BUILDING A NEW NATION: THE MODERN ARCHITECTURE OF GHANA

by

SHANNON MARIE WINTERHALTER

(Under the Direction of MARK EDWARD REINBERGER)

ABSTRACT

This thesis examines the development of modern architecture in Ghana from the late colonial period into the early years of independence. This period of time immediately following World War II into the late 1960's saw the introduction and adaptation of the architecture of the modern movement in the first Sub-Saharan African nation to gain independence, Ghana. This style of architecture, although introduced by former colonial rulers from Great Britain, became ubiquitous for the architectural vocabulary of the newly independent nation in the mid-twentieth century. This thesis examines the political climate of Ghana during this time period as well as the exportation of modern architecture to developing countries. Finally, this thesis examines architectural examples spanning the country that were constructed in the modern style from the late 1940's into the mid 1960's.

INDEX WORDS: Modern Movement, Architectural History, Ghana, West Africa, Accra, Kumasi, Historic Preservation, Kwame Nkrumah, Colonialism, Modern Architecture, African Modernism, Africa, Tropical Architecture

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SHANNON MARIE WINTERHALTER

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SHANNON MARIE WINTERHALTER

Major Professor:	Mark Reinberger
Committee:	Wayde Brown
	Pratt Cassity
	Stephen Ramos

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Suzanne Barbour
Dean of the Graduate School
The University of Georgia
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CHAPTER ONE: INTRODUCTION

For many centuries, the ideology of colonialism dominated global patterns of economics, politics, and culture. As the world grew up under the auspices of colonial thought and an assumed superiority of the Western world to the "other," the built environment of colonized territories developed to reflect the ethos of their colonizers. The traces left behind by colonization were completed with the architecture of the modern movement. Yet, many countries adopted this style after liberation as a form that expressed the new and free world they now inhabited. The remnants left behind tell a story of the shifting ideals of the twentieth century alongside the darker story of colonialism. The adoption and adaptation of modern architecture in the built environment is key in understanding its value as a cultural resource and how to approach its preservation. These buildings serve as documents for a complicated global past.

On March 6, 1957 Ghana was the first sub-Saharan African nation to declare its independence. The establishment of the new nation of Ghana saw the development of ambition in its political and economic goals and its architectural expression. This was not only true for Ghana, but for many emerging African nations who gained independence in large numbers in the 1960's. Architect and critic Manuel Herz describes the advancements and development of architecture and infrastructure for newly independent nations as a way of meeting other nations at eye-level. "Their architecture speaks of courage and optimism,

promising to deliver advancements to the country."[1] The architecture of the late colonial and early period of independence in Ghana is a visual representation of shifting ideologies in a rapidly changing world. While Ghana's former colonial power attempted to use the architectural style to shift perceptions of the complicated and often ugly past of colonization, Ghana used this architectural expression to define a new period of their own independence.

This thesis will explore the exportation of modern architecture and its development in the African nation of Ghana. Although the modern movement is most commonly associated with countries, cities, and architects in Europe and the United States, there is a vast collection of modern architectural resources spanning the globe that are underrepresented in the larger context of the modern movement. This is particularly true of the African continent and especially in Sub-Saharan African nations. While efforts by architectural historians and international preservation organizations are working towards alleviating this issue, there is still a great amount of work to be done. By addressing the development of modern architecture in a former European colony in Africa, this thesis will attempt to fill in a gap in the narrative of the modern movement. My thesis question is: *how and why did the adoption and adaptation of modern architecture in Ghana evolve from the late colonial period into the early years of independence, and how does this narrative fit into the larger story of the modern movement?*

Answering this question included examining a number of related fields. It was first necessary to look into the developmental history of modern-day Ghana in order to provide sufficient context for the topics that will be discussed in this thesis. Secondly it was crucial to

[1] Manuel Herz, *African Modernism: The Architecture of Independence: Ghana, Senegal, Cote d'Ivoire, Kenya, Zambia* (Zürich: Park Books, 201), 9.

understand the development of the modern movement specifically as it relates to the developing world and Great Britain in the mid-twentieth century. While this thesis focuses on the architectural ramifications of British colonization in Ghana, other areas of interest will be discussed, such as the impact of Le Corbusier's Chandigarh and other notable architects in developing countries. It was equally important to examine the idea of tropical architecture and its origins in British West Africa. This provides crucial context in understanding design and material choices made by architects in the buildings discussed in this thesis. The most valuable portion of my research came from examining architectural journals from across the globe (including France, Germany, the United States, Great Britain, and Italy) for detailed verbal descriptions, images, and plans of many of the buildings discussed in this thesis. Finally, it was important to examine the framework of conservation that is present in modern-day Ghana. This information is crucial in understanding how resources from this chapter of Ghanaian history fit into the heritage conservation for the nation.

This topic of research fits into the modern challenges that are beginning to gain attention in the conservation world. Resources that do not necessarily fit in neatly with preceding architectural forms are coming to the forefront of significance due to their expansive reach in infrastructure. What to do with these resources and what they mean to the people they serve today is an emerging question in the preservation discipline. Seeing as so many of these cultural resources are "coming of age" (at least according to the American system of evaluation) their preservation is becoming increasingly important. While my research focuses on buildings constructed primarily between the late 1940's and the late 1960's it also explores the events that occurred immediately before and immediately after.

To borrow a disclaimer from the 1962 *Architectural Design* Journal in reference to an article concerning modern architecture in West Africa, "Although the accompanying photographs may be used as a yardstick to judge the best in modern building, they do not – no photograph could – give a convincing impression of the general character and atmosphere in [Ghana], the hot-house climate, the invisible humidity, the smells, the endless rain forest of matted trees punctuated with palms or the tropical grassland…"[2] This thesis is an attempt to understand how modern architectural resources developed in the late colonial and early years of independence and how these buildings fit into the narrative of the modern movement as a whole. To answer this question, this thesis will focus primarily on identifying the buildings that were erected and the motivation behind their creation. This thesis relies more on archival research of architectural journals than on literature concerning post-colonial discourse. Although discourse of post-colonialism and its specific manifestation in Ghana is an important conversation, it is not the primary approach for this thesis.

[2] Sam Lambert, "Ghana, Nigeria & Sierra Leone," *Architectural Design* 38, (1962): 328

Figure 1.1: Illustration from 1953 edition of Architectural Review accompanying the essay by Maxwell Fry entitled 'African Experiment'[3]

Review of Current Literature

While no comprehensive history exists regarding modern architecture in Ghana, a wealth of information exists on the topic to help trace this unique history. African building projects of the late colonial period were widely publicized in architectural journals across the globe. These documents, in addition to a resurgence of interest on the subject in recent years

[3] E. Maxwell Fry, "The African Experiment," *Architectural Review* 113, no. 677 (May 1953): 282.

(largely in part to organizations like DOCOMOMO), have provided much of the needed documentation and identification necessary for the preservation of African Modern heritage.

The most important primary sources for this thesis were the articles written in architectural journals primarily from the late 1940's into the 1960's. These documents proved to be important for the perspective of buildings from the architect's point of view in addition to photographs and plans that are instrumental in this thesis. Journals such as *ARENA: The Architectural Association Journal, Architectural Review, Domus, Progressive Architecture, The Architect and Building News, Architectural Forum, Architectural Record, L'Architecture d'Aujourd'hui, The Architect's Journal, Bauen und Wohnen, Architectural Design,* and *West African Builder and Architect* were utilized in this thesis*.* These resources came mostly from Great Britain, but building projects in Ghana were picked up all over the world and were covered in German, Italian, and American architectural journals. Most interesting is the *West African Builder and Architect.* This was a short lived publication that ran from 1961 to 1968. The journal was founded by Nigerian architect Oluwole Olumuyiwa and covered major building projects (primarily in Nigeria) but throughout West Africa in the 1960's.

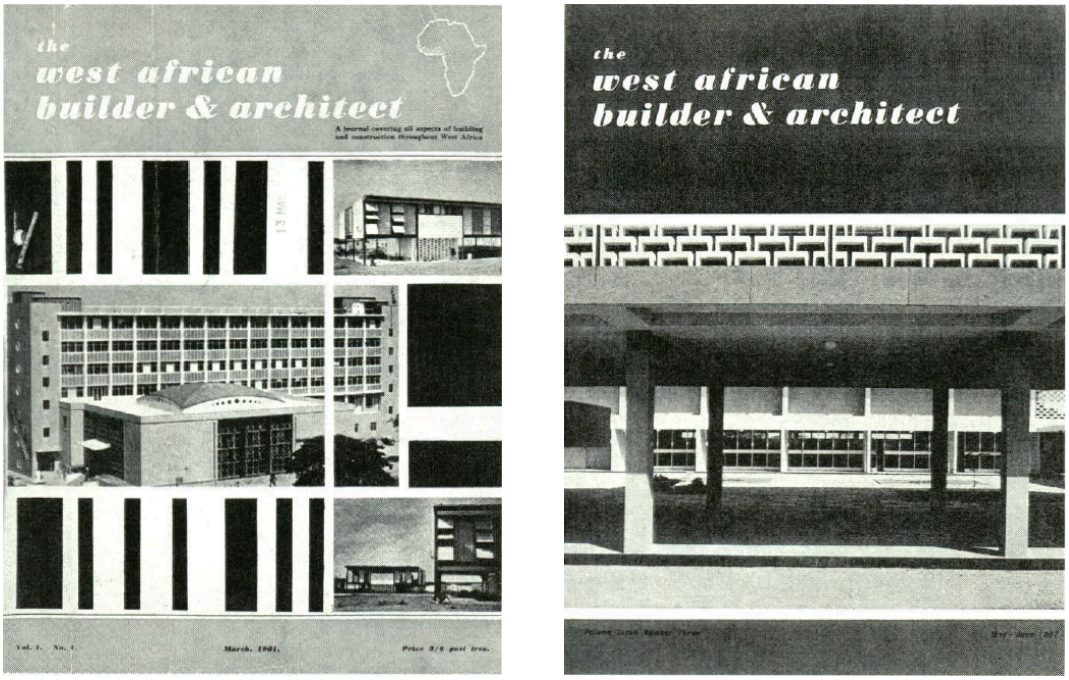

Figure 1.2: Covers for The West African Builder and Architect from 1961 (left) and 1967 (right)[4]

The German architectural historian Udo Kultermann wrote two early and widely influential texts concerning modern architecture in Africa. Although his books are some of the first to examine the potential for modern African architecture, their scope of the entire continent leaves the reader wanting details relating to specific countries and their individual relationships with modernism. The earlier text from 1963 entitled *New Architecture in Africa* examines historic precedents for nation building and town planning alongside a survey of modern buildings organized by function. This book expresses the hope of the continent and the excitement that was felt around the world for newly independent African nations and their burgeoning potential. In 1969 Kultermann came out with the *New Directions in African*

[4] Okwui Enwezor et al., *The Short Story: Independence and Liberation Movements in Africa 1945-1994,* (Munich: Prestel, 2001), 266.

Architecture, more or less as a follow up to his original book. Separated by a period of 6 years Kultermann attempts to focus on native architects designing in Africa and the documentation of their buildings. The book is organized by building types once again including educational, governmental, and commercial buildings (among others) and again spas the entire African continent. This book shows a sharp contrast to its 1963 companion in expressing disappointment that much of Sub-Saharan Africa had devolved into political instability inhibiting its architectural development that had just recently seemed so promising.

Nnamdi Elleh is one of the more prolific authors in the study of architecture in Africa. His 1996 *African Architecture: Evolution and Transformation* was one of the first definitive studies of African architecture from antiquity to modern times. Its comprehensive look at multiple regions and nations and their evolution (both socially and architecturally), provide context for the change that took place through such turbulent times in much of Africa's history. Nnamdi Elleh is a professor of architecture at the University of Cincinnati and has written extensively on the subject of architecture and power in Africa.

The 2003 book *Modern Architecture and the End of Empire* by Mark Crinson focuses on the British view of the relationship between the rising domination of modern architecture and the rapid unraveling of their colonies at a global scale. Although Africa is just one of the examples Crinson uses to make his argument about the relationship between decolonization and modern architecture, it provides proof that the relationship exists and its imprint still persists in the built environment of former colonies around the world. This text is more theory based than survey driven, but it provides important context for the relationship between modern architecture and independence and even includes a section on this relationship in

Ghana. Similar in content is the 2016 book *Architecture and Urbanism in the British Empire* edited by G.A. Bremner featuring essays by Mark Crinson. This book in particular is a result of The Oxford History of the British Empire Companion Series. The book looks at a number of former colonies and the resulting impacts of urbanism and architectural forms ranging from modern-day United States to New Zealand and the Pacific.

Jane Loeffler's 1998 book *The Architecture of Diplomacy: Building America's Embassies* is an in-depth examination of American embassy building overseas and the statements that the United States was making through architecture. This text serves as a western point of view outside of central Europe and Great Britain concerning modern architecture in Africa.

David Adjaye's text from 2011, *African Metropolitan Architecture,* is perhaps the closest widely available text that resembles a survey of urban African architecture. This project spanned a decade in the early 2000's, documenting the architecture of each major city in every African nation with the exception of just one due to a violent civil war. The text is a seven volume series with essays and photographs of architecture throughout the continent organized by terrain and region showing images of residential, commercial, and public architecture. However, little information is given about individual buildings and their architects. David Adjaye is currently an architect with firms in both London and New York. His most recent project of note is the National Museum of African-American History and Culture in Washington, DC.

The *PHAIDON Atlas of 20th Century World Architecture* (2012) is a reputable global survey of outstanding examples of twentieth century architecture. This is particularly important when putting modern architecture in Africa into the context of modern architecture at a global scale.

The 2014 text by Iain Jackson and Jessica Holland entitled *The Architecture of Edwin Maxwell Fry and Jane Drew: Twentieth Century Architecture, Pioneer Modernism and the Tropics* was one of the most vital text in understanding one of the most influential architectural team, Maxwell Fry and Jane Drew, in the early developments of modern architecture in Ghana. This is the most comprehensive text devoted to the work of the architectural couple documenting the early years of each of their careers, their work in West Africa, and their work in Chandigarh. Jackson and Holland put together a powerful argument for the importance of Drew and Fry's work in the tropics in the development of tropical architecture as a branch of modernism.

The 2015 text *African Modernism: The Architecture of Independence. Ghana, Senegal, Côte d'Ivoire, Kenya, Zambia* edited by Manuel Herz provides an almost survey like format for the modern architecture of five diverse African nations. This text includes context information on independence of each nation and its subsequent relationship with the modern movement. With focus on five separate countries it provides insight to broader issues on the continent and provides important context. Due to the scope however, it is only able provides a brief look into each country rather than an in depth examination of one particular country. The photographs taken by Iwaan Baan and Alexia Webster were invaluable in understanding the current state of these resources and the preservation threats that face them today.

This thesis also focuses on the origins and development of the movement that eventually led to modernism's adoption in Africa. This context is primarily provided by the following texts that supplied invaluable information on the subject. Perhaps the most influential text on modern architecture in the twentieth century is William Curtis' *Modern*

Architecture since 1900 (1996, third edition). This is an established comprehensive text documenting the origins and evolutions of modern architecture spanning the entire century and the globe. Curtis provides essential insights on the development of modern architecture in Great Britain and in developing nations. Curtis is a British architectural historian whose work focuses primarily on architecture of the twentieth century. This context is important in assessing how the modern architecture of Ghana fits into this broader and more universal narrative of modern architecture. The 1998 text *International Style: Modernist Architecture from 1925 to 1965* by Hasan-Uddin Khan documents the middle decades of the twentieth century and the development of the International Style. A concluding chapter discusses "Modernism outside America and Europe" and focuses on the exportation of the style throughout the world and especially in developing countries including the impact of Le Corbusier, Louis Kahn, and projects like Chandigarh and Brasilia.

This thesis will also provide context for colonization and subsequent independence and modernization in Ghana. There is already much written on the development of Ghana, but this thesis relied primarily on the work of Basil Davidson with his texts *Ghana: An African Portrait,* and *Black Star: A View of the Life and Times of Kwame Nkrumah.* Basil Davidson was a British historian who travelled extensively through Ghana in the 1960's and 1970's and even met the former President Nkrumah on multiple occasions. The extensive writings of former president Kwame Nkrumah are also utilized in order to interpret post-colonial politics in Ghana.

Finally, this thesis will also attempt to view modern African architecture through the lens of historic preservation. The following texts were relied on to provide a framework for the discussion of the preservation of these unique resources. Dr. Hanna Le Roux of University of the

Witwatersrand in South Africa has written extensively on tropical architecture and identity in West Africa in articles for DOCOMOMO and other architectural history journals. Her modern perspective, including perspectives on preservation and current uses of these resources, were of vital importance to this thesis. The 2008 text *Preservation of Modern Architecture* by Theodore H.M. Prudon is one of few comprehensive texts to tackle the emerging question of how to preserve modern architecture. It discusses new questions facing preservation of a vastly different chapter in the built environment. This text is used to look at the preservation of Ghana's modern architecture through the lens of contemporary practice of preservation of the recent past. Finally Prat Cassity of the University of Georgia's Center for Community Design and Preservation was kind enough to share his own experiences in Ghana in addition to sharing ample material from preservation projects he participated in abroad in the 1990's and 2000's.

Gaps in the Literature

While the topics of the modern movement in architecture, colonialism, and postcolonial modernism have been written about extensively spanning a number of disciplines, there is a lack of literature that combines these complex and topics into a narrative that attempts to identify and understand the development of the built environment in postcolonial Africa specific to one country. The exception to this statement would be countries such as South Africa[5], Eretria[6], and northern African nations.[7] For this reason, Ghana was chosen for the focus this thesis because of the lack of attention paid sub-Saharan Africa in this context.

[5] Judin Hilton et al, *Blank: Architecture, Apartheid and After*. Rotterdam: NAi Publishers, 1999).
[6] Ren Denison et al, *Asmara: Africa's secret modernist city*. (London: Merrell, 2003).
[7] Spiro Kostof, and Richard Lingersoll. *World Architecture: Across-Cultural History. (*Oxford: Oxford University Press, 2012) 861.

Chapter Summaries

The first chapter of this thesis is meant to provide context for the research as well as define the need for it, and present the thesis question. It also reviews the current literature surrounding the topic and examines the gaps that exist within it.

The second chapter of this thesis will cover the developmental history of Ghana. It will look at Ghana in terms of three separate time periods: Pre-Colonial, Colonial, and Post-Colonial. It examines important geographic, climatic, and cultural aspects of the country in order to provide a frame of reference for the examination of modern architecture in the country. It will also examine the political factors following independence that were key in the young nation's post-colonial architectural development.

The third chapter of this thesis will touch on the development of modernism in Great Britain and the exportation of modern architecture to the developing world and its related impact on modern architecture in Ghana. It focuses on the hesitant development of modernism in Great Britain in addition to the difficult financial times in which architects struggled to find work after World War II. All of these variables contributed to the work of British modernists abroad and lead to the development of an entirely new style of modernism: tropical architecture. This chapter will also look at the exportation of modernism to the developing countries as a whole while examining the importance of developments in India and South America in addition to the inarguable influence of Le Corbusier.

Chapter four will provide background on the themes of Ghana's architectural development including the ideas and origins of tropical modernism, key architects, and the

materials they worked with. This chapter examines the importance of the style of tropical modernism and the changes colonial policy that were seen in the early 1940's that set the stage for its development.

Chapter five will cover major architectural projects. Explanations will be provided for each architectural example along with images, plans, and supplemental information regarding the influences and importance of the structures. The chapter is organized by building type, but focuses primarily on educational buildings, community buildings, governmental buildings in addition to residential and monumental structures. Within the building type organization the architectural examples will be organized chronologically.

Chapter six looks at the decline of modernism in Ghana. After several coups d'etat in the second half of the 1960's much of the foreign interest and presence in Ghana left as a result of political instability and uncertainty. This chapter will also take a look at the precedent for heritage conservation in Ghana alongside a renewed global interest in the twentieth century heritage from this period. It will summarize the arguments and information presented in this thesis in support of my research question while looking at the legacy left behind by the modern architecture of Ghana.

CHAPTER TWO

GHANA: "A VERY OLD NEW COUNTRY"[8]

This chapter will shed light on the development of Ghana as a country in respect to its existence leading up to, during, and after colonial rule. The history of the territory we now know as Ghana has a long and complex past. This chapter will not attempt to unpack every layer of the land's people and their history, nor could it, but it will provide a frame of reference for the events that produced Ghana in the mid-twentieth century and influenced the decisions made about the built environment.

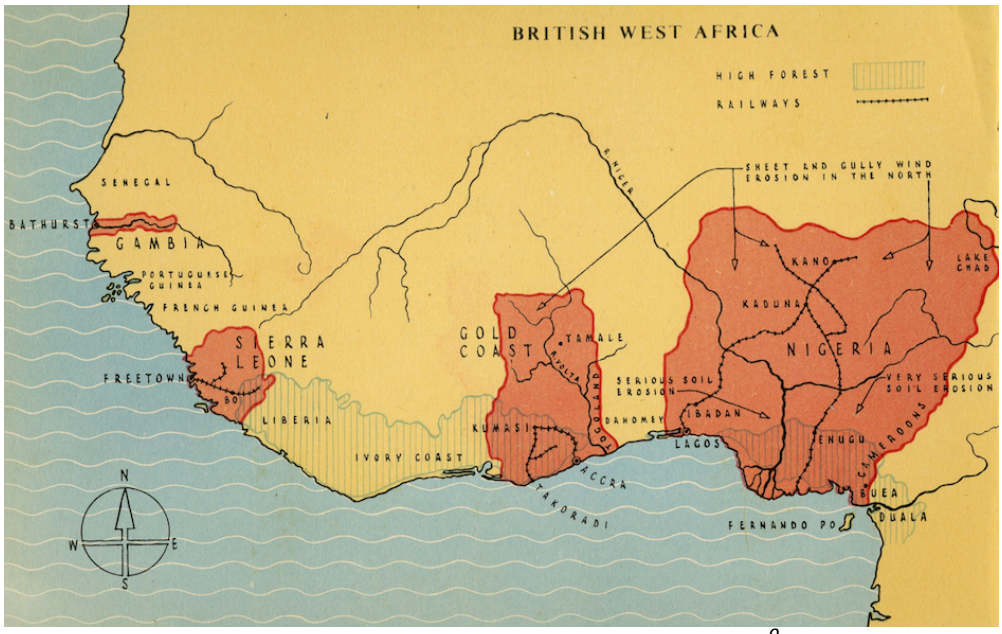

Figure 2.1: Map of British West Africa c. 1947[9]

[8] Basil Davidson, Paul Strand, *Ghana: An African Portrait,* (New York: Aperture, Inc., 1975), 121.
[9] Jane Drew and Maxwell Fry, *Village Housing in the Tropics,* (Lund Humphries: London) 1947, Inside cover.

Climate and Geography

The nation of Ghana is extremely diverse in terms of its climate and geography. Grasslands can be found in northern parts of the country, tropical forests can be found throughout central Ghana, further south are small hills and plain lands, and finally the coastal area exists along the southern edge. Ghana, as we know it today, is roughly two-hundred miles wide and six-hundred miles long.[10] Within this country lies a wide diversity of "…climate, vegetation, and a corresponding cultural and economic pattern that is broadly representative of the three major zones into which most of West Africa is horizontally divided: a narrow coastal plain land, a zone of tall rain forest, and a northerly country ranging from sparse woodland to treeless savanna."[11] The capital city is Accra located on the coast where the country meets the Gulf of Guinea. Several cities are discussed in this thesis as being major concentrations of modern architecture. The first is the capital city of Accra. Accra began as a small colonial settlement that developed into the country's main center for commercial and economic development in addition to being one of the largest concentrations of the population and modern architecture. The second city discussed in this thesis is Kumasi. Located further inland in the country, Kumasi is the old capital of the Ashanti Kingdom. Modern day Kumasi is known as the capital of Ghanaian education.

The average climate of Ghana typically range from highs in the low 90's to lows in the high 60's with humidity percentages never below the high 70's. The majority of the year is split

[10] Davidson, *Ghana: An African Portrait,* 7.
[11] Ibid., 8.

into two main seasons: the wet and the dry.[12] The temperature and amount of rainfall of course vary from southern to northern Ghana. The northern region generally sees the wet season from August to September receiving anywhere from forty to fifty-five inches of rain. In the forest country to the south the wet season generally accumulates between 50 to 86 inches of rain in a series of two wet seasons: one heavier season from April to July and a lighter one from December to February.[13]

Religion

The native religions of Ghana have long been tied to political systems and ways of life. Islam was introduced into the region in the 1400's by traders and merchants but did not widely take hold in what we know today as Ghana except in the north. Christianity was first introduced by Portuguese traders in the late fifteenth century, but it did not truly impact the country on a large scale until the nineteenth century with the introduction of colonial rule.[14] Today a majority of the population is either Christian or Muslim.[15]

Language and Ethnic Groups

Ghana has five chief languages. Although English is the official language of the country, Twi is perhaps the most important native language and it has several different dialects. Most

[12] Oliver Davies et al., "Ghana," Encyclopedia Britannica, Last Updated January 13, 2017. Accessed February 12, 2017. https://www.britannica.com/place/Ghana.
[13] Ibid.
[14] Davidson, *Ghana: An African Portrait,* 122.
[15] David Adjaye, *African Metropolitan Architecture, Volume 5: The Forest* (New York: Rizzoli International Publications, 2011), 22.

Ghanaians either speak Twi or understand it.[16] Language is very closely tied to ethnic groups in Ghana, of which there are many. A majority of the population, however, falls into a few major ethnic groups. The Ashanti (sometimes called Asante) are a historically powerful demographic of the population with origins in the inland forest. The Ashanti are part of a larger group called the Akan people. This group also includes the Fante from the inland forest. Beyond the Volta River in southeastern Ghana are the Ewe, and in the coastal area near Accra are the Ga. This is an ancient group of people who settled near Accra prior to it becoming a colonial settlement.

[16] Ibid., 121.

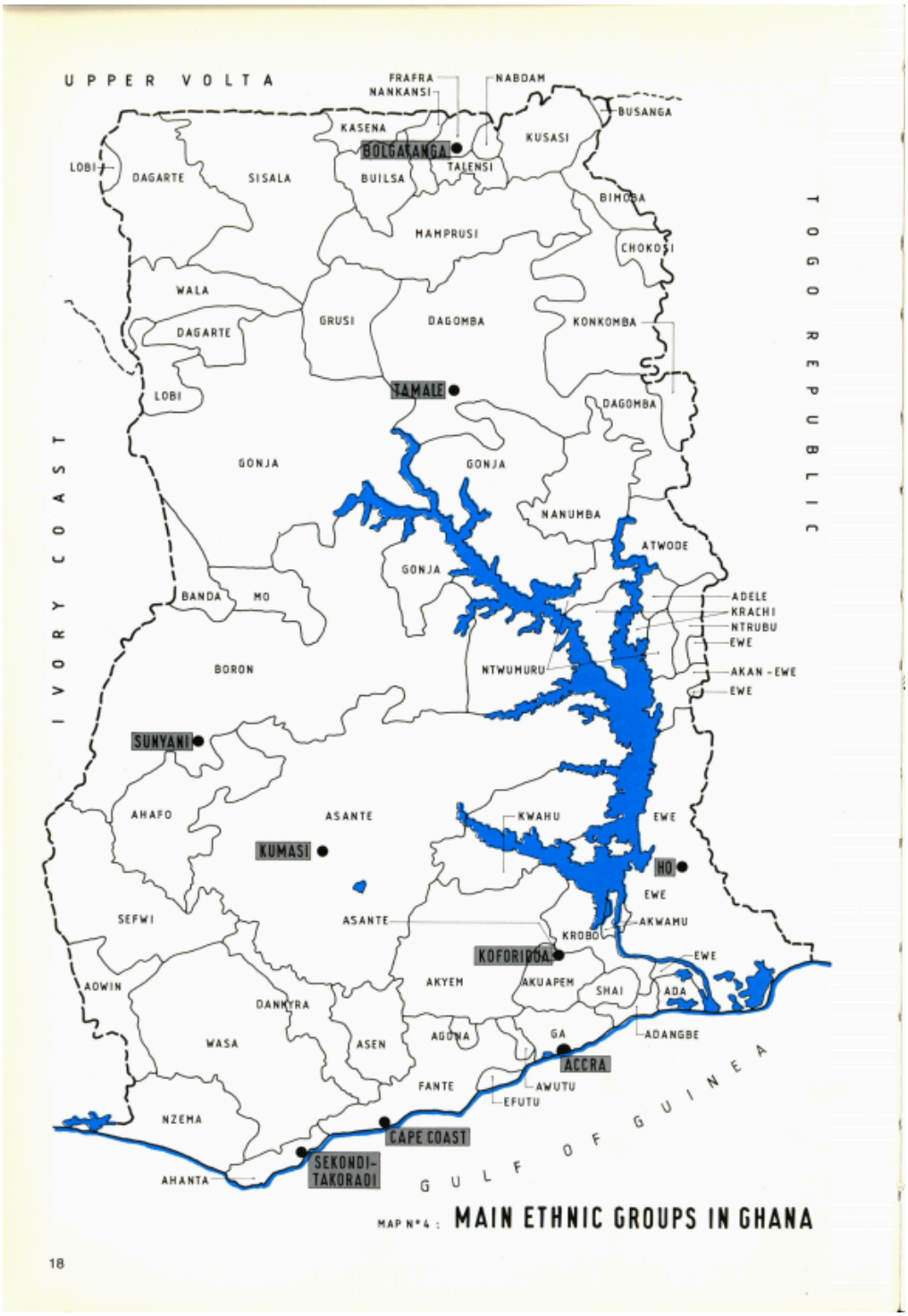

Figure 2.2: Map of Ghana's Main Ethnic Groups[17]

[17] Hannah Schreckenbach and Jackson G.K. Abankway, *Construction Technology for a Developing Country* (Eschborn: German Agency for Technical Cooperation for the Dept. of Architecture, University of Science and Technology, Kumasi, Ghana, 1984), 18.

