeration, but a “hierarchy of unequal but related and interdependent parts.” This is evident in his margin notes for the plan:

I. The positions for the different edifices, and for the Several Squares or areas of different shapes, as they are laid down, were first determined on the most advantageous ground, commanding the most extensive prospects, and the better susceptible of such improvements as either use or ornament may hereafter call for.

II. Lines or Avenues of direct communication have been devised to connect the separate and most distant objects with the principal, and to preserve through the whole reciprocity of sight at the same time. Attention has been paid to the passing of these leading avenues over the most favorable ground for prospect and convenience.

III. North and South lines, intersected by others running due East and West, make the distribution of the City into Streets, Squares and these have been so contrived as to meet at certain given points with those divergent

avenues, so as to form on the Spaces “first determined” the different
Squares or Areas.\textsuperscript{267}

The revival of L’Enfant’s plan was a high profile opportunity to display the use of
classical landscape values in the United States.

What became known as the McMillan Plan was to be monitored by the then
known Council of Fine Arts, composed of thirty eminent architects, painters, sculptors
and landscape architects.\textsuperscript{268, 269} The planners, receiving only reimbursement for their
expenses, set out on a world tour to acquaint themselves with the aesthetic atmosphere
that influenced L’Enfant and the architectural traditions that taught him. They toured
Europe: The Brandenburg Gate and Tiergarten Park in Berlin, the Frankfort-am-Main
railway station, Versailles, Fontainebleu, Vienna, Budapest, the Grand Canal, plus
Hampton Court, Hyde Park, Eton and Oxford. In 1902 they presented The McMillan
Plan for Washington, D.C., the first execution of comprehensive city planning in the
continental United States. L’Enfant’s plan would be the progenitor of American civic
sites, in and outside the continental United States. The system of diagonal avenues
superimposed on the rectilinear street plan that made the Federal City a city. Short show
streets connected the parallels and perpendiculars, combining function and
ornamentation. L’Enfant had begun by determining the positions for the different
edifices, “The Congress House was the most important of these…set upon the most

\textsuperscript{267} Schuyler 7.
\textsuperscript{268} Antoinette Lee, \textit{Architects to the Nation} (New York: Oxford University Press, 2000) 229.
\textsuperscript{269} One of the eminent proctors for the Fine Arts Commission was David D. Gaillard, soon to be member of
the Isthmian Canal Commission and tireless director of the Panama Railroad Company.
commanding ground the district contained...the center of such a radiation of streets that no fewer than sixteen vistas converged upon it and were closed by it.”

The second prominent building was the President’s house and the third, a site for the monument to the first president. The resurrection of the unfinished plan and its adaptation to completion was deemed a success comparable to the planned civic centers of great European cities. The additions and improvements contributed to “all Americans who wish to be justified of their pride in their capital.”

The influence of the Columbian Exposition was explicit within the final plan which included a water feature basin framed by classical buildings and landscape design reminiscent of the Italian Renaissance and ancient Rome.

Figure 6. McMillan Plan layout, ca. 1901.

The plan for Washington, D.C. was officially abandoned after the death of Senator McMillan and pressure from conservative congressman Joseph Cannon. However, Burnham and McKim continued their contributions as solicited by Presidents Roosevelt

270 Schuyler 10.
271 Schuyler 25.
and Taft. The bordering spaces of Grand Avenue in L’Enfant’s plan became “The Mall,” with a central green, flanked by elm colonnades and the row of public buildings “devoted to the scientific work of the government and…museums in which the public generally is interested.”

The planners sought consistency in practice, requiring common building material, common cornice lines, and a common classicism in style. Design guidelines were given to individual owners of the private buildings that would be included. Owners were told they should conform to common style to avoid “injury to another.” After the success of the McMillan plan, municipal planning, informed by a McMillan-modeled classical style, became the goal for American cities such as Cleveland (1903), San Francisco (1904), and Chicago (1909). Just as the neoclassical academic, renaissance values were utilized across the United States, the styles began to be taken abroad, for example in Manila and Baguio, Philippines (1905).

The Fine Arts Commission

Early in 1909, President Roosevelt created a committee to promote and safeguard City Beautiful values and desires for the future: The Fine Arts Commission. Roosevelt elucidated his action, “…I shall request the Council to watch legislation and on its own initiative to make public recommendations to the Executive and to Congress with regard

272 Schuyler 17.
273 Schuyler 23.
to proposed changes in existing monuments or with regard to any new project.\textsuperscript{274} The thirty-member commission of architects, painters, sculptors and landscape architects included Charles F. McKim, Daniel H. Burnham, Daniel C. French, Frederick Law Olmsted, Jr. and F. D. Millet. Before any plans for buildings, grounds or the location of statues or monuments were adopted, they had to be submitted to the Commission for review and acceptance. Representatives of this committee visited the Panama Canal Zone to make recommendations on the design and style that would be appropriate.

\textbf{The City Functional}

The City Beautiful Movement was supplanted by the city functional: the city efficient and practical, defined by technology ruled by specialization, professionalism and a burgeoning bureaucracy. The urban movement once again was an articulation of what was quintessentially "American" at the time. The great paradox of the progressive urban efforts of the time is that in the planning for solutions through reform, the progressives affected some quite rigid measures and interventions. Lawrence Vale said that cities are the "product of a multiplicity of choices...intellectual constructs as well as physical artifacts and social networks, and all three are closely related."\textsuperscript{275}

\textsuperscript{275} Vale 14.
Conclusion

The Columbian Exposition ended in 1893. In later years many reflected that it was "the Fair that changed America." The fair had affirmed pageantry and the observed exhibit, united beauty and utility in the minds of citizens and professionals, energized the philosophy of the City Beautiful Movement, displayed the power of architecture and encouraged the instituting of the American Academy in Rome for training of designers in an American architectural style. More importantly, the essence of the fair, as Rydell observes, evoked a positive response by Americans to progress and innovation. The acceptance and incorporation of progress and innovation laid the foundation necessary to receive changes associated with the modernism that accelerated from 1910-1930.

The tenets of the City Beautiful Movement were carried into spaces far from the continental United States, such as Hawai‘i, Puerto Rico, the Philippines as well as the Canal Zone. The concepts associated with the Columbian Exposition included: neoclassical academic architecture, a classical civic layout expressing elegant beauty, use of technological achievement to achieve a clean, safe, modern, spatially efficient environment, use of classic detail in the sense that it was built for posterity. All of the City Beautiful features are intentionally present in the design of the Balboa Prado civic


277 Rydell 71.
As soon as residents filled the housing of the Prado area, they were explicitly encouraged by the Canal administrators to keep small gardens and generally beautify their environs, "in keeping with the essence of City Beautiful ideals." The original designer of the civic architecture and landscape, Austin Lord, was the first director of the American Academy in Rome and a member of the Mead, McKim and White architectural firm. The landscape architect, William Phillips began his career in the Olmstead firm. All of the architects, engineers and planners who executed the Canal Zone civic center were influenced and guided by the principles and values of the City Beautiful Movement.

The creation of American civic architecture in Panama was the end product of a long line of interrelationships as has been illustrated (Fig. 4). The plan and architecture of the Canal Zone civic center of Balboa are significantly related to the City Beautiful movement by their use of Beaux-Arts and neoclassical monumental styles and their emphasis on functionality. The civic center of Balboa would not exist apart from the one great function that its society performed inside the structures and within the landscaped grounds. Contemporary United States foreign policy was upheld by the City Beautiful philosophy that careful design could affect and change societies. The philosophy promoted order, and the predictability consequential to order is useful in directing any outcome. This was an early demonstration of United States policy makers utilizing art and the innovations of private industry to translate paradigms of American power into a serviceable cultural idiom. Idealist foreign policy was translated into architectural structures.

278 The Canal Zone Record 9, No. 15 (December 8, 1915) 128.
CHAPTER 3

PRESENTATION OF THE CIVIC ARCHITECTURE OF BALBOA, CANAL ZONE PANAMA

Soon after becoming chief of the Panama Canal project in 1907, Colonel George Washington Goethals ordered the creation in a marshy swampland of “a town that shall be a credit to the nation and a place of comfort to all who inhabit it.” In 1909 the Peruvian minister to Panama suggested that this location adjacent to the area of Ancon (or anchorage) be named Balboa, after the esteemed discoverer who first recorded seeing the bay on which the new town would be built. By the 1950’s and 1960’s, that town of Balboa was characterized as a “hyper American suburb”, a miniature United States complete with manicured lawns, YMCA clubs, churches, station wagons and Fourth of July celebrations. “The Canal Zone is a place where Yankee life, with its traditions, races, nobilities, prejudices, villainies and virtues are faithfully reproduced...” stated a local Canal Zone historian. In a series on “America’s most colorful” cities, a writer at The Saturday Evening Post referred to Balboa as, “the administrative and spiritual center of the most paradoxical American community in the world.”

In order to understand the elements of style and symbol of the architecture which contributed to the identity of the civic center of Balboa, close examination of the structures is essential. The method for analysis of the civic architecture of the Panama


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Canal Zone is the Historic American Building Survey format. It requires examination of architectural measured drawings and large-format photography to produce a written report. The evaluation for significance of the buildings is based on architectural features, the importance or notoriety of the architect of the design, the presence of innovative structural systems and important historical events or persons related to the site.

The investigation of the civic architecture of Balboa, Panama Canal Zone has required inspection of over 550 original architectural plans and related archival quality photographs. An expanded collection of the complete analyses of the buildings, photographs and architectural plans for the subjects of the study of civic architecture of the Canal Zone are filed in an appendix. The following HABS format narratives document the architectural analysis of the representative civic architecture: Panama Railway Station (1913), Administration Building (1914), Balboa School (1914), Y.M.C.A. (1914), Ancon/Gorgas Hospital (1915) Balboa Union Church (1917) and the Prado mall landscape (1914). The analysis of each building is summarized separately. For the sake of the narration, an appendix (Appendix A) that sets out each structure in more specific detail as per HABS standards is included.

Because these analyses are is not strictly reports for HABS purposes, some liberties with the absolute format are taken. As the subject of this investigation is the buildings and the context and meaning of their construction, the analysis relates to the “as built” structures in the circumstance and environment of their initial construction. A standard HABS report would reference the status of the building over time, including up

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to the present. Each site report would include the outline-format analysis, architectural
drawings and photographs of the civic building.

After an introduction of the plan of the Balboa townsite, civic architecture and
landscape and the narratives of the building analyses follow in a chronological advance
according to their date of construction. Their completion dates span the years 1913–
1918. Finally, a discussion of contributing architects and engineers concludes the focus
on the civic center structures.

**BALBOA, CANAL ZONE, TOWNSITE**

The complete Balboa civic center area in 1914 encompassed one hundred fifty
acres, with one hundred thirty permanent buildings planned to be included. The area of
concentration stretched 5,600 feet long by 2,100 feet wide. The layout of the main axis
of the townsite of Balboa passes through the center of the Administration Building site on
the north and the YMCA clubhouse on the south. At construction, the town was directly
bordered by Panama, the Pacific Ocean and other land within the Canal Zone. Figure X
illustrates the layout of the plan with areas designated for specific buildings, sited for
their practicality. Construction was completed in eighteen months.283

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283 The Canal Record, Vol. 7, No. 29 276.
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Figure 7. Plan of Balboa Townsite, ca. March 1914.

Legend for location of public and semipublic buildings, ca. March 1914:

A. Site for permanent fire station
B. General athletic and recreation grounds
C. Bachelor's quarters
D. Magistrate's court and police station
E. Schoolhouse
F. Bachelor's quarters
G. Bachelor's quarters
H. General athletic and recreation grounds
I. Sanitary Department
J. Bachelor's quarters
K. Dispensary and office of district physician
The locations of the representative civic buildings are represented in Figure 12.

1. Panama Railway Station
2. Administration Building
3. Balboa School
4. YMCA
5. Gorgas Hospital
6. Balboa Union Church
7. El Prado landscape

Figure 8. Balboa townsite plan, 1915.
RAILWAY STATION

(FACILITY 1)

Figure 9 Panama Railway Station, 1914.

Figure 10 Panama Railway Station, 1916.
The Panama Railway Station is located in Panama City, adjacent to the Canal Zone administrative and civic center of Balboa. The design and treatment of the Panama Station is a “free adaptation of the stucco architecture of Palladio as found, ...in Vicenza and nearby cities of northeastern Italy.” The setting of the station is located in an urban part of Panama City. It is surrounded by sidewalks, curbs, storm drains, and a macadam road built by Isthmian Canal Commission municipal engineering forces. A triangular park bordered with tropical foliage and plantings was located opposite the station. Although the location of the station is inside Panama City, Americans constructed the new station primarily to serve the needs of the Canal Zone and function of the Canal, and then all other commerce. The station served both passenger travel and delivery of goods, including groceries, for Balboa. Completed in stages from August to November, 1913, the total project cost was $81,688. Mr. H. E. Bartlett, architect for the Panama Railroad

Company, designed the station as well as the furnishings for the station. The office of the
trainmaster and other administrative offices of the Panama Railroad were moved to this
station from Colon in March 1914. *The Canal Record* chronicle of the building’s
construction stated that it was a “modern structure designed in accord with local
operating conditions.”

The railway station is a two-story, rectangular, concrete structure with a three-
story wing in the rear built in the Italian Renaissance style. The plan is similar to other
contemporary railway stations constructed in the US. When it was completed, it
featured many of the most recent innovations in technology for train stations, as well as
separate first class and second class waiting areas and freight storage rooms. Cooled
water was available from water fountains inside the building. An “annunciator device”
and gongs announced the train’s status. In keeping with railroad tradition, bachelor
quarters for eleven employees were provided on the second floor of the station. The
architect, Mr. Bartlett chose finish elements of mahogany throughout the construction.
This wood species and the cypress of the second-story floor were selected for their insect
repellent properties.

A steel-frame construction, the building was originally constructed as the
permanent railway station to replace the original one that was located south of the present
station. Although it was a US federal project, construction of the station was sublet to the
Central America Construction Company, Ltd. based in Colon. Their building plan

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286 Daniel Burnham’s plan for Union Station (ca. 1903-1908) Washington, D. C.
included razing and re-use of the steel structure of the old station. The Panama Railroad furnished the bronze lighting fixtures, electric clocks, and ticket cases, seats upholstered in cane for the first-class waiting room and of wooden slat for the second-class waiting room. The mahogany seat ends in the first-class waiting room were made at the railroad carpentry shop. The primary exterior material of the walls was cement stucco, tinted with mineral colors, in keeping with the aesthetics of surrounding buildings in Panama City.

The neoclassical design elements were exploited for their practical purposes: On the anterior, the loggia colonnade is flanked symmetrically with vestibules, through which entry is made. Floor-length windows on the first floor admitted maximum light and provided for air circulation. On the second floor, semicircular openings filled in with cast concrete grills allowed for the same. The interior waiting salons each had adjoining one-story porte cochere. These were especially utilized for their practical purpose as the station was the nearest stop to Gorgas Hospital. Canal workers requiring medical attention were transferred by train to the station where an ambulance waiting in the convenient shelter of the porte cochere could carry them to the hospital.

In the planning and design of the Panama Station, much attention was given to the civic needs and order. The carriage and service roads in the grounds formed an integral focus of the layout, "preventing congestion and confusion by keeping all vehicles and pedestrians on a given road or sidewalk moving in the same direction."287 One-way delivery lanes were utilized. To protect passengers from tropical downpours, a roof

projection covered the discharge and alighting platforms. Also in consideration of the climatic conditions, ample carriage accommodations were protected from the weather. Roof or porticos covered all open passageways. As certain incoming trains attached an observation car, or a hospital car bringing patients from the outlying regions to the Ancon hospital, there was a direct passage designated to the waiting ambulance or public carriages.

The very placement of the baggage rooms was determined by the order of the railroad trains: irrespective of the direction in which these are destined, first-class coaches travel on the southern end of the train and the second-class coaches on the northern end, with the baggage car in the middle. The baggage room, therefore, is on the axis of the building, adjoining the alighting platform and at the same level. Handling of baggage could then be independent of the movement of the passengers.

The Panama Station is now occupied by the Museum of Panamanian Man, since 1976, a museum administered by the Panama National Department for the Historic Heritage, which comes under the National Institute of Culture. One UNESCO document comments, "the museum occupies premises that used to be the terminal station and administrative centre of the former Panama Railroad Company, the establishment of which, in the mid-nineteenth century, marked the beginning of a long period of North American economic and cultural domination of the isthmus."288

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The Administration Building was associated with the early establishment and build-up of facilities and personnel for the administration and efficient functioning of the Panama Canal. It was reported in The Canal Record that the location of the Administration Building was “well fitted to the purpose and character of an edifice that is to guard and direct the interests and operation of the Canal, overlooking...the first permanent town of the Zone.”\textsuperscript{289} Designed by New York architect Austin W. Lord, it was completed in 1914 in the neoclassical Italian Renaissance style. When the construction was completed, the editor of the Editor of the Canal Record commented, "Such a varied collection of functions has seldom before been assembled under one roof and the building is probably unique and not liable to be duplicated until some undertaking as great in

\textsuperscript{289} The Canal Record 8, No. 19 (December 30, 1914): 183.
magnitude as the Canal is to be consummated.”\textsuperscript{290} The interior and exterior elements also made the building the most illustrative of the neoclassical style in Balboa. Because of its fine construction features and the attention devoted to interior detail, the summary of the Administration Building’s analysis will include more specific information.

As the anchor building for the townsite, it is situated on a seventy-five foot high mound created from spoil removed from the Culebra Cut and Balboa Harbor. The designated purpose of this Administration Building was to concentrate the offices of the various departments of the Panama Canal under one roof “for the sake of efficiency and economy and the convenience of the general public which has business with the Canal.”\textsuperscript{291} It is the “center of power” for the management and function of the entire Canal Zone property and operations. Previously, administrative operations were decentralized to the major canal construction sites, plus an administration building in Panama City, loaned for a short period by the country of Panama.

A thoughtful plan, the layout supported maximum communication between offices. The premium utilization of the available daylight intensity was an equally distinguished concept. Configured in an “E” versus one long rectangular construction, , the widths of the wings were figured precisely with the optimal light line, and also maximized land-space utilization. 

\textsuperscript{290} Ibid.
\textsuperscript{291} Ibid 181.
Other climatic adaptations include the square pier colonnade along the front and end elevations, included in the design to protect the building against sun and rain. Porches protect the rooms from the sun’s direct rays. Numerous large windows provide natural ventilation, to prevent stagnation of the humid air of the rainy season. The overhang of the eaves substitutes to provide a porch effect on the third floor. A large Palladian window with inset French doors maximizes natural illumination for the third story stair landing area. The utilization of natural light with the particular fenestration was so effective that Commission photographer Red Hallen, using a glass plate negative system, could photograph employees on the job. There is use of ceiling ventilators, located at the roof line, under the roof above each of the highest windows.

The three-story structure features a total building area of 23,000 square feet—the largest in Panama at the time of completion. The steel frame superstructure construction, erected under the supervision of American Bridge Company, is built on a concrete slab on reinforced concrete piers. The walls are composed of fireproof concrete tile blocks manufactured nearby, and covered with cement stucco. Constructed in the manner of a fortress on the hill: there are reinforced stone concrete floor arches, reinforced sawdust concrete roof arches and reinforced concrete stairs, and concrete block curtain walls. The roof cover is dark red Spanish S pattern, fastened to the sawdust concrete slab with hardened copper nails.\textsuperscript{292} The rear of the building, with its central wing and two end wings, encloses a large court, originally serving as a protected carriage entrance to the building. At the time of its construction, the bordering land was undeveloped jungle.

\textsuperscript{292} Ibid.
The front of the Administration Building faces the Canal and Prado area, suggesting a grand entry approach. However, the extreme hill grade necessitated carriage entry via the *porte cochere* on the central portion of the building. Above the main entrance there is a plain inscription within a V-shape inset, simply reading “Administration Building, Panama Canal 1914.” The original plan called for a more decorative title panel in honor of the Canal builders, with representatives from different groups depicted, but this and a decorative marble mosaic of the Canal seal in the center of the rotunda floor were vetoed by the engineers and backed by Colonel Goethals as too expensive for the project.

The Administration Building featured technological advances: An electric passenger elevator is located within the stairwell area to serve the offices of each wing. Utilizing other modern innovations, the architect required installation of piping for a vacuum cleaning system, electric wiring, and a telephone system. A 40-drop annunciator was accessible on the desk of the chief correspondence clerk and six annunciators for messenger service distributed throughout the building. Drops were located in each wing on three of the main floors.

Interior plumbing served all floors with cooled water fountains and bathrooms. Unusual to the tropics, the Administration Building basement runs under the entire structure made feasible by the superior drainage of the site.
Natco hollow tile blocks and reinforced concrete walls are assembled around the steel frame structure. Goethals brought Albert Pauley, who had developed this process, to the Canal to oversee establishment of a local plant and its functioning. Cement stucco covers the surface of the blocks.

A paved terrace at the front of the building faces Sosa Hill; Additional wide concrete paved terraces, panels of lawn and concrete balustrades surround the building on all sides. Formed by casting concrete with reinforcement in plaster moulds on site, some 1,000 balusters were utilized. At the foot of the main front steps stand cast iron lamp standards, crafted by Mario J. Shiavoni, assistant to Austin Lord.

A flagstaff on which to display the American flag stood at the center front of the Administration Building. Constructed of reinforced concrete, it was and is positioned at the head of the stair from the terrace to the Prado town site. It was exclusively designed for the project by Shiavoni. Cast iron electric lighting standards stand on the lower ramp walls and at each side of all the landings. The lighting units are similar to those utilized for Canal locks control houses and were designed either by Shiavoni or Lord.

The interior layout is of three floors, each continuing into right and left wings of offices, separated by a central rotunda. The entire floor area is 67,000 square feet, plus toilets, elevators, stairways and hallways. Floors in the offices are of yellow pine, fastened to redwood sleepers, and imbedded in cinder concrete. In the hallways and porches, they are of red Ruabon quarry tile. Walls and ceilings are lime plastered except
above the rotunda where it is hard cement plaster. Doors, frames, sash and trim throughout are of polished mahogany with brass hardware. It is unknown whether the fine quality mahogany is from the supply in the local jungle or was shipped from another source. A limited mill existed for Canal lumber needs.

The floor of the rotunda is a mosaic tile. The rotunda area on each floor has a lighted clock placed in the molding trim portion. The walls of the rotunda are of hard cement plaster with a molded base and rusticated courses up to the second floor level. From this point upward, the walls, stringcourses, balconies, window architraves, cornice and dome are of lime plaster. On the first floor, four doorways flanked by marble columns, plus four round-headed niches break the wall space. At the second floor, there is a window over each of the large openings below, fronted by a balustrade. In the panels between the windows are four mural paintings by William Brantley Van Ingen (1858-1955), esteemed for his work in the Library of Congress and the Philadelphia Mint. Depicting a history of construction days, the titles of these panels are: *The Building of a Lock Gate, Construction of a Lock, Construction of Gatun Dam* and *The Digging of Culebra Cut*. Van Ingen created the panels in New York and brought them to Balboa for installation. The style is impressionistic and monumental, depicting the contrast of nature, human beings and industry. Goethals requested and championed the murals as celebration of and tribute to the workers of the Canal. Van Ingen completed the assignment on a budget of $25,000 ($25.00 per square foot).
Tennessee marble was imported for the stair treads and risers. Verde Antique marble was also used and the balusters, base and handrail are of mahogany. The turns in the stairwell flow continuously without newels or other breaks. At the walls, Verde Antique marble and cement wainscot follow the rake of the stair.

The Administration Building housed the office of the Governor, who exercised complete executive and administrative authority and jurisdiction over Canal affairs and personnel, subject only to the order of the President of the United States, exercised through the agency of the Secretary of War. The Governor’s Executive Department and Executive Office of the Panama Canal were charged with maintaining the files, records and libraries, all matters relating to personnel, maintenance and supervision of property accounting for all departments of the Canal and railroad, the surveying of obsolete and worn-out equipment, the compilation of data for wage adjustments, mortality statistics, and shipping statistics, all dissemination of public information for the Canal, the publication of rules and regulations, operation of clubs and playgrounds and general office business of the Governor.

The basement level is devoted to the storage of records, for which purpose vaults plus archival and other supplies are located. Additionally the Meteorological and Hydrographic Section was located in the northwest corner, in which Bosch-Omori seismographs stood ready to record any earth tremors. These instruments rested on solid concrete foundations that continue down to bedrock. An air space where they pass through the floor insulates them from the building. The southwest corner was devoted to
the blueprint room, utilizing artificial and natural lighting for the majority of all isthmus blueprinting needs. A dumbwaiter connected this space with the main drafting room on the third floor. Nearby this room is the Accounting Department, featuring a fireproof vault and files. An addressograph and a small printing room for in-house needs was adjacent.

The office of the chief dispatcher of the Panama Railroad was located on the third floor of Wing B, complete with the master clock synchronizing all timing clocks on the Railroad. On the third floor south wing was located the Balboa Heights telephone and telegraph exchange switchboard, consisting of three sections of the Western Electric Company's relay type switchboard. 840 lines were available, with a maximum capacity of 2,800 multiple lines, and eventually connecting all telephone systems within the territory between Panama, Balboa and Corozal.

The three floors of the building are divided into office spaces, organized around a central rotunda, 43 feet in diameter, and its dome. The Dome interior is entirely of wood except for the center of amber chipped plate glass. The first floor rotunda space features eight Swiss Cippolin marble columns with pink Tennessee marble borders placed equidistantly around the perimeter. Each corner has an arched niche and walls are granite blocks. The first floor rotunda has a marble mosaic design emanating from the center.

On the first floor are two vaults, each built with steel plate shell walls. All the payments for the Canal were dispersed here. The vaults in the Paymaster's office and one
in the Collector's office were reported the "most modern construction," burglar and fireproof. "they rest on a bed of steel rails interlocked and connected to form a solid steel floor, sidewalls and roof...The main door is five inches thick and weighs about four tons. It is resisting the oxy-acetylene torch, while the others are designed to be drill proof. The edges of the door are tongue and grooved, ground to a perfect fit, and have a fibre packing so that no tool can be forced into the joint between the door and its jamb when closed...a pressure system has been installed to the outer face of the door, which forces the door to a dead fit, making it impossible to get even a knife blade or liquid explosives into the joint."²⁹³

Historical Context:

The excavation and building up of the site commenced February 1913. The Fifth Division Army Department of Construction and Engineering graded and poured concrete piers, preparing the foundation for the United States Steel Products Company to start erection of the steel frame on June 18, 1913. Even as the foundation was settling, the architect and drafters produced and signed final working drawings.

The architect completing the original plans for the Administration Building was Austin W. Lord of New York City and the on-site assistant architect was M. J. Shiavoni, followed by Samuel Hitt. Work on the site finished July 15, 1914, approximately a year after the first steel beam was put into place. Total cost as budgeted was $375,000. In 1911 Goethals directed the centralization of Canal administration to this location in order

²⁹³ *The Canal Record.* 8, no. 19 (December 30, 1914): 183.
to provide space for 210 employees and the administrative records. He wanted this building to be surrounded with the best buildings; he thought that better coordination would result from this centralization. 294

The Administration Building, as administrative headquarters housed the work of the Executive Secretary who under direction of the Governor of the Panama Canal, also installed in the same building, managed employees' time keeping, post offices, customs, taxes, police and prisons, fire protection, the land office, schools, clubs, law library, custody of files and records, and the administration of estates of deceased and insane employees. His office performed duties of the Shipping Commissioner, all communication between the Republic of Panama and the Canal Zone and have charge of the seal of the Government of Panama. The Executive Office was divided into seven bureaus to carry out its mission: Correspondence, General, Personnel, Property and Requisition, Records, Bureau of Statistics and the Bureau of Clubs and Playgrounds. 295

294 Goethals’s statement, US Congressional Hearings No. 20 (October 26, 1911): 76.
Photos:

Figure 13 Administration Building Construction, 1913.

Figure 14. Administration Building construction, 1914.
Figure 15. Administration Building construction, 1913.
Figure 16. Administration Building construction, 1913.

Figure 17. Administration Building construction, 1914.
Figure 18. Van Ingen murals, Administration Building Rotunda, 1914.
Balboa Elementary School is located within the Panama Canal Zone, “Balboa Plain,” Balboa townsite, and administrative center. Situated adjacent to the Administration Building, it is associated with the early establishment and build-up of facilities and personnel for the administration and efficient functioning of the Panama Canal.

The building is a three-story, utilitarian, rectangular, permanent concrete structure built around an interior courtyard, with minimal detailing, suggesting a modified Italian Renaissance style. A steel frame construction, the built structure followed original plans with subsequent minor renovations. Situated on a concrete pile foundation, two lesser wings are placed at either end of the façade with a recessed central block in between. The
building was constructed as the permanent school to replace the original wood-frame building. The walls are made of hollow concrete blocks and reinforced concrete. The primary exterior material of the walls is stucco. The roof framing is of steel and wood and has a hip(s) on gable roof covered in dark red vitreous tile. Overhanging eaves provide shading and protection from heavy rains. Eyebrow dormers are stylistic elements placed on the hips of the roof which function to allow air circulation.

On the anterior, a loggia on each floor is flanked symmetrically with end walls of the right and left wings. The corners of these walls and the walls adjacent to the projecting loggia are heavily rusticated. The intervening wall surface above this is treated with a column effect. The two flanking ends have pilasters separated by blank wall. A band simple course treatment extends around the entire building located at the floor elevations of each level. The first course of the treatment is arched, while the
second and third are have a column effect articulated as nine structural bays, accentuated by pilaster strips.

There are eight pilasters on each long side of the building, plus the four corner-squared pilasters. The rear of the building mirrors the front with the exception of omission of the colonnade.

The fenestration of the first floor, east and west sides, is a symmetrical row of four, vertical, double-casement windows on each side of the middle doorway. Windows on floor two are two-paired horizontal, one-over-six hopper windows located within each of the eight bays; on the third floor there are two-paired, one over four hopper windows. In each of the flanking wings, there is one group of horizontal casement windows, three-over-four on the second floor and three-over-five on the third floor. All windows are clear glass. The configuration of windows allows for optimal natural light to be available in the school.

The front door is approached from six concrete steps, which run the length of the arcade. A concrete sidewalk leads to the stair. The arched entry has a cast and wrought iron, double, split hung gate crowned with a grille in the configuration of a fanlight, based on concentric circles.
The interior first and second floors contained the rooms for the grammar school grades, plus the principal's room, teachers' room, library and supervisor's room. The third floor functioned as the high school division, equipped with classrooms, science laboratory and study, a commercial division classroom and assembly room for 200 occupants. An innovation at the time of construction was the use of the open-air lunchroom, located over the entrance loggia. This commentary was published in *The Canal Record*:

...The buildings will be fireproof and will contain all the modern conveniences of one up-to-date in the United States, such as sanitary fountains, providing a continuous flow of clear cold water from a cooling plant within the building; large airy rooms with light coming from the left side only, the glare of the sun being diffused by ground glass panes in the upper portion of the window; steel window sash, the windows being pivoted to facilitate ventilation; the walls of classrooms to be tinted a neutral color to avoid irritation to the eyes of pupils; blackboards will be of slate instead of composition.\(^{296}\)

\(^{296}\) *The Canal Record*. 9, No. 49 (July 26, 1916): 416.
Multiple toilets with vertical flush plumbing and water fountains are installed on each floor. The floors are of yellow pine wood.

The original drawings for the Balboa School are signed by architect, Samuel M. Hitt and dated 1913. The original conception of the building plan was probably initiated by Austin Lord as he envisioned the comprehensive civic center requirements. The school is in the academic neoclassical renaissance style with elements of the Spanish colonial. The configuration around an interior courtyard follows the Palladian foundations put forth at the American Academy in Rome. This is very successful and efficient for a unified school environment. Construction finished in late 1914 and the class of 1916 numbered sixteen students. The construction of this elementary and "full four year" high school in the Prado civic area testified to the intended permanence of the American presence. By 1912 there were 4,064 wives and children in the entire Canal Zone. The inclusion of the school indicates an understanding of the importance of educational access for the fledgling population. An educational center was to be included in all civic planning. In this microcosm of American life, the Balboa School is an exhibit of a Progressive era American value supported and institutionalized. Its presence is an acknowledgement of a developing American civil right made manifest in this model civic community. At the time of completion, Balboa School was designated for a white student population.

