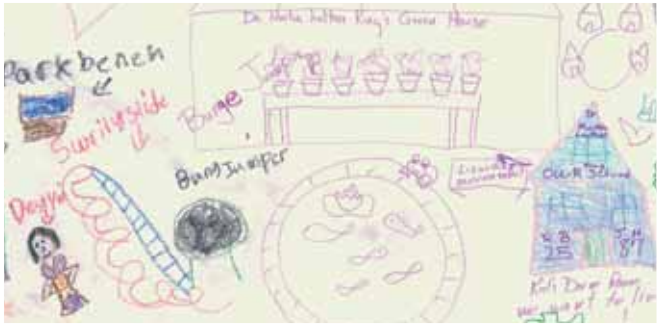
Overview

Dr. Martin Luther King, Jr. Charter School for Science and Technology

Lower Ninth Ward, New Orleans

The Learning Landscape Alliance:
Overview for Campus Improvements

University of Colorado at Denver
and Health Sciences Center
College of Architecture and Planning
Department of Landscape Architecture
Spring 2007



The Dr. Martin Luther King, Jr. Elementary School for Science and Technology Campus will be a welcoming and sustainable hub promoting education, physical development, and play for the children and community residents alike. The school will act as a catalyst for revitalization while celebrating the cultural and historical richness of the Lower Ninth Ward and New Orleans, Louisiana.

DR. MARTIN LUTHER KING, JR. CHARTER SCHOOL FOR SCIENCE AND TECHNOLOGY

PRELIMINARY PROPOSAL FOR CAMPUS IMPROVEMENTS

A RESOURCE FOR THE STUDENTS, TEACHERS AND THE PEOPLE OF THE LOWER NINTH WARD, NEW ORLEANS

Prepared by Students at the
University of Colorado at Denver and Health Sciences Center
College of Architecture and Planning, Department of Landscape Architecture
Spring 2007

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Ensure the long term

success of the school

and learning landscape

by actively involving

the community

and children

in the planning,

construction,

and maintenance of

the school grounds.

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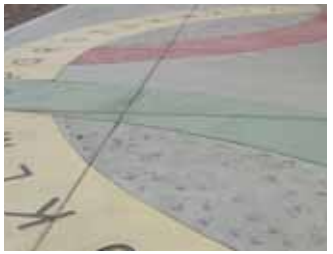

Colorful aerial views and various play and educational elements of the Ellis Elementary School Learning Landscape in Denver, Colorado.

Executive Summary: *What is the Learning Landscape Initiative?*

Since 1998, the Learning Landscape Initiative has transformed 46 neglected Denver elementary school yards into attractive and safe multi-use resources that are tailored to the needs and desires of the local community. These school yards have served more than 18,000 children, of which over 50% qualify for free and reduced lunch programs. The Learning Landscape Initiative, which represents an investment of more than $20 million, has been sponsored by a broad-based public-private partnership and directed by faculty and students from the Department of Landscape Architecture at the University of Colorado at Denver and Health Sciences Center. With a budget of approximately $450,000 per school yard, the University works with school officials, teachers, students and community members to design new school yards that respond to the culture and aesthetic tastes of neighborhood residents as well as the developmental needs of children.

Learning Landscape goals and design elements

The Learning Landscape Initiative sponsors the design, implementation and sustainability of innovative, multi-use school yards.

Each Learning Landscape has a composition of design elements that support the following goals:

1 **To provide participatory landscapes that support children's healthy development.**

2 **To develop multi-generational spaces for outdoor use by all members of the community.**

3 **To provide an aesthetically pleasing focal point for the community by creating a place that reflects the uniqueness of its location, activities, and users.**

Two creative students paint a colorful banner for the Learning Landscape playground.

Before a Learning Landscape playground at Greenlee Elementary School

A Learning Landscape playground at Greenlee Elementary School

Common design elements:

- Community gateways
- Shady places
- Common areas for gathering
- Natural, wild and cultivated gardens
- Outdoor art
- Improved multi-purpose fields
- Improved hard surface games and educational elements
- Developmentally appropriate play equipment with improved accessibility and safety
- Creative play elements

Area Key

1) Playground Gateways/Entrances
2) Green of the Field
3) The Mountain Tops
4) Intermediate Play Area
5) Primary Play Area
6) Central Gathering Area
7) Pre-K Play Area
8) Children's Garden
9) Courtyard of Science and Nature
10) Hall of History
11) School Parking
12) School Entry
13) Landscape Improvements
14) Bus Stop

This drawing showcases the new Learning Landscape campus plan for the Dr. Martin Luther King, Jr. Charter School. The new Learning Landscape playground is designed by the landscape architecture graduate students of the University of Colorado at Denver and Health Sciences Center.

Learning Landscape Project: Dr. Martin Luther King, Jr. Charter School for Science and Technology

Next August Dr. Martin Luther King, Jr. Charter School for Science and Technology (Dr. MLK, Jr.) will reopen its doors to the Lower Ninth Ward Community. This will be the only school to reopen in the Lower Ninth Ward and Holy Cross neighborhoods. Although the interior of the building has been gutted and completely refurbished there is no funding for much needed school yard improvements. The redevelopment of this school yard into a Learning Landscape is vital to a neighborhood with no other outdoor opportunities for group play and physical activity (all school yards, playgrounds and parks were destroyed by hurricane Katrina and are currently fenced off with no plans for redevelopment). We propose to plan, construct and evaluate the impact of building a Learning Landscape playground at Dr. MLK, Jr.. As we have found in our work in Denver, Colorado, the process of planning and building Learning Landscapes transforms communities. Residents engage in a participatory design process that fosters new ideas and engenders a sense of ownership on the part of the community. The actual builds of the playground involves community members of all ages and requires minimal skilled labor.

Participatory Planning Process—In rebuilding after a disaster it is vital to create a participatory process in which residents have a voice in the direction of their community. The University of Colorado at Denver and Health Sciences Center (UCDHSC) has been working in partnership with the Lower Ninth Ward Community for the rebuilding of their neighborhood. Since developing this partnership, UCDHSC gained an understanding of the needs of the community as well as relationships with many key stakeholders. Its anticipated all neighborhood stakeholders including children will be invited to actively participate in both the design and building of the Learning Landscape playground. Local artists will

Promote elements that ensure the school is a reflection of its history, time, and place in the Lower Ninth Ward and New Orleans, Louisiana.

also be invited to design artwork that can be integrated into the playground design. The outdoor environment will be designed to reflect the uniqueness of the location, activities, and users. As families return to the Lower Ninth Ward the planning process will address how children reflect on their environment. This process empowers children as they map, evaluate and make recommendations about their neighborhood.

The graduate students from the UCDHSC have been actively working with community members to create a design for the Learning Landscape at Dr. MLK, Jr. Charter School. We traveled to New Orleans on two occasions during the month of March 2007 to meet with stakeholders and get feedback on potential designs. Meetings were held with the Dr. MLK, Jr. Charter School students, as well as teachers, community members, and parents both at the temporary school site and on the Dr. MLK, Jr., Charter School grounds. These meetings served as a means for Lower Ninth Ward residents to give their feedback on the plans, as well as cement relationships between the community and the university students. The continuation of the participatory planning process is essential for the success of the project.

Participatory Building Process—While professionals complete the basic playground construction, community and student volunteers enhance the construction process and the quality of the playground. Volunteer dates for community builds will be set during the construction period. Community builds, involving people from the school community and other volunteer organizations are an essential part of the participatory process. Currently, its believed the project will have between two to four volunteer builds in which the community creates artwork, plants gardens, lays sod and bricks and builds playground equipment.

KaBOOM, a national non-profit that provides playground equipment to low income neighborhoods has offered to work with the team to enhance the playground. Community members will install this donation on the playground during several volunteer days once the site preparation and soil amendment processes are completed on the grounds.

The development of the school yard has been divided into sections and phases to make the process simple. The sections are the Intermediate Play Area & Primary Play Area, the Central Gathering Place and Landscaped Pockets, the Courtyard of Science and Nature Hall of History, Greening of the Field and The Hills, and the Children's Garden & Gateways. *Each of these areas has a more detailed description, map, and photo montage contained in this packet of information.* As stated earlier, constructing each section will be a participatory process that will involve community volunteers, graduate students and construction professionals.

In March 2007, graduate students of UCD met with students, parents, and teachers from Dr. MLK, Jr. Charter School to be acquainted with their wishes for the new playground.

Long-Term Sustainability—The stakeholder participation that is fostered during the design and building stages generates a culture of community stewardship that is essential for the long-term sustainability of the Learning Landscapes, a partnership shared between the university, the school, and the community. UCDHSC will assist in such tasks as forming partnerships to expand service learning opportunities, providing maintenance support and technical assistance to site based personnel, and seeking on-going funding to support the Learning Landscape.

The design for the Dr. MLK, Jr. school grounds will incorporate as many elements of environmental sustainability as practical. Students will tend an organic garden on the site, and learn about renewable energy through small-scale demonstrations of solar lighting, wind energy, and potentially hydro-powered pumps in a fish hatchery. These elements will be located within the school ▶

courtyard where they can be closely monitored by staff. These sustainable elements will provide educational opportunities as well as slightly reduce the school's energy consumption, with the ultimate goal of attempting to expand to a larger scale.

Community involvement in all phases of the Learning Landscape is essential for the continued success of the project. To maintain and continue to develop the school grounds, it is necessary for community members, as wells as school staff, to take a strong interest in the project. If the school yard is allowed to remain open outside of school hours, community vigilance will help reduce or prevent vandalism and other crimes.

Evaluation and Research—This is an optimal opportunity to study the effects of this initiative on local communities and children's healthy development. This includes an examination of the participatory process of the initiative and how this process can aid in disaster recovery, assessment of the Learning Landscapes on neighborhood social processes, (e.g., collective efficacy and social cohesion), and the effects of the playground renovations on children's physical activity and prosocial behaviors.

Over the past year, Landscape Architecture students have been gathering data about the Lower Ninth Ward that will help to assist in a playground design that reflects the unique characteristics of the community. This information also provides a baseline assessment of the neighborhood. Furthermore, Tulane University has

Timeline for the Dr. MLK, Jr. Charter School Learning Landscape

Phase One A

1) Remove and store covered walkway for future re-use
2) Relocate entry gateway
3) Remove fence
4) Remove concrete parking lot
5) Purchase church properties. Remove all debri and concrete

Phase One B

1) Multi-use field and track installation
2) Preparation of "The Mountain Tops" for volunteer plantings

Phase 1A:
1) Remove & store covered walkway for future re-use
2) Relocate entry gateway
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Phase 1B:
1) Multi-use field & Track installation
2) Preparation of 'The Mountain Tops' for volunteer plantings

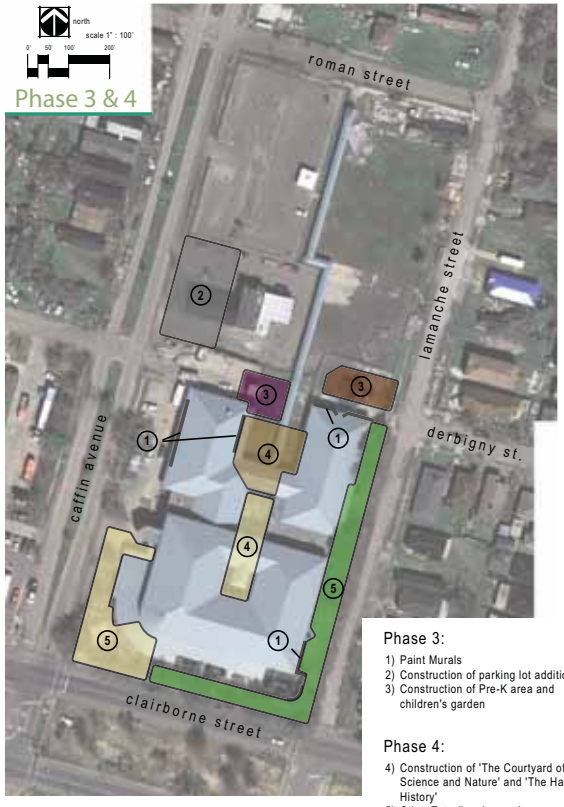
studied children's physical activity on the Dr. MLK, Jr. school playground prior to Hurricane Katrina. This information will allow us to evaluate the impact of the playground renovations on children's physical activity levels.

Past research on the Dr. MLK, Jr. school grounds examined the effects of leaving the school yard open outside of school hours on children's physical activity levels. The study revealed that leaving the school playground open positively influence physical activity levels, and thus potentially reducing the rates of childhood obesity. Continued research using the System of Observing Play and Leisure Activity in Youth (SOPLAY) method for observing and categorizing activities can be used to determine how the Learning Landscape reconstruction impacts physical activity levels. The new data can be compared to the baseline data from the Pre-Katrina study.

The redevelopment of the Dr. MLK, Jr. school yard into a Learning Landscape is an exciting opportunity that will help to revitalize the Lower Ninth Ward Community. In the following pages you will find the plans for the school, as well as written descriptions and photo montages detailing the different sections of the school yard. Additionally, you will find the proposed phases for construction and a summary of community involvement up to this point. Also attached are several appendices that outline past research and other information gathered by graduate students during the participatory process.

Phase 2:

1) Volunteers prepare play pits and build play equipment
2) Volunteers plant 'The Mountain Tops'
3) Central Gathering Area Constructed
4) Re-use and distrubution of covered walkway
5) Bus Stop Construction



Phase 3:

1) Paint Murals
2) Construction of parking lot addition
3) Construction of Pre-K area and children's garden

Phase 4:

4) Construction of 'The Courtyard of Science and Nature' and 'The Hall of History'
5) Other Entry/Landscape Improvements

Phase Two

1) Volunteers prepare play pits and build play equipment
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Phase Three

1) Paint Murals
2) Construction of parking lot addition
3) Construction of Pre-K area and children's garden

Phase Four

4) Construction of 'The Courtyard of Science and Nature' and the 'Hall of History'
5) Other Entry/Landscape Improvements

Dr. Martin Luther King, Jr. Charter School for Science and Technology

Lower Ninth Ward, New Orleans

Dr. MLK, Jr. Charter School Mission: **To create and maintain an orderly trusting environment where teaching and learning are innovative and exciting; where students are taught to read, write, compute, and think critically according to their fullest potential.**

The Dr. Martin Luther King Jr. Elementary School was severely flooded due to high water levels caused by breaks in the Industrial Canal due to Hurricane Katrina. As a result of Hurricane Katrina and the severe flooding everyone living in the Lower Ninth Ward in New Orleans was forced to relocate. Despite the damage, the school building itself has been found to be structurally intact. Children, faculty, and staff have been temporarily relocated to another facility, but are scheduled to return this fall in 2007. Slowly, there are signs of people moving back into the community such as home rebuilding and retail stores reopening.

Community Support and Volunteers—Parents are actively involved with the Dr. MLK, Jr. Charter School in terms of planning for events and addressing school goals for the future. The parent association is a vital link in a partnership between school, home, and community. They are dedicated to fostering a positive, nurturing environment.

The University of Colorado at Denver is excited about the new partnership with the Friends of King School. This dynamic group of business and community leaders, educators, and administrators are dedicated to improving the quality of education for students in the New Orleans area.

Like the Friends of King School, there are many people willing to build the school grounds. A new playground on-site would provide a vibrant center of outdoor activity for the children of the Dr. MLK, Jr. Charter School. The playground at the school will enable the children to thrive and grow physically and socially. The current playground offers minimal opportunities for physical education. Socialization is an important aspect of a child's healthy development and the grounds as they exist are not conducive for this. The new playground will be a crucial part of the rebuilding of the Lower Ninth Ward. It will serve as a beacon to the community that values the need for places for children to be able to play in a safe and nurturing environment.

Prior to Hurricane Katrina only the school children and people affiliated with the school were allowed to use the exterior play areas. Concurrent with the playground planning, the University of Colorado at Denver will be working with the Dr. MLK, Jr. Charter School to develop strategies for public use.

Demographics

Number of Children by Age	
Under 2	
2-5	120
6-12	280
13 and up	40

Ethnicity % (optional)	
African American	100%
Hispanic	%
Asian & Pacific Islander	%
Caucasian	%
Other	%

The number of children at your site enrolled in federal free or reduced lunch programs. 440 students

(This estimation was provided by personal contact with Steve Martin in New Orleans who is actively involved in the community and the school.)

Dr. Martin Luther King, Jr. Charter School students create artistic banners, sidewalk drawings and write about their playground, neighborhood and their future wishes for fun and education.

Course Approach And Community Involvement

The "Finding Common Ground: New Orleans Style" class at University of Colorado at Denver focused on using the participatory design process while working with the community of the Lower Ninth Ward to redesign the Dr. Martin Luther King, Jr. Charter School grounds. The class focused the first few weeks on the school and community background while researching different playground ideas. Students were divided into four different groups with each group focusing on an individual concept plan for the Dr. MLK, Jr. Charter School's playground. Taking the existing conditions of the site into consideration, these concepts were primarily based on the students' first impressions.

Next, the class split into seven different sections working on specific "area of interest" boards. These topics included:

1. K-8 science curriculum using the outdoor classroom
2. Play and physical activity standards and square footages of the site
3. Vernacular architecture and playground elements
4. Plant systems, eco-systems and addressing the issues of stress of an urban environment
5. History and culture
6. Human and behavior aspects of children
7. Leadership in Energy and Environmental Design (LEED) and sustainability

These boards included photographs of precedent studies and successful images which relate to the topic. In addition, each group included a summary of what each group desired to achieve through their research.

From March 8–13, the "Finding Common Ground" class visited New Orleans. On site, the university students participated in classroom activities of various age groups and talked with Dr. MLK, Jr. students ▶

about what they wanted to see in their new playground. In general the children, teachers and staff wanted many of the same elements within the playground. After compiling the results into a matrix, a few stood out such as a swimming pool, swings, shade structures, lighting, fruit and vegetable gardens, flower gardens and a basketball court. On Saturday March 10, the school held "Super Saturday" where parents could pre-register their children for the following school year. Here, the class set up the seven "area of interest" boards and the four concept plan boards. children were asked to put either a red or green sticky dot on the boards next to the photos they liked or disliked. Later data was gathered from these boards and organized into charts. The charts were referenced by the university students to improve design decisions for the playground that reflect the 'wants & desires' of the Dr. MLK, Jr. students. The charts revealed several 'wants & desires' to be very important for the children, with the following having the most positive feedback:

- flower gardens
- learning gardens
- map of the US
- shelters or sculptures
- natural play
- role models
- a maze
- Mardi Gras colors
- live oaks
- informal seating areas
- changes in elevation
- water elements
- cooperative play
- outdoor art space
- Dr. MLK, Jr. mural
- Parents and students wanted to see the church on the school property relocated
- Students wanted the existing breezeway removed

General observations gathered from the teachers and staff included:

During the March visit, Dr. MLK, Jr. Charter School students and parents were given an opportunity to observe the neighborhood's surrounding waterway: The Bayou Bienvenue.