Pre-Colonial Period: Origins to the 1860's

Much of modern day Ghana was once dominated by the tropical forest that exists in primarily central Ghana today.[18] Native populations generally inhabited small isolated communities in the interior of the country where they lived off the forest. The area known as modern day Accra originally served a main migration route for those travelling north and east. By the thirteenth century kingdoms had developed throughout the territory. Inland in modern day Kumasi was the Ashanti Kingdom. By the fourteenth century, the gold of central Ghana became increasingly important to global trading patterns which reached Western Europe and the Middle East through trans-Saharan trading partners to the north. The country would forever be defined by trade relations.

Contact with Europeans for trade in coastal West Africa began as early as the sixteenth century.[19] By this time conflict from within began to dominate the landscape as rival trading outposts battled for who would control trade with the Europeans along the coast. For much of the seventeenth century the Akwamu Empire and the Denkyira Empire controlled the coastal trading scene.[20] In the early 1700's however, the Ashanti Kingdom dominated trade until colonial confrontation came to a head in 1900.[21]

[18] Davidson, *Ghana: An African Portrait,* 124.
[19] Ibid., 7.
[20] Ibid., 126.
[21] Ibid.

While violent clashes with the foreign powers were not uncommon, the trading powers of Ghana more or less had the upper hand in these situations. They would frequently play European traders against one another for their own benefit.[22]

However, as trade continued, the transfer of technology never occurred between Europe and Africa. As Davidson points out in *Ghana: An African Portrait*, the gap in technology only widened as the decades went on, and the rest of the world went through an industrial revolution while its African counterparts continued to focus on exports, human or otherwise.[23] Prior to the rise of the slave trade in the sixteenth century, the Ashanti people controlled trade in ivory and gold with European forces. Although Ghana was not a large exporter of captives during the prominent years of the slave trade, their geographical position and extant fortresses built during the Dutch and Portuguese periods of trade put them in an important position as gathering points.[24] However, after the slave trade ended Britain sought to dominate their former trading partners and occupied Kumasi, the capital of the Ashanti kingdom, in 1896.[25] The British then established a protectorate that included much of modern day Ghana. By the end of the nineteenth century they were in control of one of the most powerful economies in colonial Africa controlling markets in cocoa beans and gold. The British called this territory Gold Coast.

[22] Ibid., 127.
[23] Ibid.
[24] Ibid., 133. Studies from the 1970's by Philip Curtin show that only one-tenth of all captives imported during the eighteenth century to Jamaica, Haiti, and the United States were from Ghana.
[25] Ibid.

Colonial Period (1860's to 1957): The Gold Coast

By the 1860's the official colonial period was well underway in Ghana.[26] By this time much of the coast was dominated by colonial rule, soon to be followed by the domination of Ashanti territory officially by 1900 and the remainder of northern Ghana followed suit by the early 1900's. In 1874, when the Ashanti people suffered a massive blow from British forces, African leaders reevaluated their relationship with what was becoming a more and more dominant force in and around their territory. By 1886 a submarine cable linking Accra to London was laid, and the years that followed were defined by invasion and conquest. 1901 marked the official annexation of the Ashanti territory, which was the last stronghold of local economic and social control in what would later become Ghana. In spite of concessions made by the Ashanti people to grant the British a chartered company in their territory, the British ultimately opted to take complete control of Ashanti territory and moved further into modern-day Ghana. Growing fears that the French had similar aspirations in the area along with technological superiority, pushed the British into making this decision.[27] The mark of the new century was the first symbol of "modernization" in Ghana and other British colonies.

Unlike other areas of the colonized continent, such as South Africa, Ghana was not widely settled by the British. Unpleasant conditions such as malarial mosquitos and general resistance to white settlement in the area made the Gold Coast an undesirable place for the British to settle on a large scale.[28] These conditions led to Ghana being classified as a territory

[26] Ibid.
[27] Ibid., 135.
[28] Ibid., 134.

of “Indirect Rule” as opposed to a Settler Rule or Trading Company Rule seen in other African countries.[29] Due to this lack of major societal disruption, some historians argue that Ghana was fully able to preserve its culture in the face of colonization, even if it was unable to develop it further.[30] It goes without saying, however, that the years of colonization altered Ghanaian history and had an irrevocable impact on the country as it exists today. Colonial rule was “…a period of cultural suffocation and psychological discouragement, of barriers to useful knowledge, to self-respect, to any understanding of the dynamics of the modern world, and of Africa’s possible connection with those dynamics.”[31] It also savagely robbed the Ghanaian economy of a century of development. In spite of the fact that mining of gold, diamonds, and manganese, in addition to the lucrative cocoa farming that occurred during the colonial period all made vast amounts of money, very little of that wealth stayed in Ghana. In fact, every year roughly half of the mining proceeds made their way back to Great Britain, while the majority of the remaining half went to the importation of needed machinery and the salaries of the Europeans who supervised the projects.[32] Even though the country was rich in natural resources and exports, very little of that was benefiting the majority of the population. In fact, basic public services like water infrastructure were never widely developed in Ghana under colonial rule. Future President Kwame Nkrumah pointed this out in one of his many writings

[29]"Africa: British Colonies." In *Encyclopedia of Race and Racism*, edited by John Hartwell Moore, 22-28. Vol. 1. Detroit: Macmillan Reference USA, 2008. *World History in Context* (accessed February 8, 2017). http://link.galegroup.com/apps/doc/CX2831200016/WHIC?u=admin&xid=5ac0f55f.
[30] Davidson, *Ghana: An African Portrait,* 134.
[31] Ibid., 143.
[32] Ibid., 145.

when he exposed the contradiction that while colonial rulers were making handsome profits the people of Ghana did not even have access to clean water.[33]

Under colonial rule Ghana was often referred to as a "model colony."[34] The colonial period for Ghana was defined by a continuation of pre-existing relationships with the British although this relationship had forcefully shifted from "…alliance into subjection or partnership into servitude."[35] However, Ghanaians under colonial rule dealt with their foreign leadership by developing their own successful exports in the production of cocoa beans. Unfortunately, the benefit of their labors went to their colonial rulers. Additionally Ghanaian culture began to blend with modernization brought by the colonists in the form of schools and other institutions. Additionally, there was little uprising in the colony until the 1940's saw Kwame Nkrumah's rise to power.

Kwame Nkrumah was an ambitious, young, Ghanaian man educated in the United States. The exposure to racial injustices abroad, in addition to the time he spend in England, influenced his political views early on in his career. The "European Model" was introduced to Ghanaians through trade and further pressed upon them as colonization developed on their soil. Although this model affected them a great deal through their economic development prior to being subjects of the British Crown, they at least had the option to choose how they would carry their culture along with them on the road to modernization. Once colonization began, they were very much stripped of this choice. The more Ghanaians were exposed to European

[33] Ibid., 144.
[34] Ibid., 135.
[35] Ibid., 136.

educational systems, government forms, and other social institutions, the "European-Educated African Opinion"[36] began to influence a new upper class of Ghana.

The path to independence was based on almost a century of colonial suppression of Ghanaian culture. There was truly no way to chase independence without the Western tools of modernization that had been used to colonize them in the first place.[37] Anti-colonial sentiment stemmed from several branches of discontent: strikes from cocoa farmers protesting unfair wages; the growth of educated Ghanaians who attended schools built by the British; and a great number of Ghanaians returning home from World War II as veterans of service for the British Empire. More than 60,000 Ghanaians fought for the British in the war, and more than half of them served outside of Ghana. This enabled them to see first-hand what was happening around the world in Fascist Italy, Nazi Germany, and Imperialist Japan.[38] The Second World War was a major catalyst for African independence as well as an unpleasant realization for Britain that it could no longer sustain the empire they had created during the eighteenth and nineteenth centuries.

In addition to functioning as a catalyst for African Independence, World War II also served as a medium for architectural exportation. Social and philosophical changes on race relations after the horrors of the Nazi regime began to change the views and policies of Great Britain's colonial system. In 1940 Great Britain established the Colonial Development and Welfare Act in an attempt to actively improve the quality of life for the citizens of the commonwealth.[39] The

[36] Ibid., 139.
[37] Ibid.
[38] Ibid., 145.
[39] Frederick Cooper, *Africa since 1940: The Past of the Present,* (Cambridge: Cambridge University Press, 2002), 31.

large increase in school building throughout the country was a direct result of this act which introduced a new educated class and a new architectural expression to go along with it.

Ghana's path to independence began in early February of 1948 when several demonstrators were killed by colonial police forces in a protest march.[40] Although the struggle for independence was not as violent in Ghana as it was in Algeria or other colonies,[41] lives were lost and the battle for independence did not happen overnight. Kwame Nkrumah assumed the role of Prime Minister in the early 1950's and would lead the Gold Coast to independence under the Convention People's Party or CPP.[42] This party gained power in 1951 when the colonial territory held their first official election and the British granted "internal self-rule" to a Ghanaian nationalist ministry.[43] The party won with its leader, Kwame Nkrumah, imprisoned by the colonial government for starting protests in Accra.[44] By 1954, under pressure from the CPP, the British conceded that the Gold Coast would soon gain its own independence. Prior to the establishment of increased self-governance in Ghana was categorized as the 'Crown Colony' type, meaning the majority of power was found in the position of the governor and his majority British administration.[45]

Nkrumah advocated for independence as early as 1953, but he was also a strong advocate for Pan-Africanism. This was a hope to reorganize his nation and the rest of the continent into a

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[40] Manuel Herz, *African Modernism: The Architecture of Independence: Ghana, Senegal, Cote d'Ivoire, Kenya, Zambia* (Zürich: Park Books, 201), 6.
[41] Herz, *African Modernism*, 6. The Algerian War for Independence from France lasted several years from 1954 to 1962 costing one million lives.
[42] Ibid., 18.
[43] Davidson, *Ghana: An African Portrait,* 140.
[44] Cooper, *Africa since 1940,* 52.
[45] F. Le Gros Clarke et al., *The New West Africa (*London: Allen & Unwin, 1953), 71.

burgeoning power on the global stage. These ambitions were strong influences on Nkrumah's early building campaigns. On March 6, 1957 the Gold Coast was the first Sub-Saharan African nation to declare its independence. When the Ghanaian flag was adopted a black star was placed in the center as a symbol of pan-Africanism. This was a reference to an early pan-African advocate Marcus Garvy's shipping company named the Black Star Line.[46] The so-called 'model colony' of the British also served as a model nation for achieving independence in Sub-Saharan Africa.

Post-Colonial Period (1957 – Present): Ghana

Between the years of 1957 and 1966 thirty-two countries (roughly two-thirds of African nations) gained independence. This gave birth to the year of Africa in 1960 in which seventeen countries, primarily in Sub-Saharan Africa, gained independence.[47] The energy and promise this new freedom brought cannot be accurately described. After Ghanaian independence was made official in 1957, the British Crown and the former colony of the Gold Coast redefined their relationship with Ghana as a sovereign nation, but refused to let their complicated history interfere with a smooth transition of power.

Nkrumah inherited a turbulent but promising nation, one that he attempted to lead into the future he saw for it in modernizing the built environment and its people. Like many countries in West Africa, Ghana was quick to create systems of governance that was similar to those in Western Europe. Nkrumah saw one of the most accessible roads to modernization and progress

[46] Julien Lanoo, "L'Etoile Noire Du Ghana" *L'Architecture d'aujourd'hui* (September 2016): 114.
[47] Herz, *African Modernism,* 5.

as keeping ties with the British, even though by the early 1960's many of his contemporaries viewed any such relationship as colonial rule by another name.[48] The architectural expression of a country on the verge of independence and the years that followed clearly articulate this struggle.

The first three years of Nkrumah's leadership can be defined as a period of optimism and excitement, not only in Ghana, but for all African nations and colonies. By 1960 however, his reign took a sharp turn. This was the year that Nkrumah made Ghana a republic and a one-party state of which he was the perpetual President. In 1966, Nkrumah was overthrown in a military coup when the economy sank due to falling prices in exports and mismanagement of funds.[49] In his place was a military dictatorship that lasted only three years. A European style parliamentary regime headed by Dr. Kofi Busia, a western-educated sociologist, followed, but by 1973 another military coup led by Colonel Ignatius Acheampong had taken over. While Ghana was going through this turbulent battle for power, Nkrumah had retired in Africa to the Republic of Guinea where he continued to write and be engaged (even if from a distance) in the political events in Ghana. He died of cancer on April 27, 1972 at the age of sixty-three.[50] He was eventually buried in his home village in southwestern Ghana.

The reasons for the decline of Nkrumah's reign are too complex to fully discuss [discuss] in this thesis, but his political career and the changes that followed it are crucial in fully understanding how the built environment of Ghana developed in the years after independence. Soon after independence in 1957, Nkrumah appointed himself as president for life and legalized

[48] Davidson, *Ghana: An African Portrait,* 135.
[49] Herz, *African Modernism*, 18. Larger projects detracted funds at an unsustainable rate.
[50] Davidson, *Ghana: An African Portrait,* 141.

the imprisonment of his political opponents without trial which made him incredibly unpopular. Nkrumah's vision for a new Ghana began with a honeymoon period in the three or four years following independence. In this time period, he assessed the funds that the new nation had inherited from its former colonial rule and delegated it as he saw fit. Money went to establishing proper infrastructure, increasing education, and health services for Ghanaians. He also set aside a large amount to support African nationalists from other newly independent nations and to promote Pan-Africanism. Unfortunately, in addition to all the good his early efforts saw, it was no secret that a portion of funds were put in private hands.[51]

Nkrumah rose to power on the public support for his 7-Year Development Plan which intended to catapult Ghana into the twentieth century by focusing on accelerating its development. This plan had three main concentrations: industrial development, affordable housing, and education and manpower. All of these categories were reflected in the post-colonial built environment and Nkrumah's act of "building a new nation."[52]

Nkrumah, who had faced opposition even in the years prior to Independence, would face his biggest challenges in the first half of the 1960's. More and more he began to believe that if the country continued to follow the "European Model" of governance they inherited, it could not avoid an inevitable financial disaster. Although Nkrumah had been accused of having communist ties prior to his election, this fear of financial collapse pushed him even further to the left. This shift can be seen in his choice of East Bloc architects for substantial Ghanaian building projects in the early 1960's. Nkrumah became so closely associated with modern

[51] Ibid., 141
[52] Kwame Nkrumah, *I Speak Freedom* (New York: Frederick A. Praeger, 1961), 111.

buildings in Ghana that in the years leading up the military coup, opposing parties would specifically target modern buildings in Accra for bomb attacks in order to weaken his regime.[53] Ghanaian newspapers were constantly showing images of Nkrumah and his building projects throughout the city establishing a firm connection between his government and the evolution of the country's modernism.

Figure 2.3: ". . . And I See Springing Up Cities in Africa" ("Scenes around Ghana [3]," in the series "This is the New Ghana Kwame Nkrumah is Building," Evening News, 21 May 1963, 6).[54]

[53] Lukasz Stanek, "Architects from Socialist Countries in Ghana (1957-67): Modern Architecture and Mondialisation," *Journal of the Society of Architectural Historians 74,* no.4 (December 2015): 426.

[54] Stanek, *Architects from Socialist Countries in Ghana*, 427

Long-opposing groups from the Ashanti territory in fact spoke out against Nkrumah and his threat as a socialist ruler to the United States in the early years of the Red Scare which ultimately effected foreign aid sent to the country.[55] Nkrumah's authoritarian rule was also seen in his policies such as imprisonment without trial, and his decision to amend the framework of the constitution making himself president for life.[56] Although his work towards industrializing Ghana by updating basic services, continuing education building programs, and massive infrastructure projects continued to boost his popularity among the country until his fall in 1966, many of these projects threw the young country into massive foreign debt. The deficit was as much as $125 million in 1961.[57] In 1962 an assassination attempt led to Nkrumah's withdrawal from the common people of his country and reliance on resources from his Soviet allies. As noted, after the fall of Nkrumah several regimes tried to remedy deeply embedded divisions and problems that were present in Ghanaian politics long before independence with their own attempts to return to the "European Model." By the 1970's, where the timeline for this thesis ends, Ghana was still in an uncertain climate. Foreign investment declined both financially and physically following the political instability of the mid-to-late 1960's. Nkrumah's building and development programs had come to a close, but he left behind a continued legacy of Ghanaian modernity through the built environment.

[55] Davidson, *Ghana: An African Portrait,* 154.
[56] Editors of Encyclopedia Britannica, "Kwame Nkrumah: President of Ghana," Encyclopedia Britannica, Last Updated June 6, 2009. Accessed January 30, 2017. https://www.britannica.com/biography/Kwame-Nkrumah
[57] Ibid.

This chapter was an attempt to set the stage for the main events that will be discussed in this thesis. In conclusion, Ghana is a country rich with diversity and a history heavily influenced by trade relations with European nations. In the years following independence, the leadership of Kwame Nkrumah was a major catalyst in building projects conducted throughout major areas in the country. The next chapter will take a look into the context for the modern movement in Great Britain and modern architecture in the third world as a whole.

CHAPTER THREE:

MODERN ARCHITECTURE AND ITS EXPORTATION

The genesis of modern architecture and its expansion in developing countries is a major theme of the twentieth century. Although this narrative as it is specific to Ghana is the central focus of this thesis, it is also important to understand the context of modern architecture and its presence in Great Britain and developing nations around the world. This chapter will shed light on the development of the modern movement in Great Britain and the influence of modern architects in emerging nations across the world. The materialization of architectural ideals rooted in social revolution and their subsequent spread to other nations is key in effectively interpreting the architecture of Ghana in the mid-twentieth century.

Modern Architecture in Great Britain

Modern architecture in Great Britain was initially rejected by traditional architects who dominated the field in the early twentieth century. By the mid-1930's however, Britain was one of the most experimental countries in modern architecture.[58] This was largely due to the heightened immigration into the country from former modern powerhouses such as Germany where modernism was repressed by new regimes.[59] The ideas spread by Le Corbusier and the

[58] William Curtis, *Modern Architecture since 1900* (London: Phaidon Press, 1996), 329
[59] Curtis, *Modern Architecture since 1900,* 329.

Congrès Internationaux d'Architecture Modern (CIAM) could be seen in Britain's architects of the 1930's and 40's in their synthesis of Ebenezer Howard's "Garden City" and Corbusier's "Radiant City" into the 'Vertical Garden City of the Future' as seen in the High Point I flats by Berthold Lubetkin. Lubetkin, a Russian émigré, was praised by Corbusier for his apartment complex design. Lubetkin's buildings can be seen as a point of genesis for the modern movement in Great Britain.[60] However, modernism did not take hold as it had in Germany or Russia, and large public commissions for modern buildings were quite rare.[61] For this reason, modern architecture outside of Great Britain (in developing countries for example) was particularly important for British modernists who were not yet fully embraced by their own country.

In 1933 Maxwell Fry and a handful of other British modernists founded the Modern Architectural Research Group (MARS). This group was formed to represent Great Britain at the increasingly influential meetings of the Congrès Internationaux d'Architecture Moderne (CIAM) where prominent modernists such as Walter Gropius and Le Corbusier among others met and discussed modern issues and how to solve them with modern solutions of city planning and architecture. Maxwell Fry, who worked extensively in Ghana beginning in the 1940's, developed a close and professional relationship with Walter Gropius in the late 1930's.[62] Fry had immense respect for Gropius who was sixteen years his senior. In 1936 Fry

[60] Ibid., 333.
[61] Ibid., 334.
[62] Iain Jackson and Jessica Holland, *The Architecture of Edwin Maxwell Fry and Jane Drew: Twentieth Century Architecture, Pioneer Modernism and the Tropics* (London: Routledge, 2014), 65.

and Gropius opened their own practice on Victoria Street in London.[63] This professional relationship and Gropius' Bauhaus design aesthetics directly translated into Fry's development as an architect and the work he would go on to produce in West Africa with Jane Drew. The partnership ended in 1938 when Gropius left England for Harvard. Though the practice was short-lived, their connection was powerfully influential.

By the 1950's modernism was evolving in Great Britain with architects like Denys Lasdun, Maxwell Fry and Jane Drew, and Alison and Peter Smithson. The Smithsons were particularly important for their experiments in housing utilizing zigzags and linear patterns based on the idea of movement.[64] Echoes of this are seen all over West and North Africa. For example, the ATBAT Housing units designed by Jean Hentsch and Andre Studer in Casablanca express the linear relationship between individual units alternating in setback but creating one unified pattern. The Smithsons belonged to a young generation of British architects who were beginning to redefine British modernism in the 1950's with experimentations in exposed concrete in urban settings. This pushed Great Britain into an era of "New Brutalism" as defined by British architectural critic Reyner Banham. These principles stemmed from their interest in Le Corbusier's *beton brut,* or exposed concrete.[65]

Modern architecture in Great Britain was not widely accepted between the two world wars and experimentation elsewhere allowed architects to freely exercise their ideas without the constraints of local building councils. This led to post-war experimentation in modern architecture in the colonies in West Africa.

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[63] Jackson and Holland, *The Architecture of Edwin Maxwell Fry and Jane Drew,* 67.
[64] Curtis, *Modern Architecture,* 444.
[65] Curtis, *Modern Architecture,* 530.

Modern Architecture in the Developing World

The adoption and adaptation of modern architecture as a tool for developing countries to showcase their independence was widespread after World War II, although many so-called developing countries had already seen the introduction of modern architecture after the First World War. Architects like Le Corbusier and Louis Kahn fully embraced the third world as an opportunity for absolute architectural expression. "The idea of social responsibility, engendered by socialism and industrialization, found a resonance in the liberation struggles in Latin America, Asia, and Africa."[66] The same can be said for Ghana. Modern architecture functioned in the same way for developing countries as it did for developed countries "as a symbolic manifestation of a new political and social reality."[67] This was especially true for countries such as Ghana in their struggles for independence after nearly a century of colonial rule.

The most influential architect in the third world was undoubtedly Le Corbusier. In the early 1930's Corbusier established principles that would resonate throughout the century in Algiers with his Obus Plan. Although the plan was never built, its impact was felt elsewhere. The implementation of his plans through public and private lenses would prove to be influential in developing countries around the globe. Housing plans featuring iconic details such as *brise-soleils*, domino structure, and *pilotis* can be found around the world. Corbusier worked with a number of young architects from developing countries such as Lucio Costa from Brazil, Rex

[66] Hasan-Uddin Khan, *International Style: Modernist Architecture from 1925-1965* (Köln: Benedikt Taschen, 1998), 190
[67] Hasan-Uddin Khan, *International Style,* 189.

Martienssen in South Africa, and Charles M. Correa in India who would bring certain aspects of Corbusier's design back home and adapt it to fit the needs of their own countries.[68]

This trend can be seen in both South America and Asia. Countries like India, who gained independence in 1947, had fully embraced modern architecture as a means of independent expression as a young nation. New capital cities popped up throughout the developing world and were the ultimate chance for architects like Le Corbusier and Oscar Niemeyer to execute a comprehensive vision. In 1950, Corbusier had this opportunity in India. Along with the help of British modernists active in Ghana, Edwin Maxwell Fry and Jane Drew, he designed the new capital of the Punjab in India at Chandigarh. Corbusier was involved with the project from 1951 until his death in 1965. The city, although several buildings were never realized, is the most prominent example of modern architecture as a symbol for the progressive ideas of a new nation. The influence of Corbusier's Chandigarh can also be seen in the new capital city of Brasilia in Brazil. The capital was planned by Lucio Costa (who had worked with Corbusier on the Ministry of Education and Health in Rio De Janeiro), and the architecture was designed by Oscar Niemeyer. The plan was conceived by Brazilian president Juscelino Kubitschek de Oliveiro who wanted the new city to revolve around the concept of a bird in flight. The head of the plan consists of the main government structures, the wings are home to the main residential sectors, and the tail encompasses recreational facilities.[69] New capital cities were also conceived and executed in Africa, such as Yamoussoukro in Cote d'Iviore, though none were as influential and iconic as Chandigarh or Brasilia.

[68] Ibid., 199.
[69] Ibid., 213

While these cities were carefully designed and created as complete entities, other pockets of modernism that developed outside of Western Europe were less planned. Modernist influences were heavily felt in places like Tel Aviv and Haifa in Israel where British and other European architects created the now iconic Bauhaus-inspired appearance of the city. The influx of immigrants into Tel Aviv from a great number of countries as a result of World War II along with the need to house a large number of people in a short amount of time is the primary reason for the appearance of the city today.[70]

Corbusier's "Five Points of a New Architecture" heavily influenced European architects practicing in the developing world.[71] This included the pilotis, the roof terrace, the free plan, the ribbon window, and the free façade. The first of these principles was concrete pilotis that raised buildings up creating circulation and open space in a way that had never existed before. The roof terrace principle directly references changing the shape of the roof from pitched to flat; this allowed the roof itself to be usable space for activities such as gardens. The third principle, the free plan, was entirely dependent upon new technology like steel frames that allowed walls to be left out where they once would have been crucial for structural integrity; this opened up the interior for new and free interpretation. The fourth principle, the ribbon window, was also reliant upon technological advancements; because walls did not need to be load bearing thanks to steel and concrete framing systems, walls could be entirely made up of glass opening up the interior to the exterior world. The free façade principle was quite similar,

[70] Ibid., 222.
[71] Ibid., 213

expressing the lack of need for structural forms around windows and subsequently 'freeing' the façade of traditional forms.[72]

The optimism of the late colonial period and early years of independence can be seen in the successful exportation of modern architecture to the colonies on the African continent. However, this hopefulness that was so powerful during the fight for independence quickly declined in the mid-1960's when sub-Saharan Africa suffered from political and economic instability that led to civil wars in countries like Nigeria. Ghana did go through a series of military coups after the fall of President Kwame Nkrumah, but the country did not devolve into violent opposition on a large scale. Many assessments of African architecture end in writing off the continent due to long-term instability. The growth of the population after independence and the lack of existing infrastructure to accommodate smart growth dulled the excitement of the early 1960's felt by Africa and the rest of the world about the potential of a newly independent African continent.