Until 1941 when the high school was constructed across the street from Balboa School, this building housed classrooms for all grades. At that time, the Balboa School
became known as the Balboa Elementary School. The Canal Zone Data Base states that the Balboa School is built according to original plans.

BALBOA Y.M.C.A.

(FACILITY 4)

Figure 21. Balboa YMCA, 1920.

The Y.M.C.A. (Young Men’s Christian Association) of Balboa is a U-shaped primary structure with two setbacks, flanking one story wings with Italian renaissance detailing and sympathies to the needs of tropical climate. The center portion of the U-shape is two-story, while the rear wing-portions are one story. These surround an inner
courtyard. The project was completed in 1914 at a cost of $52,000. Samuel M. Hitt was the architect.

This building was built as planned as a permanent structure to replace a wooden plantation style clubhouse that stood at the Steven’s Circle south end of El Prado. The wooden structure was utilized for the same purpose until its demolition when the new building was ready for occupancy. The original foundation is of reinforced concrete, placed on concrete footings set on fill material, on grade. The clubhouse features a hipped roof with projecting wings, overhanging boxed eaves, and red vitreous tile roofing. The left wing has a Spanish or Mission style-shaped roof parapet. Interior walls are constructed of steel and reinforced concrete, with Natco hollow tile curtain walls. The exterior walls are of concrete covered with stucco. Steel frame structural construction supports the building.

On the first floor front and façades, pilasters separate nine structural bays. There are eight pilasters on each side of the building, plus the four corner columns. Within each bay on the front center facade except the center double-door opening, are four pivoting casement windows. The front façade faces east, allowing natural morning illumination. Each wing has two structural bays separated by pilasters, with windows placed in the bays. The second floor thirteen-window bays running the length of a balcony that is bordered with a balustrade of bowling-pin shaped elements. The “double-snug” front door is approached by a stair of seven steps. The Y.M.C.A. architecture projects a semi-formal image.
The central building interior is divided into a lobby, billiard and pool room, reading room to the left and right of the lobby, an adult game room and gymnasium, two refreshment rooms, lockers, boys games and reading rooms, service room, barbershop and swimming pool. A bowling alley is installed in the left wing. The Y.M.C.A. screened a 'picture show' each week in one of the reading rooms or games rooms. Outside, an eight foot wide arcade follows around the entire perimeter of the building to give shade and shield from the rain.

The second floor features a wide arcade continuing the entire front length of the building. It extends on as an eight foot arcade and corridor to surround an auditorium with stage, two toilets and a motion projectionist room. The rest of the second floor is classrooms, a secretary's office and interior central stairwell.

The interior flooring is predominantly the red tile manufactured in Panama, though yellow pine flooring covers the bowling alley. Other rooms initially housed carom and six-pocket billiard tables. Windows are casement, set in wood frames. Wire screens manufactured by Wickwire Bros. originally covered all windows. Doors are set in locally produced mahogany wood frames. Over the front door is a cartouche bearing a designed Canal Zone motif.
By Theodore Roosevelt’s decision, the clubhouses or recreation buildings of the Canal Zone were placed under the management of the Young Men’s Christian Association (Y.M.C.A.). The US constructed and owned the building, but it was designed and designated for use by this private religious organization. The YMCA had a history of encouraging Bible study and prayer versus the life on the streets that presented as an implication of the population displacement of the Industrial Revolution. From its beginning, the organizational philosophy crossed the rigid lines that separated various churches and social classes in England, and later in the US. The organization was seen as a potential unifying force for the Canal workers as well as providing a recreational opportunity.

The Governor’s annual report in 1921 reported: “The clubhouses serve well as stabilizers of what would otherwise be a constantly unanchored population, drifting inevitably to the demoralizing influences of the inferior cabarets and saloons of Panama and Colon...The United States Government has created here a unique community of workers with no responsibility of citizenship as to government ownership of real and but
little personal property, and no encouragement, in fact no possibility in the Canal Zone, to private enterprise of any kind. The money appropriated by Congress for the clubhouses is a necessary corollary to the living conditions resulting in the Canal Zone from our policies.”297

The succession of workers became an issue in part because many American workers came to Panama simply to witness the canal project. When they earned enough in wages to support departure, they either left for the continental US or searching for other adventure. As early as 1904, this activity prompted Roosevelt to empower the Commission to expel anyone not necessary to the work of building the canal, men or women. The problem of work-force turnover, especially amongst skilled labor, attracted the attention of Goethals and then prompted the President’s support of a recreational club system in which the YMCA played a central role. A structure similar to the Balboa YMCA was later constructed in the area of Cristobal.

297 Panama Canal Commission, Annual Report, 1921: 73.
ANCON-GORGAS HOSPITAL

(Facility 5)

In the planning and design of the Ancon-Gorgas Hospital, much attention was given to civic needs and the order required to deliver them. The access and service roads in the grounds formed an integral focus of the layout. Also in consideration of the climatic conditions, ample carriage accommodations are protected from the weather and roofs or porticos cover all open passageways. The hospital compound is located in Balboa Heights, near the Administration Building, Ancon Hill area of Balboa townsite. It is associated with the

Figure 23. Gorgas Hospital Administration Building, 1920.
early establishment and build-up of facilities and personnel for the administration and
efficient functioning of the Panama Canal. The hospital is distinguished as the center for
research on and the prevention of malaria and yellow fever, the ‘discovery’ of
histoplasmosis and the association of the site with Colonel Dr. William C. Gorgas. The
site is further significant for its exemplary monumental architecture, effective site plan
and the vital role it played in Canal Zone operations.

Samuel M. Hitt was the architect for the Ancon-Gorgas Hospital collection of
buildings completed between 1915-1916. The last permanent facilities at Ancon Hospital
were completed and first occupied in 1918. Set on a thirty-three acre hillside site, the
entire project cost $1,750,000. The full-service hospital was legally renamed Gorgas
Hospital on March 24, 1928.

The initial cluster of eight buildings, finally expanded to fourteen, includes two
and three-story, rectangular, concrete structures, often connected by round-headed
arcades, with ornamental central roundels, designed in Italian Renaissance style. It was
constructed on the same site as the wooden French Construction era L’Hospital Notre
Dame du Canal. In this one collection of buildings, most all of the identifying features
and details of the Italian Renaissance style are displayed: Continuous porches or loggias
with extend a total linear length on all floors of 6,800 feet that connect three of the
buildings, including Wards, Administration and Clinics, and Kitchen and Mess, under
one roof, arranged in a triangular configuration. Aside from the shelter provided from
seasonal torrential rain and sun, the loggias addressed the particular challenges of the
irregularities of the hillside setting. Of steel frame construction, the built structures followed original plans with subsequent renovations. The roof is of a wood truss system.

Situated on reinforced concrete, slab-on-grade foundations on concrete piers, the buildings have hipped roofs covered in red, vitreous tiles, with overhanging boxed eaves. Roofs have semicircular, eyebrow dormers that are functional as vents.

Fireproof, terra cotta, “Natco” hollow-tile blocks compose the curtain walls and partitions. The primary exterior material of the walls is cement stucco, tinted with mineral colors. Interior walls were either cement stucco or lime plastered. The floors are of yellow pine, red ceramic tile, white tile or cement, depending on the assigned task of the space. Ceilings were painted with a washable paint. All windows and porches were treated with copper screens.

These buildings were equipped with modern innovations of freight and passenger elevators, electric dumbwaiters, fire protection, and hot, cold and ice water, steam, telephones, public address system, direct and indirect electric lights and “the latest in plumbing and hospital equipment throughout.” All windows except those that were fixed and not opening were covered in copper or other metal screens for protection against pests. For sanitation reasons, the plan of isolating “Sections” of the compound

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was followed as far as possible, "without departing too far from economy of central administration." 299

Figure 24. Gorgas Hospital, early aerial view, ca. 1919.

Figure 25. Gorgas Hospital B Wing, ca. 1919.

299 Ibid 688.
Figure 26. Gorgas Hospital, Admitting and Dispensing Building, 1919.

Contributing Properties:

(1) Administration and Clinics Building

This three-story structure with twin towers is the central building of the hospital compound. There are two identical wings extending to the southwest rear of the building, The low-pitched roof features eyebrow dormers on the front and rear slopes of the central building and overhanging boxed eaves. The two towers each have a copper finial projecting up from the roofline. The tower is arched, with Corinthian capitals crowning
the columns of the arch. The clinics building has skylights on the roof plane to maximize desired light exposure, and overhanging boxed eaves to provide shade and protection from rains.

(2) Buildings A and B

Linked to the central building by covered arcades at their western elevations are four, three story clinic buildings or Ward Groups: The tripartite south wing (A) consists of two units connected by colonnade walks and a “toll” building. Symmetrically, the tripartite north wing (B) consists of two units connected by colonnade walks and a “toll” building. Situated on a spur of the terraced northeast slope of Ancon Hill, the size of each wing was determined by the extreme slope of the building plot. The configuration of the entire Administration and Clinics Building complex is harmoniously united into a triangular shape to efficiently conform to the hillside building site.

The buildings were designed as pavilions, with entry porte cochere supported by paired columns, crowned by parapeted balconies. Exterior walls feature dripstone courses, inset panels, and rusticated quoins. The design of the ward rooms demonstrated the exploitation of natural light and ventilation, with paired casement windows. Floors were finished with red ceramic tile which was cool and sanitary, and electric lights were positioned on each interior column. This building contains the dispensary, drug-manufacturing department, surgical, medical and eye and ear clinics, operation suites, X-ray department and administrative offices of the hospital.
Auxiliary rooms such as visiting rooms, ward dining-rooms, ward and diet kitchens, cell, quiet rooms, doctor's and nurse's rooms, dressing rooms, ward laboratory, toilets and baths, service, closets elevators and stairs are included. The Isolation Section was reserved for treatment of contagious diseases. These facilities were originally built to accommodate 660 beds, but could be expanded to an 880 bed maximum capacity.

(3) Admitting Office and Dispensary

In this two-story building, rooms were dedicated to triage and admissions, consultation and examination, dressing and minor operations of outpatients, outpatient dispensary and two dental suites. Two separate admitting rooms right inside the entry-way were designated for 'silver' and 'gold' employees during the early days of the Canal operation.

(4) Kitchen and Mess (Steward's Department)

This two-story building with a basement under the south end, features a low-pitched roof with 3 eyebrow dormers on the front slope and wide overhang on closed eaves. Located just behind the Administration-Clinics Building, a porte cochere flanks each end for protected access. Maximum ventilation was supported by fourteen floor
length windows, two single doors opening onto a covered arcade. The second and third floor front façade has ample windows placed in pairs.

This area was used for all baking, cooking, and foodstuff refrigeration. Dining rooms for staff and ambulatory, convalescent patients are located on the second floor. In the basement level were the bake shop, refrigeration machinery room, elevator machinery room, diet dispatch room, locker room and toilets.

(5) Laboratory and Crematory

The Laboratory is a two-story building, plus an attic, U-shaped centered around a courtyard. First floor windows are Palladian inside an arc; basement windows are covered by wrought iron grilles. A wrought iron gate in a clover design is at the doorway. Designed for the research of tropical diseases, there are office rooms for the professionals who were involved: chemists, an embalmer, a photographer, bacteriologists, entomologists and a pathologist. A ten foot skylight is utilized for natural illumination. The lab is linked by covered bridge passageway to the Crematory. The laboratory also functioned as the Health Department Laboratory, originally established in 1905 to monitor the water supply for the Canal Zone and adjacent cities, and perform all necessary chemical, biological and bacteriological tests for the hospital.300

300“Diamond Jubilee Supplement: Seventy-Five Years of Medical Service,” Panama Canal Review 8, November 1, 1957:11.
(6) Power Plant and Shop

Three equal room sections under the same roof make up this essential building. The boiler room is a one-and-a-half story utilitarian construction. The pitched roof is covered with corrugated asbestos roofing material and wide overhanging closed eaves. The floor is concrete to accommodate steam boilers. The carpenter shop is adjacent to the boiler room and has a wood floor. The plumbing shop is contiguous to the carpenter shop and has a concrete floor with small canals for drainage. Wire mesh screens cover all window openings in the building.

(7) Supervisor’s Dwelling

The hospital supervisor’s dwelling is a two-story, rectangular, single-family residential building with minimal detailing, constructed as permanent housing for the hospital administrator. It has a low-pitched hipped roof and enclosed overhanging eaves. The roof is covered with dark red vitreous tiles. The building has a slab on grade foundation and the exterior of the hollow tile walls are covered with cement plaster. The building, though residential, has an appearance in keeping with the modified Italian Renaissance style of the other hospital buildings.
(8) Nurses' Quarters

The three-story building provided individual accommodations for seventy-two nurses, plus a social hall, a suite for the head nurse and a porch. A porte cochere in the front provided protection from intense sunlight and rain. The Quarters are located near the base of the main stairway approaching the hospital.

(9) Isolation Ward

Located behind and to the left of the central Administration and Clinics building, this three-story ward had a ninety patient capacity, serving any requirement for isolation, including pulmonary tuberculosis. On the first, second and third floors were wards and private rooms, while the basement contained offices, sterilizing rooms, elevator machinery and storerooms.

Historical Context

The expansion of permanent hospital facilities were a part of the push for “municipal improvement” of Balboa beginning from 1913. Engineers and planners, with Dr. Gorgas’s participation, designated thirty-three acres as hospital grounds in the original surveyed layout for Balboa. Although Austin Lord witnessed the early surveying of the site, Samuel M. Hitt, as senior architect, permanent building division, was the
architect for the entire Ancon Hospital built project. Dr. William C. Gorgas, for whom the hospital is named, organized the facility. There he continued to research tropical diseases, particularly malaria, and yellow fever to influence the Canal Zone to become, “the most healthful strip of land under tropical skies.”

Gorgas was originally appointed by President Roosevelt to be the Chief Sanitary Officer of the Canal Zone after his dedicated successful experience fighting malaria and yellow fever in Cuba and other tropical climes. Gorgas and Goethals apparently worked together in a highly successful, contentious partnership. Goethals continually challenged Gorgas’s spending practices, evidenced in this episode: “Did you know, Gorgas, that every mosquito you kill costs the U. S. government $10? To which Gorgas replied, “But just think, one of those $10 mosquitoes might bite you and what a loss that would be to the country.”

Serving as the Chief Health Officer, Gorgas supervised the Hospitals and Charities, Sanitation and Quarantine departments. As is previously reported in this work, more than 20,000 individuals perished during the French construction effort, mostly from disease. When Goethals assumed control, he understood that in order to make the Canal Zone a place “fit to live and work in, thorough sanitation of the isthmus must be achieved” and ultimately supported Gorgas’s work. Among other practical

303 Bishop and Bishop 125.
interventions, Gorgas initiated the use of screens on all opening windows and maintained clearing of the hospital grounds to leave swaths 200 yards wide around each building.

"The hospital at Ancon is one of the largest and best equipped in the world, situated on the hill above Panama and commanding a superb view of mountains and sea. Colonel Gorgas organized a staff of physicians and nurses inferior to none in civilization," stated Roosevelt's report to Congress, "the results (of the sanitary work) there have been astounding...the conditions as regards sickness and the death rate compare favorably with reasonably healthy localities in the United States."  

Canal era historian Bennett wrote, "The hospitals maintained were by far the best to be found anywhere in the tropics. The one at Ancon is very large, perfectly appointed, and situated in attractive grounds. It is a monument to the Catholic sisters who first conducted the institution and beautified the grounds under the French regime." Architects working on the restoration of this facility in the 21st century have commented that it is "incredibly well conceived and designed."

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304 Bennett 205.
305 Bennett 124.
BALBOA UNION CHURCH

(Facility 6)

The Balboa Union Church was the first church constructed within the Prado area. The church is situated at Sosa Hill, the opposite end of the Prado from the Administration Building. It was constructed to as built plans during 1917-1918. It is a utilitarian, rectangular, concrete structure built with minimal detailing, suggesting Italian Renaissance style with the choice of fenestration. A steel frame construction, the built structure followed original plans which were constructed in preparation for subsequent expansion. Situated on a concrete pile foundation, the floor is supported by *lignum vitae* wood beams, sturdy enough to later be utilized as the first floor of a three story expanded church with Gothic-style elements.

Figure 27. Balboa Union Church, ca. 1918.

The Balboa Union Church is constructed in a simple Colonial Adamesque-Classic Revival style on a medium pitched grade related to that of the Sosa Hill. The choice of style, though closely related to the neoclassical, is likely responsive to the anticipated
plan for later expansion of the facility. This early version of the church was seamlessly incorporated into the final one in 1926.

Summary Description of Building

The ground floor is divided into three rooms: the vestibule, the primary classroom and the sanctuary. The vestibule is flanked by stairwells, placed in the original plan to await use during future expansion and completion of the church project. The use of Palladian windows and the exterior of naturally tinted stucco is similar to the other architecture of the Balboa civic center. The sanctuary and primary classroom areas have yellow pine wood floors. The vestibule is tiled, and the kitchen and bathrooms have concrete floors. The interior walls are unadorned, painted stucco on block. The walls are Natco fireproof blocks and reinforced concrete.

The front door is approached via symmetrical sets of eighteen concrete steps, one each side of the street end of the building. These lead to a terrace from which the Church is entered through any of three doors placed in a full height alcove accessed through three arches. The double doors were paired French style, wooden casements with glass windows and fanlight lumiere filling the top of the arch. A concrete sidewalk leads to the stair.
The original drawings for the Balboa Church are dated 1916, and the basic first floor construction was completed in 1917. The Canal Zone Data Base states that the Balboa Church was constructed according to original plans at a cost of $110,000. Parishioners donated much of the construction funds, and were finally aided by John D. Rockefeller for the 1926 expansion and completion.
The building was originally constructed as the permanent Balboa Union Church to replace an original wood-frame building. Although the Canal Zone government did not sponsor nor financially subsidize the church, membership and activity in religious organizations was encouraged by the Panama Canal Commission. This involvement was valued for what was thought to be a civilizing effect on the population.\textsuperscript{307} The Canal Zone architect, Samuel M. Hitt, was the architect for the project. Though the church’s historian, Robert H. Rolofson records his active consultation with the church administrators and members, it is not known whether he was assigned by Colonel Goethals or contributed on his own volition.\textsuperscript{308}

Mr. H. A Smith, President of the Executive Council of the Balboa Union Church, laid the cornerstone of this structure on Sept. 25, 1917. By December the work was nearly finished, though limited funds constrained construction of more than the first story with a temporary but good quality roof. The completed superstructure was to follow in 1926. The church is affiliated with a limited worldwide association and distribution of Union Churches which are non-sectarian, interdenominational community churches. They were championed by theologian, Dr. Harry Emerson Fosdick, known for his “Power of Positive Thinking” themed homilies. Other such churches are located in Honolulu, Paris, where the church is the oldest American NGO in Europe, Buenos Aires, Puerto Rico and Kobe and Tokyo, Japan.\textsuperscript{309}

\textsuperscript{309} Rolofson 140.
The Union Church was the first and largest church building within integral proximity to the Prado area. Goethals, as governor of the Canal Zone, uniquely approved the use of this land. This church is the only known church incorporated by the Federal Government. The presence of churches aided to meet the needs of the growing Zone population. As in the reason for encouraging the Y.M.C.A. organization, these institutions were thought to stabilize the population of permanent workers.\textsuperscript{310}

\textsuperscript{310} Smith 107.
The *El Prado* landscape is significant as an American historic site because it is associated with the early establishment and build-up of facilities and personnel for the administration and efficient functioning of the Panama Canal. It is the central axis of the plan for the town of Balboa, formerly known as La Boca.

The area was raised from the original marsh grade with material extracted from Culebra and the nearby harbor. The Balboa town site is approximately one mile long by one-half mile wide, with a greater area covering 150 acres. El Prado is the central axis of the plan for the town of Balboa, in an area formerly known as La Boca. The area consists of 29 acres on the north and northwesterly slopes of Sosa Hill, 79.5 acres on the southwesterly slope of Ancon Hill known as Balboa Heights and 58 acres of the filled...
ground between the two hills, known as the Balboa Plain. In total, the site covers 676 acres. Mainline Panama Railroad tracks boundary the northwest portion of the site. A site claimed by the Navy for a marine reservation borders the northeast.

In June 1913, W. L. Phillips, Olmsted-trained landscape architect, arrived in Panama to complete development plans for a civic center at a salary of $250 per month. He was tasked to lay out and construct the streets, sewer and water systems for Balboa townsite by Col. Goethals. He was to locate on the site already determined by engineers and pre-existing terminals, approximately one hundred residential buildings for employees and officials, fourteen departmental buildings and the necessary infrastructure of roads, paths, water and sewer systems to support. He sited the residential buildings, mostly moved in from other towns, and located the standard government housing units assigned according to rate of pay, the commissary, post office, railroad station, quartermaster’s office, store house, dispensary and dental office, sanitary office, police and fire stations, schools, churches, parsonage, and a YMCA clubhouse. The budget for design and construction was $350,000.

El Prado is a long straight wide avenue bordered with as Goethal’s requested, royal palms. It features central parking and double road lanes on each side, stretching from the Administration Building on Ancon Hill across to the Balboa Plaza or Clubhouse Square below it at the foot of Sosa Hill. Phillips favored coconut palms were chosen for installation at all other sites because not only did he find their swaying form beautiful, but calculated the revenue they could generate in coconuts. The installation of the latest
engineering in water mains, house connections, standpipes and fire hydrants along El Prado boulevard and the rest of Balboa is evidence of application of a modern municipal innovation. Roadways were planned to curve away from this landscaped area into the business districts, Panama City, up into the residential hills in one direction and down to the waterfront and docks in the other.

Phillips designated the El Prado as the “formal part of our town.” He grouped community buildings at the base of Sosa Hill. These include the post office, commissary, dispensary, clubhouse plaza, church and the Hotel Tivoli. At the opposite, Ancon Hill, end, he sited the administrative concerns: the school, police station and courthouse. Between these two function-related clusters, government-owned residential quarters (there was no private land ownership) were sited along the El Prado and “on lateral streets branching out from either side of the El Prado, irregular and picturesque in character.”

Commercial traffic may not pass through this area, originally designated as “the mall.”

Goethals pushed for swift and efficient completion of the El Prado area. Its appearance was integral to the identity projected at the Canal’s Pacific terminus. However, the construction process met with predictable delays. Old railroad tracks had to be removed; while awaiting the hydraulic fill to harden, tensions between engineers and the landscape architect grew, according to Phillips biographer, Faith R. Jackson. Finally, engineers approved the security of the filled earth foundations and situating of

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311 The Canal Record 7, No.17 (December 17, 1913): 153.
the steel-frame, concrete buildings and macadam roadbeds began. The collection of civic buildings and residences were placed to receive as much advantage of prevailing winds and natural light as possible. Reinforced concrete storm sewers ran throughout the area, emptying into the sea, providing the absolutely required perpetual drainage.  

Phillips also made provisions for a pump station, electric substation, and a motorcar house for railway motorcars. He also made preparations for a bank, newsstand and steamship offices. Through his landscape, he envisioned the connection between buildings as one “continuous arcade,” connected by green space and paved walkways. Walking time between the major civic buildings was recorded. Phillips researched and collected auxiliary plantings from Panama jungles for the El Prado landscape. The well-established ancient village of Taboga, located on the nearby island of the same name was his chief inspiration for tropical town design. The actual layout is reminiscent of Baguio, Philippines, as both are scaled-down versions of the Mall in Washington, D.C., also a contemporary of this design.

Phillips resigned on November 10, 1914, although all of his remaining plans were executed after his departure from Panama. “The only good landscaping we found when we came there,” a successor stated, “is the road system laid out by a fellow named Phillips. I don’t know who he was, but he was a master.” Contemporary tropical

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314 Bennett 177.
315 Miami Herald, Feb. 3, 1950 qtd. in Jackson 45.
horticulturalist, Dr. David Fairchild commented, "...I think the first instance of the palm being properly fitted into the landscape that I have seen was in the Canal Zone."
Builders of Balboa: Influential Architects and Engineers

Four men were central to the planning and design of the civic architecture of Balboa: G. W. Goethals, Colonel, US Army (1858-1928), canal chief also known as Canal Czar; Austin W. Lord (1860-1922), original architect for the project and designer of the keystone Administration Building; William L. Phillips (1885-1966), landscape architect responsible for the classical format for plantings and buildings reminiscent of the Senate Park Commission plan for Washington, D. C.; and permanent building division architect, Samuel M. Hitt (ca. active 1913-1926), executor of the balance of the civic architecture of the Canal Zone after Lord’s early departure.
Colonel Goethals brought a very clear conception of the town that would be the civic center of the Canal Zone. Each of these professionals brought with them a different background and set of expectations for his assignment. The municipality that they collectively developed during their procession of involvement was functional, efficient, classically picturesque, lasting and completed on time in a pressured environment. As the builders at Chartres left their subtly identifying mason’s marks on the cut limestone of the magnificent cathedral, these four masters left their mark for posterity in the success of the civic architecture and landscape of Balboa. It is by their style and approach to their professions that they are recognized.

Colonel George W. Goethals

The period of the highest achievement in Canal construction was under George Washington Goethals, a West Point-trained Army engineer. He succeeded the brilliant railroad builder John Stevens as Chief engineer of the Canal, being named as both chairman of the Canal Commission and Chief of engineering. From this position, his only superior officer was the President of the United States, acting through the Secretary of War.

After graduating from the United States Military Academy in 1880, Goethals spent his early career teaching there. Then he served in the Army Engineer Corp, garnering applicable experience in the Muscle Shoals Dam and other canal projects, chief of engineers in the Spanish American War and a member of the coastal and harbor
fortifications board. President Roosevelt had designated him as chief engineer for the Railroad in 1907, while Stevens was yet chief canal engineer. Stevens objected, anticipating friction between Army and civilian engineers. In the end, Stevens’s letter of protest was interpreted by Roosevelt as a resignation and Goethals’s duties expanded. Goethals became chairman and chief engineer on April 1, 1907.317

Stevens had warned of inherent weakness within the organization, so Roosevelt’s ultimate plan was to deploy Army men who could not resign, for the project organization. As previously noted, eventually known as the “Canal Czar” Goethals declared, “I am commanding the Army of Panama; the enemy is the Culebra Cut and the locks and the dams.”318 Joseph Bucklin Bishop, his contemporary and Secretary of the Canal Commission, asserted that it was Goethals’s choice either to exercise his powers to lead to success and national honor or to failure and national disgrace. Soon after taking command, he reassured his anxious workers that he was no longer a commander of the United States Army, but a soldier in engineering combat. “Every man who does his duty will never have any cause to complain on account of militarism.” 319 One of his brilliant methods was the institution of the Canal Record weekly publication.320 He wanted intelligence to share from one division to the next so that the scope of work could be appreciated as it progressed. This was important for safety and task efficiency, and equally essential, his approach established a certain esprit de corps. Goethals’s methods restricted the sources of slander and sensationalism. Although the Canal Record was not

317 Joseph Bucklin Bishop The Panama Gateway (New York: Charles Scribner’s Sons, 1913) 176.
318 Bennett 135.
319 Bishop 178.
320 Bishop 182.
strictly censored by Goethals, it was by his order, the sole official and authentic source of information. The publication was also sent to the Congress, to subscribers in the United States and abroad.\textsuperscript{321}

Goethals executed his job with the best of regimented, supreme control and achieved results with efficiency and economy. He first divided the project into three divisions: Atlantic, Central and Pacific. The Atlantic section was to construct a breakwater, dredge and dam the Chagres River. They constructed the one hundred five-foot high Gatun Dam, creating twenty three and a half mile long Gatun Lake and built three pairs of locks. The Central Division faced perhaps the greatest challenge in carving out the infamous Culebra Cut, an eight mile, forty-five foot deep channel with a depth forty-feet above sea level through the Continental Divide at two hundred sixty foot high Culebra Mountain. The Pacific Division built a three mile breakwater at Panama Bay and excavated a channel in the Rio Grande River. This division also built three additional flights of locks which became known as the Pedro Miguel and Mira Flores. In the ten years of construction there were twenty-six serious, work-halting landslides. When one in January 1912 spilled the Cucaracha incline at Culebra, negating months of work, Goethals assessed the scene with characteristic resolve. To engineer in charge, David Gaillard’s shocked demands of what to do, he directed, “Hell, we dig it out again!”\textsuperscript{322}

\textsuperscript{322} Qtd. in David McCullough, \textit{Path between the Seas} (New York: Simon and Schuster, 1977) 554.
Immediately after his appointment, Goethals wrote to the Secretary of War:

It is a matter of first importance that the most approved and effective methods and measures known to sanitary science be adopted in order that the health conditions on the Isthmus may be improved. It is the belief of those who have noted the successful results secured by our army in Cuba ...that it is entirely feasible to banish the diseases that have heretofore caused most mortality on the isthmus...I desire that every possible effort be made to protect our officers and workmen from the dangers of tropical and other diseases...which have been so destructive in Panama.\textsuperscript{323}

He understood that transportation and communication were fundamental to the health and welfare of the workers, as well as to supply the project. Following extensive surveying at a cost of $75,000, he directed that a road system for service to the entire construction site be built.

After three years of successfully accomplishing the canal construction project with the best of regimented, supreme control, Goethals knew well that the establishment of order had to be the rule of the day. He concluded, against some criticism, that the Canal Zone should be a pseudo-military reservation, with the unoccupied lands left in jungle growth, and permitting only Canal employees inside the ten-mile perimeter without permission. He saw the presence of the Americans as that of a huge temporary

\textsuperscript{323} Goethals, quoted in Bishop, 145.
construction camp. In 1909 Colonel Goethals formulated his vision for the permanent civic center of Balboa. This idea’s detractors suggested that all the land be open to settlement, like the western lands. His answer was simple: “The inducements offered by farm lands in the Canal Zone are not likely to attract Americans. Other occupants are not desirable.” Later, he articulated, “The Americans, as you know, are not favorably regarded by the Panamanians, and under the present administration in Panama, the relations with the Zone are becoming more and more strained, and anything emanating from the United States that is in any way unpleasant should be avoided.”

But what kind of order in the pandemonium had he in mind to bring? Choosing a site on the Pacific side of the canal adjacent to Panama City, Goethals autocratically provided directives and vision for the then uninhabited swamp. For the administrative citadel, he required “a town that shall be a credit to the nation and a place of comfort to all of those who inhabit it.” In its location nine degrees north of the equator, a durable, completed project was needed to “fend of the tropics-induced indolence and self-indulgence...relaxing the moral fiber.”

In terms of the builders, the jungle was seen as a threat to the markers of civilization, “…encroaching upon all cities and towns on the Isthmus and it is a continual fight to keep them back a few hundred yards” said Samuel Gompers, President of the

324 Scott, Chapter 13.
325 Bennett, 206.
American Federation of Labor.\textsuperscript{328} Another observer saw the task to be "the arduous labor of creating in the jungle a duplicate American civilization."\textsuperscript{329} Indeed dense jungle did and does crowd right up to the edge of Panama City, unlike any other nation's capital. To bring discipline to this wildness, a town and supporting surrounds were called for.

As a result of the efforts, an American federal building and urban planning project on leased land in Central America commenced. Unlike the building project in the Philippines (1903-4), and later and much less involved in Cuba (1929) Puerto Rico (1929), Balboa was to be constructed on land set aside for the unique purpose of administration of a waterway owned by the United States. As with the experience in Washington, D.C., much of the land on which the development would be created was swamp or marshland. When the construction was concluded an image of power, reassurance, gentility, and modern, technology-based order was apparent in the plan. To Colonel Goethals, the business of this civic center was discrete: the efficient operation of all aspects of the Panama Canal.

