Defining Fundamental Needs for Primary School Design in Haiti

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DEFINING FUNDAMENTAL NEEDS FOR PRIMARY SCHOOL DESIGN IN HAITI

By

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A Thesis submitted to the
Department of Interior Design
In partial fulfillment of the
requirements for the degree of
Master of Fine Arts

Degree Awarded:
Spring Semester, 2011
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To:

My loving parents who have always supported me and to the children, teachers and school administrators in Haiti.
I would like to thank my major professor, Dr. Lisa Waxman, for all her support and guidance. I would have missed out on this eye-opening and life-changing experience if it were not for your encouraging words for me to stay and pursue a thesis. I would also like to extend a sincere thanks to both Dr. Jill Pable and Professor Eric Wiedegreen for being on my committee and providing invaluable insight throughout the researching and writing process.

Lastly, I would like to thank Missionary Flights International for providing the opportunity for me to visit Haiti and for the Davis family for being a wonderful host during my stay in Haiti.
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Haiti is the poorest country in the western hemisphere and one of the poorest in the world. Education is considered one of the best ways for Haitians to climb their way out of poverty, but unfortunately it is unattainable for most. Literacy rates in Haiti remain around 50%, which is significantly lower than the 90 percent literacy rate for Latin American and Caribbean countries (Library of Congress, 2006). The recent 7.0 magnitude earthquake of January 2010 devastated a large percent of the small number of primary and secondary schools in Haiti and destroyed the majority of the three main universities in the capital city of Port-au-Prince. Earthquake devastation combined with the lack of resources and poor infrastructure places Haiti in a critical time where school facilities and education are in desperate need. This study addresses the current needs of Haitian schools, the specific building design, and proposes a design solution that considers circumstances unique to Haiti. The primary focus of the research is defining fundamental needs for primary schools in Haiti while considering their economy, climate and culture.

One of the major obstacles for education in Haiti, particularly affecting the rural areas, is the lack of physical access to school facilities. It has been noted that some children will walk hours one way to school each morning after performing their domestic chores at home (Lunde, 2008). This long fatiguing walk, oftentimes before dawn, drains the students’ ability to stay focused and alert while at school.

The study began with a review of literature examining Haiti’s history, current school system, building methods and materials as well as briefly discussing some hurricane and earthquake considerations. In addition, an examination of other underdeveloped nation’s successful school design solutions was explored for possible application to Haiti. For better understanding of the current needs of Haitian schools, a trip was taken to Haiti and site visits, observations, and interviews were conducted. Those interviewed were affiliated with four different schools in Haiti and were asked questions assessing the current school facility and what aspects needed improvement.
Photographs were taken to document the conditions of the schools and everyday life in Haiti.

After collecting data from the trip’s observations and interviews, several themes emerged as reoccurring problems in Haitian primary schools. The ten issues that emerged were low lighting in classrooms, lack of clean and running water, safety and protection, safe areas to play, lack of classroom space, noise control, heat control, restroom facilities, personal spaces and personalization and the need for porches and shaded areas. Analysis of the data revealed basic and realistic, simple, low-cost recommendations for potential solutions to address each of these issues. The findings were presented in a problem-solution type format where the problem is stated, the context and why it is important briefly discussed, and then the presentation of potential solutions with supporting sketches.

In addition to the examination of educational facilities in Haiti and other underdeveloped nations worldwide and to explore effective methods for building primary schools in Haiti, this study hopes to raise awareness to the extreme poverty of a nation that sits only 500 miles off the American coast and to help a failing nation.
CHAPTER 1
INTRODUCTION AND OVERVIEW

Introduction

“Without education, development is a dream.”
-Diébédo Francis Kéré, architect

Most Americans spend a dollar a day without giving it a second thought. In Haiti more than half the country’s population struggles to survive on less than one dollar a day (The World Bank, 2006). As the poorest nation in the western hemisphere, Haiti exists amidst a crisis where economic development stands still and lack of education and illiteracy runs rampant. It is not that Haitians are unwilling to learn, in fact studies show that Haitian families are willing to make great sacrifices in order to education their children (World Bank Study, 2006). In addition to overwhelming poverty, part of the problem is the lack of sufficient school buildings. The government has had little involvement in the development of the educational sector in Haiti leaving a large extent the development and building construction to the private sector. Most all of the private organizations have very limited funds and resources for buildings school facilities.

It is important to note that Haiti has had a long unstable and violent history to better understand how the Haitian people arrived at their current impoverished state. Examining the history of their educational systems is important for an overall understanding how Haitians view education. It should also be noted what has been done and left undone for the forward progress of education of Haitian children. Other underdeveloped countries facing many of the same challenges as Haiti, such as a warm tropical climate, lack of stable electrical and clean water supply and poor economic infrastructure have built successful schools with designs solutions addressing all of these challenges.
As an interior designer, I am interested defining some of the fundamental needs for primary school design in Haiti. To help make recommendations for such designs, the history of Haiti along with the history of their education systems was studied. Also, the local climate, building materials and ecological conditions were noted along with hurricane and earthquake considerations. Other examples of successful primary school designs in other underdeveloped nations were studied. Recommendations were then made for some simple, low-cost solutions addressing challenges many Haitian schools face. These solutions consider Haiti’s poor economy, their tropical climate, and unique culture and are not meant to be cutting edge designs or new innovative ideas, but rather to address the most basic needs that many schools in Haiti are without. These suggestions are realistic in nature and are meant to be first steps that will hopefully be more dramatic improvement in the future.

The Purpose of the Study

The purpose of this research study was to examine the educational facilities in Haiti and other underdeveloped nations worldwide and to define some fundamental needs for primary school design in Haiti. Reviewing literature about the history, building materials and building practices, and education systems of Haiti and other underdeveloped countries along with observations and interviews of existing schools in Haiti was used to raise awareness and to make recommendations for primary school design elements addressing issues related to the country Haiti.

Research Questions

The primary question of this research is: What are fundamental needs for primary school physical design in Haiti taking into consideration their economy, climate and culture?
Secondary research questions include:
1. What is the current situation in Haiti regarding education?
2. What is the current situation in Haiti regarding school buildings and the
physical infrastructure of education facilities?
3. What are realistic solutions to get damaged Haitian schools rebuilt?
4. What current building materials available in Haiti would be suitable for construction of school buildings?
5. How are other underdeveloped countries creating facilities for educating students that might be suitable for use in Haiti?
6. How can a school expand to accommodate changing needs as additional money and resources become available?

A site visit to Haiti was conducted in order to observe Haitian schools and to interview educators in the school system to better understand the current conditions and to answer the research questions.

Significance of the Research

Very few Haitian children are able to complete a primary school level of education (Lunde, 2008). Many factors contribute to the low enrollment levels with one cause being the lack of adequate school facilities, especially in rural areas. This research is intended to raise awareness of the poverty and lack of educational opportunities for Haitian children. In addition, the research findings resulted in recommendations for effective school design elements with consideration given to the local climate and culture of Haiti.

Goals of the Recommendation

After reviewing literature and traveling to Haiti for observations and interviews the researcher analyzed and categorized the data into emergent themes and made recommendations for the issues that emerged. The goals of the recommendation are to propose potential design ideas that address some of the fundamental needs for primary schools in Haiti. The design ideas correlated with the greatest problems emerging from the data collection and are sensitive to Haiti’s poor economy, tropical climate, and unique culture. It is hoped that the recommendations will raise awareness and for the
need of Haitian primary schools and raise support for building schools with designs similar to the researcher’s recommendations.
CHAPTER 2

REVIEW OF LITERATURE

Introduction

Haiti is the poorest country in the Western Hemisphere and one of the poorest in the world. The poverty of Haiti runs deep with over half the population living on less than $1 a day and 78% living on less than $2 a day (The World Bank, 2006). Haiti’s long unstable history has left it with an underdeveloped and underfunded educational system. Of the schools in Haiti Ninety percent belong to the private sector making the burden of tuition and fees fall on the already impoverished families (Lunde, 2008). According to UNICEF (2007), around 500,000 children of compulsory school age have never been enrolled in school.

If Haiti is to develop, a solid educational system must be established. Schools in Haiti must address unique circumstances such as their poor economy, warm tropical climate, and culture. Architects have addressed circumstances similar to Haiti’s in successful school designs using local materials and labor, simple construction methods and placing a high value on community involvement.

The review of literature will first focus on the history of Haiti, the history of Haiti’s educational systems and local building materials and methods of construction. These sections will be followed by important considerations for building primary schools in underdeveloped nations. Finally, the review of literature will examine some examples of successful school designs already built in underdeveloped or developing countries. The information gathered will provide a foundation for developing recommendations for a primary school designs in the country of Haiti.
The History of Haiti

The Pearl of the Antilles: Early History 1492-1804

Haiti occupies the western third portion of the island of Hispaniola and lays claim to being the second oldest republic in the Western Hemisphere. The eastern two-thirds of the island of Hispaniola is occupied by the Dominican Republic. Haiti is a relatively small country of 17,398.39 miles (28,000 km) and is located 600 miles southeast of the coast of Florida (see Figure 2.1) (Coupeau, 2008).

![Figure 2.1: Current map of the island of Hispaniola (http://coto2.wordpress.com)](http://coto2.wordpress.com)

Haiti is the only nation in the Western Hemisphere to have its slave population successfully band together and overthrow colonial rulers. Haiti was once called the Pearl of the Antilles for its green mountains, fertile soil and wealth. Today Haiti ranks as one of the world’s poorest nations with huge disparities of wealth distributions, political corruption and violence. Its once fertile lands are now depleted and stripped of their
nutrients because of limited resources, deforestation, and lack of land management (Coupeau, 2008).

Christopher Columbus landed on the island of Hispaniola on December 6, 1492 and claimed it for Spain. He named the island La Española (The Spanish Island), which later became known as Hispaniola (Organization of American States, 1972). On Christmas Day the Santa María, one of Columbus’ ships, wrecked in Acul Bay. Shortly thereafter the first European settlement in the New World was established at La Navidad (near present day Cap-Haïtien). The natives Arawak Indians living in Hispaniola were either subjected to working in newly found gold mines, killed, shipped back to Spain as slaves or died from illnesses (Coupeau, 2008). It is estimated that between 12 and 20 million natives were killed or died from diseases, mainly smallpox brought by the settlers, in the decades following Columbus’ arrival. As the Native American population decreased Spain began shipping in African slaves to work the profitable gold mines. It has been reported that the import rate of African slaves at this time was 33,000 annually (Saint-Méry, 1952, p. 158). The forced migration of slaves helped to repopulate the country.

**France Gains Control 1692**

During the seventeenth century French buccaneers, pirates and corsairs began settling on the neighboring island of Tortue (Coupeau, 2008). The Frenchmen became intrigued with the coastal salt marshes, increased their presence on Tortue and then began moving onto the northern portion of Hispaniola. In 1697 France officially secured the western portion of Hispaniola through the treaty of Ryswick. The treaty divided Hispaniola into two separate colonies: the Spanish colony of Santo Domingo in the east and the French colony of Saint-Domingue in the west. Saint-Domingue provided France with vast amounts of wealth and soon become the world’s leading sugarcane producer. Additional slaves were brought in from Africa by the French to work the labor-intensive process of sugarcane production.

A distinct social stratification system arose during the end of the 1600’s. *Affranchis*, who were free people of color, and African slaves were denied certain jobs,
certain clothing, places to sit and rights to carry swords. A few wealthy Affranchis were able to own plantations and slaves but were still denied many political rights. The wealthy Affranchis were similar to the Les Petits Blancs (the small whites) who were the poor, working class white populations. According to Buss (2008), “France exploited Hispaniola’s climate and terrain to grow sugar (and produce rum), coffee, and cotton on large plantations… [and] enslaved over 500,000 people of western African origin” (p. 24). Over time African slaves intermingled with white settlers and gave birth to the mulatto class. The mulatto class, or men of color, was a cause of trouble and eventual ruin for the planters (Beard & Redpath, 1863). Some mulattos were able to own wealth, but were still denied any social standing. Even though the mulattos were lawfully emancipated they were still considered public property by whites and stood on unequal ground before the law. Today, the mulatto class still exists and is an important economic force.

With ideals of liberty, equality, and fraternity stemming from the French Revolution, mulattos and freedmen began the insurrection against the white settlers around 1790. These efforts were quickly put to an end but gave rise to further controlled and coordinated attacks (Perusse, 1977). The next coordinated group uprising began among the Affranchis who called for emancipation and equality. During this time a man named Francois-Dominique Toussaint L’Ouverture was becoming increasingly well known and climbing up the army ranks. Toussaint was most likely born around the year 1743. He was born into slavery under the ownership of the Gaou-Guinou family (Nosotro, 2003). Toussaint was allowed to learn to read and write and he became one of the few literate black slaves. He read about great leaders and philosophers including Plutarch, Epicetus, Caesar, Saxe and Abbé Raynal. Toussaint’s childhood readings became influential in his later career.
After helping his master's family escape retaliation from the slaves revolts, Toussaint joined the Spanish forces, took charge and gained control of the north-central portion of Saint-Domingue (Haggerty, 1989). Toussaint’s great success in the Spanish army caught the eye of the French and they desired to have him back on their side. February 4, 1794 brought the abolishment of slavery by the National Assembly and the return of Toussaint loyalty to the French side. Toussaint successfully rescued the French Commander Etienne-Maynard Laveaux and to express his gratitude the commander appointed Toussaint lieutenant governor of Saint-Domingue. Later on Napoleon bestowed the title Commander-in-Chief of the colony on Toussaint.

Toussaint immediately started undertaking several tasks with his newfound position and power of commander-in-chief. He defeated the remaining Spanish and
signed the Treaty of Basel, which allowed for the complete removal of Spain from Haiti. It also called for a peaceful accord between the two countries, France and Spain (Nosotro, 2003). Toussaint worked towards creating a unified state and appointed as many black government officials as he could. In 1801 a new constitution was drafted appointing Toussaint governor-for-life and gave him all effective power and the right to choose his successor (Haggerty, 1989). In the short time of peace that ensued after Toussaint’s rise to political power, Toussaint worked to improve the country’s infrastructure and initiated social reforms. He recognized that the export-trade economy was a strength for the island and focused his efforts on the plantations for production of goods to be exported. According to Beard (1863), “The control…was the result of the discipline instituted by Toussaint, and of the love and the fear which his name inspired… Not by blacks only, but by whites, was the extraordinary man obeyed. Obedience secured Toussaint’s protection” (p.90).

Napoléon Bonaparte, of the French first consul, resented Toussaint’s rule and felt as though Saint-Domingue was an essential ingredient for the exploitation of the Louisiana Territory (Haggerty, 1989). Bonaparte sent General Charles Victor Emmanuel Leclerc to seize control of the island. With the aid of the mulatto population and the white colonists, the situation for Toussaint’s army became desperate. Two of his chief generals, Dessalines and Christophe, recognized the severity of the situation and betrayed their leader by transferring their allegiance to Bonaparte. Toussaint surrendered to Leclerc on May 5, 1802 where he was promised a peaceful retirement (Nosotro, 2003). Instead Toussaint was captured by Bonaparte and transported to France where he would eventually die in the dungeons of the French prison Fort de Joux. The year of his death was 1803.

Toussaint’s reign was not considered to be in vain. It allowed, for a brief amount of time, the Haitians to experience what freedom was. This feeling of freedom helped fuel the fight for independence in the immediate years following. After Toussaint’s capture when he was aboard The Creole being transported to France, he declared “In overthrowing me, they have cut down in Saint-Domingue only the trunk of the tree of liberty for the Negro; it will re-grow by the roots, because they are deep and numerous” (Dorsainville, 1974).
After the betrayal and subsequent removal of Toussaint L’Ouverture, one of Toussaint’s generals, Jean-Jacques Dessalines, took over as the leader of the Haitian Revolution. Dessalines rallied the slave population, sought aid from the British and joined forces with the mulattos in the south led by Pétion to liberate Haiti from French rule (Coupeau, 2008). November 18, 1803 was the day when the Haitians forcefully defeated General Rochambeau, the general of the French army (Organization of American States, 1972). After Leclerc died from yellow fever, Rochambeau was his successor.