Students and parents review preliminary drawings for the Dr. MLK, Jr. Charter School Learning Landscape Playground.

- they desired to see the new playground as something that could engage the families, and encourage them to interact with one another
- the school is seen as a beacon for the community and therefore must be able hold spaces for community interaction
- they want the playground to have gathering spaces
- they desire a space to hold team activities to help students build character
- teach children stewardship though the building and maintaining of the playground

As a result of the trip, the university class improved their understanding of the community's wants and needs for the new playground—ultimetly helping to design a new playground for the Dr. Martin Luther King, Jr. Charter School.

After the trip to New Orleans, the students of the "Finding Common Ground" class discussed individual observations, as well as refined the initial four concept plans into two concept plans. Additionaly, from the data collected with the "areas of interest" there was a need for further refinement, where as ten different groups focused on:

1. Concept plan refinement
2. Science education and school yard elements
3. Outdoor art and culture/history elements
4. Child friendly neighborhood plan (Claiborne and Caffin Civic Plan)
5. Ecological zones (green building)
6. Architectural elements

"A heart means you love your parents and brothers and sisters"

—*Pre-K student referring to a heart he drew on the butcher paper during art class*

"I love performing on stage"

—*Tatyana Reimonerg, age 13, in response to what she wanted on her playground*

"A central gathering area is very important for the community"

—*Unknown local Landscape Architect*

7· Play equipment/ traditional play
8· Assessing community and school desires and input
9· Cost estimating (grants and construction)
10· Grant preparation and coordination

A second group of university students visited New Orleans to collect reactions to the modified boards. Based on this trip, and as a capstone for the class, a final concept plan was created and divided into six concentration areas. *Each study area includes a summary and a photo montage contained in this packet of information.*

1· Central gathering place and landscaped pockets
2· Greening of the Field & the hills
3· Intermediate Play Area & Primary Play Area
4· Courtyard of Science and Nature Hall of History
5· Children's Garden & Gateway's
6· Main Entry Murals

Throughout the process the "Finding Common Ground" class wanted to involve the community as much as possible through the participatory design process. With the help of the community of the Lower Ninth Ward and the students, teachers and staff of the Dr. Martin Luther King, Jr. Charter School, the design process for their playground has been as success.

"I want shade on my playground"

—Eric Lewis, 3rd grader,
in response to what he wanted on his playground

Finding Common Ground
New Orleans Style
Spring Semester 2007
Professor Lois Brink
University of Colorado at Denver
College of Architecture and Planning
March 30, 2007

Dr. Martin Luther King, Jr. Elementary School Learning Landscape

IMPORTANT COMMUNITY SPACES

WE ARE ASKING FOR YOUR INPUT ON COMMUNITY SPACES AND SAFE PEDESTRIAN ROUTES AROUND THE NEIGHBORHOOD

COMMUNITY SPACES & CIRCULATION

Child Created Spatial Reference Board

Children marked familiar spaces with dots. Green are residential homes, yellow are parks and/or recreation, purple indicate schools, and teal denotes a child friendly retail location.

Important Community Spaces and Circulation

As identified by residents of the community at left is a map of those locations. The numbers on the map coincide with the photo inventory at far right.

Pictures

1-5) Community center playground
6-9) Community playground near Jackson Barracks
10-12) Hardin Elementary School
13) Community basketball courts
14)Open space near Lawless High School
15) Open space on corner of Andry & Derbigney
16) Open space across the street from Lawless High School
17) Fields at Holy Cross High School
18) Levee off of Florida Ave. looking towards Bayou Bienvenue

Finding Common Ground
New Orleans Style

Spring Semester 2007
Professor Lois Brink

University of Colorado at Denver
College of Architecture and Planning

March 30, 2007

Dr. Martin Luther King Jr. School Learning Landscape

Community Input from meetings in March 2007

Raymond Winn
&
Zoe Selzer

Research Focus

Community input from March, 2007 student and community meetings

Overview

- This board represents community input from students, parents and community members from meetings in March, 2007.

Interpretation of Stakeholders Feedback

Stakeholders	Comments and Interests
Students	Swimming pool and water features, swings, slides, hard surfaces for play, ball fields, basketball court, shade devices, garden, flowers, trees, snack bar/ concession stand, benches to read and tables to play games.
Parents	Safety concerns at the school, monitoring of school grounds, community garden, swimming pool for community use, relocate the church.
Teachers	Bus pick-up and drop-off issues, public and private parking, contaminated water and soil, access for disabled children, rainwater collection system for watering, garden used to increase nutrition for the students.
Community members	Swimming pool, pecan trees, library access and parking.

Quotes from the Community

Students:
"I want shade on my playground" Eric Lewis Ms. Kelly's 3rd Grade

"Fruit trees with oranges and lemons, butterflies and flowers" Kindergarten Student

"I want swings, shade and a water fountain" 6th Grade Student

"I want a garden on my playground" 2nd Grade Student

Parents:
"I would like to see the church moved off of the school grounds and relocated" Parent

"Need a place for community league games football, soccer, etc". Nakia Davis, Parent

Images

1. Student Drawings
2. Student Drawings
3. Student Drawings
4. Student brainstorming
5. Student brainstorming
6. Student brainstorming
7. Community meeting
8. Community meeting
9. Community meeting

Site Recommendations for Dr. MLK, Jr. Charter School Playground

The class has proposed several critical recommendations necessary to implement this plan.

1. Purchase the two church properties

2. Raise or relocate the Church of God Chapel across the street to the vacant lot due west

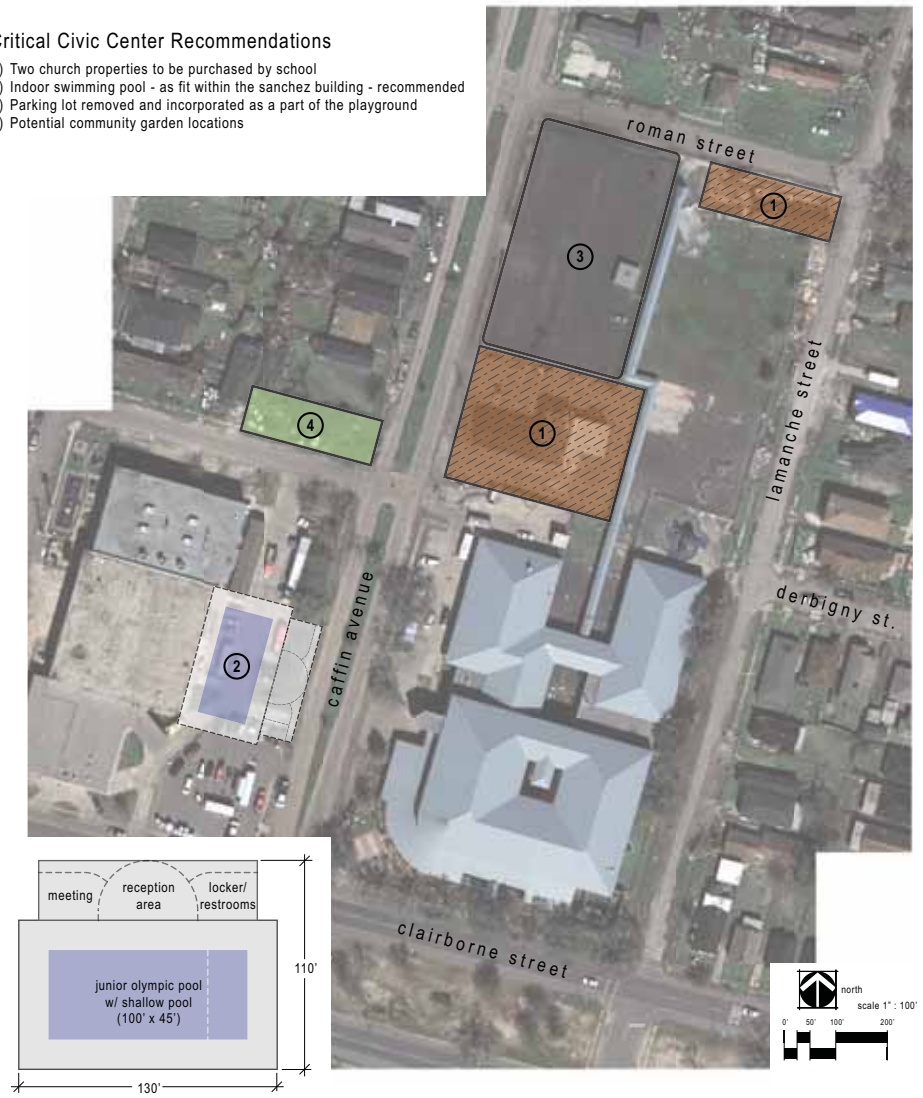
3. Relocate the indoor swimming pool to the adjacent Sanchez property due to spatial limitations. (see adjacent drawing)

4. Remove the parking to allow for a multi-purpose play field and redesign a parking lot closer to the building.

5. Renovate Sanchez Center

Critical Civic Center Recommendations

1) Two church properties to be purchased by school
2) Indoor swimming pool - as fit within the sanchez building - recommended
3) Parking lot removed and incorporated as a part of the playground
4) Potential community garden locations



Dr. MLK, Jr. Charter School Campus Plan Introductory

The overall playground envisioned will have many visual appealing aspects. The landscape will offer many eye pleasing vegetation with colorful raised beds and a variety of plants offering a nature like feel. Walking paths meander through the site and lead to a sheltered focal point for performances and outdoor classes. The multi-purpose field will entertain older kids engaging in informal play, football, and soccer. A natural play area includes boulders, small hills and dips. This play area allow children to interact with the environment through different elevations, climb and play hide and seek. Hard surface play allow children to engage in basketball, tetherball, 4-square, and shuffle board. A school garden surrounded by raised beds, plants, and sculptural pieces creates an appealing atmosphere adjacent to the main courtyard. The main courtyard will be filled with colorful murals about music and the history of New Orleans. In addition, the courtyard will permit children to sit and socialize with one another. A gateway structure, located north of the playground, marks the public's entrance. The bus drop-off on the east side of the building is balanced by the vehicular drop-off on the west side of the school. The Pre-K play area has a variety of play elements to engage children such as a Butterfly Garden, a play structure, and artificial turf. Shade is a vital part of the plan, thus, the existing walkway will be relocated in fragments to create multiple shaded locations for resting.

Intermingle the various play spaces, circulation paths, and the landscape to allow for a unified school playground.

The new Learning Landscape playground will embrace a new green playing field. Throughout the year, the students and constituents of the neighborhood will play a variety of sports and games on this new green space. In addition, a new running track will encircle this green field for jogging and leisure walks.

"Need a place for community league games, football, soccer, etc."

—Nakia Davis, Parent

Greening of the Field and The Hills

Greening of the Fields — We propose to remove the existing parking lot, relocate the gateway and purchase the church property in the northeast corner inorder to provide a large multi-use grass field for turf related activities. Approximately 225 by 150 feet, the field can be used for organized play, such as baseball, football, and kick ball, or informal play that requires larger, unobstructed spaces. Although stripping is possible for specific activities, it's anticipated that the field will remain largely un-striped allowing for a variety of configurations and parallel play. In the event the field is used for soccer, the green is large enough for U10 soccer (40 x 70 yards) and may include movable soccer goals.

Around the perimeter of the field is a crusher fine track and a backstop for baseball or kick ball. Bleechers along the north side of the field allow for seating and larger school or community events. Serving as a welcoming element to the field and the rest of the playground is the relocated covered gateway. The covered walkway will be removed and reused in smaller segments throughout the playground as shade structures. As a part of the north fence, the gateway can serve as an important access point, provide a canvas for permanent school artwork, and serve as a historical link to school.

The Hills — Along the eastern edge of the play field is the hills, an outdoor learning area that features native plants indegeounous of local upland forests, informal pathways meander through undulating mounds eventually leading to an outdoor classroom. Organized to incorporate the four existing Larch trees, the hills are intended to be an area of transition, partially planned and partially created by the students that will use this area for playing, exploring, and learning. Students will transplant native species in cooperation with Louisiana State University extension service and the Louisiana Forestry Department.

Other components found in The Hills may include; signage for plant or science interpretation, a variety of natural seating elements (particularly in the classroom space), permanent ground elements (ex. wildlife footprints), and loose play material.

A new shade structure will craft a school and community assembly space for entertainment and play while enhancing the campus with a visual, architectural element.

Create spaces that are functional, welcoming, and aesthetically pleasing as well as a source of school and community pride.

Central Gathering Place and Landscaped Pockets

Central Gathering Place — Designed to foster a sense of community among the students, faculty, and residents of the Lower Ninth Ward. This central gathering place is the datum of the playground. This space can function in a variety of ways including formal and informal gathering, performance space for the band and dance troop, as an outdoor classroom, a place to play games, and a display area for student art work. With the re-appropriation of lighting from other areas of the site, this space could be used for evening activities by the surrounding community.

Architecturally, a light weight, extremely durable shade structure made with steel and heavy fabric will provide relief from the warm New Orleans climate and help guide people through the site. A place for gathering and performance was a request made by several community members during the initial design reviews with the residents. A goal for the Learning Landscape Initiative is to encourage social interaction among the students beyond the various types of traditional play equipment.

Landscape Process— Placed throughout the playground, landscape pockets act as way of bringing the surrounding natural environment into a play setting. The intention is to use naturalized species of plants that have been used historically in the New Orleans region. The flowering plants provide a fragrant aroma while attracting birds and insects that can be incorporated into the science curriculum. These spaces can function on an educational level through activities such as plant identification, learning about animal habitats, and journaling about the changing of the seasons. These areas will provide the students with a critical understanding of their surrounding environment. There was great interest and excitement by the community members to make plants and gardens a part of this vibrant space. The integration of the natural environment with the traditional play environment is a very important aspect of a built learning landscape project.

The Primary and Pre-Kindergarten Play Areas will include vibrant play structures that offers many opportunities for different types of play such as climbing, stepping, balancing, and sliding.

Provide activities and spaces that promote different types of play, entice participation, and promote physical development.

Primary/Pre-K Play Area and Intermediate Play Area

Primary and Pre-K Play Area—The Primary and Pre-Kindergarten Play Areas will include vibrant play structures that offers many opportunities for different types of play such as climbing, stepping, balancing, and sliding. The play equipment will promote exciting and healthy exercise that highlights gross motor skills and body movement crucial for Primary and Pre-Kindergarten aged children. There will also be hard surface play elements such as hop-scotch, tetherball, triple hoop shoots, and four-square. A set of swings will provide additional entertaining activity. This area will capture the child's imagination while promoting diverse kinds of motion and interaction between children of all abilities. These spaces will promote active learning and allow children to develop social skills. New friendships will be created between peers in this active area outside of the classroom. This outdoor space will be safely situated to allow for maximum safety and accessibility. An educational map that shows the U.S.A. and the Mississippi River basin will be painted on the ground plane in the Primary Play Area and a New Orleans map showing the Lower Ninth Ward will be located in the Pre-Kindergarten area to educate the youngest children about where they live.

Intermediate Play Area—The Intermediate Play Area will likewise serve as a dynamic activity center that will engage and challenge children physically while having fun. This play structure will have emphasis on climbing and movement appropriate for the older children and their need for upper body development. The platform areas of the Intermediate Play Area will contain a space for social interaction. Also, these platforms fluxuate in elevation to enhance the site views. The experience will offer opportunities for exploration that promote healthy growth and development that is crucial for the older children. A global map that shows climate zones will be included in the Intermediate play area. Deconstructed pieces of the existing shaded breezeway as well as a variety of trees will be included in the play areas to help accommodate for shade.

A new shade structure will craft a school and community assembly space for entertainment and play while enhancing the campus with a visual, architectural element.

The Dr. Martin Luther King, Jr. Charter School for Science and Technology Campus will be a welcoming and a sustainable hub promoting education, physical development, and play for the children and community residents alike. The school will act as a catalyst for revitalization while celebrating the cultural and historical richness of the Lower Ninth Ward and New Orleans, Louisiana.

Courtyard of Science & Nature and the Hall of History

Courtyard of Science and Nature—The courtyard of science and nature at the Dr. Martin Luther King, Jr. Charter school will be a colorful outdoor space providing students with opportunities for learning while promoting culture and creativity. In the courtyard children will be enclosed in an enriching environment featuring elements such as flowers, trees, fountains and murals forming an oasis for education. The courtyard will be a private space for the school to conduct educational activities in an active outdoor learning environment.

In the "Science Central" area of the courtyard students will be active collecting samples from ecosystem gardens for science experiments or sitting down to a game of chess to develop logical thinking skills while surrounded by colorful and unique plants and paintings. An ecosystem garden will demonstrate various aspects of natural science and help students to strengthen relationships with the environment. A weather station will sit on top of the courtyard gathering data on local weather conditions. A mural of weather patterns and various cloud formations painted on the ceiling of the courtyard will connect the students to the weather station as they learn and play outside. The students will access the weather data through computers in their classrooms and use the information to learn about weather systems.

Hall of History—The walls of the courtyard form the "Hall of History" featuring murals depicting a variety of themes such as music, history, and the culture of New Orleans. The floor of the courtyard will feature an array of maps, mazes, and spaces to roll out large pieces of drawing paper. Students will contribute to the beautification of the courtyard by participating in creative activities led by various artists in residence. The cultivated courtyard will help foster school spirit and community pride as students at the Dr. MLK, Jr. Charter School feel proud of their unique school environment.

Children's Garden and Gateways

Children's Garden—A cultivated school garden is located adjacent to the cafeteria. Children will grow fruits and vegetables with the concept of 'seed to table' focus. The garden will have raised beds, plants, and sculptural pieces to create an appealing atmosphere adjacent to the main courtyard. The garden will be nearby one of the two new main gateways to the school yard.

Gateway—The gateway will be immediately adjacent to the new parking lot that can accomodate up to 50 cars. On street parking for the additional 10 cars requested by the school will be on caffin street. The public entrance will incorporate portions of the present walkway structure. Colored plexi-glass panels will be used to create an inviting entry while permitting an all weather walkway. The bus drop-off on the east will incorporate identical design principles of the gateway.