It was not until 1912 that Commission invited the National Commission of Fine Arts for suggestions on how the locks and surroundings "might be dressed up or improved upon."\textsuperscript{330} The report of the visit of sculptor Daniel Chester French and Frederick Law Olmsted, Jr. stated:

\begin{itemize}
\item \textsuperscript{328} Gompers speech, 1924.
\item \textsuperscript{329} Scott, Chapter 13.
\item \textsuperscript{330} Sen.Doc.146, 63 Cong., 1 Session, p. 5.
\end{itemize}
The canal itself and all the structures connected with it impress one with a sense of their having been built with a view strictly to their utility. There is an entire absence of ornament and no evidence that the aesthetic has been considered except in a few instances. Because of this, there is little to find fault with from the artist’s point of view. The Canal, like the Pyramids or some imposing object in natural scenery is impressive from its scale and simplicity and directness. One feels that anything done merely for the purpose of beautifying it would not only fail to accomplish its purpose, but would be impertinence.” 331

In fact, the future administrative site that Goethals had gazed upon was a great marshland lying surrounded by tangles of thick jungle. The strategy began with material displaced by hydraulic pump from the nearby harbor project and more significantly, 30,000,000 cubic yards from the Culebra Cut replaced to fill in the spongy swamp. The chosen location for the Administration Building was built up to twenty-five feet above the regular grade. After receiving the complementary, but vague, report of the National Commission of Fine Arts, Goethals pushed on for a design coalescing form and function, beauty and order for what he deemed to be an essential civic hub and headquarters for the Canal.

331 Ibid.
When Goethals chose to progress with creation of the civic center, he requested an appropriate architect and design planner for the task at hand. The Fine Arts Commission-approved architect for the job was Austin W. Lord of New York City, formerly of the McKim, Mead and White architectural firm. He was appointed Architect to the Isthmian Canal Commission on July 1st, 1912. His chore was to design the permanent structures to be used in the maintenance of the Canal. More specifically, he was expected to provide plans for Pedro Miguel and Gatun lock houses, a hydro-electric plant power house, Toro Point Light House Ancon Hospital and quarters for officials and employees of the Canal. He agreed to plan and design the built environment from Toro Point to Taboga Island, only after disagreement over what should be the order and style of this outlying area from the civic center.

As many professional architects of the time, Lord received his earliest training in architects’ offices in his hometown of Minneapolis. This training was refined at the Massachusetts Institute of Technology and then in Paris under Honore Daumet (1826-1911) and Charles-Louis Girault (1851-1932) at the Ecole des Beaux-Arts. He was the choice of McKim and Burnham to serve as the first director of the Beaux-Arts-influenced American Academy in Rome, between 1894-1896. Upon his return to New York, he joined McKim, Mead and White until he formed his own firm with J. Monroe Hewlett,
Washington Hull and Hugh Tallant. It was during his leadership of this firm that he undertook the Canal Zone project.332 333

Lord assessed the architectural requirements of the Canal Zone to be challenged by “the exigencies of climate and the absence of any precedents to guide us in the development of these buildings devoted to so many purposes...(and) the lack of proper building material of a character to withstand the ravages of this humid climate.”

Although the wood buildings with tile or sheet-iron roofs of the earlier French canal period were of a temporary fabric, he found them instructive in the plans for permanent structures. He carefully studied their Ancon Hospital construction for insights into utilization of prevalent breezes, sanitation and sun exposure. Lord made notes for proper siting of buildings utilizing French dispositions of paths and drives. He commented that all plans in accordance with American requirements for administrative housing, one, two and four family housing, the YMCA buildings, bachelor and married quarters would be based on French ideas, if not in plan, then in character of treatments. He wrote, “The temporary houses were not of a character best suited to the climate and perhaps the most marked was the treatment of porches. The intense heat, the high humidity and the absolute necessity of sufficient air makes the problem of the house a difficult one...no proper precaution was taken to keep out heat of the sun.” Further, the porches of these were amply wide, but “supported by very slender columns and the intervening spaces left unprotected.” Enlarging the supports would decrease intervening space; with added blinds and shutters, shade and breeze could be maximized. Lord notes that:

334 Architecture vol 29 p 98.
contrary to general opinion, it was impossible to adopt the type of architecture...of Mexico. While great wall spaces and small openings are desirable from the standpoint of protection from the heat...this system of building...on the Isthmus where...heat and humidity are much worse than in Mexico...maximum light and air is required at the same time adequate protection from the rays of the sun."

Sufficient projection by eaves for the living and bedroom side of housing was his goal. Because the topography of the siting of buildings was so varied, so were the housing plan types. For example, his Type A house, square and one floor in plan, could be adjusted to the direction of the hills to keep the main porch on the hot side of the house; the type A-1 designed for steeper grades was a bit more challenging. In each house a 'drying closet' designed for protection of clothing from mildew was included. Lord plan for the Governor's house introduced a decidedly more Italianate style as he felt the size and grandeur fit best to the requirements.

When Lord began to focus on the Toro Point Light house, he designed it as a three story polygonal structure with the lower story at three feet above sea level to accommodate a pump room and cisterns. The second story housed the engine and compressor room. The third story was reserved for a living quarters of two bedrooms, kitchen, bath and pantry. Lord protected the machine room from the sun with a surrounding portico.

335 Architecture, 101.
His comprehensive solution for the Ancon Hill area, at the northern end of
Balboa, addressed the need for service buildings, a post office, court house and jail,
commissary, club house, bowling alley telephone and telegraph station, school, hall for
religious meetings and clubs. He suggested that all of these buildings incorporate
colonnaded fronts with connecting colonnades covered from one end of the street to the
other. Silver workers in the ship and railway terminal would have quarters south of Sosa
Hill, at the southern end of Balboa.

Lord's exceptional contribution to the landscape was the Administration Building,
situated eighty-five feet above the Prado boulevard toward Ancon Hill. Sosa Hill is at the
opposing end of the boulevard. Eight official quarters, plus an administrative quarters
neighborhood were to the rear of the Administration Building. He designed the building
with a great court to the north, the south, east and west fronts. A two-story colonnade
surrounded the structure. All woodwork was to be of mahogany, hollow concrete block
was to be finished in stucco with American tile roofs and concrete and patent floors. All
the latest technology was to be accommodated within the floor-plan, with attention to
ease in communication and work flow. It was noted, however, that at the time of his
engagement, he did not know the actual use of each work space. The classically-trained
Lord felt that:

a nation produces the architecture it deserves and if in the main it is
materialistic and sordid, we shall find all material qualities considered first
and the moral and spiritual ones scarcely at all. Greed will crush out
generosity and shams will smother poetry and sentiment. Men will prefer
the imitation grandiose to simplicity and dignity. Things will not be what
they seem. Bodily comfort and luxurious enjoyment will be valued above
grace and refinement. Indeed the modern materialist will not admit there

he can be any moral qualities suggested or conveyed by architecture. He sees
no harm in jointing his stucco to imitate stone construction. So it is we see
what we look for... our chief trouble is in combating the greedy who
wanting things to look better than they are, ask us to strive for an effect of
richness without themselves incurring the cost of real richness. We need
all our tact to preserve our integrity with such people. 336

He included this commentary in the end of his description of the Canal Zone
work; soon after he resigned the appointment as a result of apparent artist versus engineer
conflict and probable resistance to a military-style autocracy. He wrote to his successor,
William L. Phillips, “I presume you found that there were certain exactions that were
unreasonable and uncalled for... [which made it] impossible to arrive at satisfactory
results.” 337 Goethals had requested his presence on site in Panama; Lord preferred to
work in absentia, returning to his office in New York City, leaving an assistant Mr.
Mario J. Shiavoni, assistant architect at Culebra, who was largely responsible for

336 Architecture, 114.
337 Faith R. Jackson. Pioneer of Tropical Landscape Architecture. (Gainesville: University Press of
Florida, 1997), 18.
insisting on photographic documentation of every building development in the Canal Zone.

His office was shut on August 1, 1913, and afterwards, the Office of Architect was abolished. Upon Lord’s departure from the assignment, Mr. Shiavoni worked on as an interim “second” architect of the Administration Building and others until December 1913. Lord returned to the work of his architectural firm, writing on architectural education and was for a while the Director of the Architecture program at Columbia University. His involvement in Panama had spanned one year.

William L. Phillips

After Lord’s departure, The Fine Arts Commission was again consulted. Their response this time, “in regard to the general disposition of streets and buildings, the architectural forces of the canal must make extended studies, and a landscape architect should be employed in the final preparation of the layout and construction.” Commission member Frederick L. Olmsted, Jr. recommended the professional services of one of his very best students, William Lyman Phillips of Brookline, Massachusetts, on study-leave abroad from Olmsted’s firm.

Phillips was an important new member of the team. At Harvard, he was educated in the first course of study offered in landscape architecture, laid out and sometimes taught by Frederick Law Olmsted, Jr. The goal of this new study, accepted at Harvard as

one of the Fine Arts, was to equip prospective professionals with technical knowledge coupled with a comprehension of design principles. As a distinguished Austin scholar in 1909-1910, Phillips created topographical maps of the Boston Metropolitan Park System, worked in the Peabody Museum and the Arnold Arboretum and attended an engineering camp or internship at Squam Lake, New Hampshire. After graduation, he worked with Rickson Outhet, an Olmsted trained architect in Montreal, and then was invited to join the Olmsted Brothers. Phillips got word of his unanticipated appointment while at sea, bound for Paris, via a Boston Herald newspaper article revealing the details of the arrangement. In Panama, Colonel Goethals soon announced, “Effective, Mr. W. L. Phillips, landscape architect, report to the Second Chief Engineer for assignment to duty in the Second Division, Office of the Chief Engineer. He will lay out and construct the streets, sewer and water systems and grounds for Balboa town site. He will prepare accurate maps and plans of his work for the information and files of the Division of Municipal Engineering.”\[339\] At the same time, the architect and landscaper was assigned “duties…in connection with the planning of the permanent settlement at Pedro Miguel, permanent silver settlement at La Boca, and for other work requiring the services of a landscape architect.” He began the assignment in June 1913, at a monthly salary of $250, working with a budget of $350,000. Phillips later wrote:

I was in responsible charge of a work unit composed of 18 gold force, and a labor force up to (finally) about 300 men engaged in town site design and construction. My work covered 150 acres and 130 buildings…The

\[339\] Canal Zone Circular, 7/30/13, p. 183 quoted in Abbott, 144.
problem presented to the landscape architect, was that of locating, on the
given site, as fixed by the engineers and with given conditions as regards
the disposition of the various terminal works to be moved in from other
towns, about one hundred buildings to be used as quarters for officials and
employees and about fourteen departmental buildings, together with the
necessary roads, paths, water and sewer system.\textsuperscript{340}

Phillips knew of the previous assessments and projections as documented in general
drawings and notes of Austin Lord. The actual completed and delineated plan was the
responsibility of the young landscape architect.

In tandem with the design possibilities were many engineering challenges, a task
he, unlike his predecessor, had been trained to embrace. The physical tribulations of
working with unstable fill as foundations and variant grades, complicated by seasonal
torrential rainfall, set the work of often-pressed engineers against that of site architects.
In the end, Phillips's realized plan for Balboa was the essential determinant of the
classical attractiveness and functionality of the civic center.

The guiding ideals of Phillips's work are direct descendants from those of
Frederick Law Olmsted. Olmsted's work expressed the ideals of democracy in the
physical environment, combining the spiritual and the monumental. Some architectural

\textsuperscript{340} Jackson, 30.
historians describe his design for the Capitol grounds in Washington D.C. as "the most symbolic public space in the country." 341 Olmsted himself felt that there was a perceptual psychology at work in landscape designs: "A park is a work of art, designed to produce certain effects upon the mind of men. There should be nothing in it...which does not represent study, design, a sagacious consideration and application of known laws of cause and effect with reference to that end." 342 He taught this philosophy of a symbolic, unified orchestration of buildings, green space, and statuary to his sons, Frederick, Jr. and John Charles, who were professors and mentors to Phillips. The philosophy was also integral to the City Beautiful Movement and the first tenets of American city planning, of which Olmsted Jr. was deemed the intellectual leader. 343

It is likely that Phillips also learned a practical approach to municipal landscapes from Olmsted, Sr., who wrote that the transportation system "determines the progress of the community and the convenience, economy and general satisfaction with existence." 344

And:

Service must precede art," he declared, "since all turf, trees, flowers, fences, walks, water, paint, plaster, posts and pillars in or under which there is not a purpose of direct utility or service are inartistic if not

342 Ibid.
343 Scott 180.
344 Qtd. in *The Builder* 101 (July 7, 1911):1517.
barbarous. ... So long as considerations of utility are neglected or
overridden by considerations of ornament, there will be not true art. 345

Focusing upon the Balboa Plain, the area between the Ancon and Sosa Hills,
Phillips designated the Prado (first known as ‘the mall’) as the formal part of the town.
This was in keeping with a European-style classification of elite land use. He envisioned
a “plaza, where people may enjoy social diversion of walking about and looking at one
another to the accompaniment of a band.”346 Surrounding this area, he made provisions
for a pump station, electric substation and a railway motorcar house, a bank, athletic
fields, newsstand, and steamship offices. In order to establish or “announce,” the civic
center he utilized a long, wide, royal palm-lined avenue. Goethals specifically requested
that his favorite royal palms be utilized whenever possible. The area featured double
roadways and central parking, extending from the Administration Building across to the
ellipse of Balboa Plaza below. It was called by the Spanish terminology, prado.

Driveways curved away from the Prado up into the flanking hills to residential sections
and Ancon Hospital; in the other direction lay the Pacific waterfront. Goethals located a
site for the permanent residence of the chief administrator of the Canal Zone on Ancon
Hill with easy access to the Administration Building. Following classical values, Phillips
located the community buildings at the Sosa Hill end of the Prado and the administration
buildings at the Ancon end.

345 Manuscript fragment, qtd. in Charles E. Beveridge, “Frederick Law Olmsted’s Theory on Landscape
346 Phillips, W. L. “Taboga”, writings file, private collection owned by and quoted in Jackson, 34.
In order to incorporate and reflect local design values, Phillips made notes from his visits to nearby Taboga Island, a locale that he felt “small, but in perfect scale” and containing all the requisites for a tropical urban center. He observed the red-roofed villas set high on the hill, a denser community of residences and shops on the slopes descending to the central plaza, a hotel, town hall and the dominating cathedral. Faith Reyher Jackson, his biographer, asserts that he truly understood the importance of making a “visually harmonious town, which would reflect the rhythm and style of life in Central America.” He admired Taboga for the “orderly flow pattern for the necessities of life” and wished to reproduce such an environment with proper placement of housing and services.

As part of his work, Phillips made his own local reconnaissance, plus consultation with tropical botanists, including Director Gerrit Wilder of the Bishop Museum and Foster Botanical Garden, Honolulu. The assortment of tropical plantings and flora available to him for incorporation into the landscape delighted him. He wrote to Olmsted that the coconut palms with the “curve of their trunks and fronds which carries the slightest breeze” to be “the very symbol and mark of the land, providing shade, screen and revenue.” The royal palms preferred by Colonel Goethals reminded him of common bottle brushes.

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347 Ibid.
348 Ibid.
349 The Canal Record. Vol V, No. 49, 394.
350 Correspondence, W. L. Phillips to Frederick Law Olmsted, February 1914, private collection owned by and quoted in Jackson, 36.
Evaluating his sixteen months of employment there, Phillips said, “I did an extraordinary amount of work…when I was less than 30 years old, and perfectly competent work in the lights of that period and the material I had to work with. I was good then, and as productive, as I ever was afterwards.” 351 His plans were executed as drawn and intended after his resignation and departure. However, as he wrote to Prentiss French, “the Canal commission failed to avail itself to the fullest of its unique opportunity to put into practice modern ideas of town planning. That failure is the most lamentable in that the town is located in a rather conspicuous part of the globe.” 352 An Army landscape architect providing upgrades in the Canal Zone at a later time commented, “The only good landscaping we found when we came there is the road system laid out by a fellow named Phillips. I don’t know who he was but he was a master.” 353

**Samuel M. Hitt**

Samuel M. Hitt (unknown) of Kansas City became the architect for the permanent building division, supply department on December 5, 1913. 354 He saw to completion the Administration Building drawn by Austin Lord and provided the drafts for Canal Zone civic and Balboa residential architecture. Lord resigned from his position as designer and architect of the civic center and left Panama in July, 1912. After a short time of transition with Lord’s assistant, M. Shiavonni, Hitt received the formidable task of completing the

351 Phillips to Prentiss French, 1965 August, private correspondence, Faith Reyhner Jackson collection, qtd. 27.
352 Ibid.
353 Miami Herald, February 3, 1950, quoted in Jackson, 45.
354 Bennett, 474.
civic center buildings before the opening of the Canal. The work included acquiring, drafting or overseeing the drafting of plans for each site and building.

After the opening of the Canal on August 15, 1914, the second phase of his responsibility lay in the proper and acceptable execution of continuing projects per plans. This was particularly difficult during the war years, when many of structures for municipal improvement were constructed. The expansion included commissaries, dwellings, a stadium, restaurants, fire police and railroad stations. Hitt’s signature guaranteed, among many others, the buildings of the Gorgas Hospital compound, Balboa School, Balboa Union Church and the Balboa YMCA. The building of the collective buildings of Gorgas Hospital, then known as Ancon Hospital, held the most architectural interest for him. Hitt held the office until 1920.

Gold-and-Silver Employees

Workers from the Caribbean islands traditionally supplied labor for ports along the Gulf of Mexico and railroads before the isthmian canal. Engineer Stevens set up agencies in the English and French colonies in the Caribbean; willing workers were plentiful and they could come and go from Barbados and Jamaica for a five dollar steerage passage. He also considered, but then rejected, the idea of requesting Chinese workers because of their experience with great spans of railroads. Rather than hire a Chinese workforce, Stevens made contracts with eight thousand workers from the

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356 Bennett 213.
Biscayan provinces of Spain, for labor and the training of the lesser skilled. Spain contributed the majority of European migrants, although others arrived from Italy, Greece, Armenia, Switzerland and France. By the 1912 Canal Zone census, there were forty nationalities listed. In contrast, three hundred and fifty-seven Panamanians worked on Canal construction. The Americans who arrived, usually, though certainly not always, had experience in railroad work, manufacturing and canal building. No one under twenty years of age was allowed to apply for work. In the early years only American citizens could be categorized “gold force”; all other nationalities were “silver force.”

<table>
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<th>Silver/Local Rate</th>
<th>Total</th>
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<td>700</td>
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<td>5,078</td>
<td>27,612</td>
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<td>5,671</td>
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<td>4,608</td>
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Figure 35. Full-time civilian work force, PCZ, 1904, 1920-1920.

The particular distinction arose during the first pay days, when little local (Columbia) silver or Balboa coin was available. Americans were paid in gold consistent with the American monetary standard of the economy on which they lived. Because silver was the monetary standard of the Isthmus, native employees continued to be paid

357 Adapted from Bennett 379.
in silver. The West Indians' wage rate corresponded to the prevailing rate during that period in the Caribbean. Therefore, gold and silver became the bases for basically indicating race—silver for "colored," gold for white. The distinctions in class also related to the job skill levels contributed by workers. This meant that differences were due to what John Stevens termed "skilled and common--or unskilled labor," and not originally related to race.

In the early years, most of the workers were bachelors, and therefore needed room and board to be provided in common halls; families began arriving in 1907. Separate and different housing was constructed for the groups; meals were different, more in a tradition akin to military distinctions of officers and enlisted personnel. Separate mess halls for West Indians and for combined Spanish and Italian groups were somewhat based on culturally sensitive menus. The mess hall menus added wine for the Europeans and certain preferred vegetables for the West Indians. When the construction began, managers found that adequately feeding 17,000 people living 500 to 2,000 to 4,000 miles from their homes presented a problem. The coupon system, commissary and separated mess were an adaptation from a military encampment model. It was simply seen as the most efficient delivery of the product.

When the construction period ended and the post-construction administration of the canal began, the labor requirements changed. Goethals encouraged quick departure of all undesignated laborers immediately at construction’s end. For those who remained, this presented a complex situation. The "silver" workers had a high birth rate, but since
the offspring were not former employees, nor US citizens, their rightful place were
debatable. A few attempts to absorb the individuals into the Panama Canal Zone
economy were initiated. One plan included the leasing of small sections of Canal Zone
land and materials to whomever would farm that land. Originally popular, this solution
was abandoned due to difficulties maintaining relevant sanitation and public health
standards. Another alternative met the obligation more satisfactorily with repatriation of
unemployed workers who had three years of service and benefits coming to “silver”
worker’s families.

As development continued, there were “silver” and “gold” bathrooms, “silver”
and “gold” drinking fountains, and similarly divided clubhouses, playgrounds and athletic
fields, saloons, commissaries, housing, post office clerks, and coaches on the train. The
“Society of the Chagres” was organized and limited to white employees who had earned
the Roosevelt medal, awarded for two years continuous service on the Canal & a bar for
each additional two years. The division came to equate “gold” with white American—
everyone else was “silver,” including Panamanians hired for work in the Zone. What
began as a distinction based on the economy on which workers lived, survived changes in
the requirements of the work force to exist as a racial determinant. It was discrimination
based on variable qualities and distinctions which would ultimately reinforce class
divisions related to labor skills, the attributes of American citizenship, and sometimes
race. Only when civil rights were addressed in the continental US was the racial inequity
focused upon, abolished and amended in the Canal Zone. Of the overall Canal cost of
$375,000,000 the portion that constituted wages was $150,000,000; 25 percent of this went to officers and supervisors, and 75 percent to skilled and unskilled labor.
CHAPTER 4

ANALYSIS

"Buildings have the perfect memory of materiality." 358
Buildings teach, too.

The goal of this study has been to both understand the Canal Zone civic architectural and urban forms by situating them in their historical, political and cultural context and to add to the minimal theoretical discourse of American political architecture. This chapter has three purposes: First, to analyze the form, function of and intent behind the civic built environment of Balboa in its Neoclassical academic style. Second, to present a discussion of the meaning of the civic built environment relating to the politics of the design, in comparison to the relevant US colonial contemporary in the Philippines. Third, I will discuss the effectiveness of the civic architecture and the ways it did and did not function in the early days of the working Panama Canal. The dialogue is amplified by parallels with an exploration of the Canal’s role in the American national consciousness.

In order to analyze the meaning of the civic architecture and its use in the Canal Zone, an examination of the spaces that its unique colonial situation constructed is necessary. I will situate the use of the Neoclassical academic style architecture is situated within Nelson Goodman’s structure of worldmaking, in order to evaluate the cultural effect of the US civic center in Balboa. The assessment is supplemented by the application of urbanist Kevin Lynch’s concept of imageability and his related analysis

paradigm to consider the cultural potential of the built environment in Balboa, from 1910-1920.

Analyzing the Architecture

Architecture is responsive to formal analysis involving examination of the configuration, content and stylistic features. It is also described by category, as defined by the size of the building and social class who used it. Philosopher Suzanne Langer defines architecture as "the total environment made visible...a physically present human environment that expresses the characteristic rhythmic functional patterns which contribute to a culture." Langer holds that architecture is its own version of virtual space. She adds that it creates a semblance of that world which is the counterpart of a self—a collective self in the case of public buildings serving communal needs, and a private self for private buildings. This study is concerned with the public buildings.

Because architecture also belongs to the grand class of artifacts called 'material culture' it has special value as cultural evidence. As art historian Jules Prown finds, "style is inescapably culturally expressive [because it is a manifested quality]...the formal data embodied in objects are therefore of value." Form follows function as in a partnership; function is the constant against which stylistic variables play. Stylistic properties will answer the questions, "who? when? where?." The meaning in

360 Langer 87.
362 Prown 198.
architecture, as a work of the aesthetic, is perceived subtly, and therefore has a propensity to affect with great resonance and endurance. Therefore, it may be assumed that style possesses content or meaning. Using an anthropological deduction, the objects may be traced through the people and the people through the objects. The choices made about the material express cultural preferences.

**Characteristics of the Neoclassical**

The system of symbol in the civic architecture of the Panama Canal Zone is expressive of the Neoclassical. As the art of an ideal, Neoclassical style is a direct expression of the arrival and incorporation of Enlightenment ideas. Enlightenment theory referenced classical antiquity and the capability of societies to create an ideal social and political structure through the application of reason—or at least to hold that as the guiding goal. This also encompasses a general philosophy of social betterment expressed in the City Beautiful canon. The recollected vision of antiquity is the prototype of a better world to be worked toward: a backward looking vision projected to the future. Greek architecture expressed religious meaning and had a political purpose. Monumental architecture has origins in classical Greek architecture and is similar in use to celebrate civic pride, power and thanksgiving to the deities.

The Neoclassical architectural elements not only were symbolic in themselves, but they also referred to an expression of a humanist moral philosophy, derived from classical antiquity and enriched by Renaissance values. Its principles are evident in America's monumental architecture translating elements into carriers of meaning as
"temples of democracy." The architecture of humanism which began with the Greeks made human beings at home in the world. "Structure," Geoffrey Scott wrote, "is the scientific method of well being...Its aim is firmness." Structure is both the means by which the edifice is realized, and is part of the artistic content which affects the stakeholding humans who have association with it.

Early twentieth century architectural historian James Fergusson stated "There are in reality two styles of Architectural Art—one practiced universally before the sixteenth century, and another invented since. To the former belong the true Styles of Architecture, to the latter, the Copying or Imitative Styles." The evaluating system for architecture expanded from standards of beauty and suitability to beauty, suitability and correctness during the Renaissance. This beauty is comprehended as "ideas embodied and transcended by forms." During its highest popularity, Neoclassical architecture was criticized for lacking the merit of being a natural product of a time and place.

The Neoclassical employs geometric shapes, circles and squares. Geometry, as an abstract intellectual activity, yields proportionate designs in contrast to the irregular shapes found in nature. Surface planes in decorative features isolate self-contained objects from surroundings, and two-dimensional representations of three-dimensional elements. There is intellectual pleasure and dominion in geometric design—learning for

364 Geoffrey Scott 120.
the sheer pleasure and enjoyment, as a value from the Renaissance. As Prown has written, "Neoclassical objects are aesthetically sanitized." Their main occupation is communication of power.

Neoclassical academic or Academic Classicism or Beaux-Arts Classicism are all names for identifying the architectural style utilized in the civic architecture of the Canal Zone. Characteristics of these include:

- Heightening the observer's consciousness of power
- Evocations of a classical past and ancient monumental architecture
- Balance of horizontal and vertical elements, emphasizing the strength and mass of the elements
- Use of marble or polished granite to add aesthetic finish
- Use of a Roman temple-like approach and entrance
- Use of decorative medallions with symbols of authority embedded in composition
- A geometric, symmetric, rational, austere design
- Use of Palladian ratio proportions to achieve affect of harmony

The utilization of the style name, Academic Classicism, refers to the fact that this is a historically-based architecture referencing elements utilized in earlier architecture of antiquity. It is a "morally based" architectural style, embodying the critical values on

368 Prown 208.
which Western thought is founded. The Greeks maintained that “man is the measure of all things”—in architecture as well as philosophy. The center of academic architecture is the human being, so it is also morally based by implication with the beings that are capable of moral thought and action. Proportion and order assist intelligibility and rational thought. The beauty of classical architecture is said to reside in order, which consists in correspondence, iteration and the presence of fixed ratios between parts.

The Neoclassical as Expression of Democracy

In the earliest printed work on architecture in England, John Shute worked out a thorough rendering of the Tuscan, Ionic and Corinthian Orders (columns) into human forms. Bearers of meaning, symbols of democracy, the horizontal elements bear the load of the buildings and then the vertical columns, or pilasters, support the horizontal. Vertical assertions as elements relate to power and elevation of the referent group. Columns, as they support and stretch “to the heavens” are symbols of the requirement of the cooperation of the many individual citizens to make possible or “hold up” the nation, or government, just as the columns support the roof. Each member of the building has one function and the function even dictates the decoration of that member. For example, the pillar of a temple is made to support the architrave; the flutings of the pillar, emphasize this fact. Where walls divide space off, a horizontal band of relief emphasizes the boundaries as a border on a curtain. The base of the column is molded in such a way to suggest support of great weight. Symmetry or balance is reiterated in two’s, etc. As

369 Onians 3.
370 Scott, 205.
371 Scott, 220.
an element of political architecture, they symbolize the viewing of each individual, person or column, as a singular entity, united in effort to uphold the greater good.

**Balboa Architecture of Democracy**

As previously stated, the semiotics of architecture may be acquired by the practice of defining effect associationally. The civic architecture of Balboa symbolized the United States of America. Further meaning lies in the form of the architecture itself, understood by “reading the phenomena as a text”—for moods, symbol and narrative meaning projected in details. The civic architecture carried the meaning of all the Renaissance and Enlightenment thought and ideals that are compacted and concentrated within Neoclassical Academic and Palladian style. 372

In the Palladian style of the late Renaissance, the dignified colonnades of the late expressed “noble simplicity and calm grandeur.” 373 Thomas Jefferson utilized the Palladian in his effort to present Roman republicanism as the model around which society should shape itself. It is characterized by the use of an idealized geometry, classical vocabulary and sympathetic relation with its surrounds. The typical tall Palladian windows allow more sky to be seen than land, thus heightening a sense of protected shelter and fortress from inside the building or republic it symbolizes. Combined with the rationalism of the Enlightenment, this translated to a material geometry or architecture. Cubes, spheres & prisms became elements of composition. Grand volumes

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of enclosed and semi-enclosed space were more important than ornamentation. These buildings meant permanence and stability. From their functions, they indicated a benevolent, resolute and prosperous authority behind them. The adaptation of classical forms in concession and sensitivity to the local environment is metaphor for the United States’ philosophical origins.

The American republic was created in an image of ancient Rome on founding tenets of classical democracy, including rule by aristokratia (those of achievement) and demokratia (rule of the people). The ideas of the ancient republics were mass communicated in the architecture of the day. True to its origins, the Neoclassical style in Balboa provided the citizen with an understanding of the kind of government or image of the administration to expect. Being encircled by the imagery of democracy, however, may have precipitated a mixed message as the focus on the individual diminished in the pursuit of administering the Canal. The built surroundings may have reinforced workers’ democratic expectations, but they lived mostly with an authoritarian socialism necessitated by the work at hand. Historian Bishop explicated, “The canal colony was merely a huge construction camp in a foreign land, doing a great piece of work for its employer, the United States government, which like other employers must provide for all needs of its workers...select the right man for the head of it and give him absolute power to execute it without interference.”

In the Prado area, the solid-void-solid rhythm of the façade of each building draws the eye along an expanse of uncomplicated space. The viewer’s gaze is drawn to

374 Bishop 175.
entryways by the balanced rhythm. Linear force is gathered at the citadel end of the
Prado, the Administration Building and then routed back down the steps, flowing past the
Goethals fountain, out to the Stevens Circle terminus, from which radiating paths extend
to lead into outer areas and exit. The crossings at both ends represent the calm position of
rest around which everything has been properly arranged. This is an architectural image
carried from the early ecclesiastical axis of knowledge and axis of understanding that
exist on both extremes of the interior of great churches.375

Balboa Neoclassical Style

Each of the buildings described in the previous chapter, including the
Administration Building, Balboa School, the YMCA, Union Church, Gorgas Hospital
and the environing Prado landscape, are of the Academic Neoclassical style, the authentic
monumental style of civic building in the United States at the time of their construction.
The aesthetic goals of their architects were in keeping with the twentieth century
departure from nineteenth century picturesque to strive for a hybrid of the rational
geometric and the beautiful. The fundamental principle of such compositions is an
integration of buildings and site. A summary survey of this sample of the built
environment reveals relevant identifying features: Each building except Balboa Church
have a low pitched, simple hipped roof (the Administration Building includes projecting
wings), covered by ceramic tiles; first story windows are full length, upper-story
windows smaller and less elaborate than windows below. The original first floor of the

Balboa church contains similar windows. All buildings show doors with arches or pediments above them, facades and entrance areas are accented by classical orders (Panama Railroad Station) or their engaged pier substitute, pilasters, ranging in size from small to massive. Interiors also exhibit use of columns with capitals and base.