On January 1, 1804 Haiti officially declared its independence from France in the city of Gonaïves. Dessalines assumed the position of Governor General and then later declared himself the first emperor of Haiti. Dessalines claimed his position for life and is known for ruling with an iron fist. According to Paquin (1983), Dessalines followed 4 political commandments:

1. The new Haiti must remain free.
2. The land must be property of the State.
3. “No White man shall set foot on this territory as master or land-owner”.
4. All Haitians were to be known as Blacks, whatever their color (p 27).

To feel more secure about the first commandment, the new Haiti must remain free; Dessalines massacred all Frenchmen save a few doctors, priests, and pharmacists. He also expelled white settlers, oppressed the mulatto population, confiscated lands and massacred thousands (Buss, 2008). Dessalines used the military to enforce his rule. The use of military force in political affairs set the trend for the next 150 years.

It has been noted that Dessalines faced an important decision during his rule of the newly independent nation. Dessalines could have turned away from the plantation economy and fostered an underdeveloped but yet free peasant society or he could have forced the plantations keep in production in order to produce wealth for some. Dessalines chose latter decision and set up the trend of exploiting people to create wealth for a select few (Buss, 2008).

**Independent Haiti and the Years Leading up to the US Occupation: 1804-1915**

Dessalines’ reign as emperor did not last long. Two years after his rise to power Dessalines was assassinated by two of his own advisors, Henri Christophe and Alexandre Pétion, in October of 1806 (Nicholls, 1996). The country was then divided between the black dominated northern region led by Henri Christophe and the mulatto dominated southern region led by Alexandre Pétion. Henri Chrisophe declared himself King Henri I and built La Citadelle Laferriére (in English The Citadel) and Sans Souci to be symbols of his power and authority. The Citadel, King Henri’s fortress and Sans Souci, the King’s residence, are magnificent structures that still stand today (see figure 2.3). Although Henri I ruled over a small kingdom and for a limited time, historians agree on the importance of the contributions and impacts this kingdom had in shaping the history of Haiti (Organization of American States, 1972).
King Henri Christophe the “civilizer” created administrative divisions, established church and state relations, financial structure, economic regulations, education systems, and a well-disciplined army (Organization of American States, 1972). The education system based itself on the English method known as the Lancasterian or Monitorial system, developed by Joseph Lancaster (Coupeau, 2008). The Lancasterian system utilized more advanced students to teach those less advanced which allowed for low-cost, efficient, wide-spread basic education (Joseph Lancaster, 2010). The plantation economy was maintained during the time of Christophe. The working conditions in the Northern kingdom were harsh but not as cruel as they were under Dessalines. The strict regime and labor-intensive work paid off and the north began to experience some wealth and improvement in the everyday living conditions. Christophe ruled in an intelligent and practical manner giving organization to the confused state. According to Paquin (1983), Christophe is now considered one of the most “dynamic, effective and dramatic rulers Haiti has ever had” (p 31).
At the same time the southern kingdom, being hailed as a Republic and governed by Pétion, teetered on the brink of bankruptcy but is considered one of the most tolerant and liberal governments in Haiti’s history. The powers of the president were to be checked by the powers of the Senate and Chamber of Deputies (Coupeau, 2008). One of Pétion’s crucial policies was to reverse Dessalines’ law that all land belonged to the state. The land distributed by Pétion totaled over 70,000 acres and is known for being the first agrarian reform in Latin America (p 47). The land distribution policy broke up the larger plantations and estates and created more small peasant farms. The main focus was subsistence farming instead of large production and exporting of crops (Paquin, 1983). Pétion’s presidential years were marked by a laissez fair and laissez aller, live and let live, approach. Economic depression prevailed during this time. Pétion died of yellow fever in 1818 and Jean Pierre Boyer replaced him as the new president-for-life. Henri Christophe of the northern kingdom faced discontent and mutiny and committed suicide in his residence of San Suoci in 1820.

In the wake of Pétion’s death and Henri I’s suicide, Jean Pierre Boyer was able to reunite the northern and southern regions of Haiti into one political unit. Boyer worked as Pétion’s assistant before his death and brought many of his ideals into his presidency. Boyer, a fellow mulatto of Pétion, strengthened the constitutional republic of Haiti (Organization of American States, 1972). He incorporated the Spanish, eastern portion of the island of Hispaniola during his rule and won French recognition of the independent Haitian nation. The economic state of Haiti under president Boyer stagnated and little was done to expand on the limited education system set up by Pétion. Boyer also incurred a great amount of debt to France by buying and securing their rights as an independence nation (Haggerty, 1989). The lines of races also intensified between the mulattos and blacks. Boyer remained in office as president until the revolution of 1843.

The period of time after the revolution of 1843 and until the United States involvement in 1915 is marked by political instability, civil violence, and coups d’état. According to Leyburn (1966), “Of the twenty-two heads of state between 1843 and 1915, only one served out his prescribed term of office, three died while serving, one was blown up with his palace, one presumably poisoned, one hacked to pieces by a mob,
one resigned. The other fourteen were deposed by revolution after incumbencies ranging in length from three months to twelve years” (p. 89).

The Haitian economy needed capital. Foreign nations were reluctant invest because there were no banks or banking systems in place (Prince, 1985). Each successive government faced the same problem: no money in the public treasury. The incoming government would then borrow heavily from foreign nations to temporarily refill the treasury. By doing this, each government dug a deeper economic hole for Haiti. By the end of the 19th century, 80 percent of revenue generated went towards debt repayments. Haiti’s history of unstable and weak financial structure and lack of banking institution and capital gave foreign merchants means to manipulate and take advantage of Haiti’s unstable condition. Between the years of 1911 and 1915 seven presidents were overthrown (Prince, 1985). The last of these seven was President Vilbrun Guillaume Sam who was torn apart at the hands of an angry crowd in July 1915.

**The US Occupation and Temporary Rule: 1915-1934**

The Spanish and especially the French were established in Haiti by virtue of their historical ties (Schmidt, 1971). But with the dawning of the 1900’s Germany began to gain foreign control in Haiti. Germans began trading and migrating into Haiti as well as intermarrying with Haitian women. It has been noted by Schmidt (1971); in 1914 Germans controlled 80 percent of the commercial business in Haiti. The U.S. feared Germany strengthening their hold on Haiti and taking over the small, strategically placed island.
The building of the Panama Canal in the early 1900s increased interest of the U.S. in retaining political stability throughout the Caribbean (Schmidt, 1971). Haiti’s political instability and the encroachment of foreign powers drove the U.S. intervention. Haiti lies within the Windward Passage, the strait between Hispaniola and Cuba and in the direct passage of ships passing between the Panama Canal and the eastern U.S. coast as shown in Figure 2.4. The beginning of the 1900’s was a time of relative Naval weakness for the United States. The Wilson administration believed if Haiti were to be compromised by other European powers, in particular Germany, the U.S. would be vulnerable to attacks. Also, President Wilson had also proclaimed global democratization as a foreign policy goal during World War I (Buss, 2008).

Haiti’s July 1915 uprisings and revolts escalated with the massacring of 164 political prisoners in the capital city of Port-au-Prince and the lynching of President Guillaume Sam (Douglas, 1927). Immediately following these events, U.S. Marines invaded Haiti citing humanitarian reasons to prevent total anarchy and unwanted bloodshed and would go on to occupy the island until 1934. The U.S. had already gained control of the Banque Nationale’s gold deposits in the previous year and had transported a value of $500,000 to the National City Bank in New York (Prince, 1934). The Banque Nationale and the Haitian government had been engaged in
disagreements about the disbursement of governmental funds. The Banque Nationale was fearful of the government breaking into the bank vaults had the gold transported to New York by warship. The plan to occupy Haiti had been drawn for a long time with American warships, including the Washington, patrolling the coast of Haiti.

Figure 2.6: Admiral Caperton
(www.four-stars.org)

On July 28, 1915 the Washington made landfall at Port-au-Prince, Haiti under the command of Admiral Caperton. The American troops worked quickly to take control of Port-Au-Prince and to disband the Haitian army (Buss, 2008). The U.S. established the Gendarmerie d’Haïti, a police force under the control of U.S. Marines and took control of all of Haiti’s finances. In August the American forces selected Phillippe-Sudre Dartiguenave, a pro-American mulatto, as the new president of Haiti (Douglas, 1927). The US military stayed involved in Haiti’s government as the responsibility of the collection of all custom duties was given over to Admiral Caperton.

A new constitution drafted by Franklin D. Roosevelt, who at the time was Assistant Secretary of the Navy, and was ratified on June 12, 1918 (Coupeau, 2008). The new constitution made important changes including the provision for penetration of
foreign capital and allotment for land ownership by foreigners. Additionally, a special clause was written to validate all the acts of the U.S. military occupation. The United States wanted the new constitution to be ratified under Haitian law, but with the National Assembly in chaos, the United States instead turned to the plebiscite to vote. Playing on the fact that 97% of those casting votes were illiterate, the Gendarmerie who was administrating the vote set up the process in a skewed manner by giving white ballots, which constituted a pro-vote, and only those who asked for blue ballot would vote negatively against the constitution (Douglas, 1027). The result of the vote ended in a 98,225 in favor and 769 opposed.

A new system of roadways arose out of Corvée bargaining (Schmidt, 1971). The Corvée system is historically rooted in unpaid labor acts between French peasants and feudal lords. In Haiti peasants would construct roads in lieu of paying a road taxes. One of the great achievements was the building of a 170-mile road between Port-au-Prince and Cap Haïtien in the north. The peasant workers resented their situation, feared a return of slavery and frequent uprisings occurred. The Corvée system of labor was officially terminated soon after.

In the early stages of occupation and especially between the years of 1918-1922 the U.S. faced discontent and uprisings (Haggerty, 1989). The members of the traditional elite resented the occupation and Charlemagne Péralte emerged as their leader. Péralte was from a prestigious family, had military background, and was an educated and literate Haitian. Péralte managed to set up a provisional government of rule in the north. The number of the peasant rebels under Péralte increased to 40,000. The Gendarmerie was forced to call in Marine reinforcements to end the rebellion. Thousands of Haitians as well as Péralte lost their lives during this time.

Dartiguenave’s presidency grew to become conflicted and chaotic as he tried to please the Americans on one hand while still trying to play the Haitian patriot on the other (Schmidt, 1971). The end result was alienation of Dartiguenave from both sides and his removal from office. In 1922 Louis Borno replaced Dartiguenave as president. Borno was from old Affranchis heritage and was a mulatto aristocrat with caucasian features. Borno governed Haiti by giving the Americans what they wanted and complete control except for control over education (Paquin, 1983).
Borno wanted to preserve the French culture and language of Haiti. Douglas (1927) states, “the American Occupation would be willing to grant increased funds for public school education if the Haitians would surrender control to them… but the Haitians have refused… by fear that the Americans would try to break down Haitian culture… and pursue a program of Americanization” (p 371-372). The US also tried to introduce American concepts of politics, pragmatism, and efficiency and to set up educational programs for learning industrial and technical skills. These were mainly failed attempts for the Haitians held racial and cultural prejudices as well as an anti-American viewpoint. In 1934 the US ended their occupation in Haiti leaving Sternio Vincent, the first freely elected president of the 20th century, in charge.

The US occupation of Haiti positively affected Haiti by improving the road infrastructure, partially going in and out of the capital Port-au-Prince. This further increased the economic activity and population density of the capital city (Haggerty, 1989). Also the building of bridges, telephone systems, and clean water access occurred. Public health began to improve during the 1920’s. The US launched a campaign directed at fighting against malaria and yaws (an infections disease of the skin, bones and joints caused by spirochete bacteria). According to Coupeau, (2008), life expectancy increased from 30 years at the beginning of the 1920s to 38 years by 1950 (p 78).

Economically, the U.S. occupation affected Haiti by establishing some semblance of law and order. Merchants were able to carry out business in peace and profited from the Marines who were stationed in Haiti spending their salaries. The occupation also increased the economic ties between the US and Haiti. Between 1915 and the end of the First World War U.S. imports into Haiti increased from $3.8 million to $15 million (Prince, 1985). The U.S. market share in Haiti during the 1920’s remained around 75%. This was in part due to the passage of the 1918 Constitution, which made foreign land ownership possible.

During the occupation most of the economic uplift programs were directed towards American investments and made attracting other capital investors more difficult. According to Schmidt (1971), “the requirement that capital investment be advantageous
to both Haiti and the United States complicated all development plans, and the problem of conflict of interest involved occupation officials even at the personal level” (p 176).

Widespread and severe racial segregation was characteristic throughout the Haitian occupation by the US. Certain hotels and entertainment places became American only (Paquin, 1983). Additionally, Americans were given preference for the best jobs and higher wages. Haitians openly harassed the Americans anyway they could, such as through writing, street jokes, and social snubbing. It was a clash of cultures predominantly between the Haitian elites and the Americans. Another result of the US occupation was the elevation of the mulatto elite into governmental positions (Prince, 1985). This spurred on the desire for lighter skin tones by the mulatto upper class.

The overall reaction and impression to the U.S. 19 year occupation remains complex and inconclusive.

In Paquin’s (1983) *The Haitians* he states:

“Even the Godfather of Haiti’s Constitution, Franklin D. Roosevelt had to admit: Intervention as we practiced it in Santo Domingo and Haiti was not another forward step. It is not that assistance of some sort was not necessary; it was the method which was wrong” (p 78).

And according to Leyburn (1941):

“The American occupation failed of many of its ends because it did not recognize the social situation and its implications; or, realizing them, did not consider them worthy of attention” (p 107).

Post U.S. Occupation: 1934-1957

After the departure of the American Marines in 1934, Haiti continued to be under U.S. influence. The national finances remained controlled by the U.S. officials and the Gendarmerie stayed within U.S. command (Prince, 1985). The elected president Vincent remained in office for 11 years until Elie Lescot took over with the help of Washington and Roosevelt. As did his predecessor, Lescot ruled Haiti as a dictator. Lescot was killed in a military coup after public demonstrations against his corrupt
governmental rule. Duumarsis Estime was elected president in 1946 as Lescot’s successor. A series of uprisings in 1946 became known as “The Revolution of 1946”. Unlike previous Haitian revolutions this one remained bloodless. According to Paquin (1983), this was “a total reversal of the political, social and cultural orientation of the country since the time of the American occupation. It was a social and nationalist explosion” (p 93). The black middle and upper classes now gained political power.

Political unrest and discontent shook through Estime’s presidency. When Estime tried to amend the constitution for his reelection Colonel Paul Magloire stepped in and was instead elected president by popular vote (Paquin, 1983). Magloire campaigned to end racial segregation and class divisions that strengthened during the previous years. In contrast to his campaign platform of ending class divisions, Magloire instead favored the mulatto elite. Magloire’s elevation of the mulatto elite became a cause of his downfall, the more he gave to them, the more they wanted. Again governmental corruption led to the downfall of another leader and Magloire and his family were exiled in December of 1956. The following 9 months after Magloire’s removal from office consisted of 5 provisional governments and a day-long civil war, which claimed 17 lives (Prince, 1985).

**The Duvaliers: 1957-1986**

The months of chaos following the downfall of President Magloire a relatively “free and fair” election took place in October of 1957 (Buss, 2008). Out of the 13 candidates François “Papa Doc” Duvalier emerged as the new leader of Haiti. Again, like most other presidents, Duvalier amended the constitution to allow for his life-long appointment. Duvalier’s campaign promoting unity and reconciliation was financed by the U.S. To protect himself and to control civil unrest Duvalier weakened the armed forces and created the Tontons Macoutes (Creole for “bogeyman”). According to Ferguson (1987), Tontons Macoutes were “given a license to bully, extort and murder” (p 40). Duvalier disliked the mulatto elites and advanced the “black is beautiful” culture and way of thinking (Corbett, 1994). Thousands of Haitians were unjustly murdered, tortured, and imprisoned to further advance Duvalier’s ideals. Ferguson (1987)
estimates that “between 30,000 and 60,000 people were killed by state terrorism during this period, and many others were exiled and otherwise brutalized” (p 57). Duvalier also pushed for greater emphasis of the national history and literature in Haitian education and proposed a bill to make Créole as the national language.