"Fruit trees with oranges and lemons, butterflies and flowers"

—Kindergarten Student in response to what she wanted on her playground

APPENDIX

Finding Common Ground
New Orleans Style

Spring Semester 2007
Professor Lois Brink

University of Colorado at Denver
College of Architecture and Planning

March 7, 2007

Martin Luther King, Jr. Elementary School Learning Landscape

Concept Plan One

Natalie Kerlakian
Noah Bernstein
Matt Norcross
Trevor Ehlers

BEGINNINGS

WE ARE ASKING FOR YOUR INPUT TO BETTER UNDERSTAND THE SITE OPPORTUNITIES

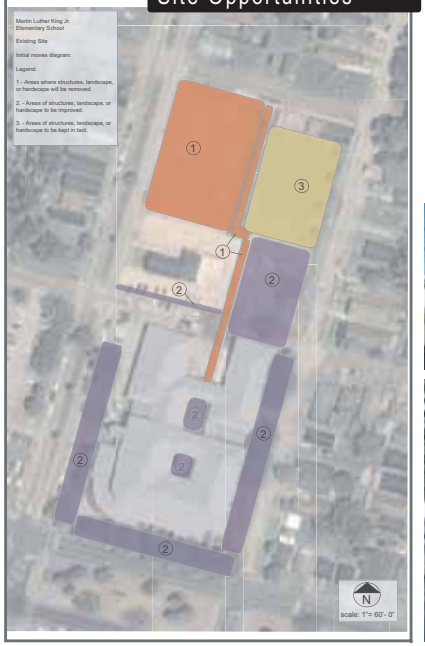
Project Vision

The Martin Luther King Jr. Elementary Charter School for Science and Technology Campus will be a multi-generation activity hub which will act as a catalyst to revitalize the lower 9th ward community and reflect the New Orleans way of life.

Project Goals

1) Provide a variety of activities for people of all ages, genders, and special needs.
2) Create spaces that are aesthetically pleasing and are a source of school and community pride.
3) Create outdoor opportunities that promote informal interaction wtih nature, allow for children's social skills to be fully realized, and allow for uses that support the educational curriculum.
4) Provide for the welfare of the lower 9th ward community through healthy outdoor environments.
5) Create easy access play areas that stimulate different types of play.
6) Actively involve children and young people in the planning,building, and maintenence of their own space.
7) Create an outdoor play area that is easily maintainable.

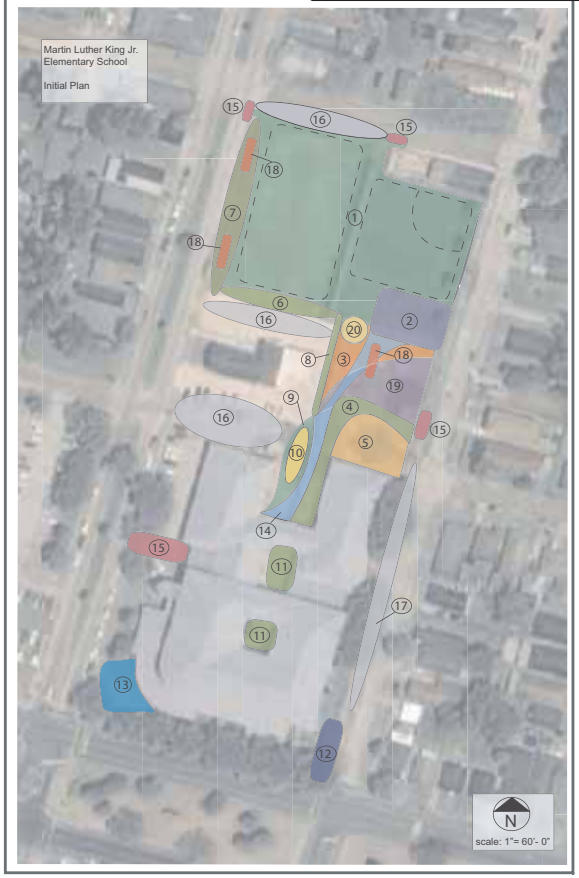
Site Opportunities



To Remain

Stakeholders	Potential Issues/ Solutions
Students, teachers, parents, staff	Solution: Create defensible space, open visibility, central teacher monitoring area, appropriate play equipment for designated age groups as well as accounting for appropriate ground space and material for fall zones. Secure private zones from public use while leaving public and semi-public areas open for use during non-school hours.
Students	that encourage social interaction
Parents, teachers, staff	design of physical site layout process
Students, teachers, staff, community	Maintenance of playground Solution: Create a playground that easily maintainable
Students, teachers, staff, community	Lack of vegetation on school grounds Solution: New design includes native, low maintenance, hardy, and non-poisonous plants
Students, teachers, staff, community	Pedestrian access not "pedestrian friendly" Solution: Crosswalks, street buffers, street trees, benches, trash receptacles, bike access and racks, drinking fountains, and street lamps. All amenities and access needs to comply with ADA standards.

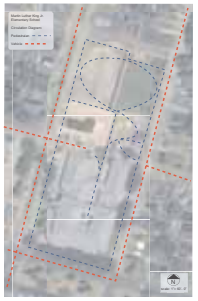
Spatial Diagram



Ideas

1) Multi-use Play Field: soccer, football, kickball
2) Hardcourt Games: Four square basketball, hopscotch, tetherball interpretive maps
3) Intermediate Play: age specific traditional play equipment and elements that support creative play
4) Interpretive Children's Garden: based in the local ecologies
5) Pre-K Play Area: age specific play equipment, soft play surfaces
6) Community Garden: vegetable garden for school and community to participate in
7) Picnic Area: shade structure, picnic table, trash barrels
8/9) Landscape Buffer: appropriate landscape to buffer church from school and outdoor classroom
10) Outdoor Classroom: landscaping, benches, tables
11) Courtyard Areas: improve courtyards with landscaping, benches, murals
12) School Recycling Area
13) Improvements to Library Entrance
14) Interpretive Path
15) Entryways: improve entries with formal gates, landscaping, and lights
16) Parking Areas
17) Existing Bus Drop Off: make longer
18) Shade structures
19) Primary Play: age specific traditional play equipment and elements that support creative play
20) Prospect Mound/ Outdoor Theater

Site Potential



Finding Common Ground
New Orleans Style

Spring Semester 2007
Professor Lois Brink

University of Colorado at Denver
College of Architecture and Planning

March 7, 2007

Martin Luther King, Jr. Elementary School Learning Landscape

Concept PlanTwo

Jay Kost
Kat Pecoraro
Zoe Selzer

BEGINNINGS

WE ARE ASKING FOR YOUR INPUT TO BETTER UNDERSTAND THE SITE OPPORTUNITIES

Project Vision

A welcoming and sustainable place for school children and community residents that is safe and stimulates play, and celebrates the cultural and historical richness of the Lower 9th Ward.

Project Goals

1) Design welcoming elements that can serve both the school and the community throughout the year.

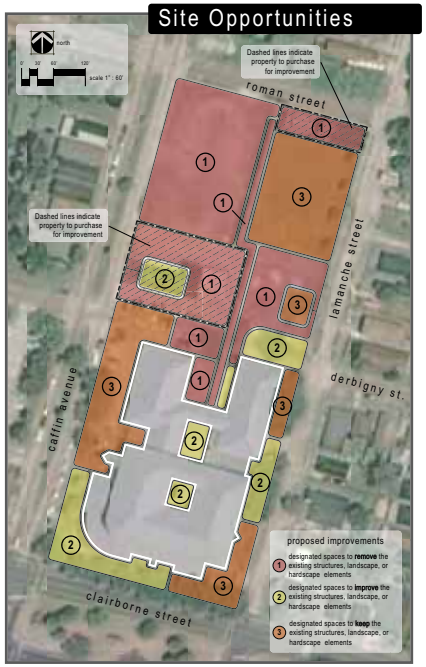
2) Rework the design of the school yard and its walks and paths as a journey throughout the site.

3) Provide a variety of age-appropriate play areas to engage multi-generational use.

4) Ground Martin Luther King Junior Elementary School into its place, time, and community in the Lower Ninth Ward and New Orleans, Louisiana.

5) Ensure the long term success of the Learning Landscape through sustainable design and community involvement.

Site Opportunities



Proposed

Sod field to **remain** and covered walkway to **remove**.

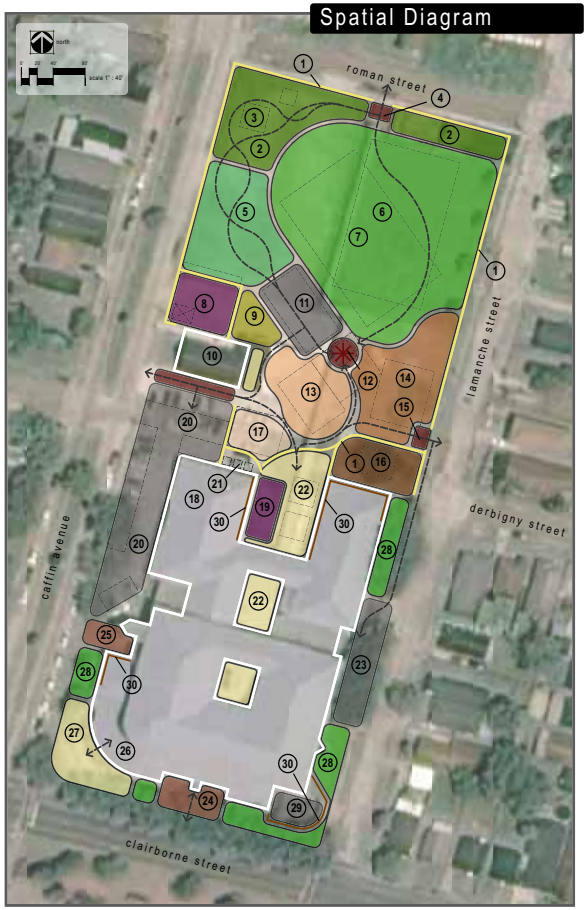
Walkway and building frontage to **improve**.

Church to **improve**, if purchased by the school.

Suggestions

Which People?	What to address?
Students, Teachers, Parents	Negative perception of school safety (including societal dangers as well as dangers encountered during play).
Students, Teachers	Underutilized outdoor spaces, such as the covered walkway.
Parents, Teachers, Staff	Desire for community independence in case of another natural disaster.
Students	Lack of playground structures to encourage a variety of creative play
Students, Teachers, Staff, Community	Lack of vegetation on school grounds
Students, Community	Lack of appropriate variety of surfaces
Students, Teachers, Staff, Community	School and Church grounds not accessible to the community.

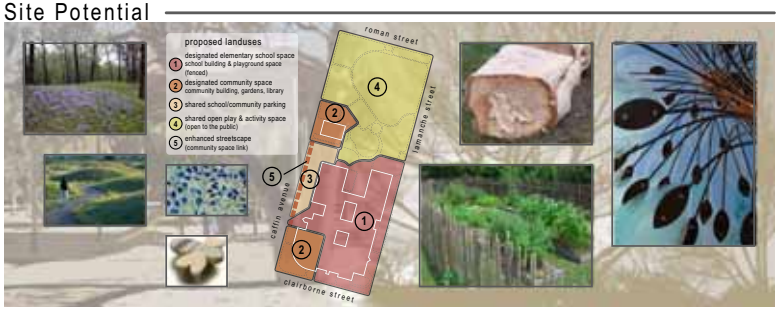
Spatial Diagram



Ideas

1) Proposed Fencing
2) Forest Play Area
   a) Pecan Trees
   b) Boulders
3) Outdoor Classroom
   a) Variety of Seating
4) Secondary Entry Point to Playground
5) Landform Play area
   a) Boulders
   b) Mini-Hills and Dips
6) Open Field
7) Soccer Field
   a) Moveable Soccer Goals
8) Community Garden
   a) Fencing
   b) Raised Beds
   c) Sculptural Pieces
9) Outdoor Community Space
   a) Picnic Benches
   b) Outdoor Grill
   c) Rain Shelter
10) Community Building
   a) Environmental Center
   b) Community Meeting Space
   c) Community Rental Uses
11) Basketball Court
   a) Basketball Hoops
12) Community Focal Point (Shelter)
   a) Rain/Shelter Structure
   b) Seating
   c) Recycled Glass Pathways
13) Intermediate Play Area
   a) Swings
   b) Jungle Gym (Cyprus Tree Themed)
   c) Boulders
   d) Monkey Bars
   e) Simple Machine Themes
14) Primary Play Area
   a) Sandbox
   b) Swings
   c) Tire Swing
   d) Smaller Play Structures
15) Primary Playground Entry
   a) Attractive, Closeable Gateway
16) Pre K Play Area
   a) Sandbox
   b) Small Swings
17) Hardcourt Play Area
   a) 4 Square Courts
   b) Tether Ball
   c) Shuffle Board
18) School Cafeteria
19) School Gardens
   a) Raised Planters
   b) Seating
20) Shared Parking
21) Trash Enclosure
   a) Mural
22) Reading/Outdoor Study Space
   a) Seating
   b) Sculptural Elements
23) Bus Drop-Off
   a) Benches
   b) Mural
24) Primary School Entrance
   a) Gateway
   b) Artistic Elements
25) Secondary School Entrances
   a) Signage
26) Library Entrance
   a) Signage
27) Outdoor Reading/Meeting Area
   a) Trees
   b) Seating
28) Sod/Foundation Plantings
   a) Flower Gardens, Bushes, & Vines
29) Mechanical Enclosure
   a) Mural
30) Mural/Building Artwork

Site Potential



Finding Common Ground
New Orleans Style

Spring Semester 2007
Professor Lois Brink

University of Colorado at Denver
College of Architecture and Planning

March 7, 2007

Martin Luther King, Jr. Elementary School Learning Landscape

Concept Plan Three

Angela Jaffuel
Ryan Lemon
Cate Townley

BEGINNINGS

WE ARE ASKING FOR YOUR INPUT TO BETTER UNDERSTAND THE SITE OPPORTUNITIES

Vision: The Martin Luther King Jr. Elementary Charter School for Science and Technology Campus will be a holistic learning environment for the school and community.

Project Goals

1. Safety – Provide a clean, safe and welcoming place for children to play.

2. Civic Engagement – Respect school/community engagement during the planning, design, construction and maintenance and monitoring of the school yard.

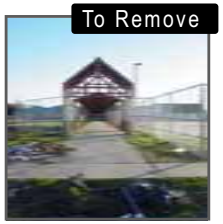
3. Outdoor Learning Environment –Provide an outdoor learning environment, through hands on experience, for science and technology, supporting the school's vision.

4. Holistic Environment – Provide a multi-generational and multi-age play environment.

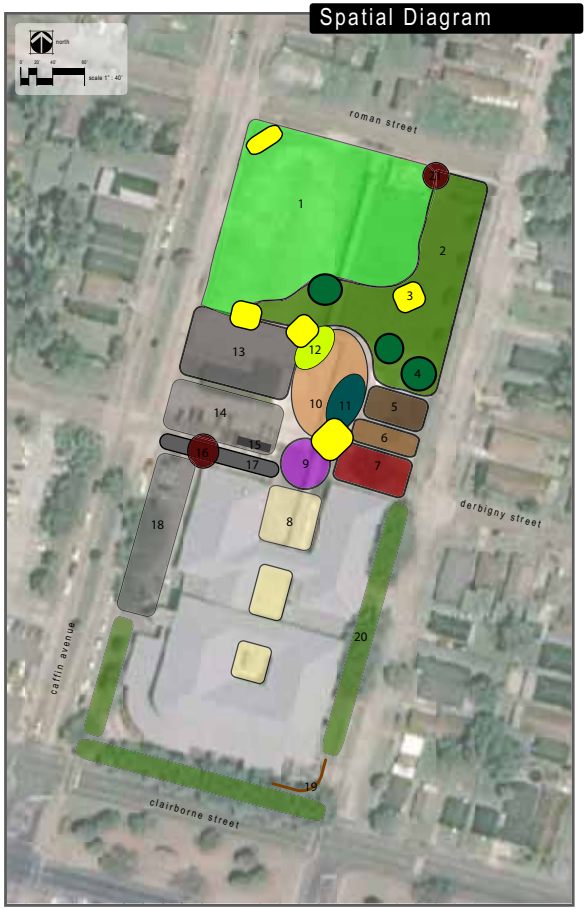
5. Holistic Approach – Provide an outdoor setting promoting physical/academic education and socialization.

Improvement Plan

To Remove



Spatial Diagram



Ideas

1) Ball field
   - Soccer
   - Marching band
   - Football
2) Natural Play Area
   - Bird Feeders
   - Upland Forest
   - Natural Habitats
   - Wild Grass and Flowers
3) Outdoor room
   - Outdoor Classroom
   - Shade/Rain/Bug Shelter
   - Sreened-in Space
   - Picnic space
4) Gommunity Garden
   - Vegetable
   - Herb
   - Flower
   - Butterfly
5) Primary Play Area
   - Swings
   - Slides
6) Sand Play Area
   - Archeology Site
7) Pre-Kindergarden Play Area
8) Semi-Outdoor Learning
   - Wetland Habitat
   - Fish Hatchery
   - Art Space
   - Reading Room
   - Vegetation Planters
   - Weather Station
9) Central Gathering Area
   - Elevated Performance Stage
   - Public Art Sculpture
10) Intermediate Play Area
    - Jump Rope
11) Rock Formation Play Area
12) Music Garden
    - Sound Sculptures
    - Musical Water Features
13) Hardscape Play Area
    - Basketball
    - Four Square
14) Parking
15) Trash Enclosure and Storage
16) Main Entrance and Gateway
17) Entrance Walkway
    - Family Name Pavers
    - Murals
    - Student Art
    - Banners
18) Bus Drop-Off
19) Mural
20) Street Scape Enhancement

Site Potential

Surface Materials

Public and Private Space

Site Circulation

Stakeholders	Considerations
Students, teachers, staff	Reduce bullying and other discipline issues
Students	Reduce possible self-esteem issues
Students	Reduce safety problems based on current physical site layout
Students	Access to appropriate amount of play equipment
Students	Access to outdoor educational resources
Students, teachers, staff, community	Access to vegetation on school grounds
Students, community	Access to soft surface areas preventing user injuries
Students, teachers staff, community, service personnel	Access to vehicular/bus drop-off that is safe and practical
Students,	Great potential for community use and social

Finding Common Ground
New Orleans Style

Spring Semester 2007
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March 7, 2007

Martin Luther King, Jr. Elementary School Learning Landscape

Team 4
Raymond Winn
Gary Taipalus
Joe Kuk

BEGINNINGS

WE ARE ASKING FOR YOUR INPUT TO BETTER UNDERSTAND THE SITE OPPORTUNITIES

Vision

To create a safe, welcoming, revitalized and accessible play park that embraces the Lower 9th Ward's cultural history, richness and diversity, offering places and activities that promote education, physical development and gathering.