The Gorgas Hospital compound and the Balboa School show the use of the arcade, which is based on columns; the School also utilizes a stoa, or detached portico. Each of the buildings is symmetrical, the façade usually with a center door. The buildings, though of a large mass, are to human scale and proportion at the main entries. The Administrative Building and Train Station mass may overwhelm the viewer, but not at closer approach. The Train Station has two entries, arranged symmetrically at each end of the building. The horizontal members and courses appear to the observer, though in balance, heavy, of sturdy composition and able to bear weight. Decorative brackets add some structural and visual support under the eaves. Urn-shaped balusters are the consistent choice for verticals supporting horizontal-member coping or upper rails on balustrades. Faithful to the Neoclassical tradition, generally, there is spare use of ornamentation. However, in the Administration Building, costly building materials are utilized prominently in the interior marble columns and flooring. It has been observed that in classical architecture of antiquity, the building materials indicate and display the “fortunes” of the builder. There was much precedence for this in the continental US

376 In the later second floor addition, which was a completion of the intended structure, Neo-gothic elements were added, including arched windows and a steeper pitched roof.
where Beaux-Arts style federal and commercial buildings provided an image of governmental power and prosperity.377

The murals in the Administration Building are sophisticated works of art for viewing by and edification of the citizens. They are calculated displays, characteristic of monumental architecture, chosen for their indication of power which is related to sufficient and qualified authority. The work of William Van Ingen, the murals are picturesque in style. Art historian John Conron writes that this style was the first truly American aesthetic.378 This choice of style is significant because it expressed a middle ground between the sublime or functional, and the beautiful or designed—an apt label for the Canal enterprise. The Balboa rendition of the picturesque made full use of and reference to contemporary technological and engineering advancements. The general panorama of El Prado and the civic center countryside shows Phillips’s composition to be like the picturesque tradition depicted by American landscape artists of the late nineteenth century. Forms flow into one another, in and out of shadow and elevation, with a unity in syntax, effect or expression. The murals, by recalling the trial and triumph of canal construction, eloquently reiterated the meaning and value of life in the Canal Zone.

Portraits of key figures in the Canal’s development fill the walls, accentuating the history, business and mission that ultimately concerns Americans who live and work in

377 Onians 5.
378 Conron 19.
the Canal Zone. The elegant rotunda is surrounded by offices carrying out every detail of
the administration of the waterway.

**Balboa Beaux-Arts Style**

In the last style of the American Renaissance, Beaux-Arts architecture is
distinguished by its aesthetic translation of the design values of the Renaissance into the
material. Its doctrines dominated French architecture until the twentieth century.
Stylistically it is horizontal, elegant, and rhythmic. The buildings of Balboa lack the
"exuberant ornamentation" that sometimes accompanies and distinguishes the Beaux-
Arts style.

The American architects trained in Paris included Richard Morris Hunt, H. H.
Richardson, Julia Morgan and Austin W. Lord. Design within this style emphasizes the
study of the finest of the aesthetic perfection of Greek and Roman structures,
composition, symmetry and elaborate two-dimensional wash or watercolor renderings of
the buildings. Designs of elements were of idealized origins, usually with heavy ashlar
stone bases, grand stairways, paired columns with plinths, arched openings, cartouches,
medallions.379

Much of the architecture includes entry porches with roofs supported by classical
columns. The Beaux-Arts often uses paired or symmetrical columns. Elaborated window

379 A. D. F. Hamlin, "The Influence of the Ecole des Beaux-arts on Our Architectural Education.,” *The
Architectural Record* XXIII, No. 4 (April 1908): 241.
crowns and surrounds are universal. Classical quoins, pilasters are also included. Medallions with simple identifying messages are above many entry doors. There is some reference to renaissance architecture’s reflection of enlightenment values by including simple decorative motifs. These are creations of the minds of men versus forms found in nature such as leaves, shells, or eggs. The Balboa YMCA features window balconies, a feature of the Beaux-Arts.

**Balboa Italian Renaissance Style**

The form of Renaissance architecture is guided by classical use of space and principles in the pursuit of ideal beauty, or ideal learning. In the fifteenth century, architects as Brunelleschi, and Leon Battista Alberti extrapolated the ruins of Rome into the foundation of a new architecture based on the principles of geometry and mathematics and the work of Vitruvius. Symmetrical construction, columns and arches are usually included because they demonstrate flow of line and democracy. Palladio’s use of columns and domes became a trademark of the initial move of the application of classical principles of design to secular structures v. the usual sacred. Stuccoed or masonry walls are universal with this style. Palladio revived an architectural form of ancient Rome whose civilization was slave-owning, imperialist and obsessed with power. This is reiterated in muscular arches, triumphal in progression, of monumental proportions. The power was also tempered with a feeling of protection that is also welcoming and though not cozy, definitely comfortable and accommodating. The
Renaissance left to the world, after this period of fourteenth, fifteenth, and sixteenth century monuments of artistic beauty, literary and cultural, that define Western culture.

**Goodman’s Model of Worldmaking**

The administration office for the canal inherited from the French era was located in a Second Empire style building in Panama City. Deemed inappropriate for American operations, for its replacement Colonel Goethals ordered a “beautiful town” to be constructed in the swampland adjacent to the Pacific entry to the proposed Canal. The new town would proclaim the American victory and advance the idea of permanence—control of the Canal in perpetuity. To build anew was to legitimize power.

The composition of a world that would frame American efforts there began at Goethal’s initiative. This version carried a vision of American achievement within the layout and choosing of the Neoclassical style of architecture for the enclave and a renaissance urban landscape style, all imbued with symbol. These were all participant in the spatial ordering, organizing or what constructivist philosopher Nelson Goodman calls *worldmaking*.

From his writings on the philosophy of art, Goodman’s concept of worldmaking is useful to apply in understanding the course of action and the cultural effects of the process. He sees architecture achieving meaning through style and structure. In the multiplicity of worlds, each differs in ordering or in the entities. The process of making Balboa a civic center necessitated the imposition of order: Goodman stated:
“worldmaking ... always starts from worlds already on hand; the making is a remaking.”

Goodman submits that identification of any world rests upon an organization of entities or components of the process of worldmaking. It must be emphasized that this is a process, not an instantaneous act. He outlines particular practices that go into worldmaking. These are useful in order to examine what the Canal Zone and Balboa meant from 1910-1920:

A. There is composition of entities, i.e. Buildings, and Landscape. Worlds differ in which entities are included, so this must be determined. This involves decomposition with labels, asking the questions, what of the old world is there; what is like the old? What is included? What is organized within this world? This is to be analyzed as members, subclasses, connections, needs of the inside that are outside? Is there the act of naming streets and other spaces?

B. There is weighting for distinctive emphasis. Two worlds may contain the same classes, sorted differently. This attribute can modify, with changing interests and new information, new function.

C. There are constructional systems as worlds are ordered. Measurement itself is based on order.

D. Deletion and supplementation makes one world out of another. Persons build worlds conforming to chosen concepts and also obeying universal laws, indicating that it is more than repetition and conditioning which influence action.

E. There is a process of deformation, performed as corrections or distortions. Some changes are reshapings that may according to point of view be considered either corrections or distortions. 381

It is important to recognize that the space in which Balboa was built was formerly a vacant swampland with no inhabitants. In terms of occupation of the space, little of the old was retained. The natural topography of the land featured two elevations, both of which were incorporated into the building plan. Only when it was a natural habitat supplemented, and filled with the displaced material from the harbor and from the Culebra Cut, could it be engineered, shaped and made ready for construction.

The entities for analysis of the Balboa world are the buildings and landscape including the streetscape. Even before there were these entities, there was the decision that the management of the Panama Canal would not continue to be directed from the erstwhile French administration building located in Panama City. The decision making process is not known; no plan other than constructing the civic-centered Balboa exists.

381 Goodman 7-16.
The situating of this ‘world’ relates only to its expeditious location at the Pacific terminus of the canal. Balboa was constructed by Americans or their employees, for Americans and solely for the purpose of supporting efficient functioning and administration of the Canal. As the administration of the Canal was carried out in English, so the language of the Canal Zone was English. It was a world space set apart from the Panamanian urban space, the jungle and the land from which the new inhabitants (Americans) originated. The barriers between Balboa and Panama were virtual ones, separating, including and excluding the members of each of what Benedict Anderson called “imagined community.”

The making of the Balboa civic center world was a reconfiguration and use of styles in fashion and use on the mainland US. In this regard, its entities were like somewhere else. The Neoclassical academic style was referent to the City Beautiful values and monumental architecture of the early twentieth century. Between 1910-1920, the included users or consumers of the buildings and landscape were American workers and their dependents, other Canal workers who might have business in the Canal Zone who may or may not live there, non-American workers hired by Americans for domestic-related tasks. One sub-class of the buildings is correlated with how individuals could use the space. They are distinguished in spatial differentiations and designations set out for gold and silver employees. Other users were transient travelers officially admitted in the Canal Zone on professional visits or for leisure.

Virtually every necessity of the worker was institutionally addressed and included in the environs of the Balboa civic center town site: practically speaking, one would not have to leave the site. Modern municipal services were provided. Free trade and commerce were not part of the interaction of the site. Reflexively, the site and its entities were not regularly available to those not included as previously mentioned. Users of the entities and site were just that as there was no ownership of land or buildings allowed to individuals within the Canal Zone. No material division or designation of the boundaries of the world existed, except for demarcations marked on maps: there were no gates, nor walls erected, though there was a definite division, articulated in the change of urban plan and function of Balboa. Panama City was the “other” as was the jungle that extended up to the rear of the Administration Building grounds. Most streets were named in English after US historical events and individuals. One notable exception is the prominent El Prado (lawn or pasture land) boulevard, named in Spanish. Delivered as a planned whole unit, the structure and organization of Balboa civic center influenced a type of sovereignty for the groups who functioned there.

The emphasis of the world of Balboa was exclusively weighted for the efficient functioning of the Panama Canal. By comparison, all other worlds were different because they did not have this particular unifocal task. Persons who lived and worked in the Canal Zone might also be part of other worlds, but no others were part of the Balboa world if they did not have an assignment there. Use of the Balboa world depended upon one’s relation to the function for which the world was created. Traditions were invented for this world.
A scheme of order began for Balboa's civic architecture and landscape when Austin Lord presented his conception of the civic center axis and the neoclassical style in which it would be realized. His suggestion of order was manipulated and worked to be compatible with the requirements of the site engineers. Lord chose an ordered style approved by Colonel Goethals. The Neoclassical style was how the buildings were utilized to contribute to the process of worldmaking. Elements of style are the connection with symbol; symbols perform metaphorically. Data embodies the material; the style of architecture, then, is how architecture conveys meaning. The system of symbol in the architecture must be mastered and then the system's categories applied. 383

The deletion and supplementation aspect of Goodman's model relates to the portion of worlds deleted or supplemented from some original. For Balboa, there was no original existing site, but a model for a neoclassic architectural and urban plan was available: two explicit contemporary examples were the McMillan Plan for Washington, D.C. and Daniel Burnham's plans for Manila and Baguio in the Philippines. Although these models would have been useful for consultation, the order that the Washington plan offered was not sensitive to the requirements of the tropics. Walkways were covered, buildings were situated for air circulation and guttering would carry the deluge of the rainy season. Here was the opportunity to accentuate diversity and be sensitive to needs outside of tradition in architectural forms, and by extension, in social forms.

Finally, Goodman’s action of deformation is also an aspect of the adaptation to create appropriate entities for the new world. Balboa world was a mélange of previous world standards deleted, supplemented and deformed to make another world of Americans performing a function and living their lives as if they were within the continental US. The order of Balboa was not found, but built into a world. Other known contexts or worlds were brought to contribute; Balboa’s space is a deformed or reshaped American world.

**Balboa Space**

Balboa is spatially reordered and reorganized, previously uninhabitable space. After Balboa was established, there were relationships among worlds in the same geographic area, and beyond, that did not exist before. These include the population centers and rural areas of Panama, the jungle, the US military in Panama, the Republic of Colombia, the continental US, and others. Since Balboa world was planned, man made and contrived, its identity for contrast may be easier to isolate. The ongoing comparative association of these worlds gave further definition to the structure of Balboa’s identity and meaning.

The straight main axis runs northeast and southwest between the administrative, educational and judicial structures to the recreational, religious and residential structures. The Administration Building sits elevated on privileged ground, supported and closely surrounded by buildings dedicated to the crucial American civic functions of education.
and the law. The groupings of supporting buildings are organized in a unified architectural expression either along El Prado boulevard or the same plane. There are no commercial buildings. They are set apart from the Administration Building by a stair of 108 steps, originally temporarily wooden, replaced by concrete to last for perpetuity. The southwest end positions the equally essential, but privileged differently, institutional elements for recreation, religion and residence. All of these buildings situate where and how they have materialized as solutions to arguments and agreements between engineers and artists and laborers. The centralized concentration of civic buildings denoted the centralized power behind the Panama Canal Zone administration which they supported.

The interiors of these buildings are socially organized, revealing larger processes and material forms that communicate contemporaneous and transferred meaning for the experience of later occupants. The interiors follow plans typical of monumental buildings of the period. The efficient layout of the Administration Building interior offers a complex space of separate office units. It is very similar to those conceived by Daniel Burnham, especially in the “E” shaped configurations he utilized, in for example The Henry W. Oliver Building, ca. 1907, of Pittsburg, Pennsylvania. The interior office space layout is the model and perpetuation of an increasingly compartmentalized and specialized work style then advancing in US business offices.

Concrete steps and sidewalks make formal the approach to the civic buildings. They reiterate preparation, ascent and a prepared approach before entering and accessing the buildings and the higher functions therein. These innovations, characteristic of form
following function, are in contrast to the different workplace scenario if the civic buildings were set in a topography of ubiquitous mud and uneven surfaces.

The Balboa composition features the buildings and structures essential to progressive cities in the United States from Fort Collins Colorado (1906) to Reading, Pennsylvania (1910). The City Beautiful-inspired civic components of many cities included parks in which to contemplate nature and recreational opportunities for escape from urban pressures, a large modern hotel, a post office, a federal office building, a theater or opera house, a school and a library.

The Balboa El Prado is a site with a complex of buildings; each is situated with symbolic associations. The difference in and distinctness of the order and buildings within the civic center distinguished their function of running the Canal from the military work and from the cacophony of Panama City. Balboa was the equivalent of a new parliamentary district—a sort of capital of a small satrap. As a symbolic “capital city” to residents, it was a symbolic center. The Canal’s completion marked the independence from a war against mudslides and disease that was the building of the Canal. The insularity of the civic center is indicative of the type of relation the United States intended with Panama regarding management of the Canal: independent, but with formal communication.
Symbolic, Ceremonial, Social and Political Roles of El Prado

El Prado was the main and formal access to the Administration Building and set the structure of the urban civic community of Balboa. Although on a smaller scale, El Prado is a perfect boulevard as defined by urban planning scholar Allan Jacobs, “evoking images of size and formality with an emphasis on formality.”\textsuperscript{384} The shorter length of El Prado makes it easier to sustain visual interest and relative to human scale. Other qualities that contribute to the effectiveness were: Royal palms at fifteen feet space placements to provide shade, elegance and in their colonnade configuration to delineate pathways, ample twenty-four foot wide streets. The beginning and ending of El Prado is well marked, introducing the ascent to the Administration Building on one end, and the exit to the less formal part of Balboa and on to Panama City at the other. Design features such as streetlights, benches and iron gates on buildings and the Goethals fountain at the Administrative Building end contribute to the unity initiated by the linearity of El Prado. Guttering and paving are contributing features to the safety of pedestrians. It is representative of the axis type plan with park or green, radiating into a grid system. This layout would later be aptly labeled the “monumental axis” by Lucio Costal (1902-1998) with his plan for Brasilia in 1957. In contrast, Panama City’s layout of streets is a basic grid, laid out by Spanish colonials. A sense of urban order of Balboa marks the passage from the urban disorder of Panama City. Americans maintained an order ruled by autocratic regulation contrasted with the relaxed regulation to anarchy they perceived in Panama City.

\textsuperscript{384} Allan B. Jacobs, \textit{Great Streets} (Boston: MIT Press, 1993) 35.
There are symbolic Neoclassical associations with the choosing of the site as well as the geometry of the plan, featuring a grid crosscut with radial streets. The plan is premised on the potential view reserved for the symbolic seat of power, the Administration Building. This view extends across El Prado and, theoretically, out to the sea. The Governor’s office is located in the Administration Building. The Prado is Balboa’s most formally important, principle public space made to balance the potentially over-powering Administration Building set on the rise. There is a hillside ascent to be scaled on foot, scanned by the eyes, or accessed by gently curving carriageway.

Freestanding buildings face or confront one another, or stand side by side. The meaning of clustering of the specific civic buildings is associated with their respective function. If the site of the civic center is regarded as the body, mind and soul of a citizenry, each is indicative and instructive of facets of the human social experience. The business of each structure or site is the obligations and privileges, the expression of which characterizes a balanced community life. Images are structured to give information about a proper way of living in the specific environment. As an expression of architectural determinism, or architecture determining the processes that may be performed within the surrounding environment, the built environment produced the social environment. The civic center acted as a tutorial for civic participation. Theodore Roosevelt had envisioned some sort of “civilizing method” to bring about the goal of “orderly freedom” in the new frontier—the civic architecture was a contributor.
Often the Prado was the site of processional pageantry, including during the visit of Theodore Roosevelt, military review, and Fourth of July parades. Because of its being reserved and designated for such occasions, it became a hallowed ground. The Administration Building, reverently known as "The Building"\(^{385}\) stood temple-like, looking down on the Prado below and outward to the sea. An American flag at the top of the ascent from El Prado to the Administration Building first flew alone, and then years later alongside the flag of Panama.

When the Balboa civic center took form, the style and space utilization connotated the US presence. Because the effectiveness with which canal activity was conducted and regulated was primary, the Administration Building was sited and given form first. Ideologies were embodied in the form. The Canal Zone was created during a

period of nationalizing in American life. The choice to employ the Academic Neoclassical style was entirely appropriate to communicate political aspirations and American civic ideals of the early twentieth century. It was completely compatible with other contemporary American civic and municipal architecture. The political, functional, economic and organizational structures of the Panama Canal Zone make it unique in the world. It is the only American construction of a civic center for American, non-military use outside of the continental US. As a liquid bridge between the Europe-oriented Atlantic and the Asia-oriented Pacific, it symbolized a spatial clearing for the American gaze toward commerce with Asia.
In its early years there was certainly a unifying notion amongst workers of the
noble task at hand of operating the canal. The common circumstances facilitated a "deep,
horizontal, comradeship" that supports robust community.\textsuperscript{386} Sheltered by distance from
the concerns of the US mainland and also a mission of engineering necessity, the Canal
Zonians approached status of, in Benedict Anderson's terms, real and imagined
community. It was real community in the sense that most people could and did know
their fellow Americans in the Canal Zone; it was an imagined or created part of a nation
many miles away from the realities of Panama.

The civic center accommodated the patterns organizing everyday life for its
citizenry. The institutions contained in the buildings chosen for Balboa were familiar and
reminiscent of those that may be seen in most continental US towns: schools, churches,
post offices and YMCA clubs. The choice of which civic buildings to be included
demonstrates the priorities to the contemporary citizenry and civic leaders.

The content of the architecture of nearby Panama City had been influenced first
by Spanish colonists and ecclesiastics and later by the French. The semantic content
of the civic architecture of Balboa contrasts with the Spanish and French influenced
architecture in varying degrees and aspects. Gwendolyn Wright has shown that
architecture in French colonies over time adapts into an assumption of elements from the
local architectures. Wright says, "Architects ... tried to evoke a sense of continuity with

\textsuperscript{386} Benedict Anderson, \textit{Imagined Communities. Reflections on the Origin and Spread of Nationalism}
the local past in their designs.\textsuperscript{387} The civic architecture of Balboa was built in a style with a semantic content compatible with Panama City’s civic architecture, with adaptations acceded in the main for climatic reasons. Humidity, light wind, high temperatures, exceedingly strong and direct sunrays, seasonal heavy rains made covered walkways, shaded large windows and pitched roofs a necessity, no matter the style chosen. The local supply of building materials, technology and tradesmen was not a determining factor in the typology. As Wright suggests, these adaptive strategies were ultimately mediators of the culture.

Though there might be the desire to banish the visibility of a previous colonial presence, no attempts by architects Lord or Hitt to revise the former Spanish colonial architectural remnants are recorded within the style they achieved. Hybrid versions of the French Second Empire style and mansard roof that was adopted by a few of Panama’s local elite from the French canal influence is not regarded nor evidenced in adaptations of the Balboa architecture.\textsuperscript{388} There was no adaptive reuse or renovation of any existing constructions for use as permanent civic architecture.

Panamanian architectural historian Samuel Gutierrez proposes that the inclusion of the ethnological and cultural architecture entering from the Caribbean and United States improved the architectural quality of Panama. He praises the addition of the architectural sensitivities in appropriate adaptations for the tropical climate, such as perimeter galleries, window blinds or jalousies, balconies houses on stilts or pilings and

\textsuperscript{387} Gwendolyn Wright 9.
\textsuperscript{388} Gruiterrez, 352.
the relation of internal and “external space that the tropics dictate so that it does not interrupt open air movement. It is a symbiosis of architectural and natural scenery.”

Lynch’s Concept of Imageability

Urbanist Kevin Lynch analyzed all collections of environmental images by isolating three components: identity, structure and meaning. Certain physical qualities compose the attributes of identity and structure of the environment as it is perceived. His term imageability is “that quality in a physical object that gives it high probability of evoking a strong image in any given observer.” Lynch asserted that it is also influenced by social meaning in an area, its function, history and often its name. The exterior form is the stimulus, but the way the observer organizes and interprets the information affects what is seen and remembered. The imageability indicates how able the attribute is to communicate an idea or message, summoning qualities of legibility or comprehensibility. Often there is an emotional significance transferring with the communicated image.

In this process, the observer identifies the parts and then reassembles the whole. This is the first move toward structuring or containment of meaning. Whether or not a space has imageability is vital in determining national identity or if that identity is conveyed in material artifacts. Lynch mainly relates the use of space with imageability, but he extends the use of the term to material culture artifacts. As has been discussed,

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389 Guiterrez 353.  
390 Kevin Lynch 9.  
391 Lynch 131.
Style in architecture and landscape may be seen as a code to identify builders and their cultural milieu. Style is a vital ink in determining imageability. Lynch asserted that the public image of a city is actually made up of five types of elements. These components when coalesced give Balboa an unmistakable American identity:

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>DESCRIPTION</th>
<th>REFERENCE TO BALBOA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Paths</td>
<td>Channels along which observers move, including streets, walkways.</td>
<td>El Prado, streets extending to Adm. Bldg., residential areas, Panama City</td>
</tr>
<tr>
<td>2. Edges</td>
<td>Linear elements not used as paths; boundaries</td>
<td>Line, unmarked (except on a map) though very recognized, between Balboa and Panama City; the jungle edge which bordered the rear of the Adm. Bldg., Balboa Harbor.</td>
</tr>
<tr>
<td>3. Districts</td>
<td>Sections of the urban area conveying &quot;inside of&quot; and recognizable because of identifying character.</td>
<td>Similar to (2), the line and architecture identified the beginning of Balboa, and end of Panama City; beginning of Administration Building and end of jungle. Balboa also designated commissary and business areas, recreational and club areas away from administration and judicial business area of Prado.</td>
</tr>
<tr>
<td>4. Nodes</td>
<td>Strategic points, convergence of paths, to-from transit.</td>
<td>Axis at base of Adm. Bldg: ascent to Adm. Bldg. or out El Prado to more civic services of Balboa (church, YMCA) or to Panama City, the rest of the CZ.</td>
</tr>
<tr>
<td>5. Landmarks</td>
<td>Clues to identity, symbolize a constant direction, visible from many vantages.</td>
<td>Goethal's monument and fountain, US flagpole</td>
</tr>
</tbody>
</table>
Phillips' Prado design is the main interior path. The royal palms lining the path refer to the symbolism of democratic columns. The choice of the palms is a tropical reference that also images a fluidity and elegant motion bordering the street, which is an avenue of communication. This and other lines of movement define the landscape. These are pedestrian-scaled, multi-use streets. The broad, open axis is a gracious and sociable one. His plan is every Palladian value that was encouraged in City Beautiful design demonstrated in a limited space, radiating balanced order on a monumental axis.

Application of Lynch's method for the evaluation of imageability of a given built environment to the drawings and plans for the civic center of Balboa yields clear results: from the site plan, one may quickly discern directions using identifiable landmarks in order to move knowingly about the civic site environment. Second, a trip of imagined (or witnessed) events could be extracted from the routes shown on the map to mark the length and breadth of the area. Third, a list can easily be generated of the distinctive parts of the civic center. Fourth, the distinctive parts may be quickly located, which is an association of building name, in Balboa, related to its function.

Lynch further theorizes that it is possible to develop an image of the environment by affecting the internal learning process for those inhabiting the environment. This is the situation for the civic community of Balboa. After it was in place, the civic architecture reiterated messages already in play. An American civic presence and the municipal and civic procedures carried out from the administration building and various civic celebrations reinforced and validated the American image of Balboa.
Image development is a reflexive process, relying on the observed and the observer. The observer brings expectations of what the image is. Many of the citizens of Balboa were already familiar with the civic images before them. They had experienced them in the court houses and train stations of the continental US. Therefore, the incorporation of Balboa images and their meaning began for them with preformed notions.

In summary, the Balboa civic built environment is highly imageable, containing strong images that have cultural effect. The Neoclassical Academic style of the civic architecture of the Panama Canal Zone says Americans (who) built the buildings during the vogue of monumental architecture and the work carried out therein (what) should be carried out efficiently, in a balanced, democratic fashion. Because the founding act of Balboa town was part of supreme American administration and ownership of the Canal, the architecture by virtue of its implicated function may be termed the architecture of an imperial action. The civic center of Balboa follows a colonial city form only as the power structure took form between the US and Panama. Because there evolved an economic dependency on Canal operations for Panama, the country also became dependent on the US. However, this was not developed at the time of completion of the architecture. Therefore, at the time of significance, the Canal Zone architecture was not colonial architecture.

Embedded with this distinction, it has meaning by association with the young nation still working at and forming an identity as a world power. Subject is “what,” style

392 King, Colonial Urban Development 34.
is “how” something is said. If art and architecture have no real subject, then only a focus on the “how” or style, will reveal the codes to interpretation of their meaning. Stylistics refer to what and how the works symbolize. Symbols illustrate, as opposed to naming or describing. Therefore architecture can not be referred to as, for example, “imperialistic architecture,” but rather it may be a referent, supporting or contributing to an imperial regime or action. It is not an imperial symbol but might be an illustration of the tenets of an imperial regime.

Foreign Vestiges of the City Beautiful Movement

The tenets of the City Beautiful Movement that were carried into foreign locales and spaces, such as Hawai‘i, Puerto Rico, the Philippines and the Canal Zone, demonstrated a connection to American ideals and foreign policy of the time. For the American commission, as advocates of progressive planning for American cities, it seemed natural and proper that progressive urban programs should be in American areas overseas. The remnants of the City Beautiful Movement record an unrelenting faith in the power of symbols as well as the urge to arrange space and form as political tools. The spread of Americanism may be traced through the City Beautiful connection.

It has been suggested that the greatest architectural success of the City Beautiful movement was on foreign soil, especially in the political architecture of the Philippines. As a cohesive effort of built and landscape architecture, Balboa is an

394 Robin 174.
exemplar in the canon. The necessity of a civic plan for the Canal Zone offered the perfect opportunity for utilizing architecture to symbolically display the massive faith and self-esteem that American policymakers brought with them to the twentieth century. In comparison to the American construction in Manila, Balboa was a town and civic center made for Americans, settling in with their own self-contained, separate, modified democracy and a very specific technical job to perform, in the middle of another nation. It held a different implication than in the Philippines where Daniel Burnham completed his City Beautiful inspired plan in 1905. The architectural style was the same, though the function and context were completely different.

After acquiring the Philippines in 1898, infrastructure development was top priority for the American colonial government. In Manila, Burnham’s plan was requested to affect the improvements needed “to accommodate the influx of Americans, who are used to better living conditions.”\(^{395}\) His interventions were to rework and improve the city for use while Americans were in occupation, and later for Filipinos when they were deemed ready to govern on their own. The essential areas of concentration in his plan were: the government center with several public buildings and system of transportation arteries radiating from this center, the development of a railway station, modernization of the harbor area and an improved shore road, and improved sanitation. In the government center, he planned construction of monumental Neoclassical architecture. Burnham embraced the Spanish colonial style within his designs as he felt it was of the fabric of the Philippine experience. He also noted that the culture of Manila called for treatments “less severe and monumental” than for

\(^{395}\) Moore, 196.
Washington, D. C. He included in his plan a YMCA, Elks Club, Philippine General Hospital, all rendered in the Neoclassical style, mostly drafted by Burnham’s assistant, William E. Parsons, who remained on site. Burnham wished that “Manila may rightly hope to become the adequate expression of the destiny of the Filipino people, as well as an enduring witness to the efficient services of America in the Philippines.”397 In the Philippine model, it is clear to see the implication of subjective building styles utilized by powerful outsiders. The Neoclassical academic architecture, due to its associational value, is exclusively referent to the political power that builds it. Especially in a colonial situation, the architecture is not usually referent to the culture into which it is sited. A new era of symbols were embodied into the country’s civic architecture.

The architecture has a political meaning that originated its style and design. The meaning for the second group may or may not be the same. However, since it is initially ‘expressed meaning,’ it cannot also be ‘impressed meaning’ in exactly the same way.

The US plan by Daniel Burnham for Baguio, Philippines is of the closest comparison to the civic center of Balboa. In 1904, as one of the most active planners of the time, it is likely that his work was known by Canal Zone designers. He reviewed Manila’s layout and presented a plan for a summer capital in the cooler highlands of northern Luzon, called Baguio. He had studied the British built colonial summer town of Simla, India and probably extrapolated for this highland town. Burnham’s plan for

396 Hines, 203.
397 Moore, 141.
Manila left much of the existing Spanish architecture, but overlaid and complimented it with American monumental structures.

Figure 38. Burnham’s design for Manila. Figure 39. Burnham’s drawn plan for Manila.

Situated in the highland Benguet province, summer capital, Baguio required a different approach from Manila. Upon presidential request, Burnham created a city-town in a cool meadow of a rugged mountain scape, which would become the Philippine summer capital to be used by civil servants and ex-patriots from February through June. Before construction, efforts began to curtail the use of the area by the “wild tribes” of Benguet. 398 After some displacement of indigenous people and interruption in the cultural life of the region was accomplished, American development began.

398 Boyce, 93.
Burnham initiated a railroad transport system restructuring space in terms of how long for people and goods and services to be transported. He proposed a street system allowing easy communicating, adapted to the contours of the land, locating public, semi-public and private institutions of importance and a park esplanade area. Burnham utilized a miniature plan reminiscent of the Washington, D. C. layout. Government buildings were nested at one end of the esplanade; trade buildings had the opposite section. His national and municipal buildings were given sites of higher elevation connotating a superior service and dignity than business buildings, which were set on ‘level’ ground for their dealings. The repercussions of the Baguio project with local Filipinos revealed a fear that the town-city meant a plan for continued, long-term colonial rule of the country by Americans. By 1925, the “summer capital” was seen as “an immaculate resort…scenery, cool air, a resident colony of splendid people, outdoor pleasure and indoor gaiety.”

In Burnham’s estimation, the American work in the Philippines “is constructive in a higher sense than is that at Panama…”

Thomas Hines comments that Burnham considered his work in the Philippines an American version of British colonial ventures. Burnham writes that the Baguio plan was a miniature version of L’Enfant’s plan for Washington, focused upon an ellipse with a green mall space in the center, bordered by boulevards. This design predated

399 Gleek, 219
400 Burnham to Forbes, January 7, 1903, Forbes Papers.
Balboa’s Prado and was most likely known by Phillips as he prepared the Prado landscape.

The applications of the classical design elements in the shape of the landscape and built environment make Baguio comparable to the Prado. The Baguio architecture, though Neoclassical in style, is not of monumental dimensions or scale. This city center was organized mainly to contain the summer capital activities and provide for the recreational activities of those so involved. The resources were to serve Americans and then Filipinos as they became engaged in governing.