Figure 2.7: The Duvaliers, François Duvalier on right and Jean-Claude Duvalier on left (www.webster.edu)

After suppressing his opposition, Duvalier focused his efforts onto extracting as much wealth as possible from the already improvised state. The main flows of wealth for the Duvalier’s were foreign trade duties and excise taxes on consumable goods. Peasants were the ones hit the hardest by these imposed taxes. According to Dewind (1988), “between the years of 1964 and 1971 probably more than 40 percent of peasants’ potential income from coffee was taken away though taxation… (and) less than eight percent of government expenditures could be said to have been returned to the agricultural sector during Duvalier’s first 10 year in power” (p 19).

François “Papa Doc” Duvalier died in April 1971. A few months before his death, Duvalier named his son Jean-Claude Duvalier to succeed him as the new president for
life. April 22, 1971 Jean-Claude “Baby Doc” Duvalier was installed as president at the age of 19. Jean-Claude publically advocated the political liberalization and economic development of Haiti but in reality Jean-Claude mainly continued the old regime his father had set into place of military terror and exploitation of the peasant class for personal monetary gain (Dewind, 1988). Jean-Claude did open up the country towards foreign nations including the U.S. but mainly to seek foreign assistance. Also Haiti became known as a source of the HIV/AIDS epidemic, which greatly hurt its tourism industry. Unrest and riots against the government and Jean-Claude increased during the years of 1984-1985. These factors coupled with the unpopular marriage of Jean-Claude to a mulatto woman with a colorful past contributed to the downfall of Jean-Claude governmental regime (Buss, 2008). Jean-Claude “Baby Doc” Duvalier and his family fled from Haiti to live in exile in France in 1986.

The Duvaliers’ legacy left Haiti as the poorest country in the western hemisphere and one of the poorest in the world. Statistics show that in 1985 only 1 percent of Gross Domestic Product was spent towards education and only .9 percent on health (Ferguson, 1987). For every secondary school there were 35 prisons and for every secondary school teacher in Haiti there were 189 security forces members. The gap between the rich and poor of Haiti widened. The Duvalier’s fortune was estimated to be $400 million in 1983 (Prince, 1985). In contrast the annual Gross National Product per person in 1983 was estimated at $315 in urban areas and $50 along the countryside.

The collapse of the Duvalier dictatorship brought hope and optimism for a democratic government. A new constitution was ratified in 1987 for the formation of an electoral council, the Provisional Electoral Council (Conseil Electoral Provisoire-CEP). The CEP was in direct conflict with the already established, military dominated, National Council of Government (Conseil National de Gouvernement- CNG). Henri Namphy, a leader of the CNG, proclaimed himself armed forces chief violating the new constitution’s ideals. The struggle for electoral power resulted in strikes and civil unrest and turned the presidential election that was supposed to be the first free election in over 30 years, into a violent and corrupt affair (Haggerty, 1989). Two of the presidential candidates were assassinated and the election suspended because of a brutal massacre of voters queuing up at the polls. Elections were rescheduled for January of
1988 and the CNG named Leslie Manigat the winner. Manigat was disposed of by June of the same year by Namphy when they disagreed on army control and appointments. Prosper Avril overthrew his former ally Namphy and took control from September 1988 to March 1990.

Jean-Bertrand Aristide Rise and Fall of Power

Jean-Bertrand Aristide, the former charismatic priest and openly anti-Duvalierist, entered the race for presidency under the campaign of “Stopping the Macoutes” (Girard, 2005). He named his movement Lavalas, the Creole name for flash flood. Like the flash floods in Haiti that would carry away the garbage after heavy rains, Aristide proclaimed he would wash away the corruption and oppression of Haiti’s past. December brought a fairly peaceful, mostly democratic election where the Aristide won by a landslide. For a time the people of Haiti celebrated Aristide’s victory and were hopeful for the new era dubbed by Aristide’s inauguration as “Haiti’s Second Independence” (McFadyen, 1995).

Figure 2.8: Jean-Bertrand Aristide
(http://www.info-regenten.de/regent/regent-d/haiti.htm)
Aristide’s exposure of the enormous class division angered the influential, dominate upper class of Haiti and his legitimate election and general popularity concerned the military. Seven months after Aristide’s inauguration, he was removed from power and exiled. Raoul Cédras was established as military dictator for the next three years. In exile Aristide still preserved his popularity and support and prepared for what is known as his “second coming”. In order to regain power Aristide had to rely on help from the Americans and strayed from his old credos of being Anti-American. Twenty thousand American troops peacefully occupied Haiti and with the approval of the United Nations reinstalled Aristide as President of Haiti in 1994 (Shamise & Thompson, 2006).

Aristide selected René Préval, his former prime minister, as his successor since the Constitution would not allow Aristide to run again for President. Préval faced political fraud and executive-legislative deadlock (Library of Congress, 2006). Confusion surrounded the 1998 elections, which were postponed till May 2000. The election of 2000 again was plagued with governmental corruption, election fraud, and violations of human rights. The outcome to this disputed election was the reinstalling of Aristide to office.

Political violence, economic recessions, and the weakening of government institutions characterized Aristide’s 2001-2004 Presidency (Library of Congress, 2006). During this time the gross domestic product (GDP) grew into the negative numbers along with attempts of coups. Riots began to break out in early 2004 protesting against Aristide. The riots intensified and in February Aristide, afraid for his life, fled Haiti. The president of the Haitian Supreme Court, Boniface Alexandre, assumed the role of President after the exiting of Aristide.

April 2004, the Multilateral Interim Force led by the US dispatched 6,700 troops and 1,622 civilian police to restore order in Haiti. The UN Stability Mission in Haiti (MINUSTAH) was specifically created for this purpose (Library of Congress, 2006).
The History of the Educational Systems in Haiti

To better understand the current state and process of Haitian schools and to make future recommendations, it is important to reference the educational systems of Haiti in their historical context. For being a relatively old country with a long history, Haiti has a remarkably undeveloped educational system. The following account of Haiti’s history of education begins with their declaration of independence from France in 1804.

1804-1915

After Haiti proclaimed its independence in 1804, the establishment of a formal educational system was not a top priority for the young republic. Haiti was more concerned with maintaining their newly found independence. The self-proclaimed first emperor of Haiti Jean-Jacques Dessalines did little to stimulate the establishment of schools. Redpath (1891) Dessalines, illiterate himself, declared, “that the parade ground was the best school for his people, and a musket the fittest text book” (p 143). In 1804 there are no accounts of any public schools in Haiti (Clément, 1979).

Table 2.1: Number of public and private schools at all levels of instruction in Haiti from 1804-1915 (Clément, p 160)
The Constitution of 1805 addressed formal education for the first time. Article 19 of the Constitution of 1805 reads, “In each military district, there shall be a public school” (Clément, 1979, p 163). The way Haiti was divided and ruled from 1806-1820 resulted in each ruler taking the role of education differently. As mentioned earlier Henri Christophe, ruler of the northern kingdom, established an education system based on the English Lancasterian model. The Lancasterian or monitorial school model, which originated in England, used students who had mastered a lesson to monitor or teach the other students. According to Logan (1930), “not satisfied with the mere establishment of schools, Christophe instituted a royal commission to supervise them, to propose curricula, and to increase the number of schools” (p 417). Logan also states, “Few countries of the period displayed a more determined or more intelligent effort to provide adequate means of leaning” (p 417).

Alexandre Pétion, ruler of the southern region, like Christophe valued education. Pétion addressed the educational deficiencies in Haiti by establishing the principle of free primary education in the Constitution of 1816 (Bellegarde, 1941). He believed in the idea of universal education giving everyone the right of intellectual development. The schools Pétion founded, which were most well-known, were The Lycée Pétion in Port-au-Prince and the Pensionnat National de Demoiselles. The latter represents a radical and forward thinking concept to promote a girls school.

Jean-Pierre Boyer, who took rule after Pétion and united the two kingdoms, did little to further promote the development of the educational systems. Accusations have been made against Boyer that he deliberately closed existing schools and opened new ones but without funding or supplies (Logan, 1930). Following Boyer’s resignation in 1843 a revolution ensued and four different presidents assumed office in the next four years. During these four years of political chaos, one noteworthy event occurred in regard to the educational systems in Haiti. This event was the Constitution of December 1842, which established the office of minister of public instruction. The office of minister of public instruction first appointed head was Jacques-Honoré Féry who
worked to reorganize the educational system in Haiti and for the establishment of more
schools. Féry was met with opposition in 1847 from the new presidential administration
of Soulouque and could not execute his organizational plan to the extent it was intended
for.

On December 29, 1848 an important law was passed in regard to education in
Haiti (Clément, 1979). This law addressed the need for rural schools throughout Haiti.
The law decreed an establishment of rural national schools, boarding schools, and land
grants for such purposes. An important result of this law was the opening of an
opportunity for education to the general population of Haiti. The curriculum for state and
private primary schools in 1848 included reading, writing, linear drawing, arithmetic,
elements of grammar, Bible stories, and history and geography of Haiti (Clément, 1979).

The year 1860 brought the appointment of Elie Dubois as the Minister of Public
Instruction. Dubois worked dutifully to revive the laws of 1848, which had not been
completely carried out or enforced. Attendance became mandated by law for those
between the ages of six and sixteen. The number of public schools of all grades in the
year of 1860 was approximately 136 schools with 10,000 students (Logan, 1930). The
appointment of Dubois as Minster of Public Instruction marked the beginning of any
consistent educational reforms or improvements. As mentioned, 136 schools with
10,000 students were in existence in 1860 with the numbering growing to be 773 public
schools with 44,542 students by the year 1895. Table 2.1 shows the 1875 census of
existing schools in Haiti. The 1860’s also saw the development of schools by the
Brothers arrived in 1864 and established their first schools. Many other Sisters and
Brothers of the Catholic Church followed their example and founded their own schools
in the subsequent years.

The establishment of Lancastrian schools in the early 1800’s was the first
attempt at a system of primary and secondary school division. Translation of these
ideas into a formal system was not realized until 1862 when the Minister of Public
Instruction recognized specific grade levels and the expected upward progression of
students through the primary and secondary grade levels and then onto professional
school (Clémont, 1979). The designation and development of the grade levels was heavily influenced by the French educational system.

Table 2.2: Haitian Census of 1875 Showing Existing Schools (Leyburn, 1941. p 251)

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 lyceums</td>
<td>543 pupils</td>
</tr>
<tr>
<td>6 girl’s high schools</td>
<td>563</td>
</tr>
<tr>
<td>5 girl’s secondary schools</td>
<td>350</td>
</tr>
<tr>
<td>165 primary schools</td>
<td>11,784</td>
</tr>
<tr>
<td>200 rural schools</td>
<td>5,939</td>
</tr>
<tr>
<td>1 medial school</td>
<td>25</td>
</tr>
<tr>
<td>1 school of music</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>19,250</td>
</tr>
</tbody>
</table>

May 22 of 1894 was the first reference to an official school year calendar (Clémont, 1979). The years 1875-1894 showed a report of having a vacation period after the end of the year examinations. Prior to 1875 there exists little evidence of any set academic calendar although it is unlikely that the students attended school year around. The official academic calendar of 1894 declared, “the school year began on the first Monday of September and lasted until July 15. Christmas and Easter vacations were also specified. Christmas vacations lasted from December 24 to the Monday following Epiphany, the twelfth night after Christmas. Easter vacations were given from Wednesday preceding Easter to the following Wednesday” (Clémont, 1979, p 170). In 1903 the academic calendar was revised to have classes begin on the first Monday of October and end on the second Friday of July.

Language created a major obstacle for the development of educational systems in Haiti. The official language of Haiti is French, but the spoken language of the general masses is Créole (Leyburn, 1940). Despite the fact that Créole is derived from French it is a very different language. Even though there was an increase in the number of rural
schools on paper during the late 1800s, a vast majority of those schools were underfunded, poorly maintained, and taught from French books which the rural Haitian population could not understand. Many of these schools were closed during the revolutionary period that soon followed. The girl’s schools opened during this time also faced challenges and many suffered the same fate the rural schools.

Curriculum has been another obstacle for the Haitian educational system. There existed a tradition of elite education where courses in French philosophy and literature would be studied (Leyburn, 1940). For the average Haitian peasant this has no practical application for survival in a country that is dominated by agriculture. The peasants also believed teaching practical and technical skills for agriculture would further augment the social stratification and teaching such skills was believed to bring back the lifestyle from which they were trying to escape.

In theory the Constitution of 1889 granted free and compulsory education, but in reality any decent form of education remained attainable only for the small percentage of the privileged upper class in Haiti (Pamphile, 1985). The number of rural schools on paper may suggest that the law of 1848, which provided for the establishment of rural schools, produced amiable results. But as Fleury observes, “the rural schools, as they exist – where they exist – as they are operated – where they are fairly well operated – are no more than a bluff. We give the country masses the illusion…of an elementary education which has sufficiently proven itself by its negative results…” (p 275-276). The concept of working, productive rural schools existed in name only.

With the 19th century coming to a close, it became apparent that Haiti’s independence stood on shaky ground and fear that the nation would collapse was not unfounded. As predicted after 1900 there was a general decline with the already fragile educational system. According to Logan (1930), “the report for 1900 gave no exact figures but declared that the schools were decreasing, that financial embarrassment prevented the regular payment of salaries, that the rural schools were in a deplorable condition, that enrollment in the city schools had fallen off considerably; even many of the church schools had closed” (p 430). Also Logan states, “whereas 350,000 children should have been in school in 1905, there were only 30,000 all told including 11,300 in the church schools” (p 430). Table 2.1 shows the comparison of the number of schools
between the years of 1895 and 1913. The table shows a marked decrease of schools at the beginning of the 1900’s with a slight increase in 1912/13 leading up to the US occupation but still significantly lower than in 1985.

**Table 2.3** Comparison of the Number of School in Haiti in 1895, 1904, 1912/13 (Logan, 1930, p 432)

<table>
<thead>
<tr>
<th>Years</th>
<th>1895</th>
<th>1904</th>
<th>1912-1913</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural schools</td>
<td>505</td>
<td>119</td>
<td>250</td>
</tr>
<tr>
<td>Urban school</td>
<td>197</td>
<td>291</td>
<td>215</td>
</tr>
<tr>
<td>Church schools, boys</td>
<td>19</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td>Church schools, girls</td>
<td>32</td>
<td>-</td>
<td>50</td>
</tr>
<tr>
<td>Lycées, boys</td>
<td>5</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Higher education</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Private schools</td>
<td>102</td>
<td>-</td>
<td>126</td>
</tr>
<tr>
<td>Total</td>
<td>875</td>
<td>-</td>
<td>675</td>
</tr>
<tr>
<td>Instructors</td>
<td>1,611</td>
<td>-</td>
<td>2,100</td>
</tr>
<tr>
<td>Pupils</td>
<td>44,542</td>
<td>27,063</td>
<td>46,108</td>
</tr>
</tbody>
</table>

From 1908-1917 Haiti witnessed the rise and fall of seven different presidents. During this politically turbulent time, Tertulien Guilbaud served as the Minister of Public Instruction. Guilbaud introduced teacher-training classes, raised teacher’s salaries, and reorganized primary education into two different levels (Pamphile, 1985). His efforts increased school attendance and built new school facilities. Even with Guilbaud’s efforts in 1914, a year before the US occupation of Haiti and a century after their declaration of independence, Haiti’s educational system was struggling. Historian Brutus shows the educational gaps in Haiti for 1914 as seen in table 2.4.
### Table 2.4 Education Percentages by Population in 1914 (Brutus, 1948, p 428)

<table>
<thead>
<tr>
<th>Population</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Population of Haiti</td>
<td>2,441,634</td>
</tr>
<tr>
<td>Children and young people of school age</td>
<td>732,505</td>
</tr>
<tr>
<td>School population-public and private</td>
<td>46,018</td>
</tr>
<tr>
<td>Percentage of attendance</td>
<td>6.55%</td>
</tr>
<tr>
<td>Percentage for entire population</td>
<td>1.80%</td>
</tr>
</tbody>
</table>

### Education and the US Occupation of Haiti

The US occupation of Haiti began on July 28, 1915 after the lynching of President Vilbrun Guillaume Sam. America was eager to aid the educational system in Haiti as they had successfully accomplished this with other colonial outposts (Pamphile, 1985). Under the treaty of 1915 between the US and Haiti, education was one issue not specifically addressed. The American occupation was willing increase funds for public education, but the Haitian government refused to hand over control. They believed that giving the Americans the right to control their educational systems would cause a breakdown in their Haitian culture (Douglas, 1927). Issues of race and culture inhibited the reception of American education efforts. Americanization was a definite goal of American education and strongly rejected by Haitians. Schmidt (1971) writes, “the Haitian elite, which traditionally prided itself on educational refinement and sophistication in French Belles letters, abhorred American vocational education and, moreover, resented the implications of racial inferiority associated with manual training programs for blacks in the Southern United States” (p 183).

