

PEDAGOGICAL METHODOLOGY & ARCHITECTURAL FACILITATION

by

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April 2010

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ABSTRACT

Pedagogical methodology has rarely been considered as a driving force in educational facilities planning and design. Because of constantly changing learning modalities, state standardization of learning and incredibly diverse educational demographic, designing learning spaces that support various pedagogies is paramount if our students are to succeed in the knowledge-based economy. From its beginnings as the rural one-room school house to the contemporary single volume, teaching and learning methodologies are continually changing and adapting to contemporary necessity. Little emphasis has been placed over the qualitative aspects of facilities planning, and how children may benefit from varying spatial environments. No practical and consistent concept of open-space learning has ever been established when considering open-concept education. This is the fundamental tenet to this master's thesis.

This thesis will analyze contemporary learning methodologies with particular emphasis on physical learning and the transition to digital learning. Through the analysis of varying pedagogies specific qualitative themes, modalities, and hierarchical mechanisms will be made known and the architectural design strategies will draw upon these themes. The thesis presents information necessary to designing within a neighborhood sensitive to history and place. The rich significance of place in the Mississippi/Yazoo Delta will be a driving force in the design of a K-6 Elementary school to replace the existing school. The thesis will additionally draw upon the analysis of various precedents, demographic studies, site analyses, and code analyses to establish an architecture rich in character and performative qualities necessary for growing minds.

NEWSPAPER ARTICLE

CITIZEN RESPONSIBILITY

The following article was published on November 8, 2009 by the *Memphis Commercial Appeal*. The article validates the urgency that new schools are required in the Delta. School design, effective teaching methodologies, and determined teachers must be a priority if the Delta is to survive as a contributing factor in the growth of the United States educational system.

EDITORIAL: THE DELTA’S SOCIAL MORASS
Numerous studies and initiatives have failed to cure the Delta’s economic stagnation. It’s time to focus on the area’s youth.

POSTED NOVEMBER 8, 2009 BY THE MEMPHIS COMMERCIAL APPEAL.

The Mississippi River Delta region can’t shake the poverty, education and health blues that has crushed the area for generations.

As writer Roland Klose reports in today’s “Viewpoint” cover story, despite numerous reports, studies and economic initiatives, the region remains mired in a persistent muck of social ills.

And, the situation is worsening.

Mention the Delta to most Greater Memphians and they likely will think of the region in the state of Mississippi that writer David Cohn said stretched “from the lobby of The Peabody in Memphis to Catfish Row in Vicksburg.”

But the greater Delta actually encompasses more than 200 counties and parishes that stretch along both sides of the Mississippi River from southern Illinois to the Gulf of Mexico.

It is an area where a nearly 20 percent poverty rate (1.6 million people) affects black and white residents alike. It’s an area of high unemployment and underemployment, low educational attainment and high rates of obesity, which sprout related ailments such as diabetes, hypertension and heart disease. And the region steadily has been losing population.

That fact raises an important question. How many resources should be pumped into a region that people are moving from? Would it be better to direct those resources to areas of the Delta, such as Greenville and Cleveland in Mississippi, that are doing well, with the hope that those areas will serve as anchors of

opportunity for residents who live near them?

Those are tough questions with no easy answers.

While policymakers and politicians ponder those questions, we urge them to focus on the Delta’s children. Concentrate resources to make sure that they have a bright future, whether that future is in the Delta or some other place.

Make sure they receive an adequate education, from pre-kindergarten and kindergarten classes through elementary and secondary education.

Make sure the resources are available for them to attend a two-year or four-year college or university.

Make sure they have access to adequate health care and housing.

If these things can be accomplished, many of the social ills that drag the Delta down can be greatly reduced, including the number of young folks who become pregnant as teenagers or turn to crime.

If they decide to move out of the Delta, they’ll be well prepared to become prosperous and responsible citizens.

If they remain in the Delta, they’ll become part of a prosperous, educated foundation that can eventually attract the kind of high-wage jobs that have eluded the area for generations.

The Delta, while rich in its own special culture, is a creature of its own history – a history that for too long was steeped in fertile soil and poverty, aggravated by racism. It spawned an agrarian society of haves and have-nots, which did not foster a middle class.

That legacy has been hard to overcome. We think a good start toward accomplishing that is to concentrate on preparing the Delta’s children for a bright future.¹

NOTES

¹ “Editorial: The Delta’s Social Morass.” News - Editorial. The Memphis Commercial Appeal, 8 Nov. 2009. 9 Nov. 2009. <<http://www.commercialappeal.com/news/2009/nov/08/editorial-the-deltas-social-morass/>>.

INTRODUCTION

A PROJECT OF URGENCY

**THE PROBLEMS
ASSOCIATED WITH OPEN-
CONCEPT EDUCATION IN
ELEMENTARY SCHOOLS
IN CLEVELAND,
MISSISSIPPI ARE
NOT COMPLETELY
PEDAGOGICAL,
BUT RATHER
ARCHITECTURAL.
PEDAGOGY, PLACE,
AND COMMUNITY
OWNERSHIP ARE
METHODS TO CREATE
ARCHITECTURAL
OPPORTUNITIES IN THE
MISSISSIPPI-YAZOO
DELTA.**

ARCHITECTURE, SINCE THE BEGINNING OF TIME, has been a tool for elevating man's spirit above natural circumstances of habitation. Architecture is a vessel by which we carry on our traditions, raise our families, and advance our technological and information systems. It is a manufactured social concept for the advancement of our culture and character. However, there are some instances where architecture creates problems in spite of the best social intentions. The design of a building may actually inhibit rather than promote the goals associated with its purpose. Architectural interventions then become necessary to create a paradigm shift in our perception of how space and its function affect people. The processes by which we are able to qualify spaces of utility become beneficial to social and moral paradigms.

Educational architecture is a recent development in our creation of space. For many years, educational architecture has had little consequence on the development of young minds. Historically, education was a localized community institution where one-room schools provided complete instruction to multiple age groups and individual learning abilities (*fig. 0.1*). Colleges and boarding schools have established educational independence and formed a fluid transition from adolescence to adulthood. Only recently, with the development of different pedagogical systems has there been emphasis placed on the form and function of the classroom. The Socratic method of teaching relied upon democratic functions where students were asked to participate spatially separated from one another. This led to the creation of the traditional classroom model where classes are organized linearly in separate spaces (the egg-crate plan). The recent desegregation of the educational system in the United States created different pedagogical systems where children would be exposed to unique learning environments to learn the same information in different ways. This experimentation created different educational models based on varying levels of student/information interaction. Open-concept education is one of the more socially unifying systems (*fig. 0.2*).

Open-concept education was developed in the 1960s as a way of equalizing (some may say socialize) the educational process for elementary schools. The primary goal was to create a process for students to form individual inquiries while learning cooperatively with the group and hence formulate ideas about their world as a unified whole. Open-concept education led architects, engineers, and educators to prematurely reorganize schools into monolithic open-plan spaces where children would be exposed

**LEFT - FIG. 0.1**

One-room school in Maryland

<http://cicotello.com/Pictures%20and%20Information/USA/States/Maryland/Historical%20Markers/One%20Room%20School/One%20Room%20School.jpg>

**ABOVE - FIG. 0.2**

Antiquated educational model for young students

http://www.amishfarmandhouse.com/fig.s/2006_0515fig.0040_qfvd.jpg

to one another and thus be more socially inclusive (*fig. 0.3*). The classes are separated not by walls and doors, but by acoustic partitions and the hope of quietly attentive students. The primary goal was to foster an educational environment where students from different grades would be encouraged to pursue new information while the exposure to previously learned information would be used as a mnemonic tool. Students would then respond as one through the material being presented and arrive at similar conclusions. Students from other classes are consequently exposed to the activities conducted in other classes, a considerable distraction for young minds focused on their own studies.

Many architectural problems arose from the premature and superficial study of this educational concept. Current problems that plague open-concept schools are not unique to place but are endemic in the relationship between pedagogy and architecture. Architectural problems associated with open-concept schools include noise, unsustainable environmental conditions with high maintenance costs, inflexibility, and no possibility for expansion with a growing student body. These generalizations have led many open-space schools to be compared to prison architecture. These problems exist throughout the nation's aging open-concept schools. New architectural moments will help foster an educational experience beneficial to pedagogical methods (*fig. 0.4*).



The location for this architectural master's thesis is Cleveland, Mississippi. Cleveland is a city of 13,841 people (50% white, 48% Black) with a history rich in cotton planting, railway development, and the "Blues Trail" (*fig. 0.5*). Cleveland is the location of Delta State University, a four-year institution offering higher education to Delta communities. The city of Cleveland, being in the Delta, one of the poorest regions in the nation, has suffered tremendous economic stress under the fall of the cotton empire and the exodus of many industries. This economic disparity has directly affected the condition of public buildings in Cleveland. The newest school was constructed in the early 1970s, and all schools (six elementary, two junior high, and two senior high) are in serious disrepair. The district's educational system is inefficiently designed and socially and economically biased. Teachers continue to educate some of the brightest students in the state and some schools have attained both Magnet and International Baccalaureate status.¹

Many of Cleveland's problems are associated with the *de facto* urban fabric. Based upon traditional Delta urban planning, the town is segregated into black communities and white communities, separated by Highway 61. Both the black and white neighborhoods have their own elementary, middle, and high schools on separate sides of town. Though busing is utilized, the communities remain socially and economically divided. As an outside observer drives through both communities, it is evident that the problems of wealth displacement and inopportunity are racially motivated. Racial politics still play a large part in Delta communities and may be a problem with no prescribed solution. Only mitigating devices may alleviate some of the inequity in Cleveland. Architectural solutions may provide this massive change. The proper situation of the building, typology used, and phenomenological qualities of architectural space will provide the black community with ownership and pride.

Both the black and white communities operate schools with considerable problems. The local educational system is beginning to erode due to lack of attentiveness and discipline from students (a result of the existing architecture). Teachers find it to be a burden on their students when one unruly child disrupts the school. Delta schools rank in the lower national percentile for teacher salaries. Certified teachers are a privilege rather than a right. University seniors are frequently asked to proctor state exams and students teach for no credit or pay. They devote personal time to children who have an instinctive thirst for knowledge. Cleveland teachers in describe conditions that are in desperate need of change to benefit their students' futures. A particularly striking quote from facilities planner Prakash Nair states:

As we move into the post knowledge economy, we should be looking beyond the "knowledge worker" who is now a global commodity. Our most valuable export as a country will be creativity and innovation....²

OPPOSITE LEFT - FIG. 0.3

Socially inclusive group learning

http://www.eduxcell.com/fig.s/nwrel_33.jpg

OPPOSITE RIGHT - FIG. 0.4

Cypress Park Elementary, Cleveland, Mississippi

Personal photograph

RIGHT - FIG. 0.5

Downtown Cleveland, Mississippi on the west side of Highway 61

Personal photograph



In May and October 2009, the author was able to conduct site visits to several elementary and middle schools in Cleveland provided by a substantial scholarship. The conditions observed led to the conclusion that many problems within the educational system are not entirely pedagogical but rather architectural. Many teachers and administrators interviewed described problems associated with the architecture of the schools rather than the methodology of teaching. Noise, environmental controls, and lack of spatial definition are common problems noted. A longtime friend, Jessica Lockwood, is a student at Delta State University and is a student teacher at Cypress Park Elementary. The school is located in the black neighborhood. This school is the target demographic for this thesis. She describes her students as willing to learn but without the proper means. Architecture is a contributing factor to these problems and is thus the solution. Cypress Park is a single example of the larger problems associated with the condition of the educational system. The community deserves consideration for the design of a new school to advance the educational opportunities of students (fig. 0.6).

The Delta is a temporal instance of intimately connected families who easily relate to one another to promote the general welfare of the group. This is characterized by the sociological concept of *Gemeinschaft*.³ *Gemeinschaft* is a localized structural device in which the actions of individuals are oriented to the large community association. This belief encourages the design of a new school to reinforce community ties with the hope of alleviating some of the economic and social pressures associated with racial inequity. Human geographers believe this proposal may encourage racial synergy and promote community development and temporal ownership (fig. 0.7).⁴

Secretary of Education Arne Duncan stated, “If we are to put an end to stubborn cycles of poverty and social failure, and put our country on track for long-term economic prosperity, we must address the needs of children who have long been ignored and marginalized in chronically low-achieving schools.”⁵ This generalized statement describes ambitious national educational and economic goals, but solutions specific to place and community offer a more proactive approach to local problems. Historically the Delta has never been supportive of federal intrusion into their lifestyles. Major historical events including the Civil

War, New Deal farm policies, school desegregation, and the Civil Rights movement has led the Delta to be hesitant towards Federal oversight in local matters. The belief in a local solution has led to engaging dialogue over the condition of schools. A famous quote by Scottish town planner Patrick Geddes states:

Think globally, act locally. ‘Local character’ is thus no mere accidental old-world quaintness, as its mimics think and say. It is attained only in course of adequate grasp and treatment of the whole environment, and in active sympathy with the essential and characteristic life of the place concerned.⁶

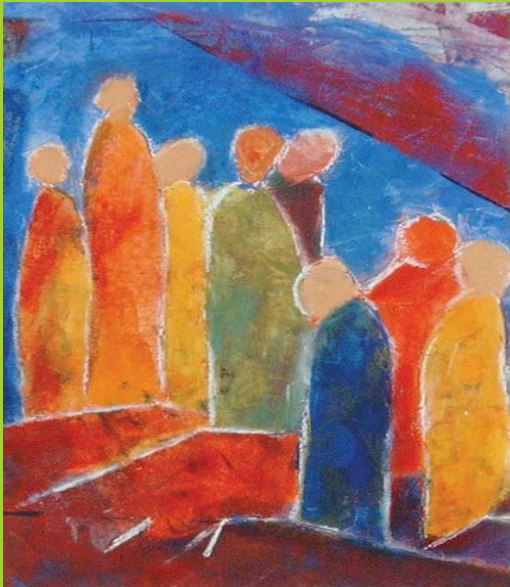
This quote is a method for addressing architectural problems to pedagogical issues specific to place and community. Local support has been generated within the teaching community in Cleveland through the interviewing process, and as one educator commented, “An outside perspective may inform the local community of its problems and possible solutions better than we can.”⁷ This thesis will strive to enrich the local community with architecture sensitive to the Delta’s temporal place and promote the growth of globally connected students.

“IF WE ARE TO PUT AN END TO STUBBORN CYCLES OF POVERTY AND SOCIAL FAILURE, AND PUT OUR COUNTRY ON TRACK FOR LONG-TERM ECONOMIC PROSPERITY, WE MUST ADDRESS THE NEEDS OF CHILDREN WHO HAVE LONG BEEN IGNORED AND MARGINALIZED IN CHRONICALLY LOW-ACHIEVING SCHOOLS.”

BELOW - FIG. 0.6
East Cleveland, Mississippi
Personal photograph



BELOW - FIG. 0.7
Watercolor abstracting Gemeinschaft
http://www.farb-ton.net/bilder/bilder/in_der_Gemeinschaft.jpg



NOTES

¹ “Cleveland, Mississippi.” *Stats about all US cities*. Advameg, Inc., 2003-2009. 9 Sept. 2009. <<http://www.city-data.com/city/Cleveland-Mississippi.html>>.
² Nair, Prakash, and Fielding, Randall. *The Language of School Design Design Patterns for 21st Century Schools*. DesignShare, Inc., 2005. 19.
³ “Gemeinschaft and Gesellschaft.” *Encyclopædia Britannica*. 2009. Encyclopædia Britannica Online. 10 Oct. 2009 <<http://www.britannica.com/EBchecked/topic/228066/Gemeinschaft-and-Gesellschaft>>.
⁴ “First Interview with Dr. Alan Barton.” Personal interview. 13 Mar. 2009.
⁵ Abrevaya, Sandra, and John White. “Obama Administration Announces Historic Opportunity to Turn Around Nation’s Lowest-Achieving Public Schools.” *Press Releases*. U.S. Department of Education, 26 Aug. 2009. 29 Nov. 2009. <<http://www.ed.gov/news/pressreleases/2009/08/08262009.html>>.
⁶ Veryard, Richard. “EA: Think Globally, Act Locally.” *Richard Veryard on SOA*. 12 June 2009. 12 Sept. 2009. <<http://rvsoapbox.blogspot.com/2009/06/ea-think-globally-act-locally.html>>.
⁷ “Interview with Mark Bonta.” Personal interview. 14 Mar. 2009.

HISTORY OF THE DELTA 1

1.1 – EARLY DELTA HISTORY

HOW CAN WE
DESIGN A
BETTER
FUTURE
WHEN WE DO
NOT
UNDERSTAND
WHAT LED US
TO TODAY?

THE HISTORY OF THE DELTA is incredibly diverse on a local scale, and it is important to explore and understand the major generative mechanisms for the social, political, economic, and educational inequality found in this once prosperous region. Because Cleveland lies in the Delta, and remains a center for growth in the region, especially Bolivar County, the historical information presented may seem slightly reductionist when comparing the scale of this modern city to the smaller towns found nearby. However, Cleveland is not exempt from the forces that helped shape the region, and may actually have been a proponent of many policies because of its size and influence on local and regional commerce. Many of the current social and economic policies defining demographic groups are the accumulation of generations of sweeping racial decisions to elevate one economic and social class over the other. Understanding the development of education between these different groups may be traced from a thorough investigation of local history. Some social scientists and human geographers have led the Delta to be labeled “The Most Southern Place on Earth” (*fig. 1.1 and 1.2 represent a comparison of contrasts in Rosedale, MS*).

Though initial development of the town of Cleveland did not occur until 1869 with the shift of people from the banks of the Mississippi River to the newly cleared inland plantations, the region had already had an incredibly rich history as one of America’s greatest aristocracies and one of America’s greatest social tragedies. Cleveland was chartered as a town on March 25, 1886, and the United States Post Office officially recognized the town on August 5, 1887. The town of Cleveland was permanently named after President Grover Cleveland in the late 1800s, but was formerly known as Fontaine, Sims, and Coleman’s Station prior to that. Timber, cotton, and other commercial goods were the major industries that developed along the Mississippi river. This allowed other upriver cities to develop as transportation hubs and “jumpin-off-points.” Communities such as Rosedale to the west of Cleveland, and Greenville to the southwest developed as trade intersections. Cleveland began its major commercial and political development during the late 1880s with the introduction of the Louisville, New Orleans, and Texas Railroads and the expansion of plantations from the river to the burgeoning commercial center. To take a step back, the development of Cleveland can be attributed to the broader development of the Delta and will be explored further.

As a set of rural communities and plantations in lowland swamps and forests, the Delta had to be cleared out by hand for nearly a century before any serious development could occur. Native Americans had known for centuries of the potency of the Delta’s lush vegetation. The basin’s humid subtropical climate

**LEFT - FIG. 1.1**

Rosedale, Mississippi is a typical Delta town with extreme architectural differences resulting from economic disenfranchisement.
Personal Photograph

**LEFT - FIG. 1.2**

Downtown Rosedale, Mississippi, with a once prosperous commercial district.
Personal Photograph

OPPOSITE - FIG. 1.3

Delta swamp with its regenerative soil.
<http://www.cas.vanderbilt.edu/bioimages/biohires/ecoregions/h50404bottomland-forest15843.JPG>

allowed for the substantial growth of a verdant blanket of vegetation that include tupelo, cypress, sweet gum, sycamore, poplar, maple, hickory, ash, magnolia, cottonwood, and slash pine. These hardwoods were used in the construction of many buildings in the plantation kingdom and continue to be a source of value to forested plantations. The thick forest and abundant water provided prime habitat for many species of big game, including deer, boar, bear, and even panther. These animals gained much of their sustenance from the substantial undergrowth that flourished in the rich, alluvial soil of the Mississippi and Yazoo River Deltas. Because of the rapid rate of decomposition in this climate, the soil only grew more potent with each successive changing of the seasons (*fig. 1.3*).

The first Europeans to engage the local Coahoma Indians were the Spanish, led by Hernando de Soto in 1539, nearly two hundred years before the first colonist would consider planting crops. De Soto and successive explorers found the swamps and forests to be nearly impossible to navigate, and found nothing but plentiful game and a sea of green. At the end of the French and Indian War, the territory of Mississippi came under control of the British who saw it as nothing more than frontier and designated it as exclusive to the Native Americans. Significant clearing of this impenetrable frontier did not occur until the organization of the Mississippi Territory in 1798, though much of the population lived along the Mississippi River and the southern Gulf Coast near the gentrified French cities of New Orleans and Biloxi. Relatively few travelers dared to venture within the seething entanglement of vines and undergrowth; however, this did not halt a hearty few prospectors seeking to strike it rich in the golden earth (*fig. 1.4*).



As the early United States grew ravenous for an exploding cotton market in the early 1800s, the Delta's bountiful soil became too enticing to ignore. The major driving force behind the clearing of the Mississippi/Yazoo Delta was the introduction of slave labor to the thick forest, something that early colonies and states like South Carolina, Georgia, and Virginia clearly understood. The only access into the Delta was via the Mississippi River, as overland routes did not yet exist that far into the interior of the country. The first settlements occurred exclusively along the banks of this great waterway. Many of the great cotton plantations that would develop from these initial settlements were formed by middle-upper class planters with a thirst for exploration and a hearty attitude. Few understood the hardships that awaited them, as the publicity generated from early exploration was limited to inner circles of friends and relatives. Many settlers did not bring their families until later years for many reasons. The heat and humidity of summer was incredibly oppressive, and the intensive labor required maintaining the land was exhausting on women and young children. Therefore, their best tool was the servant labor they already possessed in the east coast tobacco fields.

Slave labor was the primary tool being utilized in the clearing of land in the Delta, as it was readily available and cost effective. The promise and acquisition of great wealth in the Delta also helped to create the first regional aristocracy. Because of racial propriety, white settlers rarely tilled the soil or cleared the woods as intensively as their slaves did, and this created the first economic and social exclusions in the Delta. The first white settlers did not anticipate the creation of a distinctly separated racial class, but the social influence from Louisiana and entrenched sentiment between differences between whites and blacks exacerbated this situation (*fig. 1.5*).

This early separation of racial occupation was not based upon innate racial discrimination but instead by biological comparisons. To whites, it was evident that their slave labor could out-work them because of physical stamina and a high tolerance for the environmental conditions present in the Delta. This was never a problem from the perspective of the planters, as their primary goal was the greatest net

profit possible, and sometimes at the cost of the health and safety of their workers. Planters simply saw their slaves as humans without recognizable attributes and property that needed continual maintenance and oversight. The dehumanization of slave labor allowed Delta planters to generate tremendous income through dispassionate ownership.

As the Mississippi Delta was being cleared of its forests, its first plantations organized and the cotton industry began to explode. Exports grew rapidly. The publicity generated by the sale of massive quantities of handpicked cotton in the eastern states enticed many local farmers and business owners to consider a westward journey. Inevitably, the cotton kingdom exploded with a tremendous influx of coastal migrants and their slaves. Road networks were constructed, inland towns formed and grew, and more port towns on the Mississippi River grew into commercial centers, rather than being interchanges for transients. Basic economic networks were created, such as local tax systems and a cotton exchange to establish market prices in the world. The formation of these localized economic systems began to establish dominant plantations over smaller planter holdings focused around economic centers. Centralized towns like Greenville in Washington County began to rapidly develop around the major plantations, whereas the smaller plantations remained more remote.

With the development of these commercial centers came the development of a new localized social class, the aristocratic leisure class. Though much of the Delta remained undeveloped well into the mid 1800s, Delta planters used their newfound economic prosperity as a social mechanism for elitism. The number of slaves owned, the size of the plantation, and the frequency of parties both hosted and attended established this social elitism. Younger members of the Delta aristocracy held so many parties that such entertainment was often available several nights a week regardless of the planting season. It was thought nothing of to travel forty miles roundtrip if a good party warranted it. Additionally, frequent summertime visits to the mountains of the north or the seaside resorts of the east were socially expected, as the wives of planters considered the heat and humidity of Delta summers to be too oppressive to stay indoors. The



OPPOSITE - FIG. 1.4
Settling along the Mississippi River
<http://www1.assumption.edu/ahc/MississippiRaceLarge.JPG>



RIGHT - FIG. 1.5
A typical plantation home
http://www.grayline.com/GraylineAssets/images/franchises/neworleans_oakalleyfront2.jpg

planters would return to the Delta in October in time to hunt and ensure the summer's crop was well on its way to harvest, leaving the lower class white plantation managers to oversee the daily operations of the slaves (*fig. 1.6*).

These economic and social high times were not guaranteed in the Delta. Planting was a serious industry in a relatively inhospitable climate that required tremendous monetary, labor, and time investments to turn a profit. For example, hard times struck the cotton kingdom in 1857 with a dismal crop and declining demand for textiles. Relatively few planters were able to turn a profit, but that did not stop the socializing of the elite class. Parties and alcohol consumption was rumored to be at an all-time high and the reputation for excess continued. During that short period, a shift occurred in the consciousness among some Delta women concerning the image their children were beginning to acquire. Labor may have been designated solely for slaves, but the image of the Southern elite class in the North was tarnished by laziness and an air of pomposity, a gross generalization (*fig. 1.7*). A plantation mistress, Minerva Cook, announced her intention for her own children to "learn them to labor and do every kind of work, it is no degradation but a reconciliation I think and I intend to learn mine to work." The reflection on the economic slowing of the cotton kingdom led some women to want their children to contribute to the plantation's growth if the slaves could or would not.¹

The image of leisurely planter existence was in stark contrast to that of the slave's. The Delta was a place where slave labor was harder and more unrelenting than that of other slave states, such as Virginia or the Carolinas. Frederick Law Olmsted best stated that the lives of slaves were deplorable. "I found the lives and comfort of the Negroes, in the rich cotton-planting districts especially, habitually regarded, by all classes, much more from a purely pecuniary point of view than I had ever supposed they could be; and yet that, as property, negro life and negro vigor were generally much less carefully encouraged than I had always before imagined them to be."² Slaves were frequently reprimanded by their owners for even the smallest of infractions. Taking 15 minutes break during the harvest season would result in several lashings, or possibly even decreased rations for his family (*fig. 1.8*).

The slave community was exploited to the lowest levels socially and economically, but one of the greatest challenges they faced during their indenture was education. Slaves rarely received any form of



LEFT - FIG. 1.6

Delta slave auction

<http://www.sonofthesouth.net/leefoundation/civil-war/1861/july/slave-auction.jpg>

“RELATIVELY FEW PLANTERS WERE ABLE TO TURN A PROFIT, BUT THAT DID NOT STOP THE SOCIALIZING OF THE ELITE CLASS. PARTIES AND ALCOHOL CONSUMPTION WAS RUMORED TO BE AT AN ALL-TIME HIGH AND THE REPUTATION FOR EXCESS CONTINUED.”

BELOW - FIG. 1.7

Representation of the antebellum south

http://www.houmashouse.com/images/hi/antebellum_2.jpg



education for several reasons. The primary goal of slave labor was the relationship between time and profit. The more time devoted to the tenure of the season’s crop, the greater profit could be generated. The secondary reason was fear of an intelligent community rationalizing against slavery. Because slave owners were primarily focused on the labor output from their slaves, many owners denied slaves and their children proper education. For fear of questionable influence from outlying areas, owners denied slaves the ability to read, write, or have any relationship to what was then contemporary society. There was a fear that if slaves began to read or write, they would be distracted from their required duties in the fields. Children possibly could grow up to question the practice and exploitation of slavery in the Delta. Fear of northern publications informing slaves of the North’s attitude towards slavery would be disastrous, had they gained access to such ideas. These publications began circulating during the late 1850s prior to initial conflicts during the Civil War. News of the Underground Railroad was published in white newspapers during the early 1860s and was read by slaves who had secretly learned to read (*fig. 1.9*). Had cruel slave masters learned of their ability to read, many slaves would face severe penalties and possibly death. The Underground Railroad and the word-of-mouth distribution of its existence became an important tool and symbol of hope for slaves, and eventually led to the exodus of many slaves to the north with the help of various conductors, like Harriet Tubman (*fig. 1.10*).

BELOW - FIG. 1.10
Harriet Tubman
http://image24.webshots.com/24/4/10/56/132341056LDWntK_fs.jpg



BELOW - FIG. 1.8
Branding Delta slaves
<http://mrhureausclass.com/ushistory/slavery%202.jpg>



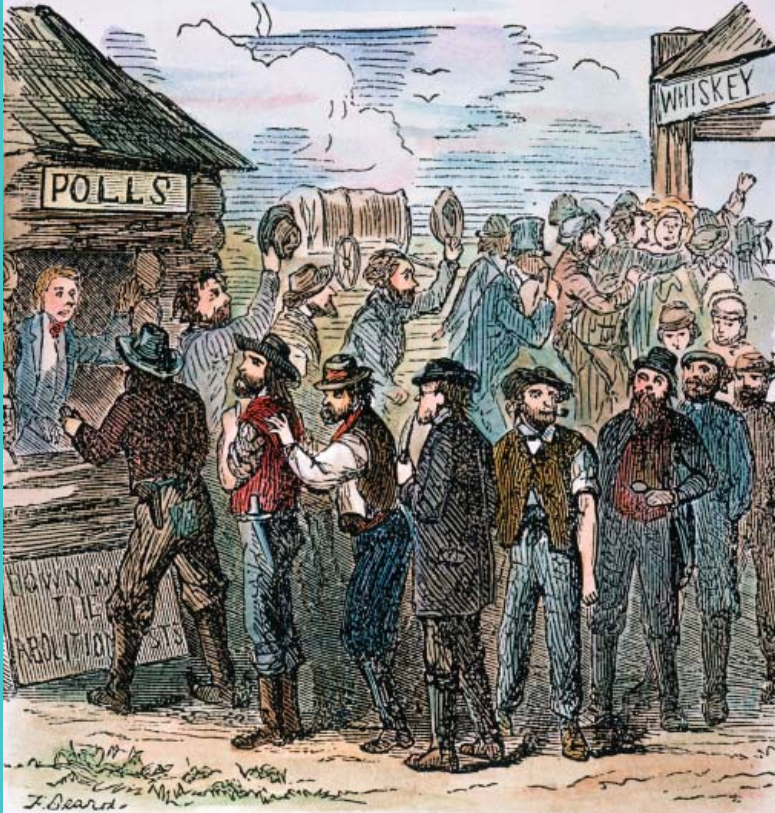
1.2 – CIVIL WAR, RECONSTRUCTION, AND THE DEVELOPING NATION

WITH THE EVENTS OF THE CIVIL WAR that occurred between 1861 and 1865, many institutions in the Delta were changing considerably, as were the rest of the country’s core beliefs in freedom. The abolition of slavery was one of the highlighted issues of the Civil War and additionally a desire for economic and social equality (*fig. 1.11*). The Civil War was considered by many slaves to be their road to salvation and the promise of freedom was enticing. The Emancipation Proclamation not only became a symbol of Lincoln’s brilliance but a way by which the ends were justified through war. Many slaves recognized the great opportunities that lay before them and promptly registered for the Union army and fought alongside soldiers in pursuit of freedom. Many Freedmen were prematurely guaranteed land and money once the war was over, which was more of a propaganda tool for the Union cause rather than a philanthropic act of civility. The early guarantee of freedom and the inability of whites to fulfill these promises during and after the Civil War brought a very different attitude and lifestyle to Delta blacks.

The great anticipation for a better life led many freedmen to strive for better lives. Some unfortunately found themselves at the wrong end of the law and between Confederate and Union forces. With the dissolution of the South’s most enduring social institution, anarchy and guerrilla violence spread throughout the Delta. Many blacks found themselves no longer under control of “masters” and questioned no authority. Reports of freedmen raping and pillaging the land and people they once worked for became frequent in the circles of white aristocracy.³ Great fear arose in the white community not just because of fear from Union soldiers but also because of the fear of an economic, political, and social uprising by African Americans who had never before been seen. Because of the ensuing violence that arose out of the anarchical influence of war, many freedmen were either shot or hung by both Union and Confederate soldiers. Many whites who were on the brink of losing their land to Union soldiers frequently paid them to protect their land and lives out of fear of rogue African Americans. Lawlessness was an unfortunate crisis that arose to fill the gap in the chaos and would not be tolerated by Union, Confederate, or private citizens (*fig. 1.12*).

Another problem that arose out of the dissolution of the slave system was the

OPPOSITE BOTTOM - FIG. 1.9
Slave return reward in St. Louis Newspaper
Citation not recorded

**LEFT - FIG. 1.11**

Abolitionist political cartoon

<http://wigwags.files.wordpress.com/2009/02/kansaspolling.jpg>
BELOW - FIG. 1.12

Violence against Freedmen

<http://wigwags.files.wordpress.com/2009/02/kansaspolling.jpg>


failure of the federal government to fulfill its promise of social freedom and economic equality. After the Union soldiers left the Delta and the war-torn south needed repair, a large quantity of jobs were created during the Reconstruction Era. These jobs ranged from cotton planters to teachers to rebuilding roads and bridges. As these jobs arose and were dispersed, many African Americans came to the front of the line with their eager work ethic and desire to begin making a living supporting their families. However, these jobs were reserved for white workers as they were placed into the control of local administrators. Numerous Union soldiers who remained in the south immigrated to the Delta seeking work with the end of the Civil War. Various firms, such as the Citizens' Council, controlled much of the labor allocation for these jobs. As they were localized, and local racism still prevailed, many of these jobs were promptly awarded to white citizens and not blacks.

One result of this job displacement was the rise of the sharecropper. Because many reconstruction jobs were given to white workers, many from the north, the only jobs remaining for the vast majority of Delta blacks were on the plantations they previously occupied. This was highly ironic, and put both whites and blacks in an awkward position. To compromise with federal oversight, white plantation owners superficially excused the disobedience of their former slaves, gave them the freedom they had newly won, and gave them their positions back on the plantation. Because these African American workers were guaranteed rights to property and wages, the newly formed position of the sharecropper arose (*fig. 1.13*). Plantation owners promptly gave their former slaves a piece of their land and some property in exchange for payment of rent, use of tools, and a share of their profit. As a tool to alleviate economic inequality, the practice of sharecropping seemed like a good idea, however, the accumulated costs of rent, tools, and land put the sharecropper at the lowest level of income. The plantation owner would purposefully fix the tenant's total costs to near nothing compared to the cost of living. After all revenue and expenditures were calculated, a very small profit may have been made, but was too low to see tangible economic growth. This sort of economic disparity would continue for generations under the sharecropping system, tenant labor on

RIGHT - FIG. 1.13

Young sharecropper on a Delta plantation

<http://www.historyforkids.org/learn/northamerica/after1500/people/pictures/sharecropper.jpg>


plantations, and later the threat of violence towards unionization in industry.

After the Civil War, in the late 19th and early 20th centuries, much had changed in terms of educational policy and development. As the economic systems of sharecropping and private labor gained traction, financial resources could be devoted to education of the African American community. Because financial resources were minimal, the only major shift in education in the African American community was who gained access to education. No longer were African Americans subject to the policies of denial to education by their white masters, though problems concerning the levels of access persisted. Rural African Americans still did not have any access to education, whereas commercial centers, such as Greenville and Cleveland began to acquire black schools (*fig. 1.14*).

Many rural sharecroppers still did not attend school, due to the distance of travel or cost to send students to public schools. Additionally, many young African American students were used as labor assistants to their families on farms to help their economic situation that frequently was at the level of extreme poverty. Countless African Americans did not have any form of literacy, which led to high levels of financial exploitation and labor mistreatment. Many plantation owners, banks, and other civic organizations frequently denied African Americans based on not being able to read and comprehend a loan application or credit system. The absence of literacy and economic exploitation of the African American community led to frequent evictions and repossession of property by landowners. This frequently included materials to educate youth. Once this property was repossessed by landowners for failure to pay for labor materials, young students had no access to education (*fig. 1.15*).

In the 1920s, Greenville, a booming commercial and industrial center in Washington County (located 45 minutes south of Cleveland), cited African American teacher salaries at thirty dollars per month as compared to fifty dollars in the white schools. This was a best-case scenario and a common theme throughout much of the twentieth century. Because of Greenville's status as an economic capitol in the Delta, the pay for African American teachers was considerably higher than in outlying rural areas (*fig. 1.16*). Towns like Indianola, Leland, and Boyle received considerably less, averaging around 15 dollars per month, and furthermore, severely remote areas of the Delta frequently did not have teachers or schools for sharecropping families.

A common complaint across the Delta concerned the refusal of white officials to open the black schools until the cotton harvest was substantially complete. A reporter found that in Leland, black schools were still not operating on November 17.⁴

As this kind of educational discrimination was endemic within the socio-economic framework, many students not only received little education and were provided with little chance for social and economic mobility. The most basic education African American students received was focused around literacy, mathematics, and basic science and history. Some vocational programs were also in place in high schools to allow for greater skills in emerging industrial jobs. Because landowners frequently required their workers and families to substantially complete the cotton harvest prior to beginning the school year, students could not get access to the education that may have increased their abilities in non-vocational and trade occupations.

The educational experience for Delta African Americans was limited to the resources provided in the classrooms. Teachers were the primary source for much of the materials provided by students. Books, desks, chalk, and paper were private expenditures not provided by the local school districts administered by white elites. Because of the severely undercut pay of teachers in the rural and remote areas of the Delta, these resources were often never available to students. The one-room schoolhouse model of education



ABOVE - FIG. 1.15

Sharecropper school

http://www1.cuny.edu/portal_ur/content/womens_leadership/exhibit/photos/sharecropper2.jpg

BELOW - FIG. 1.14

Sharecropper school in Arkansas

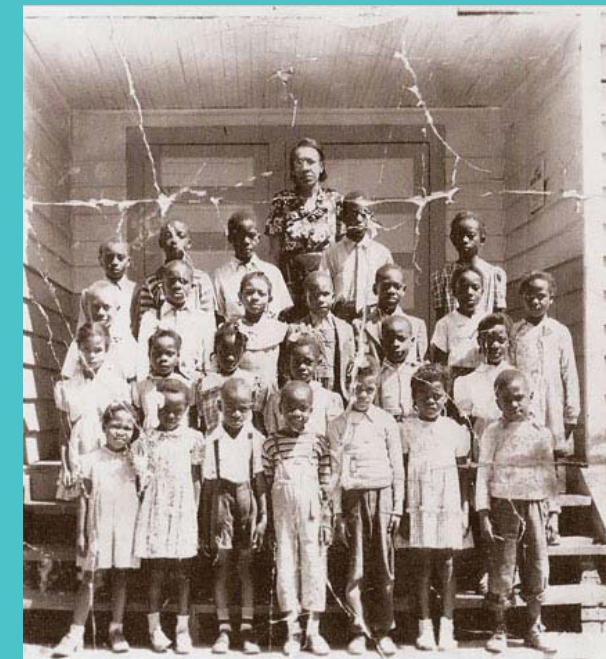
<http://newdeal.feri.org/images/s16.gif>



RIGHT - FIG. 1.16

Pine Grove Elementary, 1946

http://www.nytimes.com/slideshow/2010/01/14/us/201001schools_2.html



was typically an empty side-room in the teacher's private home. Students were limited to sitting on the floor and simply observing the teacher give the lecture, rather than participating through engagement of the information. Homework was never a concern of the teachers because students had no access to pencils or paper to send home with the students. Rural students were additionally never able to practice the information being taught because of the absence of a chalkboard and chalk (*fig. 1.17*). Mathematics became an abstract notion where the addition and subtraction of numbers was never fully conceptualized or practically utilized in the community. Literature was frequently taught through reading local newspapers or periodicals. Because many pre-civil rights era newspapers contained high levels of white propaganda in the Delta, the literary education of students also contributed to a feeling of continued racial repression and socio-economic immobility among African American youth. What was supposed to be beneficial to pedagogy inversely created deep feelings of resentment and hatred towards Delta whites. This later contributed to racial tensions and inevitably civil disturbances in the 1950s and 1960s. Additionally, white planters supported black churches far more readily than black schools, primarily because they believed that churches reinforced the status quo, whereas education contributed to black dissatisfaction. "The Negro should be taught to work with his hands ... rather than ... to conjugate Latin verbs."⁵

The main goals and expenditure of education in the first half of the Twentieth Century were limited to the white bourgeoisie. Many white schools in the Delta contained the financial and social resources necessary to educate students. State allocated money was utilized in white schools according to the total number of school age children regardless of color. White officials simply diverted a great percentage of that money that should have gone to black schools to the education of white pupils. This provided vast amounts of resources for science, history, and mathematics. Some white schools in Mississippi with the vast majority of resources allocated by the state were considered some of the highest performing in the nation. This capital was supplemented by wealth accrued with periods of high demand for cotton. Local school administrators were less concerned about a consistent educational philosophy and more focused on an agenda designed specifically to promote the development of the Delta in a manner that would serve their own ends as well. Education was seen as early propagation of biological, economic, and social



LEFT - FIG. 1.17

One-room school of a poor, rural sharecropper
http://1.bp.blogspot.com/_SSrRQXGMD8/SSQy8Ko61YI/AAAAAAAAE9k/N5wMPYy38yg/s400/Sharecroppers.jpg

BELOW - FIG. 1.18

Segregated school in New York in 1913
<http://ephemeralnewyork.files.wordpress.com/2008/10/classpicture1913.png>



exclusionary principles prior to the national and state standardization of curricula (*fig. 1.18*).

With all the negative aspects of the socio-economic structure in Delta schools, there were some points of significance worth noting. Ambitious Delta blacks saw education as the real key to their hopes of upward mobility for their children. The main investment that determined parents made in the education of their children was faith and the same hard working principles that helped them gain some level of economic independence from the caste system of the past. Several schools were built and furnished solely through the donations of time and labor by both parents of students and community members hoping to catalytically alter their own social position. Clifton Taulbert's mother taught eight grades in a one-room plantation school. She lacked any formal training as a teacher, but her tenacity led many students to success and altered the public's perception of what a quality teacher could be. The mothers of the community became supportive of her message and goals, and organized a program where they provided a hot lunch for the children each day. Miss Taulbert additionally organized a Christmas pageant wherein,

The children of tired fieldhands became angels, shepherds, and kings... The families crowded into the one-room building, their greased faces shining as they watched their children perform. I remember parents crying as the children recited their lines by memory.⁶

Though many Delta blacks faced severe economic and social disparity, they continued to make significant sacrifices to educate their children. Stories of Delta blacks who had managed to send their children to public school and university were rare, but inspiring to the larger community in general. One family, who lived with their eight children in a two-room shanty, had managed to send their oldest son to a local black college to earn his master's degree. The family did not have a portrait of Jesus Christ hanging above their hearth, but rather a portrait of their son in his graduation cap and gown. This kind of symbolism is a powerful image of the position and aspirations of Delta blacks.

Generally poorer African American schools in the rural Delta not only provided a basic level of services to their students and the community, but they failed to illustrate the importance of living a healthy lifestyle, a common theme in today's educational system. The Delta, during the first half of the twentieth century, was home to the nation's highest levels of infant mortality (some places averaged above 40.8 deaths per 1000 births in 1946 and 55.1 in 1965), malnutrition (it was very common for one child to only eat a single meal per day consisting simply of cornbread and beans), and severe vitamin deficiencies. Because meal programs were never available to African American Delta schools and educational programs were rudimentary, many students were forced to go without lunch. Many families who were not able to provide more than one meal per day to their family often did not send their children to school as they were needed on tenant farms to help provide a minimal income to provide that single meal per day.

The condition of the housing for African Americans in both the rural and commercial Delta was also deplorable. Housing for a sharecropper was typically a one-room house provided by the landowner, often a tool shed or other storage facility located away from the landowner's residence but near the sharecropper's land (*fig. 1.19*). One woman remarked how one family's home smelled of rotting flesh and urine. The cracks in the floorboards were so wide that pieces of food would fall through to feed the rats and other vermin. This led to high rates of communicable disease among the African American community. African American residents of the Delta were often subject to these extreme health emergencies. Due to the lack of financial resources, many were never able to seek proper medical attention. Lula Mae, an African American woman remarked on the quality and access to health care for her children.

There's nothing I can do for 'em. There's no doctor and I got no money for a hospital. All's I can do is wait and watch either they get better or they gonna die. I can't do nothin' but wait and pray.⁷



**“I CAN’T DO NOTHIN’
BUT WAIT AND PRAY.”**

ABOVE - FIG. 1.19
Typical sharecropper home

<http://static.panoramio.com/photos/original/4513898.jpg>

What we consider today as normal housing was extremely difficult for Delta blacks to acquire due to circumstantial economic standing. Quality housing is a basic human necessity that was frequently ignored by landowners. The quality of the spaces in these sheds or shanties ranged from bare structure to found artifacts of personal significance to treasured family heirlooms. The poorest Delta blacks lived a basic subsistence lifestyle with a purely utilitarian structure void of much evidence of habitation. Middle-class African American families tended to place great emphasis on the possessions of the family passed down through generations. Family heirlooms typically describe instances where great economic or social movement occurred in the past and led to the current standing of the family. Pride was never seen a sin among those whose means never meet the ends. The constant reminder of the challenges overcome by previous generations and the possibilities of the younger generation in the family were frequent decorative features of a poor Delta home.

Because of the segregation between the black and white communities, social inclusion within the black community developed significant sociological tools for interdependence. In some instances, as in the poorest and lower class black sharecroppers, several rudimentary houses were combined to form a small micro-community of multiple families who were able to share resources under one plantation owner. This sharing of resources contributed to the early development of a very significant and localized sociological principle known as *Gemeinschaft*. Merriam Webster’s Dictionary defines *Gemeinschaft* as “A spontaneously arising organic social relationship characterized by strong reciprocal bonds of sentiment

and kinship within a common tradition; *also*: a community or society characterized by this relationship.”⁸ This term and its possibilities for community development will be developed later in this thesis.

During the 1930s, Delta blacks started to become increasingly independent of traditional socio-economic systems. Delta blacks between the 1860s and 1930s were socially required to live the lives stereotypical of black existence merely to survive. Any violation of this social code imposed by the racism of the caste system led to problems of basic survival. Any African American who utilized systems independent of the imposed social order would be immediately reprimanded and possible legal action would be taken. These problems became increasingly obvious to younger generations who had not endured the old slave codes but were increasingly looking toward the federal government for assistance. The New Deal programs of the 1940s began to allocate educational programs, financial relief, and jobs for African Americans that had originally been provided by white landowners. This removal of the only reliant entity for Delta blacks allowed younger, more educated youths to accept the dependence and the often-humiliating obligations of deference and obedience that the paternalistic relationship implied. “Say, my Lord knows just how we’ve been fed. If it weren’t for the President, we’d all be dead.”⁹

The reliance upon federal aid by the African American community increased greatly between the years of 1932 and 1950. Because the Great Depression plunged the Delta’s economy into crisis, New Deal farm policies took much of the financial burden away from the planter and placed it into the hands of the federal government. A vast series of economic policies between Delta planters and New Deal officials occurred during this period, and a very brief overview of why labor shortages influenced social and educational development will be explained in the background of this thesis. New Deal farm policies helped to drastically change the economic base of Delta communities from strictly plantation based with tenant sharecroppers to smaller farms with less cotton production and more generalized agriculture with developing reliance on machinery. The AAA (Agricultural Adjustment Act) of 1933 implemented policies for revolutionizing the region’s agricultural system. The program allowed for the plowing up of cotton acreage for planting subsistence crops like corn, soybeans, etc. Many planters utilized the system of federal payments that came from plowing up their fields and used the money to invest in machinery rather than expand their labor force or crop acreage.

Because many planters felt that their tenants were incapable of handling their money and were likely to “throw away” what they received from the federal government, rather than apply it to their debts or spend it on essentials, the money was allocated to landowners instead of giving it directly to the tenants. This allowed the planters to maintain economic control over their tenant labor. For example, “One tenant was due \$136 for plowing up five acres of cotton, but all he got was an itemized statement from the planter that this amount had been deducted from his account.”¹⁰ Numerous other examples of the exploitation of sharecropper labor included promises of credit for future purchases but actually, a resulting balance was due from the tenant. The vast majority of the time, the finances that were stolen from the sharecropper was reinvested back into the plantation in the form of machinery and fertilizer.