The irony of modernity is constantly pointed out in writings about modern architecture in the third world. It is difficult at times to see past the idea of modernism as just another emblem of colonialism and foreign interference on native culture. "This is the paradox: how to become modern and return to sources; how to revive an old, dormant civilization and take part in universal civilization."[73] While this contradiction is commonly referenced, the question must be asked: what was the alternative? The architecture of developing countries was stifled by

[72] Choay, Francoise, "Le Corbusier: Swiss Architect," Encyclopedia Britannica. Last modified August 17, 2016. Accessed January 15, 2017. https://www.britannica.com/biography/Le-Corbusier.
[73] Curtis, *Modern Architecture*, 578.

decades of colonialism, and these countries were often shut out of the industrialization that occurred with their foreign rulers. When this gap in technology widened it became impossible for developing countries to compete on the same global stage as the developed world without adopting the tools they had created, including architecture. Additionally, the modernisms that were being adopted in the built environment were not exclusively 'British' or 'Soviet', but had the potential to be a mixture of both, as modernism had developed for almost half a century seeing many incarnations in countries throughout the west and the east. This manifestation can be seen in Ghana, as architects spanning the political spectrum of Europe practiced in the country. In many ways modernism found itself most successful in the developing world when synthesis was achieved between the form and style and the local climate and cultures. This can be seen in the evolution of modern architecture in Ghana. While at first focused exclusively on climate, local cultures were eventually taken into design consideration following independence. This followed years of perceived inferiority of the history (or lack thereof) of native architecture.

In conclusion, the initial rejection of modernism in Great Britain led British modernists to look elsewhere in the commonwealth for architectural freedom. Territories like the Gold Coast were viewed as the perfect opportunity for these architects to practice without the restrictions they faced in Great Britain. The growing influence of architects like Le Corbusier, Mies Van der Rohe, and Walter Gropius on British modernists can be seen in the building projects of British West Africa beginning in the late 1940's. The surrounding context of the modern movement is essential in placing Ghana in the larger picture of the modern movement.

The next chapter will examine the primary themes, architects and materials of modern architecture in Ghana.

CHAPTER FOUR:

TROPICAL ARCHITECTURE AND ITS ARCHITECTS

Architectural Themes

Modern architecture as it is described and examined in this thesis was not introduced on a large scale in African countries until the Second World War.[74] Between 1940 and 1970 the built environment of British colonies in Africa was heavily influenced by The Architect's Association School of Tropical Architecture in England. The development of tropical architecture is the first and most important architectural theme of this period. This school was spearheaded by the work of Maxwell Fry and Jane Drew, who will be discussed extensively in this chapter.[75] The two were married in 1942 after both being established as important architects in England. Fry studied architecture at the University of Liverpool and is heralded as one of the fathers of British modernism.[76] The study and implementation of tropical architecture was primarily dominated by climate studies that were conducted by the Building Research Institute in England which consisted of several research stations across globe. This research, along with the practice of British architects, defined the late colonial period of Ghana. The building projects in Ghana in the years after independence were a statement of the ambition and promise that newfound freedom and leadership had to offer the country. The

[74]Antoni Folkers, *Modern Architecture in Africa* (Amsertdam: Sun, 2010), 161.
[75] Folkers, *Modern Architecture in Africa,* 161.
[76] Muriel Emanuel, *Contemporary Architects* (St. James Press, 1994, 3rd ed.), 327.

research and work conducted by British architects prior to independence, in conjunction with the vision of the newly elected leader transformed the new nation. President Kwame Nkrumah went on a building campaign updating and creating universities, high schools, hotels, low-income housing, and civic monuments all utilizing modern styles of the day in addition to modern architects from around the world.[77]

The second architectural theme found in the building projects of this time period was the view of the African continent as a place for architectural experimentation. The continent of Africa was viewed as having "…an atmosphere of architectural freedom"[78] for European architects to test and push the boundaries of modernism. While they may not have been inhibited by European precedents, planning codes and existing congested downtowns, architects operating in Africa attempted to stay true to the ideals of the modern movement in their projects abroad. This was a luxury that they would not have been afforded in their own country, as discussed in the previous chapter. The development of new building technologies and the rationality of modern aesthetics were applied in African countries (including Ghana) with the humanistic goal of developing successful communities according to European standards.[79] However, this twentieth century view of humanism and rationality tended to ignore traditional building techniques. In Ghana, even five years after independence, Fry stated that traditional building (both style and form) were unfit for developing a modern and progressive country.[80]

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[77] Nnamdi Elleh, *African Architecture: Evolution and Transformation.* (New York: McGraw-Hill, 1997), 295.
[78] Folkers, *Modern Architecture in Africa,* 163.
[79] Ibid., 164.
[80] Ibid.

The final theme of note is the hope and optimism in the post-colonial period that modern architecture so strongly embodied. President Nkrumah envisioned the capital city of Accra as a powerful statement of the modernization and progress of the newly independent country and chose to utilize modern architecture to make this statement for several reasons. The "international" or modern style was a clear break with what was initially associated with Ghana's colonial past in addition to being a sign of progress. The style was also neutral enough to speak to the many different ethnic groups that lived within the country. The modern style symbolized a new progress that had the ability to speak to all Ghanaians.[81] While British architects who were active in the country under colonial rule continued to practice in independent Ghana, new architects from Italy, Poland, and America also entered the scene. In the later years of independence, native architects who had left Ghana to study architecture (usually in London)[82] would repatriate and contribute to the developing body of modern architecture from a new perspective.

Tropical Architecture

The terms tropical architecture and tropical modernism are referenced extensively in this thesis in regards to the buildings and the ideas that shaped them. The terms and their genesis therefore deserve some elaboration. The term tropical architecture was fashioned in the 1950's to describe the work of European architects active in tropical areas outside of

[81] Folkers, *Modern Architecture,* 51.
[82] Elleh, *African Architecture,* 295.

Europe that focused on climate responsive design.[83] The birth of this movement occurred in British West Africa. The term is both a genre of modern architecture and an allusion to the rapidly changing notions of colonialism. The influence of this architectural form although developed in the late colonial period had a powerful influence into the early years of independence. This thesis deals directly with tropical architecture and its application in Ghana, but experiments in climate responsive design with modern materials had been taking place long before 1950.

In the 1920's Greek architect Stamo Papadaki utilized forms to create sun breaks and overhangs to create shade in Greece, and in the 1930's in Brazil Le Corbusier designed the first *brise soleil* at the Ministry of Education.[84] This consisted of "sets of adjustable horizontal louvres, set into a three-dimensional gridded façade made from reinforced concrete, to allow ventilation and the entrance of solar radiation to be controlled from inside the building."[85] This effect would go on to be reproduced in a number of buildings adhering to the tenants of tropical modernism both for its climate responsive effectiveness and aesthetic value. Le Corbusier would later go on to design in tropical areas spanning the globe including Tunisia, Algeria, Brazil, and India. In America in the 1920's, Walter Gropius and Hannes Meyer studied proper placement of buildings for the most efficient sunlight by creating sun diagrams. Paul Rudolph's residential structures in Florida in the 1940's were heavily focused on the state's climate with his use of different shading devices and sliding doors.[86] In fact, many of the single

[83] Hanna le Roux, "The Networks of Tropical Architecture," *The Journal of Architecture* 8, no.3 (2003): 337.
[84] Le Roux, "The Networks of Tropical Architecture," 339
[85] Ibid.
[86] Ibid.

family homes designed by British architects in Ghana very closely resemble the forms of Rudolph's work in Florida.

In many ways the exportation of the international style in the form of tropical architecture (or tropical modernism) was not so much an architecture for any nation, but an architecture that transcended national boundaries in response to the unique physical characteristics of climate. The name tropical architecture was first officially used during The Conference of Tropical Architecture held in London in 1953, but the term quickly spread and grew to replace the antiquated terminology that had once been widespread throughout the colonies. For example, the word 'tropical' would go on to replace the word 'colonial' in many building publications in England. The *Colonial Building Notes,* published by the Building Research Institute became *Tropical Building Notes.*[87] In this subtle way, tropical architecture and modern architecture in the tropics became something other than colonial architecture or the architecture of the oppressor, at least in the literature.[88] The work of architects in the tropics was widely publicized through lectures and features by Maxwell Fry in *Architectural Review.*[89] The primary goal of tropical architecture, however, was to create an effective form of building that responded to the climate outside of Europe while adhering to the very European principles of modern architecture. Most buildings from the school of tropical architecture can be characterized by flat roofs, rectangular massing, single room depths, specific site orientation and adjustable louvres to control incoming sunlight and allow proper circulation.[90]

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[87] Ibid., 348.
[88] Ibid.
[89] Mark Crinson, *Modern Architecture and the End of Empire (*England: Ashgate, 2003), 132.
[90] Hannah le Roux, "Modern Architecture in Post-Colonial Ghana and Nigeria," *Architectural History* 47 (2004): 366, doi: http://www.jstor.org/stable/1568827.

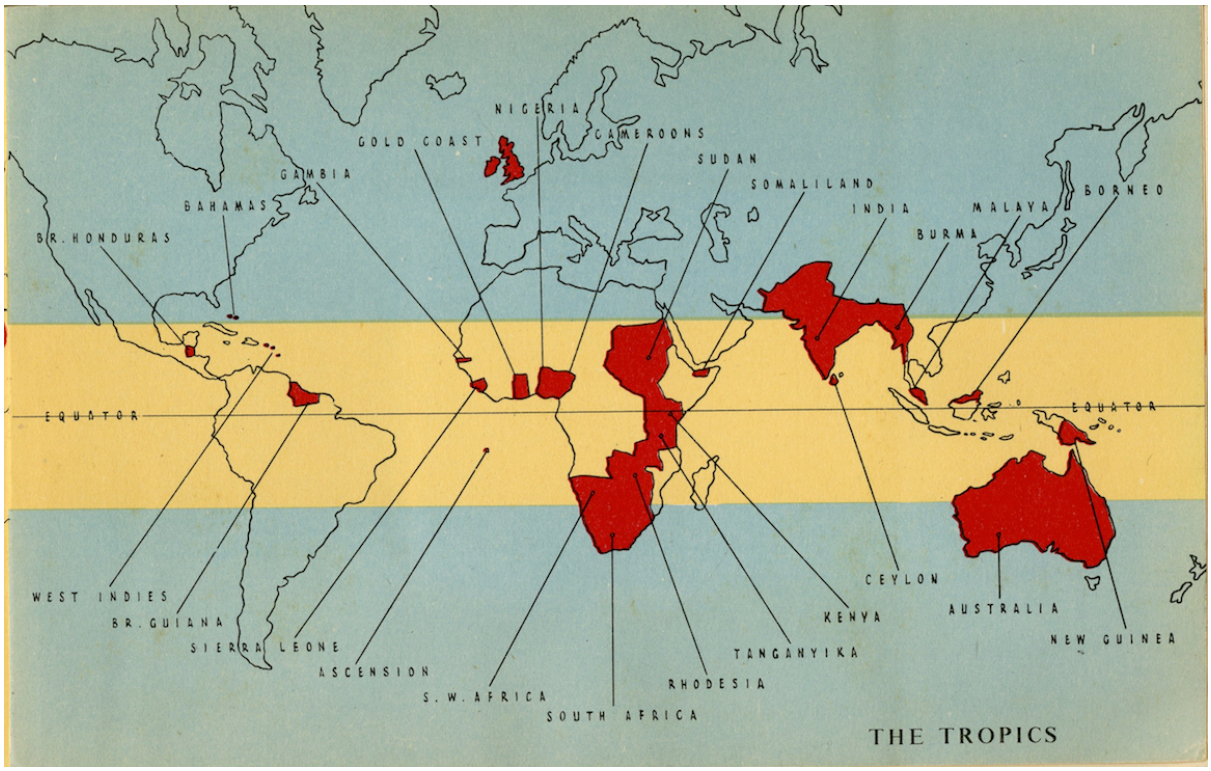

Figure 4.1: Map depicting the British view of 'The Tropics' c. 1947[91]

One of the earliest incarnations of movement towards a more defined definition of tropical architecture was the aforementioned Conference on Tropical Architecture held in London in 1953. The conference focused on construction issues, research, and climate characteristics that an architect could potentially face in a tropical environment. The conference was attended by British architects and foreign students from a number of tropical countries including Nigeria, Malaysia, Jamaica, and India. From this conference came many changes in the discourse of modern architecture in these tropical areas. Perhaps the most impressive was the establishment of special course at the Architectural Association (the premier architectural school in Great Britain) in London exclusively devoted to the design of

[91] Jane Drew and Maxwell Fry, *Village Housing in the Tropics,* (Lund Humphries: London) 1947, Inside cover.

tropical architecture. Just a year later in 1954 the Architectural Association's Department of Tropical Architecture was founded and Maxwell Fry was appointed its director. The program would remain in the Architectural Association until 1972.[92] The creation of this department and the reorganization of architectural education "…addressed a pressing need to challenge the standard assumption of universalism in architectural courses…"[93]

Expressed by Maxwell Fry in the special 1960 Commonwealth edition of the *Architectural Review* "I have come more and more to respect [climate] as a determining factor in architecture, because it has already determined so much else, from agriculture habits, customs, and finally religions of peoples who live dependent upon it."[94] Fry recommended that buildings be no more than one room deep to ensure the potential for breezes to be directed through. One of the foundations of tropical architecture was to use the principles already developed in modernism in terms of form and aesthetic, but appropriate it towards the climate. For example, in *Tropical Architecture in the Dry and Humid Zones* Fry and Drew describe the idea of an "imaginary Mies van der Rohe house as a catalyst for the vocabulary of tropical design."[95] Tropical architecture was also categorized as an:

> …attempted reconciliation of modernity to a depoliticized version of the conditions of underdevelopment. It was not just that new schools, hospitals, universities, housing, government buildings, and commercial structures became marked by this architectural language, it was also that the style became an image of this transitional phase as the late colonial empire was reset into the forms of national independence.[96]

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[92] Le Roux, "Modern Architecture in Post-Colonial Ghana and Nigeria," 366.
[93] Crinson, *Modern Architecture,* 133
[94] E. Maxwell Fry, "West Africa," *Architectural Review (Commonwealth 2 Edition)* 127, no. 761 (July 1960), 8.
[95] Hanna le Roux, "The Networks of Tropical Architecture,"347.
[96] Mark Crinson et al, *Architecture and Urbanism in the British Empire* (Oxford: Oxford University Press, 2016), 216.

In fact, Kwame Nkrumah was a great proponent of the climate responsive design that was key in tropical architecture. "Excessive heat is one of the factors which hinders our development…Already in Accra and in other towns architectural designs have been evolved which make use of the sun to produce draughts of air, which, by flowing over the surface of the roof and walls of the building, keep it cool. We propose to continue experiments of this sort, combining the work of the Building Institute [Building Research Institute], with the University [KNUST]."[97] This was the view that Nkrumah held as he moved his country forward into independence and into a new era of building.

Architects: Their Projects and their Origins

The first architectural team of note were Maxwell Fry and his wife Jane Drew who have been mentioned before in this thesis. The pair were introduced to West Africa during World War II in 1944 when they were stationed in Ghana as town planning advisors to the Minister of the Gold Coast, Lord Swinton.[98] Fry also designed a master plan for the city of Accra during the Second World War under the direction of the British government. The newly designed city was meant to be used as a launching base for allied troops in West Africa.[99] Fry continued to work in Ghana after the war and contributed to the urbanization of Accra in addition to designing a number of universities throughout the country with Jane Drew and their firm. Fry and Drew worked extensively throughout the British Commonwealth and with Le Corbusier at the new

[97] Hannah Le Roux, "Modern Movement Architecture in Ghana," DOCOMOMO Journal no. 28, (2003): 63.
[98] Jane Drew, "Introduction," Kumasi School Special Issue, *Arena: The Architectural Association Journal* 82, no. 904 (July-August 1966): 39.
[99] Folkers, *Modern Architecture in Africa,* 51.

capital city of Chandigarh in India. Although they were most active in Accra, they were responsible for building universities throughout Ghana, and they worked on the design for a new port city in Tema in conjunction with Constantinos Doxiadis.[100] Fry and Drew viewed their contributions to Ghana and in fact to the whole African continent as a boundless opportunity for architectural advancement without the physical and ideological constraints that they faced in England.[101] Fry and Drew worked extensively in West Africa and were responsible for University College in Ibadan, Nigeria in addition to many other schools and office buildings in that country.[102] They were also technical innovators in their field for reasons beyond the aesthetics of their design. They experimented with technical systems on their buildings that aimed to reduce cost and effectively control natural resources. For example, at the Aburi Girls School in Ghana they installed gutters on the buildings to collect and direct water run-off away from the buildings and into a separate storage cistern. This was in response to a limited water supply for the girls at the school for many months out of the year.[103] Their introduction to Ghana as planning advisors to the minister can be seen as a point of genesis for tropical architecture in West Africa.[104] The work that Fry and Drew produced is a direct result of their influences back in England.

[100] Folkers, *Modern Architecture in Africa,* 163. Tema was an old town on the coast of Ghana east of Accra. It was historically a fishing village that was completely replaced by a Modern city.
[101] Ibid.
[102] Muriel Emanuel, *Contemporary Architects* (New York: St. James Press, 1994), 326.
[103] Le Roux, "Modern Movement Architecture in Ghana," 64.
[104] Uduku, "Modernist architecture and 'the tropical' in West Africa: The tropical architecture movement in West Africa, 1948-1970," 398.

Figure 4.2: Maxwell Fry (left), Jane Drew (center), and Le Corbusier (right) at the Chandigarh camp c. 1950's.[105]

James Cubitt was another important architect active in Ghana. Born in Melbourne, Australia in 1914, Cubitt found architectural freedom in Ghana in the years following World War Two. In 1948, Cubbit formed a small yet influential architectural firm devoted to modernism.[106] The largest imprint left by Cubitt and his firm exists today in West Africa, Burma, and Malaysia dating from 1950 to the latter half of the twentieth century. In West Africa, Cubitt primarily worked on educational buildings in Ghana and Nigeria. Cubitt had strong social views and believed deeply in the positive implications of a modern campus in what he viewed as

[105] Ian Jackson and Jessica Holland, *The Architecture of Edwin Maxwell Fry and Jane Drew: Twentieth Century Architecture, Pioneer Modernism, and the Tropics* (Ashgate, 2014), 252.
[106] Le Roux, "Modern Movement Architecture in Ghana," 64.

underdeveloped countries.[107] These ideals can be seen in his work at KNUST in Kumasi, Ghana. A contemporary and occasional architectural partner of James Cubitt was Englishman Kenneth Scott. Scott worked in all realms of life in Ghana constructing single family residential homes, police headquarters, hotels, hospitals, and stadiums. He engineered steel houses in Tesano near Accra[108] and eventually built his own home near Accra in 1961. Although perhaps lesser known and studied than his contemporaries practicing in West Africa, Kenneth Scott made vast contributions to the modern built environment of Ghana.

Although few American architects were seen practicing in Ghana, this changed when the United States implemented a comprehensive embassy building program in the 1950's. This building program is covered extensively in Jane C. Loeffler's 1998 text, *The Architecture of Diplomacy: Building America's Embassies.* Chicago architect Harry Weese was commissioned to design the United States Embassy in Accra, Ghana in addition to staff apartments located near the site. A native of Chicago, Weese studied at MIT and Yale in the mid 1930's.[109] Other notable works by Harry Weese include the Washington, D.C. Metro. He has been called one of America's most underrated modernists.[110]

Other architects working in the Ghana from 1940 to 1970 came from a wide range of nations. The firm of Nickson and Borys, and architect Denys Lasdun are other English architects

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[107] Rhodri Windsor Liscombe, "Modernism in Late Imperial British West Africa: The Work of Maxwell Fry and Jane Drew, 1946-56," *Journal of the Society of Architectural Historians* 65, no.2 (June 2006): 212. http://www.jstor.org/stable/25068264.
[108] Udo Kultermann, *New Directions in African Architecture* (New York: George Braziller, Inc., 1969), 72.
[109] Emanuel, *Contemporary Architects*, 1979.
[110] Ian Baldwin, "The Architecture of Harry Weese," *Places Journal*, (May 2011): Accessed 20 December 2016. https://doi.org/10.22269/110519.

operating alongside the more prolific Fry and Drew, Scott, and Cubitt. Polish architects Jacek Chyrosz and Stanislaw Rymaszewski, who designed the International Trade Fair in Accra in the late 1960's, are examples of a widely occurring phenomenon throughout newly independent nations in Africa. As countries gained independence and looked for international partners outside of their former colonial powers, relationships with socialist countries in Eastern Europe were often formed. This contributed to the development of the modern architecture they chose to build in their new nations.

Materials

Building technologies focused primarily on western methods and these were widely taught in engineering universities.[111] In the 1960's one of the first African building technology texts came out of the work at Kwame Nkrumah University of Science and Technology in Kumasi. Hannah Schreckenbach of a German national agency for engineering and KNUST professor Jackson Abankwa wrote *Construction Technology for a Tropical Developing Country.* This book showed a vastly different point of view from previous building efforts that focused on western techniques and materials. Instead, this team advocated for Ghanaian building forms and materials with appropriate methods of construction.

Materials like Portland cement were widely used in colonial construction even though Building Research Institute studies conducted experiments with local cement alternatives like Ghanaian pozzolana cement. Contemporary architects like Ghanaian Joe Osae-Addo advocated

[111] Folkers, *Modern Architecture in Africa,* 163.

for the use of local materials that were studied but never widely implemented.[112] Another example of lesser utilized local material "swishcrete". This walling material was produced in Ghana by pouring a mixture of 20:1 "swish" (or earth) to concrete into wooden molds. These blocks would then be used to construct walls. Most of the projects were built with exported architecture, British contractors, and African construction workers.[113] Materials like glass and aluminum were also typically imported from Europe.[114] One major criticism of modern architecture not only in Ghana, but Africa as a whole, is the reliance it placed on new nations to England and other developed countries for building materials.[115]

Concrete seemed to be the answer to many of the difficult questions architects had to respond to in the tropical climate. It was also an inexpensive and functional material alternative to what was locally available. As Maxwell Fry, an early pioneer of tropical architecture, stated of Ghana:

> Burnt bricks were barely used in a country with none other fuel than its precious forests. Good stone occurs infrequently; slate is unknown; timber is rapidly consumed by termites, and at the end of the war no seasoned stock remained. The only response to these conditions was reinforced concrete and cement-block walling with timber and asbestos-cement roofs, a system of construction that allowed of large openings through which cooling breeze might pass. Starting modestly on this basis, the uses of reinforced concrete, thanks largely to the astonishing adaptability and skill of African workmen, have been considerably extended…[116]

[112] Ibid., 228.
[113] Phaidon Press, *20th Century World Architecture* (London: Phaidon, 2012), 571.
[114] Elleh, *African Architecture,* 295.
[115] Elleh, *African Architecture,* 296.
[116] E. Maxwell Fry, "The African Experiment," *Architectural Review* 113, no. 677 (May 1953): 300.

Additionally, concrete did not rust in the same way metals did, nor was it subject to termites or fungi in the same way that woods were. There were many cases however where the use of concrete created new and sometimes equally troubling issues for architects and their clients. Concrete is still subject to the effects of temperature and humidity found in tropical regions. Mixing and curing concrete in such temperatures had a negative effect on the overall strength of the material.[117] The ratio of concrete in the tropics was also given special attention because of the reduction in strength at such high temperatures. A reduction in the water/cement ratio was recommended. Another difficulty with mixing concrete was the lack of availability of comparable aggregates or commercial materials in the tropics. Cement was often imported. During the curing process in high heats, attendants would constantly need to spray the surface with moisture to combat the rapid evaporation on vertical surfaces.[118]

The field of tropical architecture also saw a large amount of experimentation with new materials in order to determine their behavior. Tropical environments subject to high heat, moisture level, insects, and intense solar exposure can unleash a multitude of different reactions on both organic and inorganic materials. A suite of new plastic materials including "polyethylene, polyvinyl chloride (pvc), acrylic resins, polyester resins, and polystyrene" were all proposed as materials to be utilized in the tropics.[119] However, the most commonly used building material in this period was polyvinyl chloride. It was primarily used as a floor covering either in sheet or tile form.

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[117] Tom Ridley, "Design of Concrete," *Architectural Review (Commonwealth 2 Edition)* 127, no. 761 (July 1960), 86.
[118] Ibid., 88.
[119] Ibid.

It was also used as a covering for wooden and metal window frames.[120] It is now known that while the material is very durable, its production can be harmful to the environment and carcinogenic.

The Building Research Institute (BRI), based in of England, developed a special Tropical Section devoted to the research and development of plans and materials that would be most suitable for tropical climates. The institute had a number of stations located throughout the tropics solely devoted to the study of building materials and construction as it relates to these climates specifically. George Atkinson was the head of the Tropical Building Section of the Building Research Station in the 1960's. When describing what first must be assessed in terms of site conditions and climate, it is not unlike the site assessment an architect would perform today in the process of green building. He urged that architects pay close attention to latitude, altitude, and continentiality (where a site is located in terms of the sea, or the rainforest), annual range of temperature, rainfall patterns, and the wind regime.[121] In an article in the 1960 July edition of *Architectural Review* entitled "Principles of Tropical Design" four experts discussed the key elements in design and material choice for tropical architecture. Shade, air movement, and thermal insulation and capacity are all reaffirmed as key staples in tropical design. One problem faced by architects is that it is impossible to make a building cooler than the shade temperature. This essentially means that a building cannot be cooled at night when the sun sets without the aid of air conditioning units.[122]

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[120] Ibid., 92.
[121] George Atkinson, "Principles of Tropical Design," *Architectural Review (Commonwealth 2 Edition)* 127, no. 761 (July 1960), 81-82.
[122] Ibid.

The response to climate without technological aid in the form of air conditioning was highly important for the design of buildings constructed during this period of time. Air conditioning was not widespread and it was rare to have completely air conditioned interiors even into the late 1960's.[123] High electricity costs and lack of infrastructure to support it were both factors in this condition. Also an inhibitor is the almost year-round warmth found in equatorial climates. Electricity costs for air conditioning would be constant and burdensome. Furthermore, the drastic shifts from exterior temperatures to artificially cooled interiors were foreign to the local physicality. One expert urged that if air conditioning units are to be used a buffer zone ought to be created between the extremes of the exteriors and the cooled interiors to avoid sending the body into shock.[124]

It is important to reiterate the criticisms of tropical architecture. While climate was the ultimate design influence, architects incorporated little to nothing else from the local culture into their designs. This was largely due to the lack of respect and even acknowledgement of an architectural history outside of European intervention. Additionally, the choice of material led many nations like Ghana to be incredibly over dependent on foreign building materials. Although experiments with local materials were conducted, they were never widely utilized in major building projects and Ghana entered independence with a demand for European-made concrete, glass, and metals.

[123] Sam Lambert, "Ghana, Nigeria, & Sierra Leone," 328.
[124] Richard Harrison, "Air Conditioning," *Architectural Review (Commonwealth 2 Edition)* 127, no. 761 (July 1960), 83-84.

Figure 4.3: Add for British Aluminium in July 1960 issue of Architectural Review[125]

[125] British Aluminium Advertisement, "Ghana Faces the Future," Commonwealth 2 Edition *Architectural Review* 127, no. 761 (July 1960): xxvii.

In conclusion, the emergence of tropical architecture ultimately defines the introduction of modernism to Ghana. This building period was defined primarily by British architects beginning in the late 1940's. The territory was a land of architectural freedom and modernists took full advantage of those opportunities in British West Africa. Major building projects leading up to and following Ghanaian independence gave architects the opportunity to implement these ideals. While the implantation of tropical modernism in Ghana was viewed by Europeans as a step towards modernization and development, it completely ignored local building traditions in its original incarnation. It also disregarded local building materials and cultural norms. The next chapter will take examine major architectural projects that were a result of tropical architecture.

CHAPTER FIVE:

ARCHITECTURAL EXAMPLES

Organization

The following pages contain important examples of modern architecture in Ghana that express the themes previously discussed constructed by the architects mentioned in previous chapters. The buildings identified are divided into eight major categories: educational buildings, government buildings, commercial buildings, social and cultural buildings, stadiums, exhibitions, housing, and monuments. The organization by building type was utilized by Udo Kultermann in both his texts on modern architecture in Africa, with the exception of the section on monuments which was created for the organization of this thesis.