Tension continued to rise as the Americans took initiatives in Haitian education against Haitian officials’ wishes. In 1917 Lionel Bourgeois, from Louisiana, was named superintendent of Public Instruction in Haiti adding to the growing conflicts and pressures between the US and Haitian officials (Pamphile, 1985). The Haitians believed that with more funding they alone could solve the problems with education while the Americans believed that only under their direct control could progress be
made. The unproductive negotiations between the two countries went on for years and accomplished very little.

The next major step for the Haitian educational system did not occur until 1924. America was still unsuccessful in gaining outright control the educational sector in Haiti and looked for other indirect ways to gain control. The Treaty of 1915 called for the creation of the Service Technique under the Haitian Department of Agriculture (Pamphile, 1985). The High Commissioner at the time, John Russell, used the Service Technique to establish an educational policy for Haiti that coincided with the American model of education emphasizing vocational education and efficiency. The Service Technique received funding and political support but was poorly managed and eventually collapsed. All it seemed to accomplish was adding strife and conflict between the United States and Haiti (Schmidt, 1971).

During the American occupation of Haiti, total budget allowances were increased from 7,898,485 gourdes to 23,345,368 gourdes, a 60 percent increase (Logan, 1930). The education budget only increased an approximated nine percent. Educational budgets only saw increases between the years of 1919-1920 and 1928-1929 with a total increase of 213,021 gourdes, or 42,604 dollars. The leaders of the American occupation pushed to increase vocational training, but at the expense of academic education. The two nations, Haiti and the U.S., could not resolve power issues and while both vocational and academic fields could have advanced together instead they continued to clash and neither of them marked any forward progress.

The government made efforts to better define educational systems and policies during the 1940’s. Attempts were made to expand public education accessibility and relevance to the general Haitian population (Salmi, 1998). Unfortunately the trend of neglect and unfulfilled promises continued on and little was done to achieve those goals. After the revolution of 1946 the Department of National Education took control of the educational system in Haiti (Al-Bataineh & Nur-Awaleh, 2005). The Department of National Education worked towards de-emphasizing agricultural and handicraft training, which had been prominent ideals of the 1946 Revolution. This shift in organization led to an increase in school enrollment, school budgets, and teacher training programs.
Increases such as these were most fervently applied to the primary schools with higher education receiving little assistance.

The private sector in Haiti greatly expanded during the 1950’s, 1960’s and 1970’s. Private primary school enrollment saw an increase of 16% between 1950 and 1955, 9.4% between 1955 and 1961, a slight decrease between 1961 and 1967 and then a 4.3% increase between 1972 and 1976 (Al-Bataineh & Nur-Awaleh, p 129). In 1979 through 1980, 57% of primary education enrollment belonged to the private sector (Salmi, 1998). By 1984, 72 percent of children in school were enrolled in private schools. The steady increase of students in Private Primary Schools is shown in Table 2.5.

**Table 2.5** Proportion of Students in Private Primary Schools (%). (Salmi, 1998, p 3)

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage of students in Private Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958-60</td>
<td>20%</td>
</tr>
<tr>
<td>1965-66</td>
<td>25%</td>
</tr>
<tr>
<td>1973-74</td>
<td>47%</td>
</tr>
<tr>
<td>1979-80</td>
<td>57%</td>
</tr>
<tr>
<td>1885-86</td>
<td>59%</td>
</tr>
<tr>
<td>1995-96</td>
<td>75%</td>
</tr>
</tbody>
</table>

Continued government neglect helped fuel the growth of the private school sector in Haiti. Private schools do not receive government funding and there are no governmental scholarship programs for helping families pay for educational costs. Private schools must charge tuition in order to operate. For such a poor nation, paying any kind of tuition is out of reach for many rural families. Throughout their history Haitians have always placed a high value on education. This is evidenced through Salmi’s (1998) study in 1980 that, “the direct cost of schooling (registration, tuition and exam fees, uniform, textbooks and other supplies) was calculated to represent, on
average, 11-13 percent of per capita income, not to mention the high opportunity cost in an economy where most employment is in agriculture or the informal sector” (p 7). Also, “by comparison, the average share of educational expenditures in low income countries is 3 to 4 percent of household income” (p 7).

Other educational reforms in Haiti took place during the 1970’s and 1980’s. The Education Reform proposed in 1979 but not carried out until 1982 instituted a 10-year plan which, “included new subjects, new syllabi, new teaching methods, initial instruction in Creole, automatic promotion in certain grades, and attention to supervision and inspection (IEES, 1987, p 5.2-5.3). Primary education under the Education Reform of 1979 consists of three terms (trimesters) per year. It is recommended that children begin primary school in October following their sixth birthday. Ideally students are group based on ability and evaluated after each trimester by the instructor and then proceed to the next level after each year (IEES, 1987).

In 1982 to 1983, the number of classrooms reported for 723,041 students was 17,362 (IEES, 1987). The average student-to-classroom ratio for both public and private primary school of 41:6 seems a reasonable number. But, the condition of the classrooms is not taken into consideration when computing ratios. Many of the classrooms cited in the report were out-of-doors and many others indoor classrooms were in poor condition and in desperate need of repairs. Additionally, many primary school classes in Haiti meet in buildings not originally intended for school use, such as church facilities.

The private sector for schools continued to grow and by 1987 3,846 private schools existed. In 1991 5,823 existed and 7,566 schools in 1994 (Al-Bataineh & Nur-Awaleh, 2005). Within the private education sector three main categories exist. The first, popularly known as “écoles borlettes” or “lottery schools”, are for-profit schools run by entrepreneurs. These schools are often poorly managed, poorly maintained, and have few supplies or qualified teachers (Wolff, 2008). The second category is the Catholic or Evangelical church schools. These schools generally offer a higher quality education, but still face challenges of poor facilities and little professional training for their teachers. Finally, there are community schools funded by the local community. The community schools are known for their low cost and low quality.
Haiti’s education situation is unique in that it houses one of the highest private-public sector school ratios for being such a poor country. According to Salmi (1998), “Of the twenty poorest countries in the world, Haiti is the only one with more than fifty percent of children enrolled in the private sector” (p 3). Figure 2.3 illustrates the usual situation of school privatization in Haiti.

![Figure 2.3](image)

**Figure 2.3** Share of Private Education and Per Capita GDP in Central and South America. (Salmi, 1998, p 4)

**Current State of Haiti’s Educational System**

When President Aristide returned to office in 2001 he worked towards improving the educational system of Haiti. Twenty percent of the national budget was allocated to education allowing for the construction and renovation of school buildings and tuition assistance (Corbett, 2003). In spite of these efforts Haiti’s education system still remains as one of the worst performing in the world and by far the worst performing in the Western hemisphere. In comparison, Guatemala, which has the second lowest illiterate rate in the Western hemisphere, has an adult literacy rate of about 69%
whereas Haiti's adult literacy rate remains around 50% (Wolff, 2008). The data regarding literacy rates and education enrollment is hard to determine exactly and most figures are estimates based on generalizations and trends, but there exists no debate over the overall high percentages of illiterate adults and children and the poor and unstable classroom situation in some urban and most rural schools. The national budget for public education in Haiti in 2006 was estimated at 2% of the GDP. Conversely, private school spending on education comes in around 6.6% of GDP, which constitutes a high percentage for private schooling as compared to other countries.

A major obstacle for the education of the children in Haiti, particularly affecting the rural areas, is the lack of physical access to school facilities. It has been noted that some children, as young as those in first grade (6 years old), will walk hours one way to school each morning after performing their domestic chores at home (Lunde, 2008). This long fatiguing walk, oftentimes before dawn, drains the students' ability to stay focused and alert while at school. Low attendance and high dropout rates are common in most primary schools. It seems that there is a correlation between children who travel long distances to school and the high dropout rates. Although this is not the only reason, it is a contributing factor.

Today, primary schools are divided into three cycles consisting of four years, two years, then three years totaling nine years of primary education (Lunde, 2008). If the student completes primary school he/she then can continue to secondary school, which lasts for another four years. After secondary school, university or professional training are offered to those qualified. A breakdown of the Haitian education system is shown in Figure 2.3.
On January 12th, 2010 a 7.0 magnitude earthquake shook the island of Hispaniola. According to the U.S. Department of the Interior (2010), official estimates 222,570 people killed with 300,000 injured during the earthquake. Over half of the 15,000 primary and 1,500 secondary schools in Haiti were destroyed or severely damaged. The three universities in the capital city of Port-au-Prince suffered serious damage (UNESCO, 2010). Education plays a critical role in the rebuilding and recovery from a natural disaster such as this. Thousands of children are displaced and roaming the street without a purpose. The Haitian children affected by the earthquake have
experienced intense trauma and many suffered from physical injuries. A return to some semblance of normalcy, such as returning to school, is crucial for them.

**Haiti’s Current Building Methods and Materials**

Today, Haiti is considered an ecological disaster. Deforestation, soil erosion and water shortages are serious concerns. Haiti once possessed dense woodlands and fertile soil. Over the centuries forestlands have slowly been depleted leaving only about 1% of original forest cover today (UNCCD, 2006). With a weak infrastructure and unreliable electricity grid, Haitians turned to wood for fuel and cooking fires. The deforestation not only severely limits construction materials but also creates additional problems such as landslides and flash floods. Figures 2.4 and 2.5 show the sharp contrast between Haiti and the Dominican Republic forestlands. In both figures Haiti is shown on the left side of the image.

![Figure 2.11](image)

*Figure 2.11* The border between Haiti and the Dominican Republic. Photo by James Blair
Due to deforestation and lack of other natural resources, Haitians rely on cement to build structures. Cement powder from the hills or river bottoms of Haiti is mixed with earth, sand, and stone. Haitians are adept in the skill of mixing cement but the trouble lies in creating consistent mixes (UNCCD, 2006). Inconsistent mixes create weaknesses in structures. Another major problem in Haitian concrete construction is the lack of reinforcements. In itself reinforced concrete can be a good material for withstanding earthquakes but it must mixed correctly and have sufficient reinforcements built in.

Additionally, a lack of standards and building codes make Haitian construction less than reliable. According to the Organization of American States (2008), “There is not a national building code in Haiti, and whenever technical standards are used, the choice seems to be determined by the educational background of the engineers responsible for the design of projects” (para 2).

The Climate of Haiti

Haiti is home to a warm, humid, tropical climate with variations depending on the altitude. The average temperatures in the capital city of Port-au-Prince for January and February range from 23 C (73 F) to 31 C (88 F) and range from 25-35 C (77-95 F) in
July and August ("Haiti: climate", 2010). Port-au-Prince is located at sea level with an average temperature of about 26 C (79 F) whereas the village of Kenscoff which is located at 1,430 meters (4,700 feet) has an average yearly temperature of approximately 16 C (60 F) ("Haiti", 2011). The average rainfall for the capital city is 137 cm (54 in) with two major rainy seasons occurring in April-June and October November. Droughts, floods, hurricanes and earthquakes are concerns for Haiti. These natural disasters are intensified by the deforestation, soil erosion, and poor building construction methods characteristic to Haiti.

**Figure 2.13:** Two of 2008's four tropical cyclones that ravaged Haiti: Tropical Storm Hanna (right) and Hurricane Gustav (left). Image taken on September 1, 2008. (http://www.wunderground.com/hurricane/haiti.asp)

**Hurricanes and Earthquakes In Haiti**

Haiti being located in the warm tropical waters of the Caribbean has experienced a history of hurricane devastation. Haiti’s problems are both ecological and economical. With 98% of Haiti’s natural forests lost, mudslides and flooding are common effects of
the rainy season, strong winds and hurricanes (Latin American and Caribbean Council, 2010). Trees roots function to hold topsoil in place and also aid in the absorption of excess water. Without topsoil and trees to hold it in place mudslides are common and oftentimes deadly and preventable occurrences. The hurricane season of 2008 was one of the deadliest for Haiti in recent history. Hurricanes Fay, Gustav, Hanna and Ike blew over the island of Hispaniola causing flooding, mudslides and loss of life along with widespread building devastation and economic damages (Masters, 2010). According to United States Agency for International Development, the 2008 hurricane season affected over 800,000 people with 793 killed, 310 missing, and 593 injured. In addition, 70% of Haiti’s crops were wiped out; there was the destruction of 22,702 homes with another 84,625 homes suffering damage (USAID, 2008).

**Construction for Hurricane and Earthquakes**

Better construction methods and the re-growth of Haiti’s lost forest are two ways to alleviate some of the excessive damage caused by natural disasters such as hurricanes. Construction in Haiti proves to be difficult as discussed in the previous section due to limited building resources, lack of building codes, and inconsistencies in cement mixtures and construction techniques. The following are some general recommendations for building hurricane resistant structures for smaller construction projects. Materials, structure shape, and roofing styles are topics that will be briefly discussed.

Concrete makes an efficient hurricane resistant structure if reinforced correctly (Lewis, Eamon, 2006). Fortunately, concrete is one of Haiti’s available resources for building construction. A square or rectangle shaped building are potentially more resistant to hurricane winds due to the minimizing the area impacted by high winds and uplift (see figure 2.14)
Roofing style can play a critical role in hurricane resistant design. Hip and gable roofs have proven to perform the best in strong winds (Pelto, 2004). Overhangs should be minimal to reduce the chance of uplift and roof damage. Metal fasteners should be used to secure the roof to the walls.

Earthquake resistant design follows many of the same parameters as designing hurricane resistant structures. These parameters include building symmetrical structures such as squares or rectangles, if using concrete reinforcing it with appropriate metal supports, and creating a strong foundation. Additionally, it is advisable to separate an area into multiple smaller rooms instead of having one long large room as shown in figure 2.15. The interior walls strengthen the structure creating a stronger more rigid building (International Association for Earthquake Engineering, “n.d.”)
Important Components of Primary School Design in Underdeveloped Countries

A brief study on important components for primary school design in underdeveloped and developing countries will be addressed in this section along with specific examples of successful school designs in such countries. Important components of primary school design in rural or underdeveloped areas examined will include the idea of space, lighting, ventilation, building materials, roofing, walls and flooring as well as access to water and sanitation facilities.

Generally classroom space in schools needs to be able to accommodate up to 30 or 40 students at a time. A recommendation for primary classroom size in developing countries is $1.3 \text{m}^2$ per student, which would be a 7 x 7 meter classroom for 30 students (Practical Action, 2009). Another recommendation is the addition of a porch or veranda connected to the building that would provide shade and additional teaching or meeting space if needed.
Lighting is an extremely important aspect for school classrooms. Natural light becomes the main source for many schools in underdeveloped countries that are either unable to connect to an electricity source or find that the electricity is too inconsistent or too expensive. Glass in windows is an expensive option that can create a heat problem within the classroom by blocking natural breezes and inhibiting ventilation, especially with a lack of air conditioning. A recommended 130 lux illumination levels in classrooms can be assumed to be achieved by at least two, better for three, windows of 1500 x 1200 mm in tropical areas (Practical Action, 2009).