Goals

1.) Provide spaces and activities that educate children through academic discovery.
2.) Provide spaces and activities the entice participation and promote physical development .
3.) Provide spaces that contain living playgrounds of natural vegetation, natural grasses, and local habitat that spur curiosity.
4.) Provide spaces to will welcome the neighborhood and encourage sharing music, art, and cultural history
5.) Provide spaces that allow solitude and reflection.
6.) Provide easily accessible community spaces while encouraging play spaces for each age group.

Site Opportunities

Alterations

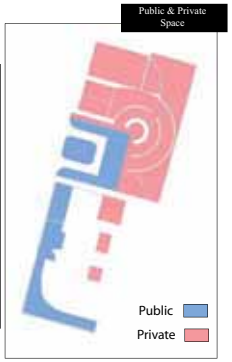
Spatial Diagram

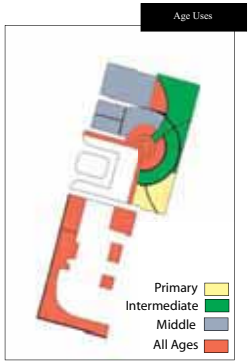
Potential Enhancements

1.) Multi Purpose Field older children: Football, Soccer
2.) Multi Purpose Field younger children: Tag, kick ball
3.) Ecological Zone: Upland Forest
4.) Soft Play Surface: With Boulders
5.) Hard Play Surface Older Children: Four Square, Tether Ball, Shuffle Board
6.) Hard Play Surface Younger Children: Funnel Ball, Hopscotch, Four Square
7.) Climbing Wall: 6-10 foot safety zone
8.) Butterfly Garden: native plants
9.) Play Equipment Younger Children: Swings, slides, monkey bars
10.) Pre Kindergarten Natural Zone: sand box, Pecan Grove
11.) Outdoor Class Room Gathering Place: sloping grass
12.) Basket Ball Court: Community Use and School Use
13.) Outdoor Library Reading Area: Community and School use, Benches, grass, shade
14.) Outdoor Cafeteria: Picnic Tables, Shade
15.) Performance Area: band performance, science experiments
16.) Art Area: Music and Historical murals
17.) Cultural/History Area: murals and Maps
18.) Focal Point Plaza: Shade Structure, water feature/art sculpture
19.) Service Entrance
20.) Community Building: concessions and meetings
21.) Community Parking
22.) Bus Drop-Off and Turnaround

Suggestions

Stakeholders	What to Address?
Students, Teachers, and Community	Variety of play surfaces
Community	Provide gateway that announces entrance to public
Students, Teachers, Parents	Bus drop off reconnect to main entrance
Students, Teachers, and Community	Feature a Central Gathering Space
Students, Teachers, and Community	Join community school and church in overall design of school grounds





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Martin Luther King, Jr. Elementary School Learning Landscape

New Orleans Timeline

Kat Pecoraro

BEGINNINGS

WE ARE ASKING FOR YOUR INPUT ABOUT *THE HISTORY AND CULTURE OF THE LOWER NINTH WARD...*

1682

Delta of Louisiana and the mouth at the gulf, surrounfing geography influences beginning settlement *"neither land nor sea"*

FIRST INHABITANCE OF NEW ORLEANS

_Robert Cavelier, Sieur de La Salle explored the Mississippi downstream to its mouth and claimed the entire drainage basin for France.

1682 1731

1731

Cuisine of New Orleans, early beginnings

1731

Plantations and agriculture in general.
_Crops grown: indigo, rice, and tobacco
_Trade by water and roads along levees
_Oak Alley Plantation shown above is known for the 300 year oaks that line the entry
_Creole's: Spanish or French descent
_Cajun's: Acadian descent
_African-American's: Western African descent

1890

Cypress Swamp, provided wood for homes in the Ninth Ward

SETTLEMENT OF NEW ORLEANS AND THE BEGINNINGS OF THE NINTH WARD

_Land designated as the Ninth Ward in 1852.
_A common misconception from municipal officials at this time is shown in an 1885 guidebook that stated: *"There are probably sections of the Ninth Ward which have never been visited by man."*
_By 1890, over 17,000 people lived in the Ninth Ward for its rural, neighborly environment.
_With wood harvested from cypress trees, residents built shotgun houses, which encouraged breezes to flow through homes as they entertained neighbors on front porches.

1852-1890

1900s

Garden District
Lower Ninth Ward

1923

THE NINTH WARD WILL CONTINUE TO GROW

_Early 1900s racial harmony, based on the Ninth Ward upbringings; *"everybody helped everybody else"*.
_1918-1923 The building of the Industrial Canal disrupted the feel, because officials claimed, *"it was uninhabited"*, when in fact 25,599 people lived in the Ninth Ward by 1910. Still the area **continued to grow.**

1918-1923

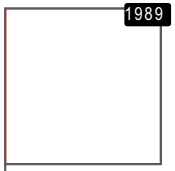
1950

1909

_African-American Neighborhood Associations of the Lower Ninth Ward advocated and implemented desegregation of New Orleans public schools.
_National Association for the Advancement of Colored People (NAACP) supported suits of *Aubert v. Orleans Parish School Board, 1948*, challenging unequal public schools in New Orleans.
_**Westley Wallace Law** is a historian and civil rights activist. He became the president of the Savannah branch of the NAACP in 1950. He orchestrated the civil rights movement of the 50's and 60's in Savannah. The Ralph Mark Gilbert Civil Rights Museum was brought about by his vision.

1940s & 50s

1989



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_____
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_Keith and Chandra Calhoun Photography Studio in the Lower Ninth Ward, above is their photo from 1989 at Junior's Bar in the Lower Ninth.

1989

2005

Joe Williams III

Mackie

"The problem for us Louisianans is that the country's marine biologists, meteorologists, geologists, environmentalists, physicists, architects, etc. have reported for at least the last forty years that disaster would one day be visited upon us if the politicians did not rebuild the coastal wetlands, construct more powerful city pumping stations, and create higher levees and gates and locks against the lakes and rivers.
Eh, La Bas, Cherie! as we say here in multicultural/intercultural Southeast Louisiana." --Mackie

_Mackie J.V. Blanton, a pro bono advisor and group leader to the Gestalt Psychotherapy Institute of New Orleans/New York, is an Associate Professor of Linguistics at the University of New Orleans, Department of English, and an Associate Dean of Student Life for Multicultural Affairs. Mackie has traveled extensively, since 1964, in North Africa, East Africa, West Africa, Europe, and Asia Minor.
_"I was raised in the Ninth Ward of New Orleans. It wasn't a pretty picture then, and it wasn't a pretty picture before Katrina hit."
-Joe Williams III

2005

1699

_Mardis Gras originated in New Orleans by Pierre Le Moyne' at his camp where the settlers entered the gulf. Mardi Gras, French for Fat Tuesday, originated in Roman culture and on the Christian calendar as the "last hurrah" before Ash Wednesday.

1762-1812

_Louisiana let Spain have ownership to avoid falling into British hands in 1762.

_Louisiana was given to France in 1801 by Napoleon Bonaparte.

_Napoleon sold all of Lousiana to the U.S. in 1803 for $15 million, which is known as The Louisiana Purchase. _Louisiana became the 18th State of the United States of America on April 12, 1812

1800's

_1800's cultural heritage of African-Americans expressed at Congo Square through dancing and singing.
_**Possibly the origin of Jazz?**
_Established as a national historic park in 1994.

New Orleans Jazz & Heritage Festival

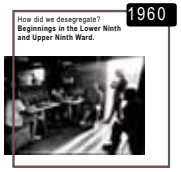
_A leader in your neighborhood...

_____
_____
_____
_____

1943 & 1960

_1943, two prominent African Americans, newspaper columnist Ernest J. Wright and Baptist minister Abraham Louis Davis, founded the Louisiana Association for the Progress of Negro Citizens extended the ballot to more African-Americans.
_1960, five Ninth Ward African-American girls desgregated two white elementary schools. Judge Wright made this happen by imposing his own plan outside of OPSB, *"all children entering the first grade may attend the formerly all-white public schools..."*

Herbert Gettridge, resident of the Lower Ninth Ward lived in his house for 56 years and built it with his own hands.



How did we desegregate?
Beginnings in the Lower Ninth and Upper Ninth Ward.

1929-1968

_Dr. Martin Luther King Jr. built on civil rights.
_1963 "I have a dream" speech.
_Important thoughts on education:
"The function of education is to teach one to think intensively and to think critically... Intelligence plus character - that is the goal of true education." -MLK

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Martin Luther King, Jr. Elementary School Learning Landscape

Sustainable Elements

Zoe Selzer
Gary Taipalus

BEGINNINGS

WE ARE ASKING FOR YOUR INPUT ABOUT GREEN BUILDING & RENEWABLE ENERGY

Opportunities

Green Building and Renewable Energy

Sustainable Development meets the needs of the present without compromising the ability of future generations to meet their own needs.
~ 1987 UN World Commission on Environment and Development, the Brundtland Commission

A sustainable society is one that can persist over generations, one that is farseeing enough, flexible enough, and wise enough not to undermine either its physical or its social systems of support.
~ Donella H. Meadows, Beyond the Limits

Renewable Energy Options

Domestic Solar Hot Water
Methane
Solar Panels

Sustainable Materials: Rubber

Rubber Flooring made of Recycled Tires
Utilized Around Play Equipment
Rubber "Bark" Chips
Utilized Around Play Equipment

Sustainable Materials: Glass

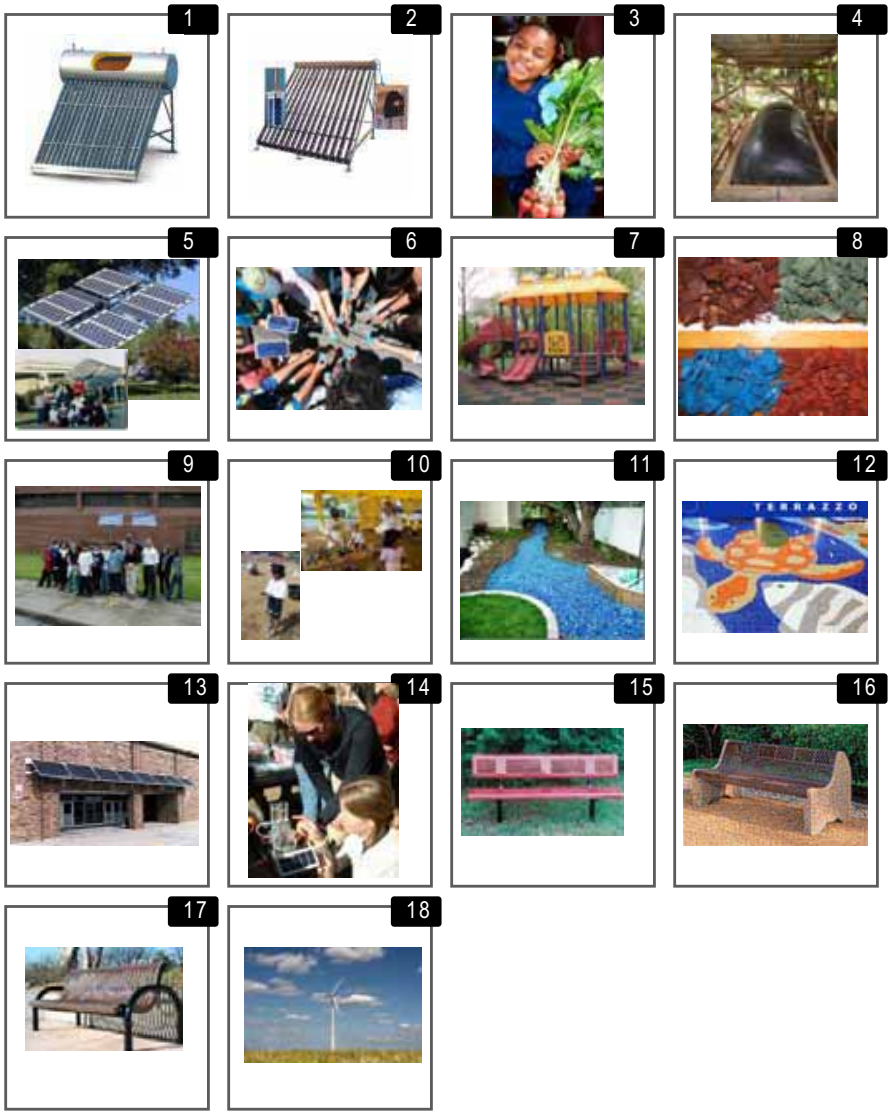
Glass "Mulch"
Utilized in Gardens and Landscaping
Recycled Glass Agrigate Flooring
Pathways, Sculptural Elements
Sustainable Materials: Plastic
Recycled Plastic Benches
Variety of seating around grounds
Prefabricated and low maintenance

Sustainable Materials: Plastic

Recycled Plastic Benches
Variety of seating around grounds
Prefabricated and low maintenance

Research Imagery

1) Solar Hot Water - Thermosyphon
2) Solar Hot Water - Concentrating
3) Neighborhood Methane Project
4) Methane Storage
5) Solar Electric
6) Solar Electric science project
7) Recycled Rubber matting
8) Recycled Rubber "bark" chips
9) Solar Electric school project
10) Renewable Energy project
11) Recycled Glass pathways
12) Recycled Glass aggregate flooring
13) Solar Collector awning
14) Solar Science project
15) Recycled Plastic bench
16) Recycled Plastic bench
17) Recycled Plastic bench
18) Wind Energy system



Finding Common Ground
New Orleans Style

Spring Semester 2007
Professor Lois Brink

University of Colorado at Denver
College of Architecture and Planning

March 7, 2007

Martin Luther King, Jr. Elementary School Learning Landscape

Architectural Elements

Jay Kost
Noah Bernstein

BEGINNINGS

WE ARE ASKING FOR YOUR INPUT ABOUT *ARCHITECTURAL OPPORTUNITIES*

Architectural Elements

New Orleans's Architectural Design Goals
- Provide shelter against intense sun and rain
- Capture natural breezes

New Orleans's Distinguishing Architectural Elements
- Raised ground floors for flood protection
- Deep porches to protect from the sun's heat
- Tall ceilings which allow the heat to rise
- French doors, full height windows, jalousie windows, shutters, and porch fans allow for maximum air circulation
- Ornamental iron fences
- Garden walls
- Courtyards

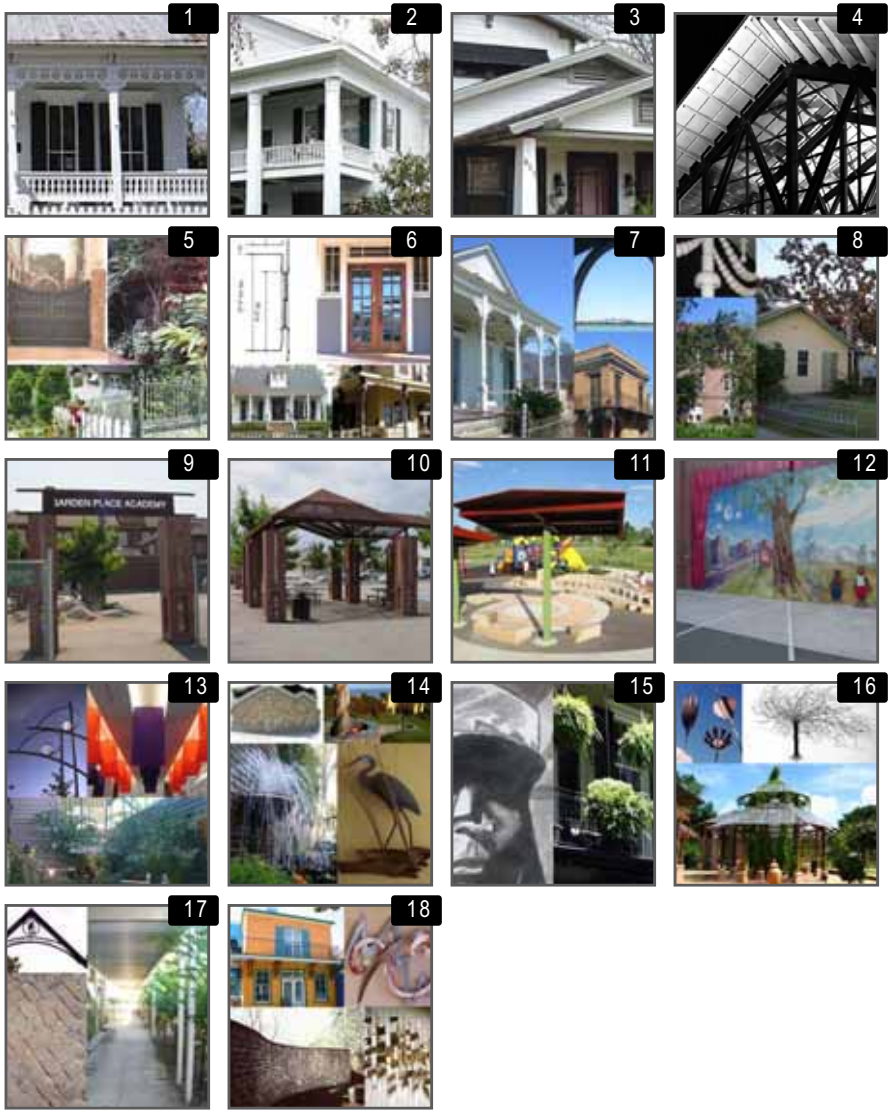
New Orleans's Architectural Influences
- Creole
- Acadian

New Orleans's Architectural Typologies
- Victorian
  - Simple form
  - Porch ornamentation
  - Railing details
  - Decorative cornice millwork
- Classical
  - Simplified version of the Victorian style
  - Main symmetrical body with added sided wings
  - Front porches with Ionic or Corinthian columns
- Arts & Crafts
  - Deep overhangs with exposed roof rafters
  - Use an array of local materials unique to New Orleans
  - Asymmetrical plans
  - Rich colors used on contrasting trim
- Modern Architecture
  - Simple form
  - Lacks ornamental detail
  - Generous use of glass
  - Open interior/exterior spaces

Architectural opportunities for Martin Luther King Jr. Charter School
- School gateways
- Shade structures
- Murals
- Flags
- Planters
- Sculptures
- Water features
- Breezeways

Research Imagery

1) Victorian Architecture Example
2) Classical Architecture Example
3) Arts & Crafts Architecture Example
4) Modern Architecture Example
5) Fences & Wall Examples
   Wooden, Masonry, & Steel
6) Architectural Detailing Examples
   French Doors, Air Flow, Ceiling Heights, Deep Porches & Raised Floors
7) Adjacent Architecture
   Viewframing & Detailing
8) Adjacent Architecture
   Landscape & Fencing
9) DPS Gateway
10) DPS Shelter
11) DPS Shelter
12) DPS Wall Mural
13) Idea Generating
    Banners & Courtyards
14) Idea Generating
    Walls, Ecology, & Water Features
15) Idea Generating
    Murals & Landscape Elements
16) Idea Generating
    Shelters & Sculptures
17) Idea Generating
    Walkways, Gateways, & Pavers
18) Idea Generating
    Colors & Abstraction



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Human & Behavioral Aspects of Children at Play

Ray winn
&
Natalie Kerlakian

BEGINNINGS

We are asking for your input on ***Childhood Development During Play***

OPPORTUNITIES

- This board explains the behavior and development of children in relation to the MLK school.
- Developmental issues related to play include cognitive, emotional, social, and cultural developments.
- Through play children form friendships.
- Play also develops mental skills like problem-solving and vocabulary.