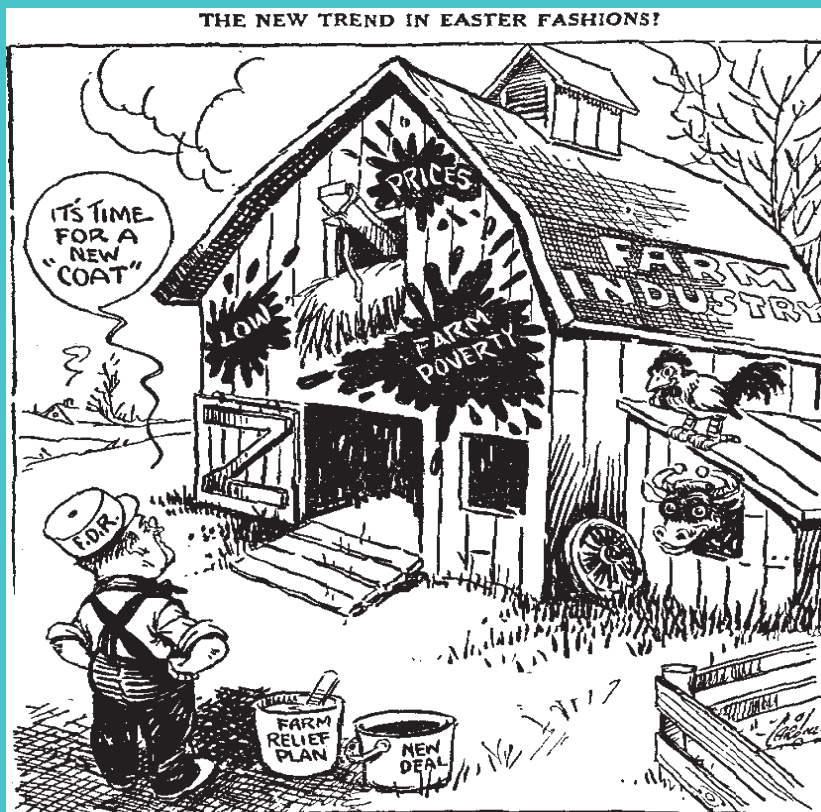
With the reinvestment of the capital gained from the federal government, white planters began to exercise economic and social dominance over their tenant laborers. Many African American tenants found themselves in economic positions with no means to escape perpetuating cycles of poverty. The best means by which African Americans could achieve economic independence from the backwards allocation of farm money was to leave the Delta. During the late 1930s and early 1940s, a large black exodus to northern industrial cities occurred. Northern factories provided unionized work with approximately equal pay to tenant labor in the south but with little of the social and economic exploitation. Northern wartime factories overseen by the federal government gave Delta planters a steady source of income with priority to housing and community services including education for their families. This pseudo-racial equality was

short lived and “planters expressed the hope that racial violence in urban areas in 1943 might ‘break the niggers loose in Northern cities’ and cause them to ‘hit back for Mississippi.’”¹¹

Because the wartime exodus became a tremendous problem for Delta planters it helped to loosen the economic constraints on the remaining black laborers. Planters soon realized that because of war-induced wage increases resulting from labor shortages, former sharecroppers could now make as much by working only a few days each week as they had once earned for a full week’s work. This allowed many black laborers to move from their tenant homes on the land into towns and cities and commute daily. Some planters were forced to allow tenants to stay on their land rent-free to keep them around through the cotton harvest. The severe labor shortages in the Delta contributed to increasing labor costs and wage increases. In 1940, wages for cotton picking averaged one dollar per hundred pounds. In 1944 it was as high as three dollars per hundred pounds. In 1945, because of this steady increase in labor costs, the federal and state governments imposed a wage ceiling of \$2.10 per hundred pounds as a wartime emergency as much of the labor costs were still being subsidized by the federal government’s Farm Security Administration and United States Employment Service (*fig. 1.20*).

The Delta was a quickly changing place during the 1940s. Wartime efforts had great economic and social influence over life in the Delta and entrenched practices were beginning to shift course. In 1946, Delta Council member W.T. Wynn summarized the impact that the war had on the Delta.

War does a lot of things. We have found out that our economics have been disrupted. If you walk over Delta farms, you will find one-third of your farms not in production....Forty percent of the houses are vacant. Forty percent of the labor is lost....I believe that in the next five to ten years you will see the greatest revolution that ever happened in this country, happen in this Mississippi Delta.¹²



LEFT - FIG. 1.20

New Deal AAA political cartoon
http://www.nisk.k12.ny.us/fdr/fdr_farm/33032002.GIF



Though mechanization was proceeding with rapid pace, the absence of a viable mechanical picker encouraged a growth in the labor sector, and helped expand some sharecropping systems. Many sharecroppers became more independent financially and socially as the necessity to live on the landowner’s property was no longer a requirement. Higher wages induced by labor shortages helped to give Delta blacks a small measure of economic and social independence. With these rare and significant advancements in the socio-economic standing of Delta African Americans, the transformation had not alleviated the disparities in income and wealth nor had it relieved Delta planters of their obsession with labor control and racial hegemony. A 1947 survey showed nearly two-thirds of a sample of black families from Bolivar County received less than \$750 in cash income. Only 57 percent of Bolivar County families had any savings, and half of this accumulated to less than twenty-five dollars (*fig. 1.21*). Some Delta planters preferred the previous methods of labor control. One planter remarked upon the federal government’s intervention on his labor force. He reminded local law officials that “I’ll kill the SOB before the year’s out; I’m damned tired of people trying to get my negroes.”¹³

With some socio-economic problems being less pervasive on daily life for Delta blacks, political development among the African American community could begin to form, though it would take several decades before it became a legitimate institution. Because of the federal government’s assistance in Delta farms during the 1930s and 1940s, local planters began to question whether the federal government’s involvement in local political and financial affairs would lead the Delta in a direction away from entrenched racism. The prevailing sentiment among white elites was they would continue to exercise dominance encompassing the African American lifestyle. There became a concern within the Delta Council and Delta Chamber of Commerce that pro-equality policies may take hold with the external influence of the federal government and national aid programs. Federal intrusion would eventually turn its regulatory inclinations toward the inequalities and racial tensions that were the dominant feature of Delta life.

With racial tensions mounting in northern cities during the late 1940s, and the shift towards economic equality through wage impositions and property guarantees, the Delta’s planters seemed to be confronting a future they could not avoid. They would be forced to fend off the civil rights initiatives of the Supreme Court and Congress, including the dismantling of the machinery of disfranchisement and segregation. The Democratic party also grew increasingly responsive to labor unions and black voters. The old Democratic party that represented the ideals of the Delta was soon replaced with a different party more inclined towards equality (*fig. 1.22*).

RIGHT - FIG. 1.21

Family with little ability to save extra income

http://www.sylvest-sarah.com/images/lc/family_home_big.jpg



OPPOSITE RIGHT- FIG. 1.22

Young Dr. Martin Luther King Jr.
http://www.diversityhotwire.com/business/leader_profiles_bayard_king_900_1368.jpg

1.3 – THE CIVIL RIGHTS MOVEMENT

AS EQUALITY BEGAN TO SPREAD THROUGHOUT THE NATION, especially in the states surrounding the Delta and the Mississippi River, elite Citizens' Council members became increasingly concerned about the changing racial attitudes within the Delta. The Citizens' Council was a group of self-labeled "conservative business owners with interests for the advancement of economic control" but was more realistically aligned with defending the Jim Crow system from all challenges outside the Delta (*fig. 1.23*). As economic racial equality began to take hold, numerous social institutions remained heavily segregated, including education. Because the historical background of this thesis is primarily a summarization of economic and social histories, this thesis will briefly mention how economic and social changes influenced the development of educational systems in the Delta.

On August 6, 1955, the local NAACP chapter submitted a petition bearing fifty-three signatures to Yazoo City for the immediate desegregation of the local school district. Those who signed the petition slowly began to lose their jobs or whatever business or trade they had with whites. Some petition signers had found it impossible to find new jobs, and the only two remaining signers were completely reliant upon the black community for business, both of whom left town promptly. Many petition signers later told of threats of violence towards themselves, their families, and their businesses. Citizens' Council member Hodding Carter wrote that:

No act of racial violence in Mississippi has ever been directly connected to the Citizens' Council... Those incidents that have occurred may be indirectly traceable to the climate engendered by the council, but it is a theoretical relationship. The council has found it doesn't need to operate that way to get results.¹⁴

This sort of denial based upon relativism and disassociations was common among the Citizens' Council members and is a common theme in the development of racial tensions in the Delta between 1943 and 1964. Delta schools were found to be the most economically segregated in the country based upon the continuing disproportion of appropriated state monies. After World War II, Children in poorer rural areas were found to have little access to education. The attitudes towards educational policy among local Delta whites remained unchanged for decades, as the attitudes of working in the fields rather than conjugating Latin still prevailed. The intervention by the federal government would cause racial tensions to reach a tipping point in the Delta, and this occurred in education and politics more so than economic policy during this period (*fig. 1.24*).



ABOVE - FIG. 1.23

Meeting of the Citizens Council
<http://images.google.com/hosted/life/f?q=white+Citizens+council&prev=/images%3Fq%3Dwhite%2BCitizens%2Bcouncil%26imgsz%3DI%26imgtbs%3Dz%26hl%3Den%26tbo%3D1%26um%3D1&imgurl=195fee137a95257d>

RIGHT - FIG. 1.24

Segregated black school during lunch period

<http://images.google.com/hosted/life/f?q=segregated+school&prev=/images%3Fq%3Dsegregated%2Bschool%26imgsz%3DI%26hl%3Den&imgurl=28bf2d3cfff25cfaimgurl=195fee137a95257d>

“DELTA SCHOOLS WERE FOUND TO BE THE MOST ECONOMICALLY SEGREGATED IN THE COUNTRY BASED UPON THE CONTINUING DISPROPORTION OF APPROPRIATED STATE MONIES.”



The most significant judicial decision involving a racial shift in educational policy in the United States was the May 17, 1954, decision of *Brown v. Board of Education of Topeka*. This landmark decision overturned earlier rulings, including *Plessy v. Ferguson*, 1896, by declaring that state laws that established separate public schools for black and white students denied black children equal educational opportunities. Justice Earl Warren's court found unanimously that separate educational facilities are inherently unequal primarily due to economic and social inequality arising from racial segregation. Though the decision was rendered unanimously, many white citizens of the South felt a great grievance towards the decision. Several noteworthy local officials were especially opposed to the idea of desegregating schools. Senator James O. Eastland of Sunflower County quickly earned the title of "spiritual leader of Southern resistance to school desegregation." His bluntness and tenacity gained him significant fame within the upper house of Congress. His declaration that white people of Mississippi would maintain supremacy over black inferiority, throughout eternity, was made nationally public. His defiance against the *Brown* decision led him to proclaim "an illegal, immoral, and sinful doctrine had been handed down by a crowd of racial politicians in judicial robes." In his rationalized view, "Southern people will not be violating the Constitution or the law when they defy this monstrous proposition" (fig. 1.25).¹⁵

Though inflammatory racial discrimination like that of Senator Eastland was readily made public through Time magazine and other national periodicals, localized racial violence rarely captured the attention of the nation. Much of the violence in the Delta was directed towards adults. Violence towards children was considered unthinkable, until the infamous trial of the murder of Emmett Till gained recognition from civil rights leaders, politicians, media moguls, and the entire nation.

The murder and trial of Emmett Till is, in the opinion of many civil rights historians, the single greatest catalyst for the most momentous equality movement in our nation's history. Till was a fourteen-year old black youth who had traveled to Leflore County from Chicago to visit his grandfather in August, 1955. Till was hanging around a store in Money, showing fellow black youth pictures of his white girlfriend from Chicago and explaining his expertise with white women. Till grabbed a young white clerk, Carolyn Bryant, by the wrist when making payment for some candy and promptly asked, "How about a date, baby?" The young black boys and Emmett immediately ran out of the store when she herself ran away with disgust. Several days later, Carolyn's husband Roy Bryant learned of the incident and knowing that the prevailing orthodoxy demanded swift retribution for such a breach of caste, he and J.W. Milam, his half-brother, resolved to give Till a whipping (fig. 1.26).

At 2:00 am on August 28, 1955, Milam and Bryant arrived at the home of Mose Wright, Till's grandfather, and immediately took Till despite pleas from his grandparents. The two men took Till down a seventy-mile stretch of rural roads searching for a particular bluff known as "scariest place in the Delta." They claimed to have planned to pistol-whip him to make him think they were going to throw him off. When they could not find the bluff, they returned to Milam's place, took Till to the tool shed, and began to beat him. Till never whimpered, according to Milam, and instead taunted his abductors by stating, "You bastards, I'm not afraid of you. I'm as good as you are. I've had white girls and my grandmother was a white woman." Milam then drove to the Tallahatchie River, forced Till to undress, took aim at him with his pistol, and asked "Are you still as good as I am?" Milam shot Till in the head, tied a seventy-pound cotton gin fan around his neck with barbed wire, and pushed his body into the river.



LEFT - FIG. 1.25

Sen. James O. Eastland and his attitude to the "Winds of change"

<http://images.google.com/hosted/life/f?q=sen.+james+o.+eastland&prev=/images%3Fq%3Dsen.%2Bjames%2Bo.%2Beastland%26imgsz%3Dl%26hl%3Den&imgurl=a248d39cb1f86099imgurl=195fee137a95257d>

OPPOSITE - FIG. 1.26

Young Emmett Till (center of photograph)

http://negroartist.com/EMMETT%20TILL/images/EMMETT%2051%20OR%2052_jpg.jpg



The discovery of the body three days later in the river and the arrest of Bryant and Milam immediately focused regional and national media on the trial. Newspapers and officials from around the nation called for a vigorous prosecution of the guilty parties. Local organizations including the NAACP and even the Citizens' Council called the crimes committed "atrocious." Further national recognition and attention of the crime came with Till's mother deciding upon an open-casket funeral. "I want to let the people see what they did to my boy!"¹⁶ exclaimed Till's mother in Chicago (*fig. 1.27*).

Though national attention was being paid to the case and black activist groups and northern press began to pressure the case, local white supremacy still reigned as it had throughout history. Milam and Bryant gained crucial support when Sheriff H.C. Strider began to question whether the bloated body was even Till's. With this stunning revelation, all five lawyers in Sumner reversed their opinion and offered to provide defense for the accused. This immediately prompted local white citizens to declare, "We are not going to put up with Northern Negroes stepping over the line."¹⁷ The backlash for these declarations was swift, and northern journalists, black and white, flocked to Sumner for the trial. The trial was also attended by Charles Diggs, a black congressional representative from Michigan. Most importantly, Mose Wright, grandfather of Emmett Till, attended the trial and exclaimed in the courtroom "Dar he!" as he pointed to Milam being the man who took his grandson (*fig. 1.28*).¹⁸

Sheriff Strider did little to help the investigation. He failed to gather substantial evidence and propagated rumors that may have impeded the trial. Rumors circulated that the local chapter of the Citizens' Council had contacted every member of the jury to persuade them to "vote the right way." The jury deliberated for only sixty-eight minutes, just long enough for the deliberation to "look good." Both men were acquitted of the murder charges in Tallahatchie County but failed to clear the charges of kidnapping in Leflore County. Despite their admission to taking Emmett Till by force, a grand jury refused to indict them for that crime.

"I WANT TO LET THE PEOPLE SEE WHAT THEY DID TO MY BOY!"



LEFT - FIG. 1.27
The open casket funeral of Emmett Till (1955)
http://iconicphotos.files.wordpress.com/2009/08/1955_jpg.jpg



ABOVE - FIG. 1.28

The trial for the murder of Emmett Till

<http://images.google.com/hosted/life/f?q=Emmett+Till&prev=/images%3Fq%3DEmmett%2BTill%26imgsz%3DI%26imgtbs%3Dz%26hl%3Den%26sa%3DX&imgurl=c6eb9d15e0a4f674>

The decision by the court immediately prompted national outrage from media outlets against obvious inclinations of white supremacy. The Pittsburgh *Courier* condemned Mississippi as the "Sin-hole of American civilization" and proclaimed the date of the verdict, "Black Friday." Additional national attention began to focus on the growing number of racial crimes against Delta blacks over the next several years. Hate crimes against local blacks continued as if the Emmett Till trial had gone unnoticed. National attention continued to focus on this endemic racial violence. Locals in Tallahatchie County vigorously sought to inform the nation that they were putting the North, the NAACP, and every local African American on notice. Because of the massive amount of attention on the Mississippi Delta as a citadel of white supremacy and black subservience, the Delta would become the target of a long-awaited assault on its well-defined caste system. Caste continues to be an operative word throughout the development of social and economic inequality in the Delta.

Though racial violence was at high levels in the 1950s, the 1960s was most brutal. The national attention being focused on the civil rights movement during the early 1960s took some focus away from Delta violence. As President Lyndon B. Johnson sought to ease racial tensions around the nation with various civil rights policies, violence continued and attracting national media attention to individual incidents became more difficult. The formation of a local pro-black political organization, the Mississippi Freedom Democratic party, posed significant challenges to white political dominance in the state. One of the last things the Citizens' Council wanted was the political organization of African Americans in

Mississippi because the demographic differences were staggering (35% white to 65% African American). The MFDP members gave national media a look at what life was like while seeking to secure their civil and political rights. The MFDP organized several witnesses to speak directly to the national media about the constant violence towards Delta blacks, which included descriptions of beatings, lashings, breaking bones, and violence against civil rights demonstrations. Greenwood became a center for violent anti-civil rights demonstrations (*fig. 1.29*). Greenwood whites frequently shot civil rights workers and tried to burn and bomb them out of the city. All the while, Greenwood mayor Charles Sampson claimed that in fact, local blacks were well treated. "We give them everything. We're building a new swimming pool. We work very close with the nigger civic league. They're very satisfied."¹⁹ This sort of local politician spin became a common theme in the Delta and national media highlighted the vast differences between what was said and what was shown on television, including police dogs attacking black demonstrators and the use of aerosol cans in courtrooms to deter blacks from entering and attending trials.

The passage of the Civil Rights Act of 1964 by President Johnson guaranteed African Americans the equal right to vote. The topic has been discussed widely among political historians how the growth of voter registration was affected by its passage. Documentation shows that voter registration initially grew by a few percentage points per year in each county. Though African Americans were slowly turning out to register to vote, the threat of violence persisted. There were charges of election day fraud and intimidation, and at least four blacks had been slain in the Delta in the months prior to the 1971 elections. Black victories in the elections of 1971 were limited primarily to minor posts as 259 of 309 black candidates were defeated by a 50 percent black turnout against a 70 to 75 percent turnout from whites. However, after this specific election, Mississippi had more black officeholders than any other southern state with 117 representatives.

BELOW - FIG. 1.29

Civil Rights demonstration

<http://www.crmvet.org/crmpics/lyon/albany4a.jpg>



OPPOSITE - FIG. 1.30

Little Rock (AR) High School

<http://www.noliberty.com/LittleRock1957.gif>

RACIAL TENSIONS WERE FURTHER EXACERBATED BY EFFORTS to force desegregation of public schools. As schools began the daunting task of desegregation in the Delta, blacks began to attain greater social standing in the broader community. The overwhelming elation of sending children to public institutions with equal opportunity gave a new sense of hope to parents who had little access to education in their youths, especially in communities that are more rural. Numerous examples of threats of racial violence with the desegregation of schools have been documented such as Little Rock (AR) High School (*fig. 1.30*). The Delta was no exception to the threat of racial violence towards black communities. The famous University of Mississippi quarterback, Archie Manning, described his first experience with his first black classmate, Ruth Carter.

It was a very tense situation....I felt kind of sorry for Ruth; she had to be scared stiff. I talked to her once or twice, but I wouldn't say that I went out of my way to be friendly to her. You can't change the place you grew up in or the way you grew up.²⁰



While describing the overall atmosphere in Drew High School, one teacher recalled the rarity that there was no violence or taunting from white classmates, only that the Carter students were ignored by the white student body. Drew is located seventeen miles northeast of Cleveland.

While desegregation at Drew High School remained relatively calm for several years into the early 1970s, an incident in 1971 immediately refocused racial violence in Delta schools. On May 25, Joetha Collier, a recent high school graduate was shot and killed in front of a grocery store in the black section of town. Collier was somberly described by her white principal as “a good girl. She was a black student but was a good girl.”²¹ Collier had been a member of the girls’ track and basketball teams. The brutal slaying of Joetha Collier in 1971 was one historical example that sparked massive protests within the Delta. This violence led to another push for African American civil and political rights. Local civil rights leader Aaron Henry indirectly associated Collier’s killing in the context of white reaction to a voter registration drive that was occurring in the Delta for the 1971 representative elections though that justification was never proven. The resort to violence by Delta whites over voter registration issues was nothing new but intimidations and threats of violence now elicited responses of counterviolence against white public officials and influential citizens. The initial reaction of whites to black voter turnout was one of ignorance. Whites felt that local blacks would not pay attention to the national attention being given the Delta’s voter issues.

The reality of the increasing voter turnout within the African American community was revelatory for whites. To avoid complete social and economic displacement by African Americans, white leaders quickly began to pay closer attention to blacks as individuals and as a group. Because of the growing influence black community members were having on local political institutions, whites made it a point to learn more about patterns of influence in the black community. Increasing numbers of blacks turned out to vote and utilize their freedom of speech. White community leaders began to consider a non-verbal reconciliation with the black community but rather than issuing a humiliating blanket apology for the past actions of the white community against the African American community, white leaders considered improving African American social and economic standing as a means of appeasing political views of the emerging black political body. Civic projects began to form with repairs to streets in black neighborhoods and the introduction of gravel to rural communities. Black law enforcement officers were hired to keep peace within the black community. Most noteworthy was the publication of the titles “Mr.” and “Mrs.” accompanying African American names with their reported activities in local newspapers. Because this was considered socially forbidden among the white community before, this was a major development in the appeasement of attitudes between Delta whites and blacks. Melany Neilson, a white mother from Holmes County described how,

Suddenly these politicians were making overtures to the black community: visits to black churches and juke joints, visits with [Robert] Clark and other local black leaders, handshakes and poses for photographs which made their way into the Lexington Advertiser. In one county race a former Citizens’ Council member linked arms with blacks at a local church to sing “We Shall Overcome.”²²

For some blacks, this was seen as substantial progress in race relations. Violence was no longer a constant threat from law enforcement or private citizens and self-esteem was frequently cited as having greatly improved over the course of two decades of civil rights fighting. The catalyst to the newfound standing of Delta blacks was the initial desegregation of schools and the march for voter registration and turnout. Though some instances of civility became well publicized as beneficial to race relations, violence still prevailed in the community and schools.

Violent incidents occurring because of desegregation reflected the prevailing sentiment of local whites to not allow their students to mix with African American students in public schools. Schools were

LEFT - FIG. 1.31

Fight against segregation

http://www.shanaburg.com/blog/wp-content/uploads/2008/08/segregation_protest4.jpg

**“WE SHALL
OVERCOME”**

**“WE PROTEST
SCHOOL
DESEGREGATION”**

**“DON’T TREAT OUR
CHILDREN LIKE
PRISONERS”**



subject to much of the same violence as the rest of the community, as can be seen from the desegregation incident of Joetha Collier. Many schools in the Delta never formally announced desegregation dates and simply relied upon a muted hearsay to allow African American students into their schools. The rate of desegregation was a slow few percentage points per year at best. Though many Delta whites found that desegregation policies were simply the result of the federal government’s oversight reaching too far into their communities, they recognized that schools would eventually have to be desegregated. Rather than immediately giving in to the Supreme Court’s mandate, Delta whites felt it would be better to utilize a “go slow” approach so as not to incite additional racial violence against children. The national media described Citizens’ Council leader Hodding Carter as one of the most despicable men on earth, but his influence over prominent Delta whites during this time led to the acceptance of a slow integration while violence over voting rights persisted. Evidence shows that little desegregation actually occurred for at least a decade after the 1954 *Brown v. Board of Education* decision. Delta schools remained racially separate while in northern cities, the neighborhood school system ensured that only a few blacks attended schools with whites (*fig. 1.31*).²³

Schools in urban areas, such as Cleveland, Greenville, and Greenwood, found that school integration was much more difficult than in outlying rural areas. Small, rural towns with few people were easier to desegregate. Schools were relatively close to one another because of the small scale of the town. Transportation distance and cost were two remaining problems for students who lived in sharecropping families and on tenant land. Larger towns, by comparison, were much more complicated. Because larger towns and cities had been informally developed according to separation of race and economic geographies, desegregation and transportation to schools was much more difficult. Many towns, such as Cleveland, found that the only practical form of desegregation was through busing. Busing became the first option

explored in the late 1960s and early 1970s as a method of integration into multi-racial urban schools and was quickly mandated by the Supreme Court in urban districts. Large cities could not readily anticipate the changing educational policies of the 1960s and 1970s and deep racial divides within and between neighborhoods persisted. Economic *de facto* segregation in urban areas created many problems.²⁴ It is impossible to desegregate and homogenize urban neighborhoods, and the only method available for the redistribution of students was busing. Urban plans of the 1960s and early 1970s resembled concentric rings of economic position. As African Americans moved into urban areas during the 1940s and 50s, whites began to move into newly suburbanized communities. In 1973, blacks made up about one-quarter of the population of the nation's central cities but less than five percent of the suburban population (*fig. 1.32*).

Busing unintentionally became a major problem when desegregating school districts were separated by racial socio-economic borders. As a transportation method, it was very successful for students who had never had effective transportation to and from school. Busing in the South, inversely, may have been used to maintain segregated schools. The transportation of a large group of students from one distinctly separate side of a town to the other to attend white schools still created racial tensions within schools and communities. With the introduction of busing nationwide, many white residents felt uneasy about the introduction of lower income African Americans into their schools. In a 1974 national survey, many white residents said they felt comfortable with having African Americans living in their neighborhoods, if they had the same income and the same level of education, but still were uneasy about the remote introduction of students whom they felt they could not trust mixing with their children. This coincidence in American society during this period became an expedited validation to desegregate schools. Some cities began to encourage homogenization policies by mixing different racial groups with similar educational and economic standing. This, however, has led to significant problems within urban communities, including the rise of gangs, and the immediate assertion of dominance between racial groups. This homogenization of urban conditions also spurred outward migration by whites to external suburbs (*fig. 1.33*).

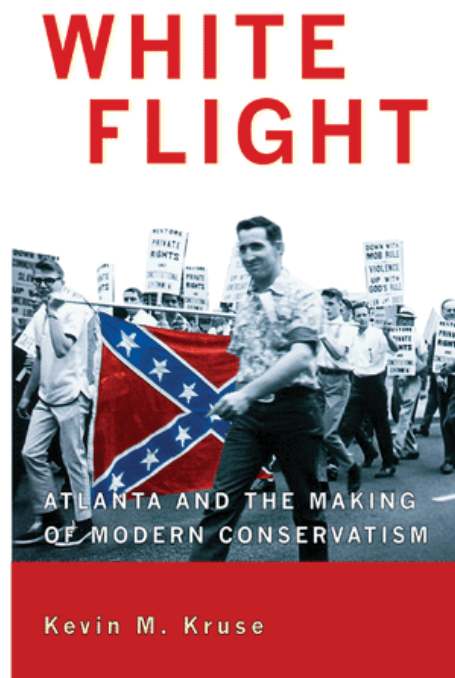
The concept of “white flight” relates the proportion of white exodus from particular neighborhoods

BELOW - FIG. 1.32

Degradation of black neighborhoods
http://www-tc.pbs.org/kqed/fillmore/images/photos/ra_low_rise_projects.jpg

RIGHT - FIG. 1.33

White flight publication
<http://www.southernspaces.org/contents/print/2005/kruse/print/images/white-flight.gif>



to the introduction of minority groups. This shift in demographics was not limited to north or south but was seen in major cities like St. Louis, Boston, Detroit, and Chicago. When the quantity of introduced minority groups is higher than rate of white outward migration, this may be seen as normative population shifts and not necessarily motivated by racial sentiment. However, when the quantity of minorities is lower than the rate of white outward migration, this is known as white flight and during this time was often racially motivated. In many urban areas in the south, white flight became common with the desegregation of public schools. Because whites still exercised greater economic dominance than blacks did, whites simply removed their children from public schools. As Delta schools were required to desegregate, parents began to establish private academies for their children, and Cleveland School District is an example of this educational exodus. This master's thesis is primarily focused on the social and economic problems associated with the current public school system in the Delta, and the role of private education in Cleveland will be explained briefly in later material.

As desegregation continued throughout the Cleveland School District, Bolivar County, and the Delta, a new pedagogical model was needed to accommodate the educational inequality of students between racial and economic classes. Many white students had great access to education during the late 1960s and early 1970s and were proficient in many standard areas of study, including math, reading, spelling, science, and history. African American students who had very little education resulting from severe economic inequality were placed at great disadvantage against their white peers. In the early 1970s, an average sixty-eight percent of black families in each Delta county ranked below the poverty line, however, blacks who were hard pressed to exercise even the most fundamental civil and political rights they fought so hard to gain, still thought more in terms of economic survival than educational access for their families. This racially based economic inequality would have severe implications on the educational process for both whites, African Americans, and teachers if a traditional pedagogical method were implemented. A different model of education was needed to fit the individual needs of students while contributing to the collective educational community.

Administrators within the Delta began to explore many different options to desegregate their schools. Several different pedagogical methods including the traditional classroom method, social inquiry method, social science inquiry, jurisprudential inquiry, and open-concept method were utilized in the Delta. Because of differences in the quality of education that many students received by either white schools or black schools, school administrators were quick to choose the open-concept method. This system had proven to be a great success in post-World War II England. Many postwar schools in England found that a similar problem like that in the Delta was created during Nazi bombing campaigns on London. Because Nazi bombers frequently targeted civilian quarters, teachers removed their students from London and fled to the countryside to stay with family. Teachers there performed their duties with great honor in the face of danger. Once the Nazi forces had been defeated by Allied forces, teachers and their pupils returned to London, only to find that their individualized instruction had created massive gaps between youths of similar ages. The teacher community developed a method known as Open-Concept theory, or Open-Space theory, which was primarily designed to promote individualized instruction while encouraging group interaction and growth. Because of the parallels between desegregation and the return of students to London, Delta school administrators felt this methodology was best to allow desegregation to continue (*fig. 1.34*). Open-Concept education will be discussed in detail in the following chapter.

As desegregation continued slowly in the Delta, violence in the community began to spread to the classroom. Threats from white elementary students against black students, and vice versa, became the rule rather than the exception. This violence has been directly linked by the inability of parents to educate their students that racial violence towards other students is dangerous and inappropriate. Delta teachers

can educate students only to a certain point before parents must instill strong moral character. In a recent telephone interview with a student teacher from Cleveland’s Cypress Park Elementary, Jessica Lockwood stated,

We spend 80% of our day disciplining the students. The high rate of disobedience in these schools becomes problematic for students, teachers, and the school in general. There are constant issues of violence in our school system; last week the police had to close Greenville High School because of race based gang violence.²⁵

This violence within the school system has been continuing for several decades after the slow rate of desegregation became established. There has been no sign of appeasing either race with continued economic and social measures. Education continues to be an instrument through which racial violence is unfortunately propagated. Though minority students have a choice of which elementary and middle school to attend in the Cleveland School District, the vast majority remain primarily in their respective neighborhoods out of fear from rival neighborhoods in other schools. The City of Cleveland and its school districts remain one of the most segregated in the nation, though busing systems and economic stimulation has been attempted since desegregation occurred. When asked when the Cleveland School District formally desegregated, student teacher Jessica Lockwood simply stated, “It hasn’t” (*fig. 1.35*).²⁶

NOTES

¹ C., Cobb, James. *Most Southern Place on Earth: The Mississippi Delta and the Roots of Regional Identity*. New York: Oxford UP, 1992. 20.
² Ibid. 20.
³ Freedmen – a slave no longer confined to the restraints of slavery in the post-antebellum South.
⁴ C., Cobb, James. *Most Southern Place on Earth: The Mississippi Delta and the Roots of Regional Identity*. New York: Oxford UP, 1992. 116.
⁵ Ibid. 180.
⁶ Ibid. 179.
⁷ Ibid. 263.
⁸ “Gemeinschaft.” Dictionary and Thesaurus - Merriam-Webster Online, 2009. 27 Sept. 2009. <<http://www.merriam-webster.com/dictionary/gemeinschaft>>.
⁹ C., Cobb, James. *Most Southern Place on Earth: The Mississippi Delta and the Roots of Regional Identity*. New York: Oxford UP, 1992. 182.
¹⁰ Ibid. 187.
¹¹ Ibid. 199.
¹² Ibid. 204.
¹³ Ibid. 203.
¹⁴ Ibid. 216.
¹⁵ Ibid. 217.
¹⁶ Ibid. 219.
¹⁷ Ibid. 220.
¹⁸ Ibid. 221 - Wright later became a national hero to blacks and those sympathetic to the civil rights movement, though he moved from Mississippi to New York after being offered a lifetime job. His departure from Mississippi was an emotionally filled goodbye and was symbolic to African American standing in the Delta.
¹⁹ Ibid. 237.
²⁰ Ibid. 248.
²¹ Ibid. 249.
²² Ibid. 250.
²³ Orfield, Gary. *Symposium on School Desegregation and White Flight*. Rep. Washington D.C.: National Inst. of Education (DHEW), 1975. ERIC document reproduction service no. ED123324. 8.
²⁴ “De Facto Segregation Definition.” *Dictionary*. Houghton Mifflin Company, 2005. 15 Sept. 2009. <<http://dictionary.reference.com/browse/de%20facto%20segregation>>. – *de facto* segregation is defined as “Racial segregation, especially in public schools, that happens “by fact” rather than by legal requirement. For example, often the concentration of African-Americans in certain neighborhoods produces neighborhood schools that are predominantly black, or segregated in fact (*de facto*), although not by law (*de jure*).
²⁵ “First Interview with Jessica Lockwood.” Telephone interview. 24 Sept. 2009.
²⁶ Ibid.



LEFT - FIG. 1.34
An early open-concept
classroom
[http://trs.unimelb.edu.au/
template-assets-custom/
images/1970c.gif](http://trs.unimelb.edu.au/template-assets-custom/images/1970c.gif)



OPPOSITE - FIG. 1.35
Interior of Cypress Park
Elementary, Cleveland,
Mississippi
Personal Photograph

OPEN-CONCEPT AND OTHER PEDAGOGICAL MODELS 2

2.1 – OPEN-CONCEPT PEDAGOGY

**DECISIONS HAVE
BEEN CRITICIZED
AS BEING HASTILY
IMPLEMENTED AND
OFTEN POORLY
JUSTIFIED WITH-
OUT SUBSTANTIAL
RESEARCH INTO
THE EFFECT OF
SUCH DECISIONS**

OPEN-CONCEPT TEACHING began in the Delta as a way to alleviate the gaps between separate educational classes with the mandate of desegregation. The 1960s and 1970s were a time of great educational policy changes to traditional educational models. These policy decisions, partially related to the Supreme Court's mandate for desegregation, forced radical changes in educational philosophy. The United States in the 1960s was characterized by a movement for increased freedom and education was integral to this movement. Open-Concept teaching was seen as a way to provide more educational opportunities for children while providing freedom and autonomy for self-directed study (autonomy was an integral tenet to the desegregation movement). Open-Concept teaching required less guidance by the teacher and helped foster self-responsibility on the part of the student. The school was also seen as the answer to the need for more flexibility. The open plan promised flexibility to change space almost at will.¹

The philosophic origins of Open-Concept teaching are ambiguous as the methodology was created for a more pragmatic solution. Research collected in the body of this thesis has not been able to identify a localized origin for Delta Open-Concept schools. However, reasons for why they arose are evident in this chapter. As previously mentioned in chapter one, Open-Concept teaching arose in England with the development of "infant" elementary schools (*fig. 2.1*). This was based upon an informal educational method to alleviate gaps in the quality and quantity of education individual students had during post-war reconstruction in England. Teachers relocated their students from London to the English countryside to protect them from Nazi bombing campaigns. British schools found that upon returning to London, children of different ages had different levels of academic achievement and knowledge (*fig. 2.2*). Educators developed an informal pedagogical method of teaching students of diverse achievement levels within one classroom. Teachers were also convinced of the merits of integrating many activities and subjects together in the classroom. This flexible model of teaching gave students the opportunity to creatively approach information in a non-linear fashion. "Information was integrated by relating it to different topics, rather than segmenting the topics into isolated time periods."²

This informal educational method became enticing to American educational administrators with the reorganization of schools during the 1960s. Much like the desegregation movement, decisions have been criticized as being hastily implemented and often poorly justified without substantial research into the effect of such decisions. The relationship between architectural space and pedagogy of Open-Concept

education is an example of this premature implementation. The first problem concerning open space classrooms and Open-Concept education was the definition of “open.” No clear relationship between open education and open classrooms was clearly established and implementation became problematic. Cypress Park Elementary is the primary example of this construction type (fig. 2.3). Some schools in the 1960s and 1970s were constructed on the basis that a school without walls could be built much cheaper than one with walls and Open-Concept teaching would later follow during the occupancy phase of construction. This was hardly the case, as individual teaching methods frequently took precedent over an administration’s decision to construct open space schools. Many open space schools continued to utilize traditional teacher-centric methods. The opposite was also true. Many schools were constructed during this similar time that were based upon a traditional “egg-crate” form with the intention of Open-Concept teaching being implemented after occupancy took place. “Not only were new schools built to house the open-plan concept, but the walls in existing schools were also knocked down to accommodate the new approach.”³ Many architects and educators took a radical position that constituted a naïve environmental determinism: that the physical environment can [directly] determine behavior.⁴

As much as fifty percent of all schools built between 1967 and 1970 were characterized by open space design.⁵ This popularity stemmed from the basis that teachers would not be the sole facilitator of education. Children would be more inclined to access information independently.

Open concept education places the student at the center of the learning process: he becomes an active participant in acquiring skills rather than the passive recipient of a predetermined body of knowledge. The teacher becomes a guide and resource person for each student rather than the sole dispenser of all the knowledge for which a group of students is held responsible. The educational environment focuses on the individual student without assuming conformity in learning styles, rates, or interests.⁶

Ben E. Graves, coordinating author of *Architectural Record’s* publication *School Ways: The Planning and Design of America’s Schools* similarly relates Open-Concept education.

They believed that children learn more effectively in open space. They believed that self-direction and self-motivation will prepare a student better for additional learning and for a fuller, more satisfying life. They believed that learning in the open-plan environment would lead the individual to be more innovative, self-assured, intelligent, and understanding.⁷



RIGHT - FIG. 2.2
Drawing of a new infant (open-concept) elementary school
<http://isee.gateshead.gov.uk/Local%20Studies%20Photos/Jpgs/LS%20Un-mounted%20prints/LS000061.jpg>



RIGHT - FIG. 2.3
Cypress Park Elementary and the lack of an “open” spatial definition, Cleveland, Mississippi
Personal photograph



OPPOSITE - FIG. 2.1
Infant elementary school in England representing a diverse convergence of intellectual backgrounds
<http://www.southlakes-uk.co.uk/userreq2008/RawlinsonStreetInfantSchool1921.jpg>

RIGHT - FIG. 2.4

Children access information independently and the teacher facilitates these inquiries
School Ways. 56.



**STUDENTS
ARE
ENCOURAGED
TO DIRECT
THEIR
INQUIRY TO
THE LIBRARY/
MEDIA
RESOURCE
CENTER**

By making information and curricula more independent, educators speculated that the consequence of informal Open-Concept education would be an atmosphere where everyone is learning together. Teachers do not feel pressured when complex information is presented with the possibility of unanswerable questions as the students are encouraged to direct their inquiry to the library/media resource center. The role of the student as an educational facilitator was also a key tenet of Open-Concept education. The free and open classroom was intended to relieve the teacher of the necessity of being a timekeeper, traffic cop, and disciplinarian (*fig. 2.4*).

Open-Concept education also removed the burden of a rigidly structured curriculum. Many subjects became incorporated into one integrated area of inquiry. Rather than structuring the day around a designated timeline of study, information was presented as a series of inquiries into contemporary issues students could identify. Open-Concept education removed the obligation to teach individual subjects and shifted it to a more holistic subject matter, though holistic was realized by merely combining subject matter without fully integrating it.

Another major benefit to teachers in open space schools, which has been identified as an asset to Cypress Park Elementary, in Cleveland, is the removal of walls tends to remove psychological barriers to a teacher's reluctance to work in harmony with other teachers. The mobility of partition walls also provides alternate environments for the child and various aspects of growth.⁸ The open space complex additionally provides more impetus for synthesizing several innovative techniques through cooperative and team teaching. Teachers find that their unique methodology of presenting material to students coincides well with open space. Teachers can easily and immediately adapt their teaching styles and material presentations to coordinate with neighboring teachers. Teachers also have the opportunity to utilize neighboring teachers if discipline or unpredicted circumstances involving students become an issue. Teachers additionally feel a greater sense of "autonomy, satisfaction, and ambition."⁹ Additionally, it is easy and natural to communicate frequently because no walls or closed doors serve as barriers. Elementary teachers also have common planning time each day in which they can work together. The architecture of Open-Concept schools lends itself to the practice of collaboration and sharing of ideas (*fig. 2.3*).

Architecturally, the school is capable of facilitating a great exchange of knowledge. This is conceptually a valid system of teaching. Based upon the research gathered, Open-Concept schools facilitate independence and place the teacher in the process of learning rather than the point of learning. Cypress Park Elementary was specifically designed for this. Due to poor research and hastily concluded arguments for this pedagogical model without understanding how the built environment facilitates this methodology, architects and school administrators constructed schools based on the assumption that "open" literally translates into an open volume. Many schools across the nation were constructed without walls and without proper treatment of interiors and ancillary spaces. This unfortunately created many problems in a completely open space school. The freedom students have to interact within their environment impinges upon other students' ability to learn and engage their material. Problems concerning noise, too much flexible space that creates indefinable space, and mechanical and lighting design led to the decline in Open-Concept school construction in the mid-1970s (*fig. 2.5*). By the end of the 1970s, many school district building programs returned to more traditional building designs.¹⁰ Additionally, teachers refused to work in the environment "Making certain it did not work, returning to educational basics and therefore returning to a more traditional classroom."¹¹

This left the Open-Concept schools to either maintain their Open-Concept pedagogy or revert to the traditional Socratic method in an open space school. Cypress Park Elementary in Cleveland, Mississippi, is an example of a building that has maintained Open-Concept teaching in some facets of daily teaching, but currently is described as semi-Open-Concept. This means that standard practices required by the State of

BELOW - FIG. 2.5

Too much flexible space does not define classes and additionally creates lighting problems, Cypress Park Elementary
Personal photograph



Mississippi have in many cases usurped Open-Concept pedagogy in higher elementary classes. Teachers at Cypress Park Elementary cooperate between similar age groups to establish common teaching goals required by the State of Mississippi. Different teachers coordinate their presentation techniques between grades and also coordinate with teachers of classes one or two years ahead to find how material was presented in the past to students. This community of teachers and their interdependence is seen as the greatest asset at Cypress Park Elementary, and any design proposals, as desired by several teachers, should strongly consider maintaining or enhancing this relationship (*fig. 2.6*).

In terms of the allocation of physical resources, Cypress Park Elementary places the media technology center, or computer lab, at the center of the school where all knowledge and inquiry was meant to converge. Because the library was the previous programmatic element of the building's educational facility, and the computer has replaced the library as the primary informational source, the library has shifted to another location with partition walls surrounding classes (*fig. 2.7*). Students are still encouraged to inquire about material they find interesting, another key tenet to Open-Concept teaching, but material tested annually by the state is presented in a teacher-centric way consistent with a traditional classroom.

Due to the increased demands and stresses of teaching in an open classroom setting, many teachers reverted to their traditional programs while often still believing they were teaching open education simply because they were in an open classroom. In addition, educational program policy concerning openness varied in its effectiveness.¹²

Teachers at Cypress Park Elementary have become the locus for all information, a major shift from the original intent of Open-Concept teaching. This mediation between the two methodologies has led to a liminal teaching model where students are either encouraged to inquire independently, or rely upon their teacher for informational access with little consistency between years.

BELOW - FIG. 2.7
Cypress Park Elementary library facilities
Personal photograph



OPPOSITE - FIG. 2.6
The ability to peer over space dividers into an adjacent spaces is considered an asset by teachers, Cypress Park Elementary
Personal photograph



2.2 – COMPARISON TO THE MONTESSORI METHOD

THE MONTESSORI METHOD was developed by Italian scientist Dr. Maria Montessori in the early 1900s. Her observations over an individual’s relationship to the built environment as a facilitator of education led her to “experiment” with physical stimuli being beneficial to education (*fig. 2.8*). According to a Montessori website, Montessori method is a way of “seeing children as they really are and of creating environments which foster the fulfillment of their highest potential – spiritual, emotional, physical, and intellectual – as members of a family, the world community and the cosmos.”¹³

Montessori emphasized social interaction and the education of the whole personality rather than teaching individual knowledge. This facet of its methodology is consistent with an original community focused aspect of Open-Concept teaching that was never fully developed or implemented in schools. Montessori practice is considered highly dynamic because of the needs specific to each child as they interact in their educational community. When these needs are met on physical and mental levels, children grow and strive with enthusiasm to learn. They exhibit a desire to teach, help, and care for others. Montessori stressed the importance of adapting the child’s learning environment to his or her developmental level. The built environment, in Montessori’s opinion, was integral in the way information and social interaction was accessed (*fig. 2.9*).

According to Vidar Hvidevold, Montessori’s teaching methodology is credited with the conceptualization and development of the open classroom, individual education, manipulative learning materials, teaching toys, and programmed instruction.¹⁴ Because Montessori strongly supported an interactive built environment as children develop, they need a much more engaging environment than adolescents. Children develop differently from adults, as their retention of information concurrently develops with spatial awareness and sensorial activity (*fig. 2.10*). However, this awareness of spatial and personal boundaries implies that students are readily able to self-direct their learning activities. The students, much like the theory behind Open-Concept teaching, are their own disciplinarians and their own educational facilitators. Students are masters of their own schoolroom environment and this disciplined environment is best achieved through learning alone during periods of intense concentration removed from their peers.¹⁵

Because interaction is seen as beneficial to social skills and spatial refinement, classrooms provide an atmosphere that is pleasant and attractive while maintaining a peaceful environment capable of self-directed study. Many Montessori schools have allowed for the development of open classrooms, but these open spaces are typically meant for social interaction and peer knowledge exchange. Many Montessori classrooms are based upon an egg-crate plan, in that they physically isolate children from external stimuli that may interrupt self-directed study. This is conceptually similar to open space classrooms; however, its



ABOVE - FIG. 2.8
Mentally stimulating objects central to Montessori
<http://www.ohdeedoh.com/uimages/ohdeedoh/montessori-top.jpg>



ABOVE - FIG. 2.10
A Montessori student learning numerical sequencing through physical activity
http://growingtimemontessori.com/yahoo_site_admin/assets/images/4D-moring_Montessori_time_edited.61143240_large.JPG

BELOW - FIG. 2.9
A variety of spaces with soft seating and stimulating materiality in a Montessori classroom
<http://www.beechwoodchildcare.ie/pictures/montessori4.jpg>



manifestations have been very different. As will be noted in chapter four, noise and distractions are a large problem for students who have little control over their self-directed study (fig. 2.11).¹⁶

As has been identified through the discussion over the relevance of Montessori schools to open space classrooms, several key similarities have been identified. They include social interaction, individual engagement and retention of material, and the teacher as a facilitator of knowledge rather than the sole source. To begin to create a hybrid model between these two methods, current teaching practice as mandated by the State of Mississippi Department of Education must also be understood. The State of Mississippi maintains different ideas for how material is presented to students than Open-Concept or Montessori methods do.



ABOVE - FIG. 2.11
A Montessori classroom and its spatial differentiation
http://www.keysforkidspreschool.com/montessori/images/DCP_4991.JPG

THIS AWARENESS OF SPATIAL AND PERSONAL BOUNDARIES IMPLIES THAT STUDENTS ARE READILY ABLE TO SELF-DIRECT THEIR LEARNING ACTIVITIES.

2.3 – CURRENT MISSISSIPPI STATE EDUCATIONAL STANDARDS

As outlined by the State of Mississippi’s Department of Education website, standards between the quality and quantity of education differ between grades. Students in kindergarten programs experience education in a much different way than students in the sixth grade (the uppermost group this thesis focuses on). Kindergarten learning conditions are much more physically engaging than upper grades which focus more on achieving baseline state testing standards. Children in kindergarten are guided by learning principles consistent with both Open-Concept and Montessori methods. According to Mississippi kindergarten guidelines, “Effective educational planning for young children takes into account knowledge of human growth and development.”¹⁷ Though this statement seems superficial and generalized, the guidelines continue to outline principles that guide planning goals:

1. Children learn as total persons (emotionally, socially, physically, and intellectually).
2. Children go through similar stages of development, but at individual rates.
3. Children learn through their senses (hearing, seeing, touching, tasting, and smelling).
4. Children learn through active involvement (exploring, playing, manipulating, problem-solving).
5. Children learn through attitudes as well as through content; therefore, attention should be given to methods, emotional climate, environment, and teacher-child interaction.
6. Children learn through play; therefore, sensitivity to the value of play is required, for it is through play that children create their own meaning and learning schemes. Play is the work of the child.¹⁸

These principles should be embodied in the curriculum design and general learning environment. However, their manifestations in the built environment are often negated by facilities that do not encourage such engaging interaction. Based upon site visits to Cypress Park Elementary in Cleveland, students are not necessarily as engaged in their physical environment due to the school’s design and function. The sixth tenet the State of Mississippi outlines as being beneficial for developmental growth should be inherent in design qualities and pedagogy in schools. In reality, its implementation in Cypress Park Elementary

has often been suppressed due to the primary issue of noise and disruption to neighboring classrooms. Children should be capable of exercising social freedom in their spatial environment, but this freedom is frequently suppressed due to disruptions to other classes and teachers. This does not apply singularly to the sixth tenet. All six learning principles outlined by the State are frequently negated by spatial problems (*fig. 2.12*).

The State additionally outlines realistic goals kindergarteners and their educational facilitators strive to achieve. Why the state outlines “realistic goals” is of great concern to the author and reflects disassociation between concept and practice. The goals educators strive to achieve include the following:

1. To help the child develop a positive self-concept.
2. To help the child achieve intellectual growth.
3. To help the child enlarge his/her world of people, experiences, ideas, and things.
4. To help the child increase competence and skills in reading, writing, listening, thinking, and speaking.
5. To help the child increase the skills involved in physical coordination.
6. To help the child increase competence in dealing with emotional feelings and social situations.
7. To help the child increase competence in self-direction and independence.
8. To help the child develop cooperative trusting relationships.
9. To help the child develop his/her natural curiosity and his/her creative potential.¹⁹

The instructional day shall also include large and small group activities, learning center activities, and individual instructional activities. This facet of kindergarten education is additionally consistent with Open-Concept and Montessori methods. The primary problem opposing this practice is, again, spatial. Many classes spend excessive time either adjusting their physical environment, or relocating to an environment supportive of the activity. The State of Mississippi defines organizational principles to support these learning principles. This will be discussed later in chapter four’s section on new construction of the built environment and its spatial implications on learning.