Educational Buildings

Educational institutions and their buildings were immensely important both before and after independence. In the late colonial period, schools were one of the easiest ways for colonial rulers to introduce western ideals and formalities to their colonies abroad.[126] After independence, systems of education and higher education became vital in order to increase literacy and ensure an educated and economically healthy population. In many ways

[126] Manuel Herz, *African Modernism: The Architecture of Independence: Ghana, Senegal, Cote d'Ivoire, Kenya, Zambia* (Park Books), 96.

universities were given more freedom architecturally because of the desire to nurture a creative environment for students and teachers alike.[127] In Ghana, more than 70 schools were constructed or added to between 1950 and 1970,[128] ten of which were built by Jane Drew and Maxwell Fry.[129] Specifically the First Gold Coast Schools Programme was established in the late colonial period serving as a catalyst to massive investment made in school construction in West Africa. Due to changes in late colonial education policy large amounts of money were invested in education throughout the country resulting in a new platform for architectural expression. "The programme of school building launched immediately after the war by the Gold Coast government is part of a plan of mass education as complete and detailed as any being undertaken in the world."[130] The money for this large scale building program came largely from the Colonial Welfare and Development Act established just prior to the end of World War II. Due to the wide publication of the projects that came out of the Colonial Welfare and Development Act "…universities became the most public expression of the complexities and contradictions of modernization and the presence of modernist architecture, in West Africa."[131]

Adisadel College in Cape Coast was one of the earliest examples of Fry and Drew and their partners in Ghana that was a direct result of this building campaign.[132] Built in 1947, the

[127] Jane Drew and Maxwell Fry, *Tropical Architecture in the Dry and Humid Zones,* 2nd ed. (Malabar, Fla: R.E. Krieger Publishing Co., 1982), 155.
[128] Hannah Le Roux, "Modern Movement Architecture in Ghana," DOCOMOMO Journal no. 28, (2003): 62.
[129] Rhodri Windsor Liscombe, "Modernism in Late Imperial British West Africa: The Work of Maxwell Fry and Jane Drew, 1946-56," *Journal of the Society of Architectural Historians* 65, no.2 (June 2006): 212. http://www.jstor.org/stable/25068264.
[130] E. Maxwell Fry, "African Experiment," *Architectural Review* 113, no. 677 (May 1953): 300.
[131] Mark Crinson, *Modern Architecture and the End of Empire (*England: Ashgate, 2003), 140.
[132] Herz, *African Modernism,* 84.

dormitory they designed as an addition to the campus shows early incarnations of techniques they would utilize widely throughout their work in the tropics, such as decorative concrete screens that would evolve throughout their careers. The campus consisted of biology, physics and chemistry classrooms and lecture hall all clustered together in a central two-story block. clustered around already existing buildings on the campus. The dormitories are located conveniently next to the lavatory buildings both of which were built to serve 120 students. The existing site was located on a sharp hill which made it difficult for Fry and Drew to expand the campus too far beyond the slope. An emphatic design feature seen here, which was used extensively in Fry and Drew's schools throughout West Africa, is the decorative balustrade.

Figure 5.1: Adisadel College, Cape Coast (1947), Fry and Drew. Dormitory, Entrance.[133]

[133] Herz, *African Modernism,* 84.

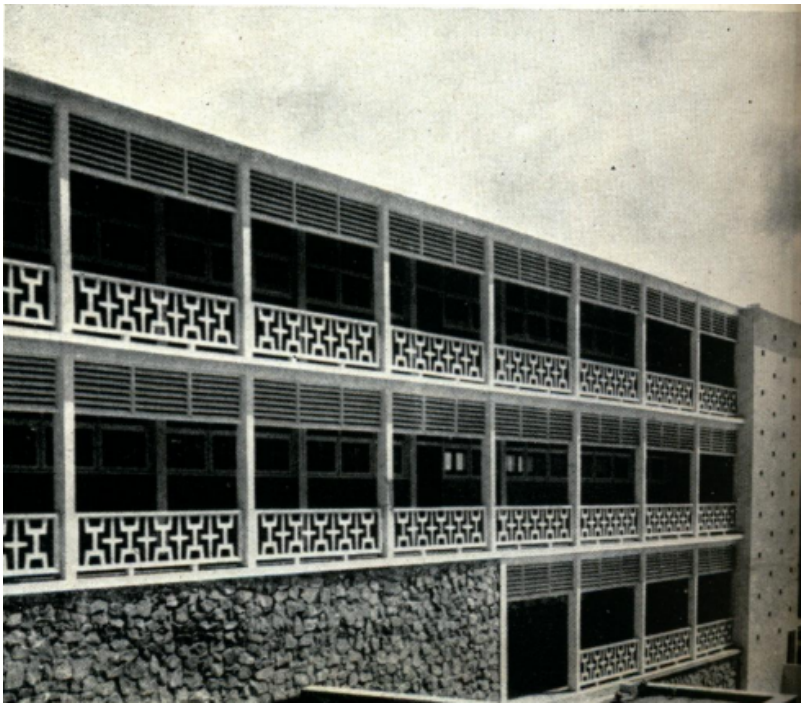

Figure 5.2: View of the decorated balustrades at Adisadel College[134]

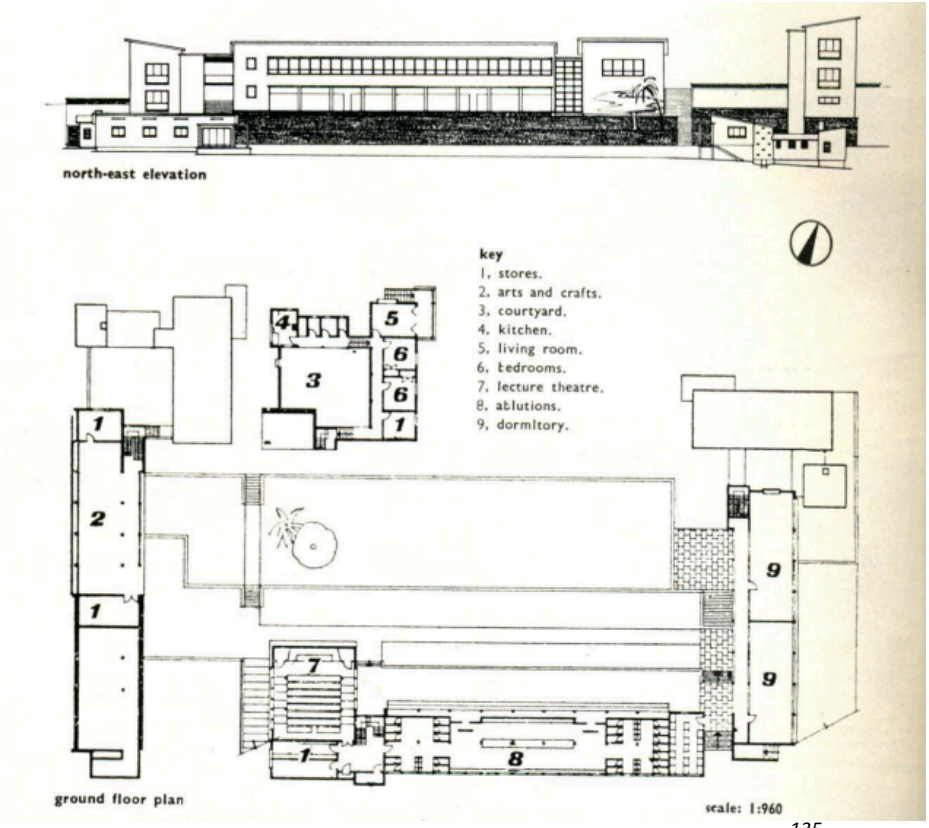

Figure 5.3: Elevation and Floorplan of Adisadel College [135]

[134] Ibid.

[135] Recent Educational Buildings in the Gold Coast: Architects Fry, Drew and Partners," *Architectural Review* 113, no. 677 (May 1953): 306.

Perhaps one of the more stunning modernist examples in Ghana is the Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi. The institution was founded in 1951 and gained university status in 1961. The new campus was designed by James Cubitt and partners (including Kenneth Scott) of England. The school initially began as a teachers training school and evolved into one of West Africa's premier engineering schools, with the earliest architectural programs in the nation.[136] The campus includes student housing and buildings that host separate colleges of study. Cubitt and his team demonstrated in depth knowledge of the regional climate and accounted for its effects in their designs throughout the campus.[137] He saw the campus as an educational park.[138] The buildings on campus were carefully sited in order to take full advantage of the southern breezes and to avoid the oppressive heat of the south-east and south-west sun.[139] His plan was heavily influenced by the architecture of South America at the time.[140] The landscape was entirely remodeled with machinery and infilled with new nature in the form of lawns, trees and shrubs.[141] Jane Drew criticized the campus design quite harshly in the *Architectural Association* Issue of 1966 writing in the introduction to the issue " this year I went to see John Lloyd's school set in one of the worst university campus layouts (if it can be called that) I have seen – dispersed and disunited."[142] She even stated that

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[136] Herz, *African Modernism,* 106.
[137] Udo Kultermann, *New Directions in African Architecture* (New York: G. Brazilier, 1969), 25.
[138] Le Roux, "Modern Movement Architecture in Ghana," 65.
[139] "College of Technology, Kumasi, Gold Coast," *The Architects' Journal* 124, (August 1956): 192-93.
[140] Ibid.
[141] "Recent Buildings in the Gold Coast: Architects: James Cubitt and Partners," *Architectural Review* 119, no. 712 (May 1956): 230.
[142] Jane Drew, "Introduction" Kumasi School Special Issue, *Arena: The Architectural Association Journal* 82, no. 904 (July-August 1966): 39.

the students disliked the plan of the campus. John Lloyd was a British architect and the director of the program of architecture at KNUST in the 1960's at the time of Drew's visit.

The campus is a collection of modernist buildings with clear references to other modernists of the time such as Le Corbusier, and some stand-alone masterpieces totally unique to the location. The campus master plan was designed by James Cubitt and the buildings were constructed slowly over time as the university and its reputation grew. In the original masterplan the campus was roughly 2.5 square miles on a site crossed diagonally by the Wiwi stream. The school was also one of the first to institute a College of Architecture and Planning.. Ghanaian architects like John Owusu Addo, who studied architecture at KNUST, went on to complete their certification in London. They would sometimes return to add to the architectural vocabulary of the campus.[143]

[143] Herz, *African Modernism,* 106.

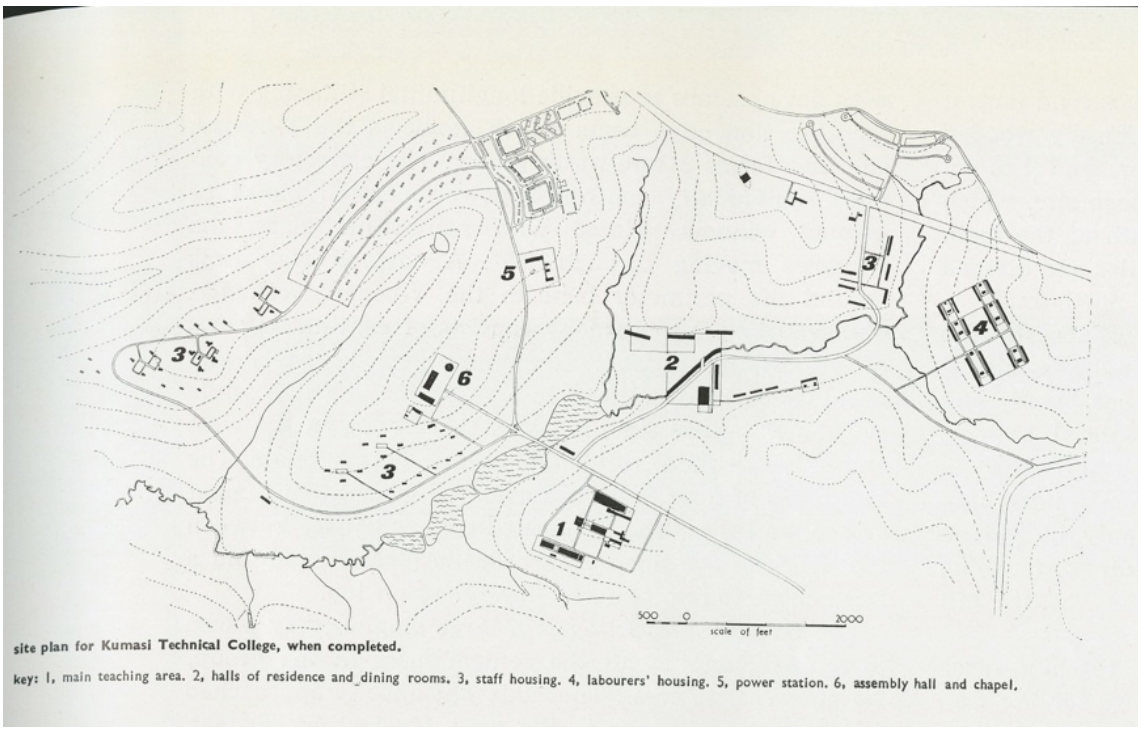

Figure 5.4: KNUST Master Plan (1956), James Cubitt.[144]

The construction of the campus was broken down into five phases.[145] The first stage concerned the existing buildings which were previously existing temporary structure on the site. The second stage concerned permanent buildings like main teaching areas and living quarters for staff and employees. The third and fourth phases were concerned with the students' living quarters and the remainder of the teaching areas, including the library. The phase was covered ceremonial buildings like the Great Hall.[146] It is likely that the construction of an engineering block was prioritized due to the rapid industrialization that Ghanaians were

[144] "Recent Buildings in the Gold Coast: Architects: James Cubitt and Partners," *Architectural Review* 119, no. 712 (May 1956): 231.
[145] "Kumasi College of Technology. Architects: James Cubitt, Scott & Partners," *The Architect and Building News* 210, (1956): 56.
[146] "Kumasi College of Technology. Architects: James Cubitt, Scott & Partners," 56.

witnessing in their own country, and projects like the Volta River Dam increased a need for engineers in the country.[147]

The first building carried out on the Kumasi campus was the School of Engineering in 1956. This building was constructed as part of a joint partnership in university construction between the British and Ghanaian governments.[148] The building is striking with its heavily articulated principles of tropical modernism with natural ventilation and natural lighting.[149] The visually dominant wing-like concrete structures are actually part of a functional factory roof designed to conduct air through the building. This series of reinforced concrete Y-shaped beams with centers of 30 feet tall punctuate the building. Not only do the shapes aid in streaming cool air across the top of the building to encourage cross-ventilation, but the forms go further to respond to the climate by collecting rainwater. This is also another cooling technique.[150] In between these beams is a timber-trussed flat roof suspended from the concrete beams by steel rods, almost as if floating. The timber trusses are lined on the interior with an acoustic plaster board backed by a layer of glass fiber glazed with resin.[151] These forms are equally spaced throughout the structure and extend beyond the facades creating a shaded portico. Features like center-pivoting metal casements on the interiors of classrooms allow for the flow of air throughout the building.[152] The west end of the structure is the exception to the otherwise consistent design with its sliding garage door opening made of plywood clad in aluminum.[153]

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[147] Ibid., 57.
[148] Ibid.
[149] Herz, *African Modernism,* 110.
[150] Phaidon Press, *20th Century World Architecture* (London: Phaidon, 2012), 571.
[151] "College of Technology, Kumasi, Gold Coast," *The Architects' Journal* 124 (1956): 193.
[152] Fry and Drew, *Tropical Architecture,* 57.
[153] "Kumasi College of Technology. Architects: James Cubitt, Scott & Partners," 57.

The whole of the building is 533 feet in length and 100 feet wide. A 60-foot gap is located centrally in the plan to divide the space into "two parts of six and eight bays respectively."[154] A clerestory lines the perimeter of the building with "individually controlled, power-operated, pivoted windows glazed with non-actinic glass and movable through 135 degrees."[155] Non-actinic glass was a material commonly used by English builders in the tropics and was discussed in Fry and Drew's staple text *Tropical Architecture in the Dry and Humid Zones.* [156] This glass was usually tinted a green or blue color and transmits only 22% of solar rays and 60% of the light.[157]

Figure 5.5: School of Engineering, KNUST, Kumasi (1956), James Cubitt & Partners.[158]

[154] "College of Technology, Kumasi, Gold Coast," *The Architects' Journal* 124 (1956): 193.
[155] Ibid., 192-93.
[156] Fry and Drew, *Tropical Architecture, 57.*
[157] Ibid., 240.
[158] Herz, *African Modernism,* 108.

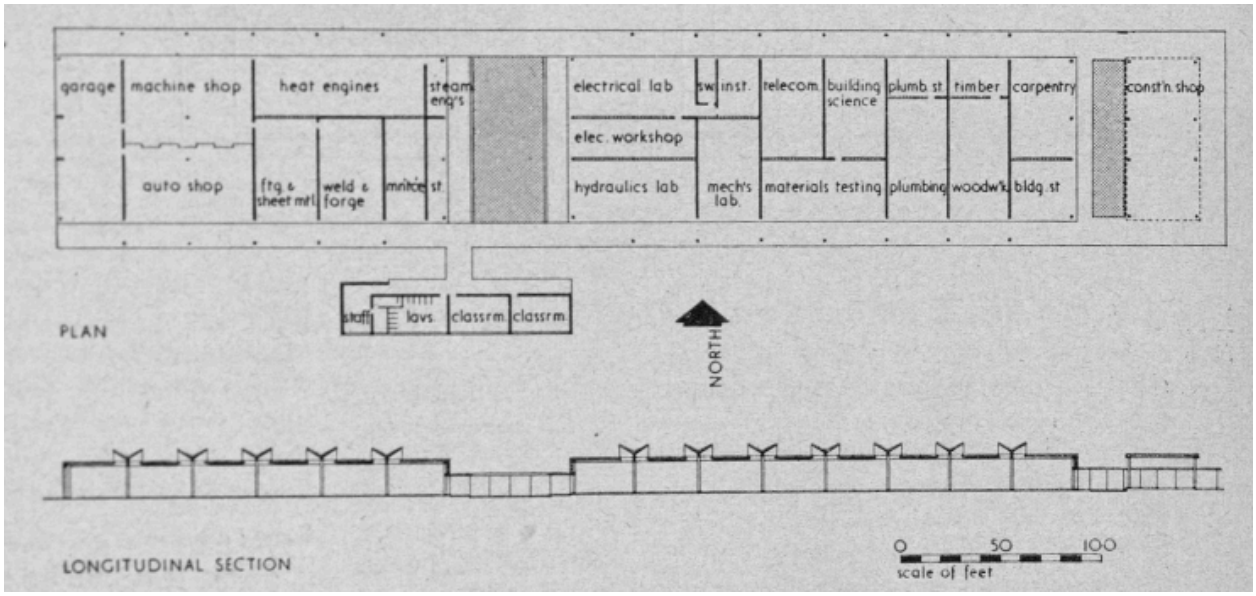

Figure 5.6: Plan and Section of KNUST Workshop Block College of Technology.[159]

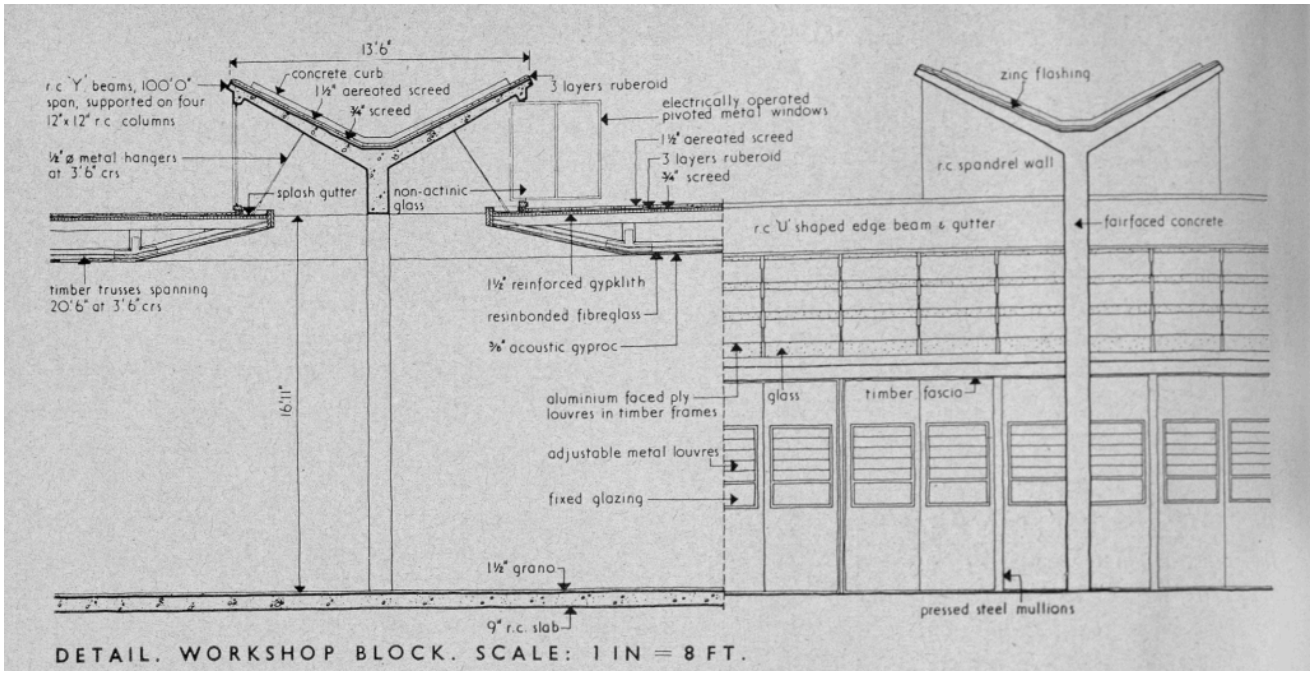

Figure 5.7: Section diagram of the 'Y' structural features in the engineering building.[160]

[159] "Kumasi College of Technology. Architects: James Cubitt, Scott & Partners," *The Architect and Building News* 210, (1956): 57.
[160] Ibid., 58.

Another integral building to the campus is the Great Hall. The building was constructed between 1964 and 1967 by English architects Gerlach and Gillies-Reyburn. The structure is filled with the architectural expressions of modernist tendencies mixed with colorful murals on staircases and walls. Like many other buildings on campus, it utilizes techniques of passive cooling to ensure comfort in the structures. The massiveness of the concrete slabs creating horizontal and vertical lines contrast with the light almost airy interior spaces. The building was designed as a multi-functional space including a library, theater, chapel, and a great hall. Although more prominent in West African countries outside of Ghana, this architectural firm was well-known in the field of tropical architecture by this time. The siting of the building was extremely important in its success. It was sited on an east-west axis in order to take full advantage of natural breezes while avoiding the oppressive heat brought by harsh sunlight.[161] The great hall was meant to function as a grand assembly room and was equipped with seating for 1,250 people on the ground floor with additional space for 350 people in balcony seating.[162] This complex is connected by walkways to an annex that serves as a reception area with changing rooms, pantry facilities and excellent views of the campus.[163]

[161] "The Great Hall: University of Science and Technology, Kumasi, Ghana," *The West African Architect and Builder* 8, no. 1 (1968): 17.
[162] Ibid.
[163] Ibid.

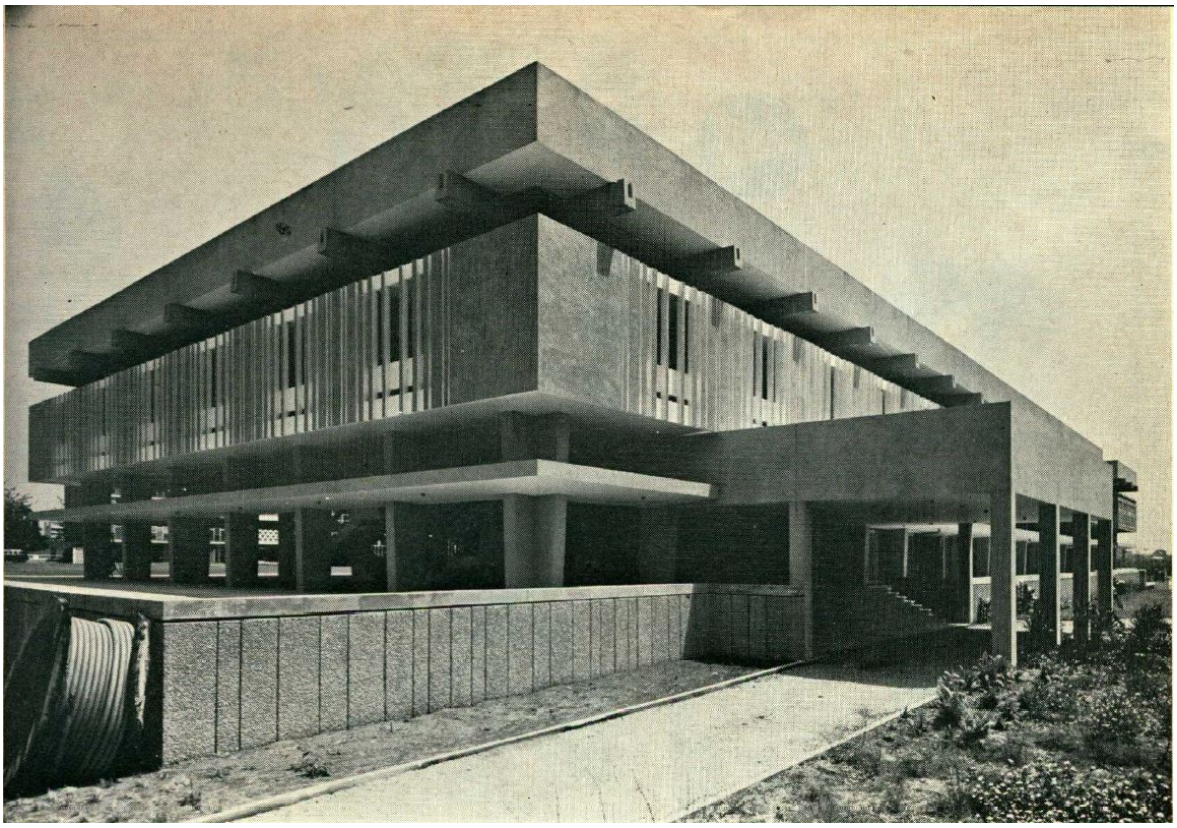

Figure 5.8: Exterior of Great Hall, KNUST, Kumasi (1964-1967), Gerlach and Gillies-Reyburn.[164]

Figure 5.9: Interior Great Hall, KNUST, Main Double Entry Staircase.[165]

[164] Ibid.

[165] Herz, *African Modernism,* 112.