![Figure 70. Layout of Baguio in geographical context.](image)

The major difference in Balboa and Baguio is their contexts of meaning. Baguio was constructed for the relief and recreation of elite workers; Balboa was assigned the efficient functioning of the canal. Ostensibly, the United States intended to structure the
Philippines democratically under American control, and then step aside. In Burnham’s assignment for which the United States sent him half-way around the world, the Fine Arts Commission requested that “rational plans” be introduced for the Philippine cities, presumably in order to expedite and make possible rational behavior amongst locals and provide an environment in which Americans could relate and relax. The US intended to hold the rights and control of the Canal in perpetuity, the support of which necessitated a working force of Americans in Balboa. Baguio was a second city for Manila and, therefore, rule of the Philippines which would eventually be Filipino in population; Balboa was the civic center of a ‘zone’—a circumscribed geographic region, regulated and set aside by distinctive features. The Manila project was the redesigning of space that was already organized and given identity. Baguio, more like Balboa, was not located nor organized before the United States effort. The War Department paid for the development of all of them.

There was no local precedent for what these buildings might metonymously mean except that which the civilians may have previously experienced in Washington, D. C. or their own home capital city. For those who worked on the canal, they could feel pride, inspired in the escalation of flights of steps and sidewalk up to the grand-sized Administration Building.403 A sense of approachability with respect to the Administrative center is communicated in the easy, elegant curve of the drive leading to its porte cochere.

403 Sam D. Bolt, retired Panama RR engineer, personal interview, August 18, 2003.
At the opening of the Canal, there were 2,535 buildings in canal settlements, of which 117 belonged to the Panama Railroad, 19 to the US Military, 2,399 to the Panama Canal commission.\footnote{Smith 61.} The manipulation of this civic space sanctions the leadership and mission of the entire Canal Zone project. Those, and their dependents, whose official business is the Canal are included within the Balboa space; those otherwise engaged are excluded. For those that are included, there are no fences or barriers in the "power sweep" flow patterns ascending to the Administration Building or extending out to the Stevens Circle terminus.

**Balboa Political Architecture**

The Civic Architecture of the Panama Canal Zone as built in 1910-1920, is a cultural symbol of the national identity of the emergent world power, the United States. Since multiple simultaneous frames of reference accompany its conception and construction, the architecture is much more than a symbol of the nation which built it, the US. Lawrence Vale suggests three factors which may be applied in determining the symbolism in Balboa:\footnote{Lawrence J. Vale, *Architecture, Power and National Identity* (New Haven: Yale UP, 1992) 48.}

1. **Preferences of the sponsoring regime:**

The national identity communicated by the use of monumental Neoclassical architecture privileges the identity of a dominant and
elite professional group within American society. However, within the reference of the exultant completion of the Panama Canal, this seems not so. The sense of greater accomplishment was a unifying agent, a quasi-kinship\textsuperscript{406} for the early interested citizens. As the Canal came to represent a characteristic US ingenuity and willpower, so did the Civic architecture of Balboa.

The spaces within the civic buildings were of formal, rigid order, as opposed to free space structures that modern architect Lebbeus Woods asserts are instrumental of a freedom of the individual. Inhabitants were not "forced to initiate" or invent, but rather to go about the function at hand as it was assigned.\textsuperscript{407}

(2) Priorities of the architect/designer's long-term design agenda and personal predilection; influence of trends:

The plan for the civic-center-town of Balboa presupposed a population that would present certain needs. The town did not originate through a process of settlement with services and institutions responding to expressed need. The needs of American citizens who would be residents and partakers of services in Balboa were appropriated from a distance. The town, therefore, was one of the first in the practice of planned communities. It was controlled development of a superstructure that would last into the perpetuity for which the Americans thought

they would control the canal. The initial advance was to provision for light, transit, water, sewer, and even the light prevailing wind for ventilation. Only then did the built site plan take form.

Early planning activist and scholar, Frederic Howe discusses in a 1912 article, “The City as a Socializing Agency”, how city planning could bring about a civilized society. He contrasts this planned effort with the American city, “inconvenient, dirty, lacking in charm and beauty because the individual land owner has been permitted to plan it, to build...there has been no community control, no sense of the public as opposed to private rights.”408 Howe observed that city malfunction was not a problem of men or political machinery, but that the health, comfort, convenience and happiness of citizens is bound up with the material side of the city...every bit of land should be allotted and planned by the city...in order to insure the harmonious growth of the community.”409 He felt that cities’ woes of his day were caused by insidious disease, and were not finally to be eradicated by merely treating symptoms. Rather, causes had to be understood and derailed. Balboa was a perfect opportunity and venue in miniature to test the model, to activate city planning (or city building as Howe preferred) and all of its progressive components in a rather controlled environment. Fitting Howe’s suggestions, this environment could be studied and built as a whole in a finite area, the strengths of which were learned “a few years ago about the World’s Fair at Chicago.”410

409 Howe 591.
410 Howe 599.
The scale and layout of the civic center-Prado also evokes a “coziness, picturesqueness and pleasantness,” qualities requested by Howe and even observable in Balboa almost one hundred years after establishment.\(^{411}\) And Balboa worked, even up to the American’s departure in 1999. The built-in social controls and City Beautiful design values were most compatible with the mandated canal administration as the only business of Balboa. The consequence was an urban space preserved and constant over time.

(3) The government’s interest in pursuing international identity:

As has been shown, the US wanted to project a well-organized functioning civic center, especially in its highly visible location.

### Success of Balboa Civic Architecture

There is little commentary on or assessment by outside observers, academics or even visitors regarding the appearance and municipal success of Balboa in early years. Gutierrez reports that Joseph Pennells, the artist assigned to document canal construction, remarked that it is “a local version of a fine relation of nature and architecture, like in Japan.”\(^{412}\) By 1949 Balboa was described as “the most paradoxical American community in the world—Shangri-la or prison…” in the Saturday Evening Post. Sidney Shalett lauded it in a series for the magazine on beautiful cities of America as a town of much distinction yet “probably Uncle Sam’s most total experiment in socialism; the harsher critics of Zone administration call it totalitarianism” and also refer to the “fortress-like”

\(^{411}\) Howe 595.


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administration headquarters. He speaks of Uncle Sam’s suburb in the tropics, a beautiful, baffling place where the government service CAF-13 speaks respectfully to the CAF-14 and the CAF 15 sits on a lofty perch just under the Governor. After years of the civic center running as a town, a new social hierarchy formed, queued from the level of civil service employment rank. A built-in sense of sovereignty and basic cohesiveness amongst the Canal Zone residents was a product of the limited geographical area and pride in a unifying cause for which they lived in the enclave. They had Canal Zone vehicular license plates, postage stamps and a police force. The predominant civic identity of the residents of Balboa however was not locally referent, but rather that of being American. For Americans elsewhere and in the continental United States, Balboa translated a strictly American identity in the national consciousness.

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"The conquest of the globe by its developed minority, transformed images, ideas and aspirations, both by force and institutions, by example and by social transformation."  

Cultural historian Ron Robin observes in *Enclaves of America: The Rhetoric of American Political Architecture Abroad, 1900-1965* that the significance of American political architecture is enigmatic. Perhaps because of the disparate nature of the collection, from embassies to the Canal Zone to military posts, it is impossible to determine a universal meaning for American political architecture. As has been discussed, architectural and landscape artifacts relate to meaning in at least four different ways: denotation, exemplification, metaphorical expression and as a mediated reference. When these methods of translation are multiplied by the political and social etiologies of each location, it is not surprising that the theoretical discourse is avoided. Architectural historians observe that although there are quite articulated British, French, Spanish and Dutch imperial schools of architecture, there exists no American imperial style. The deficiency of investigation is also indicative Americans' uneasiness with the nature of empire and a lack of consensus on America's global role.

Robin asserts that style changes in American architecture abroad, including war monuments and embassies, are relative to American foreign policy. He also sees that

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foreign policy objectives and innermost concerns of the nation dictate the style of architecture of embassies and monuments built at the time. An example of this is the US embassies that resemble plantation manor houses erected during the nation’s 1900-1920s commitment to technology, but with an emotional preference for pre-industrial values.416 In evidence of a more imperial architecture after World War II, he quotes architecture critic Ada Louise Huxtable, “The new embassies…are big and they are different. In some countries these massive structures symbolize what we have in power and plenty, as opposed to what they have not.”417

Robin’s thorough study does not mention Canal Zone architecture. America’s civic architecture situated nine degrees above the equator, surrounded by the nation of Panama, was unique because of its context. It is debatable whether the imprint remaining after the Americans left is a distinctly American one. Usually, those who colonize often leave behind certain markers. In Panama, there is no language or religion left by the Americans, nor does the greater governmental political structure, legal system or even the culinary style emulate the US. Significantly, the use and mission of the Canal Administration Building remains the same from the day of the Canal’s completion: to facilitate the efficient operation of the Panama Canal. Functional identity and definition have stayed with the building, though the nationality of the owners and workers has changed. During the American operation of the Canal, the architecture conveyed a meaning of American power for Americans in the enclave, and to all other nations who looked on. It upheld and advanced the civic order for worker residents through

416 Robin, 6.
influential images and institutions. When the context changed, the meaning of the architecture changed.

**Focusing on Function**

The civic architecture of the Panama Canal Zone, like the Canal itself, did exactly what it was built to do. The new facilities were to help transform conditions of "the most forbidding, dirty, unhealthy places on earth," as John Stevens stated in 1907, into a model American tropics where "an American may leave home without feeling that he is going into an exile of danger and intolerable discomfort."418 The civic center building project was an opportunity to display American productivity, manufacturing prowess and the ability to manage. By association, the facilities of Gorgas Hospital meant that the early Canal workforce faced and defeated tuberculosis, bubonic plague, malaria, dysentery and yellow fever. The investment in Gorgas Hospital facilities conveyed a remarkable concern for the health and welfare of laborers. When canal workers could not acquire food enough to nourish, planners instituted a commissary system. In each instance, the buildings supported the advancement of the American canal effort.

Adapting contemporary architect Louis Sullivan's phrase, portent of modernism, "form followed function;" the design supported the function. The civic architecture of the Panama Canal Zone was also the only US built architecture on leased land. It is the only civic architecture built abroad for use by Americans for a purpose other than for diplomatic or military purposes. It stood for a formal foreign presence unique in function

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418 Morrow 1921, 179, quoted in Frenkel (1992) 266.
and location. When the second governor of the Canal, Charles Magoon, petitioned in 1905 for the civic model of the Canal Zone to be tailored for use as a lesson for a new democratic form of Panamanian government, Canal Commission Chairman Theodore Shonts replied, "forget it, we're here to dig the Canal, that's all."\(^{419}\)

The civic architecture of the Panama Canal Zone was not a display of calculated cultural imperialism based on the primary function for which it was designed. Americans constructed and intended it for American consumption. Americans would use this built environment, and it would also be imported into the national consciousness as part of the national pride expressed when the Canal project was completed. An immense interest in Canal-building proceedings, even amongst anti-imperialists grew during the later years of construction to last into the era after completion, as is well documented by Alfred C. Richard in *The Panama Canal in American National Consciousness, 1870-1990*.\(^{420}\) Theodore Roosevelt contributed to the heightened appeal when in 1906 he made the first visit abroad by an American President to review the Big Dig. The effort became a great source of national pride and vicarious adventure for many Americans, and they expected the whole enterprise to sparkle. William Scott records in 1913, "After all it is no one man, but the Spirit of Americanism, indomitable and triumphant, that we admire in Panama."\(^{421}\)


Panamanians and others would also look upon the civic center and have their own impressions and associations. However, politicians and statesmen of the construction period did foresee a role as a prominent exhibit where the United States, Panama and the rest of the world converged and diverged. The Old world was to take notice of the attributes and capabilities of this new world power, the United States. America’s proselytizing of a systematic concentration on progress, innovation and ‘the positive’ offered a blueprint of the ‘future possible.’ Here, American goods and services could be prominently demonstrated. The builders precisely calculated the civic architecture, exterior and interior, for the function it would perform. The Americans acquired land rights for the Panama Canal for its function, just as they built the canal itself, preeminently for function. The civic architecture is a functional architecture, but not of pure practicality, or without aesthetic ambition.

The Balboa civic architecture and landscape built between 1910 and 1920 are demonstrations of City Beautiful optimism. They exhibited somewhat contradictorily, reform goals with commercial and political ambition. The Canal Zone was also a prominent setting in which to apply the techniques of the City Beautiful Movement. Demonstrated at the World Columbian Exposition in 1893, the St. Louis 1904 Louisiana Purchase Exposition and the 1907 Committee on Civic Centers of the St. Louis League, the trend was to utilize monumental buildings expressing the democratic ideal situated within a community cum neighborhood, civic center. It was a very public exercise of what Robinson described as “the science and art of city building” or otherwise, “city making.” This was a novel cooperation involving specialists—an architect, a landscape
architect, a sculptor-artist (muralist), and an engineer.\textsuperscript{422} It materialized one of the first American planned communities, a sure value or public good of a functionally unified civic center. An idea demonstrated early on at the Columbian Exposition, the unified civic center, built contemporaneously, parlayed the idea of America into positive physical form.\textsuperscript{423}

In the early twentieth century, consciously or unconsciously the United States was developing a leadership style that emphasized leading by example. The symbolic use of architecture was summoned in this assignment, and the civic architecture of Balboa may be seen as the premier exhibit.

In the Philippines, diplomats and builders embraced the idea that as the more advanced nation, the United States must extend a period of tutelage involving instruction and example to ultimately effect a “progressive civilization.”\textsuperscript{424} Just prior to the Canal commitment, the United States proceeded into competition with England and Germany for positions of command in Latin America, China and the Pacific. The choice to invest in the Canal indicated characteristics of an expansion policy seeking a commercial empire rather than a colonial model. What the Canal facilitated for American commerce need not interfere in the domestic political affairs of Panama.\textsuperscript{425}

\textsuperscript{422}Charles Mulford Robinson, \textit{Modern Civic Art or The City Made Beautiful} (New York: Putnam, 1903) 281.
\textsuperscript{424} Hines 200.
The meanings associated with the civic architecture of the Panama Canal Zone were not only socio-political. Two of the other implications of the civic architecture are related to its momentary metonymical status as the very essence of “The United States of America.” The innovations of technology and sanitation that were institutionalized in these buildings were themselves further explanation of the technological mentality that enabled the Canal. The entire effort demonstrated a newfound synthesis of technology from disparate disciplines in order to deliver a solution. The Canal meant American success and know-how. Likewise and by association, the supporting structures in the Canal Zone, particularly in the civic and administrative center should reflect the same unabashed success. The Canal spatially reorganized the world in shipping patterns and was a strategic economic and military asset to the United States. They had accomplished something spectacular and wanted the little tropical American civic center town to reflect this. The builders wanted to demonstrate and prove it worked and could continue to do so. The Administration of the Canal was to flow as smoothly and without mistrust as the waterway itself.

The performance of Balboa, though not as such a colonial city, illuminates one expression of America in the world at the turn of the twentieth century. It may be said that any process of cultural imperialism would only have been served up directly to Americans or others making a choice to live there, dwelling in Balboa and other towns of the Zone, and then it would be renamed nationalism. In the former Soviet Union, Moscow acted as a colonial urban model for other Soviet municipalities in the expansion.
of what architectural historian, Greg Castillo describes as "Stalinist empire." 426 As for the Canal Zone, only the Zonians themselves received the civic modeling. A member of the Society of the Chagres for residents of work histories of at least six years wrote the Zone was, "a school of citizenship...where individualistic Americans could learn community thinking." 427

Architecture of Imperialism

Edward Said's comments on the process of imperialism may be used to evaluate whether the civic architecture was a part of an American imperial scheme to dominate Panama. By being a space set apart with boundaries, Balboa civic center could reinforce control and strengthen its own political, social and health messages. He states that the main stage of the "process of imperialism" is culture in that "by predispositions by the authority of recognizable cultural formations, by continuing consolidation within education, literatures and the visual and musical arts." 428 The civic activities of Balboa and actions of the United States government never involved a dissemination of information or art to the people outside of Balboa. Keeping the US arts, literature and education, except on an exchange basis, confined to the Canal Zone acted as curb to cultural imperialism.

Gwendolyn Wright writes that much is known of European imperialism by "focusing on French colonial cities. The widespread endorsement of colonialism had as

426 Greg Castillo qtd. in Nezar AlSayyad 5.
427 Society of the Chagres, Yearbook (Balboa, Canal Zone: 1912) 51.
much to do with culture and imagery as it did with economic advantage and political structure."\(^{429}\) She also highlights a succession of municipal interventions typically brought by colonizers, including sanitation, industrial architecture and investment to provide “able workers and eager consumers."\(^{430}\) These do not match with the experience in the Canal Zone.

The imperial act that the US participated in was the promotion and sharing of technology and innovation alleged to improve quality of life that has extended to become globalization. The form of the US architecture and landscape when they were new supported an imperialism of the modern. It does not continue in that role because it is no longer modern. This would support the ideas of those who contend that the Canal was in fact given to Panama because it no longer was a source of power for the US, especially in light of the investment which was required for its maintenance.

Edward Said notes that the enterprise of empire depends first upon the expressed idea of having an empire.\(^{431}\) The cultural enterprise enables the formation of the idea. The United States had no plan or intent to neither acquire the balance of Panama or extend the Zone, nor use the country for a gateway for expanding the southern boundaries. No agenda was set up. Therefore, the architecture cannot have played a role in a plot that did not exist. Rather, it functioned to reinforce the isolation and insulation of the Zone. In the earliest days, the relative modernity of the Zone functioned as an

\(^{429}\)Gwendolyn Wright, 303.
\(^{430}\) Wright, 301.
\(^{431}\) Said 19.
isolated refuge in which to avoid the very real ravages of disease and other danger lurking outside, beyond the monitored areas.

It is worth reiterating that the Canal Zone was not technically a colony, nor a possession, nor a territory. It was classified as an “unorganized possession” of the US. Panama was not a country “taken” by any other country. Theodore Roosevelt, after his earlier boasting of taking the canal, wrote to William H. Taft in 1906, “We have not the slightest intention of establishing an independent colony in the middle of the State of Panama, or of exercising any greater governmental functions than are necessary to enable us conveniently and safely to construct, maintain and operate the canal, under the rights given us by the treaty.” With the choice to institute an American civil government in the area, the Zone stood distinctly apart from the country of Panama. Congress called the Zone a “zone”, not a territory, nor military reservation, nor colony. The Zone’s governor reported to the Secretary of the Army, but the Canal Zone Code applied to the Zone’s legal affairs, versus military justice. A zone is traditionally defined by the activities or occupations that are the specific business of those inside. The residents need not be separate and distinguished, but their pursuits are set apart. The Canal Zone experience was like a colonial encounter in that it did create a recognizable visual and organizational format unlike what was present before the encounter. It was unlike colonial efforts where adventurers, merchants, missionaries and soldiers arrived expressly to turn their relevant profits and remained to stake individual ownership.

432 Ninkovich 113.
The ninety-six year relationship continued as a pseudo-colonial experience. Zonians were not homesteaders settling, populating and developing a foreign land. However, the Canal Zone was a foreign site ultimately administered from a distant capital. Economically advantaged Zonians were a group with privileged political strength. Nevertheless, any analysis based on a purely colonial model of cultural imperialism is not completely adequate or relevant. However, the architecture by the very nature of its permanence contributed to and perpetuated the making of a colonial identity, especially when viewed by the Panamanians. The architecture and the built environment in its materiality contributed to or perpetuated a projected colonial identity to some Panamanians. Colonial architecture in general is usually a fusion of forms brought with the colonists, superimposed and fitted into the local geography. This was not the case in the Canal Zone; this architecture does not situate within the discussion of Imperial architecture in the sense of the architecture of Imperial China or Japan.

However, within an application of Ninkovich’s notion of an imperialism of modernity, the civic architecture spread the belief in modernism, and by extension, eventually a market-based economy. In this definition of imperialism, the architecture of Balboa could be described as an imperial one. As Ninkovich suggests, the desire for the modern way of life has been both the precursor and catalyst for globalization. He argues that in the modern world, globalization replaces imperialism. Globalization is a very potent type of imperialism that spreads one culture over another. Balboa’s architecture was also the architecture of modernity, conveying technological and social

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434 Ninkovich 246.
435 Ninkovich 250.
innovations of the time, contributing to Ninkovich's notion of an imperialism of modernity.

The positive features of globalization are increased health standards, rights to education, etc. The negative features of globalization may be the loss of indigenous cultures. Its success in the twentieth century probably depended on the US at the turn of that century. The US was contributing to an empire of modernity, for good or ill.

Architectural Celebration of American Accomplishment

The completion of the Panama Canal was the first truly American national triumph and accomplishment. It symbolized all that was American nationalism in 1914 during a distinct period of nationalizing of American life. The Pan-Pacific Exposition of 1915 celebrated and articulated the pride of ownership in the triumph: "Dedicated to the men of brain and brawn of our country, whose matchless skill and inspiring courage made the dream of ages a reality in the construction of the Panama Canal."

"How wonderful to be an American in 1910...it was the country's youthful brashness in action" wrote one author. Showing little willingness toward cooperative action with other countries, diplomatic or otherwise, since 1898, the foreign policy was successful in Europe, Asia and the Caribbean. The Canal upheld the national interest. The feeling of security was strong enough to allow the compromise required in the


437 Richard 251.
issuing of Canal tolls. In the end, the Canal Zone, as demonstrated in its civic architecture was a good approximation of Bellamy’s envisioned nineteenth century American utopian community that survived most of the twentieth century. The civic architecture is an artifact of a specific system designed to provide the greatest good for the greatest number of people, efficiently, absolutely and thoroughly. As material culture, the designs reflect the ideals and aspirations of the Progressive mission into the new frontier of expanded commerce, technological innovation and the Pacific, with as Francis Bellamy wrote in his 1892 *Pledge of Allegiance*, liberty and justice for all.

The fundamental principle of architectural abstractions of an American spirit abroad was that careful design could change societies. The principle was applied successfully in the Canal Zone, but the main receptors and beneficiaries, were the Zonians. In the end, Balboa worked: Americans administered the Panama Canal proficiently from this environment for eighty-six years and in the words of one long-time resident, “the Zone’s lifestyle was small town USA...just a perfect little world.”438 One visiting observer of Zone life in 1913 wrote, “The dream of the late Edward Bellamy is given actuality on the Zone.”439 The Zone’s citizens were patriotic, mostly apolitical and “pretty much what Americans were supposed to be.”440

439 Abbot 328.
440 Carl Posey, “The Bittersweet Memory that was the Canal Zone,” *Smithsonian*, Vol. 22, Number 8, November, 1991: 158.
Post-American Presence Implications for Historic Preservation

When the United States ceded control of the Canal to Panama, the American civic architecture transferred as well. As Panamanians occupy their new buildings, certain heritage questions are raised. The two national entities share common sites due to their mutual history, but possibly with different connotations for each group.

The borders of many postcolonial states are vestiges of an era when a colonial administration was in control, with varying degrees of effectiveness, intervention and brutality. At the dividing line, there are a multitude of groups of divergent interests and multifarious alliances. With the cessation of a colonial administration and external political control, many of the hostilities are unleashed. Clifford Geertz writes of "nationalism within nationalisms" and notes that virtually every state emerging from colonial rule has suffered from provincial or separatist strains that are sometimes threatening to the newly-created national identity in whose very name the independence was won. An evocation of the past is effectively used as a call for a new future. However, as Hobsbawm reminds, in reality, although modern nations generally claim to be rooted in the remotest antiquity, they are both novel and constructed. Architecture and landscape, and the institutional rituals with which they become associated play starring and supporting roles in the invention of tradition. National identity is a glacially dynamic entity. It is important to consider the repeating role of antique buildings, and thus their preservation, in the development and formation of a new national identity.

441 Geertz 237.
442 Hobsbawm 13-14.
Effects of New Ownership

Symbol as a contextually based entity depends on interpretation versus dictation. It is though, as Vale suggests, “once built, major (government) buildings remain in place; it is the meanings associated with such buildings that never remain static.”\textsuperscript{443} Further, as urban historian Nezar AlSayyad maintains, “Colonial urbanism can only be understood in its true temporal framework. Once this framework ceases to exist, then its (urban) products can no longer be seen as colonial.”\textsuperscript{444} This implies that when the contextual narrative changes as it has in the Canal Zone, so changes the meaning of the architecture.

Architects and urban designers cannot determine symbolism for their products over time, especially as varied that associated with a nation. During the almost full century that passed since the American canal effort began, the context of the operation changed. The civic architecture of the Canal Zone has stood solidly under the broiler that is the almost equatorial sun, torrents of seasonal rains, and the functions of eighty years of Canal concerns. As Vale indicates, “observers from the vantage of a later time may know more about the past influence of architecture than those living within its corresponding period of significance.”\textsuperscript{445} The civic architecture is indicative of the rigid and durable structure that exemplifies and differentiates the Canal Zone enterprise. The world changed around Balboa, but like the built environment, very little had changed within the perimeter. The transformation for both came only after the function was

\textsuperscript{443} Vale 276.
\textsuperscript{444} AlSayyad, 41.
\textsuperscript{445} Vale 286.
changed, when no longer was the town and her civic architecture required for Americans to insure the efficient working of the waterway.

The ownership of the built environment has changed, but the buildings stand much the same as built. It will be interesting to observe if they will be inextricably connected with the smooth flow of the canal as time passes. Panamanians redefined the space; Americans are paying, overnight guests in the barracks they constructed a century ago; chain-link fences run between buildings forming discrete spaces. Panamanians are homeowners in houses that Zonians could never officially own.

Vale notes that in constructing monumental symbolic architecture, “designers must be conscious of the gap between the present and some more hopeful future. If the architect is too literal in adapting the iconographical preferences of some political ascendant elite, the buildings may enshrine for generations an image that does not retain the iconographical associations that inspired it.” Of course, these alterations of meaning are beyond the control of designers and architects when buildings outlast the society and culture that produced them.

In the early years of the turn into the twentieth century, Americans regarded the Canal Zone as part of the national identity, perception and imagination. It was an incorporation, but not a holding. The Canal Zone occupied a distinctive place in the American consciousness; upon the turn into the twenty first century, it has become more of a geographic ghost story. In this twilight time, other truths regarding colonial

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446 Vale 279.
architecture are informative; “They are expressions of vanished ways of life...of nostalgia for the past...of brutality. They are also symbols of the human spirit of discovery; of inventiveness, versatility and adaptability; and of a thirst for knowledge and achievement.”

In the Aftermath of the Americans

The involvement of colonial regimes in countries worldwide produces a built environment form reflecting the economic, political and social relationships of that space. The status of their colonial architecture features a variety of outcomes after their independence. One possibility is that the definition of the newly formed federation encompasses the built environment and the history of its heritage. There is precedent for this action in Sri Lanka where the Dutch-built walled city of Galle is preserved to add to the nation’s new vision of a national past. “While it is a monument to period of foreign domination, it is also a monument to the wealth, productivity, technology and craftsmanship of Sri Lankan society in the seventeenth, eighteenth and nineteenth centuries.” The built environment is fully integrated into the present interaction or set aside, isolated in a positive or negative memorial. It is also possible to choose to ignore and/or neutralize the value of the site and treat it as any other locale. The opposite action was taken by Koreans when they razed buildings from their Japanese era.

449 Logan 67. Reports the French colonial being thus displayed and developed in Luang Prabang, Lao PDR.
Another persuasive factor in the decision making process is the international tourism market. New owners configure the legacies belonging to former dominants and vestiges of given periods of significance to appeal to a generic toll-paying public. In a post-modernist type response, some agents have commoditized the remnants of the dreaded colonial past and new constructions of the genre have supplemented the old. The message of the colonial has been deconstructed, mollified and re-presented for another interpretation—economic gain.

The future for Balboa’s civic architecture remains unknown at present.450 Panama and the United States cooperated through the mediation of an international preservation organization, ICOMOS, to complete documentation of the Canal’s engineering history in 2003.451 452 Although there had been resistance to past efforts by Americans to document the Canal Zone, Blaine Cliver, Chief of the Historic American Building Survey and Historic American Engineering Survey, said he was positive toward the project. He stated that once everyone agreed that it was a shared cultural site and the specifics of each country’s responsibility, there was no conflict.453 Before the transition, the United States Department of the Interior documented many of the primary and secondary buildings in order to know the inventory and manage their maintenance.

450 Maria Isabel Chen, personal interview, 7 August 2003.
452 At the time of the relinquishing of the Canal, some 4,000 American-constructed buildings and engineering structures remained undocumented by the US Department of the Interior. After negotiations, the engineering structures are presently being documented to HABS and HAER standards in a three-year long project of shared effort, overseen by ICOMOS (International Council on Monuments and Sites). The architecture and built environment once again function symbolically a project of public, cultural diplomacy and communication between two nations.
453 E. Blaine Cliver, Chief, personal conversation, Panama, July 2002.
During the administration of Mireya Moscoso (1999-2004), a plan to house the Panamanian President’s offices in the Administration Building emerged. Though some of the Canal Commission offices have been removed to another site, a reused military base, the Administration Building continues to be used as headquarters for the Autoridad del Canal de Panama (ACP) for administration and maintenance of the Panama Canal. The Governor’s house continues to be the Administrator’s house. The housing complex along El Prado became Canal administration offices before the transition. Presently the ACP is vacating a portion of those and relocating to Corozal West, a former military base where logistical, positioning hub for maintenance and maritime activities.

At one point, the site was considered for a UNESCO World Heritage site nomination as a “cultural landscape” of universal cultural value. The choice of this particular category is reflective of the 11,000 years of cultural layering of the area. It also reflects extreme interaction with nature producing a natural biodiversity created most recently by the securing of adequate water to make the Canal operate. The site would be a single landscape net or mixed site, featuring archaeological remnants, hydrological systems, technological construction and its associated industrial and civic architecture. It is a setting occupied with evidence of significant developments and extraordinary events of many centuries. As an historic site, the Canal Zone is a monumental living witness of traditions within the common heritage uniquely unified. Yet, the nomination for UNESCO’s World Heritage status did not include the civic architecture of Balboa. In order to be a complete, authentic landscape of the drama and ethnography of this site, the
architecture for the ongoing function of the canal should be included to complete the narrative.

When areas are set aside as sites valuable to the narrative of the world's heritage, they are abstract, intellectual constructs pinned to the present material. Because each of these sites is actually out of its very original context, it suffers from an approximated recalled existence. Even if the site appears exactly the same as it was in the reference time, the observers carry with them generations of their own layering. The observers originate from an impossible vantage or time in relation to the viewed site. It is at best, by nature, an observer-based re-interpretation. Visually encountered data extrudes through personal correspondences and memory. Observers' responses to sites of significance are filtered and deposited in their emotional and moral consciences. Their axis of knowledge intersects with the axis of understanding. Assuming the world's people do have a universal heritage and it displays in these sites, care must be taken to present them authentically to their period(s) of significance.

In the Canal Zone the cultural layering of Panama's history continues. As in the previously noted mola methodology, the revelation of all layering may divulge a chaotic and indecipherable, certain inartistic rendition of a people's past. There is tendency for the new group to approach with a remembered invented past to stake some borders and certainly over against the past occupants—usually different and better.
AlSayyad’s words again apply: “Colonial urbanism can only be understood in the true temporal framework. Once this framework ceases to exist, then its urban products can no longer be seen as colonial.”454 The cultural effect of given world-structures when a structure has been developed within diverse or layered conditions may produce ambiguity or disparity in cultural effect, much in the same way a person memorizing a list in two languages may not remember which of the list items they learned in each language. It is questionable whether the individual can recognize which language is most relevant. Surely the list items themselves are the most important value. In preservation terms, a shared site is analogous to one word having different meanings in different languages.

In the case of Balboa, though there actually has been no direct Panamanian history to be layered, except as a derivative one. There are no previous land-use issues to resolve—places and cultures were already intertwined to make a give-back a possibly peculiar and irrelevant act. This may or may not make easier the memory distortion or fabrication of myth that occurs in an expansion of national identity. The lack of a real past that involved Panamanian habitation there influences the clarity of the process to decide on a future usage for Balboa’s civic architecture. Certainly, an examination of the meaning to Panamanians of this past and present built environment has value.