An effective learning environment for growing minds should be transitional and incorporate much of the spatial and pedagogical models for developing self-direction and a greater ability to retain material. Because the State of Mississippi begins to place responsibility of material retention on students at a young age through standard testing, students need consistent transitional environments where methods to retain material are familiar and encourage calm feelings when testing. A frequent concern among educators is the transitional environment from kindergarten models, theoretically based upon Open-Concept and Montessori methodology, to the contemporary teacher-centric method of material presentation in the sixth grade. Teachers are required by the State to use materials consistent with State testing, and this usually comes in the form of weighty textbooks with little relevance to previous learning practice (*fig. 2.13*).²⁰ A major benefit for continuity in education comes through using transitional environments for shifting teaching methods. This is currently not utilized in contemporary schools. Prakash and Nair posit that:

Successful schools and universities are adapting their offerings to learner-centered, rather than teacher or curriculum-centered, modes of delivery. The paradigm is no longer about delivering information, but in nurturing a broad array of learning styles and experiences. Many of the environments for learning have not caught up with these approaches to educational delivery.²¹



LEFT - FIG. 2.12
State materials do not encourage spatial engagement, Jonestown Elementary, Jonestown, Mississippi
Personal photograph

RIGHT - FIG. 2.13
State materials, Jonestown Elementary, Jonestown, Mississippi
Personal photograph



2.4 – THE HYBRID MODEL OF PEDAGOGY

Educational environments should encourage spatial engagement where material retention becomes familiar. This may be achieved through the principles outlined previously in theoretical models of Open-Concept and Montessori methodology while adapting to the modern perspectives the State of Mississippi has on education. By creating a hybrid methodology consistent with the best practices of sub-methodologies, architectural innovation that facilitates pedagogical principles may occur. By allowing architecture to reinforce the principles of pedagogy, building conditions may lead to increased performance. In his report on educational facilities, Jeffery Lackney estimates that “improved facilities could lead to a 5.5% to 11% improvement on standardized tests” (*fig. 2.14*).²² Though this figure may seem negligible, even a small improvement in test scores may increase a school’s funding though the State by thousands of dollars.

The State of Mississippi has provided information to its teachers and administrators via its website. An article titled, “Don’t Just Rebuild Schools – Reinvent Them” by Prakash Nair, describes how schools receiving Federal Stimulus funds should utilize those funds to reconsider their teaching practice without renovating the built environment.²³ The article outlines several important topics that support the integration of Open-Concept, Montessori, and State methodologies. Some topics have clear spatial implications, whereas others create opportunities after occupancy and the adaptation to a hybrid pedagogical model. Topics that Nair outlines include:

1. **Create personalized learning communities**
2. **Make technology ubiquitous**
3. **Connect with the outdoors for health, fitness, and improved academics**
4. **Focus on student comfort**
5. **Celebrate art, music, and performance**²⁴
6. **Embed sustainability as a core principle of facilities spending – and the curriculum**
7. **Treat teachers like professionals**
8. **Engage parents and the community**

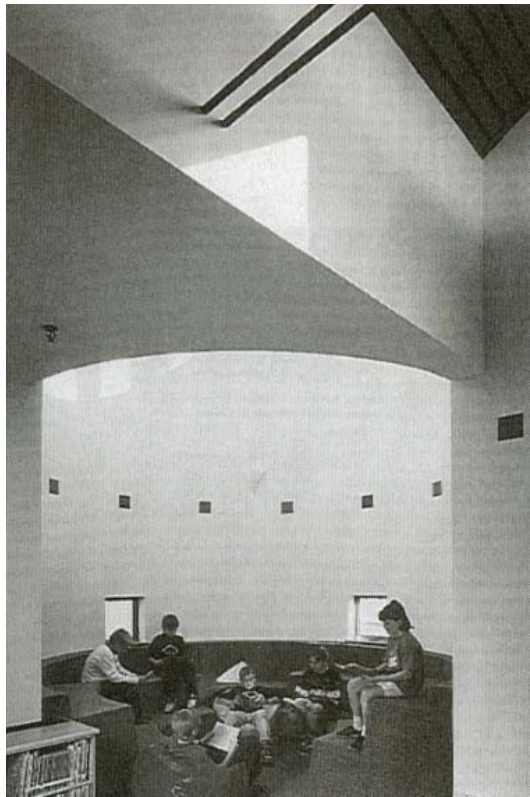
By utilizing facilities spending, a change in the educational paradigm from a largely teacher-centered model to a student-centered approach may be reconsidered. The modern issues our next generation will

confront are best approached through project-based learning and a student-centered approach. This may help students establish connections with peers around the world, create more service and community focused learning, promote independent research and design creativity, and facilitate critical thinking that challenges old assumptions (the absolute fundamental objective of this thesis). Architecture may begin to create opportunities reinforced through the development of a hybrid pedagogical model that allows for the mental development of students (*fig. 2.15*). The hybrid model utilizes aspects of the previously mentioned pedagogies and adapts other priorities that education has yet to allow architecture to reinforce. The priorities for a hybrid model of Open-Concept, Montessori, and State methodologies also include the following.

1. **The formation of flexible student scheduling using individual inquiry, small group dialogue, and large groups to allow students to effectively engage their material.**
2. **Learning is grounded in particular contexts and individual experiences.**
3. **There should be an active search for meaning by the learner.**
4. **The inclusion of community issues that establish relevance to the student’s educational material and how solutions create personal implications.**
5. **Connections to learning should be made and maintained.**
6. **Immediate and efficient access to technology and digital information to facilitate independent inquiry.**
7. **The reliance teachers have with other teachers should be emphasized as an effective method to experiment with different teaching methodologies.**

RIGHT - FIG. 2.14
Students engaged with their environment and technology in a new school facility
Language of School Design. 64.





ABOVE - FIG. 2.15
Students engaged with their spatial environment in a public learning area
School Ways. 90.

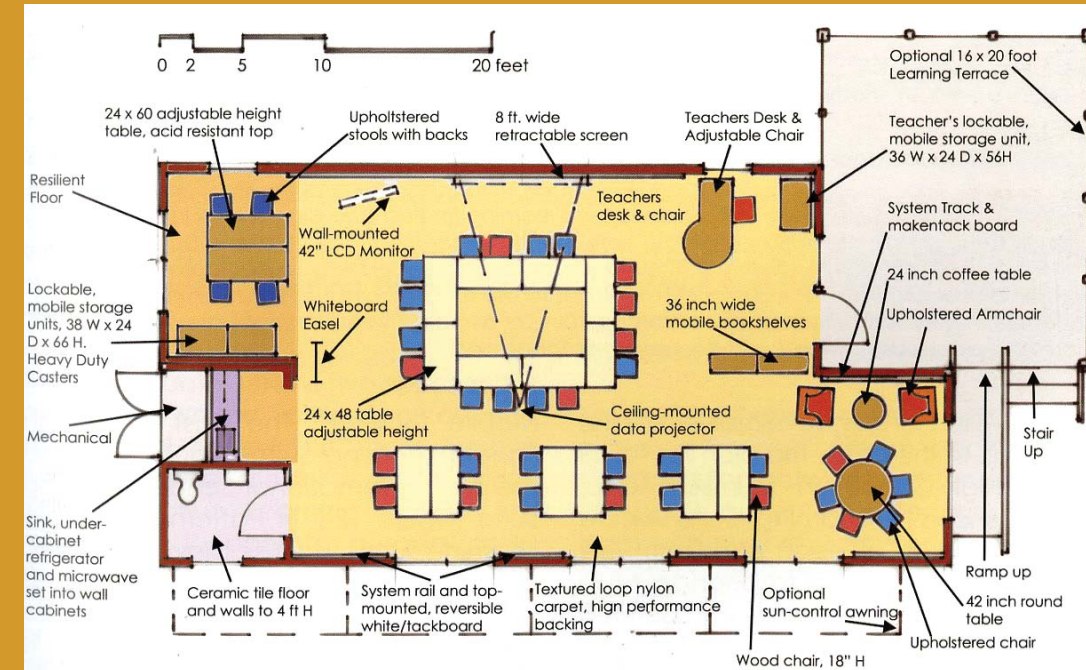
Students go through similar stages of development but at individual rates and as total persons. Children should experience some measure of flexibility in how their daily activities are experienced. This can be achieved by allowing students to learn as large groups, small groups, and as individuals, and spaces should accommodate this dynamic learning environment. The classroom may become restructured into personalized learning communities that may replace classrooms with multifaceted learning studios and common areas for various activities and collaborative projects. By allowing for flexible spatial and teaching arrangements with proximity to each other, students are able to develop cooperative environments that establish trusting relationships (*fig. 2.16*). This is currently practiced through the combination of all three methodologies but is not facilitated spatially within Cypress Park Elementary. The author observed third grade students breaking into groups of two for reading analysis, and utilizing the floor as their spatial environment. Hard floor space did not encourage students to be attentive or willing to participate fully in their assignment.

Because spatial scheduling should be flexible and encourage the formation of learning communities, students should be encouraged to inquire about material

that is relevant to themselves and their community. Students in the Delta have a unique attachment to their community and its functions which are identified in the third chapter. Lesson plans should not focus on delivering material from a problem directly to a solution but should consider how relevant the problem is to the community to arrive at a more personally applicable solution. If a problem is more relevant to a student's personal experiences, the student feels a greater sense of urgency in finding a solution. Students also are able to find and establish their position in the function of the community. The formation of personalized learning communities with focus on integrating community issues with State material encourages the pedagogical purpose of Open-Concept teaching through the experience of material with the spatial implications of Montessori method. This also fulfills and expands upon the State's third goal for educators to achieve in education, which is "to help the child enlarge his/her world of people, experiences, ideas, and things" (*fig. 2.17*).²⁵

Students should be able to immediately access digital information directly from their environment. Because the time needed to relocate to the library or technology center is considered a distraction for both the students and other classes in an open-classroom environment, students should have access to digital information without having to relocate. This sort of immediate access to information, whether in the form of individual desks or community workstations, should encourage students to seek information relevant to themselves and their community. The removal of the library as a spatial manifestation of the pedagogy to individual information stations places emphasis on the pedagogical relevance to Open-Concept teaching with the physical presence important to Montessori method. The library was once seen as the central information vessel in Open-Concept teaching. As technology grew, the computer center

RIGHT - FIG. 2.16
A multitude of flexible spaces develops cooperative learning environments
Language of School Design. 21.



RIGHT - FIG. 2.17
A multitude of flexible spaces develops cooperative learning environments
Language of School Design. 21.



replaced the library as that vessel. Now that technology has become mobile, that vessel could be utilized at a student's desk. Roger Schank expressed his belief that learners should "spend one-third of their day at the computer, one-third talking with others, and one-third making something."²⁶ Because children learn as individuals with influence from their larger community, access to information should be specific to the individual's process and refocus how one creates personal inquiry. "Students should have anytime, anywhere access to the Internet, via high-speed wireless laptop computers, smartphones, and hand-held computing devices."²⁷ Nair describes this change towards modern teaching as beneficial to how students



ABOVE - FIG. 2.19
A faculty lounge allows teachers to collaborate on interdisciplinary topics
http://image18.websshots.com/18/8/35/65/222283565nJWMTq_ph.jpg

formulate inquiries of personal and community relevance. This technological shift is meant to re-engage students with material required by the State with relevance to the student. However, the social interaction achieved in the spatial environment of the library is important for growing minds (*fig. 2.18*). Its complete removal from any school campus would have severe consequences.

Teachers also play a significant role in the redevelopment of the pedagogical model. As identified by several teachers in Cypress Park Elementary, teachers need quiet places to plan lessons and work with students one-to-one and in groups. Teachers need areas where they can collaborate on interdisciplinary

topics and activities. Immediate access to technology without disrupting other classes is an additional hope. Many teachers in Cypress Park Elementary describe the interdependence with other teachers as the one true benefit to their current layout. Teachers are more informed of the best practices for how their students retain material when different methodologies are tried and reviewed by others. Teachers require cooperative spaces that facilitate supportive practices consistent with methodology (*fig. 2.19*).

The priorities outlined by a hybrid model of pedagogy that incorporates Open-Concept, Montessori, and State methods reinforces how students best engage and retain material. Architecture then helps to facilitate the pedagogy. The priorities for a new pedagogical methodology reflect features outlined through the analysis of different pedagogies and are redefined to reflect their best practices. Teaching through a hybrid model by combining the best aspects of individual pedagogies allows for cooperative learning that additionally reinforces State requirements. Flexible and dynamic methodology helps the child develop his/her natural curiosity and his/her creative potential. Students more readily establish trusting relationships through flexible student scheduling while providing increased capability for self-directed study. By having a greater foundation for self-directed study, students are more readily able to adapt to transitional learning environments where the student is the center of the classroom (*fig. 2.20*). This platform for self-directed study also enables students to approach State tests with greater confidence. The pedagogy and methods by which information is presented through methodology has been identified as being effective in concept, but poorly executed in practice and space. The pedagogical models that have been identified and defined in this chapter represent ways information may be presented, but the architecture that was created unsuccessfully facilitated the engagement between problems/solutions and the student. As identified by the statement this thesis seeks to verify, the problems associated with open-concept education in elementary schools in Cleveland, Mississippi, are not completely pedagogical, but rather architectural. Pedagogy, place, and community are established systems to create architectural opportunities in the Delta.

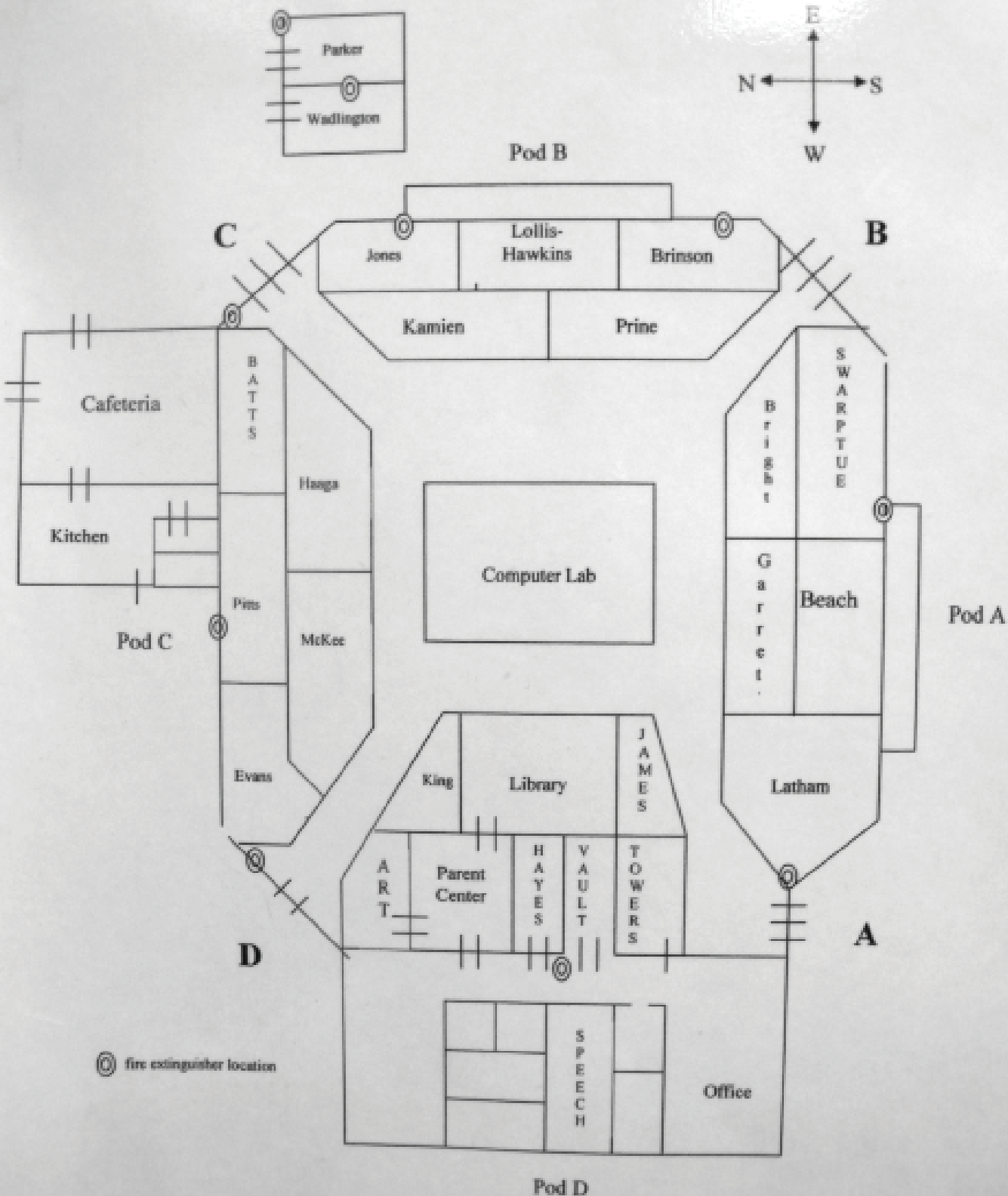


OPPOSITE - FIG. 2.18
A Montessori library
[http://lh4.ggpht.com/HOVmXuZ5v04/RmMGGjCGxxl/AAAAAAAAEp8/25lwB4LfA3o/Montessori_13+\(Large\).jpg](http://lh4.ggpht.com/HOVmXuZ5v04/RmMGGjCGxxl/AAAAAAAAEp8/25lwB4LfA3o/Montessori_13+(Large).jpg)

RIGHT - FIG. 2.20
Montessori students collaborating in a comfortable environment
<http://www.gardengatemontessori.com/Montessori/Garden%20Gate%20Montessori%20Peace%20Talk.jpg>



Cypress Park Elementary School



NOTES

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- ¹⁷ Boyd, Richard A. "Mississippi Kindergarten Guidelines." Mississippi Department of Education, 1998. 29 Nov. 2009. <<http://www.mde.k12.ms.us/ACAD/Kguide.htm>>.
- ¹⁸ Ibid.
- ¹⁹ Ibid.
- ²⁰ "Second Interview with Jessica Lockwood." Personal interview. 26 Oct. 2009.
- ²¹ Nair, Prakash, and Fielding, Randall. *The Language of School Design Design Patterns for 21st Century Schools*. DesignShare, Inc., 2005. 78.
- ²² Lackney, Jeffery A. *Educational Facilities: The Impact and Role of the Physical Environment of the School on Teaching, Learning and Educational Outcomes*. Rep. no. R94-4. Milwaukee, Wisconsin: Wisconsin University - Milwaukee, 1994. ERIC document reproduction service no. ED466574. 6-7.
- ²³ Nair, Prakash. "Don't Just Rebuild Schools - Reinvent Them." *Commentary*. Education Week, 6 Apr. 2009. 23 Sept. 2009. <<http://www.mde.k12.ms.us/Stimulus/docs/ED0406.pdf>>.
- ²⁴ Performance and music-based learning should not be discounted in Delta schools, particularly due to the fact that written traditions did not occur in traditionally black communities. Folk-lore, music, and interpretive dance were common methods to present traditional and familial knowledge when written communicative systems had not yet been established.
- ²⁵ Boyd, Richard A. "Mississippi Kindergarten Guidelines." Mississippi Department of Education, 1998. 29 Nov. 2009. <<http://www.mde.k12.ms.us/ACAD/Kguide.htm>>.
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THE PROBLEMS ASSOCIATED WITH OPEN-CONCEPT EDUCATION IN ELEMENTARY SCHOOLS IN CLEVELAND, MISSISSIPPI, ARE NOT COMPLETELY PEDAGOGICAL, BUT RATHER ARCHITECTURAL. PEDAGOGY, PLACE, AND COMMUNITY ARE ESTABLISHED SYSTEMS TO CREATE ARCHITECTURAL OPPORTUNITIES IN THE DELTA.

OPPOSITE

The existing floor plan of Cypress Park Elementary. Each classroom is not as impermeable as the diagram represents. Again, a lack of boundary definition results in poor quality

Personal Photograph

PLACE AND COMMUNITY IN THE DELTA 3

3.1 – PEOPLE AND PERCEPTIONS

**AN OBSERVER
VISITING THE
DELTA INSTANTLY
BECOMES
ENAMORED
BY THE BUILT
ENVIRONMENT
AND HOW PEOPLE
PERCEIVE THEIR
POSITIONS IN TIME
AND SPACE.**

THE MISSISSIPPI-YAZOO DELTA represents the promise of great American agricultural wealth with deep metaphysical attachment to the landscape and an entrenched social structure. Place in the Delta encompasses the spheres of spiritual, emotional, and physical connectivity to landscape as a method of reinforcing values and livelihoods. Delta residents have a profound attachment with their landscape that few other regions in the United States create. Living in this landscape is an intense challenge and for centuries has been considered frontier land. The time, labor, and monetary wealth needed to clear such a vast swath of semitropical forest has left an impression on residents few other landscapes do. The Delta is a place where that connection to the landscape is always maintained even at the compromise of social and economic equality. An observer visiting the Delta instantly becomes enamored by the built environment and how people perceive their positions in time and space. Place and community in the Delta may be described by the connection to a perpetual landscape, the maintenance of melancholic place, and perceptual shifts towards pragmatic traditionalism. These values define communities.

The Delta, as described in the first chapter, is a place of intense social and economic divisions. Citizens of the Delta operate their daily lives with the attitude that new times require old ideas to maintain social and economic stature. The Delta has been described by several residents as a place of pragmatic traditionalism. Though pragmatism is more concerned with finding immediate practical results than with postulation over cause-and-effect, traditional values and organizational systems pervade contemporary lifestyles. The practice of adapting new principles to communities has rarely been favored due to the social organization of the Delta. Several instances have occurred throughout history that validates the Delta's position on outside influence, including the abolition of slavery, the Federal Government's mandate for minimum wage increases during the Great Depression, and desegregation of schools. Community organization in the Delta has never been supportive of these Federal initiatives due to *de facto* development of separate communities. This topic will be developed later in this chapter.

Expediency is a method of delivering practical results supportive of traditionalism rather than immediate socio-economic change. Because traditional values lie at the loci of nearly all public decisions, rigid social divisions are perpetuated. Dr. Alan Barton, a human geographer with Delta State University's Center for Community Development, has described modern social organization as "Being very cooperative between different racial groups, but in a stratified and routinized form."¹ This modern social stratification is

best exemplified in rural communities. Because of the limited number of people in rural towns, cooperation between blacks and whites is necessary, but the process by which interaction occurs is based upon process through traditional stratification. An undefined yet socially enforced stratification between racial groups helps define community interactions and political process in modern development. This stratification has done little to alleviate income gaps and social inequality and continues to perpetuate these problems. This social stratification limits occupational choices between black and white individuals and reinforces the idea of traditional livelihoods (fig. 3.1).

The Delta continues to maintain these traditional values in the face of outside pressure through imposition. One experience outsiders encounter when visiting the city of Cleveland is the relationship between hospitality and inclusion. Deltans are ready to welcome visitors to their communities and exercise all aspects of Southern hospitality. This hospitality has a limited time span of a few days and anyone wishing to remain in the Delta faces problems of inclusion. The rules of inclusion into Delta communities include: (1) Which church you join and how active of a parishioner you are, (2) What school your children attend, (3) What your values are and whether they coincide with traditional Delta values, (4) What establishments you visit and with whom you interact (fig. 3.2). These parameters help define where a new resident to the Delta fits into the community. A new resident, or outside observer, must fit into these categories to be accepted into Delta communities. If a breach of social hierarchy occurs and is noticed by the community, the new resident or outside observer becomes ostracized and full social inclusion becomes very difficult.

Many Delta residents believe that the environmental and social landscape is the driving force for economic activities and external influences attempting to create developmental activity may be seen as detrimental to Delta communities. An everlasting importance of what once was coincides with modern development in the Delta. The theme of pragmatic traditionalism continues to play a major role. Modern development in the Delta is typically coerced by local officials to reinforce traditional activities. Propositions for new development are typically one-sided and rarely account for disenfranchised populations. The most successful proposals that encompass all groups of people utilize the permanence of traditionalism yet are subversive by design. The best method for achieving broad-based success for different social groups is



LEFT - FIG. 3.1
Cleveland State Bank, Cleveland, Mississippi
Personal photograph

BELOW - FIG. 3.2
Local establishment in east Cleveland
Personal photograph



subverting traditional goals by design. Another method for achieving successful development is utilizing separated communities and their strengths.

The stratification of social interaction has led to the creation of separate communities in Cleveland. Traditionally, the *de jure* separation of racial classes led to distinctly black and white neighborhoods, but modern *de facto* economic segregation has been the driving force behind the maintenance of black and white neighborhoods. Two distinct neighborhoods have left a qualitative shadow on the city of Cleveland. The white neighborhood of Cleveland represents the economic power of the Delta, and is the primary area of new construction and economic development. Many businesses in recent months that have been started with economic incentives from the Federal Government's Economic Recovery Act cater to the primarily white community. As of November 2009, according to the Economic Recovery Act's website, Mississippi has received a total of 150 contracts, 898 grants, and 24 loans totaling \$1,703,464,073. The Bolivar Community Action Agency, Inc. will receive a total of \$1,689,575 in stimulus funding. The Cleveland School District will receive \$1,137,544. ² The majority of services, including the city library, job services center (fig. 3.3), university, many banks, and other community organizations lie on the west (white) side of Highway 61, the current dividing line between the two separate communities.

BELOW - FIG. 3.3
WIN Job Center, Cleveland, Mississippi
Personal photograph



3.2 – CONNECTION TO A PERPETUAL LANDSCAPE

THE QUALITATIVE SHADOW lies on the eastern side of Highway 61. The black neighborhood of eastern Cleveland represents a landscape of perpetuity and memory with a profound commitment to place. The shadow of eastern Cleveland falls on the neighborhood where the new school to replace Cypress Park Elementary is being proposed. In major contrast to elitist dominance of the white neighborhood, eastern Cleveland clearly illustrates the perpetual landscape of disenfranchisement and racism (*fig. 3.4*). Decades of *de facto* racism and economic inequality has led to the consolidation of eastern Cleveland to be one of the lower income neighborhoods in the Delta. Chapter six references income levels between counties. The vast majority of East Cleveland citizens earn less than \$10,000 per year. Poverty, severe educational problems, and lack of black community services have led to the consolidation of racial classes in the black neighborhood.

However, the black community does not see this as detrimental. As one walks through the neighborhood, themes of memory, commitment, and an encroaching landscape are frequently noticed and admired. The black community has a deep connection to the Delta primarily because of temporal ownership over their landscape. Some contemporary black critics have formulated positions that the Delta is more of a black landscape than white (not demographic, but qualitative). Slavery was the vehicle that allowed the land clearing necessary to plant an economically viable crop (*fig. 3.5*). Many black residents feel that their family histories, passed down through generations via oral traditions, give them ownership over the Delta landscape that is more mnemonic than that of whites. University of Virginia Associate Professor of Architecture Craig Barton describes the black community's connection to memory in the Delta.

The structure of the land bears in it a record, a memory if you will, of patterns of use and in some ways a method or vehicle to represent aspects of culture. Why is that important to African Americans? We have typically not had access to the civic processes by which civic buildings and memorials were constructed. In fact, ours has been a tradition of passing significant information to one another from family to family, from person to person, through a variety of processes that were not necessarily embedded in the built environment. Oral histories, art, and music are a few of the forms of memory in the African American community. Typically, architecture wasn't used to "store" the memories of African American communities. When African American communities were intact, the ephemeral forms of memory were quite powerful.



ABOVE - FIG. 3.4

Disenfranchised neighborhood (the Levittown of Cleveland) near the project site and existing Cypress Park Elementary

Personal photograph



ABOVE LEFT - FIG. 3.5

Blooming cotton field outside Jonestown, Mississippi (a traditionally black town)

Personal photograph



ABOVE RIGHT - FIG. 3.6

A community hall that stands unused, Cleveland

Personal photograph

...Making it even more important, more critical now, to find a way to leverage the resources that are embedded into the landscape as a means to narrate the presence and importance of African American history in the Delta...³

Slaves and Freedmen were the ones who cleared the land for crops. They were the people who built roads, towns, and cities. Sharecroppers were the people who built the cotton empire and created the economic dominance of the Delta. Because racism and economic disenfranchisement are endemic to the Delta, those who built the South have never been given the opportunity to develop successful economic and community institutions in the face of white suppression (*fig. 3.6*).

The black communities have faced incredible opposition to economic and social mobility, and this has led to the consolidation of racial groups. The result of distinctly separated ethnic communities was characterized by German sociologist Ferdinand Tönnies through a principle known as *Gemeinschaft*.⁴ Tönnies described rural, ethnic, and low-income communities as being more centralized around the functions of the community rather than the individual. Because of social and economic inequality, resources were best allocated towards the prospect of community development. This concept transcends to the maintenance and development of the landscape. The black community was the primary group who developed the Delta landscape, and their communal relationship to the landscape is best described by the rural sociological definition of *Gemeinschaft*. “By kinship, customs and ritual, and, in particular, the ownership and care of productive land was strictly guarded by tradition.”⁵ Spatially the functions of family and community became centralized in the rural landscape, and farm structures were consolidated for closer exchange of goods, services, and most importantly, ideas. *Gemeinschaft* was the tool that facilitated this exchange.

As an observer in the Delta, it becomes clear that the black community’s memory and the commitment to stay in the place their families built long ago has led to the speculation over whether the black community is anticipating any great change in their lifestyles or socio-economic positions. In an interview with Clarksdale resident Jonathan Willoughby, the author posed a question to illustrate the Delta’s attitudes over contemporary place. The author questioned, “Do residents of the Delta believe any great social or economic change is going to occur that will allow the South to rise again?” Willoughby responded:

No. We don’t believe there is going to be any sort of change. Living in the Delta is hard. It’s hot. It’s poor. It’s backwards. It has always been that way and will be in the future. Living in the Delta is just what we know... It’s either do this, or go somewhere else and lose everything we have grown from (fig. 3.7).⁶



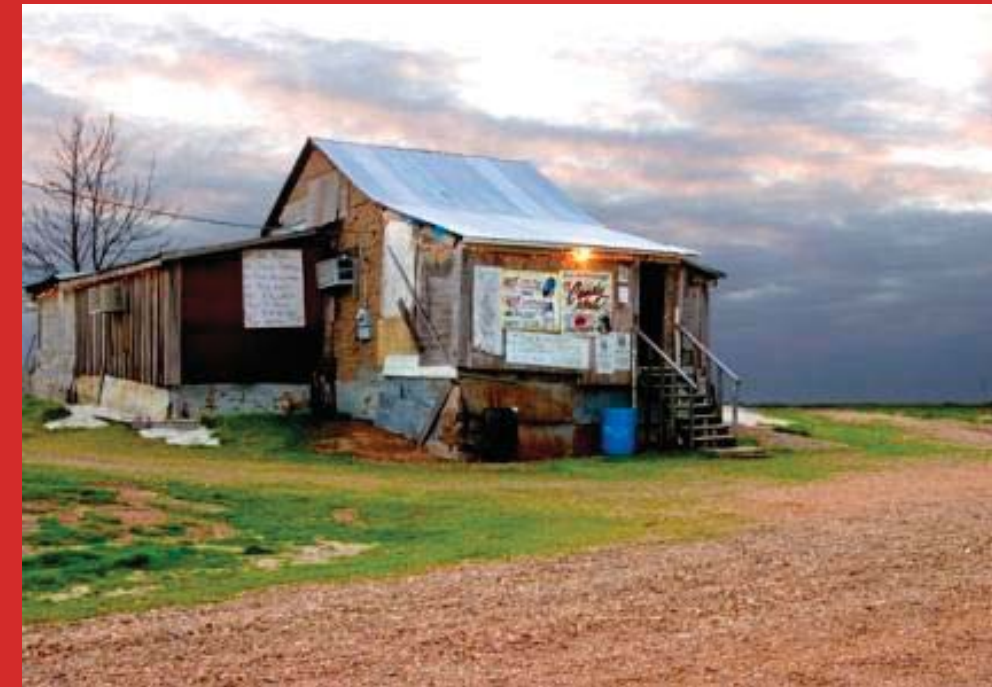
LEFT - FIG. 3.7
Layers of the past, Rosedale,
Mississippi
Personal photograph

These statements are incredibly revealing and illustrate a position that is somewhat disassociated from contemporary perception outside the Delta. This mentality and perception of place is continually illustrated in the Delta’s most prevalent form of art and communication: the Blues. Blues musicians consistently described how their position in Delta life was based in perpetuity and never allowed for socio-economic mobility. The “Spirit of the Blues” is a haunting reminder of the region’s promise to its citizens. The “Spirit of the Blues” is an image the author captured in Rosedale, Mississippi (*fig. 3.8*). The image is not just a projection onto a decaying storefront, but rather an attitude, an emotion, and a history. The image of a ghostly figure on a closed storefront is indicative of the attitude that exists not just in the mind, but also in the spirit. Blues musicians evoked these emotions consistent with the perpetual landscape. Musicians like Muddy Waters wrote popularized lyrics like:

**Goin’ no higher;
Goin’ no lower down.
Gonna stay right here,
Gonna stay right here,
‘Til they close me down (fig. 3.9).⁷**

These lyrics illustrate how the black community sees their position in society. The connection to these lyrics is due to a greater concern for survival than advancement. The Civil Rights Movement was meant to alleviate these emotions of perpetual disenfranchisement and led many blacks to seek better lifestyles that were never possible under traditional systems. Unfortunately these lifestyles have never changed, and urban conditions have created distinctly separated communities. These distinctly separated communities also have distinctly separated services. The city’s library and job services center are located in the white community (*fig. 3.3*). Their use by black citizens is rare. Because the black community does not feel ownership over these basic civil services, they are never utilized. With the construction of a new school to replace Cypress Park Elementary, a new job services center and community heritage library may also be programmatically possible.⁸

RIGHT - FIG. 3.9
Po’ Monkey’s Juke Joint,
Merigold, Mississippi
<http://www.thetfordphotography.com/galleries/lgjukejoints/po%20monkey%27s%20outside.jpg>



**FOLLOWING PAGE -
FIG. 3.8**
“The Spirit of the Blues,”
Rosedale, Mississippi
Personal photograph

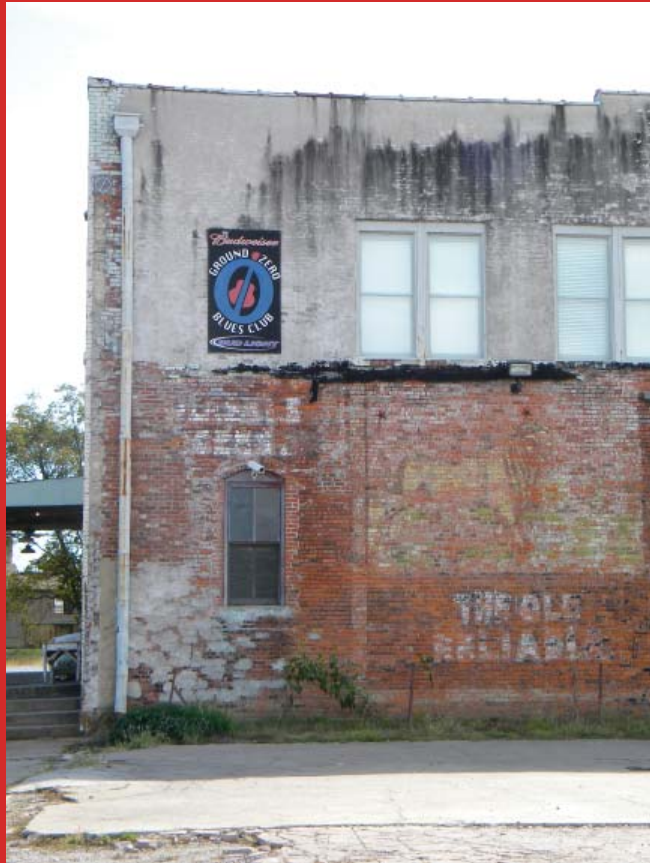


3.3 – THE BUILT ENVIRONMENT

THE PHYSICAL APPEARANCE OF THE BUILT ENVIRONMENT in the black neighborhood also lends itself to the idea that the Delta was once a great empire. Many houses in this neighborhood were constructed during the post-war era and have never experienced upgrading or renovation. Decorative decay is the prevailing aesthetic and a means to keep visitors out of the community (*fig. 3.10 and 3.11*). Weathering is a means of privacy and communities in the Delta continue to take pride in this aesthetic. Human geographer and coordinator of the Delta Rural Poll (ref. Ch. 6) Dr. Alan Barton described several traditionally black Delta towns as being “deliberately maintained in that decrepit condition to turn visitors and different racial groups away” (*fig. 3.12*).⁹

Because weathering is a prevalent aesthetic in the built environment, whether intentional or otherwise, instances of ownership and personalization may be found. Unique houses interspersed throughout neighborhoods utilize color, sash decoration, and plantings to create place otherwise not found in their community (*fig. 3.13*). Personal customization in these neighborhoods represents a desire for a heightened awareness of place. Vegetation and plantings may either be maintained or neglected. These houses are located in the black, low-income neighborhood. The houses resemble a Southern manifestation of a Levittown (*fig. 3.4*). The houses in this neighborhood are modular and are designed in a way that customization is infrequent. The houses are formally simple and reflect a brief period when a great need for mass housing dictated the architecture. The architecture is a modern interpretation on regional vernacular that creates a built environment and place unique to the Mississippi Delta.

When new construction does occur in either the white or black neighborhoods in Cleveland, specific architectural vocabulary is used. Conservatism is a socio-political ideology that has specific implications on architecture. The Delta overwhelmingly validates this. Because the spatial and temporal landscape creates emotions of impermanence for Deltans, the vernacular is often the most readily accepted and utilized architectural vocabulary. Bold forms, “style” and unique geometries are considered by many in the community as unnecessary, foreign, and problematic for a region so concerned with maintaining pragmatic traditionalism (*fig. 3.14*). Some architects have managed to transcend the imagery of foreign architectural forms and establish symbolic connotations to the vernacular language of the South. The late philanthropic architect and regionalist Samuel Mockbee describes his design methodology and approach to regionalism in the following way:



ABOVE - FIG. 3.10
Decorative decay at the Ground Zero Blues Club in downtown
Clarksdale, Mississippi
Personal photograph



TOP RIGHT - FIG. 3.11
Decorative decay, Cleveland, Mississippi
Personal photograph



CENTER RIGHT - FIG. 3.12
Deliberately maintained decay,
Rosedale, Mississippi
Personal photograph



LEFT - FIG. 3.13
Personal expressions in otherwise
expressionless architecture
Personal photograph

I pay attention to my region; I keep my eyes open. Then I see how I can take that and reinterpret it, using modern technology. We don't try to be Southern, we just end up that way because we try to be authentic. When you start to use historic references in a theatrical way, that's when I'm out of here.¹⁰

This kind of regionalism defines architecture specific to the creation of southern place for communities with low incomes and honest intentions. The theater Mockbee describes in some southern “architecture” stems from the interpretation of diagrammatic language as instant architecture. Southern vernacular is rooted in public and private communicative space, control-space of function, enforced virtual political space. Authentic architecture does not utilize the rigid lines of the southern structure, but rather colors the edges with the richness of the temporal landscape (*fig. 3.15*). The intentions that Mockbee, Coleman Coker, Marlon Blackwell, and other proactive Southern architects have pursued have led to architecture rich in authentic character, clarified by traditional language, and infused with modern technology. These architects engage the landscape by providing directed views, embedded elements to define the landscape's morphology, and earthen colors and materials reflective of the promise of wealth from the landscape. Elements such as porches, verandas, shed roofs, and materiality native to the South characterize the beautiful sense of place these architects achieve without a theatric veneer (*fig. 5.17*). Low-income residents are more accepting of a design typology that creates meaningful place which allows communities to create a sense of intimate ownership. Architectural design in the South, especially in the Delta, is rich in tradition, and elements of that tradition must be preserved in honest language for effective place making.

BECAUSE THE SPATIAL AND TEMPORAL LANDSCAPE CREATES EMOTIONS OF IMPERMANENCE FOR DELTANS, THE VERNACULAR IS OFTEN THE MOST READILY ACCEPTED AND UTILIZED ARCHITECTURAL VOCABULARY.

BELOW - FIG. 3.14

The use of vernacular forms in new construction signifying conservatism in the built environment
Personal photograph



BELOW - FIG. 3.15

Rural Studio's Butterfly House

http://www.cermakrhoades.com/blog/uploaded_images/rural_studio.jpg



NOTES

¹ “Second Interview with Dr. Alan Barton.” Personal interview. 26 Oct. 2009.

² “Where is The Money Going?” *Recovery.gov*. The United States Government, 2009. 12 Nov. 2009. <<http://www.recovery.gov/transparency/pages/home.aspx?State=MS&datasource=recipient>>.

³ Mastran, Shelley S., Robbins, Mark. *Your Town: Mississippi Delta*. New York: Princeton Architectural, 2002. 8.

⁴ *Gemeinschaft* – Translated from the German “Community” but often referred to a female community. The concept was developed to describe sociological organizations of people that collectively allocate resources towards the benefit of the community over the self.

⁵ “Gemeinschaft and Gesellschaft.” *Encyclopædia Britannica*. 2009. Encyclopædia Britannica Online. 10 Oct. 2009 <<http://www.britannica.com/EBchecked/topic/228066/Gemeinschaft-and-Gesellschaft>>.

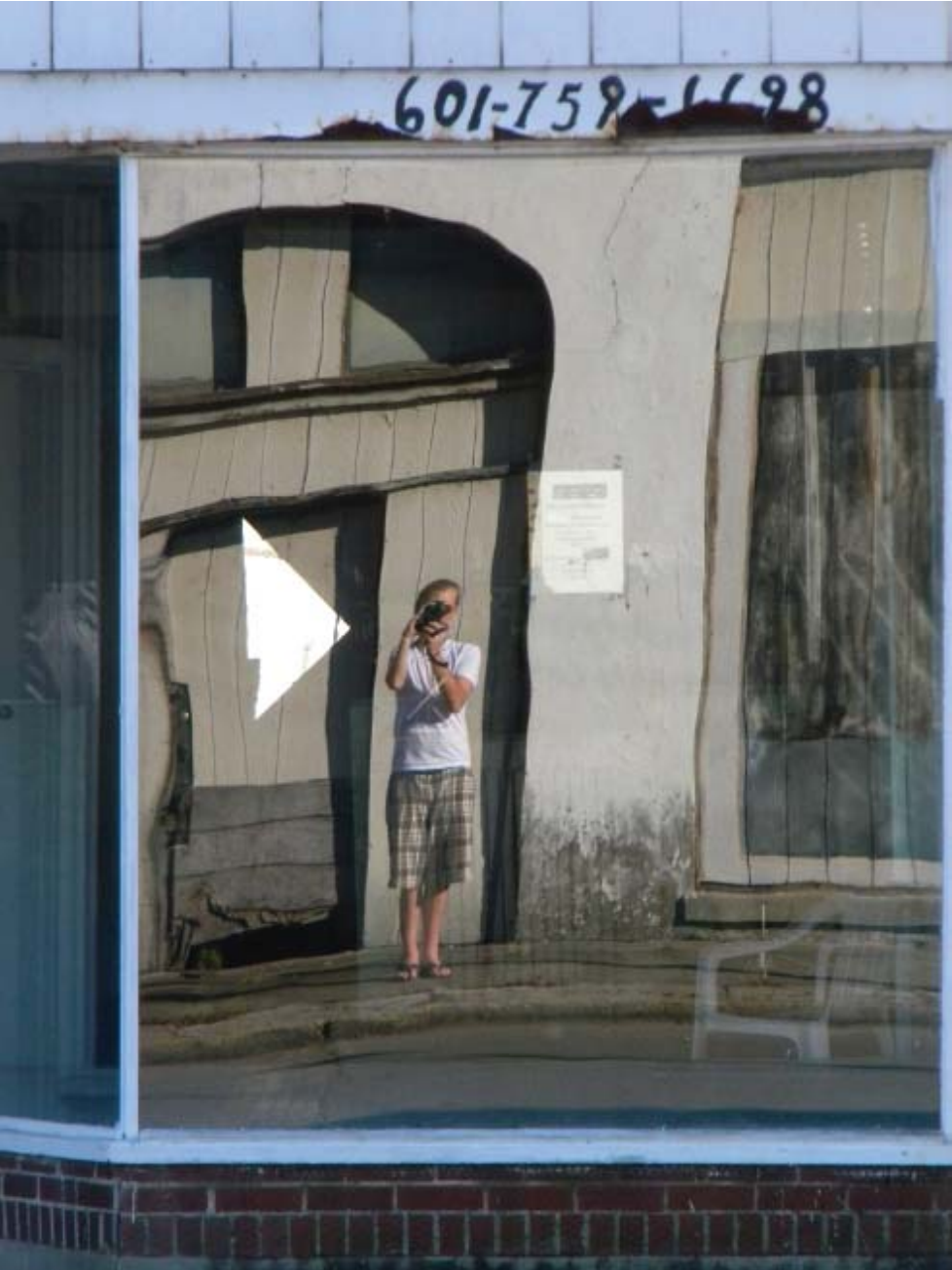
⁶ “Interview with Jonathan Willoughby.” Personal interview. 25 Oct. 2009.

⁷ C., Cobb, James. *Most Southern Place on Earth: The Mississippi Delta and the Roots of Regional Identity*. New York: Oxford UP, 1992. 284.

⁸ “Second Interview with Dr. Alan Barton.” Personal interview. 26 Oct. 2009.

⁹ “Third Interview with Dr. Alan Barton.” Personal interview. 27 Oct. 2009.

¹⁰ Dean, Andrea O., and Timothy Hursley. *Rural Studio: Samuel Mockbee and an Architecture of Decency*. New York: Princeton Architectural, 2002.



LEFT

The town of Rosedale, MS, is an incredibly beautiful town where a true sense of the temporal landscape may be engaged. As the author was driving through the town, the sense of history was overwhelming and awe inspiring. Rosedale clearly illustrates the impermanent livelihoods of many Delta towns and people. Sharp contrasts in architectural and rural/urban character, income, and temporality define this impermanence.

Personal photograph - the glass storefront of this downtown Rosedale building is not perfectly flat. Years of weathering and thermal expansion has created this reflection where clearly identifiable objects reflect a strangely warped image of reality.

SIDE-NOTE

A sign by the Mississippi Blues Commission in Rosedale states, “Rosedale was immortalized in Robert Johnson’s 1937 recording *Traveling Riverside Blues*. In 1968 Eric Clapton’s group Cream incorporated the verse ‘Goin’ down to Rosedale’ into their version of Johnson’s *Cross Road Blues*. Although Johnson’s original 1936 version of this song did not mention Rosedale, the town has since become associated with the legend of a bluesman selling his soul to the devil at the crossroads.”

Local stories also tell when Led Zeppelin played an acoustic set on their way from Memphis, TN to New Orleans, LA. The profound effect the Blues Trail and its music had on their own compositions made this side-trip a necessity.

<http://www.visitclevelandms.com/g1/g-blues.html>

EDUCATIONAL SPACE THROUGH QUALITATIVE PROGRAMMING4

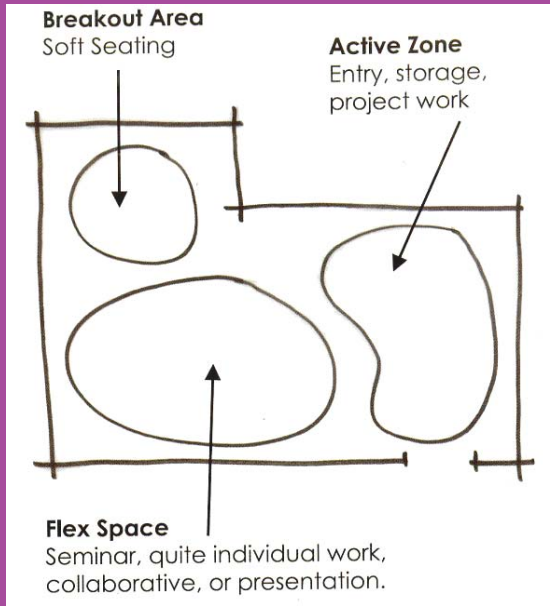
4.1 – FLEXIBLE STUDENT SCHEDULING

SENSATIONS OF INTIMACY, BRIGHTNESS, SAFETY, SPIRITUAL UPLIFT, HEALTH, RELAXATION, AND ENGAGEMENT HELP FACILITATE PEDAGOGICAL GOALS FOR TEACHERS WHILE PROVIDING THEIR STUDENTS WITH A COMFORTABLE ENVIRONMENT.

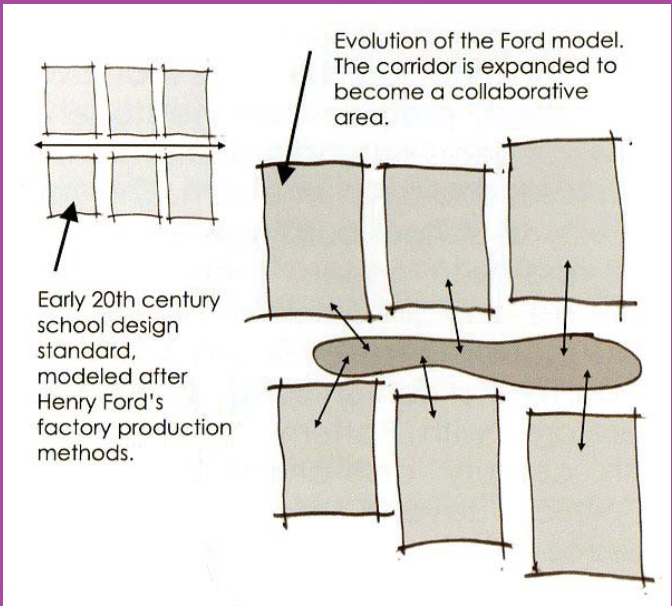
THE ARCHITECTURAL QUALITIES of the new school to replace Cypress Park Elementary in Cleveland should be carefully considered. The community receiving the school demands that the architecture be sensitive to its place and community yet facilitate pedagogical goals to improve education for young minds. The previous two chapters have identified aspects crucial to designing a new school in the Delta and the architecture may now begin to illustrate how the students, school, and the larger community participate in the educational system. The second chapter created priorities with the hybrid model of pedagogy that reinforces the best aspects of Open-concept, Montessori, and State methodology. Spatial implications exist for each of the priorities that will begin to establish architectural rules. Those priorities include the following.