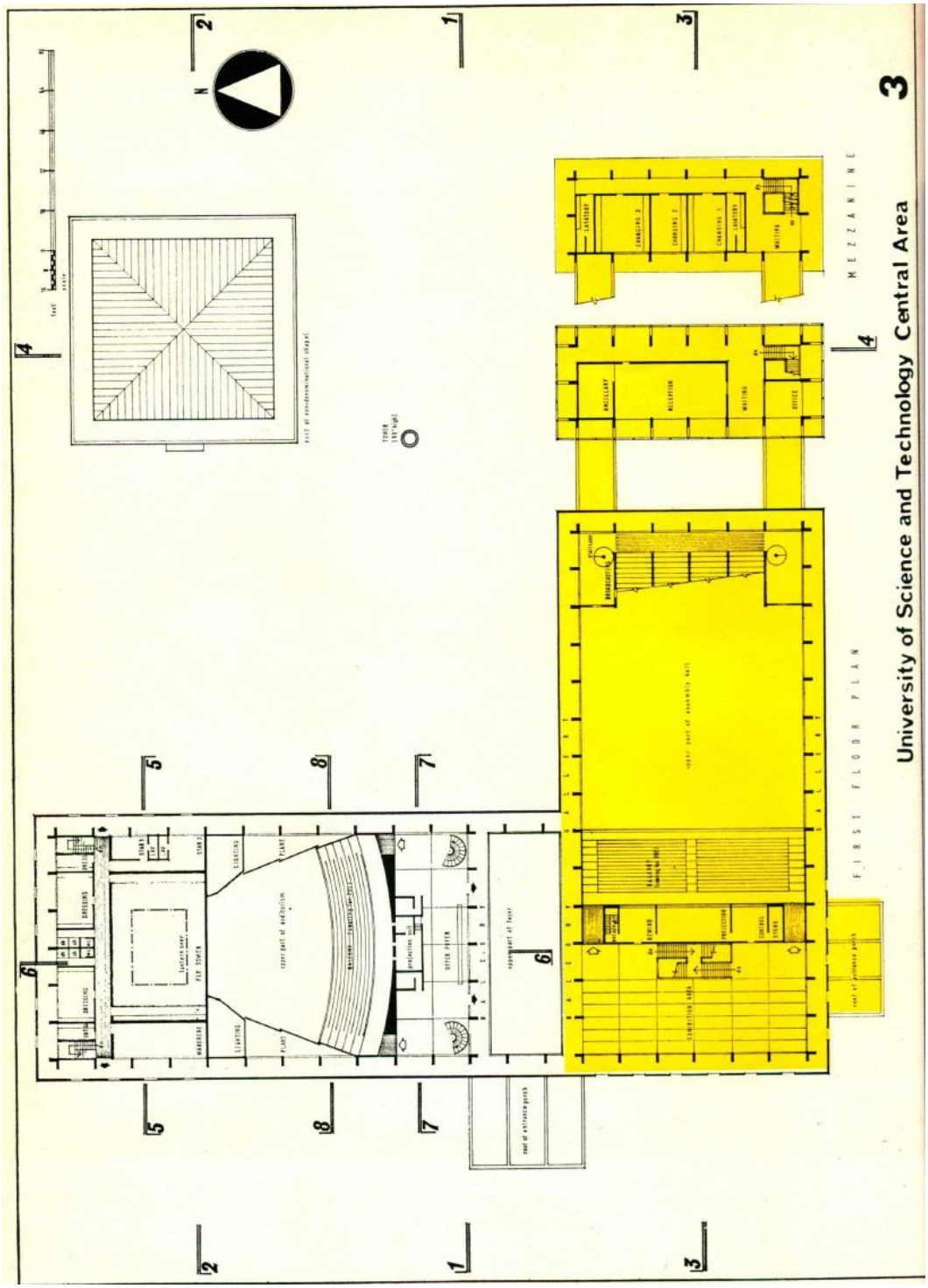

Figure 5.10: First Floor Plan of Great Hall, KNUST, and surrounding areas[166]

[166] "The Great Hall: University of Science and Technology, Kumasi, Ghana," *The West African Architect and Builder* 8, no. 1 (1968): 22.

Two more compelling structures on the campus are Africa Hall and Unity Hall. Both are high rise buildings for housing and offices on campus that echo the visual effect of Le Corbusier's Unité d'habitation. Grand pilotis lift up the massive multi-story concrete structure that is divided into individual units punctuated by the horizontal and vertical lines that form the skeleton of the structure. Both Africa Hall and Unity Hall were designed by Ghanaian architects, the former by Nikso Ciko and John Owusu Addo from 1964-1967 and the latter by John Owusus Addo and Miro Marasovic in 1963.[167] Unity Hall was arguably one of the earliest powerful architectural statements of modernism made by a Ghanaian architect.[168]

Also of note is a small building designed by Buckminster Fuller on one of his visits to Ghana in 1964. Appropriately named Buckminster Fuller Hall, the small structure is a self-cooling dome made with a ventilated aluminum ceiling. The effect of the design resulted in temperature that is 15 percent less than it would be through natural cooling processes.[169] This building stood as an exhibit in the International Trade Fair in Accra for several years.

[167] Ibid., 118-123.
[168] Crinson, *Modern Architecture,* 145.
[169] Herz, *African Modernism,* 115.

Figure 5.11: Africa Hall (1964-1967), KNUST, Nikso Ciko and John Owusu Addo[170]

Figure 5.12: Unity Hall (1964-1967), KNUST Miro Marasovic and John Owusu Addo [171]

Before moving on to the next building, it is important to reflect on the contribution of KNUST in Kumasi to the growth of Ghanaian architects and its role in the development of the built environment in the late colonial period and during independence. KNUST established the first architectural program in West Africa. The school was not only a means for education of a new and independent generation of Ghanaians but it was also an important crossroads of culture during the years of the cold war. Architects from socialist countries brought in by Kwame Nkrumah to work for the Ghanaian Construction Group often ended up as professors at KNUST's School of Architecture.[172] There they would interact and plan with architects from the

[170] Herz, *African Modernism,* 106.
[171] Ibid.
[172] Lukasz Stanek, "Architects from Socialist Countries in Ghana (1957-67): Modern Architecture and Mondialisation," *Journal of the Society of Architectural Historians 74,* no.4 (December 2015): 424.

West like Max Bond from the United States and the Architectural Association's John Lloyd who was employed as the head of the school of architecture starting in 1963.[173] His appointed resulted in a reorganization of the curriculum. The school of architecture itself was started in 1958 with 11 staff members and 30 students.[174] In 1965 the staff at the school of architecture consisted of 39 individuals (of a very cosmopolitan background) and 271 students, 15 of which were foreign.[175] The original staff of KNUST was mainly comprised of expatriate British architects, but by the mid-1960's former students were returning as professors. John Owusu-Addo for example, was the first graduate to return and would eventually become dean of the faculty of architecture. [176] As the program developed the diversity of professors became increasingly common. Representatives from the United States, Great Britain, Poland, Croatia, and the Czech Republic were all on the faculty during the 1960's.[177]

[173] John Lloyd, "Intentions," Kumasi School Special Issue, *Arena: The Architectural Association Journal* 82, no. 904 (July-August 1966): 40.
[174] Ibid., 47.
[175] Ibid.
[176] Hannah Schreckenbach and Jackson G. K. Abankwa, *Construction Technology for a Tropical Developing Country.* (Eschborn: German Agency for Technical Cooperation for the Dept. of Architecture, University of Science and Technology, Kumasi, Ghana, 1983) Introduction.
[177] Stanek, "Architects from Socialist Countries in Ghana," 422.

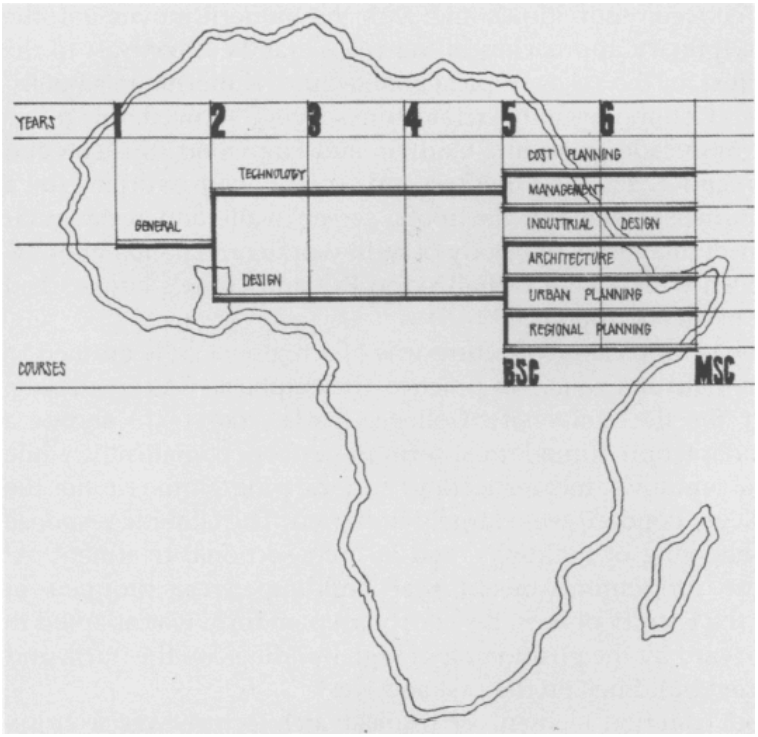

Figure 5.13: The newly designed curriculum of the architecture school at KNUST developed by John Lloyd[178]

The Wesley Girls High School built from 1952 to 1953 in Cape Coast is a stunning example of one of many of the schools designed by the firm of Maxwell Fry, Jane Drew, and Partners. Additionally, this was one of few schools built for girls in Ghana at the time.[179] The plan of the school is an extensive campus with a strong central axis running north-south and gently curving along the natural topography of the site. The axis is bookended by the school chapel on one end and the assembly hall, slightly off center, on the other.[180] To the east and west of the central axis are concrete residential blocks characterized by overhanging roofs and screened balconies to allow for proper ventilation and natural cooling. Perpendicular to the

[178] "Faculty of Architecture: University of Science and Technology, Kumasi, Ashanti, Ghana: The Curriculum," Kumasi School Special Issue, *Arena: The Architectural Association Journal* 82, no. 904 (July-August 1966): 46.
[179] Hannah Le Roux, "Modern Movement Architecture in Ghana," DOCOMOMO Journal no. 28, (2003): 63.
[180] Herz, *African Modernism,* 86.

dormitories are the classroom structures which are visually related to the design of the dormitories. The open space in between the built structures offers intimate exterior areas for gathering or transition, creating a communal experience on the small campus.[181] The visual vocabulary of individual groupings of buildings defined by an assembly building was a principle that Fry had adapted from his previous work with Walter Gropius in the Impington Village College in Cambridgeshire in the mid-1930's.[182]

Figure 5.14: Exterior of Wesley Girls High School (1952-1953), Fry, Drew & Partners, Cape Coast[183]

[181] Ibid.
[182] Crinson, *Modern Architecture,* 139.
[183] Herz, *African Modernism,* 86.

Figure 5.15: Maxwell Fry on the central axis of Wesley Girls School in Cape Coast c. 1953[184]

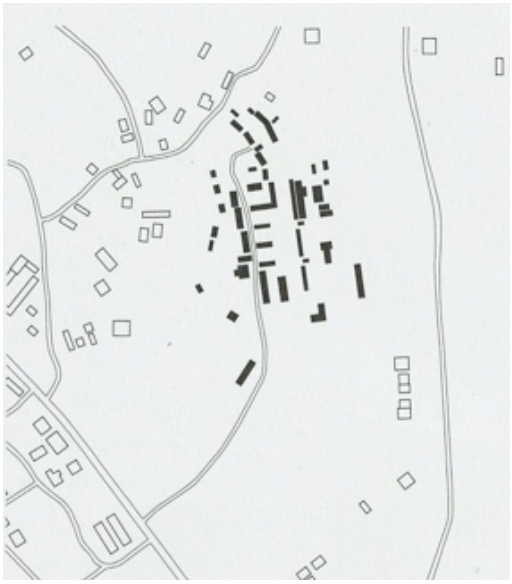

Figure 5.16: Site Plan of Wesley Girls School[185]

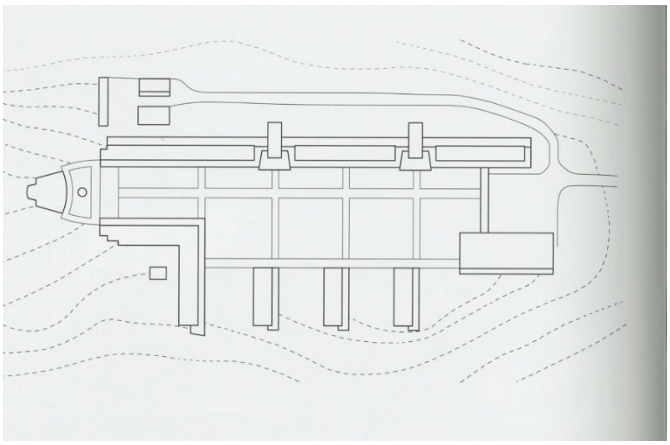

Figure 5.17: Plan of Wesley Girls School[186]

[184] Ian Jackson and Jessica Holland, *The Architecture of Edwin Maxwell Fry and Jane Drew: Twentieth Century Architecture, Pioneer Modernism, and the Tropics* (Ashgate, 2014), 190.
[185] Herz, *African Modernism,* 86.
[186] Ibid.

Also located in Cape Coast is the Mfantsipim School. The campus went through two separate building periods: one in 1947 under architect Kenneth Holgate and the next in 1958 by the now well-known firm of Fry, Drew, Drake, and Lasdun. Like many institutions in the country, the history of the school is long and complex. Founded in the late nineteenth century, the school was home to riots in the 1940's when then future president Kwame Nkrumah was imprisoned for speaking out against the British government. Kenneth Holgate was commissioned to design a new science block for the campus in 1947 in the midst of the unrest. The buildings were sited in response to the slightly sloping topography. The linear concrete structures are placed in an alternating pattern so that the lower end of one corresponds to the top of another connected by a pathway. The most striking elements of this complex are the ornate and varying screens placed throughout the exterior of the structure. Both decorative and functional, the south side of the buildings are faced with thick and bulky ornamentation, while the north is more open but still in conversation with those on the south. The dormitories designed by Kenneth Holgate are a group of three buildings on the campus. They are composed of reinforced concrete framing with concrete block infill, and asbestos roofing. The decorative doors, windows, and other exposed woodwork is oiled mahogany.[187]

[187] "Ghana," *Architectural Review (Commonwealth 2 Edition)* 127, no. 761 (July 1960): 12.

Figure 5.18: Exterior of Mfantsipim School (1958), Cape Coas, Fry, Drew & Partners.[188]

Figure 5.19: Exterior of Mfantsipim School, Cape Coast[189]

[188] Herz, *African Modernism,* 94-95.
[189] Ibid., 104.

Figure 5.20: Detail of different cast concrete techniques used throughout the building.[190]

[190] Ibid., 102.

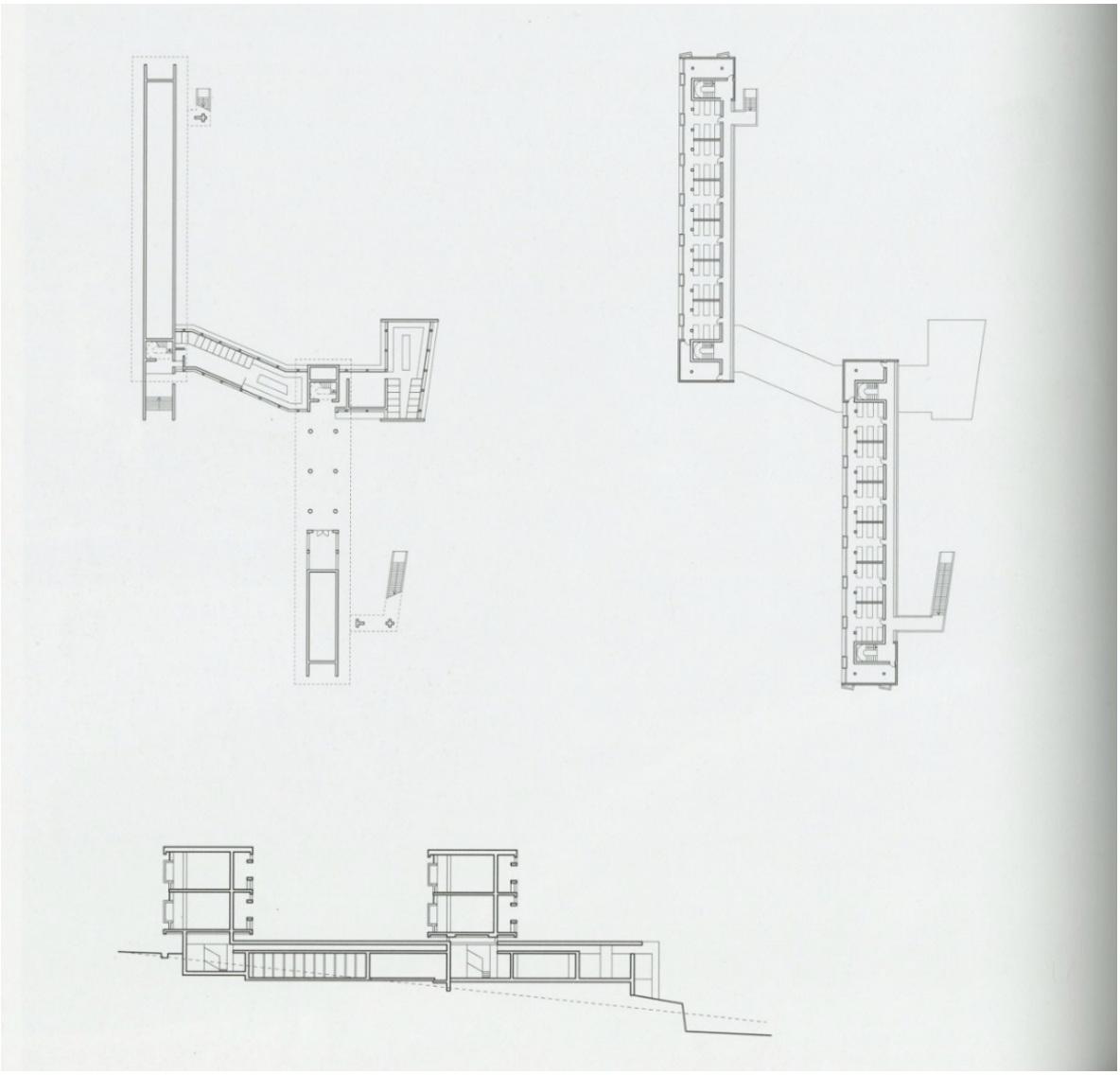

Figure 5.21: Plan (top) and Section (bottom) of Mfantipsim School Dormitories[191]

[191]Ibid., 96.

Governmental Buildings

The United States Embassy in Accra is one of the few American-designed modernist buildings in Ghana.[192] Constructed in 1958, the building is a light and elevated concrete structure that reflected architectural trends of United States embassy building around the world but also modernist trends in the built environment in post-colonial Accra. The entire building is raised one story where an open courtyard is fenced in by delicately tapered pilotis on all sides of the building. Mahogany louvers screen the upper-levels providing much needed relief from the tropical heat. The top of the building is defined with a heavy and overhanging deep-sheet-clad roof casting shadows on the interior and protecting it from direct sunlight.[193] The building also made use of local mahogany for its wooden jalousies. Concrete was utilized for the slender pilots raising the building up to take advantage of natural breezes in addition to the concrete being used for the floor beam structure.[194]

The elevation was implemented for several reasons. By raising the building on concrete pilotis, the interiors on the upper floors would be able to catch a better breeze than on the ground floor. This elevation would also provide for separation from termites (key in maintaining the mahogany jalousies), and was initially believed to enhance the buildings security.[195] The structure was originally built without air conditioning. Cooling relied at first on the design alone to protect the interiors from the harsh sunlight and high temperatures through the "especially contrived plenum,"[196] which is a space reserved for the circulation of hot and cool air. Although

[192] Udo Kultermann, *New Architecture in Africa* (New York: Universe Books, Inc. 1963), 12.
[193] Herz, *African Modernism,* 74.
[194] "Eyeful in Africa," *Architectural Design* 30 (1960): 69.
[195] "U.S. Embassy, Accra, Ghana" *Architectural Record* (June 1957), 198.
[196] Ibid.

no color images were found from the building's original construction, the rich deep red of the mahogany was meant to contrast with the painted white concrete. An interior courtyard with a reflecting pool are the central focus of the courtyard space framed by a Miesian floating staircase on one end leading to the upper story.

Initial response from architectural journals was extremely complimentary of the architect and his design. The 1959 issue of *Architectural Forum* praised the design as being unique in its ability to "…represent one country with dignity and imagination, while helping another country to form an architecture of its own."[197] The *Architectural Record* also gave the design praise for its ability to "…bring an appropriate presence to the local scene…composed of familiar fabric the climate will smile upon…[and has a] character dignified but not pompous…[and is] sprightly yet not bizarre [and] restrained but not timid…"[198]

Unfortunately, the stunning form of the embassy could not save it from the eventual criticism that followed its construction. The building was reported to be a safety hazard were a fire to break out. The building had only one main entrance that also served as the main exit. Additionally, the aforementioned hand-operated mahogany jalousies were seen as potentially hazardous. In the case of a fire, employees were advised to physically break through the shutters with a fire ax, a task that was a physical impossibility for many of the employees that worked there.[199] The American Office of Foreign Buildings Operations encouraged embassy designs to reference native cultures and building traditions in their designs, and the inspiration

[197] "Eyeful in Africa," *Architectural Design* 30 (1960): 69.
[198] "U.S. Embassy, Accra, Ghana" *Architectural Record* (June 1957), 198.
[199] Jane Loeffler, *The Architecture of Diplomacy: Building America's Embassies,* (New York: Princeton Architectural Press, 1998), 177.

for the design of the Accra Embassy building was widely criticized. Architect Harry Weese stated that the inspiration for his form came from "…African ant hills…an inverted chieftan's hut…[and] African spears…"[200] Weese was quoted in the June 1957 issue of *Architectural Record* saying:

> The columns grow out of the edge of the slab in response to the need for stability against earthquake and wind. Their square and tapered forms are reminiscent of wood; of spear points or finials or buttresses as found in sub-Sahara mud architecture. They are akin to the stalagmite ant-hills of red earth found everywhere in the land, and with the multiplicity of wood members in the parasol and slatted infilling, convey some of the richness of imagery and decoration in the African psyche. These forms are nonetheless functional; the decorative stems from expressing the structural unit and from its proliferation into a spatial pattern that attempts to characterize African aspirations for architecture.[201]

Finally, as times changed and security concerns grew alongside new threats, many United States embassies were revisited to attempt a redesign to conform to newly adopted security standards. When Harry Weese returned to Accra in the late 1970's, he was unable to retrofit the original structure to fit new security standards, and the United States was forced to abandon the building.[202] The main obstacles in the building were the open floor plan, the central staircase, and the pilotis.[203] The former embassy now houses the Ghana Ministry of Women and Children Affairs.

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[200] Loeffler, *The Architecture of Diplomacy,* 181.
[201] "U.S. Embassy, Accra, Ghana" *Architectural Record* (June 1957), 198-202.
[202] Loeffler, *The Architecture of Diplomacy* 211. Fig 125.
[203] Ibid., 243.

Figure 5.22: United States Embassy, Accra, Harry Weese (1958).[204]

Figure 5.23: Interior Courtyard and main entrance above pool.[205]

[204] Loeffler, *The Architecture of Diplomacy,* 115.
[205] "Eyeful in Africa," *Architectural Design* 30 (1960): 69.

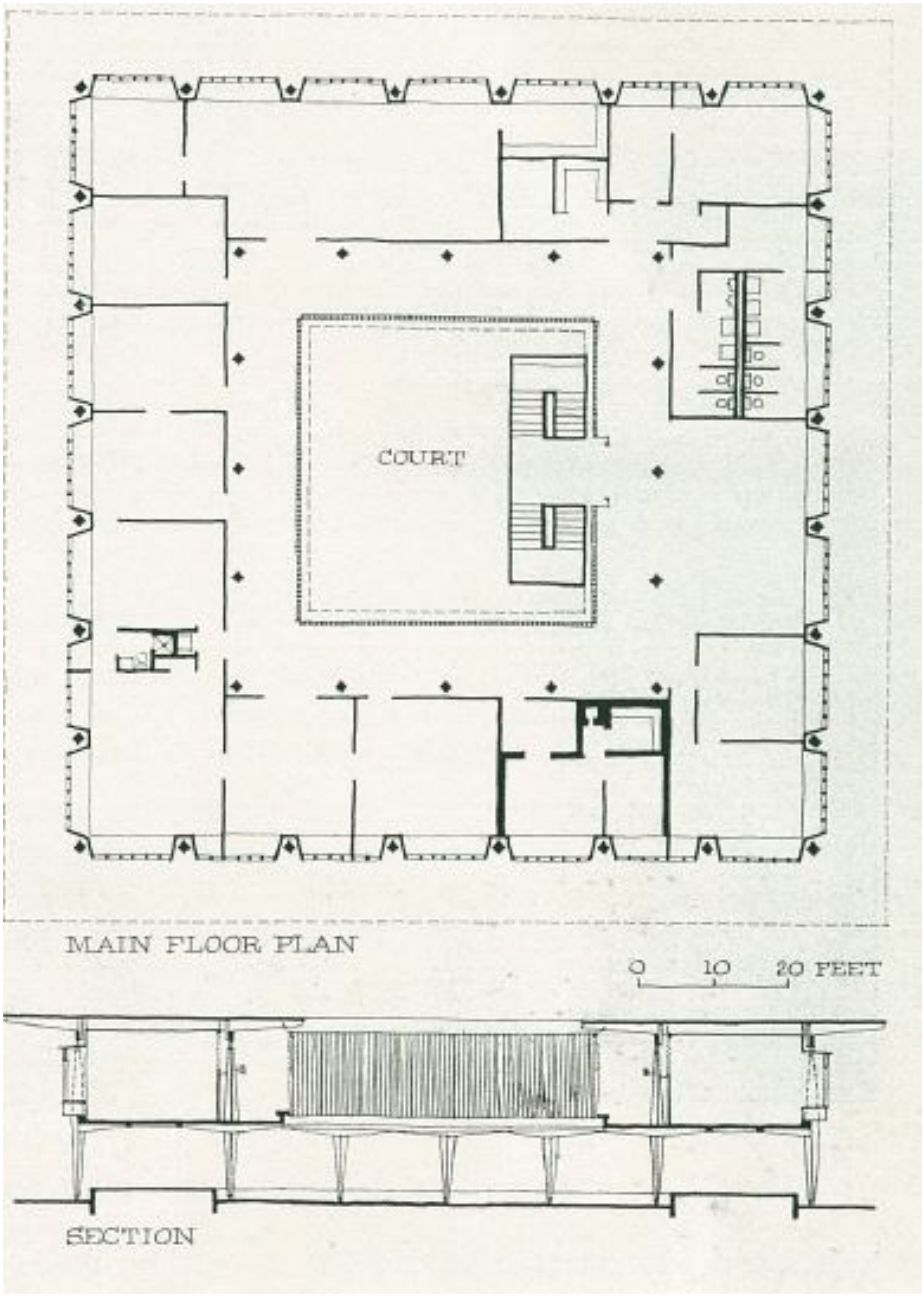

Figure 5.24: United States Embassy Plan and Section[206]

[206] "Eyeful in Africa," *Architectural Design* 30 (1960): 69.

Commercial Buildings

Commercial buildings are most dominant in the capital city of Accra. Buildings such as banks, which are discussed in this sections, were symbols of modernization in the early years of independence.[207] The Cooperative Bank Offices in Accra is an example of Fry and Drew practicing outside of the context of a university. Maxwell Fry, Jane Drew, Lindsey Drake and Denys Lasdun designed the building in the mid-1960's.[208] This six-story glass tower is protected on the exterior by sunshades.[209] This building, composed primarily of glass, shows the contrast in design between Fry and Drew's educational architecture compared to the work they created for commercial buildings in metropolitan areas.

Figure 5.25: Cooperative Bank Offices, Fry and Drew, Accra (c. mid 1960's)[210]

[207] David Adjaye, *African Metropolitan Architecture, Volume 5: The Forest* (New York: Rizzoli International Publications, 2011), 26.
[208] Kultermann, *New Architecture in Africa*, 25.
[209] Kultermann, *New Directions in African Architecture,* 49.
[210] Kultermann, *New Architecture in Africa*, 27.

In 1956 the architectural firm of James Cubitt, Scott, and Partners designed the new headquarters for the Industrial Development Corporation (IDC) in downtown Accra. This was the first building on a planned commercial site that would later be shared with Fry and Drew's Cooperative Bank Office. The external staircase seen in the figure is on the southwest corner of the building with the main façade facing southward looking over Accra. The four-story structure is one of the taller buildings examined in this thesis, but still exhibits many of the tenents of tropical modernism in its execution. Galleries run the full length of the building with walls clad in hand-operated vertical louvers which are controlled bay by bay. The first story is open and served as a showroom for products made by the Industrial Development Corporation.[211]

Figure 5.26: IDC Headquarters, James Cubitt (c. 1956)[212]

[211] "New Buildings at Accra, Gold Coast: by James Cubitt, Scott and Partners, architects," *The Architects' Journal* 124 (1956): 193.
[212] "Verwaltungsgebaude in Accra" *Bauen + Wohnen = Construction + habitation = Building + home: internationale Zeitschrift* 15, no.2 (1961): 56. doi: http://doi.org/10.5169/seals-330697.