Taking into consideration the local climate is an important component in the design of a building. Some simple design options for natural ventilation and thermal performances for tropical climates include building up and then out, using half wall construction, building thick walls, latticework, cross-ventilation, and ventilating under roof space (USAID, 2009, p 7). The first option of building up and then out utilizes higher ceiling heights and extended eaves creating porches or verandas that help control the heat. An additional benefit to this type of construction is the sheltering of the walls from natural elements, which can increase the longevity of the building. Half wall construction with support pillars and extended eaves can provide valuable cross ventilation. Another option is thick wall or double wall construction where air acts an effective insulator (Lee, 1988). The thick wall method is especially effective in areas that use hollow cement block construction.

Latticework or openwork in concrete blocks can be used to provide ventilation and light while still providing some protection and privacy. Latticework can be used in conjunction with the next and final option of ventilating under roof space. Providing openings or latticework directly under the roof space allows for the hot air within the building to rise and then be pulled out.

Using indigenous materials and local labor allows for the building to realize a lower cost, since the building materials did not require shipping, and helps the local community by providing jobs. Building material selection will depend on cost, the area’s geography, local resources and climate. Walls are important to create stability, provide protection and a means for attaching a roof. Roofs provide protection against the natural elements and can be made from a variety of materials. Maintenance should be
considered when choosing roofing materials to maintain safety and comfort. A foundation would be needed to support the structural walls. For relatively small rectangular building only the external walls would be needed to provide the support (Practical Action, 2009). The type of foundation would be dependent on the soil condition, climate, and cost.

A dependable supply of clean water is an important design feature for primary schools. Access to water allows for drinking, hand washing, cleaning, and in some cases cooking (USAID, 2009). Without a proper supply of clean water there are significant student health risks. Poor health affects a student’s performance in school and increases absenteeism (Snel, 2003). The USAID (2009) estimates that “10 liters [of water] per student per day is a good average” and notes, “that requirements can increase with climate, the latrine/technology chosen, religious/cultural practices, and water-intensive food preparation” (p 17). Rainwater harvesting can be a cost-efficient and effective way to capture water for purposes such as hand washing and cleaning and if properly filtered used for drinking and cooking.

Sanitation facilities are also important in the design of schools in order to have a healthy learning environment. Providing adequate sanitation facilities constitutes only a part in creating healthy environment for the students, also there needs to be sustained maintenance and cleaning of the facility along with the use of correct hygiene behaviors (Snel, 2003). The Ventilated Improved Pit (VIP) latrine is the most widely used and successful latrine designs for underdeveloped countries. A generic design is depicted in Figure 2.16; there exist many different variations of the VIP design.
Other Underdeveloped Nations Successful School Design Solutions

Other undeveloped countries have taken these elemental components and have implemented successful primary school designs. Examples of some successful school designs are the Gando Primary School in Gando Village, Burkina Faso, the Bamboo Primary School in Luong Son Village, Nha Trang, Vietnam and the Canchias School in Canchias, Honduras. The following section will examine these three successful examples of school design and focus on how they addressed building a low-cost school using local materials and their solutions to climate concerns.

Gando Primary School, Burkina Faso

The first example, the Gando Primary School, which is located in Burkina Faso, was completed in 2001. Burkina Faso, located in western Africa near the equator, is a landlocked country with a tropical climate and a population of 15.7 million people.
Diébédo Francis Kéré, the architect and designer of the Gando Primary School, was born in Gando village. Previously, Gando village’s population of approximately 3,000 contained only one school, built in 1990, in very poor condition (Architecture for Humanity, 2006). Kéré designed the school using the principles of designing for the local climate, low-cost construction, utilization of local materials, for the community, and the use of new technologies in a simplified way (Kéré, n.d. para. 2).

To address climatic concerns, the three classrooms were orientated in a linear fashion with covered walkways connecting each of the classrooms (Kéré, n.d). Walls constructed from compressed earth and ceilings made from concrete beams, steel bars, and compressed earth blocks helped to ensure climatic comfort for the students inside. The floating roof design provided a space that acts as a wind channel between the ceiling and roof allowing the hot air to escape (see Figure 2.17).

![Figure 2.17 Climatic section of the Gando Primary School, Burkina Faso. Image credit: Diébédo Francis Kéré. (moma.org)](image-url)
The use of traditional mud-brick methods of construction and local craftsmen and workers allowed for both low-cost construction and the utilization of local materials for the project. According to Architecture for Humanity (2006), Kéré said that, “the villagers were involved in every aspect of the school’s construction” (p 254). Kéré provided brick-making training sessions for the local villagers with the help of LOCOMAT (a Burkina Faso government agency). The roof was constructed from steel bars for lightweight trusses and corrugated metal sheeting for the rooftop. Simple welding techniques were taught to enable the roof to be completed onsite and without the use of heavy machinery (see figure 2.18).

**Figure 2.18**: South elevation of the Gando Primary School, Burkina Faso. Image credit Siméon Duchoud/Aga Khan Trust for Culture. (moma.org)

The classrooms were constructed in a basic rectangular shape with traditional stamped clay floors (Varanda, 2004). The women of the village compressed the floor by hand and infused it with oils to seal its surface. Each classroom was designed to accommodate 50 students and contains a blackboard on one side of the room (see figure 2.19). The covered walkways between the classrooms serve as additional teaching space, workshops or playtime. Steel shutters were placed over doors and windows that were able to tilt open allowing for ample natural light and cross-ventilation.
The initiative taken by the Gando village and directed by Kéré set an example for neighboring villages, who have in turn initiated their own cooperative school building projects and successfully built two schools (Kéré, n.d). The school was originally designed for 150 students but now has 350 students (with a waiting list of 150) from both the Gando village and other nearby villages (Architecture for Humanity, 2006). The Gando Primary school has won worldwide recognition and the 2004 Aga Kahn Award for Architecture.

Figure 2.19: View of a classroom in Gando Primary School, Gando, Burkina Faso. Image credit: Siméon Duchoud/Aga Khan Trust for Culture (moma.org)
The Bamboo Primary School, Vietnam

The second example focuses on the Bamboo Primary School in Luong Son village, Nha Trang, Vietnam. Lunong Son village lies 800m from the seacoast and a few miles north of the city of Nha Trang. Its people live from fishing and agriculture with their children often having to work (Architecture for Humanity, 2006). The area did not have a primary school before the Bamboo Primary School was built. The Design team consisted of the French humanitarian organization, L’École Sauvage, the Paris-based architects Nguyen Chi tam and Charlotte Julliard.

Figure 2.20: Bamboo School in Luong Son village, Nha Trang Vietnam. (www.theskyisbeautiful.com)

The school was built from local materials of bamboo, concrete, brick and corrugated sheet (see figure 2.20). The materials selected purposely contrasted the modern architecture of concrete and glass, seen across much of Vietnam (Architecture for Humanity, 2006). Architect Tam explains, “We wanted to show that we can make beautiful architecture with a simple material” (p 257). The Bamboo Primary School site included three classrooms, one common room/library or classroom, two rooms for
teachers, four closets, 1 urinal, 1 shower and sinks, and one external gallery/courtyard area ("Ecole en bamboo- Phase 1", n.d.). The school was designed to accommodate 200 to 300 students. A typical classroom is shown in figure 2.21.

![Bamboo School Classroom](www.theshyisbeautiful.com)

**Figure 2.21:** Bamboo School Classroom in Luong Son village, Nha Trang Vietnam. (www.theshyisbeautiful.com)

The design of the Bamboo Primary School was centered on addressing the problem of the high heat index in central Vietnam. Large exterior spaces incorporated into the design allow for natural ventilation (Architecture for Humanity, 2006). The designers worked to simply the construction process. The simple and traditional techniques of fashioning together bamboo with rattan cords to construct roof trusses was used as well as using brick for walls and rough concrete for flooring.

The designers used the local, abundant and sustainable resource, bamboo, throughout the design of the school. Although bamboo provides many benefits, it does require special maintenance to prevent termite damage and decay (Architecture for Humanity, 2006). The architects aimed to combine the two dichotomous meanings that bamboo holds in Vietnam. The lower class and peasants use bamboo for construction due to its low cost and availability. In contrast the upper class uses bamboo as a trendy
decorative application (“Ecole en bamboo- Phase 1”, n.d.). The architects merged these two uses by using bamboo as the buildings’ framework and support but also as decorative applications on the façade and ceilings.

Each of the buildings is separated by open garden space allowing increased ventilation (“bamboo lessons,” 2004). Enclosing the classrooms are brick infill walls with a concrete frame. These can act as anchors in tropical gales. The large veranda (see Figure 2.22) that runs the length of the whole building was originally intended for playground use, but has become the bike storage area. The high-pitched roof also aids in climate control by release the hot air. Instead of glass the windows frames are filled light blue corrugated plastic.

Figure 2.22: Bamboo School veranda in Luong Son village, Nha Trang Vietnam. (www.theskyisbeautiful.com)
The Bamboo Primary School stands as an example of using local, sustainable materials and traditional practices to create a beautiful, functional and low-cost school for those in underdeveloped areas. According to the designers of the Bamboo Primary School, architects from the skyisbeautiful, “when one has nothing in this difficult world, the school is the only hope for a better life and a better world. The school encourages the blooming of the personality, the gifts, and the aptitudes of each one” (“Ecole en bamboo- Phase 1”, n.d., p 4).

La Escuela Bertha Lainez de Castañeda, Honduras

The final example, La Escuela Bertha Lainez de Castañeda is an elementary school in Canchias, Honduras built in 1998. The school, designed by Schools for the Children of the World (SCW), won a Design Share Merit Award in 2003 for its learner-centered, cost-efficient, and sustainable design (Design Share, 2010). La Escuela Bertha Lainez de Castañeda was SCW’s first school in Honduras. It proved to be a successful design solution for addressing some of Honduras’ school facility challenges such as overcrowding, dim lighting, uncomfortable temperatures, and lack of electricity (SCW, 2010). Since the completion of La Escuela Bertha Lainez de Castañeda numerous other schools have been built by SCW and other organizations following many of the design principles that La Escuela Bertha Lainez de Castañeda demonstrates.

The school design was focused around community involvement in the education of the children. A multi-purpose room and a covered activity area are located near the main entry to encourage community use of the school’s facilities during or after school hours. Figure 2.23 shows the site plan of La Escuela Bertha Lainez de Castañeda.
The classrooms were designed to maximize natural lighting and ventilation by having large screened window openings. The windows were placed high on the wall to let the warm air escape and screen openings were placed at each end of the roof trusses for additional ventilation (Design Share, 2010). A building section is shown in figure 2.24. The school’s furniture was made with local material and expertise and is adjustable to cater to different age groups and classroom configurations. La Escuela Bertha Lainez de Castañeda site and classrooms are fully accessible to those physically challenged.
One of the main focuses of La Escuela Bertha Lainez de Castañeda was community involvement. By interviewing the local community SCW discovered that older children were reluctant to attend school because they had the responsibility of watching younger siblings while their parents were out working (Design Share, 2010). SCW took this into consideration and included Pre-K/Kindergarten facilities in the design of the school. Not only was the community involved in the design program, construction, and gathering of local materials (such as sand from a nearby river), but also responsible for the continued community committee for maintaining the school in the future. The committee has been active in the upkeep of the school, for example planting flowers and repainting the outside of the school buildings. Figure 2.25 shows the new classrooms of La Escuela Bertha Lainez de Castañeda.
**Figure 2.25:** New Classroom at La Escuela Bertha Lainez de Castañeda in Canchias Honduras (designshare.com)
CHAPTER 3

PROCEDURE

Introduction

Once hailed as the Pearl of the Antilles, Haiti now stands desolate and impoverished. Its once fertile lands lie treeless and barren. The people of Haiti fight for survival every day. More than half of the population of Haiti struggles to survive on less than one dollar per day, which is the absolute poverty line (The World Bank, 2006). The Haitian government failed to fulfill their promises to provide free education as stated in their constitution. More than 90 of the schools in Haiti operate from the private sector and thus place the burden of financing education on the students and their families (Lunde, 2008).

Despite these hurdles, Haitians highly value education and see it as way out of poverty. A livelihood study conducted in 1996 showed that “many families are forced to sell livestock, their principle form of savings or assets, to finance the beginning of the school year” (World Bank Study, 2006, p 8). Even with the educational reforms of the 1970s, where an effort was made to make education more accessible and relevant to the poor, education still remains vastly unattainable for the general population. And where education is attainable the quality is alarmingly low and inconsistent.

The earthquake in January of 2010 impacted Haitian schools dramatically. Over half of the 15,000 primary and 1,500 secondary schools in Haiti were destroyed or severely damaged. The three universities in the capital city of Port-au-Prince suffered serious damage (UNESCO, 2010). If Haiti is ever to progress, there exists a need for greater opportunity for education for Haitian children. Education of the children can provide a hope for a failing nation.

Reviewing literature addressing the history, building materials and building practices and education systems of Haiti along with that of other underdeveloped
countries will inform this thesis. To add to the existing knowledge surrounding Haitian schools, observations and interviews of Haiti’s existing schools will be used to raise awareness and to define some of the fundamental needs for primary school physical design in Haiti.

The Purpose of the Study

The purpose of this research study was to examine the educational facilities in Haiti and other underdeveloped nations worldwide and to define some fundamental needs for primary school design in Haiti.

Research Questions

The primary question of this research is: What are fundamental needs for primary school physical design in Haiti taking into consideration their economy, climate and culture?

Secondary research questions include:

1. What is the current situation in Haiti regarding education?
2. What is the current situation in Haiti regarding school buildings and the physical infrastructure of education facilities?
3. What are realistic solutions to get damaged Haitian schools rebuilt?
4. What current building materials available in Haiti would be suitable for construction of school buildings?
5. How are other underdeveloped countries creating facilities for educating students that might be suitable for use in Haiti?
6. How can a school expand to accommodate changing needs as additional money and resources become available?
Overview of Methodology

The researcher will first review supporting literature about the history of Haiti, its past and present educational systems, available building materials and current building practices. The literature review will also address the needs of school children in poverty-stricken countries and other underdeveloped countries and explore some of the more successful school building solutions. Once the literature has been reviewed, the researcher will visit Haiti to conduct interviews and to make observations. Those interviewed will be the principals of four different primary schools in Haiti near the city of Cap Haitian. Photographs will be taken to document the current condition of Haiti and Haitian schools. Once that data is gathered, recommendations will be made for addressing some of the fundamental needs of Haitian schools. These solutions are meant to be realistic solutions for providing simple, low-cost effective designs for Haitian schools today. The recommendations will be categorized into ten different emergent themes which are not inclusive of all the needs of Haitian schools but are a sample of some of the more critical issues that repeatedly surface throughout the data gathering process.

The procedure for research will include 1) review of literature, 2) Institutional Review Board approval, 3) site visit to Haiti, 4) data collection via observations, interviews, and visual documentation, 5) data analysis, 6) reporting the data, and 7) discussion of the findings and recommendations.