1. The formation of flexible student scheduling using individual inquiry, small group dialogue, and large groups to allow students to effectively engage their material.
2. Learning is grounded in particular contexts and individual experiences.
3. There should be an active search for meaning by the learner.
4. The inclusion of community issues that establish relevance to the student’s educational material and how solutions create personal implications.
5. Connections to learning should be made and maintained.
6. Immediate and efficient access to technology and digital information to facilitate independent inquiry.
7. The reliance teachers have with other teachers should be emphasized as an effective method to experiment with different teaching methodologies.

Flexible and dynamic space encourages students to be more engaged with their environment and subject matter. Open space additionally provides flexibility between individual students’ learning styles and their physical learning environment (*fig. 4.1*). Pupils hence become more self-directed and self-motivated. Children are not required to stay still and be silent. Students are additionally not required to form geometric seating arrangements consistent with teacher-centric classrooms (*fig. 4.2*). Students in an open space school were more likely to choose seating reflecting expectation of interaction rather than coercion, develop cooperative interdependence in a controlled game-playing situation and develop beliefs reflecting an internal locus of control.¹ Additional modifications in open space school design and classroom



ABOVE - FIG. 4.1
Flexible student scheduling to create separate learning environments
Language of School Design. 20.



ABOVE - FIG. 4.2
The previous classroom "egg-crate" model
Language of School Design. 17.

morphology have had influence on students, whether beneficial or detrimental to retention. These include (but are not limited to) rearranged furniture, added shelving, and a raised reading platform. The primary aspects of qualitative classroom design are explained later in this chapter.

Environmental psychologists (including designers and architects), unlike educational psychologists, have been more concerned with the physical layout of schools and less concerned with student retention of material. Educational studies are typically not concerned with the built environment. Few formal studies have been conducted to define quantifiable architectural implications on material retention. Environmental psychologists, when dealing with personal/physical dimensional relationships, focus on several aspects of educational space in Open-concept classrooms. These include seating and classroom furnishing arrangement, spatial density, crowding and stress, privacy, noise and acoustics, climate and thermal comfort, and lighting.² Open space classrooms should not be limited to these parameters due to the richness and potential of the pedagogy. Formal variability/flexibility and pedagogy must be the driving forces behind educational space. Designers should not be limited to designing seating arrangements in the same way teachers should not be forced to limit their teaching focus.

A school, or any learning environment for that matter, in its totality represents a very complex organization, but one that can usually also be represented in the form of a "pattern..." The larger pattern will only make sense, however, when its sub-groupings are also recognized as complete 'systems,' themselves deserving to be represented as patterns.³

These patterns are represented by four realms of human experience within the purview of school planning and design. Patterns that establish spatial, psychological, physiological, and behavioral characteristics for students within educational space are resultant from effective facilities planning. Architects are in the unique position to influence sensations within these four realms. Sensations of intimacy, brightness, safety, spiritual uplift, health, relaxation, and engagement help facilitate pedagogical

goals for teachers while providing their students with a comfortable environment (fig. 4.3).

The most effective diagrammatic parti that facilitates these sensations and flexible student scheduling is the "Finger Plan" (fig. 4.4). This design pattern was best explained by Prakash Nair and Randall Fielding in their publication, The Language of School Design: Design Patterns for 21st Century Schools.⁴ This parti reorganized a traditional egg-crate plan into a series of fingers radially projected from an all-school commons. The "fingers" include "small community commons" that form the nexus of classroom activities. Because students should learn between classrooms, small learning communities, and the broader community, the finger plan successfully promotes educational goals. Randall Fielding describes the finger plan's potential benefits in the following way.

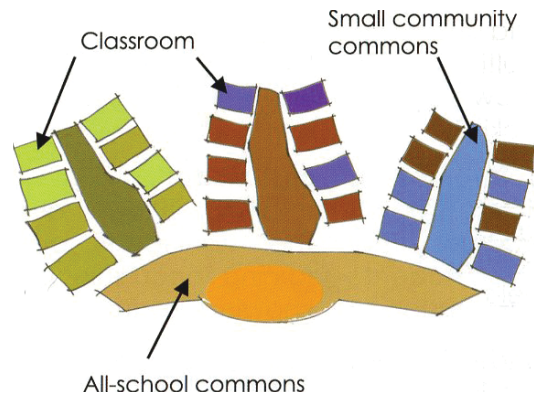
The finger plan model can have significant psychological benefits for students who are now better able to define their 'Home Base' and thus take ownership for it. In order for these benefits to be fully realized, each cluster of rooms should be differentiated from the remaining clusters so that it has its own unique identity. This can be accomplished by giving each wing a different architectural character, changing color schemes, providing different options for display of student work and so on.⁵

The differentiation between color schemes or display space is not a significant design proposal for the school to replace Cypress Park Elementary. The most significant architectural design challenge facing facilities planning is the design of appropriate transitional environments from a relative teacher-centric orientation to a more physically engaging learning environment (fig. 4.5). Because the simple arrangement of classrooms spread from a central corridor, the finger plan can be easily expanded by merely continuing the circulation spine and adding more fingers. The plan also provides all classrooms with direct access to the outside and allows for natural ventilation (an effective strategy in temperate climates similar to

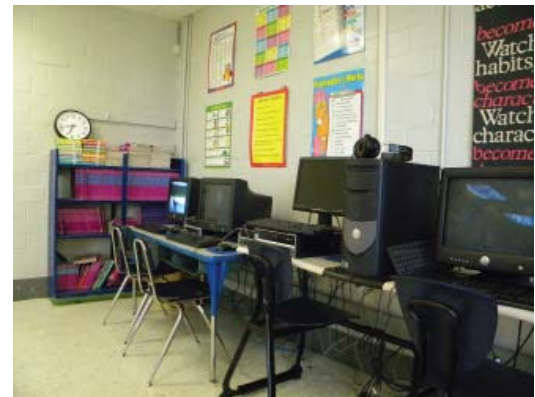
BELOW - FIG. 4.3
A comfortable and encouraging learning environment
<http://bulungulaincubator.files.wordpress.com/2009/08/classroom.jpg>



BELOW - FIG. 4.5
An example of a transitional learning environment with soft seating, vegetation, and daylight
Designing. 53.



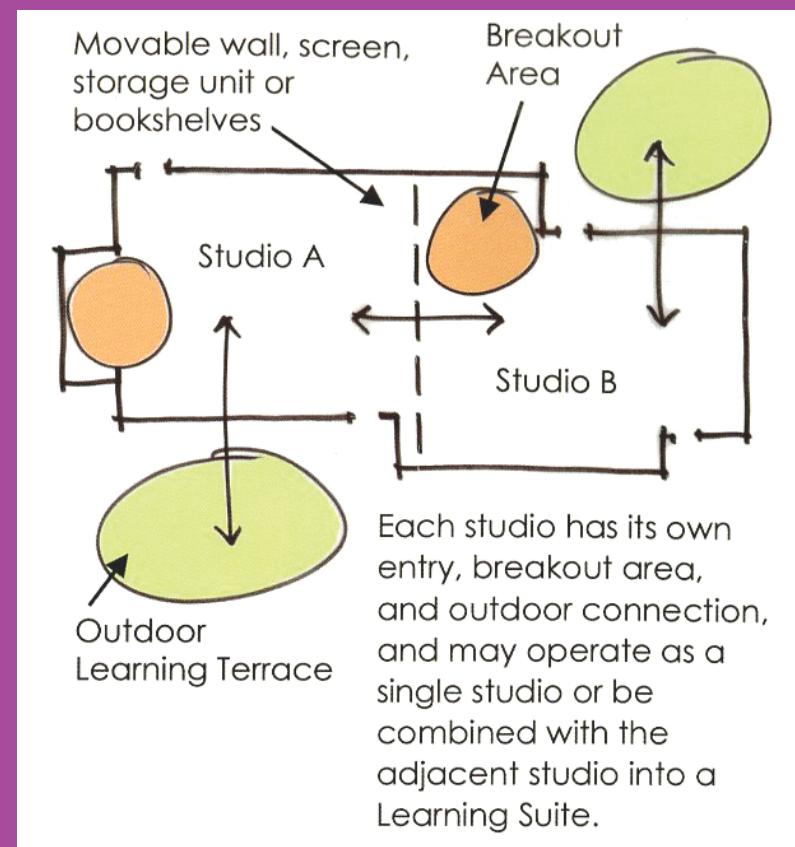
ABOVE - FIG. 4.4
The Finger Plan
Language of School Design. 18.



SPACES WITH PROXIMITY AND DIFFERENT ENVIRONMENTAL CHARACTERISTICS SUPPORT PEDAGOGICAL OBJECTIVES.

OPPOSITE BELOW - FIG. 4.6
Technology located along the periphery of the classroom serves an ancillary function rather than an integral function, Jonestown Elementary, Jonestown, Mississippi
Personal photograph

RIGHT - FIG. 4.7
Multiple learning studios sharing a single learning environment
Language of School Design. 21.



Each studio has its own entry, breakout area, and outdoor connection, and may operate as a single studio or be combined with the adjacent studio into a Learning Suite.

Cleveland).⁶ The finger plan architecture identifies several different pedagogical modalities important to the Hybrid model and eastern Cleveland students. These different learning modalities are significant in the development of flexible student scheduling and variable educational environments. They include:

1. Independent study
2. Peer tutoring
3. Team collaborative work in small and mid-size groups (2-6 students)
4. One-on-one learning with the teacher
5. Lecture format with the teacher or outside expert at center stage
6. Project-based learning
7. Technology-based learning with mobile computers
8. Art, story-telling, performance and music-based learning
9. Seminar-style instruction
10. Community service learning
11. Naturalist learning
12. Social/emotional learning
13. Learning by building—hands on learning⁷

The finger plan includes different spaces for these modalities that include the learning studio, advisories, and the all-school commons. The learning studio is a translation of the traditionally rectangular classroom into a more flexible space. Typical classrooms are arranged where students face a teacher in a predetermined geometry. This spatial configuration is consistent with lecture-oriented classrooms and is not a conducive learning modality for younger students. In a teacher-centric classroom, technology and other classroom resources are arranged on the periphery and serve an ancillary function to subject matter

rather than serving an integrative function (*fig. 4.6*). The plan of the learning studio may be separated into three different spatial functions including the breakout area (informal learning), the flex space (seminars and individual work), and the active zone (entry and project work) (*fig. 4.1*). Because the social dynamics of a learning studio should demonstrate student work, active zones are placed at the entry. Passers-by are immediately aware of student work in process. This model differs from the traditional classroom in that technology and supportive spaces are directly integrated into a single space. This single space supports multiple learning environments for different learning activities. The author observed students at Cypress Park Elementary during their reading time. The way students reconfigured their arrangement was to move onto the floor rather than moving to a unique space that encouraged reading. Identified in chapter two, spaces with proximity and different environmental characteristics support pedagogical objectives.

Multiple learning studios may then be combined into an advisory. Each studio has its own entry, breakout area, and outdoor connection, and may operate as a single studio or be combined with the adjacent studio into a group advisory (small learning community). The advisory may also contain outdoor learning terraces. This is an important connection because sustainable building features are best illustrated with natural connectivity. When two or more learning studios are combined into an advisory, separation may be achieved with bookshelves, student storage, or moveable acoustic partitions. Moveable furniture is an option to create an advisory and is a friendlier way to experience cooperative space (*fig. 4.7*).



LEFT - FIG. 4.8
Advisory spaces where students may collaborate with their peers and instructors
School Ways. 141.

The choice between the two approaches (furniture compared to partitions) comes down to philosophical and operational issues. The more flexible furniture-based model is appropriate when the two ... are more likely to operate as one larger entity with the teachers working in close collaboration with each other. In this type of situation, the acoustical separation afforded by the moveable wall is not much of an issue. Students get used to using their 'indoor voices' much as they would in a family-type situation with the realization that the [advisory] caters to many different learning activities dispersed between the two studios.⁸

The learning advisory is clearly supportive of teacher collaboration (a key asset identified by Cypress Park Elementary teachers) and does not differ from current open space schools supporting Open-concept teaching. These advisory spaces may also be used as collaborative spaces for students with soft seating and areas for presentations (*fig. 4.8*). Advisory spaces form transitional spaces between different age groups that allow for an efficient switch between project based learning and teacher-centric learning.

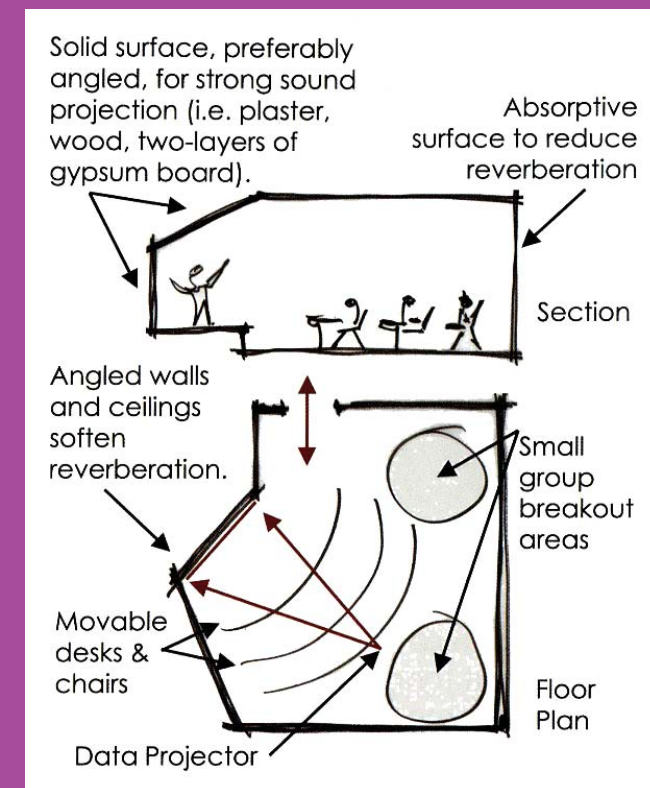
The central hub of the learning studios and advisories is the all-school commons. The commons is located near the entry and should be the signature element of the school. Prakash and Nair describe the welcoming entry containing the "signature element" of the school "that speaks to what makes the school special."⁹ Nair elaborates that this element is an architectural feature (a covered entry or other geometric manipulation of form). The idea that the entry should represent the "signature [architectural] element" is irrelevant as the signature element of a school is the people within. Architectural features that represent a designer's ambitions are distracting to a school's utility (though the architectural significance of a pronounced entry should not be negated in the opinion of the author). In fact, the covered entry is important to place making in the Delta. The porch and loggia create communicative areas between private and public dwelling. As a place where student interactions converge and knowledge is exchanged, the all-school commons is the signature element of the school. The all-school commons builds a school's identity.

The all-school commons is a place where the student body and all levels of learning converge in social exchange. This space of convergence may be represented through primitive imagery in four classifications. Author and educator David Thornburg proposed that learning might be achieved through metaphor. Each of these metaphors supports different learning modalities through informational exchange. They include campfires, watering holes, caves, and life. Thornburg elaborates:

Campfires are a way to learn from experts or storytellers; watering holes help you learn from peers; caves are places to learn from yourself; and life is where you bring it all together by applying what you learn to projects in the real world.¹⁰

Prakash and Nair posit that these different metaphorical exchanges are best achieved through spatial division. However, the all-school commons may be the best place to facilitate these modalities. Campfires help facilitate inter-age collaboration. When students are placed in the position of educators for younger pupils, different skills are introduced that were never previously achieved through teacher-centric (or project-based learning for that matter). Older campfire speakers gain skills in public speaking, confidence, and an attitude of knowledge expertise that may devalue seniority (a generator of bullying in youth).¹¹ Integrated presentation technology supported by teachers may complement public speaking abilities and additionally enhance the purpose of campfire spaces. The campfire space may be utilized as a platform for story telling, advocacy, or general knowledge and is a key facilitator of trusting relationships between age groups (*fig. 4.9 and 4.10*).

BELOW - FIG. 4.9
Campfire space schematic layout
Language of School Design. 61.



BELOW - FIG. 4.10
Qualitative aspects of a campfire space where peer learning occurs
Language of School Design. 61.



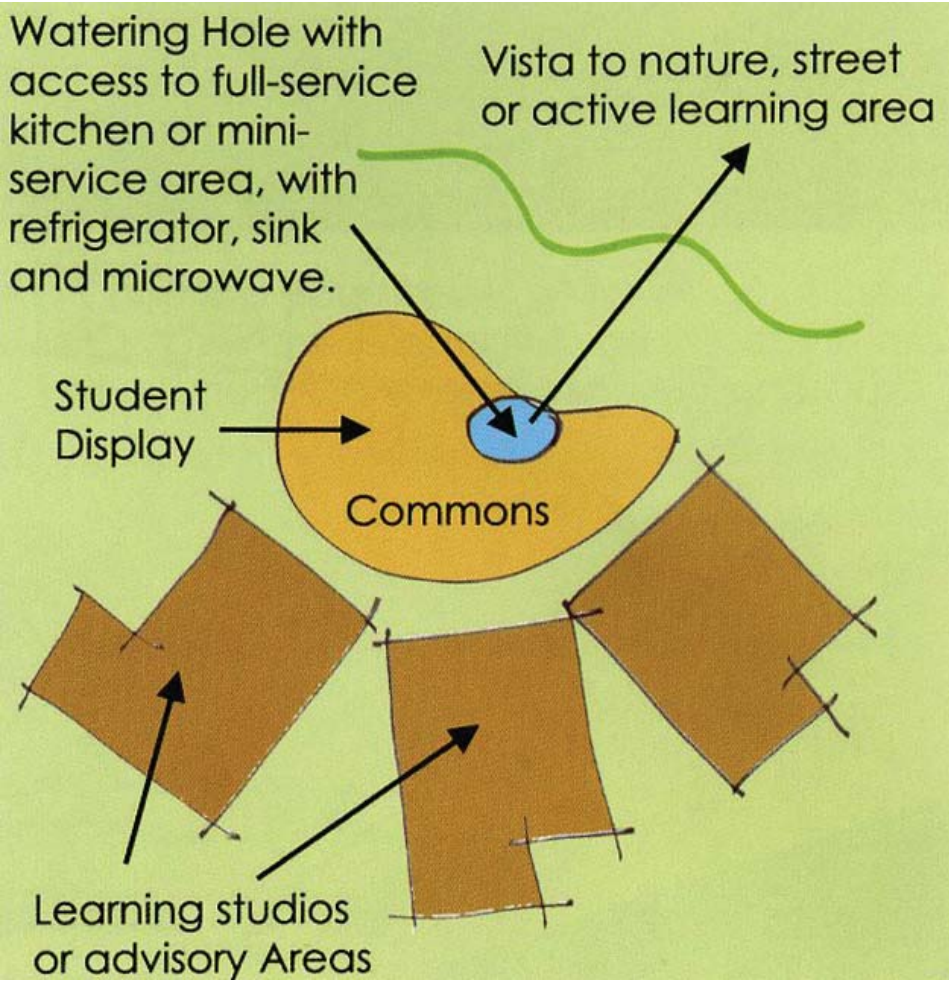
THE CAMPFIRE SPACE MAY BE UTILIZED AS A PLATFORM FOR STORY TELLING, ADVOCACY, OR GENERAL KNOWLEDGE

The watering hole is rarely seen in contemporary school design. Though many all-school commons feature watering hole spaces that generate sociability, informational exchange is a rarity. Most traditional schools based on egg-crate organization actually discourage social interaction in school as a distraction and out of fear that when students socialize, they threaten adult goals of discipline and compliance with adult rules. Though socialization is an entrenched activity in all-school commons, knowledge exchange may help negate problems with discipline. Watering hole spaces may transcend the all-school commons and be incorporated into learning studios and advisories. Because the primary function of a watering hole space is the informational exchange between peers, these spaces may be located within libraries or other informational centers where collaborative learning occurs. Watering hole spaces may also occur where moments of knowledge and experience converge to create informational inquiry (a key tenet of Open-concept methodology). Information technology should be ever-present in these spaces. Moving from a watering hole space to a separate space may decrease an inquiry's potency and sense of immediacy (*fig. 4.11*).¹²

Cave spaces are not ascetic, but are rather places for individual study, reflection, quiet reading and creative flow. These spaces should be rich in architectural character to nurture an individual's emotive experience. Spatially, these spaces should be integrated with the total school system yet acoustically separated. Some students do not need quiet spaces for learning. Thus, a variety of spaces that facilitate individual study in advisories and all-school commons are necessary. These spaces may be conceptually conceived as a series of nooks and crannies. Security may become an issue within these spaces, but visual transparency and proximity to public areas where teachers may monitor students negates security concerns. Other architectural elements that encourage cave space occupancy include natural light, texture, connectivity to the outdoors, and soft seating. These elements will be elaborated upon later in this chapter (*fig. 4.12*).¹³

The combination of these different types of learning modalities into a single spatial configuration in the all-school commons becomes supportive of the student body's exchange of information. These spaces encourage social inclusion and help facilitate informational inquiry. The all-school commons then becomes the "signature element" that Prakash and Nair regard as the community's symbol. A supportive all-school commons allows children with different knowledge characteristics to network and establish personal inquiry that Open-concept education primarily values. By creating unique spatial environments where individuals are comfortable with their peers, education becomes more engaging to students (*fig. 4.13*). Sara Snyder Crumpacker describes in her essay "Using Cultural Information to Create Schools that Work" that:

People who spend their days in schools often describe and interpret the experience favorably only when they are afforded personal choices. School users prefer areas offering the widest selection of activities, equipment, spaces, supplies, routes, and people possible. Therefore, schools should be planned so that users 'bump into' different [architectural] choices on a daily basis—buildings full of variety, where people experience increased personal satisfaction and comfort because they have some say-so over their daily living ... Facilities offering a variety of choices escape the sterile sameness that characterizes most educational facilities.¹⁴



RIGHT - FIG. 4.11
Design parti for a watering hole space
Language of School Design. 63.

BELOW - FIG. 4.12
A particularly striking cave space for private informational inquiry
<http://www.designshoot.com/uploads/februari-09/Cave-stacks-1.jpg>



BELOW - FIG. 4.13
http://www.flashalertnewswire.net/images/news/2009-11/657/IMG_0743.JPG

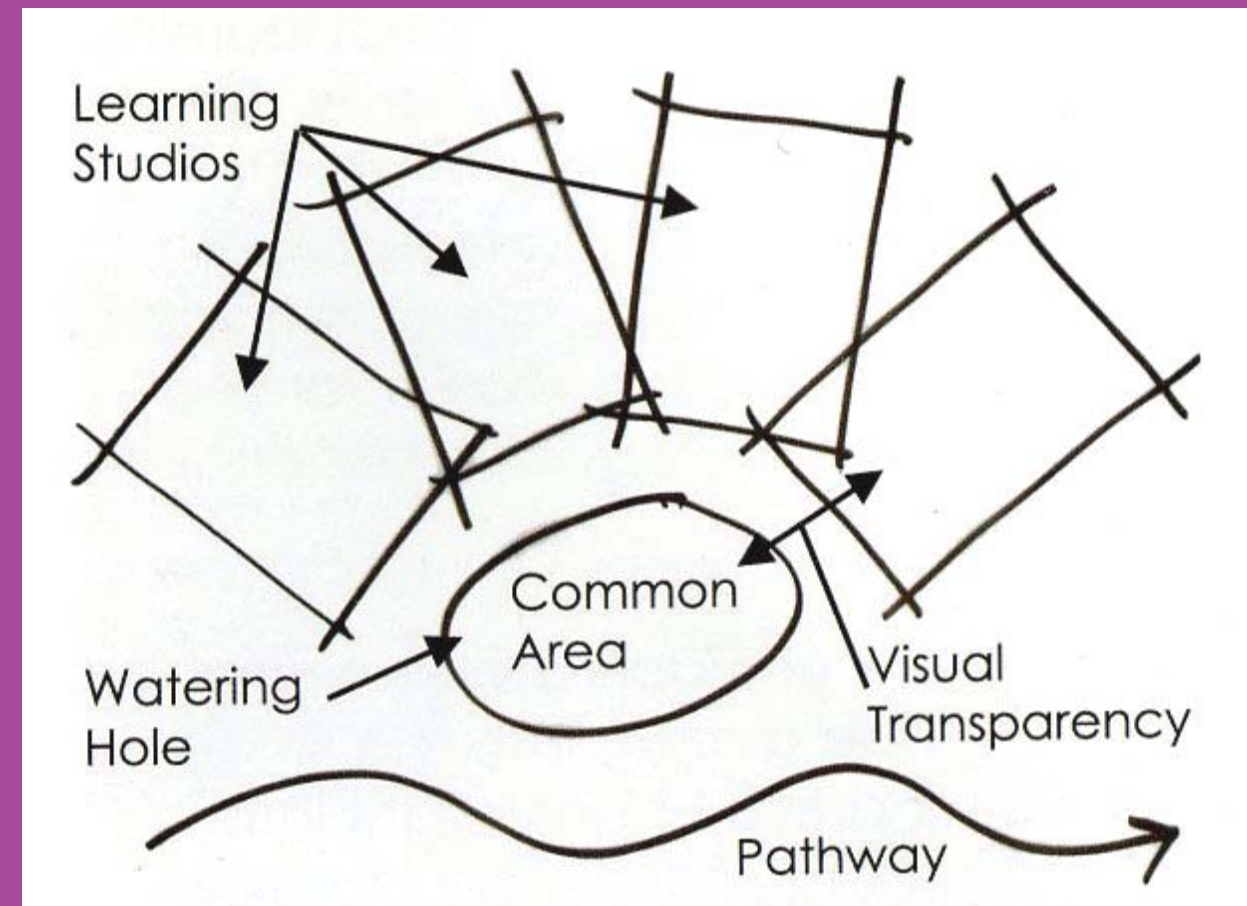


4.2 – QUALITATIVE DESIGN OF EDUCATIONAL SPACES

EDUCATIONAL SPACES MAY BE CONFIGURED within a design parti to promote educational goals, but qualitative design creates environments beneficial to educational growth. The previous quote by Crumpacker reveals a slightly popularized view of contemporary educational facilities. The “sterile sameness” schools utilize are potentially beneficial to educators as they inhibit distraction (Jonestown Elementary School, Jonestown, Mississippi).¹⁵ When qualitative design is applied to an effective architectural parti, educational facilities become full of life (the fourth primordial learning metaphor identified by educator David Thornburg). These qualities include transparency, daylight and lighting, thermal comfort and natural ventilation, color and materiality, and acoustics (the most persistent issue in Cypress Park Elementary). Other issues worth addressing in this section include indoor/outdoor connectivity, furniture, and other sustainable design strategies.

Transparency is an important aspect in educational facilities. Learning should be visible and celebrated. Transparency is best achieved through spatial vistas and experiential linkages. Informal and formal learning areas need connectivity to promote environmental exchanges specific to the material and methods. When transparency is used between these different hierarchies of space, it provides for highly stimulating and exciting places for students to learn. Having visual connectivity between the all-school commons, advisories, and learning studios clarifies circulation and announces which group of students holds ownership over those spaces. Interesting sight lines from different parts of the school create a sense of drama as people move from place to place in the building. The central office should additionally be made as transparent as possible to improve its welcoming feeling. Staff may additionally monitor student safety to prevent bullying or harassment. The entry should also be replete with transparency to present student work to the public. Transparency also serves as an efficiency measure for daylighting design. Light is able to penetrate deeper into interiors and decrease cooling and lighting loads (*fig. 4.14 and 4.15*).¹⁶

“Of all the elements that make up a high performance school, none has greater impact on the quality of learning than daylight.”¹⁷ A tremendous amount of research has been conducted over the effects of integrating daylight into spaces of learning and healing. Architects and engineers have reached a concise agreement that daylighting is integral to spatial comfort and energy efficiency (*fig. 4.16 and 4.17*). Unfortunately, Cypress Park Elementary contains very few windows in the main learning space (this is an indirect benefit to security as thieves are unable to access the building’s materials). Daylight is important



ABOVE - FIG. 4.14

Design parti for the integration of transparency between major programmatic elements
Language of School Design. 47.

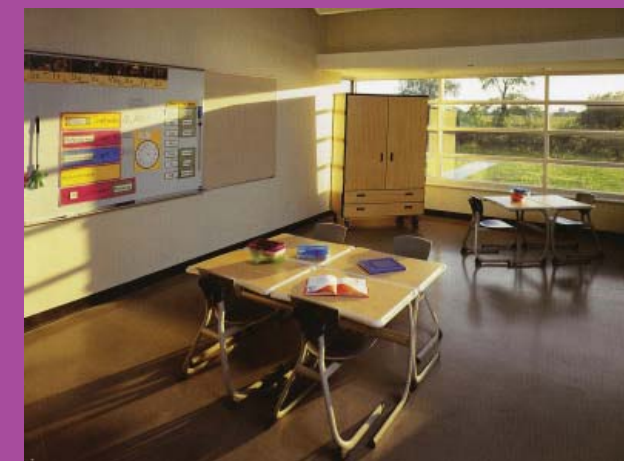
BELOW - FIG. 4.15

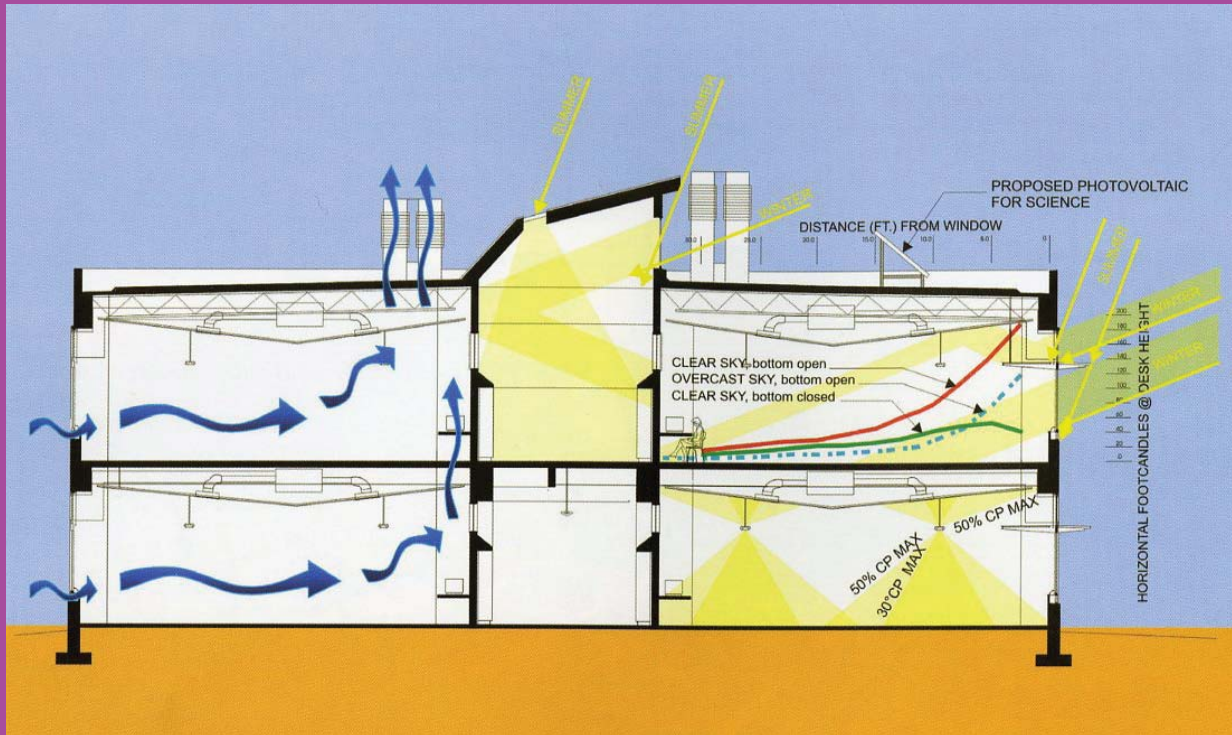
Transparency between spaces in a public school, England
Language of School Design. 47.



BELOW - FIG. 4.16

A successfully daylighted classroom in Australia
Language of School Design. 74.





ABOVE - FIG. 4.17
Sustainability diagram illustrating daylighting strategies and passive cooling
Language of School Design. 74.

for the physiological and psychological well-being of students and teachers. Research shows that in daylight classrooms math scores improve by 20% and verbal scores by 22%.¹⁸ Fluorescent lighting and climate control tend to create relatively homogeneous spaces and actually inhibits student sociability. “Evidence suggests that dim lighting may lead to a loss of self-awareness and normative inhibition.”¹⁹ An optimal choice for collaborative classrooms may be normal intensity, full spectrum or daylight complemented by fluorescent lighting in impenetrable spaces. Daylighting may be best achieved through the use of windows, skylights, light cannons, and light shelves. Higher windows allow for greater penetration into the building and are typically used as lightshelves. It is important to properly manage daylight levels with shading devices to negate unwanted heat loads.²⁰ The best shading already available in Cleveland are the canopies of Delta hardwoods that create high vegetative shade (*fig. 4.18*).

Because the finger plan promotes natural ventilation through its form, maximum access to this necessary element may be achieved. Naturally circulated air contributes to a healthy environment and alleviates some serious problems associated with spending excessive amounts of time in conditioned spaces. An observation by Ken A. Graetz and Michael J. Goliber in their essay “Designing Collaborative Learning Places: Psychological Foundations and New Frontiers” states:

Although research suggests that classroom temperature does affect learning, it probably has greater impact on social behavior. Excessive heat is a well-documented environmental irritant that appears to cause hostile thoughts, feelings, and behaviors in some individuals. When working in groups versus watching a traditional lecture, students are often sitting closer to one another and are more active physically. In addition, they may also be gathered around computers and projectors that generate heat (an additional explanation for why computers are typically placed around the periphery of classrooms).²¹



ABOVE - FIG. 4.18
Natural shade created by indigenous hardwood vegetation
Personal photograph

Primary colors have been concluded as being harsh for young children and do not stimulate learning. Neutral colors have additionally been described as inhibiting for growing minds and several shades of white do not control young minds. This research additionally concluded that children are wonderfully sensitive and responsive to nuances in both lighting and color. “For example, children are particularly attuned to the colors of nature and human skin tones, and yet these are completely out of the primary range (*fig. 4.19*).”²³ These natural colors are best represented through honest selections of the material palette. When natural elements (wood, stone, masonry, metals, or vegetation) are used in place of painted drywall, familiar and natural environments are created. Materials that are expressive of the environment surrounding the school have been described as “bringing the outside in.” Students are supportive of their learning environment if the school’s material palette relates to their ecological environment.

Acoustic qualities of spaces are the primary concern of current open space schools. Because noise is a frequent concern identified by Cypress Park Elementary teachers, acoustic design for eager minds is crucial. The impact of noise on learning depends on a range of factors including the loudness, pitch, perceptive differences, and speaking characteristics. Some research has established ambivalent attitudes towards the effect of noise in classrooms. Some research continues to suggest that noise is an inhibiting and distracting factor for students. Other researchers have identified that normal ambient noise levels improve focus when quiet environments are encountered. As for the actual noise level in collaborative classrooms, “One study of preschool students obtained sounds levels above ninety-five decibels in open plan classrooms.”²⁴ Prolonged noise exposure at this level can cause permanent auditory damage (a serious problem for preschoolers). Elevated noise conditions additionally have a snowball effect. When one classroom speaks too loud, surrounding classrooms must speak louder to effectively convey their message. This causes other neighboring classes to speak louder. In the case of Cypress Park Elementary,

Spending excessive amounts of time in conditioned spaces additionally induces serious reactions caused by the distribution of allergens through forced air systems not utilizing HEPA filters. Additionally natural ventilation helps prevent the formation of mold (endemic to the Delta’s humid climate). Mechanical systems that have the capacity to draw in significant amounts of fresh air into a building while maintaining a high ratio of fresh air to reconditioned air should be implemented. This maintains a healthy indoor environment while keeping mechanical costs low. An additional benefit to natural ventilation is a psychological one. By giving users control over the quality of air they breathe, a sense of connectedness to the outdoors and personal control is achieved (*fig. 4.17*).²²

Color is another significant design attribute architects must consider when designing educational spaces. Humans instinctually move towards light and color as they connote feelings of security. Research has been conducted that places great value on variances of colors.

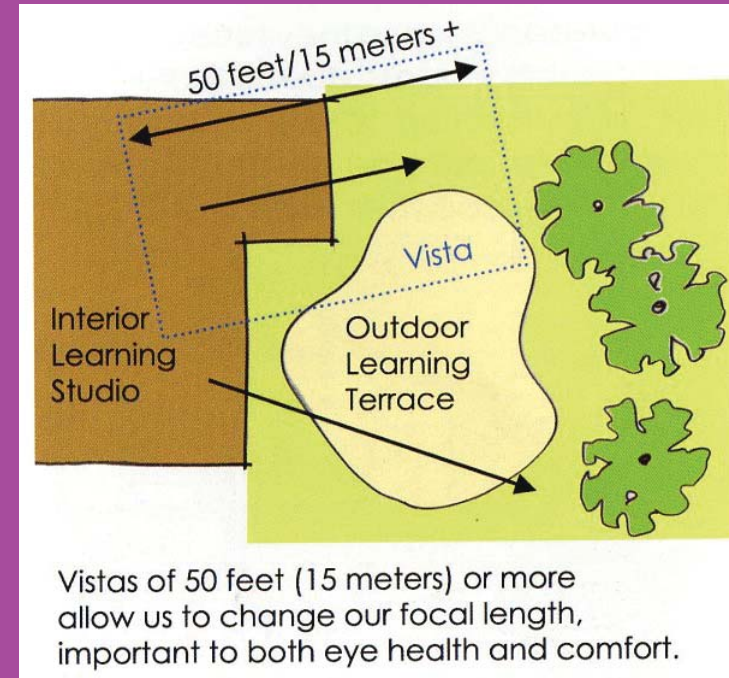


ABOVE - FIG. 4.19
Excellent use of color, materiality, and supportive lighting design in an advisory space
Language of School Design. 28.

the principal must announce to the school that noise levels are unacceptable and must be controlled. As described by Jessica Lockwood, a student teacher in the school, "The afternoon hours are complete chaos because the students have no way to expend their energy with no proper recess period."²⁵ No precise standard for noise levels has been established for classrooms. Mechanical and Electrical Equipment for Buildings 10th ed. establishes appropriate levels to be between 50 and 60 dB.²⁶ This range falls between usual background noise and loud conditions. Normal conversations are understood in this range with some ambient background. Noise may be controlled through appropriate composition of dampening materials and volumetric differentiation. The typical reverberation time in elementary classrooms averages near 0.68 seconds but may climb as high as 1.0 seconds.²⁷

Human beings are genetically engineered to establish connectivity with the outdoors. Youth are mainly predisposed to this innate condition. Every opportunity to connect the indoors with the outdoors should be pursued. Outdoor learning may be facilitated through the formal arrangement of the learning studios and advisories (*fig. 4.20*). Activities that may be performed indoors should be relocated to the exterior when the weather and climate allow. Children are able to learn from activities specific to the outdoors which include gardening, nature walks, care for animals, and most importantly, playing on specialized equipment (Cypress Park Elementary has none) to develop motor skills (*fig. 4.21*).²⁸ Classrooms that establish connectivity to the outdoors are complemented with operable windows and deep daylight penetration.

Furniture is a highly influential aspect of school design that administrators frequently take for granted. Students are asked to remain in seating that is not ergonomically designed for several hours a day with little movement towards soft seating. Almost every surface that students sit on in school is hard (including the floor for reading and group assignments). Many adults argue that the benefits of soft ergonomic seating outweigh the cost. The same is needed for growing bodies. Some estimate that as



ABOVE - FIG. 4.20
Outdoor space with connectivity to indoor programs
Language of School Design. 42.

LEFT - FIG. 4.21
Part to establish indoor/outdoor connectivity
Language of School Design. 49.

many as 50% of all Americans have back problems resulting from poor posture in classrooms.²⁹ The preferable solution to seating and other school furniture is seating that is upholstered and ergonomically designed. A small couch or sofa (to encourage sociability) may be incorporated in the periphery of learning studios. In the case of the all-school commons and the advisories, soft seating may be incorporated directly into the architecture. Confrontations may result from competition for seating. A sufficient amount of soft seating options should be available to prevent this.

Sustainable features remain the pervasive issue in architectural design and school architecture is not an exception but rather the rule. Schools are the generators of sustainable knowledge systems and should reinforce this permanent annual cycle. Many aspects of contemporary school design that have been presented within this chapter advocate sustainability as the foundation for design. Schools should be three-dimensional textbooks that illustrate complex yet interconnected systems (*fig. 4.17*). Several additional sustainable features have not been elaborated upon in this section. They include solar orientation, resource consumption, energy harvesting, indoor environmental quality (material specification), and the capture/utilization of rainwater. The school's solar orientation creates generous possibilities. For example, if second-grade students have their reading period during the beginning of the day, niches with daylight, appropriate thermal mass, and soft seating will create a soothing environment advantageous to reading retention. Solar orientation and natural ventilation may also create a daily calendar that controls activities within the school. Through a simple exchange of thermodynamics, natural ventilation may be introduced to a space with high thermal mass that cools environments requiring quiet study in the afternoon (high temperatures cause restlessness). The school should readily demonstrate the activities of various sustainable features. The water cycle may be demonstrated through the capture and retention of rainwater in ponds (which also lowers the ambient temperature and relative humidity).

Throughout the research conducted on qualitative design of educational spaces, a tremendous vocabulary of design strategies has been obtained. Students require flexible spaces with appropriate spatial qualities that traditional egg-crate schools do not promote. The most significant qualitative design

strategy that has been identified in this research is the connectivity to the outdoors. The research gathered in chapter three concluded that the black community still has a profound attachment to the landscape although land ownership was rarely an opportunity. The black community retains an attitude of temporal impermanence in the landscape. Indoor/outdoor connectivity should be entrenched in the design of the new school to establish ownership over the landscape. Students may then understand their place in natural cycles and become greater stewards of the land and community they intend to keep.



LEFT - FIG. 4.22
Children with instant access to digital information technology
Language of School Design. 52.



LEFT - FIG. 4.23
Students with personal computer access in public learning areas
http://www.abc.net.au/reslib/200812/r323914_1448500.jpg

4.3 – INFORMATION TECHNOLOGY

Information technology must be ubiquitous. This may be a bold statement for a low-income community with infrequent access to information technology, but technology is one of the more underutilized learning tools available to Cypress Park Elementary students. There is only one computer lab with enough stations for one class. Some upper-grade classrooms have individual computers. This does not imply that information technology is readily accessible or utilized (*fig. 4.22*). Simply adding network drops to classrooms does not provide an adequate solution. Graetz again describes how “Digital course content is becoming richer, deeper, and more interactive with the use of animation, multimedia, and programming languages.”³⁰ Technology is becoming more interactive with its user. Digital information technology is more virtually engaging and now complemented by a physical learning environment. The physical environment then becomes very specific to what digital technologies may be used.

Advisories and watering hole space may serve this purpose. Digital technology and exploration through the virtual information world should be a collaborative effort between students in these spaces. The distance required to travel from one end of the school to the technology center may become distracting for other students who are engaged in studies within neighboring advisory spaces and cave spaces. Therefore, technology should be a ready feature in the advisory spaces. This will help “blur the lines between so-called ‘learning’ places and support spaces.”³¹ Learning technologies such as computers, video-display terminals with a digitally archived library of materials, and electronic notebooks with network access throughout the school should be available to students.³² These community environments reflexively create digital learning environments in real space-time and the ability of a student to formulate inquiries is greatly increased (*fig. 4.23*).

Necessary precautions and other structural limitations to public technology should be made available as well. Students become easily distracted by games and other things when internet access is unlimited. An interesting proposition read by the author described how schools may build social networking profiles for their students (including Facebook© and MySpace©) to follow and understand their interactions, interests, and problems.³³ If social networking is not an available option for schools, coordinating a school-wide server and digital archive of materials is a possible investment. Some teachers have specific and successful methods of presenting information and a digital archive of these materials available to proceeding teachers helps transitional periods. Students would have access to this information (as read-

only files) at any time and place. The archived technology may be a series of interactive videos and digitally manipulated exercises. One serious problem remains. Not all students have access to technology at their homes. Many homes in eastern Cleveland do not have family computers and paper homework will remain a necessity until technology becomes more immediately available to these families.

Digital technology will be made ubiquitous to students in future learning environments but this does not discount the physical presence of the teacher. Teachers as a physical entity in the classroom are a guiding source of inspiration for growing minds. The research identified in chapter two outlines how the teacher is a facilitator of knowledge. The teacher is the guiding factor for decisions regarding appropriate materials and methods for acquiring information. A wealth of information exists concerning the potential elimination of the lecture and site-specific classroom to give way to the digitally collaborative classroom.³⁴ Again, because of the current limitations of technological resources within private homes in eastern Cleveland, this is not a concern. Teachers and site-specific classrooms will remain the contemporary model for instruction, but digital technology will be a way information is explored by young minds.

BELOW - FIG. 4.24
Contemporary art gallery with sufficient and well-implemented daylighting strategies attract the public for more than its singular use
http://www.qvmag.tas.gov.au/images/general/art_gallery.jpg



NOTES

¹ Lackney, Jeffery A. *Educational Facilities: The Impact and Role of the Physical Environment of the School on Teaching, Learning and Educational Outcomes*. Rep. no. R94-4. Milwaukee, Wisconsin: Wisconsin University - Milwaukee, 1994. ERIC document reproduction service no. ED466574. 28.
² Ibid. 31.
³ Nair, Prakash, and Fielding, Randall. *The Language of School Design Design Patterns for 21st Century Schools*. DesignShare, Inc., 2005. 9.
⁴ Ibid. 18.
⁵ Ibid. 19.
⁶ Graves, Ben E. *School Ways: The Planning and Design of America's Schools*. New York: McGraw-Hill, Inc., 1993. 71.
⁷ Nair, Prakash, and Fielding, Randall. *The Language of School Design Design Patterns for 21st Century Schools*. DesignShare, Inc., 2005. 19-20.
⁸ Ibid. 23.
⁹ Ibid. 31.
¹⁰ Ibid. 61.
¹¹ Historically, the campfire space is best embodied in the spirit of the early afternoon English soapbox speakers found in London's Hyde Park as a generator of socio-political informational exchange.
¹² Nair, Prakash, and Fielding, Randall. *The Language of School Design Design Patterns for 21st Century Schools*. DesignShare, Inc., 2005. 63.
¹³ Ibid. 67.
¹⁴ Crumppacker, Sara S. "Using Cultural Information to Create Schools that Work." *Designing Places for Learning*. Alexandria, Virginia: Association for Supervision and Curriculum Development, 1995. 31-42. 35.
¹⁵ The author was fortunate to observe students in Jonestown Elementary School during a site visit to Mississippi in late October, 2009.
¹⁶ Nair, Prakash, and Fielding, Randall. *The Language of School Design Design Patterns for 21st Century Schools*. DesignShare, Inc., 2005. 48.
¹⁷ Ibid. 73.
¹⁸ Ibid. 81.
¹⁹ Graetz, Ken A., and Michael J. Goliber. "Designing Collaborative Learning Places: Psychological Foundations and New Frontiers." *New Directions for Teaching and Learning* 92 (2002): 17.
²⁰ Nair, Prakash, and Fielding, Randall. *The Language of School Design Design Patterns for 21st Century Schools*. DesignShare, Inc., 2005. 74.
²¹ Graetz, Ken A., and Michael J. Goliber. "Designing Collaborative Learning Places: Psychological Foundations and New Frontiers." *New Directions for Teaching and Learning* 92 (2002): 16.
²² Nair, Prakash, and Fielding, Randall. *The Language of School Design Design Patterns for 21st Century Schools*. DesignShare, Inc., 2005. 76.
²³ Ibid. 80.
²⁴ Graetz, Ken A., and Michael J. Goliber. "Designing Collaborative Learning Places: Psychological Foundations and New Frontiers." *New Directions for Teaching and Learning* 92 (2002): 18.
²⁵ Interview, 10/27/09 DSU
²⁶ Stein, Benjamin, John S. Reynolds, Walter T. Grondzik, and Alison G. Kwok. *Mechanical and Electrical Equipment for Buildings*. 10th ed. Hoboken, New Jersey: John Wiley & Sons, Inc., 2006. 729-62. 748.
²⁷ Ibid. 774.
²⁸ Due to excessive code restrictions and liability concerns placed on the construction of specialized equipment, this feature will be negated in the design of the school.
²⁹ Nair, Prakash, and Fielding, Randall. *The Language of School Design Design Patterns for 21st Century Schools*. DesignShare, Inc., 2005. 57.
³⁰ Graetz, Ken A., and Michael J. Goliber. "Designing Collaborative Learning Places: Psychological Foundations and New Frontiers." *New Directions for Teaching and Learning* 92 (2002): 14.
³¹ Nair, Prakash, and Fielding, Randall. *The Language of School Design Design Patterns for 21st Century Schools*. DesignShare, Inc., 2005. 51.
³² Graves, Ben E. *School Ways: The Planning and Design of America's Schools*. New York: McGraw-Hill, Inc., 1993. p6.
³³ Specific reference was not recorded. Projects similar in this nature have been developed to coordinate activities between classmates and teachers. Students may post information relevant to current areas of study.
³⁴ Graves, Ben E. *School Ways: The Planning and Design of America's Schools*. New York: McGraw-Hill, Inc., 1993. 6.
³⁵ Nair, Prakash, and Fielding, Randall. *The Language of School Design Design Patterns for 21st Century Schools*. DesignShare, Inc., 2005. 92.