The present stakeholders must come to a balance of understanding between the global or universal (potential UNESCO World Heritage Site) and the local or particular (strictly pedestrian Panamanian) usage. As Logan suggests, these are issues to face in the

454 AlSayyad, Forms of Dominance 23.
discourse of cultural heritage in order for any area to survive as a vital entity, rather than a reduction of the authentic in theme parks or a handful of monuments. It is a valid concern that the degradation of this site might be based on inter-generational hostility, commercial greed and changing prevailing ideology of a political elite. Moreover, the strengths of the past can be built upon. The sooner Panamanians can see it as a legitimate inheritance, the sooner it does not have to be a rejected past but a brick in the wall of achieving a stronger national identity and beyond that, integration into a greater community. The affirming of a mutual cultural heritage becomes an instrument of reconciliation and rapprochement. Vale recapitulates that architects and urban designers cannot determine symbolism over time. Significantly, he adds “responsible capitol (monumental) architecture would work against the hegemony of any one group by careful crossbreeding or architectural parentage. Almost by definition, hybrids are hardier and more beautiful; yet however carefully they are planted into a landscape, there is no guarantee of a perennial bloom.”

Following Daniel Burnham’s instruction to “make no small plans...,” he added this directive:

...Make big plans, aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing asserting itself with ever growing consistency.

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455 Logan xix.
456 Vale 286.
Gone are the builders and the original occupants. Nevertheless, the buildings stand and do contain narrative. The message they contain is encoded as a sort of cultural and economic diplomacy. They are also artifacts *cum* monuments to the architectural style and landscape goals of the City Beautiful era. They represent a celebration of the birth and articulation of an American “can do” identity as they are substantiation of discipline, determination and application of new technology. As part of the Panama Canal enterprise, the architecture and landscape are evidence of a rendition of American foreign policy now past. And finally, they were also a performance of Theodore Roosevelt’s favorite adopted West African proverb, “Speak softly and carry a big stick; you will go far.”\[^{458}\] The question is whether the civic built environment of the Panama Canal Zone was the *soft speak* or the *big stick*. The ambition of this research has been to show that it was both.

APPENDIX A

HISTORIC AMERICAN BUILDING SURVEY (HABS) FORMAT REPORTS
RAILWAY STATION

PANAMA CITY, PANAMA - CANAL ZONE RELATED
(FACILITY 1)

Location: Avenue B and Central Avenue intersection near Twenty-third Street and Caledonia Bridge, Panama City, Panama.

Significance: The Panama Railway Station is located in Panama City, adjacent to the Panama Canal Zone, Balboa Plain, Balboa Townsite, and Administrative Center. It is associated with the early establishment and build-up of facilities and personnel for the administration and efficient functioning of the Panama Canal.

Description: The railway station is a two-story, rectangular, concrete structure with a three-story wing in the rear built in Italian Renaissance style. A steel frame construction, the built structure followed original plans with subsequent renovations. All floor slabs, wall columns, and girders were made of reinforced concrete. The steel framework of the rear wing was re-used from the former station that stood north of this location. Situated on a concrete slab-on-grade foundation on concrete piers, the overall dimensions are 170 feet length by 55 feet width, 36 feet high. A row of six Doric columns, each 27 feet high and 3 feet 4 inches in diameter support the loggia. The walls are composed of terracotta, hollow-tile blocks. The primary exterior material of the walls is cement stucco, tinted with mineral colors. The building was originally constructed as the permanent railway station to replace the original steel-frame building, located south of the present station.

On the anterior, the loggia colonnade is flanked symmetrically with vestibules, 20 feet wide x 36 feet high, through which entry is made. These open into the interior waiting rooms; each have adjoining one-story porte cochere, 20 feet wide x 18 feet high. Triangular, unbroken pediments, supported by two Doric columns (also made of the “Natco” hollow tile), 27 feet high and 3 feet 4 inches in diameter crown the vestibule sections. A belt course treatment extends around the entire building located at the floor elevation of the second floor level. The fenestration of the first floor is a row of seven, 10 feet 6 inch x 4 feet 6
inch, vertical, 6 light, double-casement windows set within bracketed cornices. The second floor has seven, 7 feet 6 inch x 3 feet, 4 light, and double-casement windows set within bracketed cornices. On the second level within the vestibules are semicircular windows, filled in with cast concrete grills, admitting light and air. Electric clocks are located in each pediment.

On the rear of the building, pilasters that support a gallery at the level of the second story replace the columns. This gallery and a concrete balustrade continue down the sides of the rear wing.

The main structure has a flat roof with overhanging closed eaves, dentiled cornice and roof line balustrade, with vase-shaped vertical elements. The rear section features a hipped roof with overhanging eaves, covered in red concrete tiles. Present condition of the fabric is good.

The main building first floor interior plan includes a 30 feet x 40 feet first-class waiting room on the south side of the station, separated by a closed partition from the second-class waiting room, also 30 feet x 40 feet. This area also contains one ticket office on the track side of the station and a newsstand on the street side. The floor is concrete covered in Welch floor tiles in the waiting rooms. The baggage room floor is concrete and toilet rooms have white tile floors. The public toilets on the first floor have a 5-foot wainscot of sanitary glass. The ceilings are of a white stucco with decorative designs embedded in plaster and stucco material. Finish elements are of mahogany. This wood species and the cypress of the second floor were selected for their ant/insect repellent properties. [Appendix 1] The principal items of equipment included are the fittings of the newsstand, glazed wall cases, counters and bulletin boards, two in each vestibule in each waiting room. Four of the six are fitted with a train "annunciator device" in the upper portion. Also each vestibule is fitted with gongs, controlled from the alighting platform, which announce the departure of trains. Ice water is piped throughout the building from a central cooler located in the baggage room. Lighting and power circuits are controlled from the closet of the main stairs.
In keeping with railroad tradition, bachelor quarters for employees are located on the second floor. The second floor is divided into eleven single rooms, 12 feet by 13 feet in size, all opening on hallways, with one toilet for the occupants. Each room is fitted with two electric lights and a built-in wardrobe. The walls and ceilings of these rooms are plastered, and the base and trim are of bands of Keene's cement. The window sashes and frames, door frames and wardrobes are made of cypress wood. Stairways ascending from the back of each waiting room make access to this upper floor section. [Because iron and steel corrode so rapidly in the humid tropics, they have been used sparingly as structural or decorative material, with bronze being substituted whenever practicable.]

The train platform and shed are accessed by ramp (6 percent grade) from the waiting rooms. The baggage room extends at right angles from the main structure. The baggage room is a three-story configuration, utilizing a mezzanine. The first floor is for baggage handling, and the third floor is employee quarters. There are fourteen double rooms, 12 feet 6 inches x 25 feet in size and two single rooms 12 feet x 13 feet. Two hallways, one on each side, extend the length of the baggage room section and on the outside of the building front, there is a narrow veranda.

The station was constructed by the Central America Construction Company, Ltd. of Colon. Their building plan included razing and re-use of the steel structure of the old station. The Panama Railroad furnished the bronze lighting fixtures, electric clocks, and ticket cases, seats upholstered in cane for the first-class waiting room and of wooden slat for the second-class waiting room. Mr. H. E. Bartlett, building architect, also designed these items. The mahogany seat ends in the first-class waiting room were made at the railroad carpentry shop.

The setting of the Station is located in an urban part of Panama City. It is surrounded by sidewalks, curbs, bridges over the service road, and a macadam road built by Isthmian Canal Commission municipal engineering forces. Storm water drainage is accomplished by means of a "yard drain" which collects rainfall in the railroad yard. The width of Central Avenue at the foot of the ramp leading to
Caledonia Bridge has been increased by four feet for easier approach. A triangular park bordered with tropical foliage and plantings is located opposite the station.

**Historical Context:**

H. E. Bartlett, as architect of the Panama Railroad Company, was the architect for the Station. The original drawings for the Panama Station (Passenger Station at Panama) are dated April 19, 1912 and construction was completed in August 1913 at a cost of $81,688, as stated in the Canal Zone Data Base.

The office of the trainmaster and other administrative offices of the Panama Railroad were moved to this station from Colon in March 1914. Though the location of the station is inside Panama City, Americans constructed the new station primarily to serve the needs of the Canal Zone and function of the Canal, and then all other commerce.

In the planning and design of the Panama Station, much attention was given to the civic needs and order. The carriage and service roads in the grounds formed an integral focus of the layout, “preventing congestion and confusion by keeping all vehicles and pedestrians on a given road or sidewalk moving in the same direction.” *(Canal Record, Vol VII, No. 36.)* One-way delivery lanes were utilized. To protect passengers from tropical downpours, a 13 foot roof projection covered the discharge and alighting platforms. As certain incoming trains have, on the rear, an observation car, or a hospital car bringing patients from the outlying regions to the Ancon hospital, there is a direct passage designated to the waiting ambulance or public carriages.

The very placement of the baggage rooms was determined by the order of the railroad trains: irrespective of the direction in which these are destined, first-class coaches travel on the southern end of the train and the second-class coaches on the northern end, with the baggage car in the middle. The baggage room, therefore, is on the axis of the building, adjoining the alighting platform and at the same level. Handling of baggage can therefore be independent of the movement of the passengers.
Also in consideration of the climatic conditions, ample carriage accommodations are protected from the weather and roofs or porticos cover all open passageways.

The design and treatment of the Panama Station is a "free adaptation of the stucco architecture of Palladio as found, ...in Vicenza and nearby cities of northeastern Italy." (Canal Record Vol.VII, No. 36).

The Panama Station is now occupied by the Museum of Panamanian Man (c. 1976), a museum administered by the Panama National Department for the Historic Heritage, which comes under the National Institute of Culture. One UNESCO document comments, "the museum occupies premises that used to be the terminal station and administrative centre of the former Panama Railroad Company, the establishment of which, in the mid-nineteenth century, marked the beginning of a long period of North American economic and cultural domination of the isthmus." (Cultural Policy in the Republic of Panama. National Institute of Culture. Paris: UNESCO, 1978).

Photos:

Panama Railway Station, 1916.
Sources:

The original drawings for this building are stored at the Departamento de Ingenieria y Proyectos, Autoridad del Canal de Panama (ACP), Plan Files. The Museum of Panamanian Man also owns a copy of the plans.

Information on use of buildings obtained from *The Canal Record, A History of the Panama Canal* by Ira Bennett, *La Arquitectura de la Época del Canal*, Samuel Gutierrez and original building plans.
ADMINISTRATION BUILDING

BALBOA, PANAMA CANAL ZONE
(FACILITY 2)

Location: 1 El Prado
Northwest slope of Ancon Hill
Canal Zone
Balboa, Panama

Significance: The Administration Building is associated with the early establishment and build-up of facilities and personnel for the administration and efficient functioning of the Panama Canal. It is reported in the Canal Record that the location of the Administration Building was “well fitted to the purpose and character of an edifice that is to guard and direct the interests and operation of the Canal, overlooking...the first permanent town of the Zone.” (Canal Record, VIII, 12/30/14, No. 19, p. 183)

Description: The Administration Building sits on a 75 feet high mound created from 36,500 cubic yards of spoil above the fill-plain town-site, itself raised 14 to 20 feet above original grade. Original construction notes describe its setting, “30 feet back of the former triangulation station on Lone Tree Hill.” It is constructed in an E-shape plan in order to maximize the efficient use of natural light and concentrate the usable floor space for offices in order to meet the extensive requirements. Lord, did, however proceed without knowing how the offices would be laid out. The three-story structure has a length of 328 feet 2 inches x 183 feet 8 inches width at the wing ends and the total building area at the grade line is 23,000 square feet. The steel frame superstructure construction, erected under the supervision of American Bridge Company, is built on a concrete slab laid on decomposed rhyolite, on reinforced concrete piers. The walls are composed of concrete tile blocks made in the then revolutionary method at a nearby location, and covered with cement stucco. There are reinforced stone concrete floor arches, four inches thick, and reinforced sawdust concrete roof arches 4 inches thick. “All stairs throughout are of reinforced concrete. The curtain walls are of concrete blocks and the spandrels of poured...
concrete; the roof cover is hard burned clay tile, dark red in color...of the Spanish S pattern, fastened to the sawdust concrete slab with hardened copper nails.” (Canal Record, 12/30/14).

Exterior:
The Italian Renaissance design of the exterior of the building “adapts the Renaissance of the Fifteen Century in Italy to modern building conditions, materials and to local requirements.” (Canal Record 12/30/1914). The front of the Administration Building faces the Canal and Prado area. However, the extreme hill grade necessitated carriage entry via the porte cochere on the central portion of the building. Above the main entrance there is a plain inscription within a V-shape inset, reading “Administration Building, Panama Canal 1914.” The original plan called for a decorative title panel in honor of the Canal builders, with representatives from different groups depicted. This and a decorative marble mosaic of the Canal seal in the center of the rotunda floor were vetoed by the engineers and backed by Goethals as too expensive for the project. The Canal Zone crest with 10-inch letters, “U.S.” and “C.Z.” rests in a cartouche, placed at the third story level. A square pier colonnade continues along the front and end. End bays and pylons enclose the entrance facing Sosa Hill (East). The porte-cochere covers the principle entrance to the central wing. The rear of the building, with its central portion and two end wings encloses a patio court, originally built to serve as a carriage entrance to the building. A square pier colonnade along the front and end elevations, rising from first floor level to second-floor ceiling was included in the design to protect the building against sun and rain. A two-storied colonnade of square columns supports the third story wall and the eaves of the roof. A Palladian window with inset French doors illuminates the third story landing of the central staircase.

Porches protect the rooms from the sun’s direct rays. Numerous large windows provide natural ventilation, to prevent stagnation of the humid air of the rainy season. The overhang of the eaves substitutes to provide a porch effect on the third floor.

Wide concrete paved terraces, bordered by panels of lawn and bounded by concrete balustrades surround the building on all
sides. At the center of the court side is a large circular lawn panel surrounded by the road that leads to the _porte cochere_ and the Paymaster’s and Collector’s offices in the wings. The road is four feet above the main court level at the ends of the wings, necessitating a retaining wall. A balustrade adds detail and texture to the wall. At the center of the ends of the wings, a flight of steps leads from the upper level down to the main court. From this point, concrete sidewalks connect all the entrances of the building with the main roadways and to the railroad station.

The paved terrace at the front of the building facing Sosa Hill is 50 feet wide; the southeast side is 16 feet wide and the northwest side is 12 feet wide. A balustrade constructed of pre-cast base moldings, pedestals, balusters and cap moldings forms the wall. Formed by casting in plaster moulds on site, these are composed of reinforced concrete. These were positioned, hooked together with steel, grouted in and pointed. These balusters are four and one-half inches square, with plain bases. At the foot of the main front steps stand cast iron lamp standards, placed on the pedestals of the balustrade. The entire Administration Building plant displays some 1,000 of these same balusters.

A flagstaff stands at the center front of the Administration Building. Constructed of reinforced concrete, it is positioned at the head of the stair from the terrace to the Prado town site and rises to 167 feet above sea level. It was exclusively designed for the project by Mario J. Shiavoni, assistant to architect, Austin Lord.

At the flagstaff, a 40 feet wide concrete stair descends a total 113 steps to the Prado. The stair has four flights and two ramps (which extend from the lowest platform of the main stair down to the plaza level). Two ramps (fortified as retaining walls) extend from the lowest platform of the main stair down to the plaza level. The top semicircular flights are 20 feet wide and have 18 steps each, while the three main flights have 30 steps each and are 40 feet wide. The proportion of rise to tread is six inches to 13-1/2 inches. The water collected on each platform drains into the earth terraces that border by cement guttering on either side of the steps. Cast iron electric lighting standards stand on the lower ramp walls and at each side of all
the landings. The lighting units are similar to those utilized for
Canal locks control houses and are designed either by Shiavoni or
Lord.

The front and outer sides of the wings show a basement story 5
feet above the ground. Unusual to the tropics, the
Administration Building basement runs under the entire
structure made feasible by the superior drainage of the site.
The rear of the building, with its central wing and two end
wings, encloses a large court, originally serving as a carriage
entrance to the building.

**Interior:** The layout is of three floors, each continuing into right
and left wings of offices, separated by a central rotunda 43 feet
in diameter. The entire floor area is 67,000 square feet, plus
toilets, elevators, stairways and hallways. The basement
extends the entire structure and has 20,000 square feet of
usable space, specified for archival storage.

Floors in the offices are of yellow pine (fastened to redwood
sleepers, imbedded in cinder concrete). In the hallways and
porches, they are of red Ruabon quarry tile (6”x 6”). Walls and
ceilings are lime plastered (plaster of Paris), except above the
rotunda where it is hard cement plaster. Doors, frames, sash
and trim throughout are of polished mahogany with brass
hardware. It is unknown whether the fine quality mahogany is
from the supply in the local jungle or was shipped from another
source. A limited mill did exist for Canal lumber needs.

**Rotunda:**
The floor of the rotunda is a mosaic tile. The rotunda area on
each floor has a lighted clock placed in the moulding trim
portion. The walls of the rotunda are of hard cement plaster
with a moulded base and rusticated courses up to the second
floor level. From this point upward, the walls, stringcourses,
balconies, window architraves, cornice and dome are of lime
plaster. On the first floor, four doorways flanked by marble
columns, plus four round-headed niches break the wall space.
At the second floor, there is a window over each of the large
openings below, fronted by a balustrade. In the panels between
the windows are four mural paintings by William Brantley Van
Ingen (1914), esteemed and famous for his work in the Library
of Congress and the Philadelphia Mint. Depicting a history of
construction days, the titles of these panels are: The Building of a Lock Gate, Construction of a Lock, Construction of Gatun Dam and The Digging of Culebra Cut. Van Ingen created the panels in New York and brought them to Balboa for installation. The style is impressionistic and monumental, depicting the contrast of nature, human beings and industry. Goethals requested and championed the murals as celebration of and tribute to the workers of the Canal. Van Ingen completed the assignment on a budget of $25,000 ($25.00 per square foot).

The stair treads and risers are of Tennessee marble, the stringer is of Verde Antique marble and the balusters, base and handrail are of mahogany, all turns flowing continuously without newels or other breaks. At the walls, a Verde Antique cheek piece and cement wainscot follow the rake of the stair. (Canal Record, December 30, 1914.) One passenger elevator, approximately 6’x 6’ is located within the stairwell area. This Otis Company elevator serves the offices of each wing.

The Administration Building housed the office of the Governor, who exercised complete executive and administrative authority and jurisdiction over Canal affairs and personnel, subject only to the order of the President of the United States (exercised through the agency of the Secretary of War). The Governor’s Executive Department and Executive Office of the Panama Canal were charged with maintaining the files, records and libraries, all matters relating to personnel, maintenance and supervision of property accounting for all departments of the Canal and railroad, the surveying of obsolete and worn-out equipment, the compilation of data for wage adjustments, mortality statistics, and shipping statistics, all dissemination of public information for the Canal, the publication of rules and regulations, operation of clubs and playgrounds and general office business of the Governor. To carry out the work, administrators divided the Office into seven bureaus: Correspondence, General, Personnel, Property and Requisition, Records, Statistics, and Clubs and Playgrounds.

The base slabs were of reinforced concrete and then the floors were covered with redwood and a cushion of cinder concrete and finished with long leaf, yellow pine flooring.
Manufacturers in the US sent window frames and sashes of the basement, and 1st and 2nd floors.

Utilizing modern innovations, the architect required installation of piping for a vacuum cleaning system. Electric wiring, a telephone system and the electric elevator added to the use of modern efficiencies. Interior plumbing served all floors with cooled water fountains and bathrooms. Toilets were race and gender segregated.

The basement level is devoted to the storage of records, for which purpose vaults are located, plus archival files and other supplies. Additionally the Meteorological and Hydrographic Section was located in the northwest corner, in which Bosch-Omori seismographs stood ready to record any earth tremors. (These instruments rested on solid concrete foundations that continue down to bedrock. An air space where they pass through the floor insulates them from the building.) The southwest corner was devoted to the blueprint room, utilizing artificial and natural lighting for the majority of all Isthmus blueprinting needs. A dumbwaiter connected this space with the main drafting room on the third floor. Nearby this room is the Accounting Department, featuring a fireproof vault and files. An addressograph and a small printing room for in-house needs are adjacent. Nearby is also a telephone section. Located under the rotunda a large fireproof vault houses the most valuable records.

The office of the chief dispatcher of the Panama Railroad was located on the third floor of Wing B, complete with the master clock synchronizing all timing clocks on the Railroad.

On the third floor south wing was located the Balboa Heights telephone and telegraph exchange switchboard, consisting of three sections of the Western Electric Company’s relay type switchboard No. 1-N, battery operated by eleven cells of Electric Storage Battery Company’s Type A. E. battery. 840 lines were available, with a maximum capacity of 2,800 multiple lines, and eventually connecting all telephone systems within the territory between Panama, Balboa and Corozal.
A 40-drop annunciator was accessible on the desk of the chief correspondence clerk and six annunciators for messenger service distributed throughout the building. Drops were located in each wing on three of the main floors.

When the construction was completed, the editor of the Editor of the Canal Record commented, "Such a varied collection of functions has seldom before been assembled under one roof and the building is probably unique and not liable to be duplicated until some undertaking as great in magnitude as the Canal is to be consummated."

Dark red vitreous tiles, manufactured by the American Cement tile Manufacturing Company cover the low pitch hip roof. A concrete-sawdust mixture served as the base-coat before application of the tile. (Canal Record Vol. 7. No. 10 p. 92.)

Natco hollow tile blocks and reinforced concrete walls are assembled around the steel frame structure. Cement stucco covers the surface of the blocks. Goethals brought Albert Pauley, who had developed this process, to the Canal to oversee establishment of a local plant and its functioning.

Doors and Fenestration:

Seven equal bays, 6'-8" x 37'-5-½", flank both sides of the entrance. Windows are set in the bays on all three floors. The first floor windows are casement windows, each 10'-½" in height x 13'-1/2" in width, 4 panes, 2 windows together and these paired in 4, filling a space 6'-8" across. There are 56 windows like this on all sides of the first floor. The first floor also has double hung sash windows (2) and French doors (4) and 10 doors of 2 wood panels and 6 window panes, surrounded by 4 side lights, and set within a pediment. The second floor windows are casement windows with 4 panes, extending 9'-4-½". 56 of these windows are on the second floor. The third story windows fill a space of 8'-½" in height, 3 panes. On the entire third floor, there are 72 such windows. The basement windows are casement: 136 are 2 panes set inside openings of 3'-9" x 2'-4"; 16 are 2 paired frames or 2 panes each, set inside openings of 4' length x 2'-4 1/2" height. 1 door is a French door with 6 glass panes in the top portion
and wood panels in the bottom. All fenestration and doors are fitted with either glazed glass or copper screen. All wood sashes and door panel and surround wood is mahogany.

There is use of ceiling ventilators, located at the roof line, under the roof above each of the highest windows.

The Dome interior is entirely of wood except for the center of amber chipped plate glass.

The utilization of natural light with the particular fenestration was so effective that Commission photographer Red Hallen, using a glass plate negative system, could photograph employees on the job.

**Other elements of significance:**

The three floors are divided into office spaces, organized around a central rotunda, 43 feet in diameter, and its dome that is 28 feet 6 inches in diameter. The first floor rotunda space has 8 Swiss Cippolin marble columns with marble border (pink Tennessee marble), placed equidistant around the perimeter. Each corner has an arched niche and walls are granite blocks. The first floor rotunda has a marble mosaic design emanating from the center. *(Canal Record Vol. VII, no 25. p. 244)*

The ceiling is of white plaster ceiling; walls are of cement plaster. 2nd floor has cement wainscot and a marble base.

In the first floor are 2 vaults, each 10’-11- 3/8” x 9’-11/16” x 12”- 8- 3/8” height, with steel plate shell walls. Two vaults in the Paymaster’s office and one in the Collector’s office were reported the “most modern construction”, burglar and fireproof. “they rest on a bed of steel rails interlocked and connected to form a solid steel floor, sidewalls and roof...The main door is five inches thick and weighs about four tons. It is resisting the oxy-acetelene torch, while the others are designed to be drill proof. The edges of the door are tongue and grooved, ground to a perfect fit, and have a fibre packing so
that no tool can be forced into the joint between the door and its jamb when closed... a pressure system has been installed to the outer face of the door, which forces the door to a dead fit, making it impossible to get even a knife blade or liquid explosives into the joint.” (Canal Record. December 30, 1914.p.183.)

Historical Context:
The excavation and building up of the site commenced February 1913. The Fifth Division Army Department of Construction and Engineering graded and poured concrete piers, preparing the foundation for the United States Steel Products Company to start erection of the steel frame on June 18, 1913. Even as the foundation was settling, the architect and drafters produced and signed final working drawings.

The architect completing the original plans for the Administration Building was Austin W. Lord of New York City and the on-site assistant architect was M. J. Shiavoni, followed by Samuel Hitt. Work on the site finished July 15, 1914, approximately a year after the first steel beam was put into place. Total cost as budgeted was $375,000. In 1911 Goethals directed the centralization of Canal administration to this location in order to provide space for 210 employees and the administrative records. He wanted this building to be surrounded with the best buildings; he thought that better coordination would result from this centralization. (Goethals’ statement, 10/26/1911 (US Congressional Hearings No. 20, p. 76)

The designated purpose of this Administration Building was to concentrate the offices of the various departments of The Panama Canal under one roof “for the sake of efficiency and economy and the convenience of the general public which has business with the Canal.” (Canal Record, Vol. VII. No. 19, p. 181.) It is the “center of power” for the management and function of the entire Canal Zone property and operations. Previously, administrative operations were decentralized to the major canal construction sites, plus an administration building in Panama City, loaned by the country of Panama. This plan for the building stood out from many others, as it supported maximum communication between offices. Equally important was the premium utilization of the available daylight intensity. Configured in an “E”, also to maximize land-space utilization.
(versus one long rectangular construction), the widths of the wings were figured precisely with the optimal light line.

The Administration Building, as administrative headquarters housed the work of the Executive Secretary who under direction of the Governor of the Panama Canal, also installed in the same building, managed employees' time keeping, post offices, customs, taxes, police and prisons, fire protection, the land office, schools, clubs, law library, custody of files and records, and the administration of estates of deceased and insane employees. His office performed duties of the Shipping Commissioner, all communication between the Republic of Panama and the Canal Zone and have charge of the seal of the Government of Panama. The Executive Office was divided into seven bureaus to carry out its mission: Correspondence, General, Personnel, Property and Requisition, Records, Bureau of Statistics and the Bureau of Clubs and Playgrounds. (Service Monographs of the U. S. Government, #44, 1924).

Photos:

Administration Building construction, 1913.
Administration Building construction, 1914.
Administration Building construction, 1913.
Administration Building construction, 1913.

Administration Building construction, 1914.
Van Ingen Murals, Administration Building rotunda stairwell.
Administration Building, 1915.

Sources: As of 5/2003 the original drawings for this building are held digitally in the HABS collection of the Library of Congress, Washington, D.C. The Autoridad Del Canal De Panama (ACP), Plan Files, Balboa, holds one set of original canvas drawings and digital images.
BALBOA ELEMENTARY SCHOOL

BALBOA, PANAMA CANAL ZONE
(FACILITY 3)

Location: Northeast end of El Prado
O'Connor Place and El Prado
Canal Zone Prado
Balboa, Panama

Significance: Balboa Elementary School is located within the Panama Canal Zone, “Balboa Plain”, Balboa Townsite, and Administrative Center. It is associated with the early establishment and build-up of facilities and personnel for the administration and efficient functioning of the Panama Canal.

Description: The building is a three-story, utilitarian, rectangular, permanent concrete structure built around an interior courtyard, with minimal detailing, suggesting a modified Italian Renaissance style. A steel frame construction, the built structure followed original plans with subsequent minor renovations. Situated on a concrete pile foundation, the overall dimensions are 151 feet 4 inches length by 117 feet 8 inches width, 42 feet 2 inches high and the walls are 6 inches thick. Two small wings are placed at either end of the façade with a recessed central block in between. The building was originally constructed as the permanent school to replace the original wood-frame building.

Present condition of the fabric is good. The walls are made of hollow concrete blocks and reinforced concrete. The primary exterior material of the walls is stucco. The roof framing is of steel and wood and has a hip(s) on gable roof of dark red vitreous tile with overhanging eaves, and eyebrow dormers placed on the hips of the roof.

On the anterior, a loggia on each floor is flanked symmetrically with end walls of the right and left wings. The corners of these walls and the walls adjacent to the projecting loggia are heavily rusticated. The intervening wall surface above this is treated with a column effect. The two flanking ends have pilasters separated by blank wall.
A band course treatment extends around the entire building located at the floor elevations of each level. The court treatment is very simple: The first course of the treatment is arched, while the second and third are have a column effect articulated as 9 structural bays, accentuated by pilaster strips.

There are eight pilasters on each long side of the building, plus the four corner-squared pilasters. The rear of the building mirrors the front with the exception of omission of the colonnade.

The fenestration of the first floor, east and west sides, is a symmetrical row of four, vertical, double-casement windows on each side of the middle doorway. Windows on floor two are two-paired horizontal, one-over-six hopper windows located within each of the eight bays; on the third floor there are two-paired, one over four hopper windows. In each of the flanking wings, there is one group of horizontal casement windows, three-over-four on the second floor and three-over-five on the third floor. All windows are clear glass.

The front door is approached from six concrete steps, which run the length of the arcade. A concrete sidewalk leads to the stair. The arched entry has a cast and wrought iron, double, split hung gate crowned with a grille in the configuration of a fanlight, based on concentric circles.

The interior first and second floors contained the rooms for the grammar school grades, plus the principal’s room, teachers’ room, library and supervisor’s room. The third floor functioned as the high school division, equipped with classrooms, science laboratory and study, a commercial division classroom and assembly room for 200 occupants. An innovation at the time of construction was the use of the open-air lunchroom, located over the entrance loggia.

“...The buildings will be fireproof and will contain all the modern conveniences of one up-to-date in the United States, such as sanitary fountains, providing a continuous flow of clear cold water from a cooling plant within the building; large airy rooms with light coming from the left side only,
the glare of the sun being diffused by ground
glass panes in the upper portion of the window;
steel window sash, the windows being pivoted to
facilitate ventilation; the walls of classrooms to be
tinted a neutral color to avoid irritation to the eyes
of pupils; blackboards will be of slate instead of
composition."¹ Multiple toilets with vertical
flush plumbing and water fountains are installed
on each floor. The floors are of yellow pine wood.

Historical Context:

The original drawings for the Balboa School are signed by
architect, Samuel M. Hitt and dated 1913. The original
conception of the building plan was probably initiated by
Austin Lord as he envisioned the comprehensive civic
center requirements. The school is in the academic
neoclassical renaissance style with elements of the Spanish
colonial. The configuration around an interior courtyard
follows the Palladian foundations put forth at the American
Academy. This is very successful and efficient for a
unified school environment. Construction finished in late
1914 and the class of 1916 numbered 16 students. The
construction of this elementary and "full four year" high
school in the Prado civic area testified to the intended
permanence of the American presence. By 1912 there were
4,064 wives and children in the entire Canal Zone. The
inclusion of the school indicates an understanding of the
importance of educational access for the fledgling
population. An educational center was to be included in all
civic planning. In this microcosm of American life, the
Balboa School is an exhibit of a Progressive era American
value supported and institutionalized. Its presence is an
acknowledgement of a developing American civil right
made manifest in this model civic community. At the time
of completion, Balboa School was designated for a white
student population.

Until 1941 when the high school was constructed across the
street from Balboa School, this building housed classrooms
for all grades. At that time, the Balboa School became
known as the Balboa Elementary School.

¹ The Canal Record. Vol IX, 49. 416 (July 26, 1916).
The Canal Zone Data Base states that the Balboa School is built according to original plans.

**Photos:**

Balboa Elementary School.

Balboa Elementary School.
Sources:
The original drawings for this building are held as digital images and on canvas by the Autoridad del Canal de Panama, Departamento de Ingenieria y Proyectos.