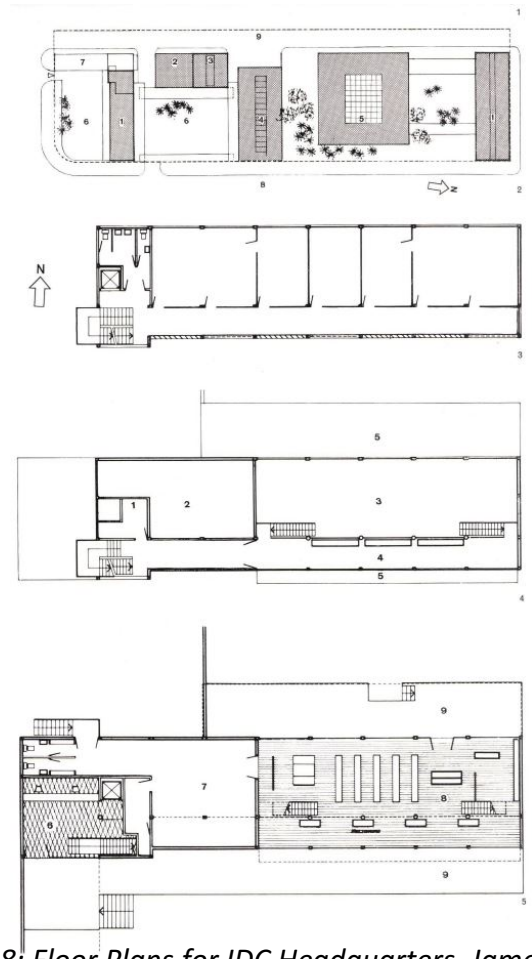

Figure 5.28: Floor Plans for IDC Headquarters, James Cubbit[213]

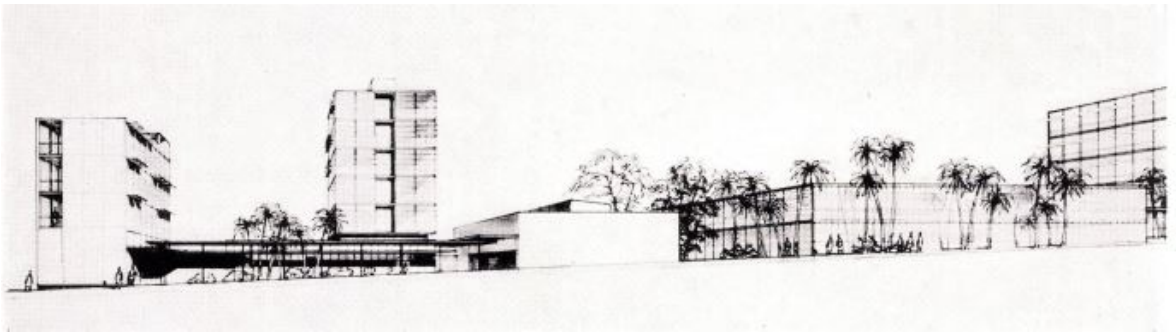

Figure 5.27: Section of Accra 'office park'[214]

[213] Ibid.
[214] Ibid.

Social and Cultural Buildings

Social and cultural buildings constructed in the years following independence reflected the optimism and hopefulness of the new nation.[215] This section includes community centers, libraries, and museums. The Community Center in Accra was constructed from 1950-1955 by Fry, Drew, and Partners. When first constructed, just years before independence, this building in its function, architectural style and siting were important for the Ghanaian independence movement.[216] Even prior to official independence, this building was placed in the heart of the former colonial government district. It was described as "…a gift of the United Africa Company to the citizens of Accra."[217] The construction was funded by the British-owned United Africa Company and was an attempt to dispel threatening trade boycotts and rising civil unrest throughout the state.[218] The concrete structure is focused around a central auditorium with arcades bordering the secondary structures. A mosaic panel sits above the main entrance with a Ga phrase reading "It is good that we live together as friends and as one people."[219] This mural was chosen after a design competition was held among Ghanaian artists and students at universities in England.[220] Two main courtyards are the focus of the plan as a whole which separates the accommodations for children from those of the adults. The adults' area includes "…committee rooms, classrooms for adult education, library and dining rooms, and a large hall

[215] Adjaye, *African Metropolitan Architecture,* 25.
[216] Herz, *African Modernism,* 66.
[217] "Community Center at Accra, Gold Coast" The Architect and Building News 197 (1950): 185.
[218] Herz, *African Modernism,* 66.
[219] Ibid.
[220] "Community Center at Accra, Gold Coast" The Architect and Building News 197 (1950): 186.

for dances, films, etc."[221] Today the complex sits largely unused and abandoned, showing signs of neglect on the grounds that once housed the final push towards independence.

Concrete block makes up the walling of the building, while the concrete floors are finished with granolith, a mixture of cement and a finer aggregate like granite to produce a more polished finish for a desired surface. The rest of the building is a mixture of timber construction and concrete framing. For example, the roof of the main hall is framed by 4-foot-deep timber trusses spanning 40 feet. The roof is covered with concrete airfoil.[222] The roofing in the remainder of the structure is similar in construction but varies in size.

Figure 5.29: Community Center in Accra, Main Entrance and sign, (1950-1955), Fry, Drew and Partners. [223]

[221] Ibid., 185.
[222] Ibid., 186.
[223] Herz, *African Modernism,* 66.

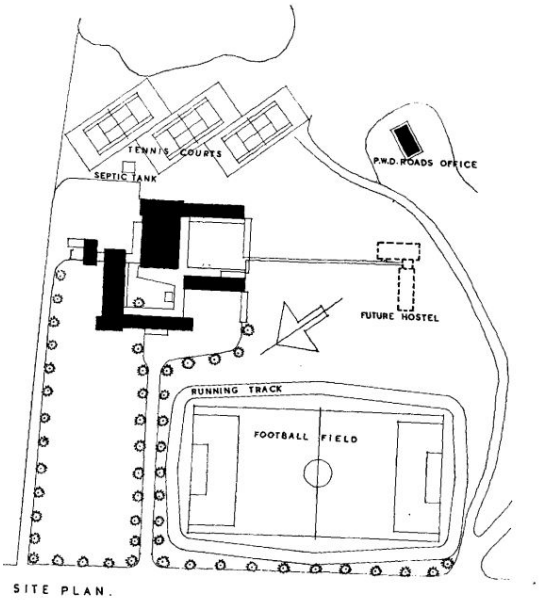

Figure 5.30: Site Plan of Community Center[224]

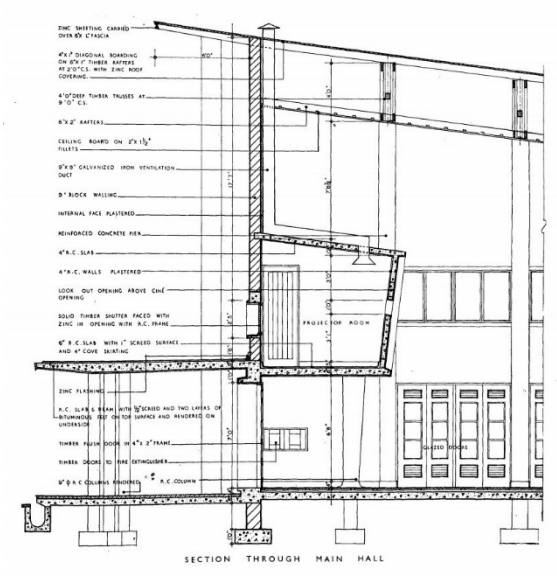

Figure 5.31: Section through Main Hall[225]

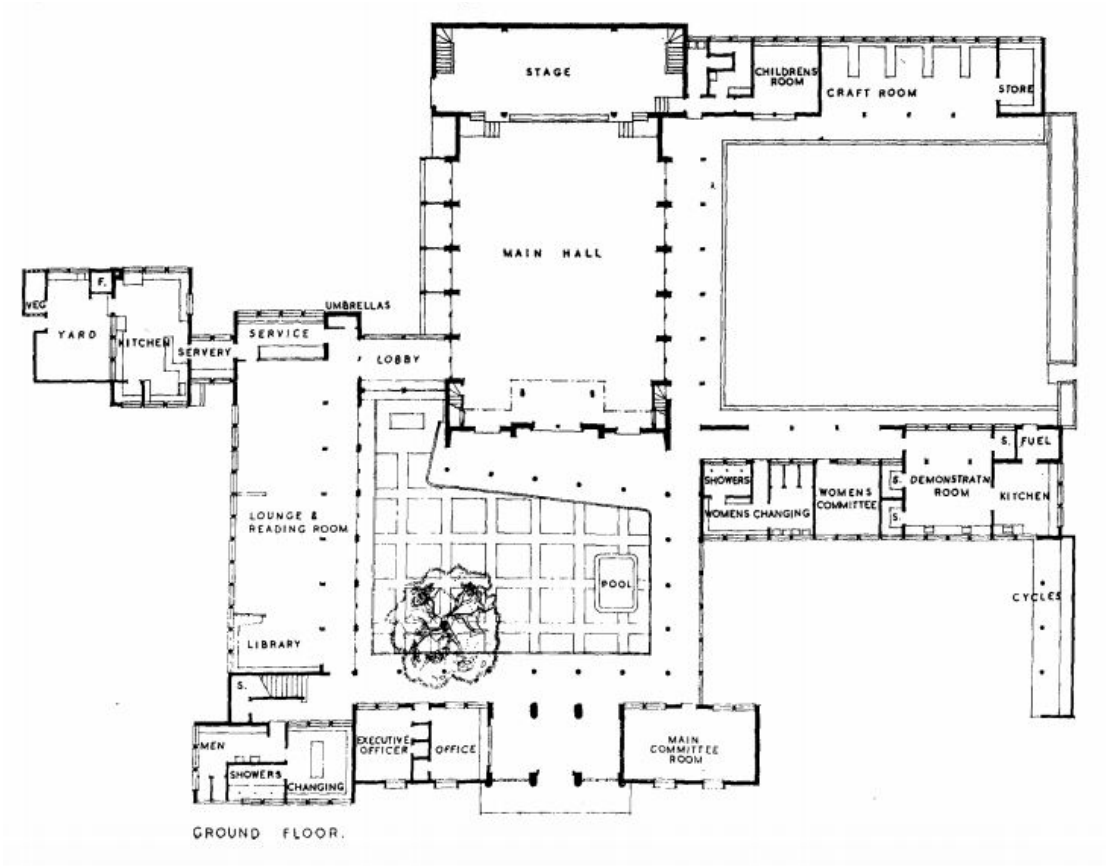

Figure 5.32: Ground Floor Plan of Community Center[226]

[224] "Community Center at Accra, Gold Coast" The Architect and Building News 197 (1950): 185.
[225] Ibid., 187.
[226] Ibid., 186.

The National Museum in Accra was designed by Drake and Lasdun[227] and was one of the few early museums built in the modern style on the continent outside of South Africa or Egypt.[228] The National Museum was erected from 1956 to 1957 in the years just prior to Ghanaian Independence. The opening of the Museum in March of 1957 actually coincided with the official declaration of Ghanaian independence.[229] The new president, Kwame Nkrumah, viewed the National Museum as representing both a peaceful transfer of power from the old colonial regime to the newly independent nation of Ghana and as a starting point for the development of a unified Africa of independent nations.[230] Both the collection and the building that housed it were significant steps in the direction of a competitive independent nation that Ghana would hope to become. The collection itself was organized by British anthropologist A.W. Lawrence in the 1950's.[231] The building in fact hosted the first formal celebration of Ghanaian independence on March 6, 1957.[232]

The dome shaped roof and internal circulation of the structure are reminiscent of Lasdun's previous work in England.[233] However, while he pulled inspiration from previous works in Europe, the experience of Fry and Drew with Ghanaian climate needs ensured that the building was appropriate for its setting. Located in central Accra, the main structure is a white concrete circular form with a low dome rising slightly above the structure and spanning 80

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[227] Kultermann, *New Directions in African Architecture,* 57.
[228] Ibid.
[229] Herz, *African Modernism,* 50.
[230] Ibid.
[231] Ibid.
[232] Phaidon, *20th-Century World Architecture*, 572.
[233] Herz, *African Modernism,* 50. The comparison made by Herz is of the National Museum in Accra to the Dome of Discovery built by Lasdun for the Festival of Britain.

feet.[234] The aluminum dome rests upon a circular row of windows that the dome projects over just slightly to control the incoming sunlight coming down upon the interior galleries. The dome is supported by concrete slabs placed at varying angles to control incoming sunlight and ensure proper air circulation within the building. "…Louvers were placed strategically throughout the structure which are open to the southwesterly winds while being closed to the northeasterly storms." [235] Additionally the dome was covered in sheet aluminum to serve as a heat repellent while extending slightly over the edge of the dome to break up the harsh sunlight. The steel dome itself was prefabricated in England and then shipped to Ghana and assembled on site.[236] The ring-like form of the building is supported on the interior by 14 separate concrete slab columns. These columns divide the interior spaces into galleries and dictate the procession of the visitor. Two curving staircases are located on opposite sides of the museum and provide access to the second floor which is reserved for offices.[237] The flooring consists of terrazzo tiling.[238] The museum served as a *tabula rasa* for the nation's history in a way that allowed them to express their point of view within the walls on their own terms.

[234] Phaidon, *20th-Century World Architecture*, 572.
[235] Ibid.
[236] Ibid.
[237] Ibid.
[238] "Museum at Accra, *"Architectural Record* (1957): 445.

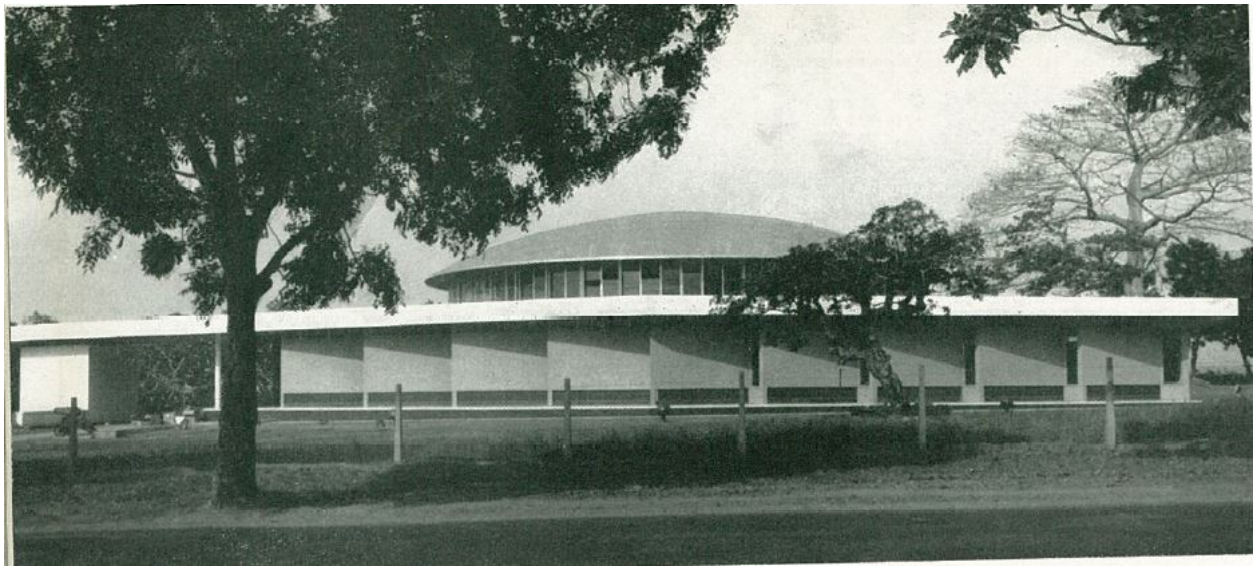

Figure 5.33: Exterior of National Museum in Accra (1956-57), Drake & Lasdun.[239]

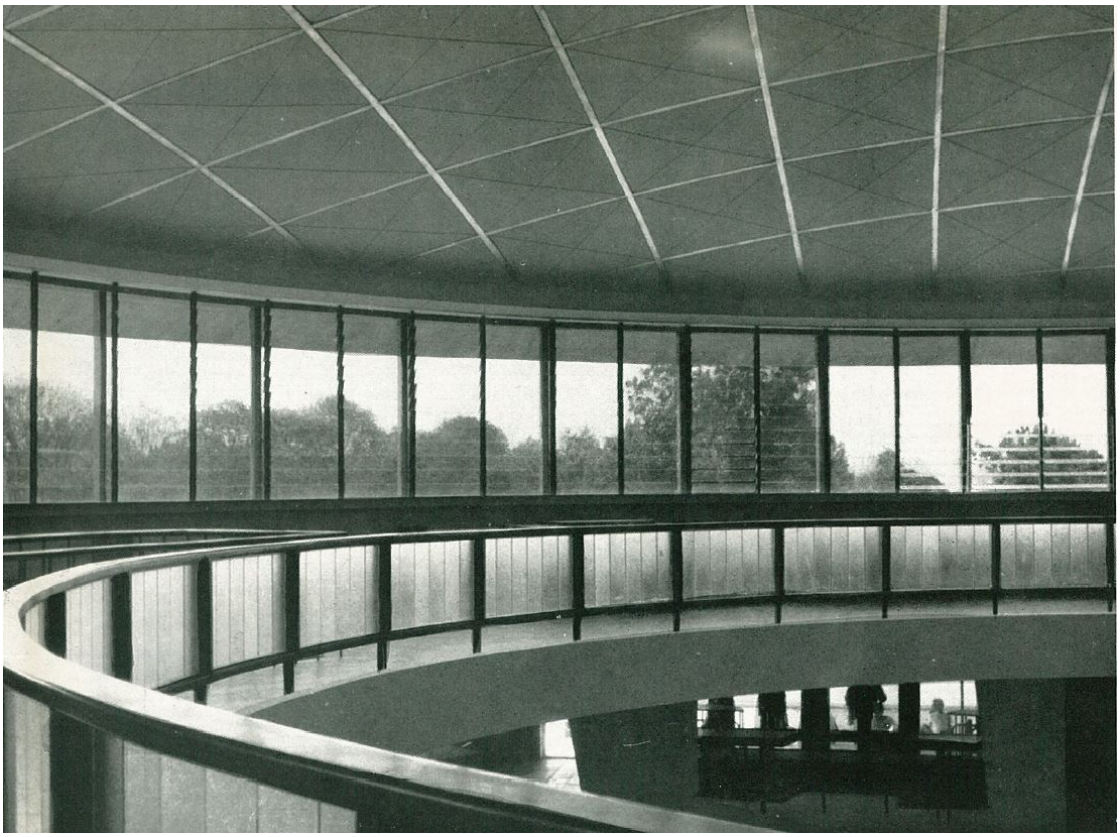

Figure 5.34: Interior of museum on the upper story[240]

[239] Museum at Accra, *"Architectural Record* (1957): 443
[240] Ibid.

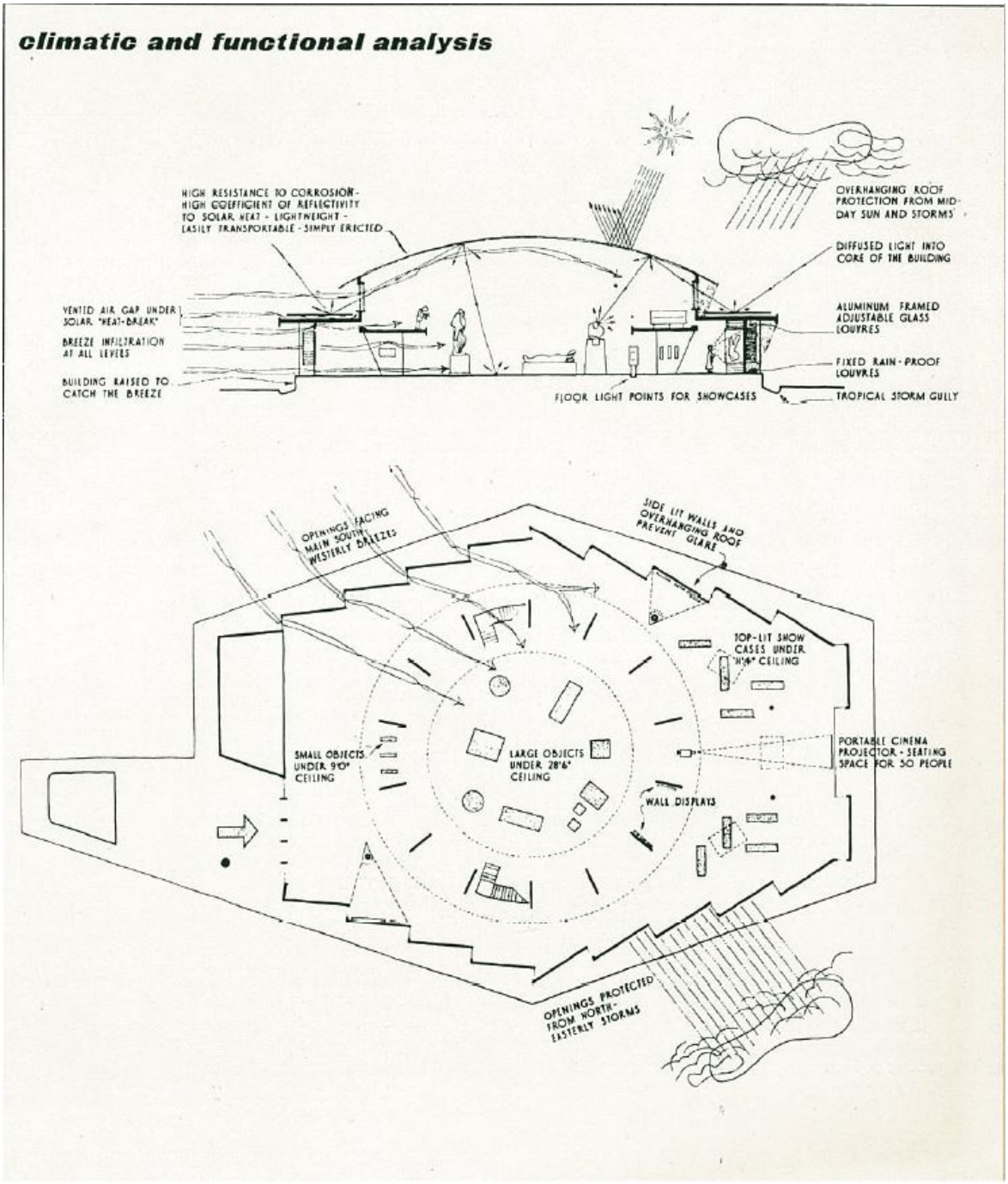

Figure 5.35: "Climate and Functional Analysis" of the National Museum in Accra[241]

[241] Ibid.

The Central or National Library in Accra by Nickson and Borys is a critical example of library design in Ghana in the 1950's.[242] The library was constructed in 1956 by the firm of Nickson and Borys during the years of transition prior to official independence. This library contains a children's section with a sculptured entrance wall. Not only does the presence of a library speak to the optimism and promise of younger generation's education in a new nation, but the building is yet another example of how architects allowed the needs of the local climate to influence their design. Particularly difficult in a library, to ensure the proper care and treatment of physical texts, Nickson and Borys implemented several measures to secure the comfort and functionality of the interior spaces. The bookshelves themselves were designed as individual pieces that tapered towards the bottom but were raised slightly from the floor leaving room for ventilation gaps at both the top and the bottom. This was meant to prevent the build-up of moisture in the collections in addition to keeping them from harmful pests.[243] The building was also originally built without modern air conditioning units and was naturally heated and cooled through the effects produced through its design.[244] This library is one of the best remaining examples of the late colonial policies to increase libraries and educational systems around the country that was continued under Nkrumah's reign.[245] Special attention was paid to the design of the building due to its unique setting near the Supreme Court Precinct. Architects Nickson and Borys attempted to blend the elements of tropical modernism

[242] Kultermann, *New Directions in African Architecture,* 57.
[243] Herz, *African Modernism,* 54.
[244] Getty Foundation, "2016 Grantees for Conserving Modern Architecture Initiative Announced," Getty Institute, last modified July 28, 2016. Accessed January 15, 2017. http://blogs.getty.edu/iris/2016-grantees-for-conserving-modern-architecture-initiative-announced/.
[245] Le Roux, "Modern Movement Architecture in Ghana," 64.

harmoniously with the classical surroundings of the new library. The building consists of a "reinforced concrete frame with concrete block panels and partitions."[246]

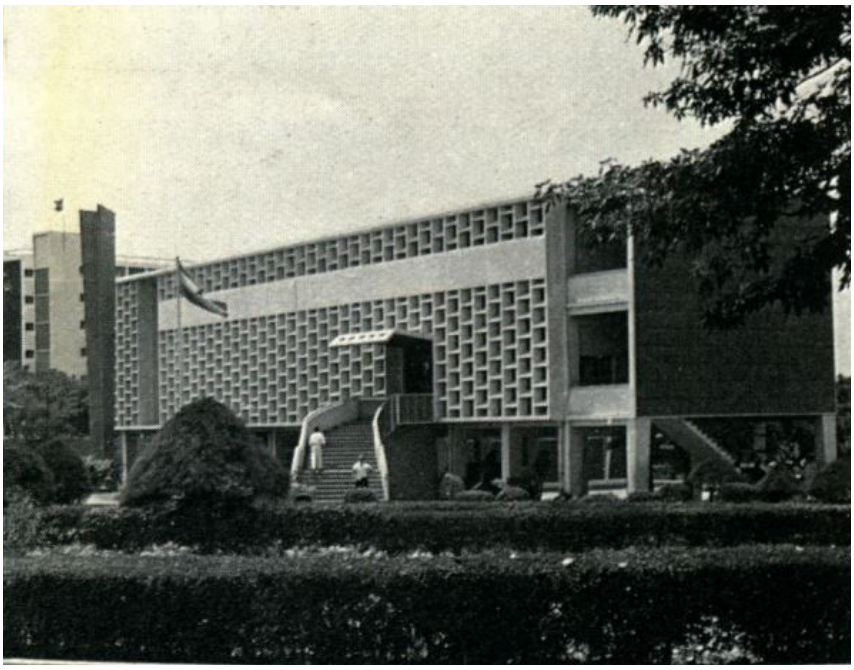

Figure 5.36: Main Entrance, Accra Library[247]

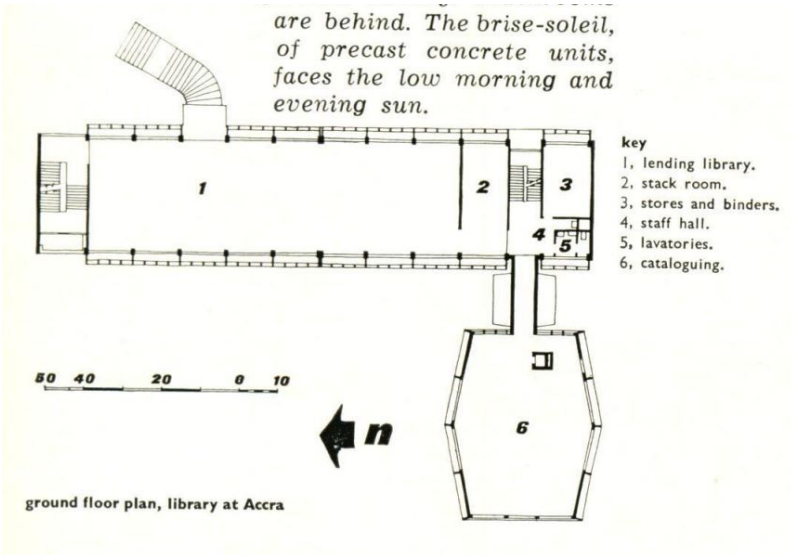

Figure 5.37: Library Plan[248]

[246] Lambert, "Ghana, Nigeria, Sierra Leone," 331.
[247] "Ghana," Commonwealth 2 Edition *Architectural Review* 127, no. 761 (July 1960): 14.
[248] Ibid.

Figure 5.38: Interior of Library, Custom-built book shelves[249]

Figure 5.39: Interior of Library hall with shading techniques and glass louvres[250]

[249] Herz, *African Modernism,* 54.
[250] Herz, *African Modernism,* 54.