PRECEDENT STUDIES 5



ABOVE
Exterior space outside of Cypress Park Elementary where students wait daily for buses to transport students accross Cleveland (another "place" of learning).
Personal photograph

LEFT
Interior of a Cypress Park Elementary classroom. This space is used by a third-grade section, but is not condusive to teaching methodology for this age group. Cypress Park classrooms do not contain flexible spaces for learning, such as cave, watering hole, and campfire spaces.
Personal photograph

"IT WAS A SIGHT SURPASSING ALL PRECEDENT, AND ONE WE NEVER DREAMED OF SEEING."

- HOWARD CARTER

5.1 – CROW ISLAND ELEMENTARY SCHOOL

PERKINS, WHEELER & WILL WITH ELIEL & EERO SAARINEN – WINNETKA, WISCONSIN, USA – 1940

“**CROW ISLAND ELEMENTARY SCHOOL** has stood as a landmark of collaboration between architect, client, and user.”¹ This architectural marvel has been hailed as one of the greatest achievements in school design during the 20th Century. The project was the synthesis of an ambitious school superintendent, determined faculty, and supportive parents. The school chose to disregard the archetypal Victorian schoolhouse of the region and supplant it with a completely revolutionary pedagogical model lying between the intersections of formal and informal education. The architecture removed the egg-crate plan and offered an informal plan that divided classrooms into separate wings, each with its own identity. The scale of the complex complemented the adjacent neighborhood context. This single-story brick structure has a welcoming rather than intimidating presence in the neighborhood.

A clock tower announces the initial entry followed by a broad set of stairs at the entrance. Transparency remains a major theme in the design, as visitors and students meet with a glazed entry. The glazed entry wraps around the building’s form as generous amounts of glazing maintain a relaxed feel. Natural light from skylights and the large windows bathe the interiors in warmth. Classrooms with nine-foot ceilings (giving the spaces a feeling of intimacy and child-like sensibility) have direct access to the outdoors to complement the architect’s use of glazing. The material palette was selected for its durability and the permission of abuse. Rose-colored brick is used on both the exterior and interior. The plan of the school is abstracted in brick on the building’s façade. Classroom interiors are warm with sufficient use of redwood, waxed Ponderosa pine, and natural colors throughout. Another creative use of an unconventional element is the three fireplaces found throughout common areas. In both 1956 and 1991, Crow Island was named one of the most important buildings completed in America during the preceding 100 years in polls conducted by *Architectural Record*. The project was also designated as a national historic landmark in 1990 (fig. 5.1 – 5.3).²



ABOVE - FIG. 5.1
Crow Island Elementary learning studio interior
School Ways. 33.

BELOW - FIG. 5.2
Crow Island Elementary L-shaped learning studios with integrated exterior spaces
School Ways. 33.



BELOW - FIG. 5.3
Crow Island Elementary plan abstracted into façade brickwork
School Ways. 33.



5.2 – STRAWBERRY VALE ELEMENTARY
PATKAU ARCHITECTS
VICTORIA, BRITISH COLUMBIA, CANADA – 1992-95

THE STRAWBERRY VALE SCHOOL is located in remote woodland outside Victoria, British Columbia. The prevailing design concept of the school was the creation of flexible spaces that could be partitioned into community spaces.³ Clusters of classrooms are arranged in a stepped formation primarily derived from the contours of the site. The capacity of the building to engage the landscape and the natural mind is a highlighting feature of Patkau Architects’ work. The school operates as a whole, but programmatic pieces such as the gymnasium, reception area, service areas, and home economics remain flexible to accommodate community functions. These flexible and communal elements form the nexus for all other learning activities in the school. Classrooms integrate with the micro and macro-organization of school. Each classroom is associated with three adjoining classrooms through a communal interior space and with three other classrooms in an exterior space. This organization may be seen in a similar parti Prakash Nair and Randall Fielding developed in *The Language of School Design*.⁴ Though Patricia Patkau, Nair, and Fielding were not the first architects to develop this organization, the way the parti integrates with their larger views of pedagogy and specificity to students creates architecture that successfully facilitates educational priorities.

Other designed elements within the school that encourage informational inquiry are the design of the HVAC, electrical, plumbing, and material systems. Services were designed by the architects and engineers using modern technology (from the mid-1990s) to optimize the use of solar energy. Passive heat gain, the controlled placement of windows, clerestories, and skylights combine with reflective interior surfaces to distribute sunlight evenly throughout the interior spaces. Services are exposed in such a way to reveal the skeletal anatomy of the building. The technological plenum in both public and classroom areas remain exposed to allow for future upgrading. Materials in the building were selected to maximize environmental quality and minimize the amount of embodied energy. The use of indigenous timbers as structural and non-structural elements is entrenched in Patkau’s work, and continues to be utilized in the Strawberry Vale Elementary School though not in a pastiche way. Cladding has been kept to a minimum to leave much of the primary construction exposed. Wooden interiors help color the light and create warm spaces that help nurture learning and social interaction. Using natural materials is much more effective than excessive use of white drywall (which is used only when daylight needs to be reflected through spaces).

The classroom pods, integrated learning communities, and flexible public areas create different

learning environments that encourage cooperation between students of different ages and abilities. The non-traditional layout of the school has taken the program to another level and created engaging environments. These environments remain public due to their transitional purpose. As students grow and establish greater need for more directed teaching, these small learning communities create opportunities for students to transition. Because of the interactivity between forms, function, light and color, and spatial mood, the building has become part of the learning experience. Students and their teachers are able to change between individual classrooms for private instruction without a loss of attentiveness. Small learning communities physically engage students in the learning environment. This is consistent with both Montessori and Open-Concept methods, as the learning environment creates tactile and interactive spaces. As identified in chapter two, these learning communities are capable of facilitating informational exchange and social interactivity that traditional teacher-centric classrooms and egg-crate schools do not achieve (*fig. 5.4 – 5.8*).⁵

IMAGE SET - FIG. 5.4 - 5.8
The Strawberry Vale Elementary School contains private and public spaces with opulent glazing and seating areas. The use of shadow, materiality, and connectivity with the exterior gives the school a sacred quality. Passive solar features, easily accessible mechanical systems, and other environmental characteristics allow this facility to be very sustainable.
<http://www.patkau.ca>



5.3 – OSLO INTERNATIONAL SCHOOL
JARMUND/VIGSNÆS AS ARKITEKTER MNAL
BEKKESTUA, OSLO, NORWAY – 2008-09

OSLO'S INTERNATIONAL SCHOOL was recognized by Architectural Record as a project representing an exemplary architectural renovation.⁶ The project replaced temporary structures and built onto the institution's spacious grounds. The school faced severe spatial limitations at the turn of the millennium and chose to expand their program rather than building an entirely new school. The architects' website states:

A new architectural vocabulary of organic forms is softening dense spatial relationships between new and old areas, and achieving intimate qualities in new and old courtyards. Colored panels of the outside walls are clearly announcing the character of the school towards society.⁷

The most beneficial aspect of the existing structure was its modulated structure. Its clear circulation, flexibility for expansion, good daylight, and contact with the outdoors was identified as beneficial and should be emphasized or improved with any new construction. The school's identity was centralized around its site and community. The school lies in a wooded neighborhood with many families of foreign diplomats. The diversity of the school's student body is a major asset, and the architects chose to emphasize this through socially engaging public spaces and the bold use of colors and textures.

The new construction primarily renovated the existing architecture. New mechanical systems on the roof and upgraded service areas were necessary for increased occupancy. Expanded entry areas and corridors within the existing structure foster gathering for study and discussion when out of class. The expanded corridors and new courtyards encourage students to occupy the space by talking, playing, and studying. The architects most noticeably erected curvilinear, wood-battened pavilions housing a new library/media center and science laboratories. The dynamic forms were additionally conceived as exterior spaces for quiet activities for upper-level students. Each space within the new curved forms is filled with light and layered with color and texture. These selections for the interiors stimulate young minds throughout the day through sensory transformations. The second phase of construction added a large entry pavilion, sheathed in a rainbow of thin, multicolored panels. New kindergarten classrooms and offices wrap around a curved, rubber-lined internal playground. The colored walls are representative of the school's diversity and are a playful juxtaposition against the white cold of winter snow.

This school adapts well with the pedagogical methods presented in the second chapter of this thesis as well. By creating public gathering spaces in the previously modulated structure, students have transitional environments to socialize and inquire about issues relating to their personal experiences.

This project fulfills similar pedagogical goals by creating spaces unique to informational inquiry and social engagement. Because the architects identified the existing structure to be relatively flexible to any upgrading, the design was not limited by the constraints facing other schools. The building analysis of Cypress Park Elementary has concluded that the inflexibility of the current structure does not allow for renovation, and expansion does not facilitate educational goals identified by school administrators (fig. 5.9 – 5.12).

IMAGE SET - FIG. 5.9 - 5.12
The renovation and expansion of the Oslo International School has been considered one of the most thoughtfully executed projects in recent years. Because of the extensive use of natural materials, colors as way-finding markers, and the careful placement of public spaces, children and parents are immediately attracted to the school as a place of learning.
<http://www.jva.no/>



THE SCHOOL'S STUDENT BODY IS ITS MAJOR ASSET, AND THE ARCHITECTS CHOSE TO EMPHASIZE THIS THROUGH SOCIALLY ENGAGING PUBLIC SPACES.

5.4 – BRIDGES CENTER
BUILDINGSTUDIO [COLEMAN COKER]
MEMPHIS, TENNESSEE, USA – 2002-05

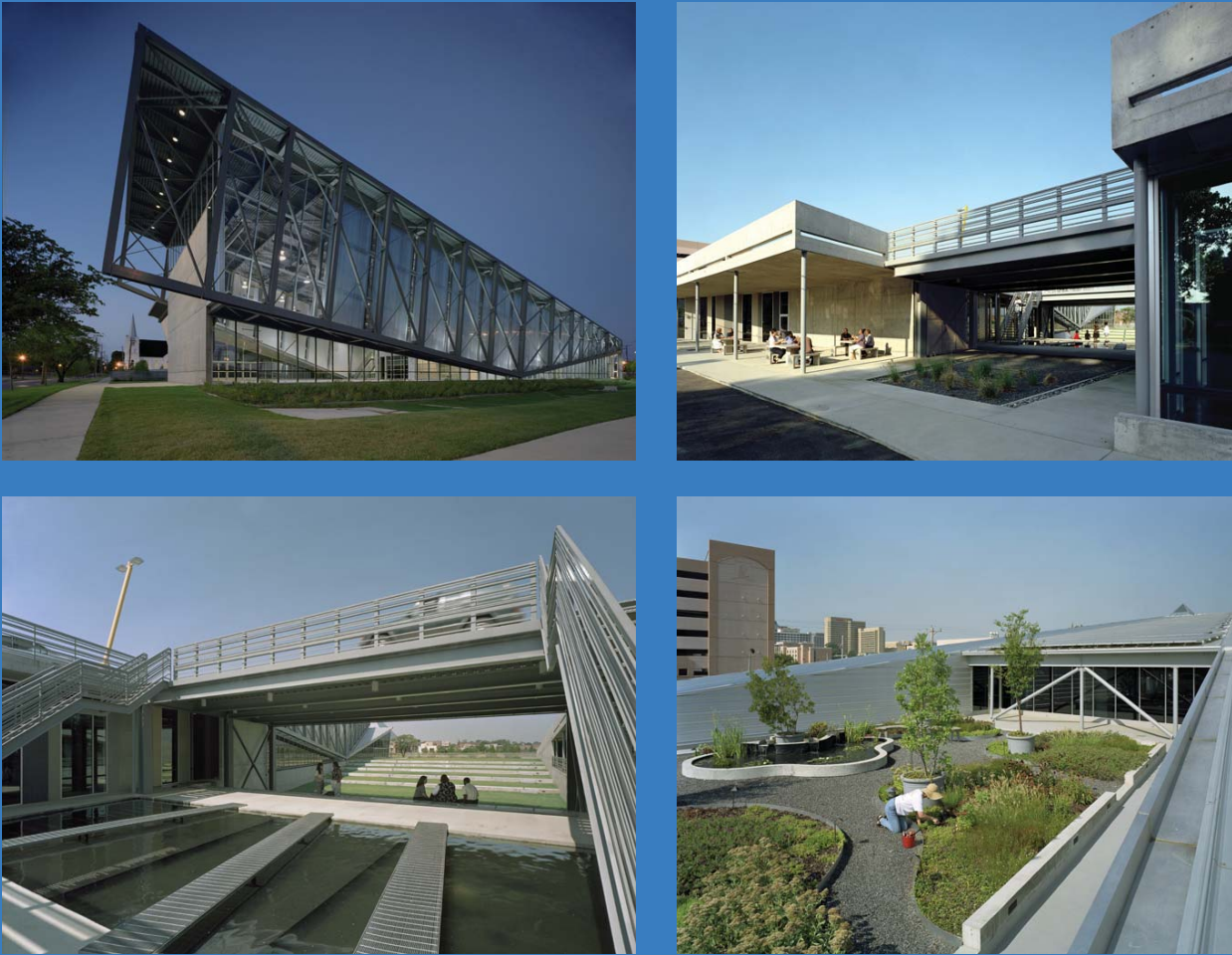
THIS URBANE MODEL FOR A COMMUNITY CENTER in a low-income neighborhood addresses issues specific to its context. The BRIDGES Center utilizes a site that previously contained two shotgun houses, a city mule barn, and a maintenance building for St. Jude hospital. The project draws its primary design objectives from elements endemic to Southern place making. Issues concerning form, contextual scale, public access and integration within the community create architecture that “becomes a teaching tool, especially for teenagers.”⁸ The building contains integrated communal learning spaces and communal gathering spaces. Because BRIDGES works directly with communities, issues with significant personal relevance are addressed at the Center.

The project holds the street edge and immediately addresses the urban scale with the single-story roof as parking. By having a structure that maintains its contextual scale, the new structure does not impose itself upon neighboring residents but rather allows the streetscape to be mutually engaging. The streetscape is briefly punctuated by exterior gathering spaces found in typical Southern planning. Residents in this low-income neighborhood typically did not have access to open public spaces but are now able to cross the street to access those spaces. The BRIDGES Center creates opportunities for gathering and interaction in the exterior spaces. These spaces may seem elementary, but they create moments important to Southern culture. An informal outdoor amphitheater with a sloping grassy lawn provides performance space for around 1,000 people. An open plaza space and breezeway connect the two separate structures and forms the primary circulation throughout the entire complex. The plaza has two exterior stairs and the main pedestrian access to parking above.

The two separate volumes are used by two different programs. The BRIDGES space houses administrative offices, a boardroom, teaching spaces for teenagers, art studios and computer labs. The Work Place program contains administrative offices, classrooms, computer labs, ad a teaching kitchen for adults. The two separate programs are typically used at different times over the course of the day. There are two separate entrances connected by the exterior breezeway. The exterior breezeway also forms the entrance to the large activities area in the southwest corner of the site. The building’s west wall is used as the indoor/outdoor climbing wall and is used to encourage teenagers to remain active. The gathering room is used for teenage activities but also acts as a meeting and banquet space for communal functions. The main volume additionally contains “breakout” rooms where occupants may split into smaller groups for discussions and activities.

This project is supplemented by numerous sustainable features. Operable windows, high ceilings with deep overhangs, and natural light help mitigate many of the climactic concerns of the South. Materials with low-embodied energy are also used and include cellulose insulation, fly-ash concrete, and recycled waste material. The building also channels storm water run-off and is held in an underground cistern for on-site irrigation. The project also utilizes a ground-source heat pump to efficiently heat and cool the building. The heat pump is supplemented by solar water heaters and a photovoltaic array. These important sustainable features are clearly demonstrated within the public spaces. “The building’s environmental features will be highlighted, along with much of the structural, mechanical and electrical systems of the building being exposed, to “show” how the building operates.”⁹ The BRIDGES Center utilizes an on-site learning program, known as O2E, to educate the public about sustainability in the built environment.¹⁰ The teaching capacity of the building may be translated into the pedagogical methods previously described. By utilizing interactivity, flexible spaces, and place making for a specific demographic, the BRIDGES Center creates a microcosm of space and time that facilitates educational goals for teenagers and adults. This project illustrates how flexible and fixed spaces integrate to create public areas for learning and demonstration (*fig. 5.13 – 5.19*).

IMAGE SET - FIG. 5.13 - 5.16
<http://www.buildingstudio.net/>

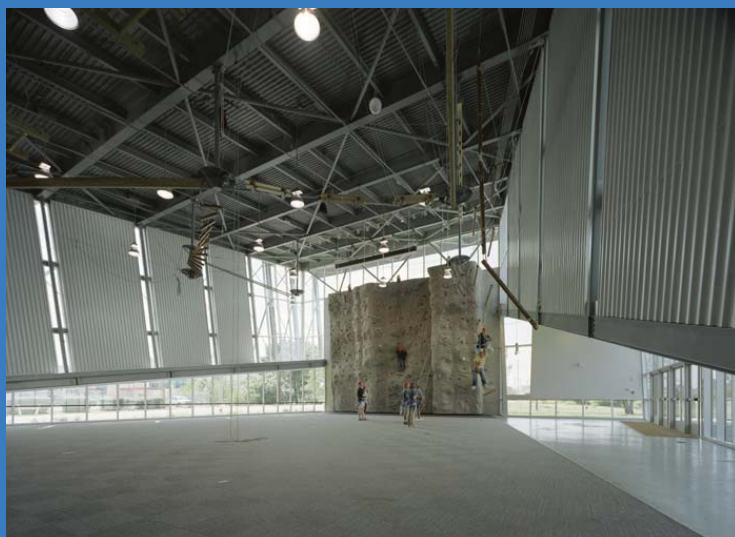




LEFT - FIG. 5.17
BRIDGES Center, public porch space
<http://www.buildingstudio.net/>



LEFT - FIG. 5.18
BRIDGES Center, the project embraces the neighborhood's scale and street presence
<http://www.buildingstudio.net/>



LEFT - FIG. 5.19
BRIDGES Center, the building's structure becomes interactive and engaging
<http://www.buildingstudio.net/>

NOTES

- ¹ Graves, Ben E. *School Ways: The Planning and Design of America's Schools*. New York: McGraw-Hill, Inc., 1993. 33.
- ² Ibid. 33-5.
- ³ Patkau, Patricia. "Strawberry Vale Elementary School." *Projects*. Patkau Architects, 2008. 17 Nov. 2009. <<http://www.patkau.ca/>>.
- ⁴ Nair, Prakash, and Fielding, Randall. *The Language of School Design Design Patterns for 21st Century Schools*. DesignShare, Inc., 2005. 18.
- ⁵ Patkau, Patricia. "Strawberry Vale Elementary School." *Projects*. Patkau Architects, 2008. 17 Nov. 2009. <<http://www.patkau.ca/>>.
- ⁶ MacKeith, Peter. "Oslo International School." *Architectural Record* July 2009: 96.
- ⁷ "Oslo International School." *Projects*. Jarmund Vignsnaes Arkitekter, 2008. 15 Nov. 2009. <<http://www.jva.no/>>.
- ⁸ Coker, Coleman. "BRIDGES Center." *Buildingstudio*. 2009. 12 Nov. 2009. <<http://www.buildingstudio.net/>>.
- ⁹ Ibid.
- ¹⁰ "O2E." *BRIDGES*. 2009. 18 Nov. 2009. <<http://bridgesusa.sitewrench.com/o2e>>.

DEMOGRAPHIC DATA 6

6.1 – BACKGROUND OF THE DELTA RURAL POLL

A CONCERN THAT CONTINUES TO PRESENT A PROBLEM IS THE LACK OF TELEPHONES IN SOME HOUSEHOLDS. ABOUT 90% OF DELTA HOUSES HAVE TELEPHONE SERVICES, AND THE REMAINING 10% REPRESENT A SYSTEMIC BIAS, SUCH AS POORER HOUSEHOLDS.

THE DEMOGRAPHIC DATA PRESENTED WITHIN THIS THESIS is primarily gathered from the Delta Rural Poll. This biannual poll is a demographic and economic survey conducted by the Center for Community Development (CCED) at Delta State University in Cleveland, MS. Dr. Alan Barton is the primary surveyor in association with other social scientists and the Division of Social Sciences at DSU. Other faculty members involved within the Coordinating Committee include Dr. Alan W. Barton, Dr. Albert B. Nylander III, Dr. John J. Green, Dr. Paulette Meikle-Yaw, Dr. Debrashmi Mitra, and Dr. Leslie Fadiga-Stewart. Other graduate and undergraduate research students have been involved in the project's execution. The current survey is contractually conducted by Mississippi State University's Social Science Research Center (SSRC).

The primary goals and objectives of the Delta Rural Poll are to:

1. **Collect annual data on social and demographic characteristics of Mississippi Delta residents for use by researchers, policymakers, local communities, and others;**
2. **Strengthen ties between Delta State University and communities in the Mississippi Delta;**
3. **Provide Delta State University students and Delta residents with opportunities to learn about research techniques through experience;**
4. **Collaborate with other universities and researchers carrying out similar projects to develop a broad, comparable database on social and demographic characteristics of rural dwellers.¹**

The original goals associated with the biannual poll were to focus on quantifying qualitative research within the eleven "core" Delta counties that lie entirely within the Yazoo-Mississippi floodplain. These counties include: Bolivar, Coahoma, Humphreys, Issaquena, Leflore, Quitman, Sharkey, Sunflower, Tallahatchie, Tunica, and Washington. The questionnaire includes a series of questions pertaining to issues of quality of life, demographic characteristics, employment, and intent to migrate. In recent years, the survey has begun to explore topical issues of demographics, quality of life, intent to migrate, workforce,

social capital indicators, attitudes about social problems, attitudes about health care services, early childhood development programs, and youth after-school programs. In future years, the Delta Rural Poll intends to extend beyond normal statistical data, and focus on much of the qualitative aspects of living in the Delta. The concluding statement from the Delta Rural Poll (v.2007) states that:

The Delta Rural Poll continues to benefit the people of the Mississippi Delta and beyond. By collecting a wealth of high quality social science data on the Mississippi Delta region, the Delta Rural Poll has enhanced the ability of faculty and students at DSU to carry out research and has increased the knowledge about the Mississippi Delta both in local communities and in national and international circles, through presentations at conferences and publications. The Delta Rural Poll continues to grow and adapt, creating new outlets to distribute findings. The coming year will provide new challenges, and the faculty and students who work on the Delta Rural Poll look forward to building on the groundwork that has been established and continuing to work together to advance community development in the Mississippi Delta region.²

The 2007 Delta Rural Poll is the primary source of much of the information, as the 2009 Poll was not available for press at the time of writing. The 2007 Poll contains many other survey questions the 2009 Poll does not include. Social programs and community social capital were issues not addressed in the 2009 survey. The 2007 Poll was conducted in January 2007, and was generated from 1,005 telephone responses. Some of the data included in the body of this Poll was excluded because of the inability of the surveyed person to accurately identify the best choice. The surveyed person also may not have felt comfortable addressing a specific issue and the question was ignored from data collection. Additional information, data, and methodology may be collected through contacting the Center for Community Development, or Dr. Alan Barton directly. Previous Delta Rural Polls may be found at:

<http://www.deltastate.edu/pages/536.asp>

6.2 – DATA COLLECTION

THE SURVEY RESEARCH UNIT (SRU) at Mississippi State University collected the data through Computer-Assisted Telephone Interviewing (CATI). The choice to use Mississippi State University became beneficial to survey practices, as DSU was seen locally as subjective to the data, whereas an outside entity was impartial to the data and survey. Delta residents responded well to the surveyors and the contact resulted in a completed questionnaire.

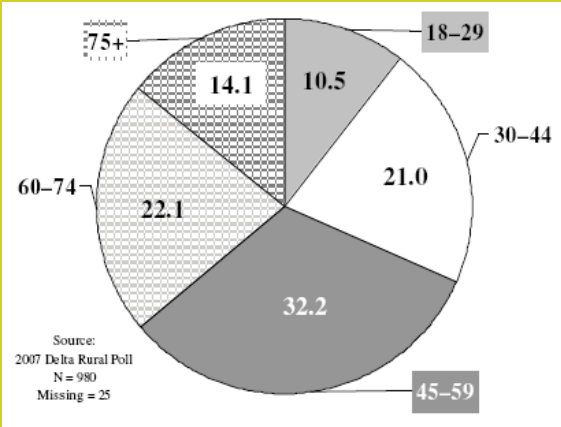
A concern that continues to present a problem is the lack of telephones in some households. About 90% of Delta houses have telephone services, and the remaining 10% represent a systemic bias, such as poorer households. The data gathered accurately assesses the responses of the survey to the 2000 United States Census and has found close equation to the Census. The survey summarizes basic demographic variables such as age, gender, race, size of the nearest community, and county of residence.³

AGE: The respondents screened were required to be 18 years or older. Because of employment, younger ages were underrepresented and older ages overrepresented. The mean age for all respondents was 50.2 years. The Poll is accurate to census data, but a deviation was applied to account for these discrepancies.⁴

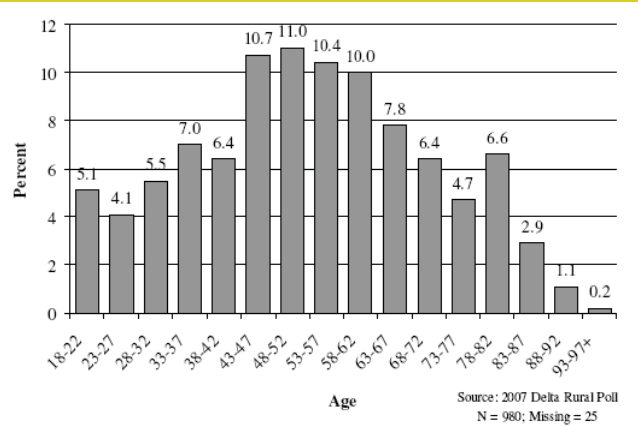
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BELOW - FIG. 6.1
Age of respondents



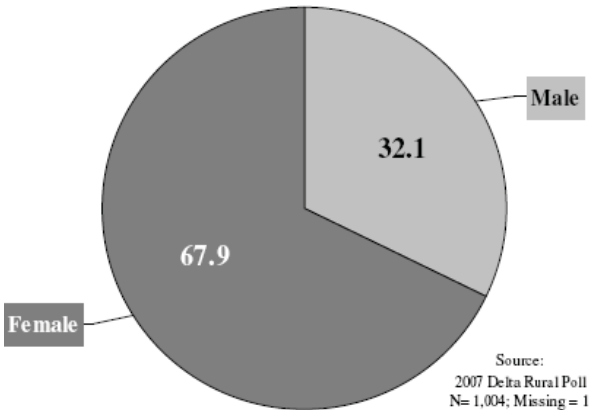
BELOW - FIG. 6.2
Distribution of age



GENDER: The gender of respondents in the Delta is remarkably skewed. Because of employment characteristics, and other social factors, the male figure is significantly underrepresented. This gender bias is not unusual for surveys occurring in the Delta.

County	Percent Female			
	2007 Delta Rural Poll		2000 U.S. Census	
	Unweighted	Weighted	Age 18+	Total Population
Bolivar	69.6	55.4	55.0	53.2
Coahoma	67.2	57.0	56.3	54.1
Humphreys	72.4	54.8	56.0	53.4
Issaquena	71.4	57.1	43.5	46.8
Leflore	68.5	53.1	53.3	52.0
Quitman	65.8	55.3	55.8	53.6
Sharkey	58.6	54.2	54.8	53.0
Sunflower	61.9	45.6	45.5	46.3
Tallahatchie	70.9	54.4	54.2	53.3
Tunica	61.3	52.9	53.8	52.3
Washington	70.1	55.2	55.5	53.3
Total	67.9	53.7	53.6	52.1

Source: 2007 Delta Rural Poll, U.S. Census Bureau, 2004a
Delta Rural Poll N = 1,004, Missing = 1



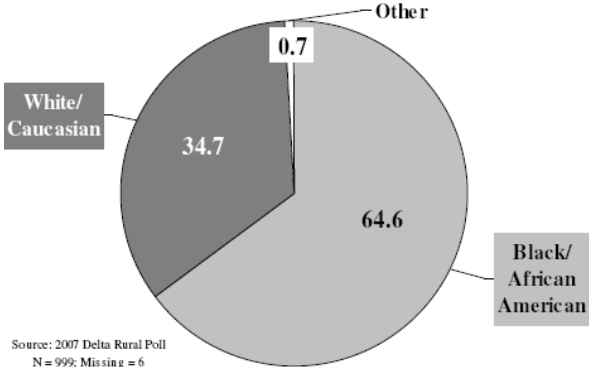
ABOVE - FIG. 6.3
Gender of respondents

LEFT - TABLE 6.1
Gender by county

RACE: Race continues to be a major factor in the Delta. Because of racial distribution and employment status, African American racial demographics are inflated for several counties including Bolivar, Humphries, Issaquena, Sharkey, and Tunica. Racial demographics in other counties remain relatively consistent to census data, and do not necessarily reflect employment or availability for survey collection.

County	Percent Black			Percent White		
	2007 DRP	2000 Census, Age 18+	2000 Census, All	2007 DRP	2000 Census, Age 18+	2000 Census, All
Bolivar	68.0	59.8	65.1	32.0	38.5	33.2
Coahoma	66.1	64.3	69.2	32.2	34.2	29.3
Humphreys	78.6	67.0	71.5	21.4	31.5	27.2
Issaquena	71.4	58.5	62.8	28.6	40.6	36.3
Leflore	66.1	63.2	67.7	33.3	34.3	30.0
Quitman	55.3	63.6	68.6	44.7	35.5	30.5
Sharkey	82.8	64.3	69.3	17.2	34.4	29.4
Sunflower	60.6	66.1	69.9	39.4	32.6	28.9
Tallahatchie	53.2	54.3	59.4	46.8	44.6	39.6
Tunica	71.0	64.2	70.2	29.0	33.4	27.5
Washington	63.1	59.8	64.6	35.4	38.8	34.0
Total	64.6	62.1	66.8	34.7	36.3	31.6

Source: 2007 Delta Rural Poll, U.S. Census Bureau, 2004a



ABOVE - FIG. 6.4
Race of respondents

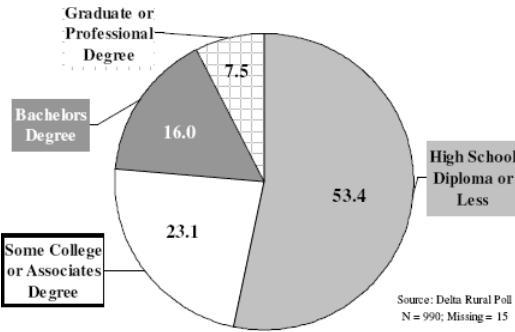
LEFT - TABLE 6.2
Race by county

MARITAL STATUS: Less than half of respondents are currently married, while 29.0 percent are single or formerly married. With the exception of Issaquena and Tunica counties, the Delta Rural Poll captured a higher percentage of married respondents than the county populations as a whole.

County	Percent Married		Percent Single, Never Married		Percent Single, Previously Married	
	2007 DRP	2000 Census	2007 DRP	2000 Census	2007 DRP	2000 Census
Bolivar	48.3	38.1	22.5	40.6	29.1	21.3
Coahoma	43.1	39.8	33.0	36.2	23.9	24.0
Humphreys	45.2	36.4	21.4	41.5	33.3	22.2
Issaquena	12.5	53.2	62.5	29.8	25.0	17.0
Leflore	45.9	39.0	25.3	38.6	28.8	22.4
Quitman	41.7	40.7	33.3	34.1	25.0	25.2
Sharkey	39.1	39.0	21.7	39.4	39.1	21.5
Sunflower	54.8	37.7	18.5	41.9	26.7	20.4
Tallahatchie	48.2	44.6	26.8	33.1	25.0	22.4
Tunica	32.4	37.0	44.1	38.6	23.5	24.4
Washington	48.9	42.9	23.6	34.7	27.5	22.4
Total	47.0	40.0	25.5	37.7	27.5	22.3

Source: 2007 Delta Rural Poll, U.S. Census Bureau, 2004d

LEFT - TABLE 6.3
Marital status by county
BELOW - FIG. 6.5
Educational attainment



EDUCATION: Over half of the respondents to the 2007 Delta Rural Poll have a high school diploma or less. This demographic calculates educational attainment for people over 25 years of age to give allowance for some college, a college degree, or a postgraduate degree. Even through a weighted average, respondents had a higher general quantity of education compared to Census data. These figures do not reflect qualitative aspects of education in the Delta.

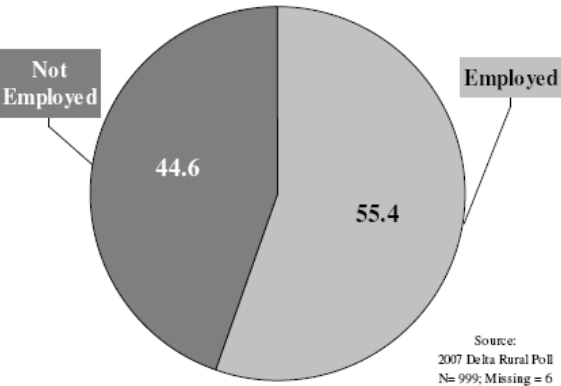
	High School Graduates [†]				Bachelors Degree [‡]			
	2007 Delta Rural Poll			2000 U.S. Census, Age 25+	2007 Delta Rural Poll			2000 U.S. Census, Age 25+
	All	Age 25+			All	Age 25+		
	Unweighted	Unweighted	Weighted		Unweighted	Unweighted	Weighted	
Bolivar	75.2	72.8	75.7	65.3	21.6	22.0	20.8	18.8
Coahoma	77.5	76.6	76.9	62.2	26.7	27.9	28.8	16.2
Humphreys	69.0	66.7	62.2	53.7	10.3	11.1	13.5	11.6
Issaquena	57.1	57.1	57.1	58.8	14.3	14.3	14.3	7.1
Leflore	71.5	74.2	73.4	61.9	26.1	27.1	29.0	15.9
Quitman	68.4	67.6	67.6	55.1	13.2	11.8	11.8	10.6
Sharkey	62.1	59.3	65.2	60.6	31.0	33.3	39.1	12.6
Sunflower	72.8	74.0	73.0	59.3	26.2	27.1	26.2	12.0
Tallahatchie	67.1	66.7	65.4	54.4	12.6	12.5	11.5	10.9
Tunica	64.5	68.0	71.4	60.5	19.4	20.0	21.4	9.1
Washington	71.2	70.0	71.0	66.5	26.1	26.7	27.6	16.4
Total, 11 Counties	71.6	71.4	72.0	62.1	23.5	24.2	24.5	14.9
Mississippi Statewide	N/A	N/A	N/A	72.9	N/A	N/A	N/A	16.9
National	N/A	N/A	N/A	80.4	N/A	N/A	N/A	24.4

Source: 2007 Delta Rural Poll, U.S. Census Bureau, 2004a, 2004d
Delta Rural Poll N = 990, Missing = 15 for "All", N = 911 for "Age 25+," U.S. Census N = 150,379 for all 11 counties
[†]Includes High School Graduates and Higher [‡]Includes College Graduates and Higher

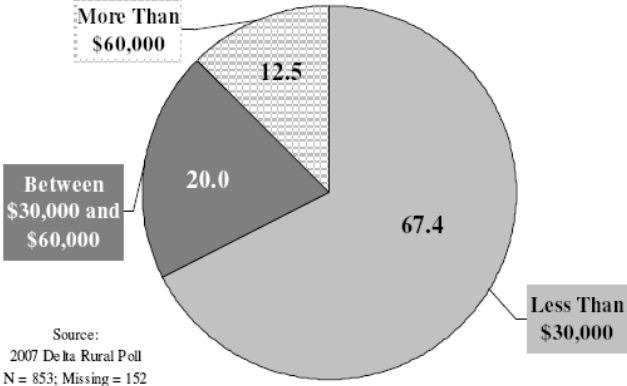
LEFT - TABLE 6.4
Educational attainment by county

EMPLOYMENT: The employment statistics gathered reflect an interesting demographic. Based upon the evidence collected, only 55.4 percent of those surveyed had held a full-time, part-time, or seasonal job at some time in 2006. The population surveyed was employed more than the census data collected in 2000. The data collected, however, may reflect a gender issue within the survey.

BELOW - FIG. 6.5
Employment status



BELOW - FIG. 6.6
Household income before taxes



INCOME: The data collected within Delta counties represents income collected before taxes. Because of the sensitive nature of this information, this question always has a high number of refusals. In 2007, there were 152 respondents did not answer the question in 2007. According to the Poll, 23.3 percent of households had annual incomes below \$10,000. This figure represented Census data accurately. A total 67.4 percent of respondents had annual incomes less than \$30,000.

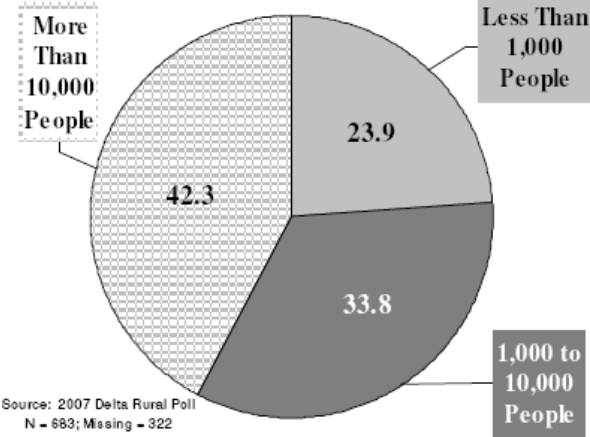
County	Households with Annual Incomes Below \$10,000		Households with Annual Incomes \$10,000 to \$49,999		Households with Annual Incomes Over \$50,000	
	2007 DRP [†]	2000 Census [‡]	2007 DRP	2000 Census	2007 DRP	2000 Census
Bolivar	26.2	24.0	52.3	54.7	21.5	21.3
Coahoma	17.8	25.6	60.4	52.7	21.8	21.7
Humphreys	19.2	25.6	69.2	56.9	11.5	17.5
Issaquena	16.7	26.9	83.3	54.0	0.0	19.1
Leflore	25.5	25.6	57.9	54.0	16.6	20.4
Quitman	35.5	26.2	61.3	57.5	3.2	16.3
Sharkey	16.7	23.3	66.7	56.5	16.7	20.2
Sunflower	18.7	20.1	56.0	57.0	25.3	22.9
Tallahatchie	23.8	25.4	63.5	57.9	12.7	16.7
Tunica	18.5	22.8	74.1	55.0	7.4	22.2
Washington	25.0	21.8	56.5	54.7	18.5	23.5
Total	23.3	23.7	58.7	55.0	17.9	21.3

Source: 2007 Delta Rural Poll, U.S. Census Bureau, 2004a
Delta Rural Poll N = 853, Missing = 152; Census N = 87,950 households
[†]Delta Rural Poll income figures are for 2006; [‡]Census income figures are for 1999
^{*}Census figures for income come from long forms, a 1 in 6 sample

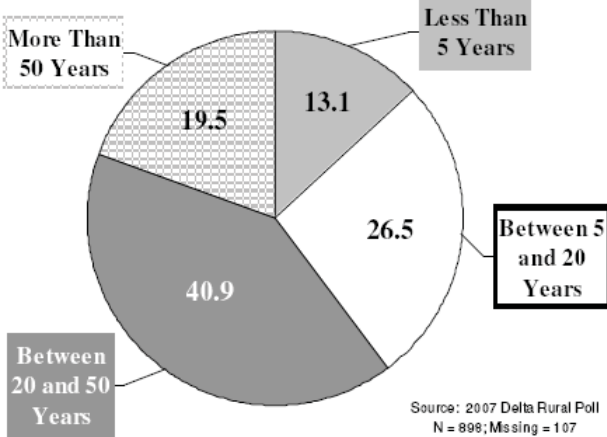
LEFT - TABLE 6.5
Total household income by county

LENGTH & PLACE OF RESIDENCE: Slightly over two-thirds of Delta residents reside in mid-Delta counties. These include Washington, Bolivar, Leflore, and Sunflower counties. These counties are urban centers in the largely rural Delta. Bolivar County represents about 15.6 percent of the Delta's surveyed population with 40,633 total residents and 13,776 occupied housing units, whereas neighboring Washington County represents 24.1 percent of the Delta. Washington County is home to Greenville, a major commercial city near the Mississippi River. Slightly one quarter of people surveyed responded that they lived in or near a community with less than 1,000 residents, and 42.3 percent of respondents said they lived in a community greater than 10,000 residents. Well over half of respondents have lived in their current communities more than twenty years, and nearly 20 percent of those surveyed have lived in their community for more than 50 years. 13.1 percent have lived in their communities for less than five years.

BELOW - FIG. 6.7
Size of place of residence

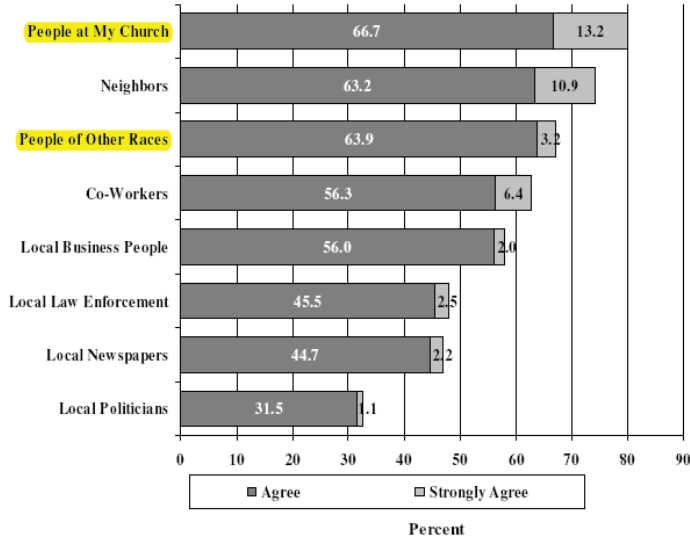


BELOW - FIG. 6.8
Length of time having lived in the same community



SOCIAL CAPITAL: The measure of social capital was to find indicators of trust in various groups involved within the community. This is an important method used to assess public safety and proactive information distribution. The Poll included various structural forces such as newspapers, police, businesses, and churches. Religion and community attained the highest percentages of trust. Respondents claimed

I can trust...



to trust their religious community 79.9 percent of the time. Schools were not included as an option. One of the most striking features of this data is that 66.1 percent of respondents claimed generally to trust people of other races. Though the survey will not speculate on the reason for this data being so high, it illustrates an interesting point: the data collected reflects an evolving sentiment within Delta communities from the recent past.

LEFT - TABLE 6.6
Social capital indicators
Perceptions of trust in various institutions

SOME ADDITIONAL TABLES AND COMPARATIVE STATISTICS between the 2003, 2005, and 2007 Delta Rural Polls are provided on the following page. These statistics to not reflect a great change in demographic characteristics between these years, but do provide some instances of flux in communities. The data presented illustrates the diversity of Delta communities and how the region begins to compare within the nation. Some of the most striking demographic characteristics are race, income, education, and length of stay.

BELOW - TABLE 6.7
Age of respondents - comparison between 2003, 2005, and 2007 polls

Age	2003 Delta Rural Poll		2005 Delta Rural Poll		2007 Delta Rural Poll	
	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted
18 – 29	16.5	17.5	14.9	15.0	10.5	10.9
30 – 44	26.4	27.7	23.4	23.0	21.0	20.1
45 – 59	29.4	29.4	30.7	31.9	32.2	32.9
60 – 74	17.1	16.5	20.2	20.3	22.1	22.4
75+	10.7	8.9	10.8	9.7	14.1	13.7
N	796	789	984	980	980	970
Missing	13	12	25	22	25	24

BELOW - TABLE 6.8
Race of respondents - comparison between 2003, 2005, and 2007 polls

Race	2003 Delta Rural Poll		2005 Delta Rural Poll		2007 Delta Rural Poll	
	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted
Black	60.3	62.8	61.3	62.5	64.6	62.7
White	39.9	36.6	37.5	36.4	34.7	36.6
Other	0.9	0.6	1.2	1.1	0.7	0.7
N	808	800	989	982	999	988
Missing	1	1	20	19	6	6

BELOW - TABLE 6.9
Educational levels - comparison between 2003, 2005, and 2007 polls

Educational Attainment	2003 Delta Rural Poll		2005 Delta Rural Poll		2007 Delta Rural Poll	
	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted
High School Diploma or Less	50.1	50.5	47.6	48.2	53.4	53.1
Some College/ Associates Degree	25.8	25.3	26.9	25.6	23.1	23.3
Bachelors Degree	16.5	16.2	16.8	17.3	16.0	15.3
Graduate Degree	7.6	7.9	8.7	8.9	7.5	8.3
N	805	798	997	990	990	980
Missing	4	4	12	11	15	14

NOTES

¹ Barton, Alan. *Annual Report. The 2007 Delta Rural Poll.* Center for Community and Economic Development, Delta State University, Aug. 2007. 7
² Ibid. 12.
³ Barton, Alan. *Summary of Findings. The 2007 Delta Rural Poll.* Center for Community and Economic Development, Delta State University, Aug. 2007. 8 Oct. 2009. 6.
⁴ Ibid. 7-8.

BELOW - TABLE 6.10
Total household income - comparison between 2003, 2005, and 2007 polls

Income	2003 Delta Rural Poll		2005 Delta Rural Poll		2007 Delta Rural Poll	
	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted
More Than \$60,000	14.7	15.6	13.1	13.5	12.5	15.1
\$30,000 to \$60,000	21.5	21.8	26.3	27.7	20.0	20.9
Less Than \$30,000	63.8	62.5	60.7	58.8	67.4	64.0
N	679	675	765	766	853	849
Missing	130	126	244	236	152	145

BELOW - TABLE 6.11
Percent of respondents by county - comparison between 2003, 2005, and 2007 polls

County	2003 Delta Rural Poll		2005 Delta Rural Poll		2007 Delta Rural Poll	
	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted
Bolivar	14.8	16.0	12.2	15.7	12.5	15.8
Coahoma	13.2	11.4	13.9	11.7	12.1	11.4
Humphreys	2.6	4.1	4.6	4.2	2.9	4.2
Issaquena	3.7	0.9	3.0	1.0	0.7	0.7
Leflore	16.2	14.7	14.1	14.6	17.7	14.8
Quitman	2.5	3.8	4.1	3.8	3.8	3.8
Sharkey	2.0	2.4	1.6	2.5	2.9	2.4
Sunflower	10.5	13.6	11.8	13.6	10.4	13.7
Tallahatchie	7.9	5.8	6.6	5.6	7.9	5.7
Tunica	2.3	3.5	3.6	3.5	3.1	3.4
Washington	24.2	23.8	24.7	23.8	26.0	24.1
N	809	801	1009	1002	1005	994
Missing	0	0	0	0	0	0

QUANTITATIVE PROGRAM 7

7.1 – REQUIRED SPACES

BECAUSE SPACES MUST
BE INTEGRATED FOR
A UNIFIED LEARNING
ENVIRONMENT,
CIRCULATION
(CORRIDORS) WILL BE
ELIMINATED.

TYPE	TOTAL NUMBER	TOTAL AREA OF EACH
LEARNING FACILITIES (OCCUPANCY CLASS E)		
Learning studios	21	900 sf
Advisories	4	600 sf
All-school commons	1	Determined by spatial morphology
Art	1	600 sf
Art storage	1	250 sf
Music	1	700 sf
Music storage	2	200 sf
Library	1	1,800 sf
Library offices	2	200 sf
Technology	1	500 sf
Storage	3	150 sf
STAFF		
Reception	1	200 sf
Administrative offices	2	250 sf
Copy room	1	200 sf
Staff lounge	1	300 sf
Staff restroom	1 (per sex)	300 sf
Nurse station	1	150 sf
Other offices	3	200 sf
OTHER FACILITES		
Restrooms	2 (per sex)	400 sf
Kitchen	1	700 sf
Gymnasium	1	3,500 sf
Mechanical room	2	15% total floor area
Electrical closet	2	100 sf
Janitor closet	2	100 sf
Circulation		8% total floor area
EXTERIOR		
Entry		
Parking	40, 4 bus drop offs	
Verandas/terraces	per studio layouts	600 sf
Garden		1,200 sf
Exercise field/playground		40,000 sf

7.2 – MISSISSIPPI STATE STANDARDS FOR NEW STRUCTURES

THE DEPARTMENT OF EDUCATION for the State of Mississippi stipulates that new construction must conform to specific guidelines. These parameters govern the administration of kindergarten programs in Mississippi public school districts and were originally adopted by the Board of Education in 1984. They are specified for kindergarten programs, but may additionally inform upper-grade programs. The regulations were amended in February 1998 as a “Response to the current research on reading and early childhood education.”¹

4.0 PHYSICAL SETTINGS FOR NEW STRUCTURES²

- 4.1 – All building construction shall conform to the Southern Building Codes, the American Disabilities Act, the Life Safety Codes, the Guide for School Facility Standards and Procedures, published by the Mississippi Department of Education, and to any other local building codes.³
- 4.2 – The classroom shall be a minimum of 1,000 square feet.
- 4.3 – The minimum classroom width shall be 24 feet except in pod-type structures.
- 4.4 – Each classroom shall contain a minimum of one bathroom that shall consist of a toilet and lavatory, or at the district’s option the lavatory may be omitted if the work counter area is equipped with a sink and is in close proximity to the toilet room door. The toilet paper holder is required and is to be placed within a child’s reach from the toilet. Individual toilet rooms are required to accommodate the physically handicapped and be in compliance with ADA regulations.
- 4.5 – Open storage units, known as cubbies, shall be provided for each student.
- 4.6 – Built-in cabinets or portable storage areas shall be constructed to promote accessibility of materials to the child in order to encourage the selection of activities and to facilitate room clean-up.
- 4.7 – Wall receptacles shall be placed 10 feet to 15 feet apart in each classroom. Any receptacle in the

counter area should not be located near a sink. A minimum of six outlets is required.