CHILD DEVELOPMENT AND BEHAVIOR

SAFETY:

- Safety is the top priority which affects playground use, where playgrounds should be supervised before, during, and after school

SOCIAL AND PSYCHOLOGICAL FACTORS:

- Interaction with older children and caring adults outside of the home provide guidance as well as mentoring

NATURAL PLAY:

- Access to nature with a range of vegetation provides children with the best opportunity for free and creative play

LEISURELY PLAY:

- Provide alternative play like board tables, puzzles, semi-private places like boulders, tall grasses, and elevation changes
- provide Physical access to play opportunities for children with disabilities

DEVELOPMENT:

- children like spaces which they can manipulate
- Pre School to age 7 start to use exploratory play for creative expression and start problem-solving
- 7-9 year-olds slowly start understanding more rules and play interests develop.
- 10-12year-olds like to invent new rules in games and are start becoming interested in membership and belonging, Ethical and moral behavior becomes a focus.

TYPES OF PLAY

Solitary Play:

- children play away from one another with a great distance between each other and most of the time have their backs turned from the other kids.
- they are engaged in a different activity and do not pay attention to the other children's behavior.

Parallel Play:

- Children play independently from one another, however they are in close proximity to one another.
- they tend to play alongside each other, but do not play together.

Associated Play:

- Children are playing with others and are participating in a similar activity.
- communication and materials are exchanged, but there is no overall goal.

Cooperative Play:

- Children organize themselves into groups with common goals for the activity.
- the activity is group-centered

Competitive Play:

- similar to cooperative play, however the activity has now become a competitive game
- often these can take the shape of team sport activities.

RESEARCH IMAGERY

1. "walking school bus"
2. parallel play
3. associated play
4. parallel play
5. competitive play
6. celebrity role models
7. playing chess
8. cooperative play
9. natural and cooperative play
10. cooperative play- school band
11. after school supervised play
12. cooperative play- working on a mural
13. associative play- children dancing
14. cooperative play- students spreading mulch
15. solitary play
16. competitive play
17. natural play
18. natural play- children planting a tree


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Martin Luther King, Jr. Elementary School Learning Landscape

Outdoor Learning

Angela Jaffuel
Cate Townley

BEGINNINGS

WE ARE ASKING FOR YOUR INPUT ABOUT *Outdoor Learning*

Opportunities

Louisiana Curriculum Standards and ways to incorporate learning experiences in an outdoor setting.

Science

- **Life Science:** The students will become aware of the characteristics and life cycles of organisms and understand theri relationships to each other and to their environment.
- **Earth and Space Science:** The students will develop an understanding of the properties of earth materials, the structure of the Earth system, the Earth's history, and the Earth's place in the Universe.
- **Physical Science:** Students will develop an understanding of the characteristics and interrelationships of matter and energy in the physical world.

Visual Art, Music, Dance

- **Creative Expression**: The ability to imagine, organize, and interpret ideas for expression in the process of creating and producing art forms which involve inspiration, analysis, and problem solving.
- **Aesthetic Perception**: The ability to perceive the unique characteristics of natural environments and human creations, to respond to aesthetic ideas and experiences, and to develop awareness of beauty and meaning in the arts.
- **Historical and Cultural Perspective**: The ability to recognize the arts as a reflection of individual and cultural expression and to appreciate the aspects of history and human experience.

Social Studies

- **Geography:** Students develop a spatial understanding of Earth's surface and the processes that shape it, the connections between people and places, and the relationship between man and his environment.
- **History:** Students develop a sense of historical time and historical perspective as they study the history of their community, state, nation, and world.

Math

- **Geometry:** In problem-solving investigations, students demonstrate an understanding of geometric concepts and applications involving one-, two-, and three-dimensional geometry, and justify their findings.
- **Patterns, Relations, and Functions:** In problem-solving investigations, students demonstrate an understanding of patterns, relations, and functions that represent and explain real-world situations.

Research Imagery

1) Seedling Garden
2) Planting Garden
3) Vegetable Garden
4) Edible Garden
5) Kenetic Sculpture
6) Climbing Rocks
7) Water Cycle Mural
8) Natural Area
9) Playground Map
10)Solar System Panel
11)Logical Thinking Games
12)Weather Forcasting Panel
13)Maze
14)ABC 123 Panel
15)Play Web
16)Drum Panel
17)Wisper Chamber
18)Outdoor Art Space

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Play and Physical Activity

Ryan W. Lemon

BEGINNINGS

WE ARE ASKING FOR YOUR INPUT ABOUT *PLAY AND PHYSICAL ACTIVITIES*

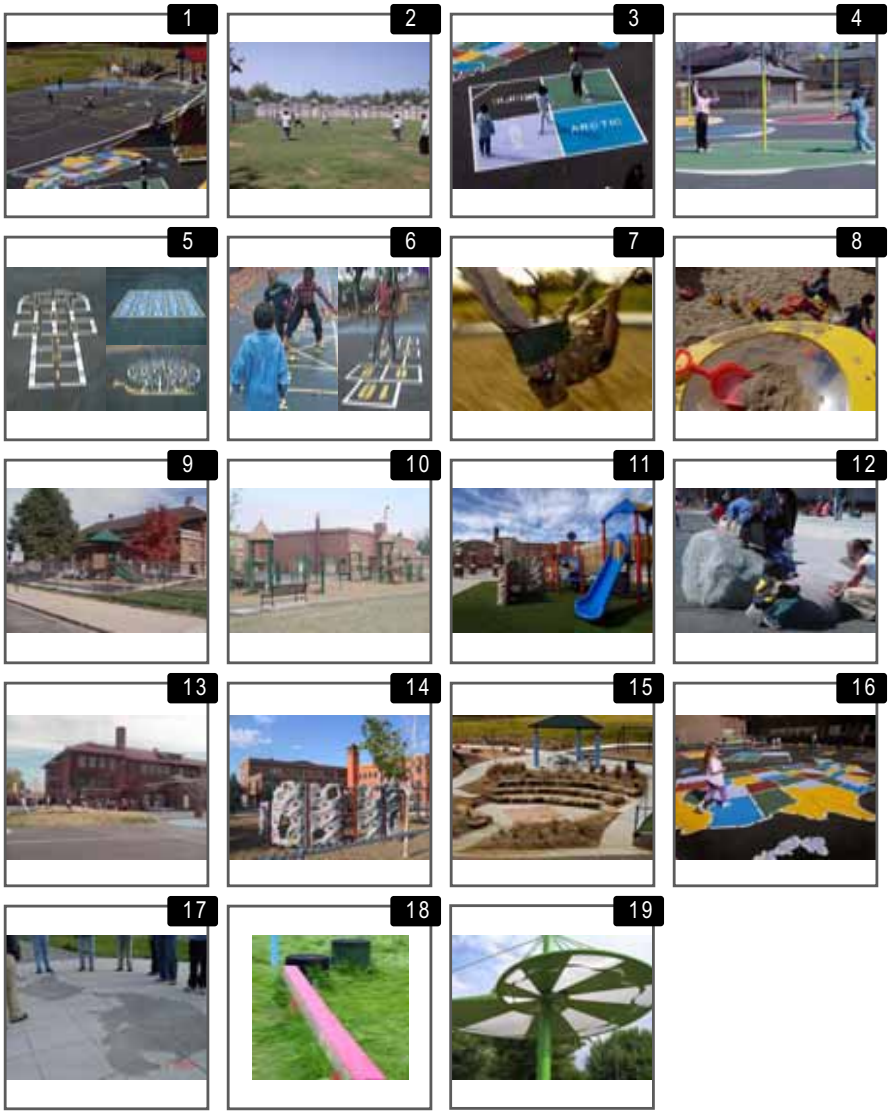
Opportunities

Play equipment should provide opportunities for both mental and physical development. Guided and free play on outdoor equipment helps children of all ages develop their muscles, define their sense of space, develop eye-hand coordination, increase body awareness, increase physical fitness skills, develop strength and endurance, and provide opportunities for social play (Moore, Goltsman and Iacofano 1 997).

Information of Type and Size

	Categories of Play
1	Solitary Play
2	Parallel Play
3	Associated Play
4	Cooperative Play
5	Competitive Play

	Type of Equipment or Activity	Categories of Play	# of "kids"	Dimensions	Safety Zone
1	Basket Ball	1,2,4,5	up to 16 each	35'x70' ea. full court	5'
2	Soccer	1,2,4,5	up to 20	120'x210'	5'
3	Four Square	4,5	4 each	16'x16' (total court)	---
4	Tether Ball	4,5	2 each	18' dia.	---
5	Hop Scotch	1,2,4,5	2-4	10'-6"x3'	---
6	Hop Scotch (Pre-K)	1,2,4	1-2	7'x2'	---
7	Swings	1,2	2+	≈375 SF per each pair	included
8	Sand Box	1,2,3	1+	100+ SF	---
9	Pre-K Play Set	1,2	up to 30	35'x65' (+/-)	included
10	Intermediate Play Set	1,2	up to 25	30'x60' (+/-)	included
11	Primary Play Set	1,2	up to 30	60'x60' (+/-)	included
12	Boulders	1,2,3,4	1+	Each varies	6'-10' inbetween
13	Hills and mounds	1,2,3,4	1+	20+ SF	5'
14	Climbing walls	1,2,5	3-6 (+/-)	15'x15' (+/-)	6'-10'
15	Outdoor Classrooms	4	15-20	25'x25'	---
16	United States Map (50 states)	1,2,4	1+	1200 SF (Scale:1' = 100 mi.)	---
17	World Map	1,2,4	1+	up to 3600 SF (Scale:N/A)	---
18	Balance Beams	1,2,3	1+	10+ LF	6'-10'
19	Shade Elements	1,2,3,4	1+	20+ SF	---



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Martin Luther King, Jr. Elementary School Learning Landscape

Ecological Elements

Matthew Norcross
Trevor Ehlers

BEGINNINGS

WE ARE ASKING FOR YOUR INPUT ON *ECOLOGY*

Ecology

The focus of the ecological research is to establish opportunities for the environment of greater New Orleans to be integrated into the design of the Martin Luther King Jr. Elementary school playground re-design.

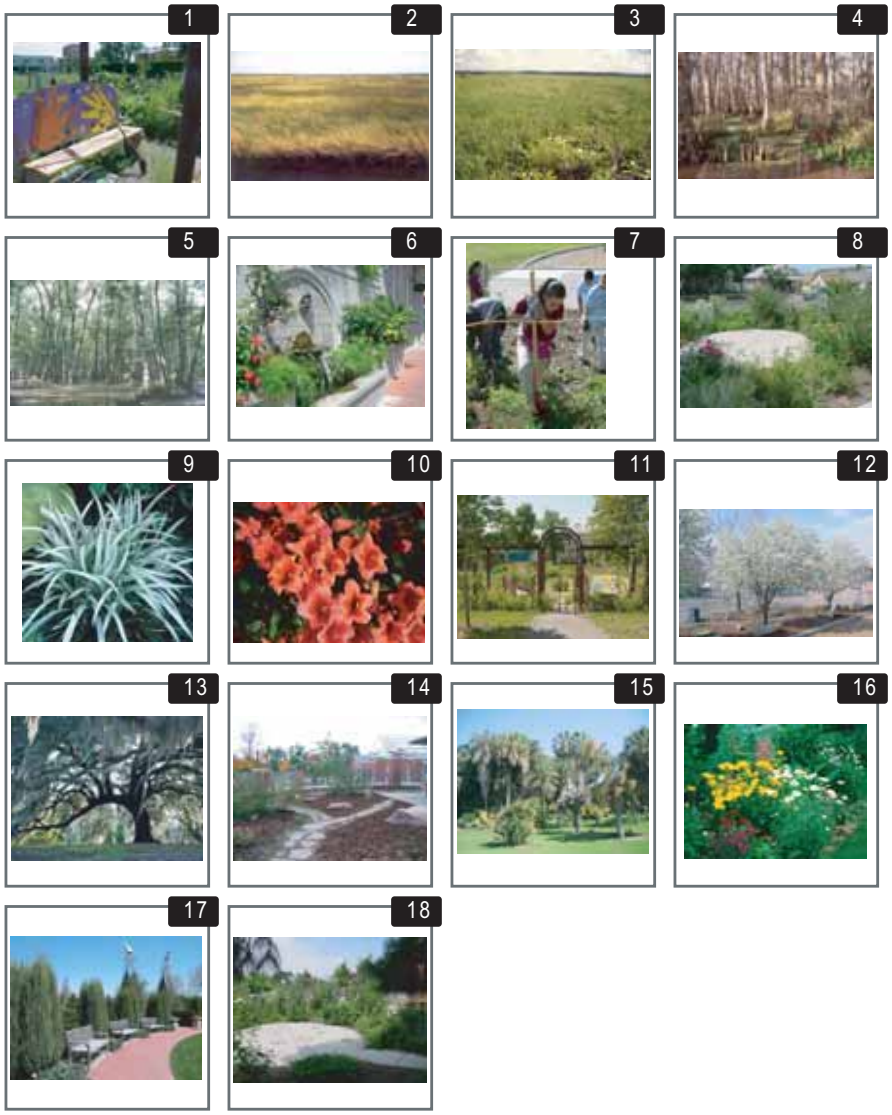
Climate:
*Hot, humid summers with afternoon thunderstorms.
*Average precipitation of 64 inches per year.
*Mild winters with brief periods of cold weather that are rarely severe.

Ecologies:
*Brackish marsh system which is an area that lies between salt marsh and intermediate marsh that is characterized by salt tolerant tall grasses.
*Intermediate marsh system which is characterized by both fresh water and salt water plant species.
*Wetland forest which has standing water and woody vegetation consisting mainly of cypress and tupelo gum trees.
*Upland forest which is usually a dry area consisting of a variety of hardwoods including hackberry, elm, maple, ash, honey locust, and elderberry.

Specific Features:
*Vegetable gardens both for the school and the community.
*Formal flower gardens.
*Ecological learning gardens.
*Butterfly gardens.
*Water features.
*Fruit bearing trees.

Research Imagery

1) Informal Seating
2) Brackish Marsh
3) Intermediate Marsh
4) Swamp/Wetland Forest
5) Upland Forest
6) Wall Garden / Water Feature
7) Childrens Vegetable Garden
8) Learning Garden
9) Ornamental Grasses
10) Flowering Vines
11) Community Vegetable Garden
12) Flowering Trees
13) Live Oak
14) Nature Trail
15) Palm Garden
16) Flower Garden
17) Formal Sitting Area
18) Butterfly Garden



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Dr. Martin Luther King, Jr. Elementary School Learning Landscape

Draft Plan A

Jay Kost
Kat Pecoraro
Zoe Selzer
Raymond Winn
Gary Taipalus
Joe Kuk

BEGINNINGS

WE ARE ASKING FOR YOUR INPUT TO BETTER UNDERSTAND THE SITE OPPORTUNITIES

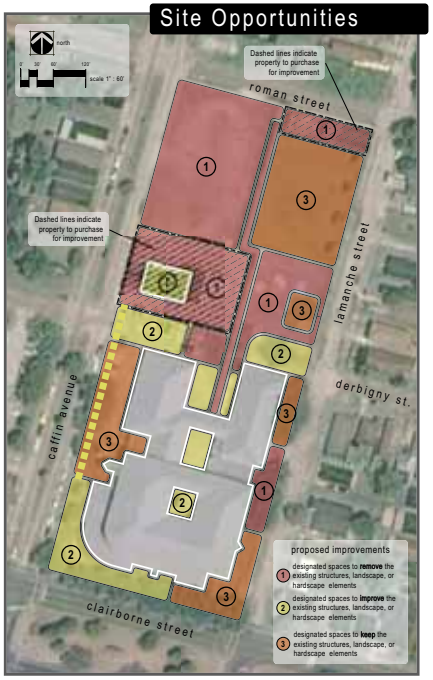
Project Vision

A welcoming and sustainable place for school children and community residents that promotes education, physical development and celebrates the cultural and historical richness of the Lower 9th Ward.