Research Design Overview

Observations and Interviews

After receiving approval from the Florida State University Institutional Review Board, the researcher will travel to Haiti to conduct observations and interviews. The researcher will have the ability to travel to Haiti by way of Missionary Flights International. Missionary Flights International is a non-profit mission aviation service to Christian missions serving in Haiti, the Dominican Republic and the Bahamas. The
researcher will ride as a flight attendant, after completing the necessary training, on the Douglas DC-3, an aircraft manufactured during the Second World War, to Haiti. In addition to serving any passengers on the flights, the researcher will also assist in the loading and unloading the cargo of the plane (typically including passengers’ luggage, medical and building supplies, relief supplies, food, mail for the missionaries, household goods, and generators) and checking the manifesto. Once in Haiti, observations of the living conditions of Haitians and the existing conditions of the school facilities will be noted. Three schools will be visited with selection based on convenience for the researcher due to traveling distances and availability and willingness of administrators to participate. The researcher will take advantage of personal contacts serving as missionaries who have access to schools in Haiti. Interviews with four individuals will be conducted throughout the trip with focus on the current state of schools and ways they could be improved. Questions asked to guide the conversation will include:

1. What are the current conditions of schools in Haiti?
2. What are the greatest needs for primary schools in Haiti?
3. What aspects of your school building do you wish you could improve?
4. What aspects of your school building work well to facilitate learning?
5. What is the ideal classroom size for primary schools in Haiti?
   a. How many children would it accommodate?
6. Does your school provide a facility to serve the children food?
   a. If yes, how well does it work for its intended use?
   b. Are there changes that could be made to make the facility function better?
7. How does your school address Haiti’s unstable electricity grid?
8. How does your school address the hot climate in Haiti?
9. How does your school utilize the building materials available in Haiti?
Assumptions and Limitations

It is assumed that the interviews will result in accurate and honest answers and that the observations made during the trip will reflect the typical conditions of the schools. There does exist a risk that the interviewees might be motivated to modify their answers for personal reasons, such as desires for assistance or fear of recrimination. In addition, it is assumed that the researcher will be able to accurately record data collected during the trip. Due to the limited length of time of the trip, three schools will be visited yielding a small convenience sample limiting the generalizability to a larger population.

The term education when used in this context refers to the formal, institutionalized form of education. Formal education is the deliberate transmittal of knowledge in a structured setting. When referencing education in this study, the concept of formal education is assumed.

Institutional Review Board Approval

Before traveling to Haiti for observations and interviews, the researcher will seek the Florida State University’s Institutional Review Board approval. A proposed itinerary of the trip will be submitted for review. The identities of those interviewed will not be revealed in the findings.

Conclusion

As stated above, the researcher will first review literature concerning Haiti’s history, their building materials and building practices and their education system. Literature will also be reviewed relating to other underdeveloped countries and their successful solutions for school design. The researcher will then seek the approval from the Florida State University’s Institutional Review Board for a site visit to Haiti. The trip will be conducted to further enhance knowledge about school building conditions in present day Haiti. Data will be collected during the trip through observations and interviews with those familiar with the design of the schools. The data will then be
analyzed. The analyzed data in conjunction with the review of literature will result in recommendations for fundamental design elements for Haitian schools addressing issues specific to Haiti. These recommendations will be basic in nature in hopes that they are realistic solutions for Haitian schools to implement with little additional costs or materials. A review of findings along with the recommendations for future research will conclude the study.
CHAPTER 4

FINDINGS

Introduction

The following is a report on the trip to Haiti, emergent themes generated from the trip, and recommendations for design features for building primary schools in Haiti. The findings were gathered through qualitative methods of research, which included site visits, observations, interviews and photographs. Data was collected through touring four primary schools in Haiti, observing the current condition the four schools and interviewing the principals of each of the schools. The children were not interviewed due to them being taught primarily in Creole creating a language barrier. Also their limited world experience and not knowing anything different than their current school room would provide little framework for them to make informative observations about their current school condition and how it could be made better. Additionally, the school visits were taken during school hours and not wanting to disturb the students studies provided another reason to not interview the children directly. The interviews with the principals focused on discovering what the schools considered their greatest needs were and what worked well in the existing school. The data was then analyzed and categorized into ten emergent themes of obstacles for Haitian schools.

The findings are presented in three main sections. The first section is a first-person account of the research trip to Haiti and observations about the general state of Haiti followed by more detailed observations about the four schools visited during the trip. Special attention is given to how the school buildings are constructed and the challenges Haitian schools face in regard to school facilities. The second section of the findings organizes the data into ten emergent themes. The third section takes these ten emergent themes and addresses each one with recommendations of possible solutions to addresses the challenges. The recommendations take the form of conceptual sketches with annotations.
The Trip

The following is an account of the trip to Haiti taken January 18-20, 2011. The goal of the visit was to make observations of the current condition of Haiti and also to visit four Haitian primary schools. The school visits were made in order to conduct interviews with the principal of each school and learn about their school, what works well there, and what their greatest needs are.

The trip began at 4:30 in the morning on January 18, 2011 when I woke up and got ready to leave the house at 5:00 for the Fort Pierce International Airport. After an hour drive we, my father (the pilot captain for the trip) and I, arrived at the airport and checked the weather, had a flight briefing, and took care of last minute details regarding the passengers and cargo for the flight. My father has been flying into Haiti for the past 30 years at least once, but more likely twice a week to deliver supplies, work teams, and basically anything else that is scarce or unattainable in Haiti. I turned in my flight attendant test, which allowed me to serve as the official flight attendant on the trip, and got ready to board the turbine DC-3, N200MF. Thirteen sleepy-eyed passengers boarded the plane and at 6:54 A.M. we began to taxi out onto the runway. At 7:01 am the propellers roared into action and we left the comfort of the United States and headed for the island of Hispániola (see figure 4.1). Two hours into the trip, after I delivered a snack and beverage service to the passengers, we began the checklist for a quick stop in Exuma, an island in the Bahamas, for fuel. Thirty minutes after touchdown in Exuma, wheels were up again and off to the next stop and my destination, Cap Haitian, Haiti.
Flying into the mountainous terrain of Haiti it is hard to tell that it is home to the poorest country in the Western Hemisphere. The mountains are impressive and the water surrounding the island has the green-blue Caribbean beauty. But as we descend down into the northern city of Cap Haitian it becomes clearer and clearer this is not like any other Caribbean island. Things look brown and worn down, even from the sky. The plane lands and the thirteen passengers and I deplane and make our way into customs. In the second largest city in Haiti, the airport consists of one runway and one shabby looking building that is hot and unorganized. I wait at the baggage claim area (see figure 4.2) for the couple that I will be staying with for the next few days.
We load up an old pick-up truck with supplies brought in on the plane; a few of the helpers that came along ride in the back of the pick-up to ensure that people off the streets do not reach in and grab the supplies. The 45-minute ride through Cap Haitian and to the mission compound where I am going to stay is eye opening and also the bumpiest car, train or rollercoaster ride I’ve even taken. There apparently are no traffic laws (or if they exist they are not enforced) in Haiti or traffic lights, for people drive basically wherever the road is least eroded and honk their horns to alert others of their presence (see figure 4.3). Car accidents are common and oftentimes fatal, for even if there are no serious injuries or fatalities in an accident, it is common for the driver that caused an accident to be chased down by the crowds and to be stoned to death after the fact.
The sights from the car window are moving. Streets are busy with people walking, talking, shopping, or sitting on the side of the road. Trash is everywhere, as shown in figure 4.4) and the smell emphasizes this fact.
In the past, Haitians have used the nearby river to dump their garbage, as seen in figure 4.5. It is customary for those living at higher elevations to throw their garbage into the streets so when it rains it is carried down to the lower city by the rain. In the lower city people tend to throw the garbage into man-dug pits on the side of the road, burn the piles, then carry what is left away to locations outside the city.

![The River Flowing through Cap Haitian](image)

**Figure 4.5:** The River Flowing though Cap Haitian
(Hallquist, 2011)

Cap Haitian is in the northern part of Haiti and did not receive direct damage from the earthquake of January, 2010, but it is hard to tell since many of the buildings in the city look as though they have been hit by an earthquake or hurricane. In reality they are in this condition due to lack of money or resources to finish construction or to maintain the buildings if they were completed (figures 4.6 & 4.7).
The Schools

Children in Haiti go to school in two shifts. Students attending school during the first half of the day (from 8 A.M. to 1 P.M.) are those in grades up to 5th grade while the older grades attend in the afternoon. This system allows for school facilities to be used by more children each day. All children attending school both in the public and in the private sector must wear uniforms. This was mandated during the Duvalier rule in order
to discourage children from attending school. Duvalier believed that uneducated and illiterate people were easier to control (K. Davis, personal communication, January 19, 2011).

Each school is responsible for choosing their own uniform color and style. Before the school day begins one can see children walking along the road in their school uniforms. The children take great pride in their uniforms and keep them meticulously clean even while traveling through the dirty streets. Hair ribbon and bows are worn by the girls, because they are a requirement, but for their own pride and sense of style (see figure 4.8).

![Figure 4.8: School children in Haiti (Hallquist, 2011)](image)

During the site visits for this research project, four schools were visited in order to gather first-hand information about the current conditions of Haitian primary schools and to conduct interviews with the heads of each of the schools. All four schools were privately run and received no government aid or funding, as is the case with the majority of schools in Haiti. Two larger schools were visited along with two smaller schools. The schools were located outside the city of Cap Haitian. The head of each school was able to speak some English but a translator was brought along to aid in communication.
School A was located about one hour drive outside Cap Haitian. The scenery changes as one drives out from the city to more of the rural parts of Haiti. The buildings become further apart and the streets less crowded. The roads are more likely to be dirt than paved. People tend to travel more by foot or on livestock, as shown in Figure 4.10, than in cars, tap-taps (Haiti’s version of city buses) or on motorcycle and mopeds as they do in the cities.
School A accommodated 219 students and had 9 teachers. The property contained two school buildings that housed eight different classrooms, and one church building facility. The first building visited, building I, (see figure 4.11) housed 3 classrooms for the youngest children, which they called preschools I, II, & III. Preschool I, shown in figure 4.12, had 21 students in attendance the day I visited. The children in the classroom were as young as 2-3 years old.
Each of the classrooms was furnished only with wooden seats, bench-like tables and a chalkboard. There was no electricity for the classroom and only light sources were the opening for the door and the rectangular openings built into the concrete walls. The roof was constructed from wooden beams supports with a corrugated metal roof attached to the top (figure 4.13).
The second building visited, building II, housed the older children up to grade 5. Building II was located about 50 yards away across a grassy field, had a more open layout (see figure 4.14). There were multiple classrooms in one larger room separated only by free-standing chalkboards (see figure 4.15).

Figure 4.13: Metal Roof, School A
(Hallquist, 2011)

Figure 4.14: Building II, School A
(Hallquist, 2011)
Figure 4.15: Building II Classrooms, School A (Hallquist, 2011)

The open layout keeps the building cooler in the hot months by allowing for cross-ventilation of the breeze and also allowing for greater amounts of natural light to come in. The main concern with the open layout of classrooms was the noise associated with having multiple classes teaching different subjects at the same time in essentially the same room. The noise creates distractions and confusion for the students trying to learn their own lessons.

When asked what the school would do if money were donated, the head of the school, who also was the pastor of the church located on the same property, replied that the greatest need was to build more buildings in order to allow for more children to come and attend school. Some of the classrooms, shown in figure 4.16 were very small considering the number of students. Having more classrooms would greater serve the community by giving more children the opportunity to learn and attend school.
Figure 4.16: Classroom in Building II, School A  
(Hallquist, 2011)

School B

Figure 4.17: Site Plan of School B  
(Hallquist, 2011)
The second school, School B, was the second largest school, by student enrollment, of the four schools visited during the trip. This school was located in more of the rural area of Haiti and accommodated approximately 180 students. The school had two areas for classrooms. The first area, building I is shown in figure 4.18. Building I sat on a rectangular concrete slab with walls that contained several window-like openings and doorways. Within this area two different classrooms existed with no formal barriers besides a free-standing chalkboard in the center of the room.

Figure 4.18: Building I Exterior, School B
(Hallquist, 2011)

Figure 4.19: Building I Interior, School B
(Hallquist, 2011)
The open area for the two classrooms was well lit by natural sunlight and the large openings for windows allowed for cross-ventilation. Again, the concern with the open classrooms was the noise level for both for the students and for the teachers (figure 4.19). To help alleviate the heat in the warmer months, they would hold class in the open courtyard in between the two buildings and hang a tarp across the area to provide shade for the children.

Building II of School B, held more classrooms was a more enclosed building. The entrances to two of the classrooms are shown in figure 4.20.

Figure 4.20: Building II Exterior, School B (Hallquist, 2011)

The third classroom entrance was located behind the building down an alley and though a door that could not open all the way due to the close proximity of the classroom desks (see figures 4.21, 4.22, & 4.23). The classroom was no larger than 4’ x 8’ and 11 children were in attendance in this particular classroom on the day of the visit. Again, to leave, one would have to scoot by the desks and squeeze out the half-open door into the alleyway.
Figure 4.21: Walkway to enter classroom (Hallquist, 2011)

Figure 4.22: Classroom Entrance, School B (Hallquist, 2011)

Figure 4.23: Classroom at School B (Hallquist, 2011)
The head of School B also expressed the great need for additional classrooms. As shown in figure 4.24, the classrooms are crowded and oftentimes house multiple grade levels in one room. The classrooms in the building II are dark and the seating arrangement is not conducive for effective learning. The floors are nothing more than dirt over the concrete foundation slab. As seen in the first school there is nothing in these classrooms besides furniture for the children to sit on and write on and a chalkboard for instruction.

![Figure 4.24: Classroom with Multiple Classes, School B (Hallquist, 2011)](image)

When asked what worked well for the school, the response was the children’s desire to learn and gratefulness to attend school helped keep the school running. The children, even in the younger grades, would walk up to 2 kilometers each way to attend school.

Schools C & D were still outside the central city of Cap Haitian but were much closer to the city than the first and second school. These last two schools were smaller...
primary schools with 86 and 120 students respectively. All the schools visited had large security walls around the properties with central gates to help control vandalism, wandering children, and reduce noise.

**School C**

![Site Plan of School A](image)

*Figure 4.25: Site Plan of School A (Hallquist, 2011)*

School C had a centrally located courtyard/play area with the classrooms opening off of the central courtyard. The head of the school explained that this feature gave a safe area for the children to play and an area to congregate the whole school together. Figure 4.26 shows the children and teachers in the central courtyard welcoming and singing for me.
The school walls, floors and ceilings were all constructed from concrete blocks. The window-like openings in this school were smaller and placed higher on the walls with bars for protection against vandalism. With the concrete ceilings and the smaller window-like openings, the classrooms had a darker and more cave like feeling (see figure 4.27).
The reason for the solid concrete ceiling was to allow the option to expand the school by adding more classrooms and learning spaces on the second floor. When asked what would make the school better, the head of School C replied, “I want to have a good school that has lots of children.” She equated a good school with having the facility to accommodate lots of children, which means more classroom space. Figures 4.28 & 4.29 show the stairs up to and the unfinished second floor. Whenever there is extra money, more concrete block is brought to make the walls for the proposed upstairs classrooms, library and reading room.
One of the major challenges facing all the schools is access to clean running water. The head of School C mentioned that she buys the clean water herself and brings it into the school. From this particular school it is 1 kilometer away to get clean water. They have some rainwater harvesting capabilities and use the captured rainwater for activities such as cleaning the schoolrooms, cleaning messes that the children make, flushing toilets, and washing hands.

Unique characteristics of this school not seen in the previous two schools were areas in the classroom for the children to store personal items and areas for personalization (shown in figure 4.30 & 4.31). It is also important to note the high dropout rate of children in Haitian schools. Dropout rates occur mostly because parents are not able to pay the tuition. Also, when children get into the older primary grades (4th-5th grade) they are able to go out and find work or are able to be a greater help at home causing the older primary grades to have dramatically less students than the younger grades. For example in this third school there were 25-30 children in the classrooms for the lowest grades and as few as 5 or 6 students in the higher grades.
There was an “American restroom” facility connected to the side of the building with one shower stall. The American restroom is defined in Haiti as having a flushable toilet. Also outside the restroom area are pots for the children who have never seen or used an American toilet. The restroom area is open without doors to let some natural light in to compensate not having electricity or windows. Restrooms in many Haitian primary school are unisex with little or no privacy. If pots are used in the school they
are most likely placed behind the classroom but without walls for privacy or a place to wash up afterwards.