Stadiums

Sports stadiums found throughout the continent were designed by Europeans like the Kumasi Stadium in Ghana designed by Kenneth Scott. [251] The concrete grandstand dominates the landscape left blank to hold local sporting events. Scott utilizes the possibilities of the building material that developed out of the evolution of modern architecture.[252] Beneath the grandstands which has a seating capacity of 1,500 is space for changing rooms, shops, and dormitories.[253] The stadium included fields for sports, tracks for running and cycling, and open terraces for up to 24,000 visitors.[254]

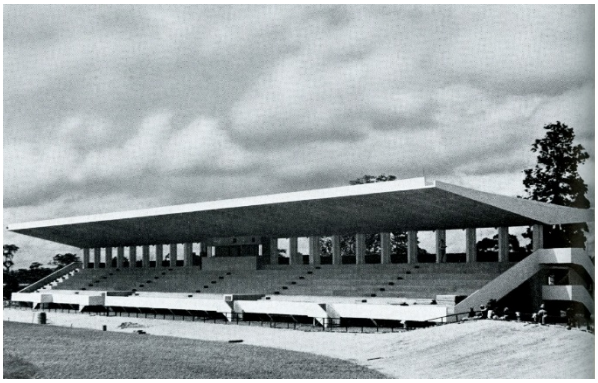

Figure 5.40: Kumasi Stadium, Kumasi, Grandstand, Kenneth Scott, c. 1960[256]

Figure 5.41: Back of Kumasi Stadium[255]

[251] Ibid, 46.
[252] Kultermann, *New Directions in African Architecture,* 66.
[253] "Ghana,"*Architectural Review (Commonwealth 2 Edition)* 127, no. 761 (July 1960): 12.
[254] Ibid.
[255] Kultermann, *New Architecture in Africa*, 46.
[256] "Building the New Africa" *Progressive Architecture* XLIII, no. 12 (December 1962): 87.

Exhibitions

The International Trade Fair was built in Accra between 1964 and 1967 by Polish architects Jacek Chyrosz and Stanislaw Rymaszewski in cooperation with Ghanaian architect Victor Adegbite. This complex in particular expresses the post-independence developments and ideologies that occurred in Ghana. Built on the outskirts of Accra, it was meant to showcase new technologies and products from around the world. One of the most prominent exhibitions housed there was a self-cooling dome developed by Buckminster Fuller with students at the University in Kumasi.[257] It was officially opened in 1967, and the first fair was held that year. The startling and futuristic form stands out in the surrounding landscape. The complex was a project of Kwame Nkrumah and a direct result of his economic aspirations for Ghana and his political connections with socialist countries. The construction of the trade fair was managed by the Ghana National Construction Corporation (GNCC) which employed both Ghanaian and foreign architects. Many of these foreigners were hired by the GNCC on contract from socialist countries.[258] This organization was at the center of Ghana's post-colonial modernization.

The GNCC was officially formed out of the Public Works Department when it became nationalized in 1962. Due to this history, in which the PWD relied heavily on studies conducted by the Building Research Institute of England and previous experiments in tropical architecture, many of the tenents developed in the tropical architecture period were carried over in the early years of the GNCC.[259] Staff positions in the GNCC were increasingly taken over by Ghanaian architects educated overseas, both in the west and the east. Victor Adegbite, for example, was

[257] Herz, *African Modernism,* 58.
[258] Stanek, "Architects from Socialist Countries in Ghana," 417.
[259] Ibid., 420.

educated at Howard University in Washington D.C., while architects such as A.W. Charaway and E.G.A. Don Arthuer were educated in the Soviet Union.[260] Additionally, architects from Britain and France were also contracted to Ghana for building projects throughout the late 1960's.[261] This time period in the country represents a truly cosmopolitan and global building vocabulary.

Although today the building is visibly suffering from neglect, it initially succeeded in bringing ambitious technologies to Ghana while acting as an object of architectural fascination. The structure is dominated by a large raised circular structure with passageways that lead to several exhibition halls around the perimeter. The choice of architects by President Nkrumah is a direct result of his own socialist policies within the country as well as his political relationships with Soviet Eastern Europe.[262] Its implementation was a part of Nkrumah's strategy to rapidly modernize and industrialize Ghana by building universities, libraries, and other institutions that would encourage economic growth and trade throughout the region. Socialist countries were also very well represented with exhibitions at the fair, such as Czechoslovakia, the German Democratic Republic, Hungary, and Poland.[263] The west was also represented with the former Great Britain and the United States. The construction and intended function of the building shed an enormous amount of light on Ghana's foreign relations after independence. This project, along with others produced by the GNCC, are the forms of modernism where the chief architect was Ghanaian and the subordinating designers and engineers were from primarily socialist Eastern Europe. These projects were widely publicized in the Ghanaian press (as seen

[260] Ibid., 417.
[261] Ibid.
[262] Herz, *African Modernism,* 56.
[263] Stanek, "Architects from Socialist Countries in Ghana," 417

in chapter 2), but the names of the architects were rarely mentioned. This is in direct contrast to the period of predominately British building in which architects like Maxwell Fry, Jane Drew, and Kenneth Scott gained prominence in the architectural world from their work in the tropics. Furthermore, British projects were more commonly reported on in architectural magazines than those of eastern or soviet associations that came out the GNCC. This is not so surprising to see in western architectural journals like the British *Architectural Review*, but this was the case even in African publications like the *West African Builder and Architect.* This is most likely due to the publication's close ties to Great Britain from the magazine's genesis.[264]

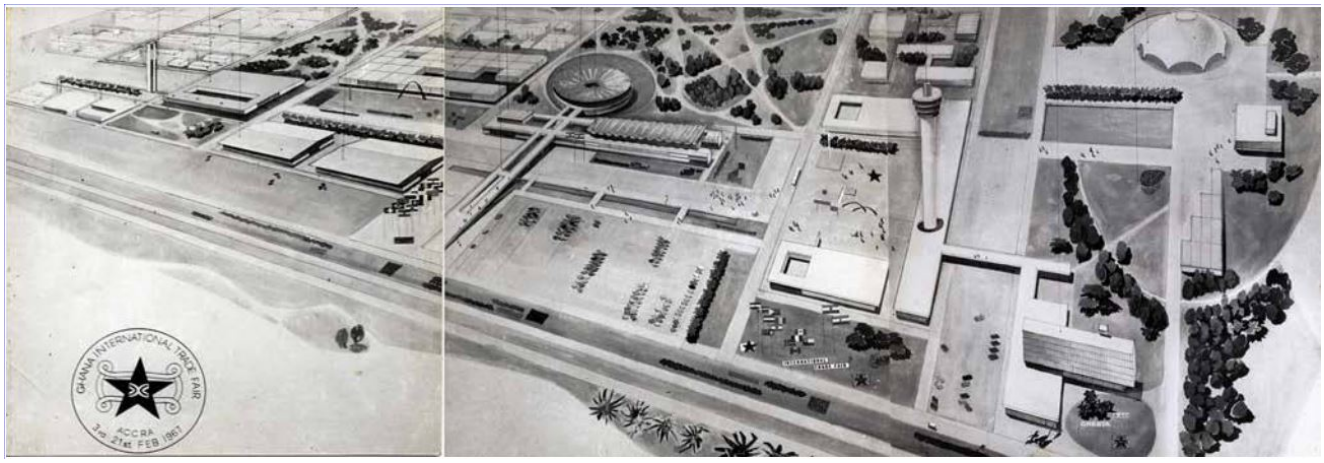

Figure 5.42: Aerial of International Trade Fair[265]

[264] Stanek, "Architects from Socialist Countries in Ghana," 435.
[265] Ibid., 419.

Figure 5.43: View of ramp to main entrance of the pavilion roof terrace, International Trade Fair[266]

Figure 5.44: International Trade Fair, Timber Pavilion, Vic Adegbit, Jake Chryosx, and Stanislaw Rymaszewski[267]

[266] Herz, *African Modernism*, 58.
[267] Stanek, "Architects from Socialist Countries in Ghana," 433.

Housing

Housing was a particularly difficult building type to translate into the modernism that many architects were practicing at the time. The social and cultural traditions of residential communities in Ghana and other communities in Africa did not have a need for single-family homes common in western Europe. Inter-generational communal living spaces were of primary importance to many locals. For this reason there are several examples of modernist high-density housing and single-family homes built in Ghana from the 1950's to the 1970's.

Both Kenneth Scott and James Cubitt designed a number of private homes near the capital city of Accra, and in Kumasi near the university. The Dr. Easmon House was built by Kenneth Scott in 1959 for Ghanaian surgeon, Dr. Easmon, near Accra in Tesano. The main structure itself is elevated 8 feet off the ground on a series of 16 thin columns. The steel frame of the house is left partially exposed, expressing the clean linear form. In response to the harsh sun, the house only has windows on its north and south facades. Both of these facades have elongated roof overhangs to create powerful shades to generate a cooler interior. On the interior the windows are paired with venetian blinds and "…tiers of smaller hinged solid panels that can be opened to provide ventilation."[268] There are two staircases in the home: the main one leads from under the home to a covered veranda on the east end and the other is a spiral staircase leading to the kitchen on the west end. An interior courtyard sits central to the house while the main rooms surround it. Adjustable jalousies are located on the interior and exterior windows to allow for protective shade. The kitchen, a study, two bedrooms, and the dining and living rooms are all located on the first floor. The dining and living rooms and the veranda are

[268] Phaidon, *20th-Century World Architecture*, 573.

seen in plan-view as a large open space separated by a sliding glass door, still allowing for visual unity of the main living spaces. The ground level is home to a store-room and a garage.

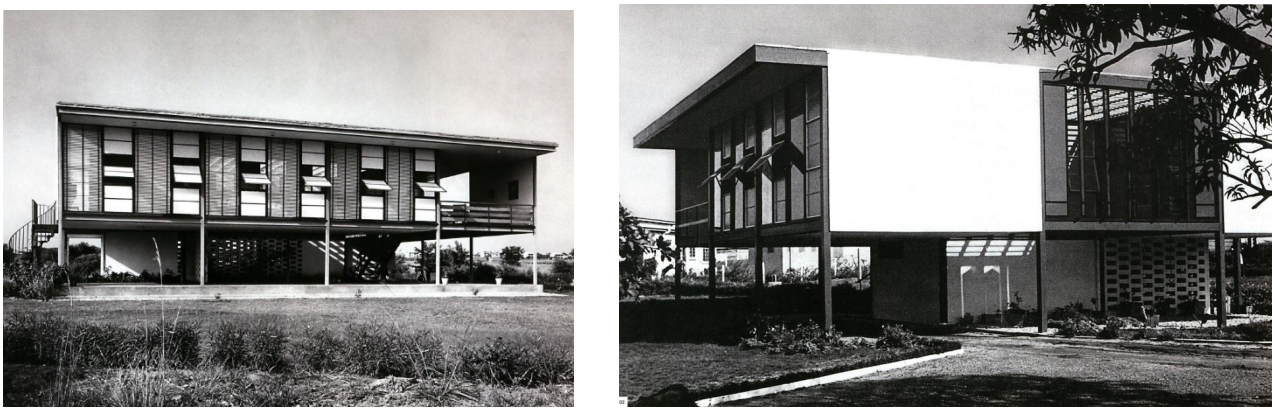

Figure 5.45: Exterior of Dr. Easmon House, Kenneth Scott, 1959[269]

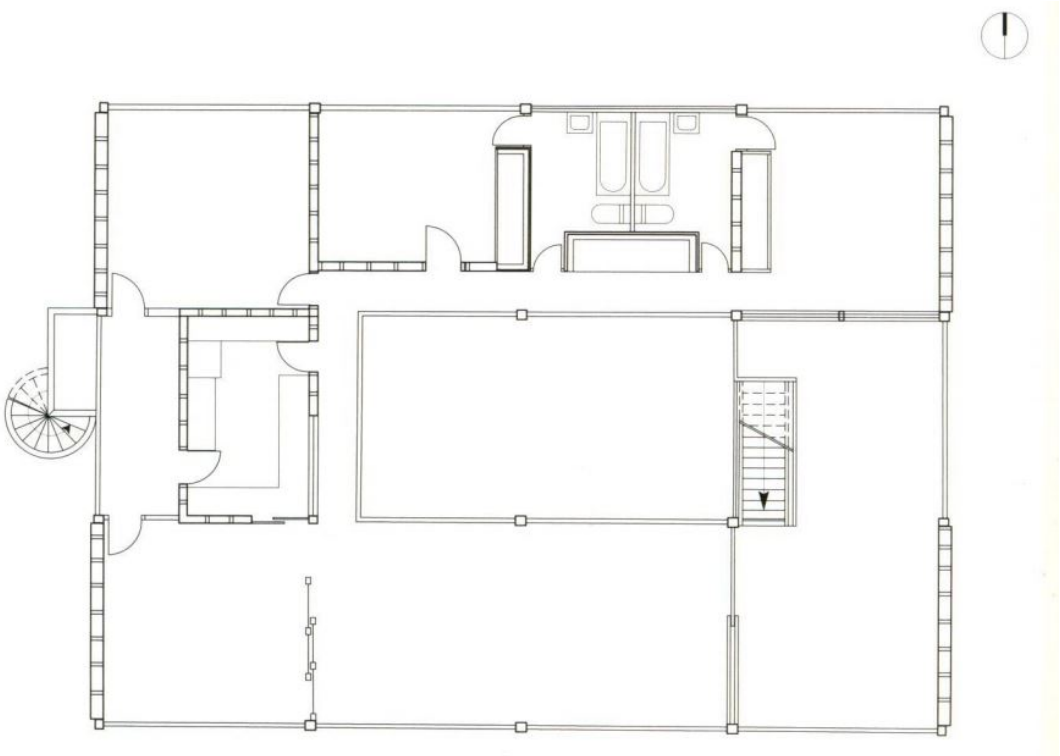

Figure 5.46: Plan of Dr. Easmon House, Kenneth Scott, 1959[270]

[269] Ibid.
[270] Ibid.

In 1961 Scott built his own home in the city of Accra. The home, clearly western in both its style and functionality as a single family dwelling unit, has been integrated into the landscape by the architect. The home is Scott's interpretation of Le Corbusier's Villa Savoye with special design detail catered to the needs of the Ghanaian climate.[271] The large open living room on the second floor of the home is protected by sunshades.[272] Terraces lined with louvers flank the upper level of the home, while the bottom story extends beyond the footprint of the upper level. White concrete and striking geometric lines dominate the otherwise natural setting. The house is still home to Kenneth Scott's widow, who served as Ambassador to France and as a United Nations advisor.[273] This house is a unique and early example of a building with central air conditioning. This feature in fact influenced the overall form of the structure to cater to the specific technological needs of an air conditioning unit. Room heights are lower in this home than typically found in other single family homes built both by Scott and others to maximize efficiency of the air conditioning unit.[274] Another peculiarity of the home was its function to perform as a home for Kenneth Scott's expansive collection of sculpture from both Europe and Africa. Walls were constructed with special built-ins or recesses in order to accommodate the collection. The main home has a frame made of reinforced concrete, concrete columns, and a flat roof spanned by timber joists with a "built-up bituminous" finish on the second floor.[275] The ceiling of the first floor is wooden boarding and the interior

[271] Spiro Kostof and Richard Lingersoll, *World Architecture: Across-Cultural History (Oxford: Oxford University Press, 2012)* 875.
[272] Kultermann, *New Directions in African Architecture,* 72.
[273] Herz, *African Modernism,* 78
[274] Lambert, "Ghana, Nigeria, Sierra Leone", 334.
[275] Ibid.

cupboards are finished with a veneer of polished rosewood. The floors throughout the interior are finished with travertine marble. The grounds also included a guest annex and service quarters for servants.

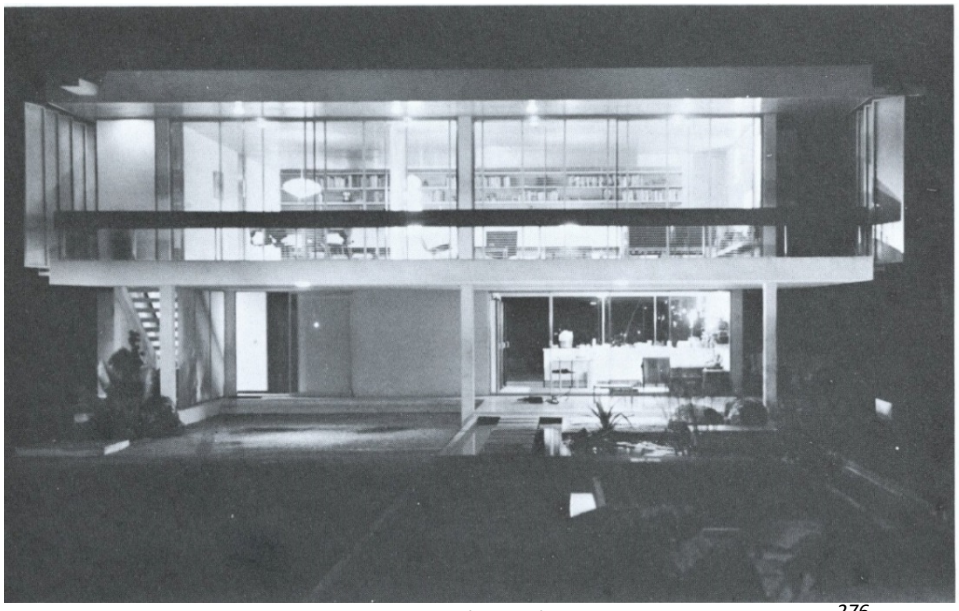

Figure 5.47: Architect's House (1961), Accra, Kenneth Scott.[276]

Figure 5.48: Interior of Scott House, Dining Room and Living Room[277]

[276] Kultermann, *New Architecture in Africa*, 131.
[277] *"Nel Ghana, regione di Accra" Domus* 393 (August 1962): 15.

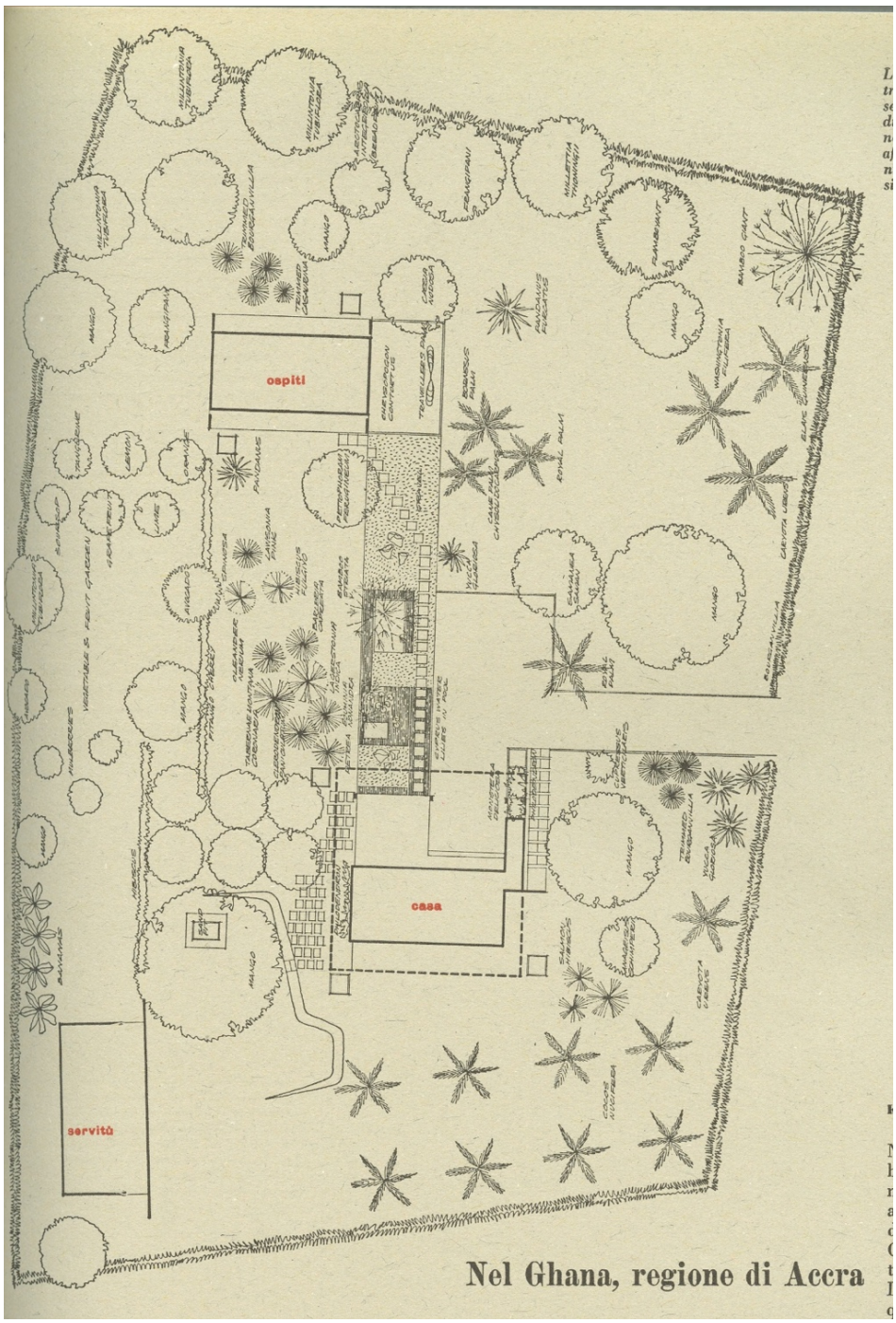

Figure 5.49: Site Plan, Kenneth Scott House, Accra 1961[278]

[278] Ibid.,9.

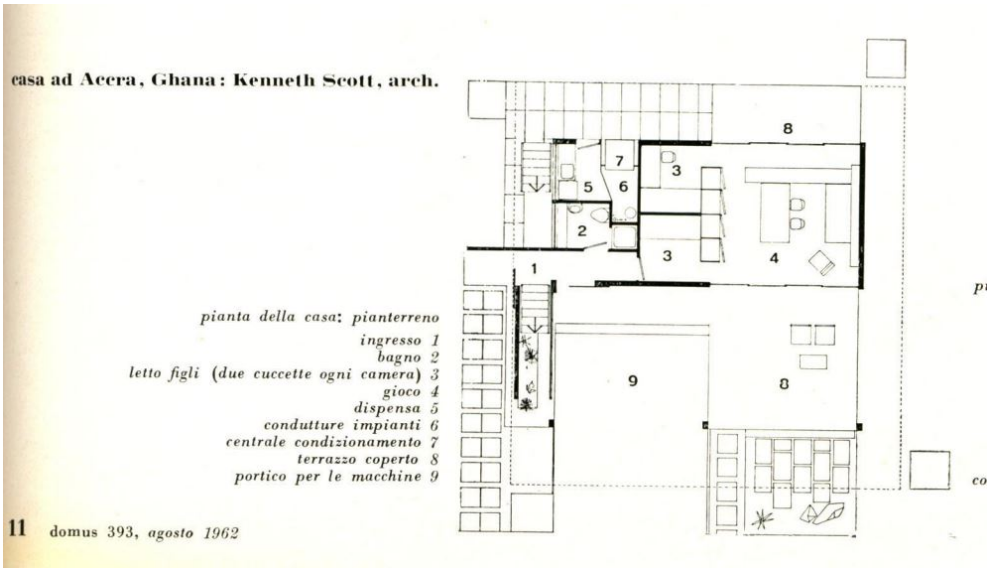

Figure 5.50: Ground Floor Plan of the Scott House, Accra, 1961[279]

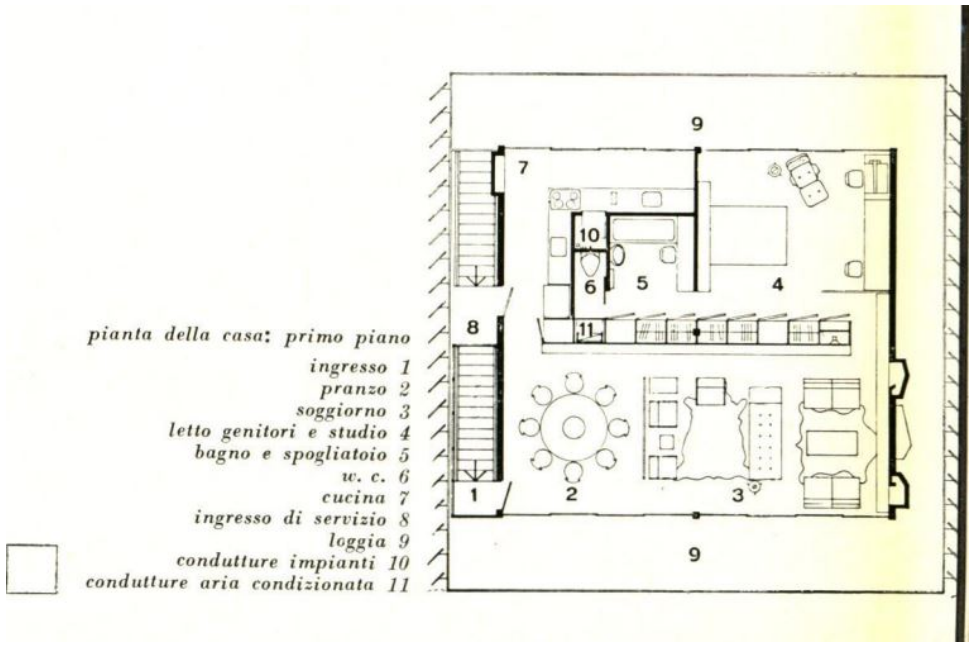

Figure 5.51: Upper Story Plan of Scott House, Accra, 1961[280]

[279] Ibid., 11.
[280] Ibid.

Fry described the design of affordable housing as one of the most difficult challenges he and Jane Drew faced during their work in the developing world (Chandigarh in particular).[281] The Housing Estate in Christiansborg Castle near Accra, by English architects D.A. Barrat and J.G in 1962. Halstead is a unique example of European adaptations to the native living unit of multi-family dwelling with an emphasis on the social function of the home. [282] The architect was a young British designer working with the Department of Public Construction in Ghana. He envisioned a housing project for Africans fitting their traditional social unit. This development in particular grew out of a need for housing for the employees of Christiansborg Castle, which was the new seat of Ghana's head of state near Accra.[283]

The former Danish castle, which now served as the home for the Prime Minister, served as the inspiration for this 1.5 acre site. The synthesis of the "triple heritage" of the Ghanaian experience can be seen explicitly in these buildings. The sharp geometric references to castellation in the housing units is subtle yet effective. The arrangement of the 24 homes is derivative of a traditional enclave with a series of single family units alternating in setback to create a central courtyard closed by a communal laundry. With private interiors and shared exteriors, this new compound is an early and significant mark in experimentation with modernism and Ghanaian social traditions.[284] In each grouping of structures, two units are located on the ground floor, and one on the upper floor. This upper story is accessible by an external staircase. In addition to the large central courtyard, each unit opens to a smaller

[281] E. Maxwell Fry, "West Africa," *Architectural Review (Commonwealth 2 Edition)* 127, no. 761 (July 1960), 8.
[282] Kultermann, *New Architecture in Africa*, 162-163.
[283] Kultermann, *New Directions in African Architecture,* 79.
[284] Phaidon, *20th-Century World Architecture*, 574.

private courtyard. Each dwelling unit contains a kitchen, a shower and toilet, and storage areas. The walled courtyard is provided for outdoor living and sleeping. The buildings are constructed from stuccoed concrete blocks on the first floor, reinforced concrete on the second floors, with timber roofs structures clad in tile.[285]

Figure 5.52: Housing Estate (1962), Christiansborg Castle (near Accra), D.A. Barrat.[286]

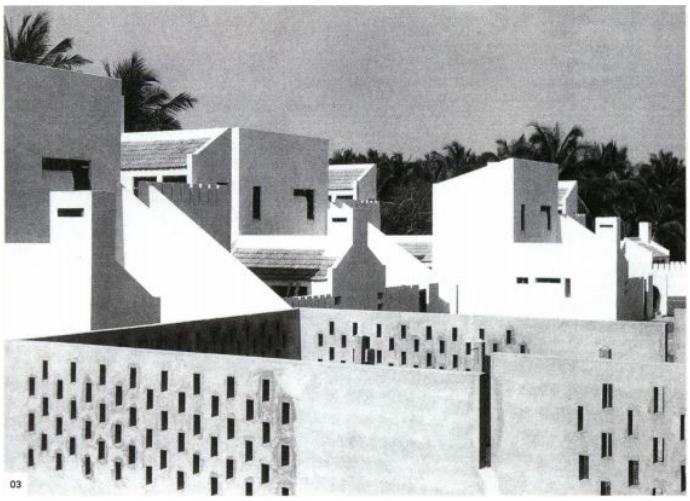

Figure 5.53: View from private courtyard into communal courtyard[287]

[285] Phaidon, *20th-Century World Architecture*, 574.
[286] Kultermann, *New Architecture in Africa*, 162.
[287] Phaidon, *20th-Century World Architecture*, 574.