Project Goals

1) Design welcoming elements that can serve both the school and the community throughout the year.
2) Provide a variety of age-appropriate play areas to engage multi-generational use.
3) Ground Dr. Martin Luther King Junior Elementary School into its place, time, and community in the Lower Ninth Ward and New Orleans, Louisiana.
4) Ensure the long term success of the Learning Landscape through sustainable design and community involvement.
5) Provide spaces and activities that educate children through academic discovery.
6) Provide spaces and activities that entice participation and promote physical development.
7) Provide spaces that contain living playgrounds of natural vegetation, natural grasses, and local habitat that spur curiosity
8) Provide spaces that allow solitude and reflection

Site Opportunities



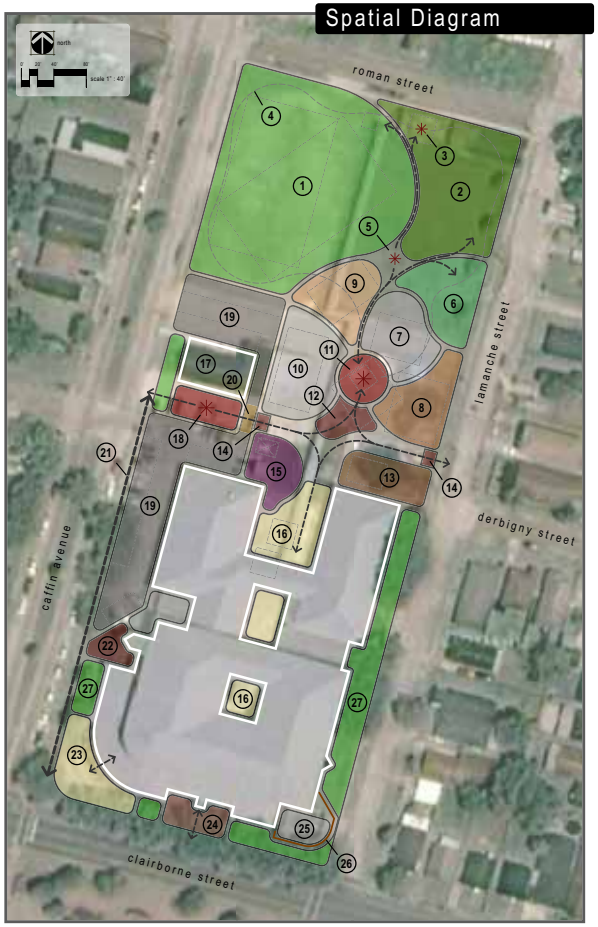
Proposed

Church as a **Community Building**

Passive Art/Outdoor Uses in **Courtyard**

Sod Field for **Multi-Purpose Play**

Spatial Diagram



Ideas

1) Multi-Purpose Field – Older Children
   a) Football & Soccer
   b) Informal Play
2) Multi-Purpose Field – Younger Children
3) Outdoor Classroom/Reading Space
4) Adventure Trail
5) Seating/Minor Focal Point
6) Landform Play Area
   a) Boulders
   b) Mini-Hills and Dips
7) Hard Surface Play - Intermediate
8) Intermediate Playgrounds
   a) Swings
   b) Jungle Gym (Cyprus Tree Themed)
   c) Boulders
   d) Monkey Bars
   e) Simple Machine Themes
9) Primary Playgrounds
   b) Swings
   c) Tire Swing
   d) Play Structures
10) Hard Surface Play - Primary
   a) Basketball Court
   a) 4-Square Courts
   b) Tether Ball
   c) Shuffle Board
11) Community Focal Point (Shelter)
   a) Performance Area
   b) Stage Area for Outdoor Classroom
12) Outdoor Classroom/Reading Space
13) Pre K Play Area
   a) Sandbox
   b) Small Swings
   c) Play Structure
14) Playground Gateways/Entrances
15) Community Garden
   a) Raised Beds
   b) Sculptural Pieces
   c) Plants
16) Passive Art/Outdoor Area
   a) Music and Historical Murals
   a) Seating
   b) Sculptural Elements
17) Community Building
   a) Concessions
   b) Environmental Center
   c) Community Meeting Space
   d) Community Rental Uses
18) Outdoor Community Space
   a) Barbeque Pit
   b) Grill
   c) Picnic Tables & Benches
   d) Rain Shelter
19) Shared School/Community Parking
20) Vehicular Drop-Off/Special Paving
21) Enhanced Community Walk
22) Seating/Meeting Space
23) Outdoor Library Reading Area
   a) Benches
   b) Grass
   c) Shade
24) Primary School Entrance
   a) Gateway
   b) Artistic Elements
25) Mechanical Enclosure
26) Mural/Building Artwork
27) Sod/Foundation Plantings

Site Potential

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Dr. Martin Luther King, Jr. Elementary School Learning Landscape

Concept Plan B

Natalie Kerlakian
Noah Bernstein
Matt Norcross
Trevor Ehlers
Angela Jaffuel
Cate Townley
Ryan Lemon

BEGINNINGS

WE ARE ASKING FOR YOUR INPUT TO BETTER UNDERSTAND THE SITE OPPORTUNITIES

Project Vision

The Dr. Martin Luther King, Jr. Elementary Charter School for Science and Technology Campus will be a multi-generation activity hub which will act as a catalyst to revitalize the lower 9th ward community and reflect the New Orleans way of life.

Project Goals

1) Provide a variety of activities for people of all ages, genders, and special needs.
2) Create spaces that are aesthetically pleasing and are a source of school and community pride.
3) Create outdoor opportunities that promote informal interaction wtih nature, allow for children's social skills to be fully realized, and allow for uses that support the educational curriculum.
4) Provide for the welfare of the lower 9th ward community through healthy outdoor environments.
5) Create easy access play areas that stimulate different types of play.
6) Actively involve children and young people in the planning,building, and maintenence of their own space.
7) Create an outdoor play area that is easily maintainable.

Site Opportunities

To Remain

Spatial Diagram

Ideas

1. Multi-use Play Field
2. Hard Courts - Basket Ball and Tennis
3. Natural walking pathway
4. Leaning garden for children
5. Pre-K play area
6. Community Gardens and natural area
7. Community Picnic areas
8. School gardens
9. Natural area with school garden
10. Outdoor Classroom
11. Courtyards - murals and elevated vegetation
12. Murals along side of school
13. Library and front entrance improvemnt
14. Access points and entry-ways
15. Parking and bus access
16. Bus Drop-off
17. Shade structures

Site Potential

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Dr. Martin Luther King Jr. School Learning Landscape

Community Input from meetings in March 2007

Raymond Winn
&
Zoe Selzer

Research Focus

Community input from March, 2007 student and community meetings

Overview

- This board represents community input from students, parents and community members from meetings in March, 2007.

Interpretation of Stakeholders Feedback

Stakeholders	Comments and Interests
Students	Swimming pool and water features, swings, slides, hard surfaces for play, ball fields, basketball court, shade devices, garden, flowers, trees, snack bar/ concession stand, benches to read and tables to play games.
Parents	Safety concerns at the school, monitoring of school grounds, community garden, swimming pool for community use, relocate the church.
Teachers	Bus pick-up and drop-off issues, public and private parking, contaminated water and soil, access for disabled children, rainwater collection system for watering, garden used to increase nutrition for the students.
Community members	Swimming pool, pecan trees, library access and parking.

Quotes from the Community

Students:
"I want shade on my playground" Eric Lewis Ms. Kelly's 3rd Grade

"Fruit trees with oranges and lemons, butterflies and flowers" Kindergarten Student

"I want swings, shade and a water fountain" 6th Grade Student

"I want a garden on my playground" 2nd Grade Student

Parents:
"I would like to see the church moved off of the school grounds and relocated" Parent

"Need a place for community league games football, soccer, etc". Nakia Davis, Parent

Images

1. Student Drawings
2. Student Drawings
3. Student Drawings
4. Student brainstorming
5. Student brainstorming
6. Student brainstorming
7. Community meeting
8. Community meeting
9. Community meeting

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IMPORTANT COMMUNITY SPACES

WE ARE ASKING FOR YOUR INPUT ON COMMUNITY SPACES AND SAFE PEDESTRIAN ROUTES AROUND THE NEIGHBORHOOD

COMMUNITY SPACES & CIRCULATION

safe routes to school and community spaces

Pictures

1-5) Community center playground
6-9) Community playground near Jackson Barracks
10-12) Hardin Elementary School
13) Community basketball courts
14)Open space near Lawless High School
15) Open space on corner of Andry & Derbigney
16) Open space across the street from Lawless High School
17) Fields at Holy Cross High School
18) Levee off of Florida Ave. looking towards Bayou Bienvenue

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History & Culture
Outdoor Art
Architectural Elements

Kat Pecoraro
Joe Kuk

BEGINNINGS

WE ARE ASKING FOR YOUR INPUT ABOUT *HISTORY & CULTURE, OUTDOOR ART, & ARCHITECTURAL ELEMENTS....*

History & Culture

New Orleans's Rich History
- Founded in 1682,
  Delta of Louisiana and the mouth at the gulf, surrounfing geography influences beginning settlement *"neither land nor sea"*
- Birth Place of Jazz
- Mardis Gras
- Birth of Civil Rights Movements

Outdoor Art

Artists from New Orleans
- Rashida Ferdinand

During her graduate work at Syracuse University, Ferdinand worked with David MacDonald and explored installation as an extension of her ceramic vessel forms as spaces for containment. She began to create sculptures of tree roots, with alcoves of spaces as metaphors for wombs. These narratives about the continuity of life, inclusive of birth, physical death, and regeneration with ancestral memory were also developed in Crick Crack (2001), an outdoor installation within the natural landscape of Stone Quarry Art Park in Cazenovia, NY.

- Amelie Prescott (Small Acts Urban Gardens)

Gives her time to the children of Dr. Martin Luther King Jr. Charter School to help them understand their inner strength to express themselves through natural emotions, artwork, and other forms of activism.

- Nick Busciglio (Small Acts Urban Gardens)

Assists Amelie in discovering the children at Dr. Martin Luther King Jr. Charter School through film, artwork and other forms of expression. Volunteers at the school to provide the children with cameras to interview one another and learn from their personal experiences.

Architectural Elements

New Orleans's Architectural Design Goals
- Provide shelter against intense sun and rain
- Capture natural breezes

New Orleans's Distinguishing Architectural Elements
- Raised ground floors for flood protection
- Deep porches to protect from the sun's heat
- Tall ceilings which allow the heat to rise
- French doors, full height windows, jalousie windows, shutters, and porch fans allow for maximum air circulation
- Ornamental iron fences
- Garden walls
- Courtyards

New Orleans's Architectural Influences
- Creole
- Acadian

Architectural opportunities for Dr. Martin Luther King Jr. Charter School
- School gateways
- Shade structures
- Murals
- Flags
- Planters
- Sculptures
- Water features
- Breezeways

Research Imagery

1) Cooperative Play- Working on a Mural
2) United States Map- Geographic Mural
1699) First Mardis Gras in Louisiana- Venetian Masks shown
1731) Dirty Rice
   Creole and Cajun Flavor
1960) First Schools Desegregated
   Lower Ninth Ward
   Upper Ninth Ward
   Advocates of equality
1963) "I Have a Dream Speech"
   Dr. Martin Luther King Jr.
2005) Resident of the Lower Ninth
2007) Resident of the Lower Ninth
3) Art Installation- Oyster Shells on Cayenne Pepper
4) Art Installation- Grandmothers Letters
5) Denver Public School Shelter
6) Denver Public School Wall Mural
7) Ideas for Outdoor Art
   Banners & Courtyards
8) Ideas for Outdoor Art
   Walls, Ecology, & Water Features
9) Ideas for Outdoor Art
   Murals & Landscape Elements
10) Ideas for Outdoor Art and Shade
   Shelters & Sculptures
11) Ideas for Moving in the Playground
   Walkways, Gateways, Murals, & Pavers
12) Ideas for Outdoor Art
   Colors & Abstraction


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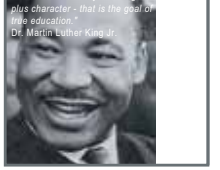
1699

1731

Cuisine of New Orleans, early beginnings


How did we desegregate? **Beginnings in the Lower Ninth and Upper Ninth Ward.**
1960


"The function of education is to teach one to think intensively and to think critically...: Intelligence plus character - that is the goal of true education."
Dr. Martin Luther King Jr.
1963


2005

Herbert Gettridge, resident of the Lower Ninth Ward lived in his house for 56 years and built it with his own hands.


"This is my life and my world, right here. And this is my future of education in the community, the future House of Dance and Feathers." Ronald Lewis
2007


"I am not tragically colored . . . I am too busy sharpening my oyster knife" -Zora Neale Hurston (2004). Installation Art by Rashida Ferdinand
3


"I feel like the Pharoas Old" Installation by Rashida Ferdinand
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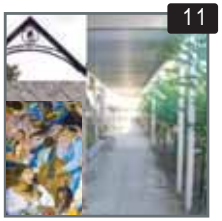
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Spring Semester 2007
Professor Lois Brink

University of Colorado at Denver
College of Architecture and Planning

March 30, 2007

Dr. Martin Luther King, Jr. Elementary School Learning Landscape

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BEGINNINGS

WE ARE ASKING FOR YOUR INPUT ABOUT *Green Building and Renewable Energy, Ecology,Outdoor Learning, and Childhood Development During Play*

Opportunities

The following information is based on visual preferences from students, teachers and parents at the Dr. Martin Luther King Jr. Elementary School.

Sustainable Elements

One of the most innovative ways schools can actively promote green building and renewable energy is by incoporating sustainable materials into their playground.

Renewable Energy: Incorporating options utilizing methane and solar panels.

Sustainable Materials: Rubber flooring used in various ways can be used to enhance a school environment with vibrant colors. Glass "mulch" adds colorful luster to school grounds for murals and artwork. The use of recycled plastic benches offer a variety of seating requiring low maintenance.

Ecological Elements

The focus of the ecological research is to establish opportunities for the environment of greater New Orleans to be integrated into the design of the D. Martin Luther King Jr. Elementary school playground re-design.

Climate: The hot and humid summers, afternoon thunderstorms and average precipitation of 64 inches per year, along with mild winters support the natural environment unique to the New Orleans area.

Ecologies: To increased knowledge of the brackish and intermediate marsh systems along with the wetland and upland forests, choosing vegetation for planting will reinforce the strong ties with the local ecosystems.

Outdoor Learning

Incorporating the Louisana Curricullum Standards along with hands on learning experiences in an outdoor setting, will provide students with an educationally advantageous learning environment.

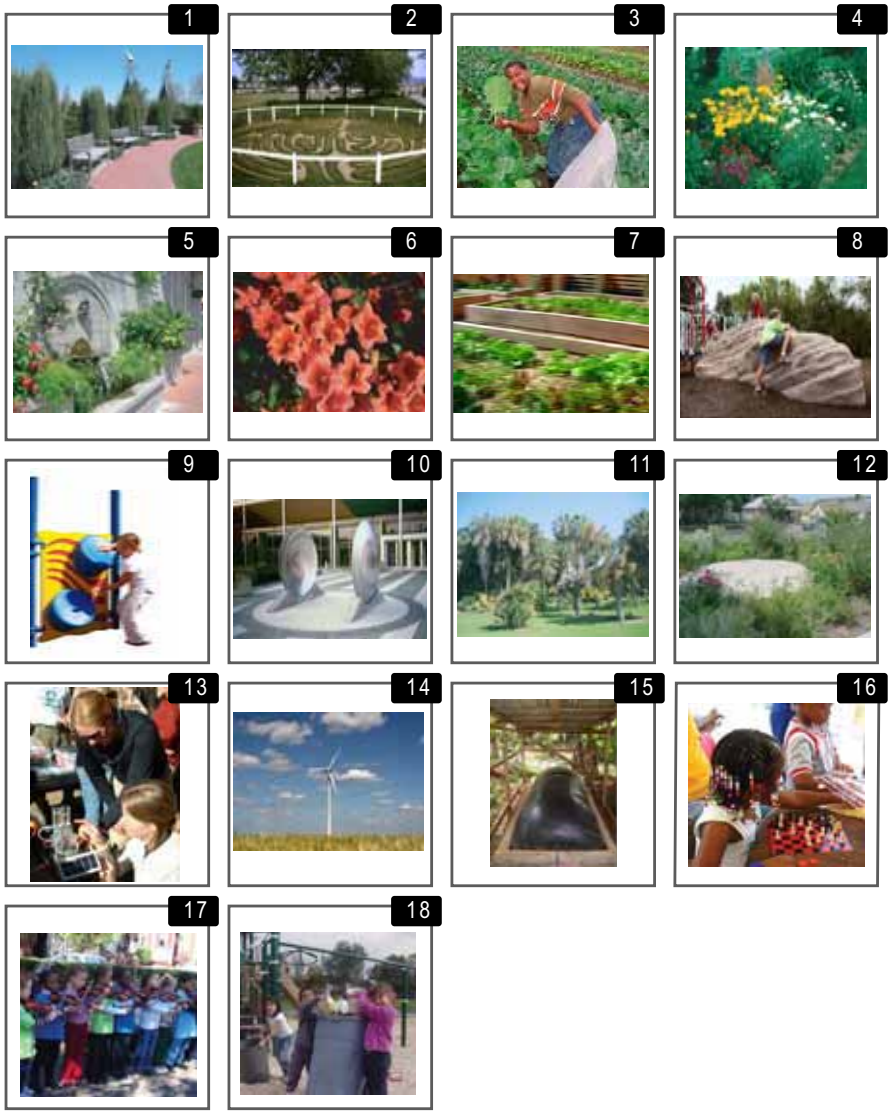
There are many opportunities to include science, visual art, music, drama, social studies and math into an outdoor learning environment.

Human & Behavioral Aspects of Children at Play

The many positive environments an educational learning environment can provide a child, promoting a holistic and healthy self image through play, can make a life long impact on their role in society.

Child Development and Behavior:
Safety, social and psychological factors, natural play, leisurely play and development are 5 key elements that are of great priority to ensure a child's developmental needs are met.

Types of Play
The 5 main types of play, solitary play, parallel play, associated play, cooperative play and competitive play are developmental stages a child progresses through as they grow. All of these are incooperated into the playground design.



Research Imagery

1) Formail Sitting Area
2) Maze
3) Edible Garden
4) Flower Garden
5) Wall Garden / Water Feature
6) Flowering Vines
7) Vegetable Garden
8) Climbing Rocks
9) Drumming Panel
10) Wisper Chamber
11) Palm Garden
12) Learning Garden
13) Solar Science Project
14) Wind Energy System
15) Methane Storage
16) Playing Chess
17) Cooperative Play School Band
18) Cooperative Play Spreading Mulch

Finding Common Ground
New Orleans Style

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WE ARE ASKING FOR YOUR INPUT ABOUT *PLAY AND PHYSICAL ACTIVITIES*

Goals

1. Transition of play opportunities from younger to older.
2. Pre- K, Primary, and Intermediate areas each have soft surface, grassy area, hard surface games, and traditional play equipment.
3. Play equipment should provide opportunities for both mental and physical development.