School D

Figure 4.32: Site Plan of School D
(Hallquist, 2011)

The fourth and final school, School D, accommodated 120 students. School’s C & D were located relatively close to one another and close to the city of Cap Haitian. School D contained similar characteristics as the other school visited such as concrete block construction, low lighting, lack of clean running water, and crowded classrooms.

For the school to have access to water, buckets were brought in each day and placed in the central courtyard area (see figure 4.33).
A restroom facility was built into the school but was not yet completed. The areas for stalls were constructed but no toilets were placed in the restroom so the children used pots outside the restroom area. What stood out in School D was the use of color in the classrooms. Painted walls designed different classrooms and the children’s artwork and class projects were on display (figure 4.34). Along with the painted walls and artwork on display, the furniture was a mixture of colors making the classroom appear brighter and more vibrant.
Emergent Themes

The following section presents the data collected from the site visits, interviews and observations into ten emergent themes. Each emergent theme represents a challenge to Haitian schools and focuses on the physical facility of the schools. Summarizing the data from the interviews and observations of the schools, the following categories emerged as the greatest needs of the schools. The categories are not inclusive of all the needs of the schools, but are a sample of issues related to the physical space that repeatedly emerged throughout the trip. The following categories are not listed in any particular order.

The Challenges

Low Lighting in the Classrooms

Low and inconsistent lighting was prevalent in each of the schools visited. Haiti’s inconsistent and unreliable electricity grid makes natural lighting techniques the main light source in the classrooms. Almost every structure in Haiti is constructed from concrete block due to its availability, relatively low-cost and simple construction techniques. The problem with using concrete blocks is the nature of the material which blocks light. Common methods for providing light and also serving for ventilation were to build in openings in the concrete wall. This was accomplished either by placing the concrete blocks on their sides or by leaving gaps in between the concrete blocks (see figure 4.35). Open doorways also provided natural light into the classrooms but created other problems such as increased noise level, outside distractions and the accumulation of dirt and debris. Large window-like openings provided the benefits of increased natural light but also caused many of the same problems as stated above. Additionally, with the large window-like openings there was no way to secure the building allowing for the
increased threat of vandalism and theft along with the issue of water entering the classroom during the rainy season.

![Classroom in School B.](image)

**Figure 4.35:** Classroom in School B. (Hallquist, 2011)

**Lack of Clean and Running Water**

Another emergent theme was the problem of the lack of clean and running water in the schools. For many schools water has to be brought in each day (sometimes from great distances) in order for schools to have access to it at all. Water is needed for drinking, cleaning the facility, for hand washing, and for restroom uses (either for toilet flushing if they have American toilets or for pot cleaning). The third school visited on the trip utilized some rainwater harvesting techniques for capturing water for cleaning purposes. The other schools had to bring in buckets of water each day.
Safety and Protection

Another theme that seemed to emerge was the need to protect the school against theft and vandalism and to keep the children safe while in the facility. All the schools visited during the trip had some sort of an exterior security wall with a gate to let people in and out (see figure 4.36). The wall should reach all the way around the school in order to keep unwanted people out and the children in during school hours. Some schools also placed bars over the window-like openings to discourage theft and vandalism.

Figure 4.36: Security wall around School C (Hallquist, 2011)

Safe Areas to Play

The next emergent theme relates to the previous theme of safety and protection and includes the need for a safe area in which the students can congregate and play.
The third school was built with a central courtyard area with all the classrooms and offices radiating out from the courtyard. This allowed for a safe area for the children to relax and play. It is important for the children, especially in the primary grades, to have a place where they can have a break and leave the classroom. In addition, it allows students to exercise and to socialize with classmates. It also can serve as a central gathering area when the entire school gets together for school-wide announcements or to welcome guests as shown in Figure 4.37.

![Figure 4.37: Students from School C Gathered in the Central Courtyard (Hallquist, 2011)](image)

**Lack of Classroom Space**

Additionally, the need for more classroom space arose as a common theme from the interviews conducted at the schools. All four of the principals of the schools visited emphasized the need for more classroom space. Observing the crowded classrooms and seeing multiple grade levels having to share the same classroom re-emphasized the need for additional classroom space (see figure 4.38). The first school solved this problem by extending the existing building to add more classrooms. This minimized construction materials due to already having a wall built. The third school worked to add...
extra classroom space by using their existing building and then building a second floor above it. By building upwards the school minimized its footprint, which is especially important if they do not have land to expand on or if they already have an existing security wall that would otherwise have to be expanded. Having additional classrooms would allow more children to attend school and hopefully increase the literacy rates and result in more options and better life for the children.

![Crowded Classroom at School B](Figure 4.38: Crowded Classroom at School B (Hallquist, 2011))

**Noise Control**

The next theme that emerged coincides with the previous one regarding more classroom space. A challenge that surfaced during the interviews and site visits was the issue of noise control in the classrooms. The children were very attentive and well-behaved. The teaching style in Haiti includes a great deal of reciting the lessons out loud that makes for a noisy classroom (see figure 4.39). The problem arises when multiple classes share the same room creating distractions and making it difficult for the students to concentrate. Three of the four schools visited had areas where multiple classrooms share the same connected space. Oftentimes schools would use
freestanding chalkboards to designate and delineate the different classes. Although the chalkboards provide a visual barrier they do little to create a sound barrier.

![Image: A Class at School A Reciting Lessons](hallquist2011)

**Figure 4.39**: A Class at School A Reciting Lessons (Hallquist, 2011)

**Heat Control**

Haiti, being a tropical island in the Caribbean, can experience very high temperatures. Without electricity and air conditioning, Haitian schools must cope with the heat by using natural means of ventilation. A common design feature among the schools in Haiti is large open window-like openings that not only let light in but also to allow breezes and a chance for cross-ventilation and cooling of the building. Placement of the buildings in relation to the sun and existing trees also plays a factor in heat control. Building under existing trees or being able to plant new ones around the school provided shade from the sun and kept the schools cooler. Some schools, including the first school and second school visited, had vaulted metal roofs with wood trusses for
support. The roof was slightly offset from the building allowing for an air space for hot air to escape from the building as shown in figure 4.40.

Figure 4.40: Building II at School A Showing Air Cooling Techniques (Hallquist, 2011)

Restroom Facilities

Many schools in Haiti are without clean and functional restroom facilities. The concept of an “American toilet”, one that students can sit upon and is flushable is
unknown to a large percentage of the Haitian population. Schools often just have pots sitting on the ground for the children to use. This causes sanitary concerns especially with the limited supply of water to clean out the pots and limited opportunities for clean up and hand washing afterwards. Some schools have American type restroom facilities but since many do not have access to running water they must use captured rainwater or use the water brought in by the buckets. Even if the schools have American restrooms they often also have pots available for the children who do not know how to use the American toilet. Students both male and female tend to use the same restroom facility along with teachers and staff members. Sometimes the principal or teachers live on the same compound around as the school, in which they may have their own private restroom facilities.

**Personal Spaces and Personalization**

Another theme that surfaced was the need for personal areas and personalization for the children to foster a sense of belonging. Many schools in Haiti are bare and dull with only benches for the students to sit on and chalkboards for instruction. While the structure of the building serves the basic function of providing a place to gather, with a shelter over their heads and a place to sit and learn, it does lack the physiological sense of place. Giving a child a sense of belonging in the school is important in keeping the student motivated and coming back to school.

Some schools in Haiti make an effort to provide personal spaces for the children to put their belongings—if they have any to bring (see figure 4.41). This can take the form of shelving, cubbies or a personalized table or desk space. Being able to showcase students’ school projects or artwork can add to a sense of belonging. Simple methods of hanging completed projects on the wall or from the ceiling could increase a student’s sense of pride in their academic work.
Need for Porches and Shaded Areas

The final emerging theme was the need for porches and shaded areas. The temperature in the classrooms can get very high creating an uncomfortable atmosphere for the students and the teachers. Having a covered porch or shaded areas close to the classrooms would allow the students and teachers a place to escape from the heated classroom. In the warmer months class could be held on these porches to allow for maximum airflow while still having a covering overhead. Shaded from trees could provide the same benefits as the porches while also shading and cooling the buildings if close enough in proximity.

The Recommendations

The third and final section of the findings offer some recommendations for building primary schools in Haiti by addressing each of the ten emergent themes listed above. The recommendations are possible solutions for the challenges many Haitian schools face while being sensitive to their poor economy, unstable electricity grid, and limited amount of resources. The following recommendations are presented in a problem-solution format where the challenge or problem is stated, reason why it is
important and then a possible solution. The ideas presented are by no means the only solution to the problems but are a simple way to address what was observed and noted as significant and solvable issues in the schools. The recommendations will consider that most schools have very limited funds and resources for improvements. The potential solutions will also try to only suggest using those materials that are local and easily attainable in Haiti. The recommendations are as follows:
PROBLEM: Low Lighting in the Classrooms

Context:
- Schools in Haiti have low and inconsistent lighting
- Most schools use natural light from large window-like openings
- Using window-like openings for lighting brings in the light at angles creating inconsistencies and shadows.

Why it is important:
- Good lighting is important for effective learning and overall well-being of the students.

Potential Solutions:
- One possible solution would be to create skylight openings in the roof of the school buildings.
- The skylights would provide more lighting at a more appropriate angle. Also, if the skylights are vented they can remove the hot air adding an additional benefit.
- The skylights should be made from a Plexiglas type material in order to allow light in while keeping rain and debris out of the classroom. These skylights would also be earthquake resistant.
Figure 4.43: Fixed skylight in a metal roof (Hallquist, 2011)

Figure 4.44: Installation of a skylight (Hallquist, 2011)
PROBLEM: Lack of Clean and Running Water

Context:

- Many schools in Haiti do not have access to clean or running water.
- Buckets or jugs of water are carried each day for use in the school.
- Clean water is very expensive in Haiti and not readily available.
- Oftentimes the source of water is a great distance from the school.

Why it is important:

- Water is important in schools for drinking, washing and cleaning.
- Water is also important to use if American style toilets are present in the school facility.

Potential Solutions:

- A possible way to alleviate the shortage of water is to harvest rainwater.
- By capturing rainwater, the schools would be able use to their advantage Haiti’s tropical climate and rainy season. Port-au-Prince received an annual average rainfall of 137cm (54in) (Encyclopedia of the Nations, 2011).
- After the initial set up cost, the schools then could start saving money by not having to buy as much water.

**Figure 4.46**: Example of simple gutter to container rainwater harvesting technique (Hallquist, 2011)
PROBLEM: Safety and Protection

Figure 4.47: Existing Conditions
(Hallquist, 2011)

Context:
- Most schools in Haiti have some sort of security wall around the school.
- Not all the security walls are completed or structurally sound.
- Walls are often made from concrete block, but stone, bamboo and dense bushes are also used.

Why it is important:
- Children need to be protected when they are at school. They need to have protection from outside intruders and from wandering off themselves.
- A security wall discourages vandalism and theft and also act as a sound barrier for the school.

Potential Solutions:
- Building a sturdy security wall around the school will provide safety and protection for the students and teachers.
- The wall should be high enough to give the school visual privacy from outsiders, and discourage outsiders from climbing in.
Figure 4.48: Security wall design in plan view (Hallquist, 2011)

Figure 4.49: Security wall section (Hallquist, 2011)
PROBLEM: Safe Areas to Play

Figure 4.50: Existing Conditions  
(Hallquist, 2011)

Context:
- Schools in Haiti need a safe and enclosed area for the children to be able to leave the classroom and play.
- Most all the schools in Haiti have an exterior wall enclosing the school, thus allowing for a built in courtyard space.
- The area for children to play need to be able to easily monitored by adults and sightlines should be clear.

Why it is important:
- Children, especially primary school aged children, need a break during the day and a place to run around and play.

Potential Solutions:
- Orientating the classroom around a central courtyard area creates a barrier and an area for the children to play in.
- Having the classrooms radiate out from a central courtyard also allows for easy supervision and clear sightlines for the teachers.
PROBLEM: Lack of Classroom Space

Figure 4.51: Enclosed courtyard area with clear sightlines
(Hallquist, 2011)

Figure 4.52: Existing Conditions
(Hallquist, 2011)
Context:
- Classrooms in Haiti are often overcrowded.
- The data from the interviews showed that more classroom space was their greatest need in regard to their buildings.
- Multiple classes oftentimes have to share one classroom.

Why it is important:
- Having additional classroom space allows for the opportunity for more children to attend school and get an education.

Potential Solutions:
- Have children attend school in double-sessions or hold some classes outside for at least short periods of time.
- Constructing square or rectangular shaped buildings would allow for an easier addition of classrooms by having a wall of the new classroom already constructed. In order to accomplish this the building and site needs to be sized to anticipate the building of additional classrooms.

Figure 4.53: Efficient addition to existing classroom (Hallquist, 2011)
PROBLEM: **Noise Control**

Figure 4.54: Existing Conditions  
(Hallquist, 2011)

**Context:**
- Haitian schools can be noisy and distracting especially if more than one class occupies one given space.
- Freestanding chalkboards are oftentimes placed in room to divide it into different classes.
- Oral recitation of lessons is a common way of instruction for Haitian schools

**Why it is important:**
- Noise can distract, confuse and lower academic performance for both the students and the teachers.

**Potential Solutions:**
- If able to, separating the classrooms with walls would decrease noise across the different classroom.
- If unable to separate the classrooms with walls, orientating the classes so they do not face each other but instead outward would help with noise control.
- Some sort of insulating materials, such as straw bales, can help reduce noise and heat levels.
Figure 4.55: Orientation of classrooms to reduce noise levels
(Hallquist, 2011)

Figure 4.56: Insulation for noise control
(Hallquist, 2011)
PROBLEM: Heat Control

Figure 4.57: Existing Conditions
(Hallquist, 2011)

Context:
- Buildings in Haiti can be extremely hot due to the warm tropical climate and lack of air conditioning.
- Many schools in Haiti are enclosed and do not have proper ventilation in order to let the heat escape and a breeze come through.

Why it is important:
- A hot environment can distract the students from their studies as well as pose health risks such as dehydration and heat stroke.

Potential Solutions:
- Placing vent space between the wall and roof along with a ridge vent allows for the hot air to rise and escape from building.
- Orientating the building so that the afternoon sun hits the shorter sides of the rectangular buildings helps with controlling the heat. The shorter sides of the building should be placed in an east-west orientation.
- Planting trees around the school provides shade keeping the buildings cooler, also if fruit trees are planted an added benefit would a food source and a learning opportunity for the student about agriculture.

**Figure 4.58:** Ridge vent
(Hallquist, 2011)

**Figure 4.59:** Building orientation in relation to the sun to minimize heat gain
(Hallquist, 2011)
PROBLEM: Restroom Facilities

Context:
- School facilities in Haiti often lack adequate restroom facilities for the students and teachers.
- Some schools are able to have stalls and American type toilets, while others use a pot on the ground for their restrooms.
- A sense of privacy is also important in restroom areas, especially for girls.

Why it is important:
- It is essential for children and teachers to have a place to relieve themselves during the day that is both safe and sanitary.

Potential Solutions:
- By using rainwater harvesting techniques the schools should have the water needed flushable toilets.
- Providing barriers between toilets would provide privacy for the children.
- If the school does not have access to toilets, placing an outhouse away from the main school buildings is a way to provide a restroom facility and while keeping odors involved in outhouses minimal.

Figure 4.60: Diagram of a Ventilated Improved Pit Latrine
(http://www.lboro.ac.uk/well/resources/fact-sheet/fact-sheet-htm/lcsahgt.htm)
PROBLEM: Personal Spaces and Personalization

Figure 4.61: Existing Conditions
(Hallquist, 2011)

Context:
- Many Haitian classrooms lack means of personal space or personalization.
- Some schools are able incorporate personal areas such as shelves where children can place belongings.