Information on the use of buildings is obtained from The Canal Record, A History of the Panama Canal and building plans acquired from Departamente de Ingenieria y Proyectos, Autoridad del Canal de Panama (ACP), Plan Files.
BALABOA Y.M.C.A.

BALBOA, PANAMA CANAL ZONE
(FACILITY 4)

Location: Balboa Road
South Prado Area
Balboa, Former Panama Canal Zone, Republic of Panama

Significance: It is associated with the early establishment and build up of facilities and personnel for the administration and efficient functioning of the Panama Canal.

Description: The Y.M.C.A. is a U-shaped primary structure with two, setback, flanking one-story wings with Italian renaissance detailing and sympathies to the needs of tropical climate. The center portion of the U-shape is two-story, while the rear wing-portions are one story. These surround an inner courtyard. The U-shape of the floor plan has overall dimensions of 155 feet front length x 162 feet width and stands 27 feet high at the roofline. The building was built as planned as a permanent structure to replace a wooden clubhouse that stood in a nearby location. The original foundation is of reinforced concrete, placed on concrete footings set on fill material, on grade. The clubhouse features a hipped roof with projecting wings, overhanging boxed eaves, and red vitreous tile roofing. The left wing has a Spanish/Mission shaped roof parapet. Interior walls are constructed of steel and reinforced concrete, with Natco hollow tile curtain walls. The exterior walls are of concrete covered with stucco. Steel frame structural construction supports the building. On the first floor front and façades, pilasters separate nine structural bays. There are eight pilasters on each side of the building, plus the four corner columns. Within each bay on the front center facade except the center double-door opening, are four pivoting casement windows. The front façade faces east, allowing natural morning illumination. Each wing has two structural bays separated by pilasters, with windows placed in the bays. The second floor thirteen-window bays running the length of a balcony that is bordered with a balustrade of bowling-pin shaped elements. The “double-snug” front door is approached by a stair of 7 steps.
The central building interior is divided into a lobby, billiard and pool room, reading room to the left and right of the lobby, an “adult game” room and gymnasium, two refreshment rooms, lockers, boys games and reading rooms, service room, barbershop and swimming pool. A bowling alley is installed in the left wing. The Y.M.C.A. screened a ‘picture show’ each week in one of the reading rooms or games rooms. Outside, an 8 foot arcade follows around the entire perimeter of the building.

On the second floor a 10 foot wide arcade runs the front length and continues on as an 8 foot arcade and corridor to surround a 104 foot 2 inch auditorium with stage, two toilets and a motion projectionist room. The rest of the second floor is classrooms, a secretary’s office and interior central stairwell.

The interior flooring is predominantly the red tile manufactured in Panama, though yellow pine flooring covers the bowling alley. Other rooms initially housed carom and six-pocket billiard tables.

Windows are casement, set in wood frames. Wire screens manufactured by Wickwire Bros. originally covered all windows. Doors are set in mahogany wood frames. Over the front door is a cartouche bearing a designed Canal Zone motif.

The project was completed in 1914 at a cost of $52,000.

**Historical Context:** By Theodore Roosevelt’s decision, the clubhouses or recreation buildings of the Canal Zone were placed under the management of the Young Men’s Christian Association (Y.M.C.A.). Begun in 1844 in England, this organization encouraged (originally) Bible study and prayer versus life on the streets that presented as an implication of population displacement with the Industrial Revolution. From the start, the organizational philosophy crossed the rigid lines that separated all the various churches and social classes in England. This openness was seen as unifying force for the workers as well as a recreational opportunity. The Governor's annual report in 1921 reported, “The clubhouses serve well as stabilizers of what would otherwise be a constantly shifting, unanchored population, drifting inevitably to the demoralizing influences of the inferior cabarets and saloons of Panama and Colon…The
United States Government has created here a unique community of workers with no responsibility of citizenship as to government, no ownership of real and but little personal property, and no encouragement (in fact no possibility in the Canal Zone) to private enterprise of any kind. The money appropriated by Congress for the clubhouses is a necessary corollary to the living conditions resulting in the Canal Zone from our policies." [Annual Report, 1921, p. 73.] The problem of work-force turnover, especially amongst skilled labor, attracted the attention of Goethals and then the President, who responded with support of a recreational club system. Many Americans signed on for work just to actually witness the operation. When they earned enough in wages to support departure, they either left for the continental U.S. or looking for other adventure. As early as 1904, this activity prompted the Theodore Roosevelt to empower the Commission to expel anyone not necessary to the work of building the canal, men or women.

This Balboa Y.M.C.A. is a permanent replacement of a wooden plantation style structure that stood at the Steven's Circle south end of the Prado and was utilized for the same purpose until its demolition when this structure was ready for occupancy.

Photos:

YMCA Balboa
YMCA Balboa, 1920.

Sources: The original drawings for this building are on canvas and microfilm at the Departamento de Ingenieria y Proyetos, Autoridad del Canal de Panama (ACP), Plan Files.
ANCON-GORGAS HOSPITAL

BALBOA, PANAMA CANAL ZONE (FACILITY 5)

Location: Southwest of Gorgas Avenue, Northeast slope of Ancon Hill, Balboa Heights.
Universal Transverse Mercator (UTM) Coordinates: Northing 990640 to 990980.

Significance: The hospital compound is located in Balboa Heights, near the Administration Building, Ancon Hill, Zone, Balboa Townsite, Administrative Center. It is associated with the early establishment and build-up of facilities and personnel for the administration and efficient functioning of the Panama Canal. The hospital is distinguished as the center for research on and the prevention of malaria and yellow fever, the 'discovery' of histoplasmosis and the association of the site with Col. Dr. William C. Gorgas. The site is further significant for its exemplary monumental architecture, effective site plan and the vital role it played in Canal Zone operations.

Description: Samuel M. Hitt was the architect for the Ancon-Gorgas Hospital collection of buildings completed between 1915-1916. (The last permanent facilities at Ancon Hospital were completed and occupied in 1918.) Set on a 33 acre hillside site, the entire project cost $1,750,000. The full-service hospital was legally renamed “Gorgas” Hospital on March 24, 1928.

The initial cluster of eight buildings (finally fourteen) includes two and three-story, rectangular, concrete structures, often connected by round-headed arcades, with ornamental central roundels, designed in Italian Renaissance style. It was constructed on the same site as the French Construction era L’Hospital Notre Dame du Canal. In this one site, most all of the identifying features and details of the Italian Renaissance style are displayed. Continuous porches or loggias with extend a total linear length on all floors of 6,800 feet that connect three of the
buildings (Wards, Administration and Clinics, and Kitchen and Mess) under one roof, arranged in a triangular configuration. Aside from the shelter provided from rain and sun, the loggias addressed the particular challenges of the irregularities of the hillside setting. Of steel frame construction, the built structures followed original plans with subsequent renovations. The roof is of a wood truss system.

Situated on reinforced concrete or “semi-concrete” slab-on-grade foundations on concrete piers, the buildings have hipped roofs covered in red, vitreous tiles, with overhanging boxed eaves.

Roofs have semicircular, eyebrow dormers that are functional as vents.

The walls are composed of fireproof, terra cotta, “Natco” hollow-tile block curtain walls and partitions. The primary exterior material of the walls is cement stucco, tinted with mineral colors. Interior walls were either cement stucco or lime plastered.

The floors are of yellow pine, 6 inch square red ceramic tile, white tile or cement, depending on the assigned task of the space. Ceilings were painted with a washable paint. All windows and porches were treated with copper screens. These buildings were equipped with freight and passenger elevators, electric dumbwaiters, fire protection, and hot, cold and ice water, steam, telephones, public address system, direct and indirect electric lights and “the latest in plumbing and hospital equipment throughout.” (The American Architect, 690).

All windows (except those that were fixed and not opening) were covered in copper or other metal screens.

This cluster of buildings was constructed as the permanent medical facility to replace and supplant the wood-frame hospital buildings, originally sited on this Ancon hill location and constructed during the French canal effort. This compound has been supplemented during subsequent expansion and modernization of the hospital system.
The plan of isolating “Sections” of the compound was followed as far as possible, “without departing too far from economy of central administration.” (American Architect, 688)

Contributing Properties:

(1) Administration and Clinics Building

This three-story structure with twin towers is the central building of the hospital compound. The external dimensions of the above-ground building are 37 feet high to the roof line x 142 feet 4 inch length and 31 feet 3 inch interior width, plus two identical wings extending to the rear (southwest), 72 feet long x 37 feet 6 inch width. The low-pitched roof has 5 eyebrow dormers on the front and rear slopes of the central building and 3 feet 10 inch overhanging boxed eaves. The two towers are 12 feet 8 inches high, each with a copper finial projecting up 3 feet 3 inches from the roofline. The tower is arched with Corinthian capitals atop columns and rusticated corner pilasters of the arch. The clinics building has 3 skylights on the roof plane, and 3 feet 10 inch overhanging boxed eaves.

(2) Buildings A and B

Linked to the central building by covered arcades at their western elevations are 4, 3 story clinic buildings or Ward Groups: The tripartite south wing (A) consists of 2 units connected by colonnade walks and a “toll” building. A-1 is 128 feet 6 inches long x 43 feet in width; A-2 is 171 feet 5 inches long x 43 feet in width. The tripartite north wing (B) consists of 2 units connected by colonnade walks and a “toll” building. B-1 is 128 feet 6 inches long x 43 feet in width; B-2 is 114 feet long x 43 feet in width. Situated on a spur of the terraced northeast slope of Ancon Hill, the size of each wing was determined by the extreme slope of the building plot. The configuration of the entire Administration and Clinics Building complex is harmoniously united into a triangular shape to efficiently conform to the hillside building site.

The buildings were designed as pavilions, with entry porte cocheres supported by paired columns, crowned by parapeted balconies. Exterior walls feature dripstone
courses, inset panels, and rusticated quoins. A HABS description of one of the ward rooms demonstrates the exploitation of natural light and ventilation: "...an open room to the ceiling with exposed concrete beams. Structural columns with curtain walls formed the perimeter of the room; the ward walls did not reach the ceiling to allow maximum ventilation from the open porch/corridors. Inner walls were amply ventilated by paired casement windows. Floors were finished with red ceramic tile (cool and sanitary) and electric lights were positioned on each interior column...each room had an inner corridor glass and frame double door with a hopper opening transom and an outer door leading to the porch/corridor. A series of clerestory windows was positioned over outer doors and windows...ceiling was open to the beams." (HABS report on Bldgs 255, 253) 1996.

This building contains the dispensary, drug-manufacturing department, surgical, medical and eye and ear clinics, operation suites, X-ray department and administrative offices of the hospital.

Auxiliary rooms such as visiting rooms, ward dining-rooms, ward and diet kitchens, cell, quiet rooms, doctor’s and nurse’s rooms, dressing rooms, ward laboratory, toilets and baths, service, closets elevators and stairs are included. The Isolation Section is reserved for treatment of contagious diseases. These facilities were built to accommodate 660 beds, but could be expanded to 880 beds maximum capacity.

(3) Admitting Office and Dispensary

This two-story building is 89 feet length x 53 feet wide x 27 feet 3 inches high.

Rooms are for triage and admissions, consultation and examination, dressing and minor operations of outpatients, outpatient dispensary and two dental suites. Two separate admitting rooms right inside the entry-way were designated for 'silver' and 'gold' employees during the early days of the Canal operation.

(4) Kitchen and Mess (Steward’s Department)
This two-story building with basement under the south end, is 214 feet long x 42 feet 10 inches wide and 36 feet 10 inches high to the roof-line. The low-pitched roof has 3 eyebrow dormers on the front slope and 5 feet 3 inch overhang on closed eaves. Located just behind the Administration-Clinics Building, a porte cochere flanks each end. 16 ground floor openings are covered with an arcade porch. 14 openings are windows, 2 are single doors, asymmetrically placed, 1 with pediment. The second floor front façade has 18, 4 over 4 windows. The third floor has 18, 6 over 6 windows, placed in pairs.

This area was used for all baking, cooking, and foodstuff refrigeration. Dining rooms for staff and ambulatory, convalescent patients are located on the second floor. In the basement level were the bake shop, refrigeration machinery room, elevator machinery room, diet dispatch room, locker room and toilets.

(5) Laboratory and Crematory

The Laboratory is a two-story building (plus attic), U-shaped centered around a courtyard, 115 feet in length x 27 feet 3 inches high (38 feet 3 inches with basement) x 86 feet 10 inches wide. First floor windows are Palladian inside an arc; basement windows are covered by wrought iron grilles. A wrought iron gate in a clover design is at the doorway. Designed for the research of tropical diseases, there are office rooms for chemists, an embalmer, a photographer, bacteriologists, entomologists and a pathologist. A 10 feet 3 inch x 6 feet 2 inches skylight is utilized. The lab is linked by covered bridge passageway to the Crematory. The Crematory is 53 feet length x 22 feet width x 13 feet 4 inch height.

The laboratory was also the Health Department Laboratory, originally established in 1905 to check the water supply for the Canal Zone and adjacent cities, and perform all necessary chemical, biological and bacteriological tests for the hospital (Panama Canal Review 1957:11; Annual Report 1905:61-62).

(6) Power Plant and Shop
Three equal room sections under the same roof make up this building with overall dimensions of 61 feet 6 inches in length x 41 feet 6 inch width. The boiler room is a one-and-a-half story utilitarian construction, with a first floor 11 feet 3 inches to the roof-line and a smaller second floor 6 feet 9 inches high. The 2/1 pitched roof is covered with corrugated asbestos roofing material and has 4 foot overhanging closed eaves. The floor is concrete to accommodate steam boilers.

The carpenter shop is adjacent to the boiler room and has a wood floor. The plumbing shop is contiguous to the carpenter shop and has a concrete floor with small canals for drainage. Wire mesh screens cover all window openings in the building.

(7) Supervisor’s Dwelling

The supervisor dwelling is a two-story, rectangular, single-family residential building with minimal detailing, constructed as permanent housing for the hospital administrator. It has a low-pitched hipped roof and enclosed overhanging eaves. The roof is covered with dark red vitreous tiles. The building has a slab on grade foundation and the exterior of the hollow tile walls are covered with cement plaster.

Fenestration is asymmetrical; the first floor façade has 2 double, double-hung sash, 4 over 4 light windows flanking the main entry door and a triple casement window at the end of the facade away from the door. The 2nd floor has the same casement window just above the 1st floor one, plus 3 identical double-hung sash windows with 1 solid pane, top and bottom. The entry door is set inside an alcove with an arched top of the door void that breaks into the pediment. A decorative cement plaster coursing follows the perimeter of the house on both levels, at 1/3 of the floor height. The end corners of the building are articulated by (cosmetic) pilasters. The building, though residential, has an appearance in keeping with the modified Italian Renaissance style of the other hospital buildings. The dimensions are 57 feet front length x 28 feet 7 inches width.
(8) Nurses’ Quarters

The three-story building is 225 feet long and 43 feet wide. It provided individual accommodations for 72 nurses plus a social hall, suite for the head nurse and porch. A porte cochere in the front provided protection from intense sunlight and rain. The Quarters are located near the base of the main stairway approaching the hospital.

(9) Isolation Ward

The dimensions of the three-story Isolation building are 114 feet length x 42 feet 9 inches. Located behind and to the left of the central Administration and Clinics building, this ward had a 90 patient capacity, serving any requirement for isolation, including pulmonary tuberculosis. On the first, second and third floors were wards and private rooms, while the basement contained offices, sterilizing rooms, elevator machinery and storerooms.

Historical Context:

The making permanent and expansion of the greater hospital facilities were a part of the push for “municipal improvement” of Balboa beginning from 1913. Engineers and planners, with Dr. Gorgas’ participation, designated 33 acres (28 acres were built) as hospital grounds in the original surveyed layout for Balboa. Although Austin Lord saw the early surveying of the site, Samuel M. Hitt, as senior architect, permanent building division, supply department of the Panama Canal Company, was the architect for the entire Ancon Hospital built project. Dr. William C. Gorgas, for whom the hospital is named, organized the facility. There he continued to research tropical diseases, particularly malaria, and yellow fever to influence the Canal Zone to become, “the most healthful strip of land under tropical skies.” (The Panama Canal, 105.) Gorgas was originally appointed by President Roosevelt to be the Chief Sanitary Officer of the Canal Zone after much experience and success in Cuba and other tropical climes. Gorgas and Goethals apparently worked together in a highly successful, contentious partnership. Goethals continually challenged Gorgas’ spending, evidenced in this episode: “Did you know, Gorgas, that
every mosquito you kill costs the U. S. government $10?
To which Gorgas replied, "But just think, one of those $10
mosquitoes might bite you and what a loss that would be to
the country." (Bishop and Bishop 168)

He later served as the Chief Health Officer, supervising the
Hospitals and Charities, Sanitation and Quarantine
departments. As is previously reported 20,000 individuals
perished during the French construction effort, mostly from
disease. It was understood that in order to make the Canal
Zone a place "fit to live and work in, thorough sanitation of
the isthmus must be achieved." Among other practical
interventions, he initiated the use of screens on all opening
windows and cleared the vegetation/landscape of the
hospital grounds to leave swaths 200 yards wide around
each building.

"The hospital at Ancon is one of the largest and best
equipped in the world, situated on the hill above Panama
and commanding a superb view of mountains and sea.
Colonel Gorgas organized a staff of physicians and nurses
inferior to none in civilization," and in President
Roosevelt's own report to Congress, "the results (of the
sanitary work) there have been astounding...the conditions
as regards sickness and the death rate compare favorably
with reasonably healthy localities in the United States." (History of the Panama Canal, 205).

"It is not too much to say that if yellow fever—and
malaria—had not been overcome in Panama, the Canal
might never have been built. In nine years, yellow fever,
malaria and dysentery had cost the French at least 22,189
lives of laborers. Records show that at least three out of
four of the recent arrivals perished within two or three
months of their arrival." (Miller, The Isthmian Highway,
27.)

"The hospitals maintained were by far the best to be found
anywhere in the tropics. The one at Ancon is very large,
perfectly appointed, and situated in attractive grounds. It is
a monument to the Catholic sisters who first conducted the

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2 Bishop and Bishop, 168.
institution and beautified the grounds under the French regime.” (HPC, 124).

Architects working on the restoration of this facility in the 21st century have commented that it is “incredibly well conceived and designed.” (Personal interview, July 2002. Manuel Choy, Presidente, ICOMOS, Panama).

The original drawings for the Ancon-Gorgas Hospital are dated from 1913 to 1915. Construction was completed in August 1916 at a cost of $1,750,000 as stated in the Canal Zone Data Base.

In the planning and design of the Ancon-Gorgas Hospital, much attention was given to the civic needs and order. The access and service roads in the grounds formed an integral focus of the layout. Also in consideration of the climatic conditions, ample carriage accommodations are protected from the weather and roofs or porticos cover all open passageways.
Photos:

Ancon/Gorgas Hospital, Administration Building, 1920.
Ancon/Gorgas Hospital, Admitting and Dispensing Building, 1919.

Ancon/Gorgas Hospital aerial view.
Sources:

The original drawings for this building are stored in the Administration Building vault, and Departamento de Ingeniería y Proyectos, Autoridad del Canal de Panamá (ACP), Plan Files. Digital copies are held by Library of Congress, Washington, D.C.

BALBOA UNION CHURCH

BALBOA, PANAMA CANAL ZONE
(FACILITY 6)

Location:  
Southwest end of El Prado  
Balboa Road  
Canal Zone Prado Townsite  
Balboa, Panama

Significance:  
The Balboa Union Church is located within the Panama Canal Zone, “Balboa Plain”, Balboa Townsite, and Administrative Center. It is associated with the early establishment and build-up of facilities and personnel for the administration and efficient functioning of the Panama Canal. It was the first church constructed within the Prado area. The church is situated at the opposite end of the Prado from the Administration Building.

Description:  
The Balboa Union Church was constructed to as built plans in 1917-1918. It is a one-story building with a basement, utilitarian, rectangular, concrete structure built with minimal detailing, suggesting Italian Renaissance style with the choice of fenestration. A steel frame construction, the built structure followed original plans with subsequent expansion. Situated on a concrete pile foundation, the floor is supported by lignum vitae wood beams (ties), to bear a 75-pound per square foot safe live load. This floor was prepared to later become the first floor of a 3 story expanded church with Gothic-style elements. (The expansion is ca. 1926).

The Balboa Union Church is constructed in a simple Colonial Adamesque-Classic Revival style on a medium pitched grade related to that of the Sosa Hill. (The choice of style is most likely responsive to the anticipated plan for later expansion of the facility. This version was seamlessly incorporated into the final one.) The dimensions of the first
floor are 135 feet 7 inches length x 66 feet 6 inches width x 14 feet 9 inches.

The ground floor is divided into three rooms: the vestibule is 26 feet 5 inches x 18 feet 3 inches wide, the primary classroom 39 feet 10 inches x 28 feet 5 inches wide. The vestibule is flanked by stairwells, placed in the original plan to await use during future expansion and completion of the church project.

The west side has 6 Palladian windows, 1 double door and 1 casement window. The east side has 7 Palladian windows, 1 double door and 1 window opening with 1 solid pane. The rear has 3 Palladian windows with 2 casement windows flanking them. The front has 3 round-head double doors. 2 of these doors were covered in copper screening and the third was wood panel. Each round head opening is of poured concrete. The roof is composed of paroid roofing material. The exterior is plaster on block.

Interior:
The sanctuary and primary classroom areas have yellow pine wood floors. The vestibule is tiled, and the kitchen and bathrooms have concrete floors. The interior walls are unadorned, painted stucco on block. The walls are made of hollow concrete blocks and reinforced concrete.

The building was originally constructed as the permanent Balboa Union Church to replace original wood-frame buildings. Although the Canal Zone government did not sponsor nor financially subsidize the church, membership and activity in a religious organization was encouraged by the Canal Company and the U.S. Government. This activity was valued for its ‘civilizing’ effect on the population. The Canal Zone architect at the time, Samuel M. Hitt, was the architect for the project. It is not known whether he was assigned by Col. Goethals or contributed on his own volition.

The primary exterior material of the walls is stucco. The roof framing is of wooden beams and is a gable on side-gable roof of dark red vitreous tile. In the façade of each of
the gables is located 1 elliptical ventilation lunette, the
opening covered in wire mesh. Present condition of the
fabric is good.

The front door is approached via symmetrical sets of 18
concrete steps, one each side of the street end of the
building. These lead to a terrace from which the Church is
entered through any of three doors placed in a full height
alcove accessed through three arches. The double doors
were paired French style, wooden casements with glass
windows and fanlight lumiere filling the top of the arch. A
concrete sidewalk leads to the stair.

Historical Context:

Mr. H. A Smith, Pres. of the Executive Council of the
Union Church, laid the cornerstone of this (ultimately)
Gothic structure on Sept. 25, 1917. By December the work
was nearly finished, though limited funds constrained
construction of more than the first story with a temporary
but good quality roof. The completed superstructure was to
follow in 1926. The church is affiliated with a (limited)
worldwide association and distribution of Union Churches
which are non-sectarian, interdenominational community
churches. They were championed by Dr. Harry Emerson
Fosdick, known for his “Power of Positive Thinking” based
homilies. Other such churches are located in Honolulu,
Paris (the oldest American NGO in Europe), Buenos Aires,
Kobe and Tokyo Japan, Puerto Rico,

It is the one church building within integral proximity to
the Prado. The governor uniquely approved the use of this
land. This church is the only known church incorporated by
the Federal Government. The presence of churches aided
to meet the needs of the growing Zone population. As in
the reason for encouraging the Y.M.C.A. organization,
these institutions were thought to stabilize the population of
permanent workers.

The original drawings for the Balboa Church are dated
1916, and the basic first floor construction was completed
in 1917.

The Canal Zone Data Base states that the Balboa
Church was constructed according to original plans at a cost of $110,000. Parishioners donated much of the construction funds, and were finally aided by John D. Rockefeller for the 1926 expansion and completion.

Photos:

*Balboa Union Church, final construction, 1926.*

Sources:

The original drawings for this building are on microfilm at the Departamento de Ingenieria y Proyectos, Autoridad del Canal de Panama (ACP) Plan Files. Some copies of plans are held by the Balboa Union Church. The location of the original canvas plans is not known.

Information on use of buildings obtained from *The Canal Record, A History of the Panama Canal* by Ira Bennett, and from original building plans and *Christian Cooperation at the World's Crossroads*, by Robert H. Rolofson, Private printing by Union Church of the Canal Zone, 1950.
PRADO LANDSCAPE

BALBOA, PANAMA CANAL ZONE
(FACILITY 7)

Location: El Prado, Balboa Plain extending between Ancon and Sosa Hills.
UTM: Northing 990640 to 990980, Republic of Panama Map, Tommy Guardia IGNTG, Series E962, Edition 1, revised 1992

Significance: It is associated with the early establishment and build-up of facilities and personnel for the administration and efficient functioning of the Panama Canal.

Description: The dimensions of the Balboa town site are 5,600 feet long by 2,100 feet wide, with a greater area covering 150 acres. The Prado is the central axis of the plan for the town of Balboa, formerly known as La Boca. The area was raised between 14 to 20 feet from the original marsh grade with material extracted from Culebra and the nearby harbor.

The area consists of 29 acres on the north and northwesterly slopes of Sosa Hill, 79.5 acres on the southwesterly slope of Ancon Hill (Balboa Heights) and 58 acres of the filled ground between the two hills, known as the Balboa Plain. In total, the site covers 676 acres.

Mainline Panama Railroad tracks boundary the northwest portion of the site. A site claimed by the Navy for a marine reservation borders the northeast. The Prado, originally designated "the mall", is a long straight wide avenue bordered with (Goethal's requested) royal palms with central parking and double road lanes on each side, stretching from the Administration Building on Ancon Hill across to the Balboa Plaza/Clubhouse Square below it at the foot of Sosa Hill. Phillips favored coconut palms were chosen for installation at all other sites because not only did he find their swaying form beautiful, but calculated the revenue they could generate in coconuts. The installation of the latest engineering in water mains, house connections, standpipes and fire hydrants along El Prado boulevard and the rest of Balboa is evidence of application of a contemporary innovation. Roadways were planned to curve away from this landscaped area into the business districts,
Panama City, up into the residential hills in one direction and to the waterfront and docks in the other.

Phillips designated the Prado as the “formal part of our town.” He grouped community buildings at the base of Sosa Hill. These include the post office, commissary, dispensary, clubhouse plaza, church and the Hotel Tivoli. At the opposite, Ancon Hill, end, he sited the administrative concerns: the school, police station and courthouse. Between these two function-related clusters, government-owned residential quarters (there was no private land ownership) were sited along the Prado and “on lateral streets branching out from either side of the Prado, irregular and picturesque in character.” (Canal Record, Dec. 17, 1913) along the Prado. Commercial traffic may not pass through this area, originally designated “the mall.”

Goethals pushed for swift and efficient completion of the Prado area. The Prado appearance is integral to the identity projected at the Canal’s Pacific terminus. However, the construction process met with predictable delays. Old railroad tracks also had to be removed. Awaiting the hydraulic fill to harden, tensions between engineers and the landscape architect grew. Finally, engineers approved the security of the filled earth foundations and situating of the steel-frame, concrete buildings and macadam roadbeds began. The collection of civic buildings and residences were placed to receive as much advantage of prevailing winds and natural light as possible. 750 linear feet of 5 ½ x 8 foot reinforced concrete storm sewers ran throughout the area, emptying into the sea, providing the absolutely required perpetual drainage. (Annual Report Isthmian Canal Commission, 1913, 180-181)

Phillips researched and collected auxiliary plantings from Panama jungles for the Prado landscape. The well-established ancient village of Taboga, located on the nearby island of the same name was his chief inspiration for tropical town design. The actual layout is reminiscent of Baguio, Philippines and a very scaled-down version of the Mall in Washington, D. C., both contemporaries of this design.
Historical Context:

In June 1913, W. L. Phillips, Olmsted-trained landscape architect, arrived in Panama to complete development plans for a civic center at a salary of $250 per month. He was tasked to lay out and construct the streets, sewer and water systems for Balboa townsite by Col. Goethals. He was to fix on the site already determined by engineers and pre-existing terminals, approximately 100 residential buildings for employees and officials, 14 departmental buildings and the necessary infrastructure of roads, paths, water and sewer systems to support. He sited the residential buildings, mostly moved in from other towns, and located the standard government housing units (assigned according to rate of pay), the commissary, post office, railroad station, quartermaster’s office, store house, dispensary and dental office, sanitary office, police and fire stations, schools, churches, parsonage, and a YMCA clubhouse.

Phillips also made provisions for a pump station, electric substation, and a motorcar house for railway motorcars. He also made preparations for a bank, newsstand and steamship offices. Through his landscape, he envisioned the connection between buildings as one “continuous arcade,” connected by green space and paved walkways. Walking time between the major civic buildings was recorded. (History of the Panama Canal, Ira Bennett. Washington D.C. Historical Publishing Company, 1915) 177.

He resigned on November 10, 1914 though all of his plans were executed after his departure from Panama. “The only good landscaping we found when we came there,” a successor stated, “is the road system laid out by a fellow named Phillips. I don’t know who he was, but he was a master.” (Miami Herald, Feb. 3, 1950). “…I think the first instance of the palm being properly fitted into the landscape that I have seen was in the Canal Zone.” (David Fairchild quoted in Jackson, 1997).
Photos:

Prado, ca. 1914.

Prado, 1921.
Prado, 2002.

Prado, 1915.
Prado view towards Administration Building, 2002.

Sources: *Pioneer of Tropical Landscape Architecture*. Jackson, Faith R. The construction plans for Prado are held digitally and on the original canvas at plan files, Departamento de Ingeniería y Proyectos, Autoridad del Canal de Panamá (ACP), Plan Files.
APPENDIX B

DRAWING AND PHOTO RECORD GROUPS
GROUP 1

RAILWAY STATION
RECEIVED
AS
FOLLOWS
PANAMA TRAMWAYS COMPANY

SKETCH

SHOWING

SPECIAL TRACK WORK TOGETHER WITH PROPOSED NEW PRR STATION PANE

in vicinity of

Panama Railroad Station

Panama — April 18, 1912 — Scale 1"=20'

PRR Passenger Station
GROUP 2
ADMINISTRATION BUILDING
INTRODUCTION
COMMISSION

DETAILS OF DOORS & WINDOW FRAMES
ADMINISTRATION BUILDING
BALBOA, C.Z.

TOTAL - 445 FRAMES

UNIVERSAL GUILD, COMMISSION

DOORS & WINDOW FRAMES
ADMINISTRATION BUILDING
BALBOA, C.Z.
THE PANAMA CANAL

FULL SIZE PLAN AT AA

MAHOGANY FRAME, DOORS, ETC

ROUGH WALL LINE

PLASTER, PLASTER LINE FINISH, PLAIN FOOT

MARBLE PINTL

FINISH OF DOORS & WINDOW IN 2ND FLOOR ROTUNDA HALL

AT FRONT OF BUILDING

317
GROUP 3

BALBOA ELEMENTARY SCHOOL
GROUP 5
GORGAS HOSPITAL
RECEIVED AS FOLLOWS
RECEIVED

AS

FOLLOWS
PLAN OF PASSAGeway CONNECTING THE ADMINISTRATION BUILDING WITH THE KITCHEN AND MEAT BARN.
THE PANAMA CANAL
DEPARTMENT OF OPERATIONS AND MAINTENANCE
NEW ANCON HOSPITAL
ENGINEERING
ARCHITECTURAL
Navy Yard, Ancon
Panama
June 1, 1905
Scale 1:100
Sheet No. 7
GROUP 6

BALBOA UNION CHURCH
RECEIVED

AS

FOLLOWS
RECEIVED AS FOLLOWS
GROUP 7

EL PRADO
TREES ON PRAIRIE TO BE INFECTED ON PLANTING STRIP.

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THE DANESCA CANAL
DEPARTMENT OF RECREATION AND RECREATION
DIVISION OF MUNICIPAL ENGINEERING

BALBOA TOWNSITE
PLAN FOR LOCATION OF TREES ON PRAIRIE區

496 51338
ORGANIZATION FOR FISCAL YEAR JULY 1, 1913 – June 30, 1914.