Dr.Martin Luther King, Jr. Elementary School Learning Landscape

Play and Physical Activity

Ryan W. Lemon
Trevor Ehlers

Information of Type and Size

	Categories of Play
1	Pre-K
2	Primary
3	Intermediate

	Type of Equipment or Activity	Categories of Play			Quantity
1	Basketball				(1) Primary - 2 half courts (1) Int. Full court
2	Soccer/ Football Field				(1) Full-sized regulation field
3	Four Square				(3) Primary (2) Intermedeate
4	Tether Ball				(3) Primary (2) Intermedeate
5	Hop Scotch				(2) Pre-K (2) Intermedeate
6	Tennis Court				(1) Joint-use with basketball court
7	Swings				6 bays (12 swings) 2 bays (4 swings) E.C.E.
8	Sand Box				(1) Pre-K
9	Pre-K Play Set				(1)
10	Intermediate Play Set				(1)
11	Primary Play Set				(1)
12	Boulders				Arranged informally throughout the site
13	Hills and mounds				Located along perimeter areas as buffers
14	Climbing walls				(1)
15	Balance Beams				(2)
16	Physical Fitness Course				(1) Located in natural area
17	Track				(1)
18	Shuffleboard				(3)
19	Free Play Grassy Area				distributed throughout plan
20	Water Play				(1)
21	Baseball backstop				(1)

Preliminary Cost Estimate Dr. MLK Jr Charter School
Spring 07'- Fall 08'

Date: May, 2007

Construction Costs Campus Improvements				
Category	**Unit**	**Unit Cost**	**Quantities**	**Total Cost**
Project Start Up				
Purchase church sites	LS	$150,000.00	1	$ 150,000.00
Survey	LS	$4,500.00	1	$ 4,500.00
Permitting and Barricading	LS	$5,000.00	1	$ 5,000.00
Staking and Layout	LS	$2,400.00	1	$ 2,400.00
Temporary Const. Fencing	LF	$2.00	2500	$ 5,000.00
SUBTOTAL				**$ 166,900.00**
Demolition				
Clear and Grub	SF	$0.08	103125	$ 8,250.00
Sawcut Concrete	LF	$2.50	1200	$ 3,000.00
Remove and relocate parking light polls				
Remove Concrete	SF	$0.75	85625	$ 64,218.75
Remove Concrete Curb and Gutter	LF	$3.00		$ -
Remove Drive Apron	SF	$1.50		$ -
Remove and relocate parking lot lights	EA	$2,500.00		$ -
Remove Church outbuildings	LS	$5,000.00	1	$ 5,000.00
Relocated church	LS	$15,000.00	1	$ 15,000.00
Remove Play Equipment	LS	$4,000.00		$ -
Remove Chain Link Fence	LF	$5.00	640	$ 3,200.00
Remove Bench	EA	$100.00	3	$ 300.00
Relocate Bench	EA	$200.00	3	$ 600.00
Remove Basketball Goal	EA	$400.00	2	$ 800.00
Remove Tetherball Pole	EA	$100.00		$ -
Remove Rubber Surfacing	SF	$1.00	2800	$ 2,800.00
Remove and stock pile covered walkway	LF	$15.00	800	$ 12,000.00
Remove and relocate gateway	LS	$2,500.00	1	$ 2,500.00
Misc Demolition	LS	$1,000.00	3	$ 3,000.00
SUBTOTAL				**$ 120,668.75**
Earthwork and Drainage				
Import Fill	CY	$20.00	500	$ 10,000.00
On-Site Earthwork	CY	$8.00	200	$ 1,600.00
Concrete Pan, 3' width	LF	$20.00	100	$ 2,000.00
Walk Chase	LF	$100.00		$ -
Clean Out Existing Inlet	EA	$1,000.00	3	$ 3,000.00
Jet Existing Storm Lines	LS	$1,000.00	1	$ 1,000.00
Lower/Raise Existing Inlet	EA	$1,200.00	2	$ 2,400.00
Inlet and Grate	EA	$2,400.00	2	$ 4,800.00
Dry Well	EA	$900.00	9	$ 8,100.00
Repair undground lines	LS	$2,500.00	1	$ 2,500.00
4" Perf PVC Drainage Pipe	LF	$7.00	150	$ 1,050.00
4" PVC Drainage Pipe	LF	$6.00	200	$ 1,200.00
6" PVC Drainage Pipe	LF	$10.00	200	$ 2,000.00
8" PVC Drainage Pipe	LF	$14.00	200	$ 2,800.00
SUBTOTAL				**$ 32,450.00**
Site Work				

Project Start Up				
Maze	EA	1700	1	$ 1,700.00
Map Striping	EA	$1,200.00	3	$ 3,600.00
Tetherball Striping	EA	$150.00	5	$ 750.00
Hopscotch Striping	EA	$100.00	3	$ 300.00
Basketball Court Striping	EA	$400.00	2	$ 800.00
Shuffle board Striping	EA	$150.00	2	$ 300.00
4-Square Striping	EA	$150.00	5	$ 750.00
Decorative Striping ($500-2000, varies)	EA	$1,000.00	4	$ 4,000.00
SUBTOTAL				**$ 12,200.00**
Concrete				
Concrete Flatwork, 4" depth	SF	$3.80	8500	$ 32,300.00
Concrete Flatwork, 6" depth (parking)	SF	$4.25	13000	$ 55,250.00
Concrete Color Hardener	SF	$2.50	4000	$ 10,000.00
Integral Color for Concrete	SF	$5.00	4000	$ 20,000.00
Sandblasting with Stain ($500-2000, varies)	LS	$1,500.00	2	$ 3,000.00
Concrete Edger, 8"x6"	LF	$12.00		$ -
Concrete Stairs	SF	$50.00		$ -
Concrete Curbwall, 8"x24" at EWF	LF	$24.00	300	$ 7,200.00
Concrete Curbwall, 12"x24" at EWF w/ fence	LF	$26.00		$ -
Concrete Curbwall, 8"x18" at PIP	LF	$22.00		$ -
Concrete Curbwall, 12"x30" at Sand	LF	$28.00		$ -
Concrete Retaining Wall with Footing	FF	$45.00		$ -
Concrete Wall w/ Stone Veneer & Footing	FF	$70.00		$ -
Concrete Seatwall, 12" w x 16" ht, stemwall	LF	$48.00	200	$ 9,600.00
Sandstone Wall Cap, 3" thick	LF	$15.00		$ -
Concrete Sidewalk Ramp	EA	$650.00		$ -
Concrete Ramp at Play Pit	EA	$1,000.00	2	$ 2,000.00
SUBTOTAL				**$ 139,350.00**
Masonry				
Modular Block Retaining Wall	FF	$22.00		$ -
Dry Laid Sandstone Retaining Wall	FF	$30.00		$ -
Brick Pavers, w/ sand bed & geo-fabric	SF	$8.00	3000	$ 24,000.00
Sandstone Bench, snap cut 60x18x18	EA	$380.00		$ -
Sandstone Bench, snap cut 18x18x18	EA	$250.00		$ -
10' Brick Shelter/Gateway Column	EA	$2,300.00		$ -
SUBTOTAL				**$ 24,000.00**
Soft Surfaces				
Synthetic Turf (pre K area)	SF	$8.00	700	$ 5,600.00
Crusher Fines, 4" depth over geo-fabric	SF	$1.80		$ -
Crusher Fines Stabilizer	SF	$1.00		$ -
Edging, plastic lumber	LF	$5.00		$ -
Edging, plastic standard	LF	$3.00		$ -
SUBTOTAL				**$ 5,600.00**
Metal				
Guardrail, powder coated ($90-130, varies)	LF	$110.00		$ -
Handrail, standard powder coated	LF	$40.00		$ -
Decorative Fence Panel, 4 ht	LF	$130.00	50	$ 6,500.00
Shade Structure with shade sails	EA	$25,000.00	1	$ 25,000.00
Chain Link Fence, 4' ht vinyl coated	LF	$24.00	100	$ 2,400.00

Project Start Up					
Chain Link Fence, 6' ht vinyl coated	LF	$32.00	1200	$	38,400.00
Chain Link Gate, 4' width	EA	$800.00		$	-
Gate, 10' wide double swing	EA	$1,200.00	1	$	1,200.00
Bollard	EA	$500.00	5	$	2,500.00
decorative fencing for courtyard					
Rebuilt cover walk structure	EA	$3,500.00			
Backstop with Hood	EA	$9,000.00	1	$	9,000.00
SUBTOTAL				**$**	**85,000.00**
Recreation Play Equipment					
Play Equipment					
Pre K+B143 Play Structure amendments	LS	$7,000.00	1	$	7,000.00
Primary Play Structure	LS	$25,000.00	1	$	25,000.00
Intermediate Play Structure	LS	$25,000.00	1	$	25,000.00
2-Bay Swings	EA	$2,500.00		$	-
3-Bay Swings	EA	$5,000.00		$	-
4-Bay Swings	EA	$7,500.00		$	-
5-Bay Swings	EA	$10,000.00	2	$	20,000.00
Climbing Wall, prefabricated	EA	$12,000.00	1	$	12,000.00
Climbing Wall, custom	FF	$60.00		$	-
Asphalt, 4" depth track	SF	$2.80			
Track Crusher Fines Stabilizer	SF	$1.00	6000	$	6,000.00
SUBTOTAL				**$**	**95,000.00**
Play Surfacing					
Poured-In-Place Rubber	SF	$16.00		$	-
EWF Surfacing at ECE	SF	$2.80	3500	$	9,800.00
EWF Surfacing at Intermediate	SF	$2.80	4500	$	12,600.00
EWF Surfacing at Swings	SF	$2.80	7000	$	19,600.00
SUBTOTAL				**$**	**42,000.00**
Interactive Areas					
weather station with remote read out		$2,135.00			
The Hills - upland forest	SF	$8.00	2500	$	20,000.00
Landscape pockets - Butterfly, Habitat, Cultural	SF	$5.00	1200	$	6,000.00
Outdoor classroom, informal, 20 students	EA	$7,500.00		$	-
Central Plaza, formal, 60 students	EA	$20,000.00	1	$	20,000.00
Boulder Field, 150 sf, crusher fines	EA	$3,000.00	3	$	9,000.00
SUBTOTAL				**$**	**55,000.00**
Art Elements					
Banner Pole	EA	$850.00	6	$	5,100.00
Mural (courtyard & claiborne)	EA	$7,000.00	3	$	21,000.00
Artist in Resdience (7k.sem)	EA	$7,000.00	2	$	14,000.00
Administer Art Program per semester	EA	$25,000.00	2	$	50,000.00
Tile Project	LS	$6,000.00	1	$	6,000.00
Energy Sculpture (kinetic/solar)	EA	$3,000.00	1	$	3,000.00
Game Tables	EA	$1,200.00	3	$	3,600.00
PreK aligator drum, painted and sealed	EA	$1,986.00	1	$	1,986.00
Children African Dance Drums	EA	$4,000.00	3	$	12,000.00
Gateway ($8000-12,000, varies)	LS	$10,000.00	2	$	20,000.00
SUBTOTAL				**$**	**136,686.00**
Site Furnishings & Athletic Equipment					

Project Start Up					
Picnic Table	EA	$1,200.00	3	$	3,600.00
Trash Receptacle	EA	$645.00	4	$	2,580.00
Bench, 6' with back	EA	$950.00	4	$	3,800.00
Bench, 6' without back	EA	$850.00	4	$	3,400.00
Bike Rack	EA	$710.00	2	$	1,420.00
Seat Boulder with Sandblasting	EA	$350.00		$	-
Soccer Goal	EA	$1,800.00	2	$	3,600.00
Basketball Goal	EA	$1,200.00	6	$	7,200.00
Triple Shootout Adjustable Goal	EA	$2,500.00	1	$	2,500.00
Toss-Up Hoop	EA	$1,000.00		$	-
Bleechers					
Raised Planter boxes					
Tetherball Poles	EA	$350.00	5	$	1,750.00
SUBTOTAL				**$**	**29,850.00**
Planting and Irrigation					
Seed and Soil Prep, low grow-no mow	SF	$0.17	60000	$	10,200.00
Sod and Soil Prep	SF	$0.55	43560	$	23,958.00
Irrigation, seed areas	EA	$0.40		$	-
Irrigation and Water features, court yard	LS	$5,000.00	1	$	5,000.00
Irrigation Repair	EA	$1,000.00		$	-
Shade Tree, 1" caliper	EA	$150.00	35	$	5,250.00
Shade Tree, 3" caliper	EA	$550.00	7	$	3,850.00
Ornamental Tree, 1-1/2" caliper	EA	$150.00	15	$	2,250.00
Evergreen Tree, 5-7' ht (larch)	EA	$150.00	15	$	2,250.00
Palm	EA	$150.00	5	$	750.00
Shrub, #5 container	EA	$30.00	30	$	900.00
Perennial, #1 container	EA	$12.00	30	$	360.00
Ornamental Grass, #1 container	EA	$14.00	20	$	280.00
Shredded Mulch, 4" depth over fabric	SF	$0.80	4500	$	3,600.00
Edging, plastic lumber	LF	$5.00		$	-
Edging, plastic standard	LF	$3.00	500	$	1,500.00
SUBTOTAL				**$**	**60,148.00**
Miscellaneous					
Geo-Technical Report	LS	$1,800.00	1	$	1,800.00
Testing	LS	$3,000.00	1	$	3,000.00
SUBTOTAL				**$**	**4,800.00**
Construction Cost Total				**$**	**1,009,652.75**
Design and Administration					
A/E Fees	3%	Constr Costs		$	30,289.58
Research doc. and eval. 11/2 yrs	LS	$150,000.00	1	$	150,000.00
Neighborhood Watch Program sum & fall 08	LS	$30,000.00	1	$	30,000.00
Outdoor Science Education Program (sem)	EA	$20,000.00	2	$	40,000.00
CM Fees	6%	Constr Costs		$	60,579.17
Contingency	5%	Constr Costs		$	50,482.64
Design and Admin Total				**$**	**361,351.39**
Grand TOTAL				**$**	**1,371,004.14**

Safe Play Spaces to Increase Physical Activity in Inner-City Children:
A Pilot Study of an Environmental Intervention

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Abstract

Objectives. To evaluate the effect of providing a safe play space on inner-city schoolchildren's physical activity.

Methods. In one of two matched neighborhoods, we opened a schoolyard and provided attendants simply to ensure children's safety. Over the next two years we directly observed the number and physical activity levels of children in the schoolyard as well as in the surrounding intervention and comparison neighborhoods. We also surveyed children in the intervention and comparison schools regarding sedentary activities.

Results. During the school year, a mean of 71.4 children used the schoolyard on weekdays and 25.8 on weekends; when observed 66% of these children were physically active. After the schoolyard was opened the number of children outdoors and physically active was 84% higher in the intervention neighborhood than the comparison neighborhood. Surveys showed declines in the intervention school relative to the comparison school in children reporting watching television, watching movies/DVDs, or playing video games on weekdays.

Conclusion. Providing a safe play space was followed by a relative increase in children's physical activity and holds promise as a simple replicable intervention.

Introduction

The prevalence of overweight is rising rapidly in children[1]. Among African-Americans the problem is more severe, with 21.8% of children age 12-19 overweight[1]. The relationship between inadequate physical activity and weight gain is strong and consistent[2, 3]. In spite of national recommendations for greater physical activity, the amount of physical activity practiced by American children remains low[4, 5].

There is increasing evidence that features of the physical and social environment influence levels of physical activity[6-9]. A sense of safety of the neighborhood appears to be one important environmental determinant. Adults who perceive their neighborhoods to be unsafe are substantially more likely to be physically inactive than adults who perceive their neighborhoods as safe10. Outdoor safety is especially important for children, because their time spent outdoors has been shown to be strongly associated with physical activity[11, 12]. Parents of young children rank safety as the most important factor in determining whether they will allow them to play in a given location13. A recent study found that children whose parents perceived their neighborhoods to be particularly unsafe were more than four times as likely to be obese as children whose parents perceived their neighborhoods to be safe[14].

Changes in family structure and work have accentuated the impact of neighborhood safety on physical activity. The

proportion of children whose mothers are employed outside the home has increased in recent decades. While pre-school children whose mothers work often attend structured day care centers or are cared for by relatives, 23% of school-aged children whose mothers are employed outside the home are left alone during after-school hours[15]. One multi-site study found that when children are in self-care, their most frequent activity by far is watching television, a sedentary activity strongly associated with obesity[16, 17]. In recognition of the need for more opportunities for physical activity for children, the Institute of Medicine has recommended that schools be used as community centers for physical activity during after-school hours[18].

In spite of the recognition of environmental effects, there have been very few interventions developed that have been demonstrated to increase physical activity or reduce obesity in children by changing the environment. We implemented a pilot intervention in which we provided a safe play space in a low-income inner-city neighborhood and evaluated its impact on physical activity of children.

Methods

Setting

The study took place in two low-income neighborhoods in New Orleans that were approximately one mile apart but were separated by a canal. The intervention and comparison neighborhoods were similar in the 2000 census in median household income ($19,185 vs. $21,297), percent African-American (99% vs. 90%), and percent of households headed by females (both 37%); the intervention neighborhood had a slightly lower population density (10,144 vs. 14,717 residents per square mile). Each neighborhood had a district public elementary school containing a schoolyard that before the study was locked when the school was not in operation. The catchment districts for the two schools were such that nearly all students lived within one-half mile of their respective neighborhood school. The intervention school taught children in pre-Kindergarten through 6th grades and the comparison school pre-Kindergarten through 5th grades. In both schools greater than 99% of the children were African-American. The intervention school had a higher "school performance score" (69.6 vs. 38.3), a composite measure based on standardized test scores and attendance for which the highest-performing schools in the city scored 130.

Intervention

The intervention took place between April 2003 and May 2005 and consisted of providing a safe, supervised space (the schoolyard) in which children could engage in free play. On days when school was in session, the schoolyard was open from school dismissal time, usually 3:00 pm, until 5:30 pm or dark. It was open on Saturdays 10:00 am – 3:00 pm, and on Sundays 12:00 pm – 3:00 pm until April 2004, when the Sunday session was discontinued because of low attendance. During the summer of 2003, the schoolyard was open on the same days and hours as it was during the school year; during the summer of 2004, the schoolyard was open on this same schedule until it was closed on July 10, reopening at the beginning of the next school year. The comparison school's schoolyard remained locked during the study until January 2005 when another program began to use that location for a small limited-enrollment after-school program.

Any child between the second and eighth grades, or in Kindergarten or 1st grade accompanied by an older sibling or parent, who had written parental permission was allowed to use the intervention schoolyard during its hours of operation, regardless of whether he or she attended the school. No fees were charged. Children were required to check in with an attendant upon entering the yard each day to verify parental permission, but afterward could enter and exit freely. Three to four attendants (almost all of whom were teachers) were paid to prevent fights or bullying among children, prevent vandalism or theft of recreational equipment, and prevent adults or children outside of the designated age range from entering the schoolyard, but they did not organize, require, or even suggest specific activities to children. Parents could accompany their children in the yard, but almost none did. Liability concerns were addressed by the project purchasing additional liability insurance for the school, at a cost of $550 per year. The cost for 12 months of salaries for all of attendants and a custodian when school was not in session was $49,000, which was paid by the research project.