Why it is important:
- Children need to feel a sense of belonging at school and having a personal space can help in providing that.
- Providing personal spaces can give an increased incentive to attend school.
- Hanging student projects or artwork on the wall or from the ceilings can provide personalization and give a sense of belonging.
Potential Solutions:

- Placing shelves or cubbies for each child in the classroom gives them a personal space and sense of belonging.
- Being able to personalize their own work space would also increase their sense of place at the school

Figure 4.62: Individual cubby areas for personal space (Hallquist, 2011)
**PROBLEM: Need for Porches and Shaded Areas**

**Figure 4.63: Existing Conditions**
(Hallquist, 2011)

**Context:**
- Classrooms in Haiti are often hot and overcrowded.
- Children need an area outside the classroom during the school day.

**Why it is important:**
- Having an alternative area for holding class when the classrooms get too hot is important.
- Shaded areas provide shade for the building and outside activities.

**Potential Solutions:**
- Providing porches extending off of the buildings provide an area to hold classes if the classroom temperature gets too high. This also provides an area for the children to play between class sessions that is shielded from the weather.
- Shaded areas could provide the same function and help cool for the buildings.
Bamboo is a renewable resource available in Haiti that could be used to construct the porches.

Figure 4.64: Bamboo porch overhang
(Hallquist, 2011)
CHAPTER 5

CONCLUSION

Introduction

This study examined primary school facilities in Haiti and explored effective building design methods. The study began by focusing on reviewing the literature regarding Haiti’s history, education systems, building materials and construction methods. This was important to note in order to better understand Haiti’s current political and economic situation, as well as the condition of Haitian schools, and their indigenous building techniques. A section on Haiti’s climate and earthquake and hurricane tendencies was also included. The final portion of the review of literature concentrated on some examples of other underdeveloped countries’ effective solutions for primary school designs.

The primary focus of the study was to examine the educational facilities in Haiti and explore effective methods for building elementary schools in Haiti. The main question to be answered was: what are effective design methods for building primary schools in Haiti taking into consideration their economy, climate and culture? To better understand educational facilities in Haiti, a trip was taken for observations and interviews. Four private primary schools were visited and observed; in addition, the principals of the four schools were interviewed. The interviews were made in order to gain increased insight of the views of those working in and directly connected to Haitian schools.
Summary of the Findings

From the research findings it became clear that Haitian schools face numerous problems with regard to physical structure. Ten themes emerged from the findings and are as follows: low lighting in the classrooms, lack of clean and running water, lack of classroom space, noise control, heat control, restroom facilities, safety and protection, safe area to play, personal spaces and personalization and the need for porches or shaded areas. After identifying some of the challenges Haitian schools face, recommendations were made in response to each of the emergent challenges. The recommendations focused on simple, low-cost and easy to construct solutions for Haitian school buildings.

A theme emerged of low and inconsistent levels of lighting in the schools. Low lighting levels can cause strain on the students, especially for reading and writing. The light sources in the Haitian classrooms are primarily from openings in the walls that serve as windows and the doorways leading into the classroom. A proposed solution was to install skylights in the roof to create overhead lighting for the classrooms. If the skylights were vented then an additional benefit of ventilation and heat control is realized.

Another issue that emerged was the lack of clean and running water. Clean water in Haiti is scarce and expensive. Since most schools in Haiti lack the means to have running water, most of the time water must be hauled in with buckets to the school each day. This time and labor-intensive practice can be alleviated with some simple rainwater harvesting techniques. Collected water could be used for various purposes in the schools such as for washing, cleaning and toilet flushing.

Additionally, the need for safety and protection is important for Haitian primary schools. Children need to feel that the place they are learning in is a safe environment. It was recommended to have a security wall built around the school. The security wall should be high enough to break sight lines into the school and to discourage street people from climbing it and gaining unwanted access to the school. The security wall would then also function as a way to keep the children safe and on the school property during school hours. Noise reduction from the street is an additional benefit from
building a security wall.

Furthermore, providing a safe area to play is important theme that emerged during the study. Primary aged school children need a safe and enclosed area where, during the day, they can escape from the classroom and play. If a security wall was built around the school, a form of a courtyard could emerge if the classroom buildings were positioned so they enclosed an area. For the safety of the children it was recommended to have the play area be open with clear sight lines, so the teachers and supervisors could also have an eye on the children while they gather and play. Also the play area could be used as a gathering area for the whole school if needed.

Another emergent theme was the lack of classroom space. The findings showed that the schools are often overcrowded. Multiple classes are often housed in one open area due to the limited amount of space. A recommendation of constructing square or rectangular shaped buildings was made to allow for an easy addition of classrooms if needed. Haitian school already go to school in two shifts (primary school in the morning and the older grades in the afternoon), using the buildings to their full potential; making the only real solution for needing extra classroom space is to build more classrooms. Building classrooms that are composed of four basic walls and a roof are not expensive to build by American standards, but additional funding would be necessary for the school to make this a reality.

The need for noise control emerged as another challenge for Haitian schools. As discussed above, the majority of Haitian schools lack a sufficient number of classrooms and multiple classes are forced to share the same classroom space creating the need to control noise. In order to relieve this problem a recommendation was made to orient the seating so students are not facing each other if more than one class was forced to share the same space. If the school was able have individual classrooms it was recommended to place some sort of insulation on or between the walls to help reduce the noise levels.

The seventh emergent theme was the problem with controlling heat in the buildings. Haiti’s warm climate necessitates heat-controlling techniques in school buildings. The idea of placing vent space between the walls and roofs of the school was recommended to allow the hot air to escape. Also orientating the building so that
the short sides of the buildings face directly west and east to minimize exposure to the strong afternoon sun helps in controlling the heat. Also, planting trees for shade would help to cool the buildings and could provide additional benefits such as food production and a learning opportunity for the student about agriculture, if fruit trees were planted.

Another extremely important issues was the need for restroom facilities in the schools. Utilizing rainwater harvesting techniques would allow schools to be able to use flushable toilets, which would be the best situation. If the schools were unable to use flushable type toilets, building outhouses away from the main classroom area would provide a solution. A simple latrine type restroom area such as the Ventilated Improved Pit (VIP), as discussed in chapter two, would provide a restroom facility and also address sanitation and odor concerns.

The next theme that surfaced was the need for personal space and personalization for the students in the schools. Giving the student a personal space in the classroom allows for an increased sense of belonging for them. This in turn can give increased motivation for the student to return to school each day. A purposed solution for the addition of shelving or cubbies in the classroom for each child was made to give them their own space for personal belongings, such as lunch sacks brought to schools, or for completed schoolwork. Also, hanging student work from the walls or ceilings can help create a sense of belonging and pride in their schoolwork.

The final emerging theme was the need for porches or shaded areas. During the day the classroom temperature can get very high and having a covered porch or shaded areas around the classroom would provide a place for the students and teachers to find some relief from the heated classrooms. Bamboo was suggested as a possible low cost, available resource in Haiti to construct these porches.

**Recommendations for Further Research**

Haiti’s economic struggles and poverty levels are long-term issues that need careful attention and consideration. Education is just one area in Haiti that is neglected and poorly funded. Many other areas of everyday life that Americans take for granted are not available in Haiti. In Port-au-Prince, a city with a population of approximately
three million people, even before the earthquake of January 2010, was currently without consistent electricity or any working traffic lights. Haitians value education and see it as a way out of poverty and into a better life. The majority of the educational facilities in Haiti are in very poor condition and the recommendations made are just the first of many steps to be taken in order to create better functioning, higher quality schools.

In this study, specific costs involved in the recommendations were not calculated but the recommendations were aimed to provide additional benefits at very little or no additional costs. Future research should take these first initial steps and hopefully expand them and build them into prototype schools where these recommendations are used. The hopes for such prototype schools are for them being low enough in cost and great enough in benefits to be built in mass around the country.

**Final Thoughts**

The purpose of this research was not necessarily to find groundbreaking techniques for building schools in underdeveloped nations but more as a way to raise awareness of the poor conditions of primary schools around the world and especially in Haiti. It is easy to get caught up in the fast pace of the American lifestyle and the research and developments of new technologies to make life easier. I feel strongly that it is important to step back for a minute and consider those less fortunate and unable to receive even the basic necessities of life.
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 · FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 12/7/2010

To: Leslie Hallquist

Dept.: INTERIOR DESIGN

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
Exploring Best Practices for Building Primary Schools in Haiti

The application that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be Expedited per 45 CFR § 46.110(7) and has been approved by an expedited review process.

The Human Subjects Committee has not evaluated your proposal for scientific
merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 12/5/2011 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.
This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is IRB00000446.

Cc: Lisa Waxman, Advisor
HSC No. 2010.5246
APPENDIX B

Florida State University Behavioral Consent Form
Exploring best practices for building primary schools in Haiti

You are invited to be in a research study of the building facilities of schools in Haiti. You were selected as a possible participant because of your knowledge concerning Haitian school facilities. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by Leslie Hallquist, a masters student in Interior Design at Florida State University.

Background Information:

The purpose of this research study is to examine the educational facilities in Haiti and other underdeveloped nations worldwide and to explore the best practices solutions in regard to school design for underdeveloped countries. The primary question of this research is: What are the best methods for building schools in Haiti considering their economy, climate and culture?

Procedures:

If you agree to be in this study, we would ask you to do the following things

- Participate in a personal interview about the current conditions of Haitian school and suggestions on improvements for the schools.

Length of Time:

If you agree to be in this study, the interview process will be limited to no more than 30 minutes.

Risks and benefits of being in the Study:

The study has few risk associated with those involved. The names of those interviewed will be recorded only by the researcher and then coded with a number. The researcher will not use real names in the final research. If information gathered from this interview is cited in the final research a number or a name with no resemblance your real name will be used instead.

It is important to keep a link between the information and identifies (real names) in order to keep clear and accurate records of interview responses. Any notes with identifiers will be only seen by myself, the researcher, and will be stored in a locked cabinet. Interview information will be put into digital form into the researcher's personal password protected computer by the researcher. The link between the information and any identifiers will be kept until the researcher's
thesis defense in spring 2011 then will be deleted and destroyed by the researcher.

There will be no direct benefits for those interviewed. The purpose of the study is to raise awareness about the educational systems and buildings in Haiti and to design a best practices example of a school for Haitian children.

Compensation:

You will not receive any form of payment or compensation for participation in this study.

Confidentiality:

The records of this study will be kept private and confidential to the extent permitted by law. In any sort of report we might publish, we will not include any information that will make it possible to identify a subject. Research records will be stored securely in a locked cabinet and only researchers will have access to the records.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Florida State University or Missionary Flights International. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

Contacts and Questions:

The researcher conducting this study is Leslie Hallquist. You may ask any question you have now. If you have a question later, you are encouraged to contact them at [redacted]. If you prefer to contact my advisor, Dr. Lisa Waxman, you may do so at (850) 644.8326 or lwaxman@fsu.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the Florida State University Institutional Review Board at 2010 Levy Street, Research Building B, Suite 276, Tallahassee, FL 32306-2742, or 850-644-8633, or by email at humansubjects@magnet.fsu.edu.
You will be given a copy of this information to keep for your records.

**Statement of Consent:**

I have read the above information. I have asked questions and have received answers. I consent to participate in the study.

_________________________     _____________
Signature                        Date

_________________________     _____________
Signature of Investigator        Date
APPENDIX C

INTERVIEW QUESTIONS:

1. What are the current conditions of schools in Haiti?
2. What are the greatest needs for primary schools in Haiti?
3. What aspects of your school building do you wish you could improve?
4. What aspects of your school building work well to facilitate learning?
5. What is the ideal classroom size for primary schools in Haiti?
   a. How many children would it accommodate?
6. Does your school provide a facility to serve the children food?
   a. If yes, how well does it work for its intended use?
7. How does your school address Haiti’s unstable electricity grid?
8. How does your school address the hot climate in Haiti?
9. How does your school utilize the building materials available in Haiti?
APPENDIX D

PRESIDENTS OF HAITI, 1804 TO PRESENT

<table>
<thead>
<tr>
<th>President</th>
<th>Year(s) in office</th>
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<tbody>
<tr>
<td>Jean Jacques Dessalines</td>
<td>1804-06</td>
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<td>Henri Christophe</td>
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<td>Suicide</td>
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<td>Alexander Petion</td>
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<td>Jean Pierre Boyer</td>
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<td>Riviere Riviere-Herard</td>
<td>1843-44</td>
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<td>Philippe Guerrier</td>
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<td>Jean Louis Pierrot</td>
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<td>Jean Baptiste Riche</td>
<td>1847-47</td>
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<tr>
<td>Faustin Soulouque</td>
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<td>Fabre Nicholas Geffrard</td>
<td>1859-67</td>
<td>Overthrown</td>
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<tr>
<td>Sylvain Salnave</td>
<td>1867-69</td>
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<td>1870-74</td>
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<tr>
<td>Michel Domingue</td>
<td>1874-76</td>
<td>Overthrown</td>
</tr>
<tr>
<td>Canal Boisrond</td>
<td>1876-79</td>
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</tr>
<tr>
<td>Lysius Felicite Salomon</td>
<td>1879-88</td>
<td>Overthrown</td>
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<tr>
<td>Francois Legitime</td>
<td>1888-89</td>
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<tr>
<td>Florvil Hyppolite</td>
<td>1889-96</td>
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<tr>
<td>Tiresias Simon Sam</td>
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<td>Alexis Nord</td>
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<td>Antoine Simon</td>
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<td>Cincinnatus Leconte</td>
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<td>Tancrede Auguste</td>
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<td>Michel Oreste</td>
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<td>Oreste Zamor</td>
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<td>Status</td>
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<td>Sudre Dartiguevave</td>
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<td>Élie Lescot</td>
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<tr>
<td>Frank Lavaud</td>
<td>1946</td>
<td>Provisional</td>
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<td>Dumarsais Estimé</td>
<td>1946-50</td>
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<td>Paul Eugène Magloire</td>
<td>1950-56</td>
<td>Overthrown</td>
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<td>Joseph Nemours Peirre-Louis</td>
<td>1956-57</td>
<td>Provisional</td>
</tr>
<tr>
<td>Franck Sylvain</td>
<td>1957</td>
<td>Provisional</td>
</tr>
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<td>Executive Government Council</td>
<td>1957</td>
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<tr>
<td>Antonio Thrasybule Kebreau</td>
<td>1957</td>
<td>Chair, military council</td>
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<td>1957-71</td>
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<td>Jean-Claude Duvalier</td>
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<td>Henri Namphy</td>
<td>1986-87</td>
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<td>Lesli Manigat</td>
<td>1988</td>
<td>Overthrown</td>
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<td>Henri Namphy</td>
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<td>Prosper Avril</td>
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<td>Overthrown</td>
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<td>Etha Pascal-Trouillot</td>
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<td>Jean-Bertrand Aristide</td>
<td>1991</td>
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<tr>
<td>Joseph Nerette</td>
<td>1991-92</td>
<td>Provisional</td>
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<tr>
<td>Marc Bazin (acting prime minister)</td>
<td>1992-93</td>
<td>Interim</td>
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<tr>
<td>Émile Jonassaint</td>
<td>1994</td>
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<td>Jean-Bertrand Aristide</td>
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<td>Finished remainder of term</td>
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<td>Rene Préval</td>
<td>1996-2000</td>
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<td>Jean-Bertrand Aristide</td>
<td>2000-04</td>
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</table>
LIST OF REFERENCES


BIOGRAPHICAL SKETCH

Leslie Jane Hallquist was born in Seoul, Korea and raised in Palm Beach Gardens, Florida. She received her Bachelor’s of Science degree in Business Administration from Gardner-Webb University in Boiling Spring, North Carolina. After graduating she decided to pursue her interest in Interior Design and enrolled in the Florida State University’s Interior Design graduate program in August of 2008. Her interests lie in commercial and sustainable design, but hopes to still pursue her passion for helping underprivileged children in developing and impoverished countries. Leslie will graduate with a Masters of Fine Arts degree in spring of 2011.