Division of Terminal Construction

Landscape Architect

W. L. Phillips 20

Gold - 21 men
Silver - 360 men

Junior Engineer
M. W. Horgan
2 Transitmen
2 Levelmen
2 Rodmen
6 Silver Men

General Foreman
C. P. Cronaghan
5 Foremen
312 Silver Men

General Foreman
of Paving
E. J. Lewis
1 Foreman
2 Steam Engs.
40 Silver Men

Office Force
1 Draftman
1 Clark
2 Silver Men

W. L. Phillips

LANDSCAPE ARCHITECT
APPENDIX C

Inventions and advancements available and in use at the time of Canal construction:

- Mercury thermometer 1714
- Diving bell 1717
- Lightning rod 1752
- Marine chronometer 1759
- Steam engine 1769
- Submarine 1775
- Steamboat 1786
- Gas turbine 1791
- Hydraulic press 1795
- Electric battery 1800
- Screw propeller 1804
- Steam locomotive 1804
- Food preservation by sterilization and exclusion of air 1810
- Printing Press 1810
- Railroad locomotive 1814
- Safety lamp 1815
- Hygrometer 1820
- Electric motor 1821
- Electromagnet 1823
- Portland cement 1824
- Typewriter 1829
- Platform scales 1830
- Sewing machine 1830
- Phosphorus match 1831
- Pistol revolver 1835
- Telegraph 1837
- Morse code 1838
- Photography 1839
- Vulcanized rubber 1839
- Bicycle 1839
- Steam hammer 1839
- Nitroglycerine 1846
- Ether 1846
- Reinforced concrete 1849
- Water turbine 1849
- Elevator (with brake) 1852
- Gyroscope 1852
- Hypodermic syringe 1855
- Bessemer converter (steel) 1856
- Gas engine 1860
- Newspaper printing press 1861
- Machine Gatling gun 1861
- Antiseptic surgery 1865
- Paper from wood pulp 1866
- Dynamite 1866
- Typewriter 1868
- Air brake 1868
- Asphalt 1870
- Quadruplex telegraph 1874
- Telephone 1876
- Internal combustion engine 1877
- Phonograph 1877
- Microphone 1877
- Electric welding 1877
- Refrigerator Car 1877
- Cathode ray tube 1878
- Cash register 1879
- Multiple wheel steam turbine 1884
- AC transformer 1885
- Air inflated rubber tire 1887
- Adding machine 1888
- Kodak camera 1888
- Vacuum bottle 1892
- Diesel engine 1893
- Gasoline automobile 1893
- X-ray 1895
- Wireless telegraph 1895
- Radiotelephone 1902
- Airplane 1903
- Gyrocompass 1906
- Air conditioning 1911
- Vitamins 1911
- Neon lamp 1911
- Mercury vapor lamp 1912
- Cracked gasoline 1913
- Browning gun automatic rifle 1916
• Gas filled incandescent lamp      1916
• Mass spectrograph                1919

\[\text{\footnotesize\textsuperscript{1} Compiled from information posted: http://memory.loc.gov/ammem/detroit/dethome.html}\]
When the canal opened, it was a technological marvel accomplished in a harsh and challenging environment with three lock systems, rendering the passage a type of water bridge from Atlantic to Pacific. Some of the technology developed \textit{in situ} as they progressed, especially within the climatic challenges presented by an average temperature of 91 degrees Fahrenheit, 80 percent humidity and salt and brackish water.

A summary of recent discoveries ready for application in Canal excavation includes: Electricity, drilling machines, behemoth steam shovels, explosives, dredging machines, crushing equipment, sanitary equipment, typewriters, typesetters, typecasting,
The cooperation with American industrial manufacturers who were ready to develop new prototypes at engineers' requests inspired great pride and satisfaction. Turn-of-the-Century industrial, technological and organizational entrepreneurs received a unique opportunity to develop their leadership in technological delivery on a challenging world stage. Their successes greatly increased the demand for and development of new markets. Innovations that were developed in response to Canal needs include:

- The most sophisticated transits for plane, topographic, engineering and construction surveying and levels.
- Chains that would not break
- Manganese steel and iron castings
- Bitsumatic solution and enamel was applied so the steel work on gates/locks and other would stand up to corrosion. This technology soon transferred to shipbuilding.
- An onsite blueprinting center developed by Williams, Brown and Earle of Philadelphia, supplied a record 50,000 yards of blueprint in 1912.
- Youngstown Company was the first to submit a standardized formula and specification for iron pipe and tubes and reaped the rewards of contracts and the accolade that similar suppliers then must apply their standards. This was also a new step in manufacturing.

The history of the construction of the Canal is also a history of American manufacturing efficiency—"of good material honestly put together and systematically forwarded."² All goods and services went out on competitive bidding schedules.³

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¹ Source note: This section is compiled from the thorough listing by Bennett from his ownfirst-hand records of technological advances and vendors.
² Bennett 371.
³ Bennett 408.

503
Medical Achievement:

The Canal construction era was a zenith in medical and technological achievement for the first portion of the twentieth century. Knowing that 20,000 individuals died during the French construction period, and mostly from disease, organizers for the American effort began their public health emphasis upon their arrival on the Isthmus. Dr. William Gorgas, veteran practitioner and researcher who had fought tropical disease in Cuba and during the Spanish American War lead a reconnaissance expedition before workers arrived. Gorgas’s experience in Cuba advanced the ideas that anopheles mosquitoes cause malaria. He directed what became one of the first large-scale preventative public health efforts of the US by draining stagnant water and using quinine in drinking water. The bacillus of the also prevalent yellow fever carried in the stegomyia mosquito required a more scientific sanitation intervention. Gorgas’s campaign supported the paving of streets, installation of sewer systems, drainage conduits, inspected residences and hotels for pests, and sprayed marshland with oil. He initiated the paving of streets to make possible the clearing of standing water and flushing of filth. The abundance of fresh water for this task required the addition of piped water and sewerage systems. The water systems also replaced many cistern delivery techniques in order to eliminate them as incubators for yellow-fever mosquitoes. Cholera, plague and pneumonia were also eliminated or curtailed. When Sir Ronald Ross, 1902 Nobelist for addressing malaria and yellow fever in India, visited his colleague Dr. Gorgas in
1904, he remarked that Gorgas's campaign in Panama "could be made an example for the entire world." 4

Technological Achievement

The Canal opened to a mechanical and industrial world of gadgets—New York christened its first subway, Ford Motor Company was a year old, the Wright Brothers had their first flight ten years before. The Marconi telegraph and radio (1897) and the first motion picture in The Great Train Robbery (1903) had added new realms to mass communication.

The US had purchased all remaining equipment from the French. Most of this became valuable scrap metal to be molded into new machinery or machinery parts. Giant earth-moving machines had to be designed, constructed and imported. There is a great body of information just on the technological and mechanical advancements related to the Canal project.

The Panama Canal utilized the most sophisticated electrical system in the world in 1914. In the entire Canal Zone, electrical, telegraph and phone system wires were laid underground. The original electrical system used for the lock operation has provided ninety-one years of uninterrupted service. From this high profile achievement, many industries began to shift from steam and waterpower to electricity. 1,022 electrical motors

were installed with total capacity of 28,290 horsepower. Each of the lock motors runs on a mere 14 horsepower because of the tilted design of the gates, making them able to utilize gravity in their opening and closing. The design includes remote lock operation from a central location.

Engineers chose electrical power during Canal construction because it proved the most dependable and economical form of power for the operation of construction plants to build the locks. Engineer Edward Schildhauer, credited for innovative mechanical engineering throughout the canal operations, designed each 20-foot diameter gate with an electric motor mechanism. Power for operation of the two construction plants, one located at Gatun and the other at Miraflores generated on site, each with three Curtis steam turbines. The Gatun hydroelectric plant provided the required electric power after the opening in 1914.

The Canal is a result of application of a multitude of American industrial and mechanical achievements. When requests for specific product adaptations and innovations went out, the American manufacturers responded. Leschen Company of St. Louis developed “Hercules” wire rope for the cableways, innovative in its strength and elasticity. Three different types of Roebling wire rope was developed with high tensile strength by twisting many small wires together around a hemp center. Engineers used the almost indestructible product on cableways for controlling basket loads across wide
spans, steam shovels were equipped with the rope and towing lines at the docks were the stoutest of the ropes at 1 ¾ inches diameter.

The Dupont Company of New Jersey supplied original blasting fuses and drills. Additionally, there were improvements in air compressor drills for underground rock drilling, supplied by Chicago Pneumatic Tool Company. The small hammer drill or jackhammer saw its first indispensable use in mining to bore blast holes for explosives. These enabled workers to most efficiently localize the detonation power and avoid injuries. Star drilling company many sizes and specific configurations of portable drills. For the first time on a project of grand scope, compressed air powered the operation of drills in mines and tunnels.

Channeling machines, or Sullivan channelers, for grooving stones in the lock floors utilized compressed air. This task directly applied similar technology developed for construction of Chicago’s main drainage canal. Because the impact of blasting might threaten walls, the engineers employed a new technology using a chopping motion.

Structural Technology
The builders utilized all available skyscraper structural technology for railroad and vehicular bridges and steel structure buildings. American Bridge Company erected the steel framework of the largest building in the Canal Zone, the Administration Building at Balboa. Engineers applied advances in surveying and land grading to situate the permanent buildings, especially on Balboa’s filled terrain. The Canal commissioned Blaw Steel Construction Company of Pittsburg to build steel forms for the culverts and conduits. The sometimes-used wood frame forms would have quickly warped and otherwise disintegrated in the humid tropical climate. After seeing the US success, other tropical locations sought advice on construction technology for their similar projects. Officials in Hawai‘i requested information on the most appropriate thickness for concrete foundations in tropical conditions. The volume of requests for recommendations on “tropical housing” was so great that an instructional pamphlet was published for the response by the Canal Commission building division. Queries from representatives from Australia, Cuba, the Philippines, Puerto Rico, Venezuela, Italy, India, Fiji, Greece, Ceylon and South Africa were answered with a packet which included: a cover letter, nine photographs of houses, five blueprints, a map of a model townsite and three small booklets outlining the Canal Commission’s building and sanitary rules and regulations. The recipients could almost assemble a guaranteed functional tropical town by following these instructions.

The massive use of concrete was addressed by Allis Chalmers Company, supplying the first stone crushing plant used in the production of crushed stone for concrete work. Allis-Chalmers Company designed the plant and the Isthmian Canal

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Commission erected it near Balboa. Its capacity was 1000 cubic yards per day. As demands evolved, Allis-Chalmers supplied special-built larger, heavier duty crushers. A swift pace was kept by Atlas Portland Cement Company as they supplied 5,000,000 barrels for the project, without any rejection. Because of the quantities involved, innovations in the method of mixing by machine were adopted as they were needed, from the rotating drum to the continuous mixer and finally the Austin Improved Cube Mixer that mixed most of the concrete for the Panama Canal. Their technology was applied immediately to US mainland dam projects at Helena, Keokuk, Roosevelt dam, Galveston sea wall, and in Puerto Rico, Hawai‘i, and the Philippines. For the processing a fully operating quarry, Quarry Heights, delivered 3.2 million cubic yards of rock for construction of the locks and other concrete needs. Additionally, a concrete tile factory manufactured all the fireproof Natco process hollow blocks for the permanent buildings. The inventor of the process, A. A. Pauley, supervised the construction of the plant for making steam process molded tile blocks.

Organizational and Procurement Achievement

Partnerships with contractors were initiated on a large scale. The organizational enterprise transported, housed, hospitalized, fed and offered recreation to for the giant workforce. In pursuit of this monumental work, the Canal Commission solicited the discoveries of modern science in the construction of the Canal and environs. The procurement of goods, services and technology for the effort involved the largest scale assembly and deployment of the products of American industry in the nation’s history. A
discussion of a collection of the vendors is instructive to understand the scope of the enterprise.

Without the giant steam shovels and dredges that were specifically developed for Canal work, the work would have gone much slower. The canal’s chronicler Ira Bennett described the appearances of the great steam shovels and dredges “making the dirt fly” were “picturesque”\(^7\). The dipper dredges were immense machines, grand-sized for the Canal effort. Their scale and effectiveness could be comprehended when they were placed alongside the discarded French dredges. They had fifteen cubic yard dippers, which could hold thirty four men standing on a platform. The boom of each dredge weighed fifty six and one half tons and was sixty two feet long. The dipper handles were seventy-two feet long.

Made famous in a photo opportunity taken by President Roosevelt, the Bucyrus steam shovel became synonymous with the heavy-duty efficiency of the American canal effort. Manufactured in Bucyrus, Ohio, the Bucyrus held all records of steam shovel

\(^7\) Bennett 142.
output on the project. A 95-ton shovel excavated 4,823 cubic yards of earth and rock in five hours and twenty minutes. Seventy-seven Bucyrus shovels helped remove more than 172 million cubic meters (225 million cubic yards) of dirt in order to create this important waterway between 1904 and 1914. Thew Automatic Shovel Company of Lorain, Ohio supplied them. The Corozal was the most powerful bucket “hopper” dredge in the world. William Simons of Renfrew, Scotland, 1911 designed and built the reliable workhorse. It was also allowed to be one of the first vessels through the open Canal.
Hydraulic dredges had to be designed to meet the conditions of wet excavation. Ellicott Machine Company of Baltimore supplied. Centrifugal pumps were used onboard manufactured by the Morris Machine Works of Baldwinsville, N. Y., and were able to deliver 300 cubic yards of material per hour through 1,000 feet of pipe line. The Morris pumps also pumped drainage and sewage to drainage pits. These ran off electric motors.

Figure 43. The dredge Ancon, ca. 1910.

The drill barges for sculpting the floor of the waterway were adjusted to fit the varying needs of the route. The Pacific entry side required a calibration for the greater tidal fluctuation (eighteen feet on the Pacific versus eighteen inches on the Atlantic coast) and an almost solid rock floor. Marine equipment including tugboats of an appropriate size, two floating hoists, the largest ever at the time, was built for the canal. Gasoline marine engines especially suitable for saltwater were developed and supplied.
Other new and unique manufactures were the so-called mules or electric locomotives that assist the forward travel of ships, patented by General Electric. Track shifters, innovated by Spencer Otis Company of Chicago, with special tie plates eased the labor intensive, manual task of relocating railroad track as construction progressed. The Browning Engineering Company of Cleveland, Ohio manufactured locomotive cranes. These were self-propelling and could rotate and hoist independently or simultaneously, 1-100 tons, fitted with booms 100 feet in length.

Because ultimately dams would supply all necessary electrical power, the construction power was generated by various sizes and types of steam boilers, all custom built for the work specified. There were Keeler water tube boilers and Robb boilers, requested for large-scale work of machine shops and air compressor plants. Specific drill machines could adapt to ACDC power sources.

Water had to be neutralized for its many uses in marine, stationary and locomotive equipment to prevent the catastrophes brought on by corrosion. Bird-Archer Company supplied the chemicals in liquid and powder form, relative to their storage and usage. These chemicals had to be adapted for tropical applications.

Building Materials and Equipment

Insulated cold storage vaults made of the locally manufactured Natco hollow tiles could hold supplies for 50,000 people. In order to conserve energy, they featured rolling
twenty gauge steel shutter doors powered with electric motors, and fitted to prevent their removal by high winds. John Lucas Paints of Philadelphia supplied high heat and humidity paint and varnish. Bronze was the material chosen for delicate machinery to offset the rust conditions endemic to the tropics. Hohlfeld hammocks of Philadelphia supplied "adaptive bedding" to workers. Ducker portable houses shipped in segments, ready for assembly on site, and also for demolishment and reconstruction elsewhere.

By 1911, the workers reported no stoppage of machinery due to overheated bearings or other such oil quality-related failures. Quantities of specifically mixed lubricants and kerosene were shipped from Houston. A new product, 3-in-1 oil was used to lubricate guns, sewing machines, typewriters, bolts and clocks. Engineers sequestered other petroleum products in regular supply: gasoline, heavy greases, and candles.
The American Gasaccumulator Company of Philadelphia installed fifty-seven acetylene light buoys, eighteen front and rear range lights, and a number of beacons utilizing acetylene as the revolutionary new superior illuminating agent. This medium has power five times stronger than that of the oil-gas then commonly used for navigation lighting. Early in 1906, the Gamewell Fire Alarm Telegraph Company of New York manufactured a complete automatic electric fire alarm system (and street signals) for use in the Canal and towns.

To insure a consistent energy supply, New River Coal of West Virginia and Pocahontas Coal Company of New York were contracted for specific, high-grade "smokeless" coal for steam-driven machines in enormous quantities.

Sanitation and Health Equipment Innovation

Ernest Leitz of New York City supplied microscopes and laboratory materials for use in medical diagnosis and examination of the purity of the water supply. Wickwire Brothers supplied especially designed “wire cloth” or screening for the demands of tropical elements. First requested for the reconnaissance trips of Gen. George Davis to ascertain the feasibility of an isthmian canal, it is made of copper and spelter wire.

Dr. Gorgas requisitioned portable spray pumps in the campaign against mosquitoes. By 1911 he required about 500 knapsack-style copper pumps to fumigate marshes, swamps, small streams and creeks. The sanitary force sent out by Gorgas
aggressively cleansed and sprayed suspect domiciles, often to their owners’ initial
dismay. Medical workers strictly quarantined questionable sickenesses. The chemicals
used were products of Phinotas Oil and the newly developed Chloro-Naphtholeum from
West Disinfecting Company of New York. This cleanser is five times stronger than
carbolic acid and Gorgas hospital came to rely on its application as well. Workers
drained any stagnant water and incinerated collected waste in nine well-distributed
Morse-Boulger “waste destructor” furnaces. To help eradicate the standing water, streets
were paved with macadam asphalt.

The Americans pioneered processes for enametation with the sanitary equipment
made available to the hospitals. The extreme demands of the Canal effort proved the
sanitary value of using enamel bathroom fixtures, improved from wood with zinc/copper
sheeting. This discovery practically made the business of Standard Manufacturing
Company who produced the best of these fixtures. All the civic buildings and most of the
others are fitted with Standard products. Both the successful attack on yellow fever and
the superior hospital sanitation standards distinguished the Canal enterprise. All workers
and their family members routinely received soap and toilet articles, products of Colgate
Company.

Colonel Goethals writes of “an immense moving department store” in explication
of the commissary supply delivery of nutritious, healthful food and dry goods. The train
cars moved along the railroad line,
...supplying to the employees whatever may be necessary for their comfort and convenience. Manufacturing, cold storage and laundry plants were established and turn out each day about 90 tons of ice, 14,000 loaves of bread, 2,400 rolls, 230 gallons of ice-cream, 1,000 pounds of roasted coffee and 7,500 pieces of laundry. Four to five refrigerator cars, loaded with meats, vegetables, and such fruits as can be obtained, are sent out on the night freight to distant points and every morning a supply train of about 16 cars, of which number six to eight refrigerator cars, leaves Cristobal at 4:30 A.M. to distribute food stuffs and laundry to the local commissaries along the line, where the employees make their purchases and where the hotels, messes and kitchens secure their supplies for the day.8

Climatic conditions required steel bins and shelving for the commissary to depress spoilage and pests. Ice and Cold Machine Company of St. Louis upgraded refrigeration equipment to be able to run continuously. A dense, odor absorbing lining of nonpareil corkboard provided insulation in the commissary cold storage units. These machines used a minimum of steam and met requirements of constant high humidity heat. The small American manufacturer, Gorham, winner of the 1900 Paris Exposition Grand Prix award supplied standard silverware, some medical instruments and electroplate.

Most provisioners of food stores for the Canal processed orders out of New York City. Holt and Company supplied enormous quantities of lower fat flour to reduce

possibility of rancification in the damp heat. Rancy was also a problem with caches of oats and other high fat grains. Perhaps the earliest foray into ‘engineered nutrition’, C. W. Post Company Grape-Nuts cereal is an innovation in response to Canal needs. Workers complained of colicky symptoms after eating large enough quantities of food to sustain them through their strenuous work. The double toasting process of the barley in Grapenuts prevented spoilage and also made the hearty foodstuff an easily and slowly digested, portable snack, offered by the handful to workers. They found this food consummately stable and nutritious in the climate. Each week, three to seven cars of meat shipped from Chicago arrived to the Zone, packed under USD.A. inspection. South Americans received butter from North America for the first time. Mellen tinned milk substituted for fresh as the heat was deleterious for dairying. Karo syrup provided a concentrated and sealed source of sugar. The Army bought and supplied Philip Morris cigarettes in enormous quantities.

Clothing and Personal Equipment

The Canal project supplied high quality machine-made, steel-toed boots and rubber “Rubberhide” watertight shoes. Blum and Koch sent straw, Panama-like hats to Panama and Stetson Company furnished high-grade felt hats. Jacob Miller, Sons and company made working shirts and overalls “from look to wearer” for the effort. US firms even tailored socks and BVD underwear for the rigors of the climate and labor. Hulse Brothers and Daniel Company assembled copper wire based umbrellas with riveted handles for protection from sun and rain. By 1912, A. A. Marks of New York City made
and delivered some 200 "mail-order" prostheses' for any worker in need, based on measurements taken in the Zone. The Canal Commission offered newly innovated sewing machines to resident homemakers, seamstresses and tailors.

Kodak system cameras documented the story of the building—something never before done on such a large-scope project. Heat and moisture of the tropics disintegrate the photographic emulsion and therefore render former photographic processes useless. The Kodak method allowed developing of films upon exposure. Therefore, the Canal effort became the first national endeavor to be so publicly viewed "back home." The shared images contributed to the canal's position in the national consciousness and a heightened sense of American pride and 'ownership'. At present, no significant quantity of the private photos is centralized in any collection, if they are extant. The Library of Congress archives many of the government-sponsored images.

Pay roll equipment for such a large workforce, institution of a commissary coupon system, meal slips (coupons went to gold force, meal slips went to silver force). National Cash Register Company supplied sixty-one machines in 1909. York Safe and Lock built the safes for tropical climates.

Bennett lists Some 3,000 American industrial concerns and at least one land grant university, the University of Pennsylvania that contributed to construction on the "Industrial Roll of Honor." The directory reads like a "who became who" for 21st century business and manufacturing conglomerates. In summary, their successful

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9 Bennett 436-460.
participation added to the great pride Americans felt in the Panama Canal project. It demonstrates an exercise of the problem-solving, challenge-taking American identity. In summary, their involvement meant:

1. The organizational advancements of the Canal Zone provisioning system presented an exemplar paradigm for future commissary delivery systems, military or otherwise. Some of the businesses supplied new items at financial loss, particularly when an original product required research and development for Panama specifications. The desire to be part of the great enterprise, in most cases was enough to spur speedy delivery.\(^{10}\)

2. The United States shared the advancements in tropical sanitation, including plumbing, with every port city in South America and in the Philippines. In doing so, the Panama effort was both part humanitarian conveyance of information and technology and also expansion of United States markets and goods related to healthcare.

Most provisioners were not only pleased with their Canal contracts, but anticipated a positioning for increased business in South and Central America when the waterway opened. Many planned for expansion of manufacturing abilities for these areas as well, possibly with partnerships in mind.

\(^{10}\) Bennett 435.
BIBLIOGRAPHY AND ANNOTATED REVIEW OF LITERATURE

The greater source of information specifically on the buildings is located in the Library of Congress, American Memory collection, Historic American Building Survey section of the Prints and Photograph Division. Much of the information on the Panama Canal, including many original architectural and construction records, was received by the National Archives and Library of Congress after the US presence ended. However, a much of this information remains unprocessed.

Original copies of the architectural plans that yet exist are located in the Plan Files section of the engineering section of the Autoridad del Canal de Panama. The Canal Zone Information Center in Balboa holds a full set of the Annual Report of the Governor of the Panama Canal for each year of operation. Two articles by architects of the civic architecture reveal their design intent for and understanding of the site: “Architecture on the Isthmus of Panama” (1914), by Austin Lord, appeared in Architecture and “The Ancon Hospital, Ancon, Panama Canal Zone” (1919), by Samuel Hitt, in The American Architect. Faith Reyher Jackson’s Pioneer of Tropical Landscape Architecture: William Lyman Phillips in Florida (1997) provides not only a biography of the landscape architect for the Canal Zone project, but fine detail on the Prado area construction.

The one scholarly source on the architecture of Panama is Samuel Guiterrez’s Arquitectura De La Epoca Del Canal, 1880-1914 (1984). Sources consulted on the academic neoclassical style exemplified in the Canal Zone civic architecture were The

The Canal Record was the Canal Commission's official newspaper from 1907 through 1999. The weekly publication carried formal notices and news of the construction as well as social life and other activities of the Zone. Therefore, it is a most useful source of information on the realities of life for Americans and others in the Zone, as well as reporting the anticipated construction and general account of new buildings. Useful publications spanned 1910-1920. A full set of this resource is located at the National Archives and in Panama at the Canal Zone Information Center. The annual reports of the Panama Canal Commission (PCC) provided detail on engineering and architectural projects, financial data and some limited commentary by current officials. A full collection of these are available at the Panama Canal Zone Information Center. Other useful journal and newspaper articles included features in the Saturday Evening Post and Smithsonian, obituaries in the New York Times, and architectural and urban planning journals.

In order to prepare for the portion of the study that would give appropriate context to the architecture of the Canal Zone, I kept mainly to references produced during the time of concentration. After checking corroboration of dates and other data, a sort of immersion in the historical discourse of the time aided the goal of understanding and evaluating context. The best comprehensive secondary reference is Canal historian Ira Bennett's excellent History of the Panama Canal, published in 1913. Bennett includes
chapters from some of the central figures in Canal decision-making and construction to supplement his thorough chronicle of the period. His work includes invaluable construction documents and appendices not otherwise currently available. It was helpful to examine these documents as well as works by other contributors to the treaty process, as Philippe Bunau-Varilla’s *Panama: The Creation, Destruction and Resurrection* published in 1920 and *The Great Adventure of Panama*, written in 1914 and Harmodio Arias’s *The Panama Canal: A Study in International Law and Diplomacy* (1911). George W. Goethals’s address to and published by the National Geographic Society entitled, *The Panama Canal*, is a detailed report including anecdotal information on his work in Panama during construction.

Among the many works on the history of the isthmus during the four hundred years of envisioning a canal, the following have been used: *The Panama Gateway* (1913) by Joseph Bucklin Bishop, secretary of the Panama Canal Commission, Willis J. Abbot’s *Panama and the Canal. The Story of Its Achievement, Its Problems, and Its Prospects* (1914), David Howarth’s *Panama* (1966), and the more recent critical perspective, *Emperors in the Jungle: The Hidden History of the US In Panama* by investigative journalist, John Lindsay-Poland (2003).

national power are represented in Harvard historian and diplomat, Archibald C. Coolidge’s *The United States as a World Power* (1908) and *A Century’s Journey. How the Great Powers Shape the World* (1999), edited by Robert A. Pastor. In the most insightful and instructive work in this section of the research, *The United States and Imperialism* (2001), Frank Ninkovich conceptualizes American imperialism “as an element of the geopolitics of modernity.”¹ *American Ideals, and Other Essays, Social and Political* (1903) by Theodore Roosevelt contributed to an understanding of the pervasive political outlook of the time.

Two recent works are enlightening: First, Stephen Frenkel’s dissertation, *Cultural Imperialism and the Development of the Panama Canal Zone, 1912-1960* (Syracuse University, 1992) presents a thoroughgoing geopolitical study with the thesis that Panama was developed in the American consciousness, as America’s “other.” In relation to this, my topic invokes an integration of ideas from architectural theory and meaning to articulate that which was the “not-other.” Juxtaposed against the “other” of the jungle, the Zone stood alone: neither Panamanian nor US mainland, but projecting an American civic presence.

Second, Ron T. Robin comprehensively examines American political architecture built inside other countries with an intensive focus on embassies and cemeteries in *Enclaves of America: The Rhetoric of American Political Architecture Abroad, 1900-1965*, is his dissertation published in 1992 as a book. Though he provides a thorough discourse on the planning of Manila and Baguio in the Philippines, he does not discuss

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the Canal Zone. His work shows evidence that American architecture is used to express political messages abroad and that the meanings can alter with the change in global perception of the US.

Sources conveying sociological insights into the lives of employees and residents of the Panama Canal architecture include *Panama Canal: What It Is, What It Means* (1913) written by John Barrett, Director General of the Pan American Union, *Christian Cooperation at the World's Crossroads* by Robert H. Rolofson (1950), and *Red, White, and Blue Paradise, The American Canal Zone in Panama* (1984) a sociological retrospective by Herbert and Mary Knapp, professors at Canal Zone College.

The symbolism of international expositions is discussed by Robert Rydell in *All The World's A Fair: Visions of Empire at American International Expositions, 1876-1916* (1984). Two works, David F. Burg's *Chicago's White City of 1893* (1976) and Reid Badger's *The Great American Fair. The World's Columbian Exposition and American Culture* (1979) were instructive in most aspects of the Columbian Exposition, from expenditures to assessments of its affect on the American people. Similarly, William H. Wilson's comprehensive work, *The City Beautiful Movement* (1989) provided analysis of the history and political reform ideology of the City Beautiful Movement as well as a complete narrative history. An article by J. A. Peterson, "The City Beautiful Movement: Forgotten Origins and Lost Meanings," in the *Journal of Urban History* (1976) was helpful in exploring the wider implications of City Beautiful. Charles Mulford Robinson's *Modern Civic Art or the City Made Beautiful* (1903) provides
scholarly description and commentary on the goals of the philosophy during its greatest popularity. *The Search for Order 1877-1920* (1967) by Robert H. Wiebe was most useful in explicating a theory of the origins of “new values of continuity and regularity, functionality and rationality, administration and management” that developed at the turn of the century.²


landscapes of cities. The edition supports the idea that classical styles were the architectural medium through which empire is historically apprehended. *Meaning in Architecture* (1969) edited by Charles Jencks and George Baud was useful for a baseline guide in the process of determining meaning in architecture.


Three websites provided data for corroborative purposes, visual images of relevant supporting characters and settings and invaluable transcripts of oral and written personal histories of the Panama Canal Experience. They are:  
http://usinfo.state.gov/,  
On-site research, including photographs, inventory tours of Canal Zone buildings and sites, some measurements of buildings and in-depth observation of Canal operation, followed guidance provided in the *Secretary of the Interior’s Standards and Guidelines for Architectural and Engineering Documentation* (1990) and *HABS/HAER Guidelines for Historical Reports* (October 1993), published by the US Department of the Interior.
BIBLIOGRAPHY AND SOURCES


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---. The Architecture Lectures; Eighteen Discourses on a Great Variety of Subjects Delivered in New York During the Winter of 1940. New York: Creative Age Press, 1942.


Fraser, John F. *Panama and What it Means.* London: Cassell and Company, 1913.


Hogan, J. Michael. *The Panama Canal in American Politics. Domestic Advocacy and


Isthmian Canal Company (ICC). Architectural Drawings for Ancon. NARA, College Park, MD and/or Balboa, Panama, 1910-1920.


*Panama Canal Commission (PCC) Reports*, Various dates. National Archives Record Center, College Park, MD.


---. The Improvement of Towns and Cities or the Practical Basis of Civic Aesthetics. New York: 1901.
Modern Civic Art or the City Made Beautiful. New York: The Knickerbocker Press, 1903.


**Supplemental Works**


Lowenthal, David. *The Past is a Foreign Country*. Cambridge, UK: Cambridge


**Public Diplomacy**


**Websites**

http://usinfo.state.gov/products/pdg/pdq.htm

http://memory.loc.gov/ammem/amhome.html

http://www.czbrats.com/

http://www.lostparadise.com/history/schildhauer.html

**Archives**

- Administration Building, Autoridad del Canal de Panama (ACP), Balboa, Panama, Architecture and Engineering Department, Plan Files/Vaults.
- Engineering Data Base, ACP, Balboa, Panama.
- Technological Information Center and Library, ACP, Balboa, Panama.

• National Archives Records Administration (NARA), Records of the Panama Canal, 1848-1984 (Record Group 185). College Park, MD