- 4.8 – Classroom lighting shall contain operable standard fluorescent lights with area controls that provide adequate lighting. Switches within reach of the children, will be located at the doors. Toilet rooms will contain lighting fixtures.
- 4.9 – Furniture shall be an appropriate height for the children.
- 4.10 – Kindergarten classrooms are to be located at ground level.
- 4.11 – The maximum distance to an exit from any point in the building shall not exceed 150 feet. The maximum distance from the interior classroom door at the corridor to an exit shall not exceed 100 feet.
- 4.12 – Every closet latch shall be such that children can open the door from the inside.
- 4.13 – Every toilet room door lock shall be designed to permit opening of the locked door from the outside in an emergency, and the opening device shall be readily accessible to the staff.

5.0 OUTSIDE PLAY AREA

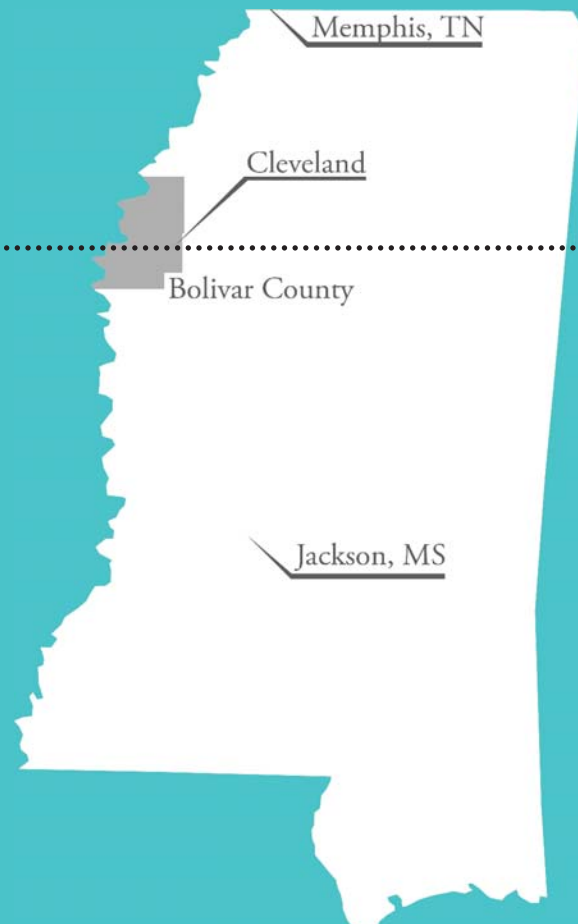
- 5.1 – A designated area for supervised outside periods during the kindergarten day shall be provided.
- 5.2 – Kindergarten students shall not simultaneously share an area with children in grades three or above during designated outside periods.
- 5.3 – The outside play area shall have defined boundaries to protect children from environmental hazards such as traffic and/or stray animals.
- 5.4 – Appropriate playground equipment and landscape design should be provided to facilitate learning and ensure safety.

NOTES

¹ Boyd, Richard A. “Mississippi Kindergarten Guidelines.” Mississippi Department of Education, 1998. 29 Nov. 2009. <<http://www.mde.k12.ms.us/ACAD/Kguide.htm>>.
² Ibid.
³ International Building Code v.2009 will be the code utilized for analysis.

SITE ANALYSIS 8

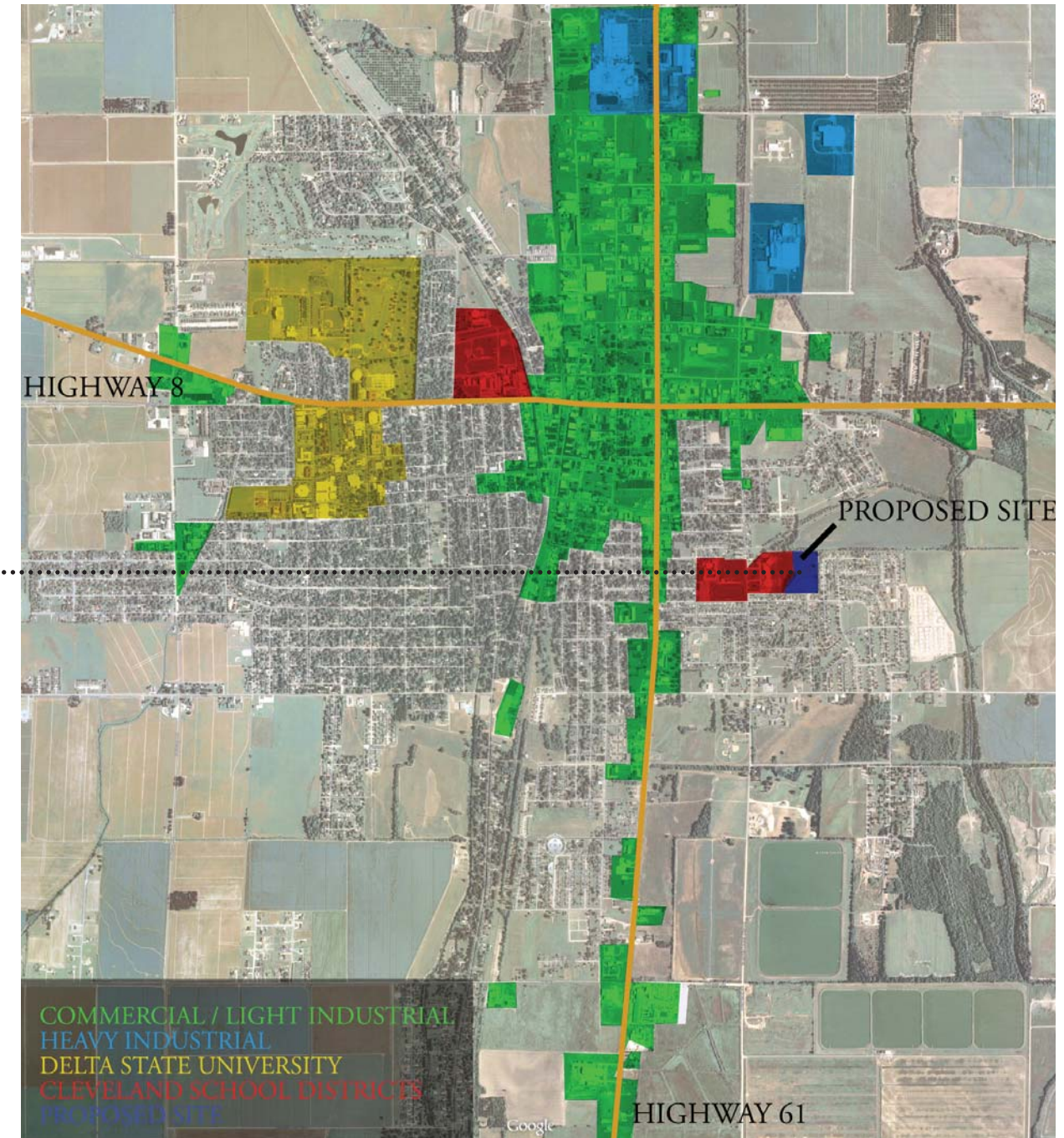
8.1 – LOCATION AND CONTEXT



THE PROJECT IS LOCATED IN THE MISSISSIPPI-YAZOO DELTA in Bolivar County. Cleveland, Mississippi is the city and the neighborhood on the east side of Highway 61 is the site's location.

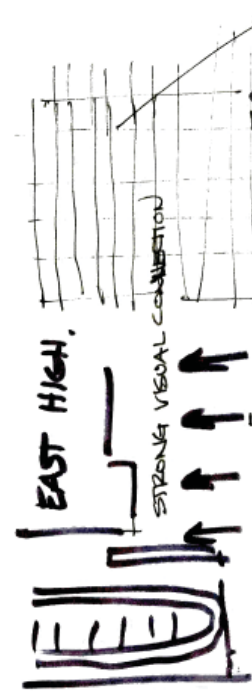
LONGITUDE: 90° 42' 25" W **LATITUDE:** 33° 44' 19" N
POSTAL CODE: 38732

CLEVELAND AERIAL VIEW

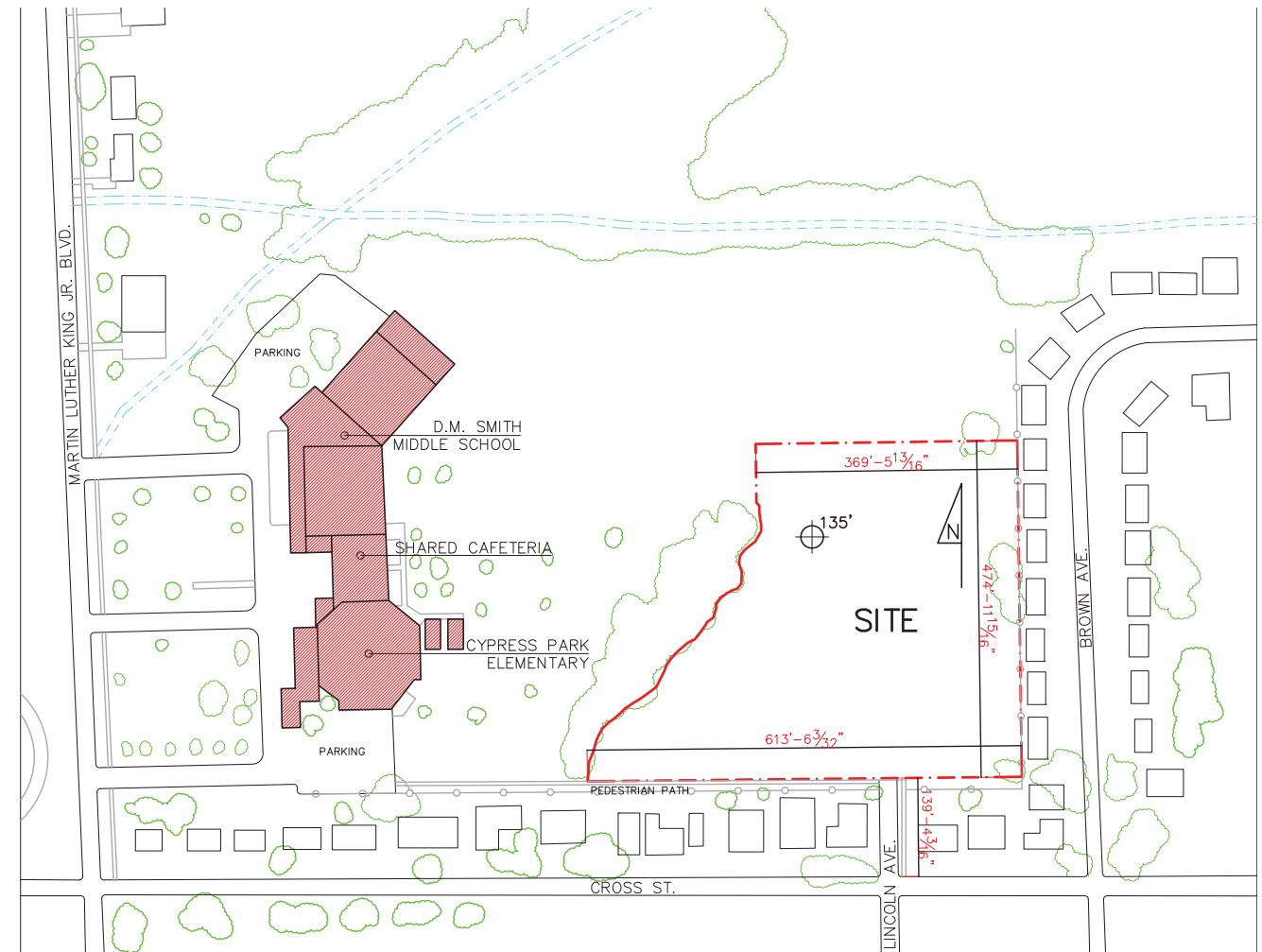




ADJACENCY ANALYSIS

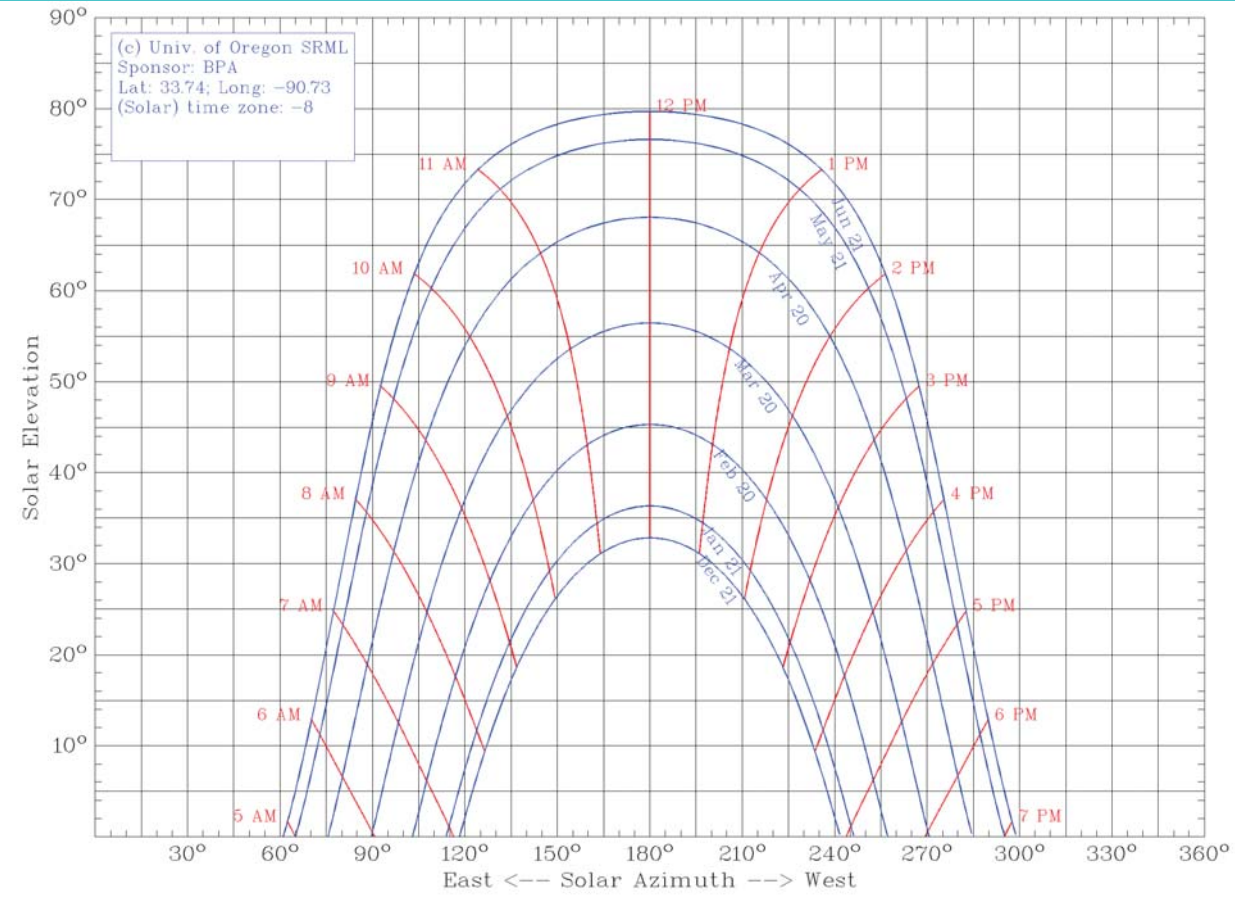


SITE PLAN¹



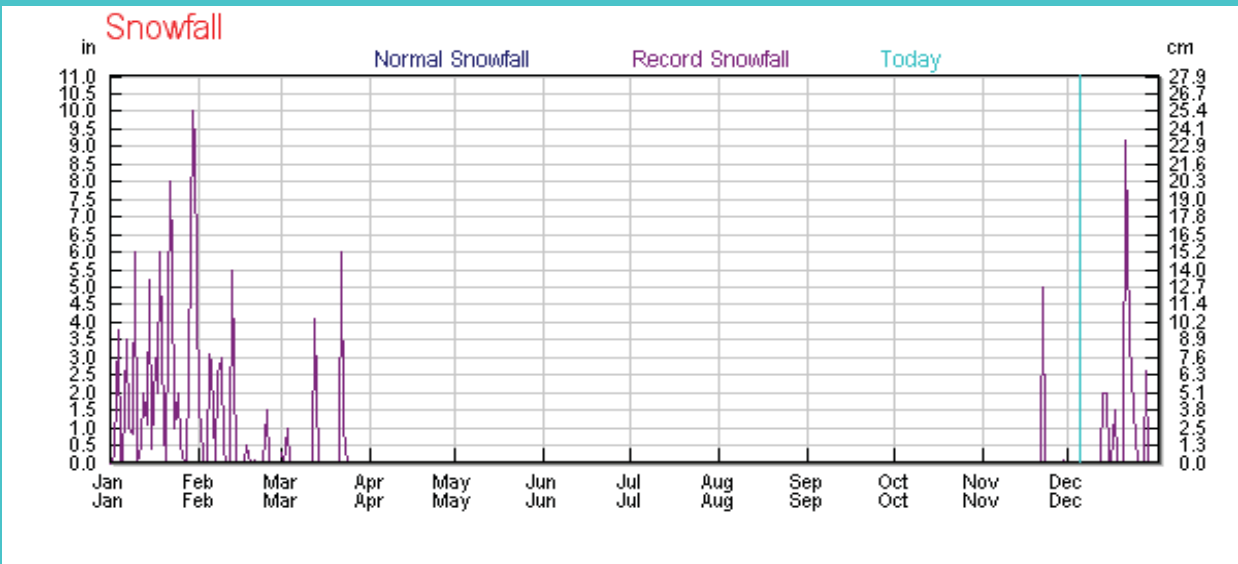
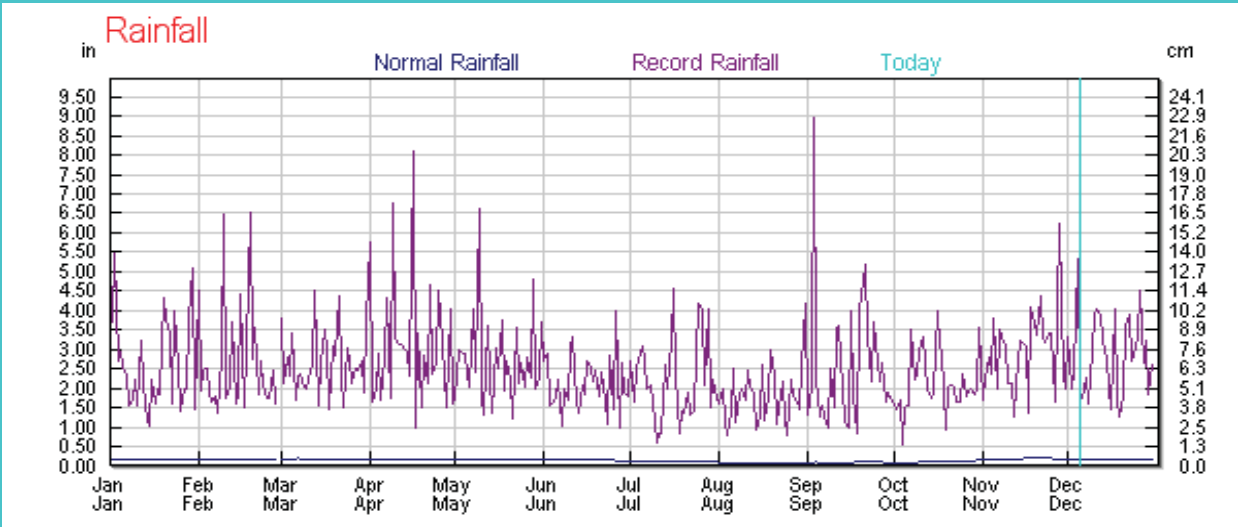
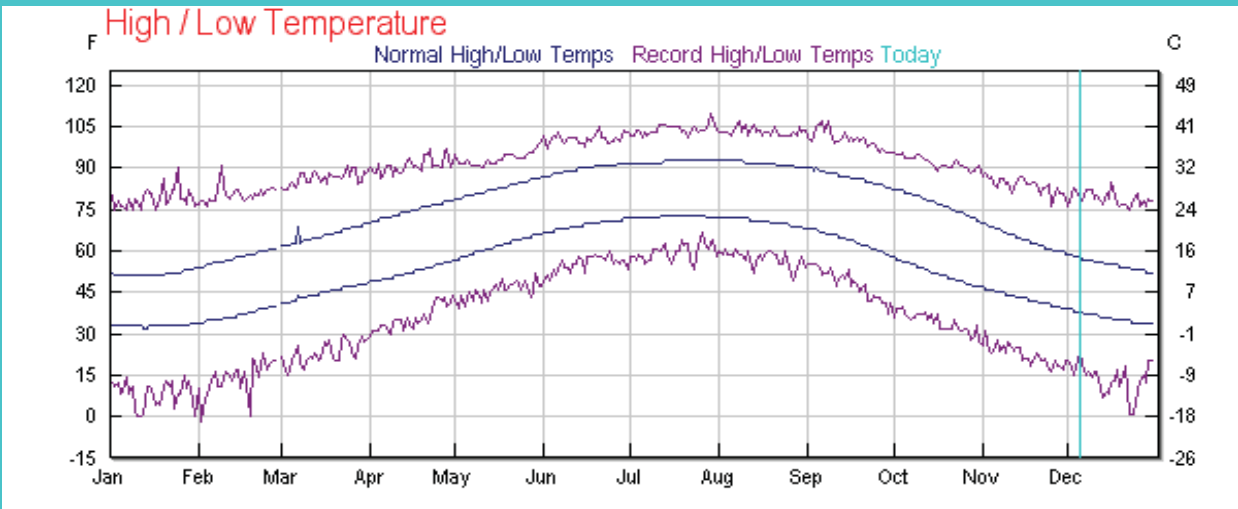
8.2 – CLIMACTIC ANALYSIS

VERTICAL PROJECTION SUN PATH CHART²



TEMPERATURE, RAINFALL, AND SNOWFALL DATA^{5,6}

Monthly averages & records					°F °C
Month	Average low	Average high	Average precip	Record low	Record high
January	33°	51°	6.27 in	-5° (1936)	82° (1909)
February	37°	56°	5.56 in	-5° (1899)	91° (1918)
March	44°	65°	6.01 in	12° (1892)	96° (1918)
April	53°	75°	6.48 in	29° (1950)	97° (1987)
May	62°	83°	5.93 in	36° (1909)	100° (1934)
June	69°	89°	4.7 in	47° (1930)	107° (1918)
July	72°	92°	4.22 in	52° (1947)	109° (1930)
August	70°	91°	3.5 in	50° (2004)	109° (1918)
September	62°	86°	4.12 in	36° (1942)	107° (1925)
October	52°	76°	4.61 in	24° (1910)	96° (1918)
November	43°	64°	6.12 in	14° (1903)	93° (1999)
December	36°	54°	6.76 in	1° (1989)	85° (1924)



DESIGN GUIDELINES FOR PASSIVE SOLAR GLAZING AREA³

			APPROXIMATE SSF VALUES			
	AREA OF SOLAR GLAZING AS RATIO OF FLOOR AREA		STANDARD PERFORMANCE		SUPERIOR PERFORMANCE	
Location	Low	High	Low	High	Low	High
Memphis, TN	0.09	0.19	22	36	36	60

OUTSIDE DESIGN CONDITIONS FOR MEMPHIS, TN
(CLOSEST LOCATION AVAILABLE)⁴

STATION, STATE	HDD65°F	Design Dry-Bulb (°F) (97.5%)	Design Dry-Bulb and Mean Coincident Wet-Bulb (°F) (2.5%)	Mean Daily Range (°F)	Design Wet-Bulb (°F) (2.5%)	CDH74°F
Memphis, TN	3214	18	95/76	21	79	24504

ADDITIONAL INFORMATION⁷

PRECIPITATION DAYS: 93

SUNNY DAYS: 216

COMFORT INDEX: 27⁸

UV INDEX AVE.: 5

AVERAGE ELEVATION: 144 ft. (135 ft. constant elevation at site)

WIND: Information not found (see IBC figure 1609 for basic wind speed (3-second gust) (90 mph)



8.3 – ZONING

CLEVELAND FOLLOWS THEIR CITY’S ZONING MAP, but due to unforeseen reasons, the zoning map was not made available. The city engineer, Greg Korb, was contacted to acquire the map, but the information was never made available. The current zoning map is undergoing revisions and release date is yet to be determined. Because the specific site’s ownership and lot information is not available, the site will be assumed to be owned by the City of Cleveland. Lot boundaries and specific setbacks will be ignored because of inadequate information. The above aerial view of Cleveland’s zoning is based on contextual observations made during site visits in May and October 2009.

NOTES

¹ No considerable elevation change occurs on the site and therefore will be defined at 135' above sea level.
² "Sun path chart program." *UO Solar Radiation Monitoring Laboratory*. University of Oregon, 5 Mar. 2007. 1 Dec. 2009. <<http://solardat.uoregon.edu/SunChartProgram.html>>.
³ Due south-facing openings are assumed. Stein, Benjamin, John S. Reynolds, Walter T. Grondzik, and Alison G. Kwok. *Mechanical and Electrical Equipment for Buildings*. 10th ed. Hoboken, New Jersey: John Wiley & Sons, Inc., 2006. 1608.
⁴ Ibid. 1495.
⁵ *Season Weather Averages for Mid Delta Regional*. Weather Underground, 2009. 1 Dec. 2009. <<http://www.wunderground.com/NORMS/DisplayNORMS.asp?AirportCode=KGLH&SafeCityName=Cleveland&StateCode=MS&Units=none&IATA=GLH>>.
⁶ WDT. *Monthly Averages for Cleveland, MS*. MSN Weather, 2009. 2 Dec. 2009. <http://weather.msn.com/monthly_averages.aspx?wealocations=wc:USMS0068&q=Cleveland%2c+MS+forecast:averagesm>.
⁷ "Climate." *Cleveland, Mississippi*. Sperling's Best Places, 2009. 5 Dec. 2009. <<http://www.bestplaces.net/city/Cleveland-Mississippi.aspx#>>.
⁸ Based upon humidity and temperature during hot summer months. Out of 100, which is the most comfortable condition the body perceives.

CODE ANALYSIS

INTERNATIONAL BUILDING CODE 2009

9

CHAPTER 2: DEFINITIONS

SECTION 202

DEFINITIONS

SEE PER REQUIREMENT

CHAPTER 3: USE AND OCCUPANCY CLASSIFICATION

SECTION 302

CLASSIFICATION

302.1 General. Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed below. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to each of the purposes for which the room or space will be occupied. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved.

1. Assembly (see Section 303): Groups A-1, A-2, A-3, A-4 and A-5
2. Business (see Section 304): Group B
3. Educational (see Section 305): Group E
4. Factory and Industrial (see Section 306): Groups F-1 and F-2
5. High Hazard (see Section 307): Groups H-1, H-2, H-3, H-4 and H-5
6. Institutional (see Section 308): Groups I-1, I-2, I-3 and I-4
7. Mercantile (see Section 309): Group M
8. Residential (see Section 310): Groups R-1, R-2, R-3 and R-4
9. Storage (see Section 311): Groups S-1 and S-2
10. Utility and Miscellaneous (see Section 312): Group U

SECTION 304

BUSINESS GROUP B

304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

- Airport traffic control towers
- Ambulatory health care facilities
- Animal hospitals, kennels and pounds
- Banks
- Barber and beauty shops
- Car wash
- Civic administration

Clinic—outpatient
Dry cleaning and laundries: pick-up and delivery stations and self-service
Educational occupancies for students above the 12th grade
Electronic data processing
Laboratories: testing and research
Motor vehicle showrooms
Print shops
Professional services (architects, attorneys, dentists, physicians, engineers, etc.)
Radio and television stations
Training and skill development not within a school or academic program

SECTION 305
EDUCATIONAL GROUP E

305.1 Educational Group E. Educational Group E occupancy includes, among others, the use of a building or structure, or a portion thereof, by six or more persons at any one time for educational purposes through the 12th grade. Religious educational rooms and religious auditoriums, which are accessory to *places of religious worship* in accordance with Section [303.1](#) and have *occupant loads* of less than 100, shall be classified as A-3 occupancies.

305.2 Day care. The use of a building or structure, or portion thereof, for educational, supervision or *personal care services* for more than five children older than 2½ years of age, shall be classified as a Group E occupancy.

CHAPTER 4: SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

SECTION 423
STORM SHELTERS

423.1 General. In addition to other applicable requirements in this code, storm shelters shall be constructed in accordance with ICC-500.

423.1.1 Scope. This section applies to the construction of storm shelters constructed as separate detached buildings or constructed as safe rooms within buildings for the purpose of providing safe refuge from storms that produce high winds, such as tornados and hurricanes. Such structures shall be designated to be hurricane shelters, tornado shelters, or combined hurricane and tornado shelters.

STORM SHELTER. A building, structure or portions(s) thereof, constructed in accordance with ICC 500 and designated for use during a severe wind storm event, such as a hurricane or tornado.

Community storm shelter. A storm shelter not defined as a “Residential Storm Shelter.”
Residential storm shelter. A storm shelter serving occupants of *dwelling units* and having an *occupant load* not exceeding 16 persons.

CHAPTER 5: GENERAL BUILDING HEIGHTS AND AREAS

SECTION 503
GENERAL BUILDING HEIGHT AND AREA LIMITATIONS

503.1 General. The *building height and area* shall not exceed the limits specified in Table [503](#) based on the type of construction as determined by Section [602](#) and the occupancies as determined by Section [302](#) except as modified hereafter. Each portion of a building separated by one or more *fire walls* complying with Section [706](#) shall be considered to be a separate building.

TABLE 503
ALLOWABLE BUILDING HEIGHTS AND AREAS^a

Building height limitations shown in feet above grade plane. Story limitations shown as stories above grade plane.
Building area limitations shown in square feet, as determined by the definition of “Area, building,” per story

GROUP	TYPE OF CONSTRUCTION									
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
	HEIGHT(feet)	UL	160	65	55	65	55	65	50	40
	STORIES(S) AREA (A)									
B	S A	UL UL	11 UL	5 37,500	3 23,000	5 28,500	3 19,000	5 36,000	3 18,000	2 9,000
E	S A	UL UL	5 UL	3 26,500	2 14,500	3 23,500	2 14,500	3 25,500	1 18,500	1 9,500

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

A = building area per story, S = stories above grade plane, UL = Unlimited, NP = Not permitted.
a. See the following sections for general exceptions to Table [503](#):

- Section [504.2](#), Allowable building height and story increase due to automatic sprinkler system installation.
- Section [506.2](#), Allowable building area increase due to street frontage.
- Section [506.3](#), Allowable building area increase due to automatic sprinkler system installation.
- Section [507](#), Unlimited area buildings.

d. See Section [415.5](#) for limitations.

503.1.2 Buildings on same lot. Two or more buildings on the same lot shall be regulated as separate buildings or shall be considered as portions of one building if the *building height* of each building and the aggregate *building area* of the buildings are within the limitations of Table [503](#) as modified by Sections [504](#) and [506](#). The provisions of this code applicable to the aggregate building shall be applicable to each building.

503.1.3 Type I construction. Buildings of Type I construction permitted to be of unlimited tabular building heights and areas are not subject to the special requirements that allow unlimited area buildings in Section [507](#) or unlimited *building height* in Sections [503.1.1](#) and [504.3](#) or increased *building heights and areas* for other types of construction.

SECTION 507
UNLIMITED AREA BUILDINGS

507.3 Sprinklered, one story. The area of a Group B, F, M or S building no more than one *story above grade plane*, or a Group A-4 building no more than one *story* above *grade plane* of other than Type V construction, shall not be limited when the building is provided with an *automatic sprinkler system* throughout in accordance with Section [903.3.1.1](#) and is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.10 Group E buildings. The area of a Group E building no more than one *story above grade plane*, of Type II, IIIA or IV construction, shall not be limited when all of the following criteria are met:

- Each classroom shall have not less than two *means of egress*, with one of the *means of egress* being a direct *exit* to the outside of the building complying with Section [1020](#).
- The building is equipped throughout with an *automatic sprinkler system* in accordance with Section [903.3.1.1](#).
- The building is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

CHAPTER 6: TYPES OF CONSTRUCTION

SECTION 602
CONSTRUCTION CLASSIFICATION

602.1 General. Buildings and structures erected or to be erected, altered or extended in height or area shall be classified in one of the five construction types defined in Sections [602.2](#) through [602.5](#). The building elements shall have a *fire-resistance rating* not less than that specified in Table [601](#) and exterior walls shall have a *fire-resistance rating* not less than that specified in Table [602](#). Where required to have a *fire-resistance rating* by Table [601](#), building elements shall comply with the applicable provisions of Section [703.2](#). The protection of openings, ducts and air transfer openings in building elements shall not be required unless required by other provisions of this code.

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (hours)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A ^d	B	A ^d	B	HT	A ^d	B
Primary structural frame ^a (see Section 202)	3 ^a	2 ^a	1	0	1	0	HT	1	0
Bearing walls Exterior ^{f, g} Interior	3 3 ^a	2 2 ^a	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior ^e	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction and secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and secondary members (see Section 202)	1½ ^b 2	1 ^{b, c}	1 ^{b, c}	0 ^c	1 ^{b, c}	0	HT	1 ^{b, c}	0

For SI: 1 foot = 304.8 mm.

- a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.
- d. An approved automatic sprinkler system in accordance with Section [903.3.1.1](#) shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Section [506.3](#) or an allowable height increase in accordance with Section [504.2](#). The 1-hour substitution for the fire resistance of exterior walls shall not be permitted.
- e. Not less than the fire-resistance rating required by other sections of this code.
- f. Not less than the fire-resistance rating based on fire separation distance (see Table [602](#)).
- g. Not less than the fire-resistance rating as referenced in Section [704.10](#).

TABLE 602
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE a , e

FIRE SEPARATION DISTANCE = X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP H ^f	OCCUPANCY GROUP F-1, M, S-1 ^g	OCCUPANCY GROUP A, B, E, F-2, I, R, S-2 ^g, U ^b
X < 5^c	All	3	2	1
5 ≤ X <10	IA Others	3 2	2 1	1 1
10 ≤ X < 30	IA, IB IIB, VB Others	2 1 1	1 0 1	1 ^d 0 1 ^d
X ≥ 30	All	0	0	0

For SI: 1 foot = 304.8 mm.

- a. Load-bearing exterior walls shall also comply with the fire-resistance rating requirements of Table [601](#).
- b. For special requirements for Group U occupancies, see Section 406.1.2.
- c. See Section [706.1.1](#) for party walls.
- d. Open parking garages complying with Section [406](#) shall not be required to have a fire-resistance rating.
- e. The fire-resistance rating of an exterior wall is determined based upon the fire separation distance of the exterior wall and the story in which the wall is located.
- f. For special requirements for Group H occupancies, see Section [415.3](#).
- g. For special requirements for Group S aircraft hangars, see Section [412.4.1](#).

602.1.1 Minimum requirements. A building or portion thereof shall not be required to conform to the details of a type of construction higher than that type which meets the minimum requirements based on occupancy even though certain features of such a building actually conform to a higher type of construction.

602.2 Types I and II. Types I and II construction are those types of construction in which the building elements listed in Table 601 are of noncombustible materials, except as permitted in Section 603 and elsewhere in this code.

602.5 Type V. Type V construction is that type of construction in which the structural elements, *exterior walls* and interior walls are of any materials permitted by this code.

CHAPTER 7: FIRE AND SMOKE PROTECTION FEATURES

SECTION 705 EXTERIOR WALLS

705.1 General. *Exterior walls* shall comply with this section.

705.2.1 Type I and II construction. Projections from walls of Type I or II construction shall be of noncombustible materials or combustible materials as allowed by Sections [1406.3](#) and [1406.4](#).

705.2.2 Type III, IV or V construction. Projections from walls of Type III, IV or V construction shall be of any *approved* material.

SECTION 707

FIRE BARRIERS

707.1 General. Fire barriers installed as required elsewhere in this code or the *International Fire Code* shall comply with this section.

707.2 Materials. *Fire barriers* shall be of materials permitted by the building type of construction.

707.3 Fire-resistance rating. The *fire-resistance rating* of fire barriers shall comply with this section.

707.3.2 Exit enclosures. The *fire-resistance rating* of the *fire barrier* separating building areas from an *exit* shall comply with Section [1022.1](#).

707.3.3 Exit passageway. The fire-resistance rating of the fire barrier separating building areas from an exit passageway shall comply with Section 1023.3.

707.3.4 Horizontal exit. The *fire-resistance rating* of the separation between building areas connected by a horizontal exit shall comply with Section 1025.1.

707.3.8 Separated occupancies. Where the provisions of Section 508.4 are applicable, the *fire barrier* separating mixed occupancies shall have a *fire-resistance rating* of not less than that indicated in Table 508.4 based on the occupancies being separated.

707.3.9 Fire areas. The fire barriers or horizontal assemblies, or both, separating a single occupancy into different fire areas shall have a fire-resistance rating of not less than that indicated in Table 707.3.9. The fire barriers or horizontal assemblies, or both, separating fire areas of mixed occupancies shall have a fire-resistance rating of not less than the highest value indicated in Table 707.3.9 for the occupancies under consideration.

TABLE 707.3.9
FIRE-RESISTANCE RATING REQUIREMENTS FOR FIRE BARRIER ASSEMBLIES OR HORIZONTAL ASSEMBLIES BETWEEN

OCCUPANCY GROUP	FIRE-RESISTANCE RATING (hours)
H-1, H-2	4
F-1, H-3, S-1	3
A, B, E, F-2, H-4, H-5, I, M, R, S-2	2
U	1

707.4 Exterior walls. Where *exterior walls* serve as a part of a required fire-resistance-rated shaft or *exit* enclosure, or separation, such walls shall comply with the requirements of Section 705 for *exterior walls* and the fire-resistance-rated enclosure or separation requirements shall not apply.

707.5.1 Supporting construction. The supporting construction for a *fire barrier* shall be protected to afford the required *fire-resistance rating* of the *fire barrier* supported. Hollow vertical spaces within a *fire barrier* shall be fireblocked in accordance with Section [717.2](#) at every floor level.

Exceptions:

1. The maximum required *fire-resistance rating* for assemblies supporting *fire barriers* separating tank storage as provided for in Section [415.6.2.1](#) shall be 2 hours, but not less than required by Table [601](#) for the building construction type.
2. Shaft enclosures shall be permitted to terminate at a top enclosure complying with Section [708.12](#).
3. Supporting construction for 1-hour *fire barriers* required by Table [508.2.5](#) in buildings of Type IIB, IIIB and VB construction is not required to be fire-resistance rated unless required by other sections of this code.

CHAPTER 9: FIRE PROTECTION SYSTEMS

SECTION 903

AUTOMATIC SPRINKLER SYSTEMS

[F] 903.1 General. *Automatic sprinkler systems* shall comply with this section.

[F] 903.2 Where required. Approved *automatic sprinkler systems* in new buildings and structures shall be provided in the locations described in Sections [903.2.1](#) through [903.2.12](#).

Exception: Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an automatic smoke detection system in accordance with Section [907.2](#) and are separated from the remainder of the building by not less than 1-hour *fire barriers* constructed in accordance with Section [707](#) or not less than 2-hour *horizontal assemblies* constructed in accordance with Section [712](#), or both.

[F] 903.2.3 Group E. An *automatic sprinkler system* shall be provided for Group E occupancies as follows:

1. Throughout all Group E *fire areas* greater than 12,000 square feet (1115 m²) in area.
2. Throughout every portion of educational buildings below the lowest *level of exit discharge* serving that portion of the building.

Exception: An automatic sprinkler system is not required in any area below the lowest level of exit discharge serving that area where every classroom throughout the building has at least one exterior exit door at ground level.

CHAPTER 10: MEANS OF EGRESS

SECTION 1003
GENERAL MEANS OF EGRESS

1003.1 Applicability. The general requirements specified in Sections [1003](#) through [1013](#) shall apply to all three elements of the *means of egress* system, in addition to those specific requirements for the *exit access*, the *exit* and the *exit discharge* detailed elsewhere in this chapter.

1003.3 Protruding objects. Protruding objects shall comply with the requirements of Sections [1003.3.1](#) through [1003.3.4](#).

1003.3.1 Headroom. Protruding objects are permitted to extend below the minimum ceiling height required by Section [1003.2](#) provided a minimum headroom of 80 inches (2032 mm) shall be provided for any walking surface, including walks, *corridors*, *aisles* and passageways. Not more than 50 percent of the ceiling area of a *means of egress* shall be reduced in height by protruding objects.

A barrier shall be provided where the vertical clearance is less than 80 inches (2032 mm) high. The leading edge of such a barrier shall be located 27 inches (686 mm) maximum above the floor.

1003.3.3 Horizontal projections. Structural elements, fixtures or furnishings shall not project horizontally from either side more than 4 inches (102 mm) over any walking surface between the heights of 27 inches (686 mm) and 80 inches (2032 mm) above the walking surface.

Exception: *Handrails* are permitted to protrude 4¹/₂ inches (114 mm) from the wall.

1003.5 Elevation change. Where changes in elevation of less than 12 inches (305 mm) exist in the *means of egress*, sloped surfaces shall be used. Where the slope is greater than one unit vertical in 20 units horizontal (5-percent slope), *ramps* complying with Section [1010](#) shall be used. Where the difference in elevation is 6 inches (152 mm) or less, the *ramp* shall be equipped with either handrails or floor finish materials that contrast with adjacent floor finish materials.

1003.6 Means of egress continuity. The path of egress travel along a *means of egress* shall not be interrupted by any building element other than a *means of egress* component as specified in this chapter. Obstructions shall not be placed in the required width of a *means of egress* except projections permitted by this chapter. The required capacity of a *means of egress* system shall not be diminished along the path of egress travel.

SECTION 1004
OCCUPANT LOAD

1004.1 Design occupant load. In determining *means of egress* requirements, the number of occupants for whom *means of egress* facilities shall be provided shall be determined in accordance with this section. Where occupants from accessory areas egress through a primary space, the calculated *occupant load* for the primary space shall include the total *occupant load* of the primary space plus the number of occupants egressing through it from the accessory area.

1004.1.1 Areas without fixed seating. The number of occupants shall be computed at the rate of one occupant per unit of area as prescribed in Table [1004.1.1](#). For areas without fixed seating, the *occupant load* shall not be less than that number determined by dividing the floor area under consideration by the occupant per unit of area factor assigned to the occupancy as set forth in Table [1004.1.1](#). Where an intended use is not listed in Table [1004.1.1](#), the *building official* shall establish a use based on a listed use that most nearly resembles the intended use.

TABLE 1004.1.1
MAXIMUM FLOOR AREA ALLOWANCES

FUNCTION OF SPACE	FLOOR AREA IN SQ. FT. PER OCCUPANT
Accessory storage areas, mechanical equipment room	300 gross
Assembly with fixed seats	See Section 1004.7
Business areas	100 gross
Day care	35 net
Educational Classroom area Shops and other vocational room areas	20 net 50 net
Library Reading rooms Stack area	50 net 100 gross
Locker rooms	50 gross
Stages and platforms	15 net

For SI: 1 square foot = 0.0929 m².

1004.8 Outdoor areas. Yards, patios, courts and similar outdoor areas accessible to and usable by the building occupants shall be provided with *means of egress* as required by this chapter. The *occupant load* of such outdoor areas shall be assigned by the *building official* in accordance with the anticipated use. Where outdoor areas are to be used by persons in addition to the occupants of the building, and the path of egress travel from the outdoor areas passes through the building, *means of egress* requirements for the building shall be based on the sum of the *occupant loads* of the building plus the outdoor areas.

SECTION 1005
EGRESS WIDTH

1005.1 Minimum required egress width. The *means of egress* width shall not be less than required by this section. The total width of *means of egress* in inches (mm) shall not be less than the total *occupant load* served by the *means of egress* multiplied by 0.3 inches (7.62 mm) per occupant for stairways and by 0.2 inches (5.08 mm) per occupant for other egress components. The width shall not be less than specified elsewhere in this code. Multiple *means of egress* shall be sized such that the loss of any one *means of egress* shall not reduce the available capacity to less than 50 percent of the required capacity. The maximum capacity required from any *story* of a building shall be maintained to the termination of the *means of egress*.

Exception: *Means of egress* complying with Section [1028](#).

SECTION 1007
ACCESSIBLE MEANS OF EGRESS

1007.1 Accessible means of egress required. *Accessible means of egress* shall comply with this section. *Accessible* spaces shall be provided with not less than one *accessible means of egress*. Where more than one *means of egress* are required by Section [1015.1](#) or [1021.1](#) from any *accessible* space, each *accessible* portion of the space shall be served by not less than two *accessible means of egress*.

1007.2 Continuity and components. Each required *accessible means of egress* shall be continuous to a *public way* and shall consist of one or more of the following components:

1. *Accessible routes* complying with Section [1104](#).
2. *Interior exit stairways* complying with Sections [1007.3](#) and [1022](#).
3. *Exterior exit stairways* complying with Sections [1007.3](#) and [1026](#).
6. *Horizontal exits* complying with Section [1025](#).
7. *Ramps* complying with Section [1010](#).

1007.6 Areas of refuge. Every required *area of refuge* shall be *accessible* from the space it serves by an *accessible means of egress*. The maximum travel distance from any *accessible* space to an *area of refuge* shall not exceed the travel distance permitted for the occupancy in accordance with Section [1016.1](#). Every required *area of refuge* shall have direct access to a *stairway* within an *exit enclosure* complying with Sections [1007.3](#) and [1022](#) or an elevator complying with Section [1007.4](#). Where an elevator lobby is used as an *area of refuge*, the shaft and lobby shall comply with Section [1022.9](#) for *smokeproof enclosures* except where the elevators are in an *area of refuge* formed by a *horizontal exit* or *smoke barrier*.

1007.6.1 Size. Each *area of refuge* shall be sized to accommodate one *wheelchair space* of 30 inches by 48 inches (762 mm by1219 mm) for each 200 occupants or portion thereof, based on the *occupant load* of the *area of refuge* and areas served by the *area of refuge*. Such *wheelchair spaces* shall not reduce the required *means of egress* width. Access to any of the required *wheelchair spaces* in an *area of refuge* shall not be obstructed by more than one adjoining *wheelchair space*.

1007.6.2 Separation. Each *area of refuge* shall be separated from the remainder of the story by a *smoke barrier* complying with Section [710](#) or a *horizontal exit* complying with Section [1025](#). Each *area of refuge* shall be designed to minimize the intrusion of smoke.

1007.7 Exterior area for assisted rescue. The exterior area for assisted rescue must be open to the outside air and meet the requirements of Section [1007.6.1](#). Separation walls shall comply with the requirements of Section [705](#) for *exterior walls*. Where walls or openings are between the area for assisted rescue and the interior of the building, the building *exterior walls* within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a *fire-resistance rating* of not less than 1 hour. Openings within such *exterior walls* shall be protected by opening protectives having a *fire protection rating* of not less than ³/₄ hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the floor level of the area for assisted rescue or to the roof line, whichever is lower.

SECTION 1014
EXIT ACCESS

1014.2 Egress through intervening spaces. Egress through intervening spaces shall comply with this section.

1. Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are accessory to one or the other, are not a Group H occupancy and provide a discernible path of egress travel to an *exit*.

SECTION 1015
EXIT AND EXIT ACCESS DOORWAYS

1015.1 Exits or exit access doorways from spaces. Two *exits* or *exit access doorways* from any space shall be provided where one of the following conditions exists:

1. The *occupant load* of the space exceeds one of the values in Table [1015.1](#).
3. Where required by Section [1015.3](#), [1015.4](#), [1015.5](#), [1015.6](#) or [1015.6.1](#).

TABLE 1015.1
SPACES WITH ONE EXIT OR EXIT ACCESS

OCCUPANCY	MAXIMUM OCCUPANT LOAD
A, B, E ^a , F, M, U	49

a. Day care maximum occupant load is 10.

1015.1.1 Three or more exits or exit access doorways. Three *exits* or *exit access doorways* shall be provided from any space with an *occupant load* of 501 to 1,000. Four *exits* or *exit access doorways* shall be provided from any space with an *occupant load* greater than 1,000.

1015.2 Exit or exit access doorway arrangement. Required *exits* shall be located in a manner that makes their availability obvious. *Exits* shall be unobstructed at all times. *Exit* and *exit access doorways* shall be arranged in accordance with Sections [1015.2.1](#) and [1015.2.2](#).