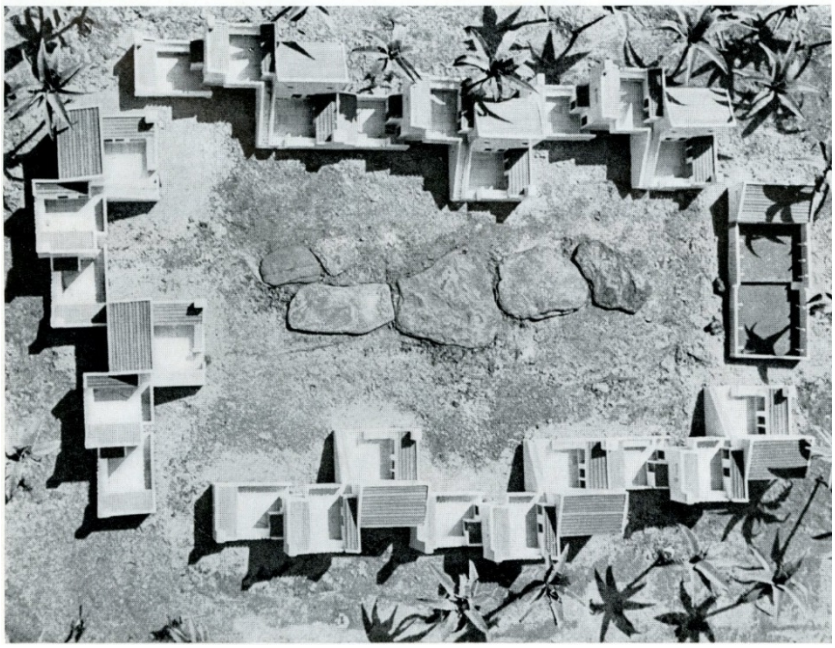

Figure 5.54: Housing Estate, Birds Eye View.[288]

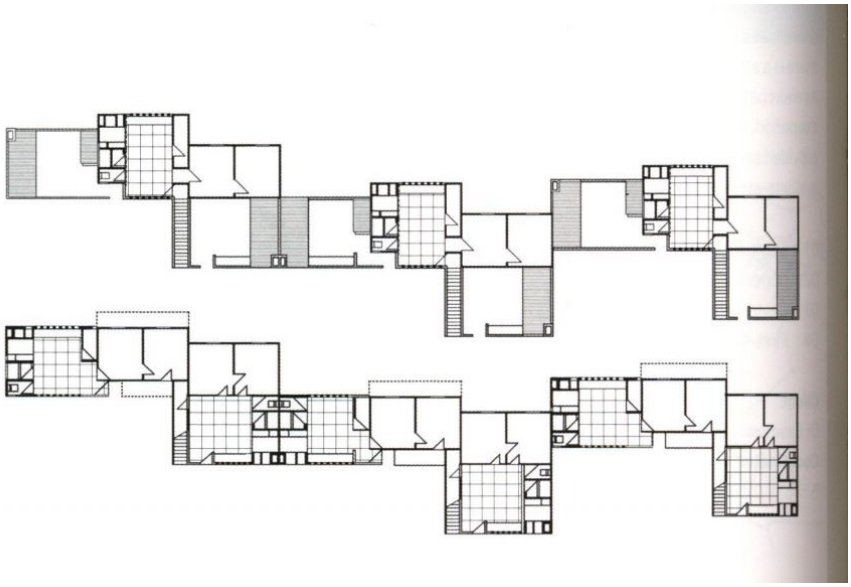

Figure 5.55: Plan of Christiansborg Castle Units[289]

[288] Kultermann, *New Architecture in Africa*, 163.
[289] Phaidon, *20th-Century World Architecture*, 574.

Monuments

While large monuments were far more common in Franco-west Africa than in former colonies of the British, one monument in particular speaks to the optimism of the time in post-colonial Ghana. The Independence Arch located in Independence Square was completed in 1961 by the Ghanaian Public Works Department.[290] These are also referred to as Black Star Arch and Black Star Square in certain texts. During the colonial era, this land served as a recreational area for colonial government officials, somewhere you might find a game of cricket. Located directly on the coast, Nkrumah chose to reinterpret this land as a symbol of their new independence. The completion of the square coincided with Queen Elizabeth II's ceremonial visit to Ghana.[291] The square was inaugurated with an impressive celebration of the event. The grandstands were built to hold as many as 300,000 spectators surrounding a large parade ground.[292] The central focus of these grounds however, is the Independence Arch. This arch is placed at the central edge of the grounds where the land meets the ocean. This arch, symbolic in its reinterpretation of the triumphal arch, also functioned as the presidential box for viewing events.

While the arch and the public space that contains it are representations of Nkrumah's goals of pan-Africanism and continental unity of newly independent African nations, the form of the place itself was heavily inspired by the soviet model.[293] Nkrumah's Independence Square

[290] Herz, *African Modernism,* 46-47.
[291] Herz, *African Modernism,* 47.
[292] Ibid.
[293] Julien Lanoo, "L'Etoile Noire Du Ghana" *l'architecture d'augjour'dhui* (September 2016), 114.

was built as the second-largest urban square in the world. Second only to Tiananmen Square in China, Accra's Independence Square is just over 27 acres in size. Today the square is still home to major national holidays like the Independence Day parade (March 6) and other national festivals. On ordinary days however, the space is used by the public for recreation and relaxation under the shade of the grand stands.[294] The shape of the main arch is reminiscent of Le Corbusier's rejected design for the Palace of the Soviets (1931-2) which incorporated a large tapered arch within the main structure of the palace. It is also similar in form the Eero Saarinen's Gateway Arch in St. Louis that was built just over a decade later.

Figure 5.56: View of the Arch in Independence Square, Accra, Ghanaian Public Works Department (1961)[295]

[294] Ibid., 119.
[295] Herz, *African Modernism,* 47.

Figure 5.57: View of Ceremonial Grandstands in Independence Square.[296]

Figure 5.58: View of Independence Square looking behind the grandstands and onto the arch.[297]

[296] Ibid., 46.

[297] L'Architecture d'Aujourd'hui, "Independence Square, Accra, Ghana," Last Updated 2016. Accessed January 15, 2017. http://www.larchitecturedaujourdhui.fr/profession-architecte/com_ghana_accra_independancesquare_20160201-12100/

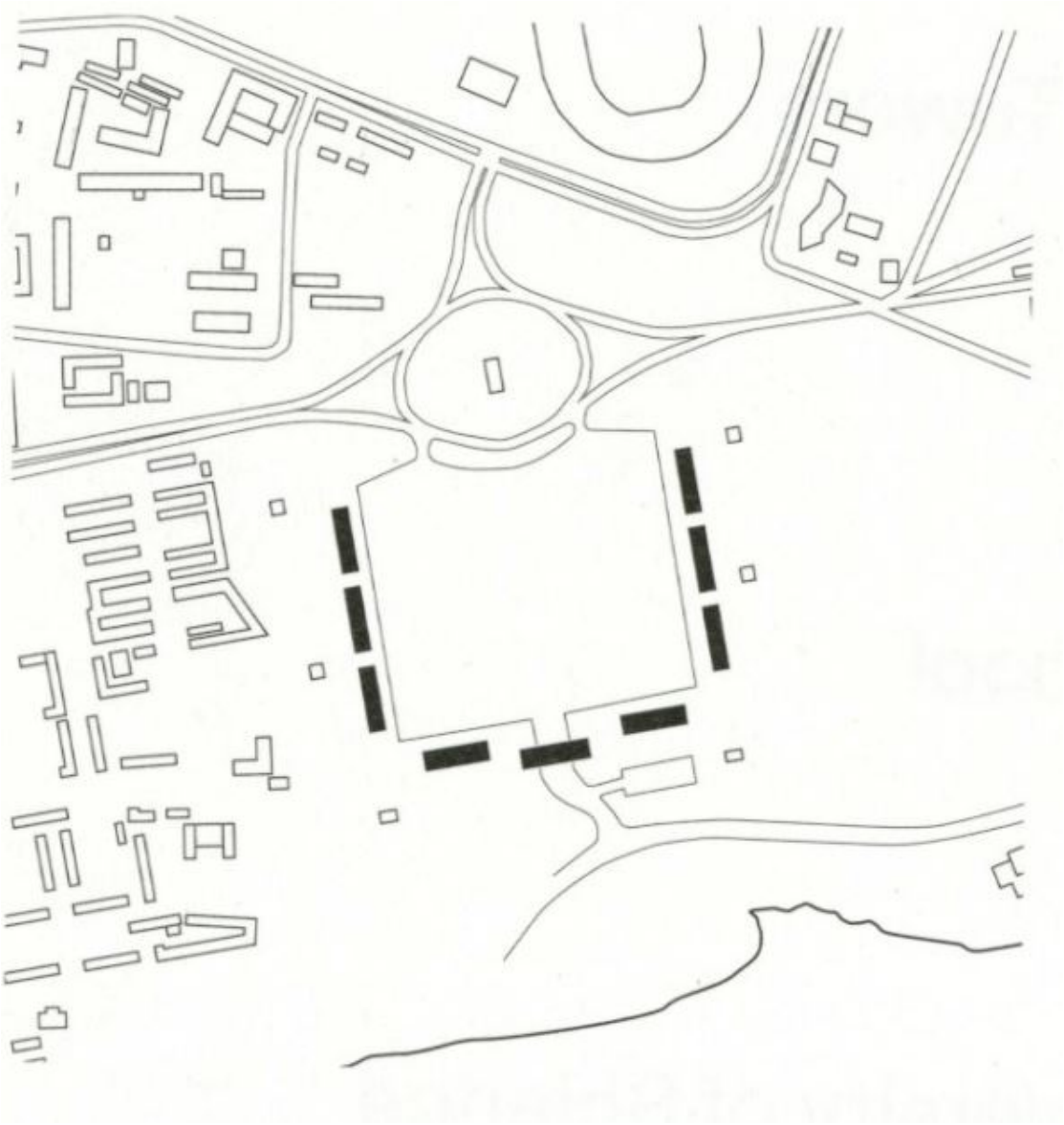

Figure 5.59: Site Plan of Independence Square[298]

[298] Herz, *African Modernism,* 47.

It is important to note that although new schools, hospitals, and community centers were introduced in Ghana in the late colonial period, this did not necessarily facilitate a better life for all Ghanaians. The creation of this new way of developed life only applied to a fraction of the population and rural areas were largely ignored. Nonetheless, these buildings mark a turning point in Ghana's history in addition to the history of the modern movement. Nation building was a priority of the colonial government and Nkrumah's regime and they both utilized modern architecture to express the new direction of the country.

CHAPTER SIX:

CONCLUSIONS

Decline of Tropical Architecture in Ghana

By the mid-1960's, after the decline and fall of President Nkrumah, much of the hope and excitement in Ghana, the first sub-Saharan nation to win its independence, started to wane. After the optimism of early decades of independence the African continent appeared to be falling into many of the stereotypes it is known for today: unrest, conflict, and violence. Many foreign architects working for the country or teaching at the school of architecture in Kumasi left shortly after political instability and uncertainty ensued. The end of what was known as the tropical period was an after effect of the 1966 military coup that toppled the government of Kwame Nkrumah. After 1966 the once ideal conditions for architects in Ghana became increasingly difficult. The fall of Nkrumah was seen around the world as a signal for the dulling of hope that decolonization had provided for sub-Saharan Africa. As one historian said, "Ghana lost its visibility as a beacon of decolonization after the fall of Nkrumah…"[299] During the late 1960's, the character of architecture also began to change as air conditioning became more widely available and form became less dependent upon its performance under climatic

[299] Lukasz Stanek, "Architects from Socialist Countries in Ghana (1957-67): Modern Architecture and Mondialisation," *Journal of the Society of Architectural Historians 74,* no.4 (December 2015): 436.

conditions.[300] Tropical modernism, however, left a lasting and widely visible imprint upon the landscape due to its performance and longevity.[301]

This shift after the fall of Nkrumah is most evident at the Kwame Nkrumah University of Science and Technology in Kumasi. What once was a cosmopolitan center for the exchange and dissemination of architectural ideas became less internationally welcoming after the coup in 1966. The vice chancellor of the University was dismissed by the newly installed military regime and John Lloyd, the then dean of the school of architecture, left shortly thereafter.[302] This shift can also be seen in the Ghana National Construction Corporation. As discussed in the previous chapter, the GNCC employed a significant number of eastern European architects in the years following independence. In 1965 Ghana had employed 102 Polish architects.[303] This was more than any country in Africa. After the fall of Nkrumah, this number significantly declined.[304]

Also a determinant in the decline of not only tropical architecture, but building projects as a whole was the economic instability of the time. Declining prices in cocoa created a major economic crisis for Ghana. Following that in the 1970's, the oil boom in West Africa also lead to a brief period of wealth which resulted in what historian Ola Uduku called an American style of high-maintenance building that can be seen in both domestic and commercial buildings.[305] He

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[300] Ola Uduku, "Modernist Architecture and 'The Tropical' in West Africa: The Tropical Architecture Movement in West Afria, 1948-1970," *Habitat International* 30, (2006): 401, doi: 10.1016/j.habitatint.2004.11.001

[301] Uduku, "Modernist Architecture and 'The Tropical' in West Africa: The Tropical Architecture Movement in West Afria, 1948-1970," 401.

[302] Herz, *African Modernsim,* 139.

[303] Stanek, "Architects from Socialist Countries in Ghana," 436.

[304] Ibid.

[305] Uduku, "Modernist Architecture and 'The Tropical' in West Africa: The Tropical Architecture Movement in West Afria, 1948-1970," 409.

characterizes this style as one "Built on the premise that energy is cheap and style is more crucial than substance…"[306] This architecture of the 1970's was a clear break with the climate responsive design of the tropical building period that defined the adoption of modern architecture in Ghana. Tropical architecture was replaced by facades of glass boxes with artificially controlled interior climates.

The turbulent and changing times did not deter native architects. In many ways the political turmoil put a spotlight on the social responsibility of the architect as a profession for those at the University in Kumasi. In the 1966 Kumasi special edition of *ARENA: The Architectural Association Journal*, John Owusu-Addo wrote a concluding piece entitled "Aspirations." Owusu-Addo was a Ghanaian architect who was one of the first success stories out of KNUST and would eventually go on to be the Dean of the School of Architecture. In 1966, as a professor, he described Ghana and other developing nations like it, as a "place of extremes."[307] In this statement he eloquently sums up the contradictory environment of Ghana where modern buildings go up on college campuses and in cities while the majority of the population is still in need of basic services. This was the true problem that Ghana now had complete control and responsibility for as an independent nation. Unable to overlook the increasingly poor living conditions of vast swaths of the country as their former colonial rulers had, Owusu-Addo placed a very real and powerful ideal of social responsibility on the

[306] Ibid.
[307] John Owusu-Addo, "Aspirations," Commonwealth 2 Edition *Architectural Review* 127, no. 761 (July 1960): 62.

architectural profession in the country. He even went as far as to poke holes in the history of modernism and its supposed socially aware ambitions:

> Unless this role [of the architect] is based on our real needs we run the risk of drifting into one or more of the typical architect's poses: Jewelers – building society's baubles, very nice, very pretty, and like that architect for whom buildings with social content are just too much trouble and who devotes his life to making buildings look like pastry. Heroes—big muscular buildings at all cost, use twice as much concrete, but expose it and make it honest. Stars – like America's brilliant showman, a new architectural hat-trick with each publication. Expressionists – take a 2 inch pipe and wrap it in brick and voila, a tower. Purists—the noblest pose of all, espousing principles and avoiding such unfortunate problems as building more for less, to reverse the slogan. In Europe and America such poses are ridiculous enough but here we simply can't afford them.[308]

This powerful quote evokes the sentiment of a nation tired of relying exclusively on the outside for answers for its own country. The architectural experiments of the late colonial period served as the backdrop for this sense of awareness and urgency that Owusu-Addo expressed. Although the tropical building period had come to a close by the late 1960's, the architecture of Ghana continued to evolve beyond this distinct and important period in its architectural history. Jane Drew described the student body when she visited the school in 1966 as "they were as full of 'isms' as most students but they were delighted in the main with their teaching and this attitude among architectural students is almost unique. They were enthusiastic to improve the environment for their poor and meant the total environment; not just isolated buildings."[309] This was also the period when John Lloyd, who has been discussed previously in this thesis, made a conscious decision to redesign the curriculum with an emphasis on local building traditions. Prior to this, the western narrative of architectural history

[308] John Owusu-Addo, "Aspirations," Commonwealth 2 Edition *Architectural Review* 127, no. 761 (July 1960): 62.
[309] Jane Drew, "Introduction," Commonwealth 2 Edition *Architectural Review* 127, no. 761 (July 1960): 39.

had been taught to students. This change came from a shift in understanding the needs of the Ghanaian community. In addition to the cosmopolitan nature of the staff, also previously discussed, the students were acutely aware of the world growing up around them. As one student describes in 1966 "America…is my ideal in life…I find myself agreeing so much with the way of life there…"[310]

By the 1970's, discussions of the new generation of Ghanaian architect began to be more fully developed. A curriculum was outlined that consisted of integrated studios in the surrounding communities, rural and urban issues, in addition to approaches to dealing with the climates of Ghana.[311] A conscious investment was also made in the exploration of local building materials and their application to modern needs in order to leave behind the option of importing expensive and foreign materials for construction.

Perspectives on the Modern Movement

The built environment of the modern movement and experiments in tropical architecture in the mid-twentieth century are more recent in the history of Ghana than traditional and earlier colonial structures that are sometimes many centuries old. However, as buildings from the late 1940's into the early 1970's are coming of age, many of them are at risk by not being included as key elements of Ghana's cultural heritage. The buildings discussed in

[310] Aye Kwei, "The Human Material," Commonwealth 2 Edition *Architectural Review* 127, no. 761 (July 1960): 45.
[311] Owusu Addo, Foreward, Hannah Schreckenbach , Jackson G.K. Abankway and John Owusus Addo, *Construction Technology for a Developing Country,* Foreward*,* (Eschborn: German Agency for Technical Cooperation for the Dept. of Architecture, University of Science and Technology, Kumasi, Ghana, 1984), 9.

this thesis are invaluable expressions of Ghana's rise to nationhood in addition to serving as important examples of the various branches of the modern movement addressing essential and often overlooked moments in global architectural history.

The complicated past of formerly colonized nations is particularly challenging when dealing with heritage conservation. Little of the built environment in many African nations speaks to what existed prior to European involvement, first through trade and later through direct control during long periods of colonization.[312] In fact it is estimated that in Sub-Saharan Africa less than 1% of the total built heritage are pre-colonial monuments, and the percent of monuments built after 1960 (or independence) is roughly 90%.[313] Here, monument is used as a term not to be applied to the vernacular or everyday architecture of the land, but of government, public, and social tributes.

Architecture of the recent past is a topic that speaks to preservation on a global scale. Countries across the world are grappling with how to approach the conservation of their heritage from the twentieth century, which is rapidly moving further and further away from us in time. Underrepresentation of modern architecture on national heritage lists is a timely issue and not specific to Ghana. Organizations like DOCOMOMO are immensely important in the documentation and awareness of cultural heritage of the modern movement especially in areas outside of Europe and the United States.

[312] Antoni Folkers, *Modern Architecture in Africa,* (Sun, 2010), 295.
[313] Ibid.

In fact, some notable Ghanaian buildings from the movement have gone through several phases of conservation. Such is the case with the College of Technology at KNUST in Kumasi. Some design features were altered yet are still recognizable, while other alterations have more severely impacted the building. For example, the louvered glass windows in the clerestory around the perimeter of the building have been replaced with non-adjustable fixtures which defeat the intent behind the original design feature.[314] The building as it exists today is still recognizable, but KNUST lacks the resources to properly care for all of its historic resources. Another building that is currently still in use is Harry Weese's United States Embassy. As previously discussed, the building was decommissioned by the United States government in the 1970's for security reasons, but it was absorbed into the civic framework of Ghana and currently serves as the Ministry of Women and Children. Although still recognizable, without proper upkeep and conservation and because of minor changes made throughout the years, the building has lost its initial effect.

The complex that is currently at the greatest risk is the International Trade Fair. It is already being partially demolished and is scarcely in use and largely ignored. The building serves as an important reminder of Nkrumah's industrialization goals for the newly independent Ghana. Quite ironically, the original debut of the fair had to be halted due to the coup against Nkrumah in February of 1966. Its inaugural fair took place in March of that year although under a different ruler. The complex was reported as being partially demolished as of

[314] Le Roux, "Modern Movement Architecture in Ghana," 66.

2014 in the book *African Modernism* due to its discontinued use and poor condition.[315] Similarly neglected is the Accra Community Center built by Maxwell Fry and Jane Drew in the early 1950's. Today the building sits vacant and in decay. Throughout the developing world and even in developed countries, it is not uncommon for architecture to be neglected that was once heralded as great champions of the modern movement.[316] While conservation has a clear place in Ghana's governmental institutions and existing institutions can be utilized to conserve modern heritage. Throughout the continent, valuable modern resources are at risk from neglect and development pressures such as the former night club in Nairobi, the Chai House, which was demolished in 2014.[317]

On the other hand it is important to note that there *has* been a significant amount of attention paid to the preservation of modern resources in African nations. For example, in 2016 the National Library in Accra was the recipient of a $140,000 grant from the Getty Foundation for its 'Keeping it Modern' Grant Awards. The money will go towards the development of a conservation plan for the library in addition to the development of an exhibit on the history of the library. This will be a joint effort between experts and students from both Ghana and the United Kingdom.[318] Additionally in the summer of 2015 a Conserving West African Modernism Workshop and Conference was held at the Kwame Nkrumah University of Science and

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[315] Manuel Herz, *African Modernism: The Architecture of Independence: Ghana, Senegal, Cote d'Ivoire, Kenya, Zambia* (Park Books), 13.
[316] Stubbs, *Time Honored* 303.
[317] Herz, *African Modernism,* 13.
[318]Getty Foundation, "Keeping It Modern: 2016 Grants Awarded," The Getty, last modified 2016, accessed January 20, 2016. http://www.getty.edu/foundation/initiatives/current/keeping_it_modern/grants_awarded_2016.html

Technology in Kumasi, Ghana. The conference had a number of objectives which ranged from building relationships with universities abroad in order to identify and conserve post World War II heritage in West Africa, to document and record modern heritage specifically at KNUST, to partner with schools in Great Britain to further educational programs at the university in heritage conservation, and finally to promote education and outreach among younger generations about the importance of modern architectural heritage in Ghana.[319]

The preservation of modern architecture is something that has only very recently come into the forefront of preservation ideology and is now a burgeoning subject in need of increasing attention. Answering the question of what to preserve and why to preserve it is the first step in working towards a clear management strategy for preserving modern architectural resources in Ghana. In the 1990's heritage practice began to acknowledge some of the more outstanding works of modernism in the United States, but the architectural genre as a whole was still not placed at the same level of significance in the context of architectural history.[320] The First International DOCOMOMO Conference was held in 1990 in Eindhoven, Netherlands. This conference resulted in the first document to focus on the preservation of modern architecture, the Eindhoven Statement. The vision that came out of the establishment of DOCOMOMO was one that aimed to preserve not only the iconic, but also the every-day sites, buildings, and neighborhoods of value that came out of the modern movement. In his book *Preservation of Modern Architecture,* Theodore Prudon argues for the development of new

[319] University of Edinburgh, "Conserving West African Modernism Workshop and Conference Report, KNUST Kumasi, 2-18th July 2015," University of Edinburgh, last modified 2015, accessed January 20, 2016. https://sites.eca.ed.ac.uk/aapwd/
[320] Theodore Prudon, *Preservation of Modern Architecture* (Hoboken: Wiley, 2008), 158.

criteria for assessing the significance and integrity in a modern building.[321] Documentation of these resources is an invaluable first step towards understanding their importance and moving forward in assessing how to preserve them or if they are deemed worthy of preserving at all. This thesis, just as much as the resources it relied upon, is an attempt to work towards proper documentation of these resources for Ghana. Manuel Herz accurately sums up the climate in today's preservation challenges by saying, "To document also means to preserve. We might be able to witness some of the buildings for several more years, but many are threatened by demolition or transformation beyond recognition."[322]

Conclusions

The vast and diverse collection of modern architecture throughout the world came into being through a sense of optimism and hope for new opportunities with the advancement of technologies and the ability to express new ideas in innovative ways never seen before. The same can be said for the modern architecture of Ghana. The expression of the built environment in Ghana is not unlike many other colonial situations of the mid-century. However, many key buildings and architects that practiced in Ghana truly pushed the envelope of modern architecture and created new genres of the style that would go on to define new nations. Despite the devolution of the style followed the first coup of 1966, modern architecture continued to define the era of independence for Ghana and subsequently the new hope of independence and progress for the entire continent. Therefore, this places the modern

[321] Prudon, *Preservation of Modern Architecture*, 158.
[322] Ibid., 13.

architecture of Ghana in a key role in the narrative of the modern movement as experimentation in climate responsive modernism originated and evolved in the country.

The possibilities for future research on this topic are abundant. With the rising interest in modern heritage around in Sub-Saharan Africa, Ghana has the potential to receive much-deserved attention at a global scale for its architectural heritage. Moving forward, it is important to understand how the current population perceives and values these resources. This question is really at the heart of the future of the preservation of modern heritage in Ghana as discussed in this thesis. Further research must be conducted to fully understand this heritage and its place in the hearts and minds of Ghanaians today. Future research could also be conducted to more extensively explore Ghana's connection to the Soviet Union and the effects it had on the newly independent nation. More comparative study can also be conducted on Franco-West Africa to analyze their development in relation to that of the British.

This thesis examined many of the reasons for the introduction and development of modernism in Ghana and how it fits into the context of the modern movement. Through the provided architectural examples, the examination of architects, and the exploration of the political climate of Ghana during this time period the questions central to this thesis are answered. *How and why did the adoption and adaptation of modern architecture in Africa evolve from the late colonial period into the early years of independence?* Modern architecture was first introduced in Ghana and other British colonies as a transitional style of architecture when it was first realized that decolonization was inevitable both during and after World War II. The goal was that the style would aid in a cultural shift that would show the British government not as an oppressor, but as a generous ruler investing in welfare of the commonwealth. The

style of modernism was executed in the commonwealth first of all because of the lack of opportunities for architects in Great Britain during and following the war. This in conjunction with a lack of acceptance of modern architecture in Great Britain at the time led British modernists to look outside of their immediate surroundings for opportunities. The commonwealth, and Ghana in particular, was the perfect solution to this problem. Following independence modernism continued to persist. The style evolved as a political statement of independence due to its effectiveness climatic responsive design which was crucial for Ghana and to function as a progressive and competitive nation with modern opportunities for its people. The progressive symbol of the style was also fully embraced by the new leadership of Kwame Nkrumah and British architects continued to work and educate in the country. The style saw changes in the new era of independence with the emergence of Ghanaian architects and the introduction of modernists from outside of Great Britain from places like the United States and Eastern bloc countries like Poland and the former Yugoslavia. As the style evolved, the importance of improving everyday life with architecture moved became increasingly important to native architects. This is especially true in a developing country with such wide gaps in the quality of life from urban dwellers to those in the majority of the rural areas.

How does this narrative fit into the larger story of the modern movement? Finally, this narrative of modern architecture in Ghana ultimately fits in to the larger context of the modern movement due to its influential developments in design and research contributing to tropical architecture and climate responsive design in addition to its persistence into the period of independence as a style of the newly independent Ghana. The modernism that developed in Ghana was not just another modernism. It is valuable in several capacities when placed in the

narrative of the development of modernism and the exportation of modern architecture to developing countries. The tropical architecture that developed in Ghana can be defined as a truly international architecture. Not in the sense of the architectural definition but in the sense that the style from adoption to completion saw the work of architects from the west, the east, and eventually Ghana itself.

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