1015.2.1 Two exits or exit access doorways. Where two *exits* or *exit access doorways* are required from any portion of the *exit access*, the *exit* doors or *exit access doorways* shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between *exit* doors or *exit access doorways*. Interlocking or *scissor stairs* shall be counted as one *exit stairway*.

Exceptions:

- Where *exit enclosures* are provided as a portion of the required *exit* and are interconnected by a 1-hour fire-resistance-rated *corridor* conforming to the requirements of Section [1018](#), the required *exit* separation shall be measured along the shortest direct line of travel within the *corridor*.
- Where a building is equipped throughout with an *automatic sprinkler system* in accordance with Section [903.3.1.1](#) or [903.3.1.2](#), the separation distance of the *exit* doors or *exit access doorways* shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.

1015.2.2 Three or more exits or exit access doorways. Where access to three or more *exits* is required, at least two *exit* doors or *exit access doorways* shall be arranged in accordance with the provisions of Section [1015.2.1](#).

1015.3 Boiler, incinerator and furnace rooms. Two *exit access doorways* are required in boiler, incinerator and furnace rooms where the area is over 500 square feet (46 m²) and any fuel-fired equipment exceeds 400,000 British thermal units (Btu) (422 000 KJ) input capacity. Where two *exit access doorways* are required, one is permitted to be a fixed ladder or an *alternating tread device*. *Exit access doorways* shall be separated by a horizontal distance equal to one-half the length of the maximum overall diagonal dimension of the room.

1015.4 Refrigeration machinery rooms. Machinery rooms larger than 1,000 square feet (93 m²) shall have not less than two *exits* or *exit access* doors. Where two *exit access doorways* are required, one such doorway is permitted to be served by a fixed ladder or an *alternating tread device*. *Exit access doorways* shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of room.

Doors shall swing in the direction of egress travel, regardless of the *occupant load* served. Doors shall be tight fitting and self-closing.

**SECTION 1016
EXIT ACCESS TRAVEL DISTANCE**

1016.1 Travel distance limitations. *Exits* shall be so located on each *story* such that the maximum length of *exit access* travel, measured from the most remote point within a *story* along the natural and unobstructed path of egress travel to an *exterior exit* door at the *level of exit discharge*, an entrance to a vertical *exit enclosure*, an *exit passageway*, a *horizontal exit*, an *exterior exit stairway* or an exterior *exit ramp*, shall not exceed the distances given in Table [1016.1](#).

Exceptions:

- In other than occupancy Groups H and I, the *exit access* travel distance to a maximum of 50 percent of the *exits* is permitted to be measured from the most remote point within a building to an *exit* using unenclosed *exit access stairways* or *ramps* when connecting a maximum of two stories. The two connected stories shall be provided with at least two *means of egress*. Such interconnected stories shall not be open to other stories.

TABLE 1016.1
EXIT ACCESS TRAVEL DISTANCE

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200	250 ^b
B	200	300 ^c

For SI: 1 foot = 304.8 mm.

- Buildings equipped throughout with an automatic sprinkler system in accordance with Section [903.3.1.1](#) or [903.3.1.2](#). See Section [903](#) for occupancies where automatic sprinkler systems are permitted in accordance with Section [903.3.1.2](#).
- Buildings equipped throughout with an automatic sprinkler system in accordance with Section [903.3.1.1](#).

**SECTION 1020
EXITS**

1020.1 General. *Exits* shall comply with Sections [1020](#) through [1026](#) and the applicable requirements of Sections [1003](#) through [1013](#). An *exit* shall not be used for any purpose that interferes with its function as a *means of egress*. Once a given level of exit protection is achieved, such level of protection shall not be reduced until arrival at the *exit discharge*.

**SECTION 1021
NUMBER OF EXITS AND CONTINUITY**

1021.1 Exits from stories. All spaces within each *story* shall have access to the minimum number of *approved* independent *exits* as specified in Table [1021.1](#) based on the *occupant load* of the *story*. For the purposes of this chapter, occupied roofs shall be provided with *exits* as required for stories.

TABLE 1021.1
MINIMUM NUMBER OF EXITS FOR OCCUPANT LOAD

OCCUPANT LOAD (persons per story)	MINIMUM NUMBER OF EXITS (per story)
1-500	2
501-1,000	3

**SECTION 1027
EXIT DISCHARGE**

1027.1 General. *Exits* shall discharge directly to the exterior of the building. The *exit discharge* shall be at grade or shall provide direct access to grade. The *exit discharge* shall not reenter a building. The combined use of Exceptions 1 and 2 below shall not exceed 50 percent of the number and capacity of the required *exits*.

Exceptions:

- A maximum of 50 percent of the number and capacity of the *exit enclosures* is permitted to egress through areas on the level of discharge provided all of the following are met:
 - Such *exit enclosures* egress to a free and unobstructed path of travel to an exterior *exit* door and such *exit* is readily visible and identifiable from the point of termination of the *exit* enclosure.
 - The entire area of the *level of exit discharge* is separated from areas below by construction conforming to the *fire-resistance rating* for the *exit enclosure*.
 - The egress path from the *exit enclosure* on the *level of exit discharge* is protected throughout by an *approved automatic sprinkler system*. All portions of the *level of exit discharge* with access to the egress path shall either be protected throughout with an *automatic sprinkler system* installed in accordance with Section [903.3.1.1](#) or [903.3.1.2](#), or separated from the egress path in accordance with the requirements for the enclosure of *exits*.
- A maximum of 50 percent of the number and capacity of the *exit enclosures* is permitted to egress through a vestibule provided all of the following are met:
 - The entire area of the vestibule is separated from areas below by construction conforming to the *fire-resistance rating* for the *exit enclosure*.
 - The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).
 - The area is separated from the remainder of the *level of exit discharge* by construction providing protection at least the equivalent of *approved* wired glass in steel frames.
 - The area is used only for *means of egress* and *exits* directly to the outside.
- Stairways* in *open parking garages* complying with Section [1022.1](#), Exception 4, are permitted to egress through the *open parking garage* at their *levels of exit discharge*.

CHAPTER 11: ACCESSIBILITY

**SECTION 1101
GENERAL**

1101.2 Design. Buildings and facilities shall be designed and constructed to be *accessible* in accordance with this code and ICC A117.1.

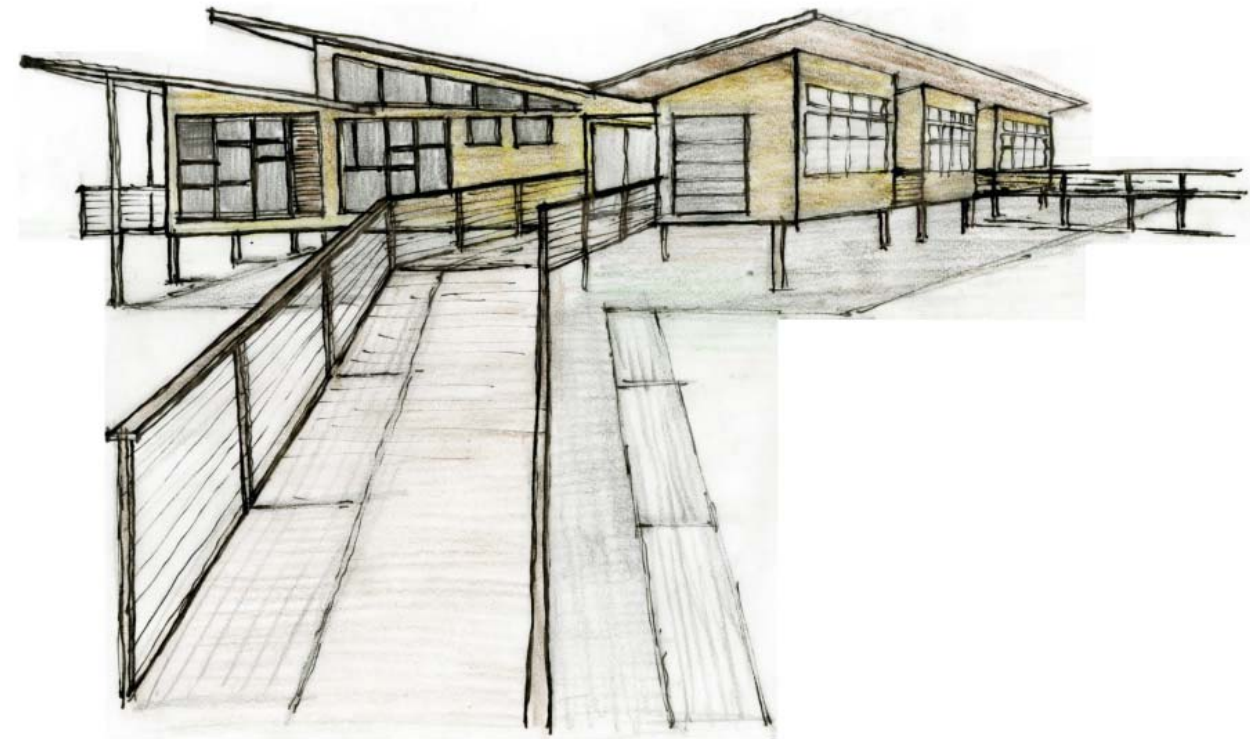
**SECTION 1105
ACCESSIBLE ENTRANCES**

1105.1 Public entrances. In addition to *accessible* entrances required by Sections [1105.1.1](#) through [1105.1.6](#), at least 60 percent of all *public entrances* shall be *accessible*.

NOTES^{1,2}

¹ "International Building Code, 2009." *ELibrary*. MADCAD. 25 Nov. 2009. <<http://www.madcad.com/library/IBC-09/>>.
² Tables have been cropped to manage and clarify material. Complete table definitions may be found in the above citation.

DESIGN SYNTHESIS 10



PRELIMINARY CONCEPTUAL SKETCH

SPATIAL CONSIDERATIONS FOR K, 1ST, & 2ND GRADERS

SPATIAL
CONSIDERATIONS FOR
GRADES K-2
(1200 SF MINIMUM)★ ALL AREAS
ARE ACTIVE
AREAS ★★ GOOD FOR K-K-16
- Maybe for K-12

ALSO FIRST GRADE? +2

KINDERGARTEN (Much more active)

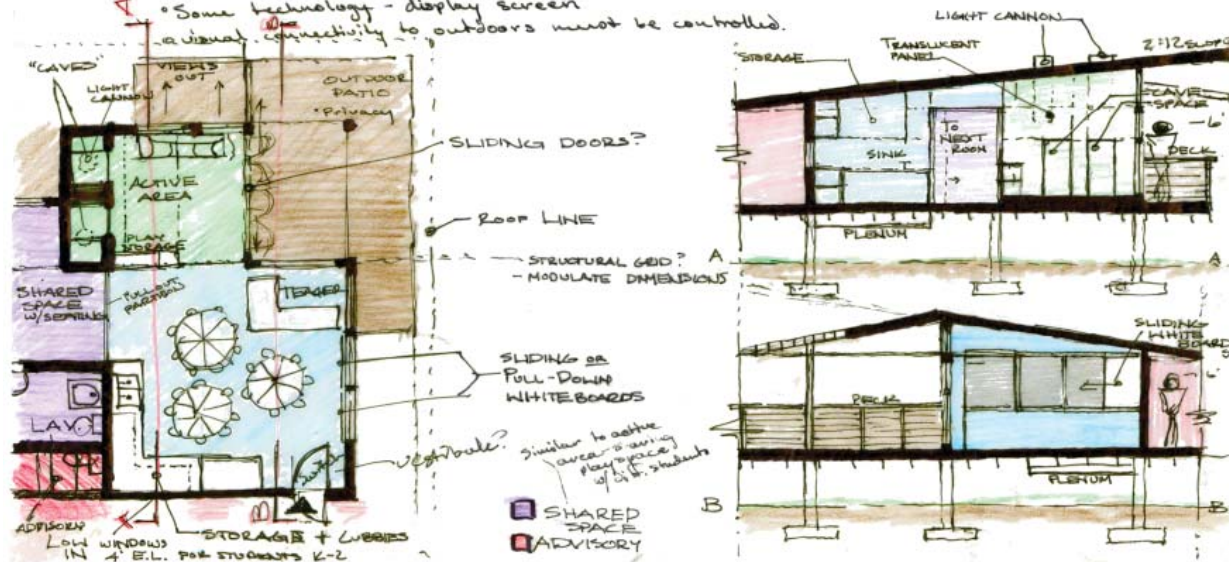
- Spaces linked by furniture and wet-core/area +
- Connectivity to outdoors - spatial vitality w/ natural connections.
- Colors as signage/wayfinding
- Elevation changes to in floors to better define spatial relationships
- Outdoor patio - enclosed by guardrails and intimately shaded.

ACTIVE AREA (pseudo-play area)

- Immediate Connectivity to outdoors - strong daylighting - natural ventilation.
- Materiality and scale - naturally comforting to Kindergarteners
- Small (really tight) Cave spaces for private learning → niches in walls.
- Soft walls for active students
- Integrated storage for playthings and other physical stimuli.

FLEX SPACE

- Ambient lighting and ^{calm} environmental controls
- Proximity to storage, whiteboards, sinks → any services that are beneficial to project learning
- Some technology - display screen
- a visual connectivity to outdoors must be controlled.



BY IDENTIFYING AND MANIPULATING UNIQUE SPATIAL CONDITIONS FOR INDIVIDUAL GRADES AND HOW THEY AFFECT PEDAGOGICAL GOALS, UNITS BEGIN TO FORM A COHESIVE IDENTITY IN BOTH INDIVIDUAL CLASSROOMS AND CO-OPERATIVE ADVISORY SPACES.

SPATIAL CONSIDERATIONS FOR 3RD & 4TH GRADERS

PEDAGOGY

- Still very much physically oriented to learning and social cohesion
- Being introduced to text oriented materials for state practices
- other practical skills in art, music, and ~~physical~~ digital knowledge/experience.
- Similar architectural language with 3 transitional modalities (Active, Flex, Breakout)
- Multiple Teacher cooperation is still significant benefit.
- Public advisories directly integrate with inter-classroom advisories.

ACTIVE ZONE - predominant space in 3rd/4th Grades

- Entry and project learning - spaces open and physically stimulating
- Connected to outdoors, transparent - dynamic
- Lab and dirty area - proximity to clean stations

FLEX SPACE

- flexible seating w/ cooperative lighting
- more storage and space for books and technology
- presentation spaces may link all three modalities - Campfire space
- ambient lighting and relatively uniformly conditioned space - bright walls and board space for demonstration work.

BREAKOUT SPACE

- soft seating w/ cooperative learning spaces - also soft floors
- integrated digital technology and ~~watering~~ watering hole space.
- comfortable ambient environment

SPATIAL CONSIDERATIONS FOR 5TH & 6TH GRADERS

PEDAGOGY

- Synthesis of Montessori, Open-Concept, and State Methodology
- Digital technology becomes integral to understanding and accessing info
- Science and Social Studies are central to tests and life skills
- Social cooperation and sustained relationships are paramount to avoid bullying and cliques.
- Because these students are at the pinnacle of their education, more display, campfire, and watering hole spaces are necessary to communicate learned information and skills to younger children.
- Lab and shared spaces should be still cooperative, formal/informal learning centers
- These groups may also operate student body functions (school store, student council)

ACTIVE ZONE

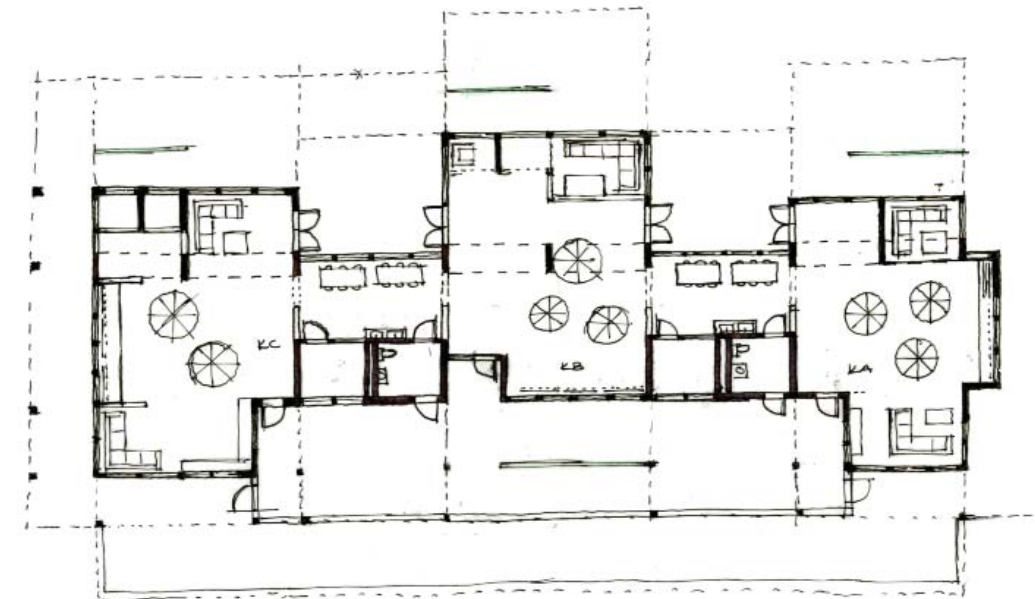
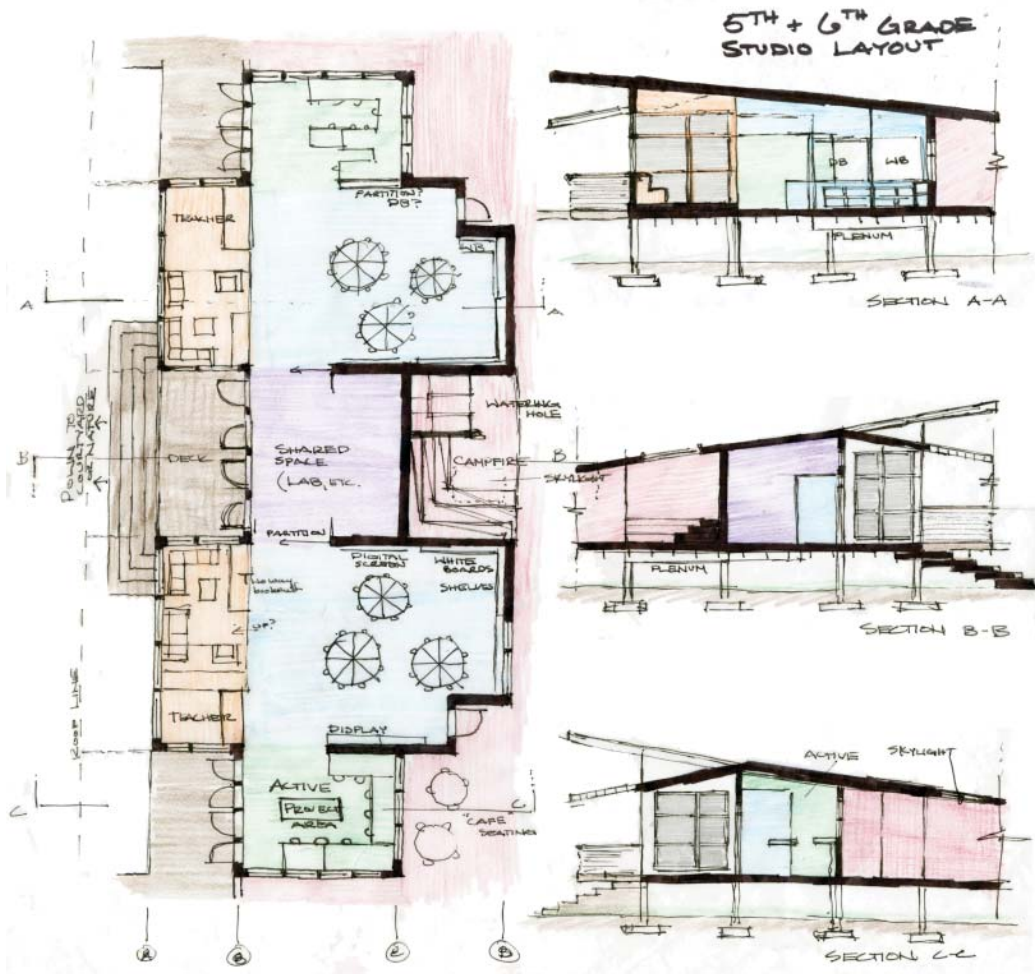
- project area is more about building, representing, and displaying information
- active connection to advisory spaces and public areas.
- dynamic learning through physical scientific experiences + objects (telescopes, microscope, etc.)

FLEX SPACE

- More organized to lecture format with possibility of moveable furniture
- Digital and analogue presentation technology are integrated
- Personal digital tech. is available at students desks. - laptops etc.
- Display space has direct connection to advisories.
- More intimate and controlled environment - lighting, thermal, etc.

BREAKOUT SPACE

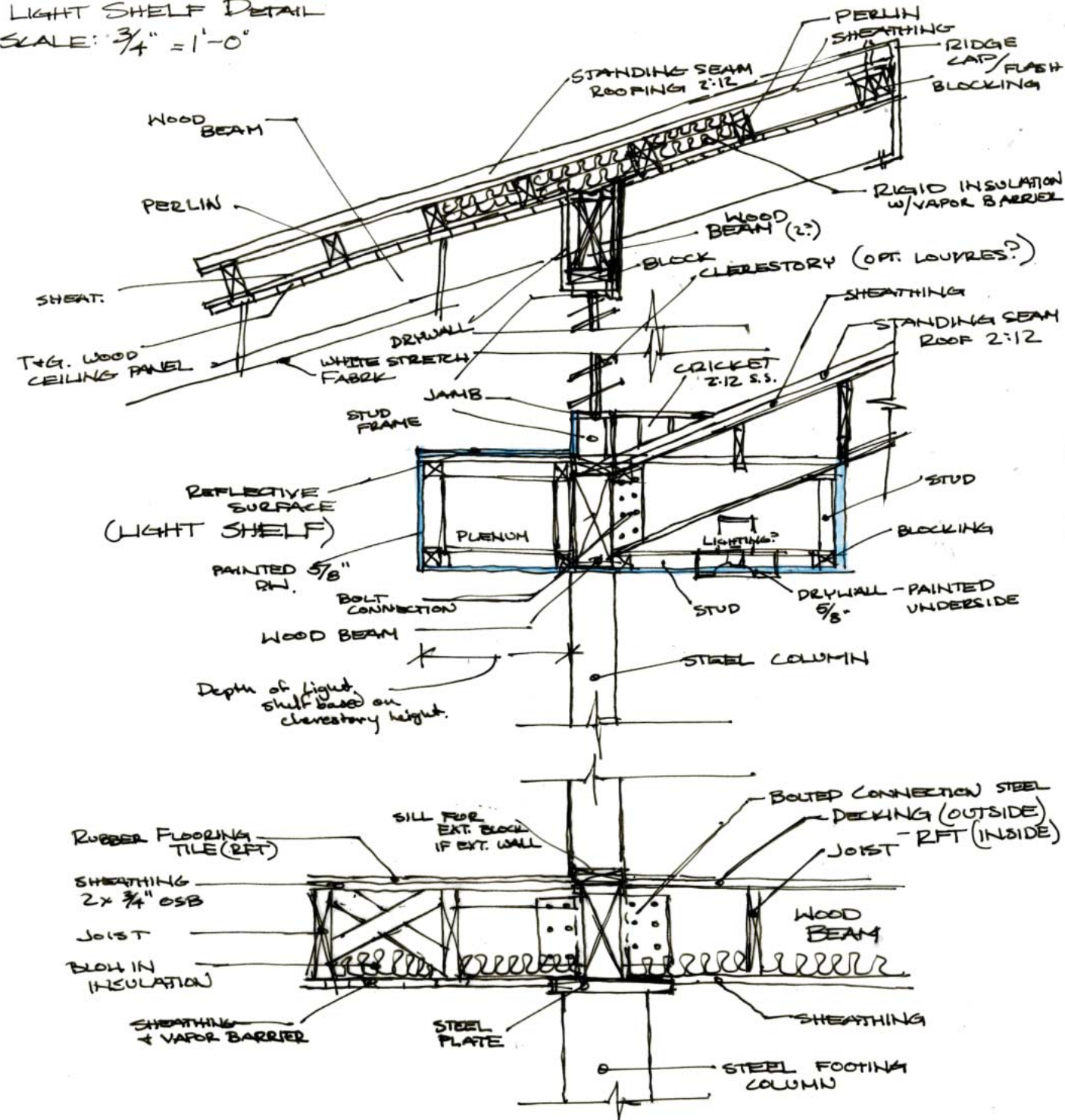
- soft seating and continued cooperative learning spaces.
- reading area - reinforce the importance of books as a tool of independent inquiry
- Environment has direct connection to environment but is an "island of retreat" for students seeking quiet time to read or focus on private learning.

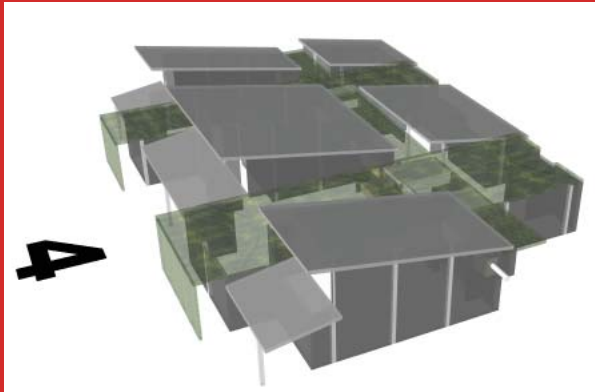
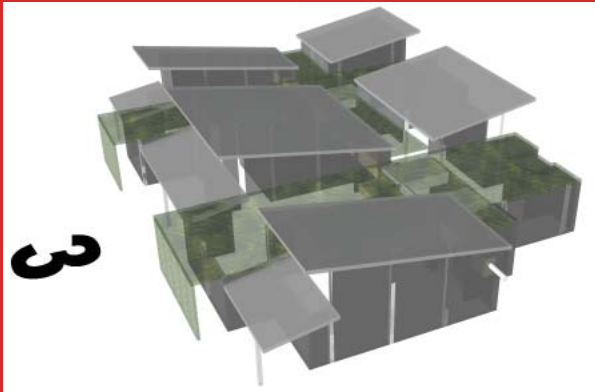
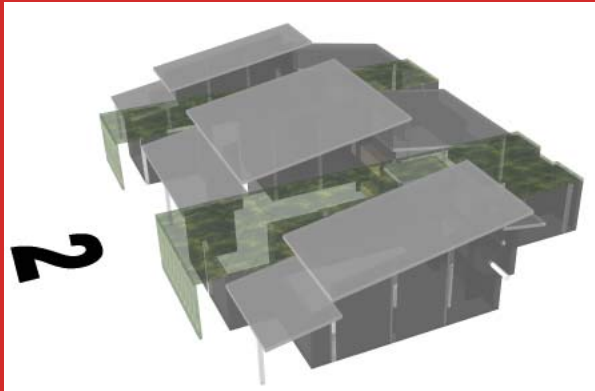
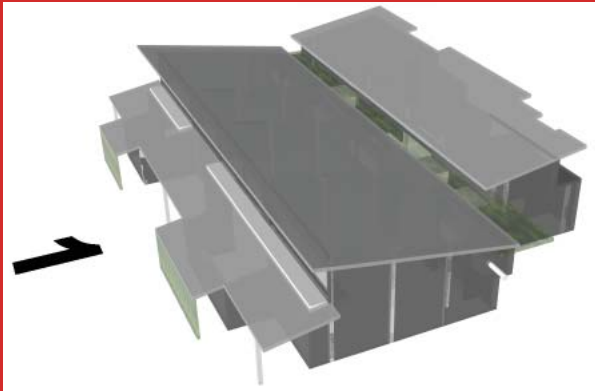


SCHEMATIC PLAN ORGANIZATION BETWEEN STUDIO UNITS

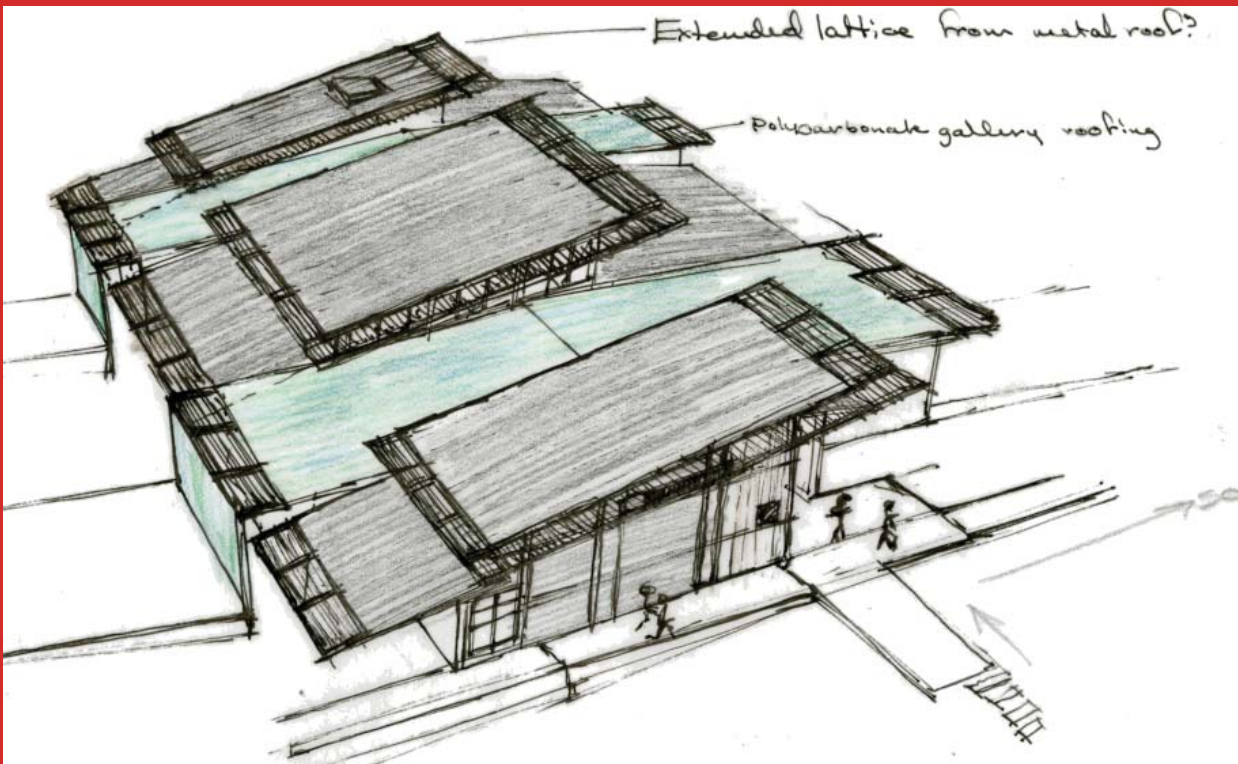
ROUGH SKETCH OF SCHEMATIC CONSTRUCTION SECTION DETAIL FOR STRUCTURAL, MECHANICAL, AND LIGHTING STUDIES

LIGHT SHELF DETAIL
SCALE: $\frac{3}{4}" = 1'-0"$



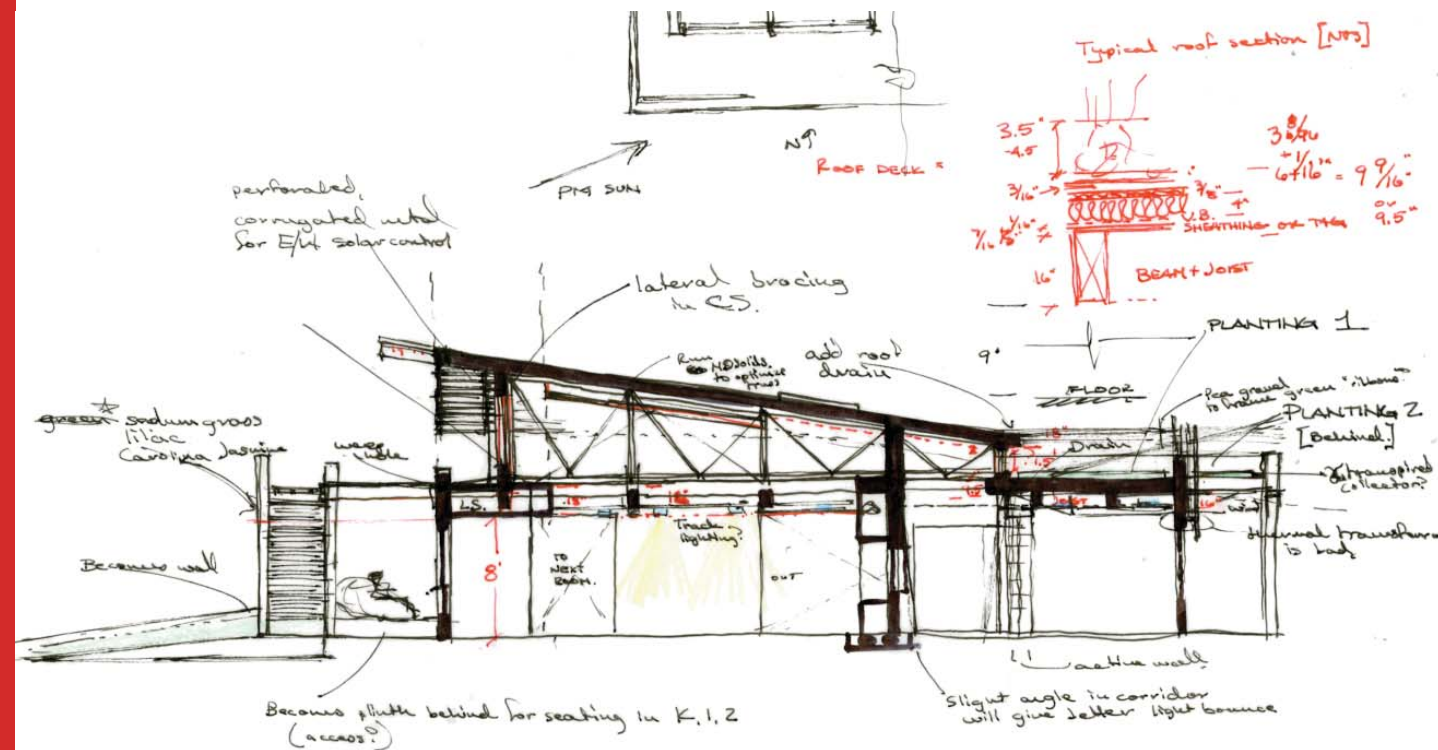


STUDIES OF UNIT MORPHOLOGY AND WATER COLLECTION CALCULATIONS TO FIND THE MAXIMUM WATER VOLUME VS. CATCHMENT AREA POSSIBLE

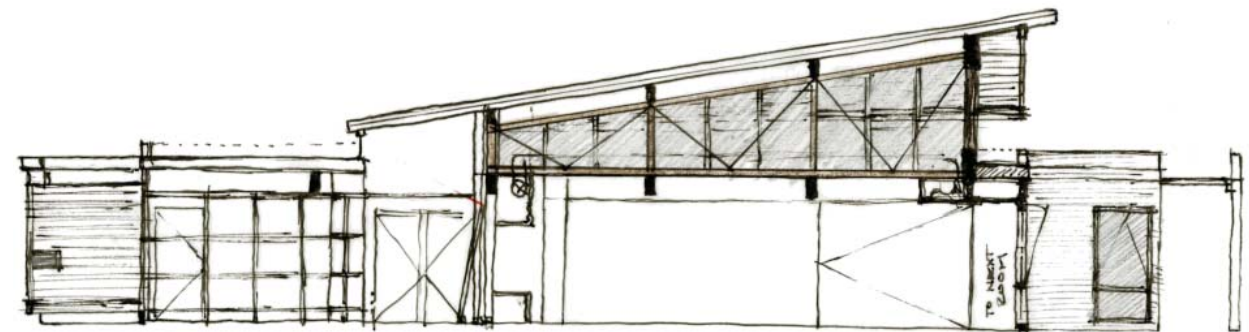


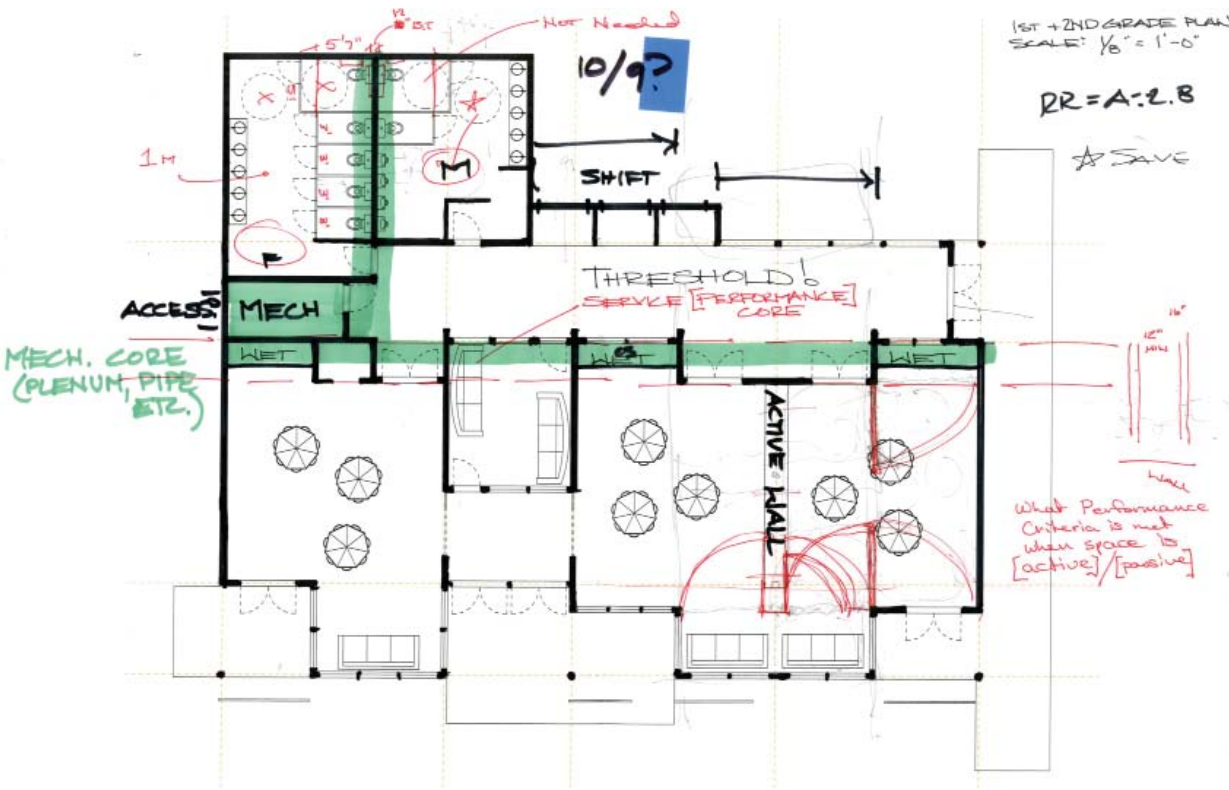
SCHEMATIC PERSPECTIVE OF ROOF MORPHOLOGY

SCHEMATIC SECTIONS OF LEARNING STUDIO

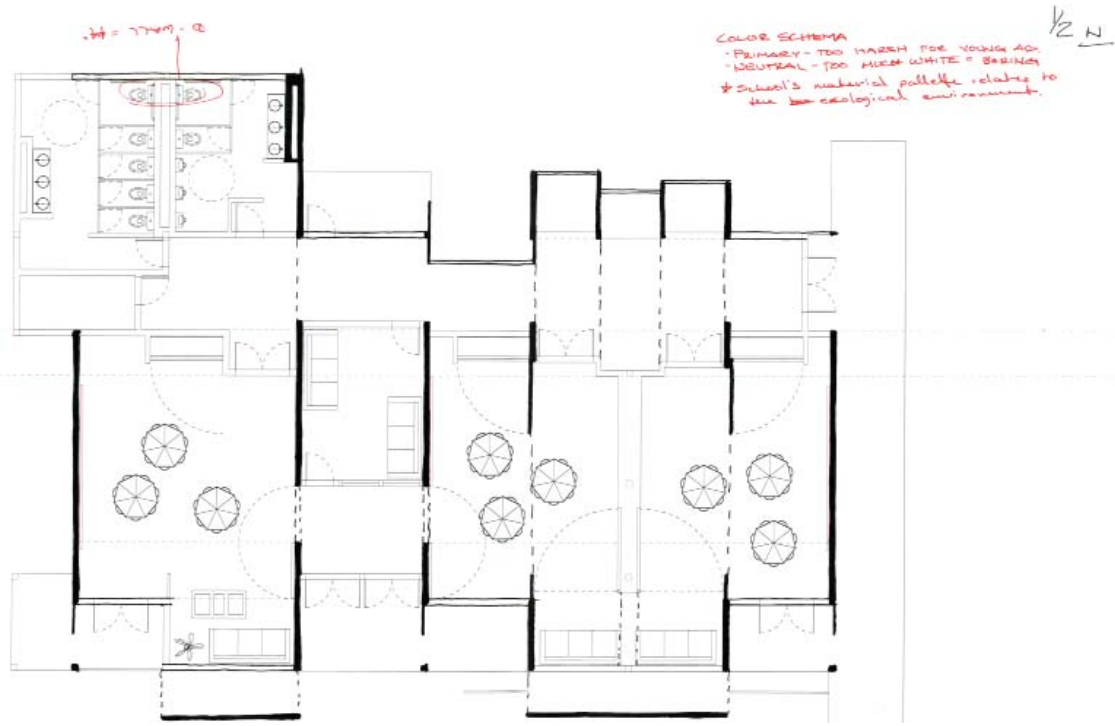


★ Should shared CR's in 3+4 have tables in active areas, or should they be soft seating and tables sold out of [active wall?]





IDENTIFYING MAJOR MECHANICAL SERVICES WHICH IN TURN CREATE AN OCCUPANCY THRESHOLD AND AN EXCHANGE BETWEEN STUDIO AND PUBLIC SPACES. THRESHOLD SPACES THEN CREATE THEMATIC PERFORMANCE CRITERIA TO BETTER INFLUENCE PEDAGOGICAL GOALS (SEEN TO THE RIGHT).



THRESHOLD PERFORMANCE CRITERIA
KINDERGARTEN... RESPONSIBLE SELF-AWARENESS

- Identity is formed in response to increasingly sophisticated challenges and explorations
- Achievement is when a person makes identity choices and commits to them à
 - Disregard role playing activities – becomes alienated from personal self – increased effectiveness of identity groups
- Daylighting and natural sensorial environment
- Cooperative teaching – mainly shared space which directly engages private environments

1st & 2nd..... FAMILY & FRIENDS

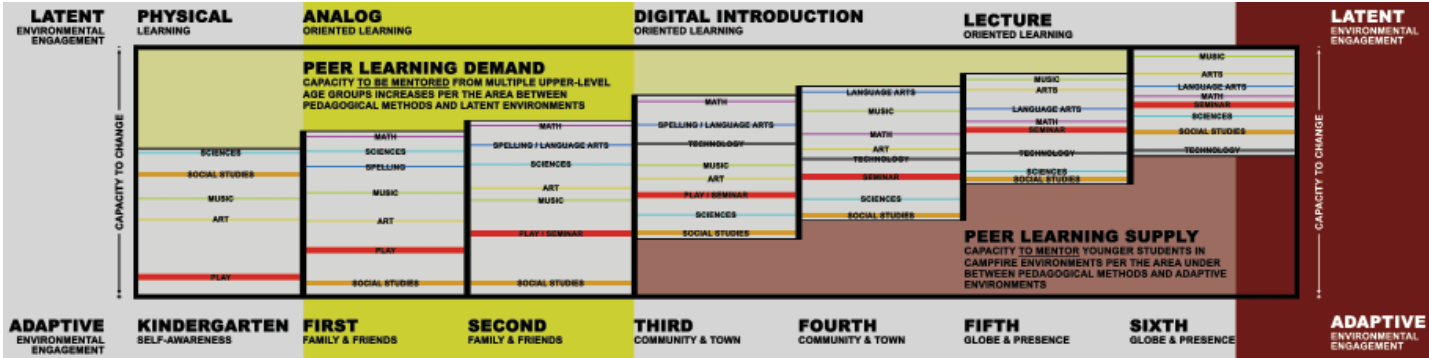
- Project areas with wet cleanup
- Active zones close to flex spaces for immediate exchange
 - BUT
- Acoustically separate from breakout areas

3rd & 4th..... COMMUNITY & TOWN

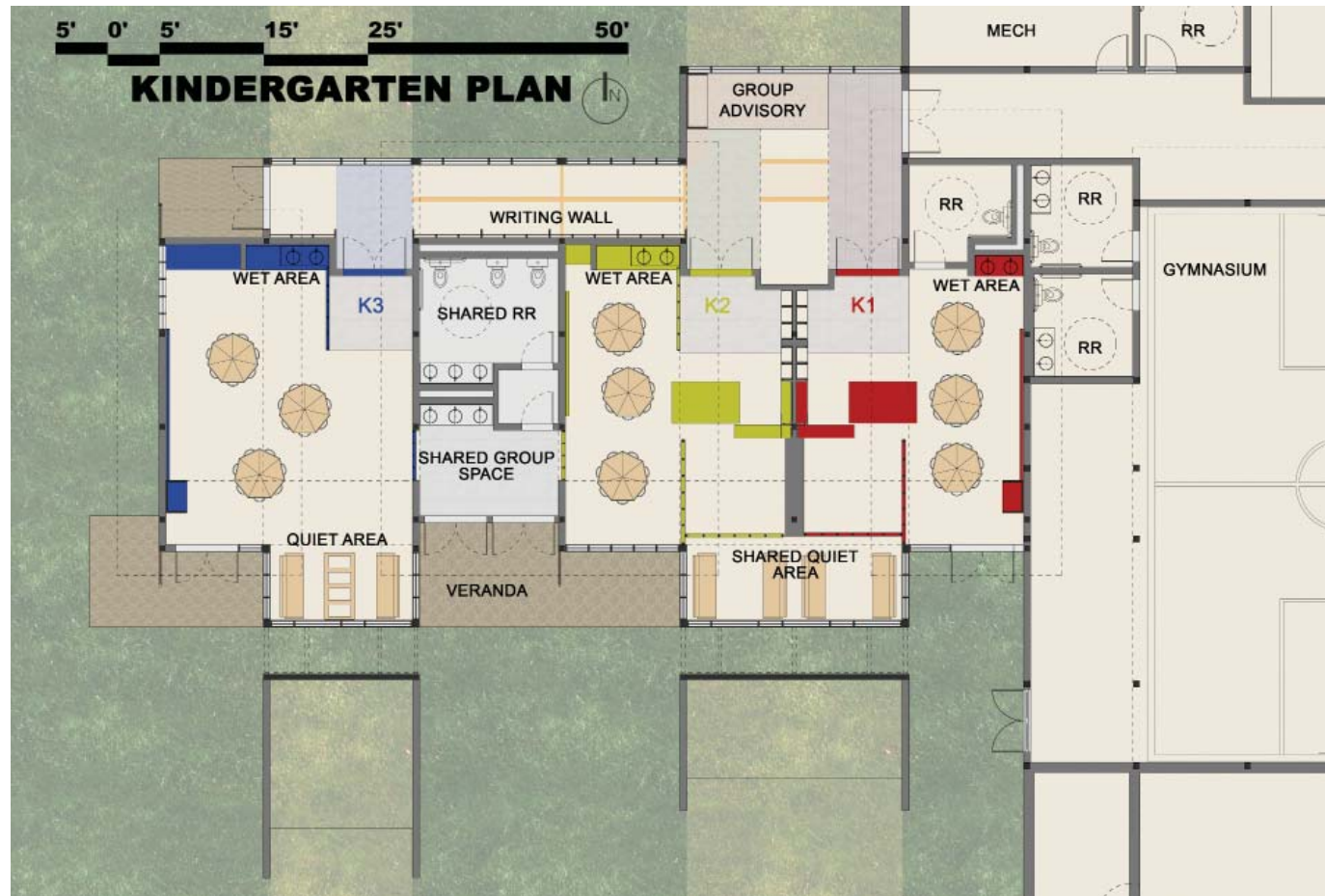
- Integrate physical and digital learning
- Guiding mechanism rather than the sole distributor of information
- Flexible active space
- Allow for the formation of social capital
- ** Four elements of Sense of Community
 - [1] Membership includes five attributes:
 - Boundaries
 - Emotional safety
 - A sense of belonging and identification
 - Personal investment
 - A common symbol system
 - [2] Influence works both ways: members need to feel that they have some influence in the group, and some influence by the group on its members is needed for group cohesion.
 - [3] Integration and fulfillment of needs – Members feel rewarded in some way for their participation in the community.
 - [4] Shared emotional connection – The “definitive element for true community” – it includes shared history and shared participation (or at least identification with the history).

5th & 6th..... GLOBE & PRESENCE

- Digital technology becomes paramount
- Personal and public exposure to information
- Active spaces more focused towards science, teacher-centric learning
- Breakout spaces do not need to be per classroom – advisory commons

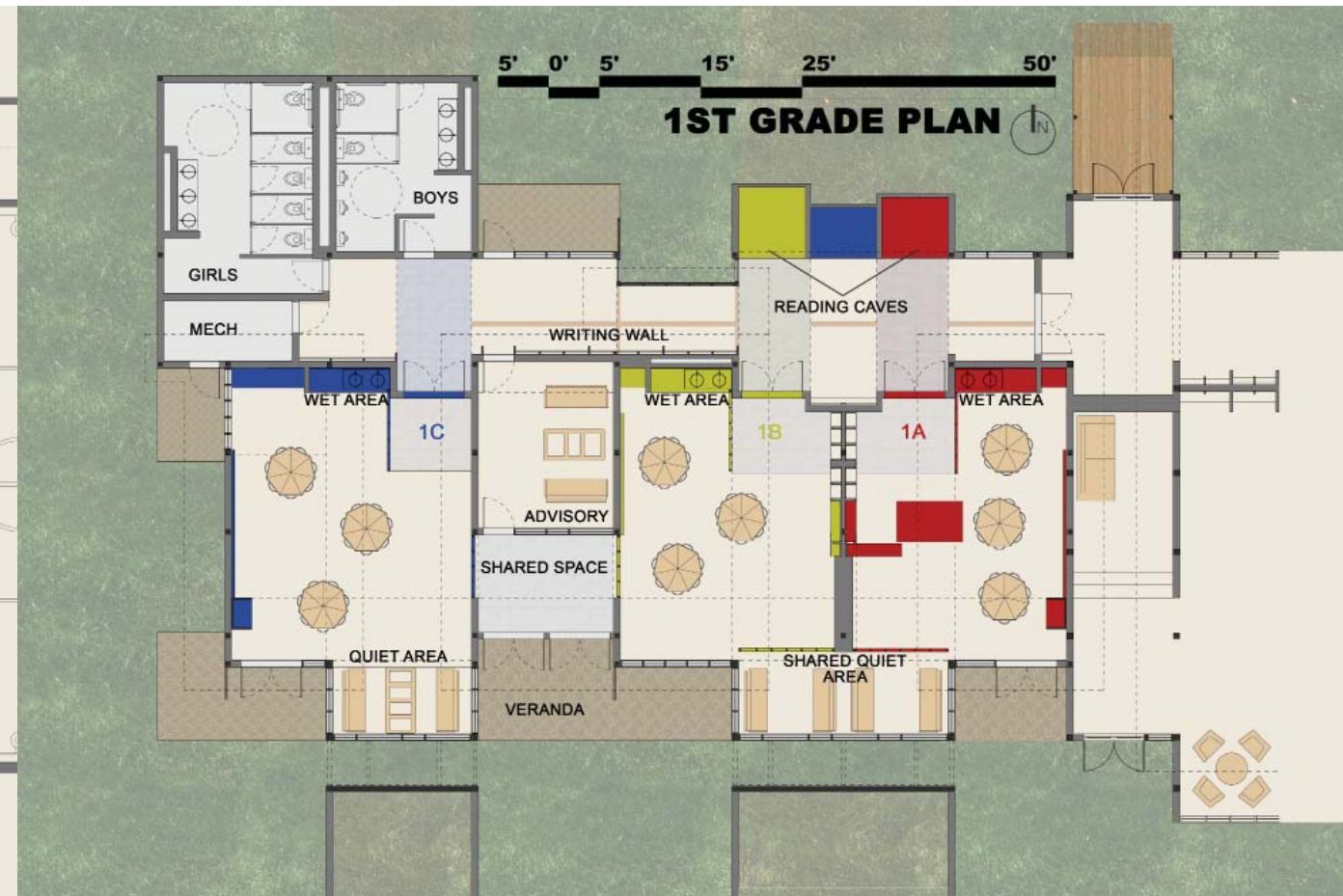






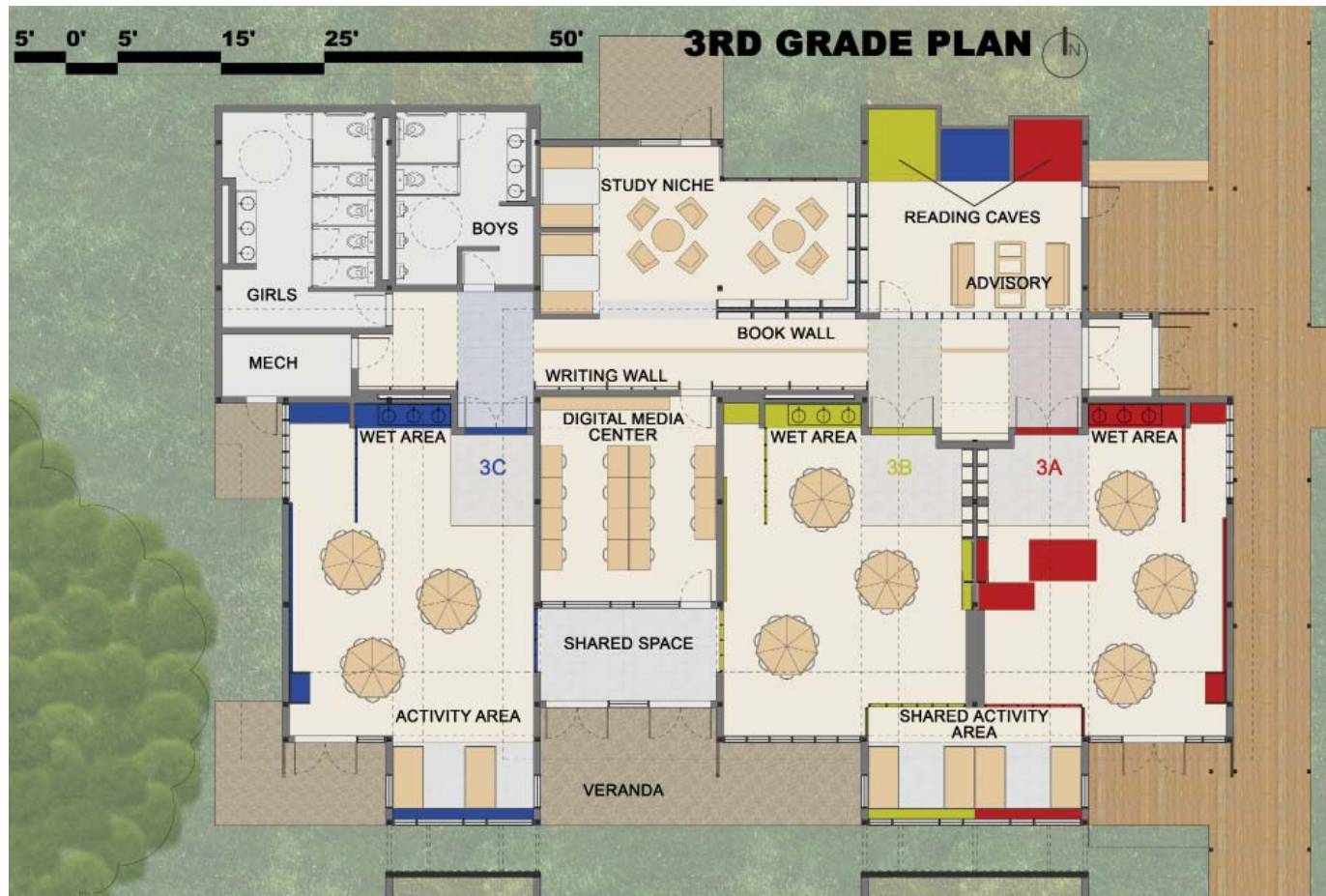
KINDERGARTEN

- PHYSICAL LEARNING BECOMES SPECIFIC TO IDENTITY
- INDIVIDUAL CLASSROOMS CONTAIN UNIQUE MORPHOLOGICAL CHANGES WHICH IN TURN FACILITATE IDENTITY FORMING EXERCISES
- CLASSROOMS WITH MORE DYNAMIC SPATIAL MORPHOLOGY MAY BE OCCUPIED BY TROUBLED STUDENTS OR STUDENTS WITH GREATER INTELLECTUAL RESPONSE TO CHANGING ENVIRONMENTAL CONDITIONS AND PEDAGOGICAL STIMULI
- CLASSROOMS WITH LESS MORPHOLOGICAL CHANGES ARE DESIGNATED FOR STUDENTS MORE CAPABLE TO SUCCEED IN GROUP LEARNING WITH LITTLE RELIANCE UPON SMALL BREAKOUT GROUPS
- VARYING MORPHOLOGICAL SHIFTS PROMOTE DIFFERENT DAYLIGHTING AND A NATURAL SENSORIAL ENVIRONMENTS
- COOPERATIVE TEACHING IS THE PRIMARY LEARNING METHODOLOGY



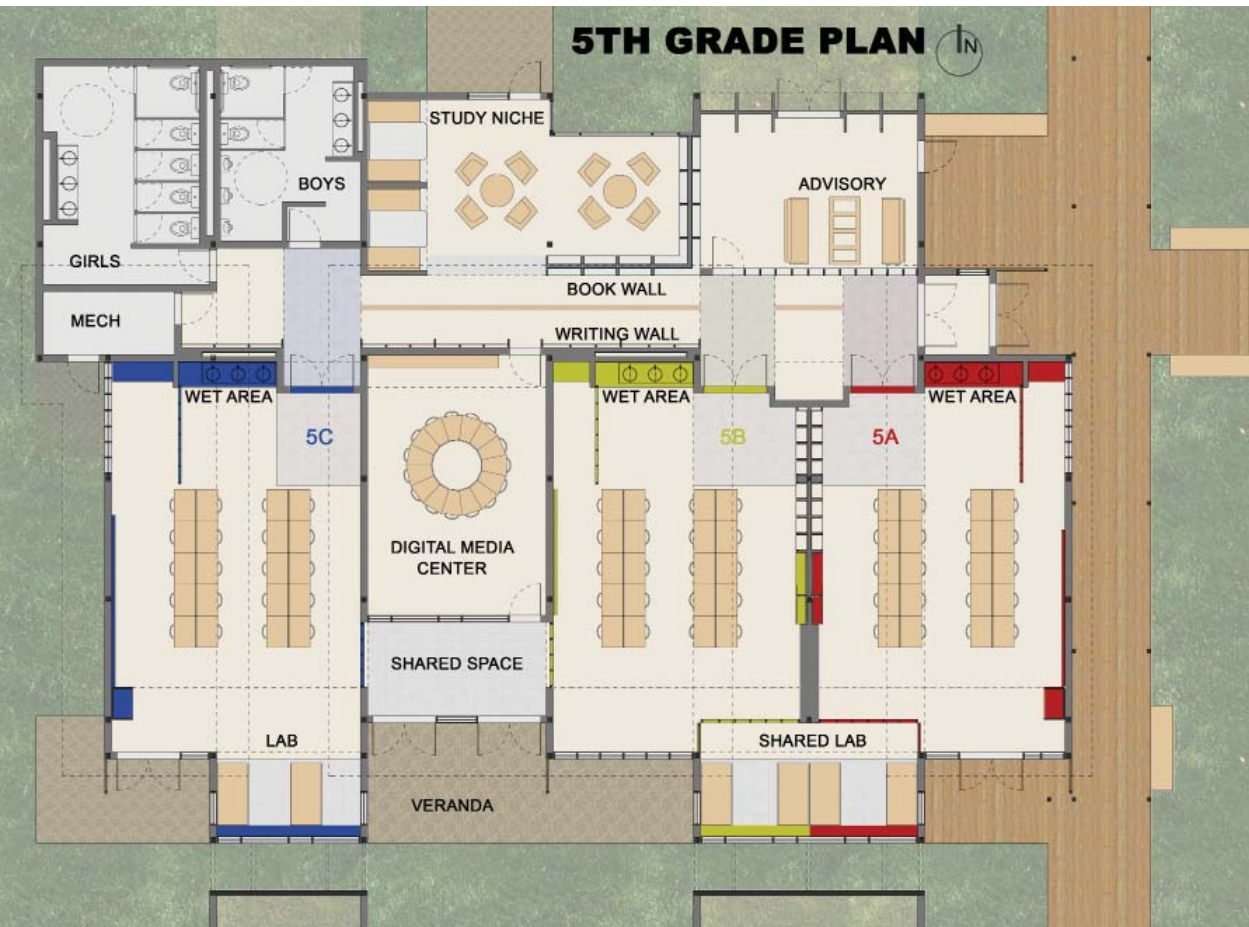
FIRST & SECOND GRADES

- PHYSICAL LEARNING BECOMES SPECIFIC TO GROUP LEARNING WHEN FOCUSING ON ESTABLISHING RELATIONSHIPS BETWEEN FAMILY AND FRIENDS
- ACTIVATED ZONES PARTITION THE STUDIO INTO SMALLER GROUP STATIONS FOR PROJECT WORK
- ACTIVATED ZONES AND SPACES FACILITATE LEARNING WITH WET MATERIALS
- DE-ACTIVATED STUDIOS (WHEN THE SPACE IS OPEN) WILL BE USED FOR QUIET STUDY OR GROUP STORY-TELLING
- THE INTRODUCTION OF A SHARED ADVISORY AND READING CAVES PROMOTE INDIVIDUAL QUIET STUDY AND PLACES WHERE QUIET ACTIVITIES MAY BE SEPARATED FROM NOISY AND ACTIVE ONES



THIRD & FOURTH GRADES

- PHYSICAL LEARNING GRADUALLY DEFERS TO DIGITAL LEARNING DURING THE THIRD GRADE
- AS ANALOG READING AND LEARNING TECHNOLOGIES ARE STILL THE PRIMARY MECHANISM TO TRANSMIT INFORMATION DURING THESE YEARS, MUCH EMPHASIS IS STILL PLACED ON COOPERATIVE SPACES AND LEARNING SEQUENCING
- THE DIGITAL MEDIA CENTER, AN INTRODUCTORY DIGITAL SPATIAL ENVIRONMENT, REPLACES THE PREVIOUS SHARED ADVISORY AS A TECHNOLOGICAL SHARED SPACE
- OTHER SHARED SPACES MOVE TO THE NORTHERN WALLS AND FEATURE COMMUNAL LEARNING SPACES, BOTH PRIVATE AND PUBLIC
- THE SHARED ACTIVITY AREAS ON THE SOUTH WALLS TRANSITION TO SMALL SCIENCE AND ART LABS, WHILE THE WET CORE STILL FACILITATES MUCH OF THE DIRTY, PHYSICAL LEARNING
- GRADUALLY THE SPACES BECOME MORE TEACHER-CENTRIC IN THEIR PEDAGOGICAL GOALS

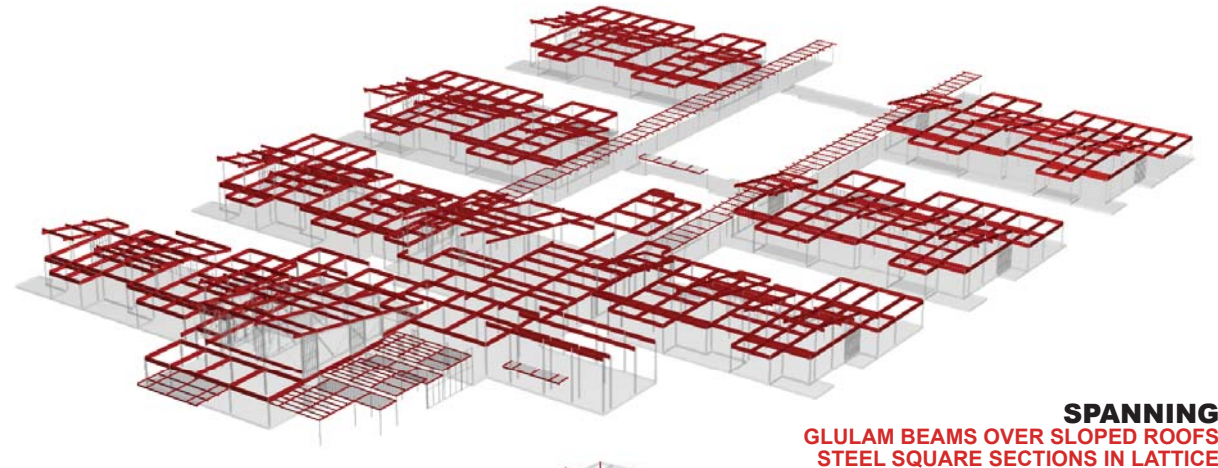


FIFTH & SIXTH GRADES

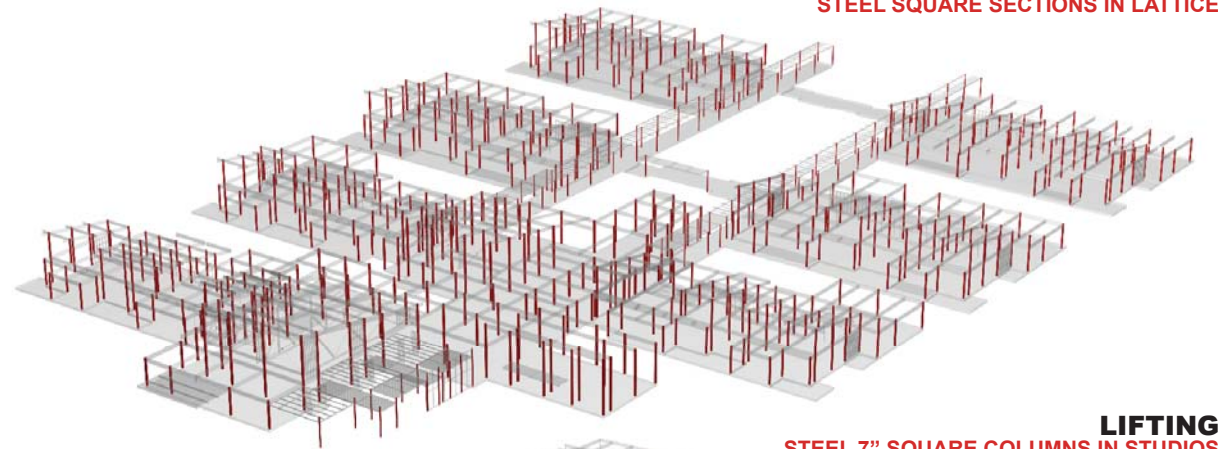
- THE ENVIRONMENTS ARE PRIMARILY ORIENTED TOWARDS TEACHER-CENTRIC TEACHING AND LEARNING
- THE DIGITAL MEDIA CENTER HAS TAKEN ADVANTAGE OF THE TRANSITION TO DIGITAL LEARNING BY REMAINING A COOPERATIVE ADVISORY FOR GROUP WORK, WHILE STUDENTS ARE USING LAPTOPS AND OTHER DIGITAL TOOLS AT THEIR DESKS
- THE PUBLIC ADVISORY SPACES REMAIN LARGELY STUDY AREAS, BUT AGAIN ARE PARTITIONED AND SEPARATED ACCORDING TO THEIR REQUIRED ACOUSTIC LEVELS AND PEDAGOGICAL PURPOSES
- MORPHOLOGICAL SHIFTS THAT OCCUR WITHIN THIS SPACE ARE PRIMARILY PRESENTATION TOOLS AND BECOME AREAS WHERE STUDENTS ARE ABLE TO WRITE ON WALLS WHEN IN ACADEMIC COMPETITIONS

BUILDING INFORMATION MODELS

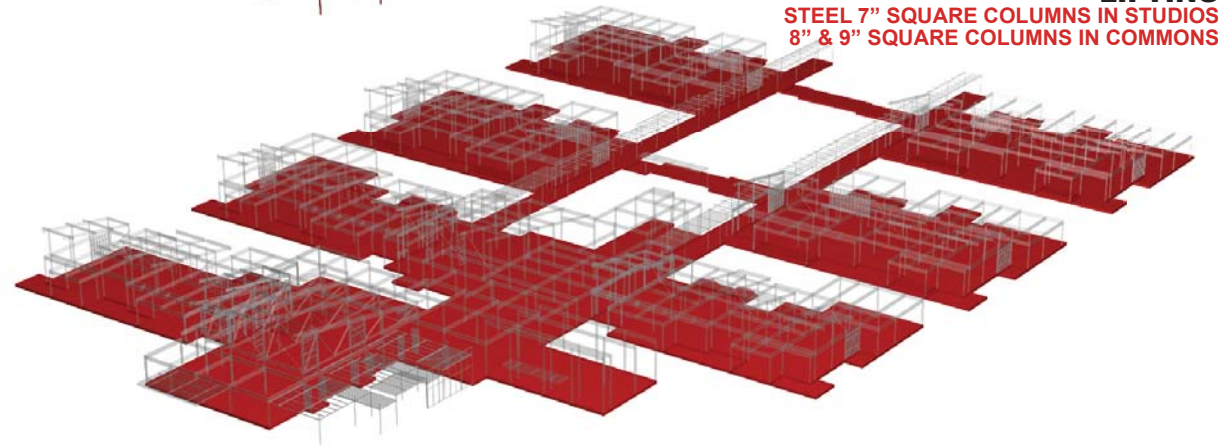
The following Building Information Models have been developed based upon the efficient and independent organization of each learning studio. Because of the specificity required by each pedagogy, unique and localized systems adapt to each structure and utilize specific strategies of orientation, scale, and performative pedagogical capacity.



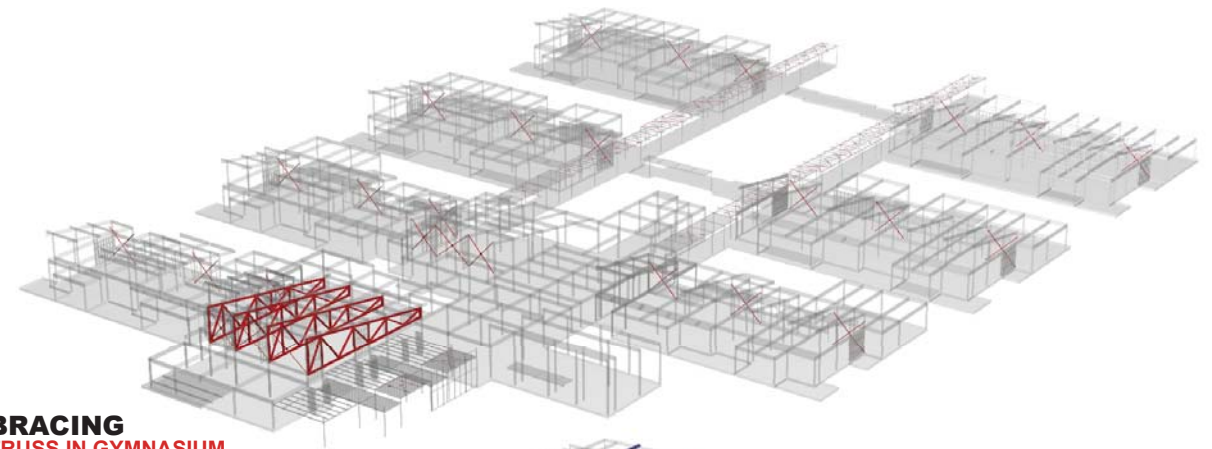
SPANNING
GLULAM BEAMS OVER SLOPED ROOFS
STEEL SQUARE SECTIONS IN LATTICE



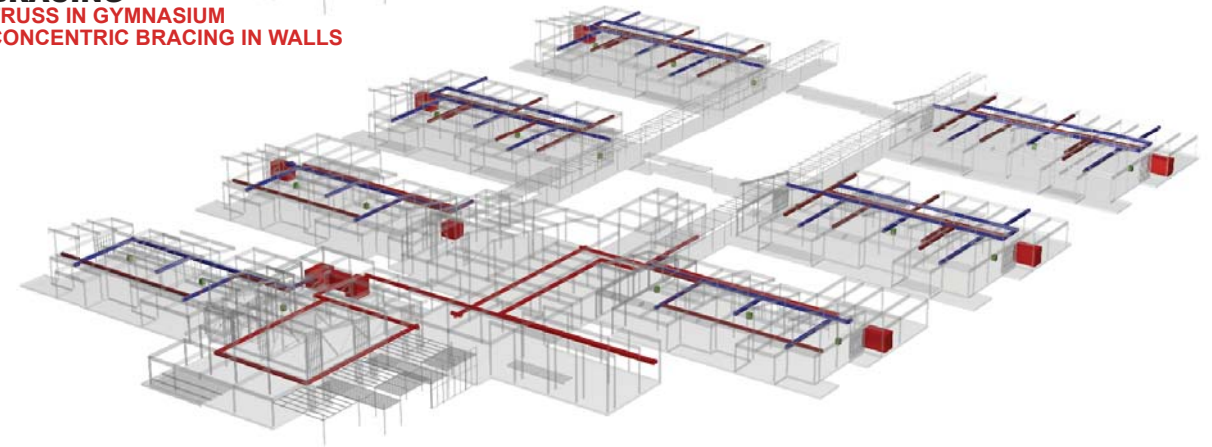
LIFTING
STEEL 7" SQUARE COLUMNS IN STUDIOS
8" & 9" SQUARE COLUMNS IN COMMONS



BEARING
RAFT FOOTING WITH PLUMBING BELOW
STRUCTURAL GRID IN ACTIVE WET CORES



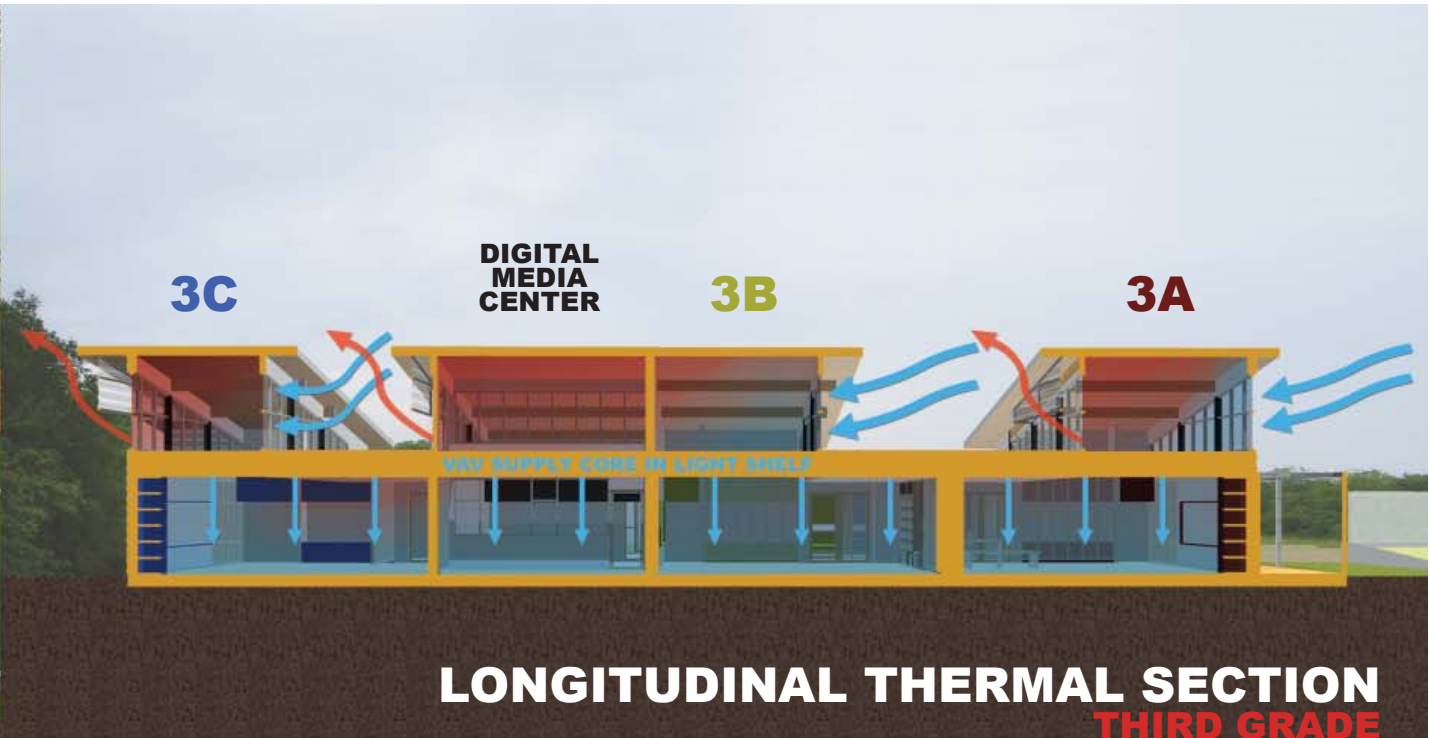
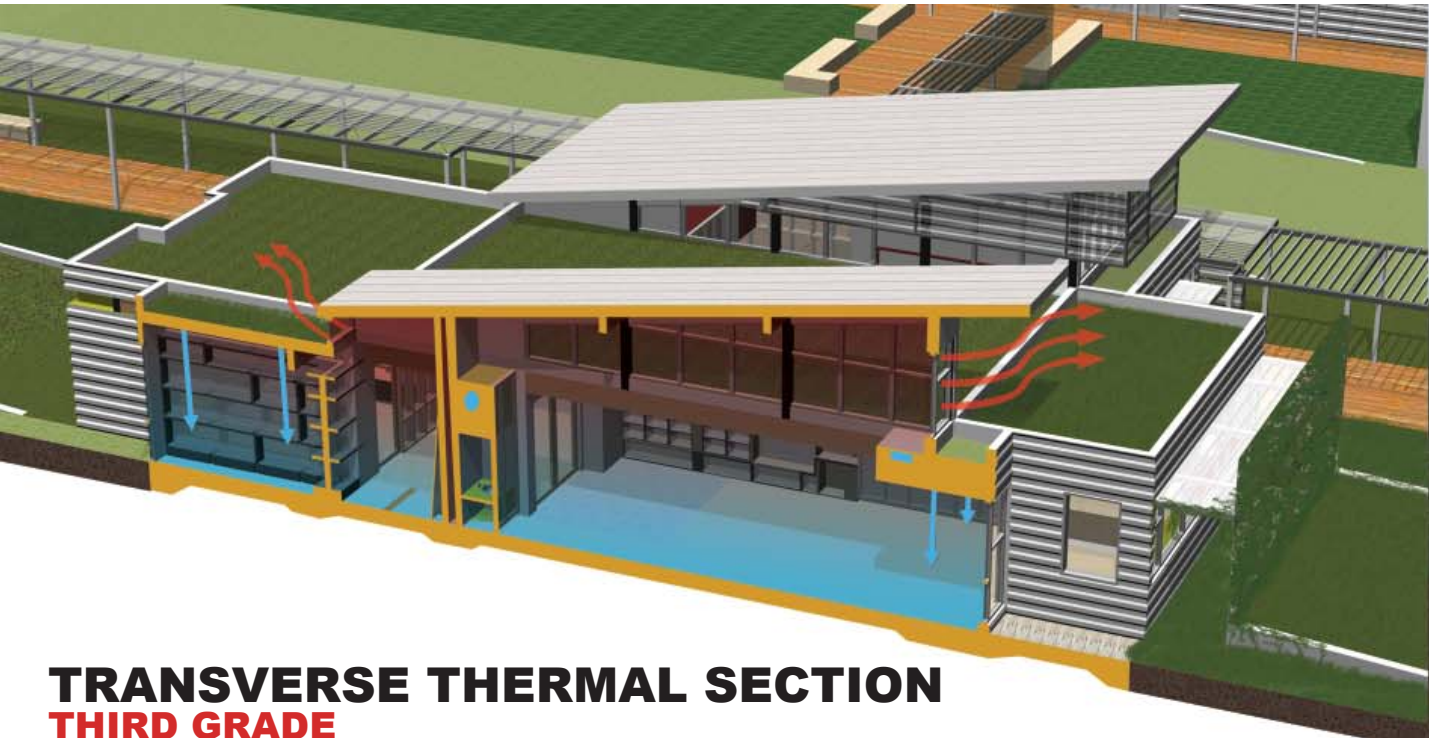
BRACING
TRUSS IN GYMNASIUM
CONCENTRIC BRACING IN WALLS



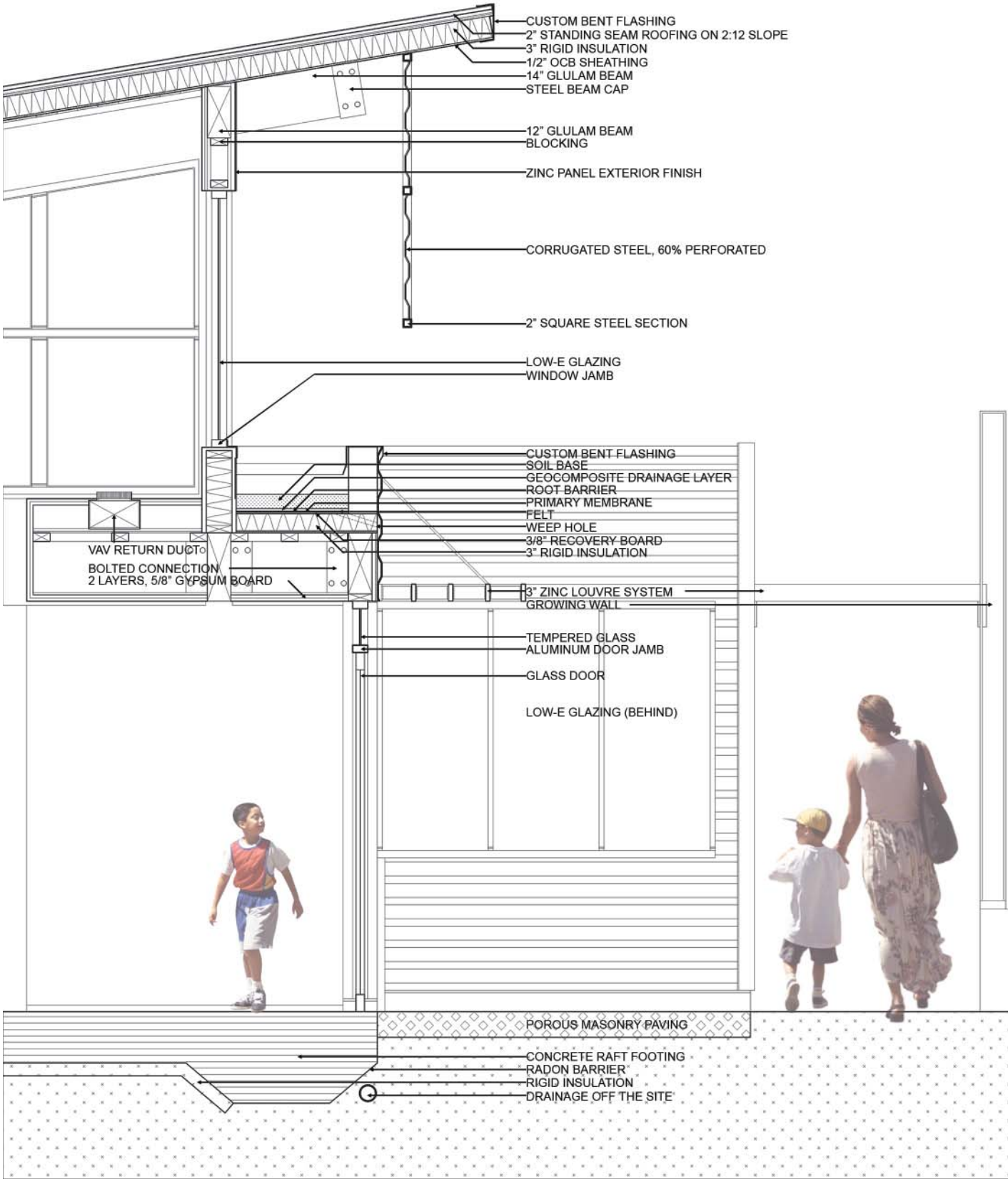
MECHANICAL SYSTEM DISTRIBUTION
SINGLE DUCT, VAV (DEHUMIDIFIED) AIR SYSTEM
SUPPLY AND RETURN LOCATED IN LIGHT SHELVES AND ACTIVE CORES
OPERABLE WINDOWS IN CLERESTORIES ALLOW FOR COMPLETE CROSS-VENTILATION

SECTION DIAGRAMS
PASSIVE STRATEGIES, SOLAR ORIENTATION, SCALE

THE CLASSROOMS ARE ORIENTED WITH LIGHTSHELVES AND OPERABLE WINDOWS TOWARD THE SOUTH TO ADVANTAGEOUSLY GATHER REFLECTED LIGHT AND PREVAILING WINDS FROM THE WEST. SHED ROOFS HAVE OPERABLE WINDOWS TO ALLOW STACK AFFECTED HEAT TO ESCAPE WITHOUT RETURN VENTILATION USING THE VAV SYSTEM. LIGHTSHELVES AND CLERESTORY DIMENSIONS HAVE BEEN CALCULATED TO OPTIMIZE REFLECTIVE LIGHT BETWEEN THE MONTHS OF MARCH AND OCTOBER. AFTERNOON SUN IS MEDIATED BY WEST-FACING SCREENS. OPTIMUM SCREEN DIMENSIONS AND PERCENTAGE OF PERFORATION HAS BEEN CALCULATED BASED UPON EXPOSURE.



DETAIL SECTIONS
TYP. CLERESTORY, LIGHT SHELF, AND SCREEN



ENTRY PAVILION PERSPECTIVE



UNDERGROWN LANDSCAPE SPRING ACTIVITY PERSPECTIVE



OVERGROWN LANDSCAPE
SUMMER COMMUNITY FESTIVAL
PERSPECTIVE



KINDERGARTEN STUDIO PERSPECTIVE



FIRST GRADE STUDIO PERSPECTIVE



THIRD GRADE STUDIO PERSPECTIVE



FIRST GRADE ACTIVE CORRIDOR
PERSPECTIVE



KINDERGARTEN ACTIVE CORRIDOR
PERSPECTIVE



FINAL PRESENTATION BOARDS

CYPRESS PARK ELEMENTARY CLEVELAND, MISSISSIPPI
[PEDAGOGICAL METHODOLOGY & ARCHITECTURAL FACILITATION]

PEDAGOGICAL METHODOLOGY HAS RARELY BEEN CONSIDERED AS A DRIVING FORCE IN EDUCATIONAL FACILITIES PLANNING AND DESIGN. BECAUSE OF CONSTANTLY CHANGING LEARNING MODALITIES, STATE STANDARDIZATION OF LEARNING AND INCREDIBLY DIVERSE EDUCATIONAL DEMOGRAPHICS, DESIGNING LEARNING SPACES THAT SUPPORT VARIOUS PEDAGOGIES IS PARAMOUNT IF OUR STUDENTS ARE TO SUCCEED IN THE KNOWLEDGE-BASED ECONOMY. NO PRACTICAL OR CONSISTENT DEFINITION OF OPEN-SPACE LEARNING HAS EVER BEEN ESTABLISHED WHEN CONSIDERING OPEN-CONCEPT EDUCATION. THE ANALYSIS OF CONTEMPORARY LEARNING TECHNOLOGIES WITH PARTICULAR EMPHASIS ON PHYSICAL, DIGITAL, AND LECTURE ORIENTED LEARNING, THE ANALYSIS OF QUALITATIVE THEMES, MODALITIES, AND HIERARCHICAL MECHANISMS AND THE ARCHITECTURAL DESIGN DRAWS UPON THESE FINDINGS. FLEXIBILITY, ADAPTABILITY, AND PERFORMATIVE SPACES ARE IMPORTANT TO FACILITATING PEDAGOGY. THIS THEORETICALLY CREATES SUCCESSFUL PLACE-MAKING STRATEGIES FOR A DEMOGRAPHIC SENSITIVE TO ITS HISTORY AND PLACE. THE SPATIAL/TEMPORAL RICHNESS OF THE MISSISSIPPIAN DELTA IS A DRIVING FORCE IN THE DESIGN OF A K-6 ELEMENTARY SCHOOL TO REPLACE THE EXISTING CYPRESS PARK ELEMENTARY SCHOOL.

THE LARGER GOAL LEARNING IS A LIFE-LONG ACTIVE PROCESS. THE SCHOOL IS THE FOCAL POINT FOR LIVING COMMUNITIES.

LATENT ENVIRONMENTAL ENGAGEMENT

PHYSICAL LEARNING

ANALOG ORIENTED LEARNING

DIGITAL INTRODUCTION ORIENTED LEARNING

LECTURE ORIENTED LEARNING

LATENT ENVIRONMENTAL ENGAGEMENT

PEER LEARNING DEMAND CAPACITY TO BE MENTORED FROM MULTIPLE UPPER-LEVEL AGE GROUPS INCREASES PER THE AREA UNDER PEDAGOGICAL METHODS AND LATENT ENVIRONMENTAL ENGAGEMENT.

PEER LEARNING SUPPLY CAPACITY TO MENTOR YOUNGER STUDENTS IN CAPTIVE SITUATIONS PER THE AREA UNDER MULTIPLE PEDAGOGICAL METHODS AND ADAPTIVE ENVIRONMENTS.

ADAPTIVE ENVIRONMENTAL ENGAGEMENT

KINDERGARTEN SELF-AWARENESS

FIRST FAMILY & FRIENDS

SECOND FAMILY & FRIENDS

THIRD COMMUNITY & TOWN

FOURTH COMMUNITY & TOWN

FIFTH GLOBE & PRESENCE

SIXTH GLOBE & PRESENCE

ADAPTIVE ENVIRONMENTAL ENGAGEMENT

PERFORMANCE CRITERIA

- KINDERGARTEN ~ SELF-AWARENESS**
- IDENTIFY AND NAME PERSONAL IDENTITIES CHOICES AND COMMITMENTS TO THEM
 - SUPPORTS ROLE-PLAYING ACTIVITIES, BECOMING FAMILIAR WITH PERSONAL SELF, INCREASED EFFECTIVENESS OF IDENTIFYING
 - DEVELOPMENT AND NATURAL ENVIRONMENTAL ENGAGEMENT
 - COOPERATIVE TEACHING, MAINLY SHARED SPACE WHICH DIRECTLY ENGAGES PRIVATE ENVIRONMENTS
- 1ST & 2ND ~ FAMILY & FRIENDS**
- PHYSICAL AREA NOW VERY CLEANLINE
 - ACTIVE ZONES CLOSE TO FLEET SPACES FOR IMMEDIATE ENGAGEMENT
 - ACTIVELY INTEGRATE WITH ENVIRONMENTAL AREA
- 3RD & 4TH ~ COMMUNITY & TOWN**
- REINFORCE PHYSICAL AND DIGITAL LEARNING
 - GROUND MECHANISM RATHER THAN THE SOLE DISTRIBUTION OF INFORMATION
 - FOSTER ACTIVE SPACES
 - ALLOW FOR THE FORMATION OF SOCIAL CAPITAL
 - FOSTER ENGAGEMENT OF STUDENTS OF COMMUNITY
 - IT MEMBERSHIP INCLUDES FIVE ATTRIBUTES:
 - FOSTER SAFETY
 - A SENSE OF BELONGING AND IDENTIFICATION
 - PERSONAL INVESTMENT
 - A COMMON VISION, SYSTEM
 - IT INTEGRATION AND FULFILLMENT OF NEEDS - MEMBERS FEEL MEMBERSHIP IN HOW THEY PARTICIPATE IN THE COMMUNITY
 - IT ENHANCES EMOTIONAL CONNECTION, THE TENSILE ELEMENT FOR TRUE COMMUNITY - IT INCLUDES SHARED HISTORY AND SHARED PARTICIPATION (OR AT LEAST IDENTIFICATION WITH THE HISTORY)
- 5TH & 6TH ~ GLOBE & PRESENCE**
- REINFORCE TECHNOLOGY BECOMES PARAMOUNT
 - PERSONAL AND PUBLIC EXPOSURE TO INFORMATION
 - ACTIVE SPACES NOW FOSTER TENSILE TOWARDS TEACHERS ON THE LEARNING
 - REINFORCE WHAT IS NOT NECESSARY TO BE FOR CLASSROOM - ADVISORY COMMUNITY

KINDERGARTEN PLAN SCALE: 1/8" = 1' - 0"

- PHYSICAL LEARNING BECOMES SPECIFIC TO IDENTIFY INDIVIDUAL CLASSROOMS CONTAINING MORPHOLOGICAL CHANGES WHICH IN TURN FACILITATE IDENTIFY FORMING KNOWLEDGE
- CLASSROOMS WITH MORE DIVERSE SPATIAL MORPHOLOGY MAY BE OCCUPIED BY TENDENT STUDENTS ON STUDENTS WITH GREATER INTELLECTUAL NEEDS TO CHANGING ENVIRONMENTAL CONDITIONS AND PEDAGOGICAL STRATEGIES
- CLASSROOMS WITH LESS MORPHOLOGICAL STRATEGIES ARE DERIVED FOR STUDENTS MORE SUITABLE TO SUCCESS IN GROUP LEARNING WITH LITTLE RELIANCE UPON SMALL REPEATED GROUPS
- VARYING MORPHOLOGICAL SHIFTS PROMOTE DIFFERENT BEHAVIORAL AND A NATURAL ENVIRONMENTAL ENGAGEMENT
- COOPERATIVE TEACHING IS THE PRIMARY LEARNING METHODOLOGY

1ST GRADE PLAN SCALE: 1/8" = 1' - 0"

- PHYSICAL LEARNING BECOMES SPECIFIC TO GROUP LEARNING WHERE FOCUSING ON EXTERNAL SPACES RELATIONSHIPS BETWEEN FAMILY AND FRIENDS
- ACTIVATED ZONES PARTITION THE STUDY INTO SMALLER GROUP STUDIOS FOR PROJECT WORK
- ACTIVATED ZONES AND SPACES FACILITATE LEARNING WITH NET MATERIALS
- BE ACTIVATING STUDENTS (WHEN THE SPACE IS OPEN) WILL BE USED FOR STUDY STUDY ON GROUP STUDY FOLLOWING
- THE INTRODUCTION OF A SHARED ADVISORY AND READING CARED PROMOTE INDIVIDUAL STUDY AND PLACES WHERE STUDY ACTIVITIES MAY BE SEPARATED FROM NOISE AND ACTIVE ZONES

3RD GRADE PLAN SCALE: 1/8" = 1' - 0"

- PHYSICAL LEARNING BECOMES SPECIFIC TO GROUP LEARNING WHERE FOCUSING ON EXTERNAL SPACES RELATIONSHIPS BETWEEN FAMILY AND FRIENDS
- ACTIVATED ZONES PARTITION THE STUDY INTO SMALLER GROUP STUDIOS FOR PROJECT WORK
- ACTIVATED ZONES AND SPACES FACILITATE LEARNING WITH NET MATERIALS
- BE ACTIVATING STUDENTS (WHEN THE SPACE IS OPEN) WILL BE USED FOR STUDY STUDY ON GROUP STUDY FOLLOWING
- THE INTRODUCTION OF A SHARED ADVISORY AND READING CARED PROMOTE INDIVIDUAL STUDY AND PLACES WHERE STUDY ACTIVITIES MAY BE SEPARATED FROM NOISE AND ACTIVE ZONES

5TH GRADE PLAN SCALE: 1/8" = 1' - 0"

- THE ENVIRONMENTAL AREA FORMALLY ORIENTED TOWARDS TEACHER-ORIENTED TEACHING AND LEARNING
- THE DIGITAL MEDIA CENTER HAS TAKEN ADVANTAGE OF THE TENSILE TOWARDS TEACHING AND LEARNING
- THE PUBLIC ADVISORY SPACES REMAIN LARGELY EMPTY DURING THE DAY AND BECOMING MORE ACTIVE DURING THE EVENING HOURS
- THE PUBLIC ADVISORY SPACES REMAIN LARGELY EMPTY DURING THE DAY AND BECOMING MORE ACTIVE DURING THE EVENING HOURS
- THE PUBLIC ADVISORY SPACES REMAIN LARGELY EMPTY DURING THE DAY AND BECOMING MORE ACTIVE DURING THE EVENING HOURS

COMMONS PLAN SCALE: 1/16" = 1' - 0"

LEGEND

- A ENTRY PAVILION
- B GYMNASIUM
- C CAFETERIA KITCHEN
- D MUSIC
- E ADMINISTRATION
- F MECHANICAL
- G RESTROOM
- H LOCKERS (K, L, J)
- I LIBRARY
- J COMMONS
- K ARTS / CRAFTS
- L LANDSCAPE PROMENADE

5TH GRADE

6TH GRADE

3RD GRADE

4TH GRADE

1ST GRADE

2ND GRADE

KINDERGARTEN

COMMONS PLAN SCALE: 1/16" = 1' - 0"

LEGEND

- A ENTRY PAVILION
- B GYMNASIUM
- C CAFETERIA KITCHEN
- D MUSIC
- E ADMINISTRATION
- F MECHANICAL
- G RESTROOM
- H LOCKERS (K, L, J)
- I LIBRARY
- J COMMONS
- K ARTS / CRAFTS
- L LANDSCAPE PROMENADE



FIFTH GRADE

THIRD GRADE

FIRST GRADE

KINDERGARTEN

SECTION SCALE: 3/32" = 1' - 0"

LEVITTOWN SCALE

TOWARDS THE DIVISION OF HIGHWAY 61

TOWARDS THE EAST SIDE LEVITTOWN

HOSTING SCHOOL

A BENEVOLENT MEDIATOR THROUGH EDUCATIONAL OPPORTUNITY

PRIMARILY DIRECTIONAL AXIS

MAJESTIC ADVANCEMENT

POROUS ENTRY

POROUS ENTRY

180°W 150° 120° 90°N 60° 30° 0°E

BIM MODELS

BRACING BRACING, TRUSS, AND WALL

SPANNING THE SPAN OF THE STRUCTURE

LIFTING THE LIFTING OF THE STRUCTURE

BEARING THE BEARING OF THE STRUCTURE

DETAIL TYP. CLERESTORY, LIGHT SHELF, AND SCREEN

DETAIL SECTION SCALE: 1/2" = 1' - 0"

PASSIVE STRATEGIES

MECHANICAL



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My Family: Steve, Janice, and sister Lauren

My inspiration: Jessica Lockwood, for her commitment to children who deserve the world. She is a tireless reminder of true compassion when others chose to turn away.



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“All fine architectural values are human values, else not valuable.” - Frank Lloyd Wright.
- to my second year students