The intervention schoolyard was approximately 5,800 square meters in size. It included an installed play structure with impact-absorbent surfacing, large paved areas in which basketball hoops were stationed and a four-square court was painted, and an open grassy field. The project provided and maintained ample sports equipment such as footballs, basketballs, playground balls, hula hoops, jump ropes, Frisbees, and parachutes. A CD player/radio was also provided to supply music for dancing, and a sprinkler was installed during the summer months.

Evaluation

Attendance – The number of children using the schoolyard was taken from attendance records kept by schoolyard staff.

Physical activity - The number and physical activity levels of children in the schoolyard and in the neighborhoods surrounding each school were measured by direct observation. Observations occurred after school on five randomly selected weekdays and four randomly selected weekend days during a 4-week period before the intervention began and during each quarter throughout most of the intervention period (April 2003 – October 2004). During the last two quarters (November 2004 – January 2005 and February – April 2005) observations were increased to ten randomly selected weekdays (two for each weekday) and two randomly selected Saturdays.

The physical activity of the children in the schoolyard during the designated hours was assessed using a modified version of the System of Observing Play and Leisure Activity in Youth (SOPLAY)[19, 20]. It is based on momentary time-sampling in which periodic scans in a target area are made according to an established schedule. At each scan and in each target area, counts are made of the number of children engaging in each of three different levels of physical activity: sedentary (lying, sitting, or standing), walking, or very active (e.g. running, jumping rope, climbing on play equipment). Using mechanical counters mounted on boards, two observers independently made counts of boys and girls at each activity level; their results were averaged.

To measure any effect of the intervention on activity of children in the neighborhood surrounding the schoolyard, we developed a modification of SOPLAY for measuring physical activity of children in neighborhoods. For each neighborhood we defined a "Neighborhood Measurement Area" of 8 blocks by 8 blocks (approximately 2/3 mile by 2/3 mile) that surrounded the school; the areas approximated two census tracts in the intervention area and three census tracts in the control area. In each Neighborhood Measurement Area, a driver and an observer drove at 10 mph or slower on standard routes that traversed every street oriented North-South. An observer in the passenger seat identified children outdoors on the streets driven and on the cross-street blocks to the east of all intersections. Children playing in back yards could not be observed and were thus not included in the measurement. Each identified child who appeared to be in the target age range (2nd through 8th grade) was counted and coded according to the child's activity level. In the comparison neighborhood, the areas observed included the comparison schoolyard. To control for the effect of weather on outdoor activity, observations occurred simultaneously in the intervention and comparison neighborhoods, as well as in the intervention schoolyard. To control for inter-observer bias, three observer teams were rotated among the neighborhoods and intervention schoolyard. To assess the inter-observer reliability of the method, we conducted sixteen paired observations from the same car driving through intervention and control neighborhoods; the intraclass correlation coefficient of the observers' counts of active children was 0.962.

Sedentary activities – To assess the effect of the intervention on sedentary activities, we conducted annual self-report surveys of children. For practical reasons, these surveys were conducted with students enrolled in the elementary schools in the intervention and comparison neighborhoods, so only children in the 2nd through 5th grades were included. All children in these grades who had written parental consent to be included in the measurement and were available in school were surveyed. Surveys were administered simultaneously in intervention and comparison schools on Tuesdays in March or April, and students were asked about activities during the previous afternoon/evening, on the previous Saturday morning and on the previous Saturday afternoon/evening. We used the procedure and questions developed by Robinson for 3rd- and 4th-graders[17]; for each activity, children coded their time spent on a nine-level semi-quantitative scale ranging from "none" to "6 hours or more".

Body composition – We measured height, weight, and an estimate of body fat using bioelectrical impedance analysis (BIA) before the intervention began (in February 2003) and again in May 2004 and May 2005. Children included in the measurements were those in 2nd through 5th grades in the schools in intervention and comparison neighborhoods. BIA measurements were performed with the Quantum II Body Composition Analyzer (RJL Systems), following procedures used by Houtkooper et al[21]. Children were measured supine in the late morning or early afternoon.

Informed consent procedures for human subjects were followed according to guidelines established by the Institutional Review Board of Tulane University; parents or guardians of children returned a form specifically stating whether or not they wanted their children to participate.

Data analysis

To assess the relationship between time period (before vs. after the intervention began) and neighborhood (intervention vs. comparison) in the number of children outdoors and physically active, we calculated p-values using chi-square tests and calculated confidence intervals for the differences in the number of children observed using paired t-tests.

Data from self-reported surveys on time spent in sedentary activities were dichotomized into any time versus no time. To assess statistical significance of changes from baseline between the two schools in the reporting of sedentary activities, the three survey years were dummy-coded and logistic regression models built; the p-values reported are for school-by-year interactions.

Children's fat-free mass was estimated from their weight, height and bioelectrical impedance using the formula derived by Houtkooper21: FFM = 0.61 x H2/R + 0.25 x W + 1.31, where FFM is the fat-free mass in kilograms, H is the height in centimeters, R is the resistance in ohms, and W is the weight in kilograms. To assess changes in means for body mass index (BMI) and body composition in the serial cross-sectional samples we used analysis of variance. For the children who were measured at baseline and again two years later we conducted a two-sample t-test comparing the intervention and comparison schools for the change in BMI over the two years.

Results

Participation

The schoolyard was immediately popular upon opening. Attendance varied little by season but did vary substantially with whether school was in session. During the school year, attendance was higher on the weekdays (71.4) than weekends (25.8); during the summer, the mean attendance was 27.8 on weekdays and 14.2 on weekends. Approximately 80% of children using the yard were in grades 2-5, 18% were in grades 6-8, and the remainder were younger siblings in Kindergarten or 1st grade. Attendance was nearly equal in boys (50.5%) and girls (49.5%).

During the 12 months that included the 2003-04 academic year and following summer, a total of 710 children attended the schoolyard at least once, of which 506 (71%) were enrolled at the intervention school and the remainder attended other schools. Only one child from the comparison school visited the intervention schoolyard, and he visited one day only. Of the 379 children enrolled in grades 2-5 in the intervention school in the 2003-04 school year, 283 (75%) visited the schoolyard at least one time over 12 months, and among these students, the mean number of days attended over 12 months was 32 (median 22).

Physical activity in the schoolyard

Of the children observed in the schoolyard, 33% were recorded as "very active" and 33% as "walking", for a total of 66% who were physically active when observed. Interestingly, this did not differ by sex (66% of boys and 67% of girls were active).

Physical activity in the neighborhoods

Data on observed activity in the neighborhoods surrounding

the schoolyard as well as the intervention schoolyard itself are shown in Table 1. In the four weeks before the intervention began, the mean number of children per day observed to be outdoors and physically active (i.e. categorized as "walking" or "very active") in the intervention neighborhood was 3% lower than in the comparison neighborhood (65.1 vs. 67.4). After the intervention began, the mean number of children observed outdoors was lower in both neighborhoods, but in each of these eight quarters the number of active children was greater in the intervention neighborhood (exclusive of the schoolyard) than in the comparison neighborhood; for all eight quarters combined we observed 30% (CI 18%, 43%) more active children in the intervention neighborhood (50.4 vs. 38.7, p<.0001). For the entire intervention period, 84% (CI 66%, 101%) more children were outdoors and active in the intervention neighborhood and schoolyard combined than in the control neighborhood (71.1 vs. 38.7, p<.0001).

Sedentary activities

Table 2 shows data on consent to participate in surveys regarding sedentary activities and anthropometry at baseline and the two follow-up measurement periods for children in the schools in the intervention and comparison neighborhoods. Consent was provided by parents for 67%-81% of enrolled children. Of those for whom consent was provided, 90% or more were surveyed and 92% or more measured.

Data on trends in self-reported sedentary activities the day before the survey are shown in Figure 1A-C. At baseline, children in the intervention school were more likely to report most types of sedentary activities, but over the two follow-up surveys, children in the comparison school tended to show an increase in sedentary activities, while children in the intervention school tended to show a decline. For example, from baseline to the two-year follow-up surveys, the percentage of children reporting watching television increased from 83% to 92% in the comparison school and decreased from 92% to 88% in the intervention school (p=.018 for school-by-year interaction). Similarly, the percentage of children reporting watching movies or DVDs increased from 61% to 70% in the comparison school and fell from 60% to 50% in the intervention school (p=.004), and the percentage of children reporting playing video games increased from 55% to 61% in the comparison school and fell from 62% to 48% in the intervention school (p=.001). These changes were greater in the second year of follow-up than the first and achieved statistical significance only after the second follow-up year. Changes in computer use, homework, and reading were not statistically significantly different across the surveys between schools.

Body composition

From the baseline to the 2-year follow-up measurement there were increases in both the comparison and intervention schools in children's mean body weight (3.89 vs. 2.04 Kg) and BMI (1.12 vs. 0.32). These changes were not statistically significantly different between intervention and comparison schools after controlling for age and gender (p>.40). Similarly, there were no significant differences between schools in the increase in fat mass or percent body fat (Table 3).

A cohort of 160 2nd and 3rd grade children were enrolled in the study at baseline and were measured again two years later. In this embedded cohort the mean BMI change was 2.25 in the intervention school and 2.39 in the comparison school (p=.68).

Discussion

In this pilot project, we found that when a safe play space was made available within a low-income residential neighborhood, many children used it for free play and most of those using it were physically active. We also found a substantial (84%) increase in the total number of children outdoors and physically active in the intervention area relative to the comparison area, and evidence to suggest that the intervention may have reduced time spent in sedentary activities. Overall the project provides additional evidence that perceived lack of neighborhood safety may be an important determinant of physical activity in children and suggests that physical activity levels of low-income urban children may be increased through simple environmental interventions that provide safety.

Several research groups have demonstrated that by engaging children in organized physical activity programs they can increase their physical activity levels, and some of these interventions have been followed by reductions in body fat in intervention children compared to children in comparison groups[22-29]. However, these interventions are generally complex and require substantial training and oversight of staff[29-32]. There is a need to develop additional models for promotion of physical activity at the community level that are less complex to implement and are sustainable. Our intervention was simple to implement and required almost no staff training. While it cost our project $49,000 per year, we believe it could be implemented for less than this in many schoolyards by employing fewer staff. Interestingly, the children participating in our project spent a greater proportion (66%) of their time physically active than elementary-school children in other studies participating in standard physical education classes (37%)[33] or in the Child and Adolescent Trial for Cardiovascular Health (CATCH) project (52%)[23]. This may be due to the fact that in our project, unlike in organized programs, none of children's time was spent in instruction.

Besides the many health benefits of active play itself, as well as the potential social benefits of the children spending time with other children, an intervention such as the one in this project can have health benefits if it simply reduces time spent in spent in sedentary activities, particularly watching television. In fact, in one successful school-based intervention to reduce obesity in middle school children, the benefit was found to be almost entirely mediated by a reduction in television watching[24]. We attempted to assess the impact of our intervention on television watching and other sedentary activities through self-report surveys of children. The trends were encouraging, with relative reductions over the course of the study in reports of watching television, watching movies or DVDs, and playing video games. However, it is difficult to draw a firm conclusion from these self-report data because the reductions occurred in the second year after the intervention began, and because much of the relative change appeared to reflect increases in sedentary activities in the comparison school.

Our observation data demonstrated a consistent and substantial increase in the number of children outdoors and physically active

in the intervention neighborhood relative to the comparison neighborhood for the entire intervention period. Interestingly, this relative increase was found even when excluding the number of children in the schoolyard itself. However, we also found a decrease between pre- and post-intervention in the mean number of children active outdoors in both neighborhoods. Weather and other neighborhood environmental factors that change over time are likely to influence outdoor play, and our pre-intervention measurements were made over a shorter period of time than our post-intervention measurements (4 weeks vs. 3 months), during which the weather was particularly pleasant. We are unable to control for time-dependent environmental factors in the pre- vs. post-intervention comparison, but we did control for them in the neighborhood comparison by conducting observations simultaneously in both neighborhoods, thus we believe the inter-neighborhood comparisons are the most valid measures of intervention effect. Nonetheless, future implementations of this intervention should be evaluated with longer baseline periods to better assess its effect over time as well as across a larger number of neighborhoods. These evaluations should also assess any possible "spillover" effect into surrounding neighborhood areas.

The relative increases in the number of children playing outdoors in the neighborhood are encouraging. However, the fact that the schoolyard was used by children far more on weekdays than weekends, and more during the school year than during the summer suggests that connection to the school day is important to the success of this intervention.

Our study has clear limitations. First, because it included only one intervention neighborhood and one comparison neighborhood, changes in measures of sedentary activities or outdoor play outside of the schoolyards could have been caused by factors unrelated to the intervention. Second, although our measures of physical activity of children in the afternoons were by direct observation and thus were objective, we did not measure objectively their physical activity during the remainder of the day; our measures of sedentary activities were based on self-report by young children, which have limited validity. Measuring 24-hour physical activity in young children objectively has proven to be difficult, making evaluation of interventions in this age group challenging[36, 37].

In spite of these limitations, the results of this pilot project are encouraging. Because physical activity levels in children are uniformly low, there is a need to develop interventions that can be applied to large numbers of children at low cost. The simple intervention of providing safe play spaces should be implemented in larger trials and evaluated for its effect on physical activity, sedentary activities, perceived neighborhood safety, and physical activity of children in neighborhoods beyond these play spaces.

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Contributors

Thomas Farley and Rebecca Meriwether conceived of the project, designed it with the help of other authors, and oversaw the implementation. Thomas Farley and Erin Baker analyzed the data, and Thomas Farley wrote the manuscript. Erin Baker and Liza Watkins managed the intervention and data collection. Carolyn Johnson and Larry Webber provided ongoing advice throughout the project on study design, data collection, and issues regarding conducting research projects in schools. All authors reviewed and commented on drafts of the manuscript.

Institutional Review Board Approval

The protocol for this study was reviewed and approved by the Institutional Review Board of the Tulane University Health Sciences Center.

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Table 1. Observed physical activity in intervention schoolyard, intervention neighborhood, and control neighborhood

	Comparison Neighborhood Mean children per day		Intervention Neighborhood Mean children per day		Intervention Neighborhood vs. Comparison Neighborhood % Difference		Intervention Schoolyard Mean children per day		Intervention Neighborhood + Schoolyard vs. Comparison Neighborhood % Difference	
Quarter/Year	**Total**	**Active**	**Total**	**Active**	**Total**	**Active**	**Total**	**Active**	**Total**	**Active**
Pre-intervention*	102.0	67.4	97.8	65.1	**-4%**	**-3%**	0.0	0.0	**-4%**	**-3%**
2nd, 2003	81.9	44.1	85.3	48.9	**4%**	**11%**	21.2	11.6	**30%**	**37%**
3rd, 2003	80.0	37.3	84.0	51.1	**5%**	**37%**	21.9	12.7	**32%**	**71%**
4th, 2003	61.8	37.1	66.8	41.3	**8%**	**11%**	34.3	20.8	**64%**	**68%**
1st, 2004	68.2	40.2	88.6	61.4	**30%**	**53%**	36.8	24.4	**84%**	**114%**
2nd, 2004	51.5	25.8	56.9	35.6	**10%**	**38%**	11.8	7.8	**33%**	**68%**
3rd, 2004	50.4	31.2	80.2	53.6	**59%**	**72%**	53.0	38.2	**165%**	**194%**
4th, 2004	57.5	40.8	61.8	43.3	**8%**	**6%**	32.3	23.8	**64%**	**64%**
1st, 2005**	75.8	50.5	90.2	62.9	**19%**	**25%**	30.4	18.8	**59%**	**62%**
Mean during intervention	65.4	38.7	77.1	50.4	**18%**	**30%**	31.1	20.7	**66%**	**84%**

* Pre-intervention measurements made over a 4-week period
** Comparison neighborhood figures include mean of 7.9 children per day (5.7 active children per day) observed in comparison schoolyard

Table 2. Consent and participation in surveys and anthropometry at intervention and comparison schools

	2003		2004		2005	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
Enrollment in grades 2-5	366	344	379	318	381	278
Consented (%)	267 (73%)	232 (67%)	282 (74%)	234 (74%)	309 (81%)	214 (77%)
Refused (%)	36 (10%)	33 (10%)	27 (7%)	24 (8%)	40 (10%)	33 (12%)
Form not returned (%)	63 (17%)	79 (23%)	70 (18%)	60 (19%)	32 (8%)	31 (11%)
Surveyed (% of consented)	257 (96%)	208 (90%)	270 (96%)	215 (92%)	300 (97%)	211 (99%)
Measured (% of consented)	245 (92%)	225 (97%)	264 (94%)	221 (94%)	304 (98%)	206 (96%)

Table 3. Body mass and body composition of children in intervention and comparison schools, 2003-2005

	2003		2004		2005		Change 2003-05*	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
N	245	225	264	221	304	206		
Weight (Kg)	37.59	36.19	39.79	38.13	39.63	40.08	2.04	3.89
BMI (Mean)	19.49	18.78	19.95	19.23	19.81	19.90	0.32	1.12
Fat Free Mass (Mean)	29.23	28.64	29.67	29.18	30.10	30.51	0.87	1.87
Fat Mass (Mean)	8.36	7.56	10.00	8.99	9.54	9.57	1.18	2.01
% Fat (Mean)	19.6%	19.3%	23.0%	21.9%	21.9%	21.1%	2.3%	1.9%

* None of the changes over time in the intervention school compared to the comparison school are statistically significant (p>.40 after controlling for age and gender)

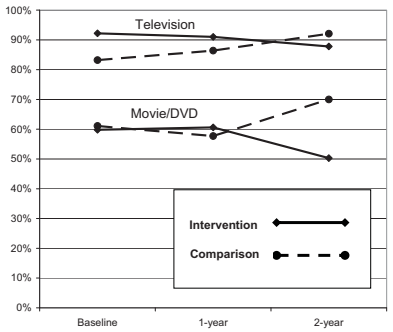

Figure 1A.

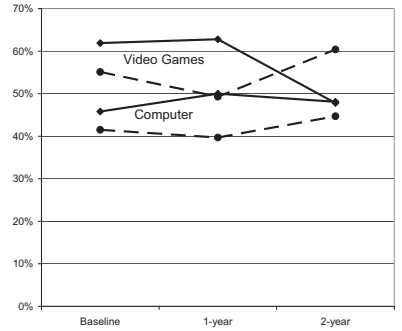

Figure 1B.

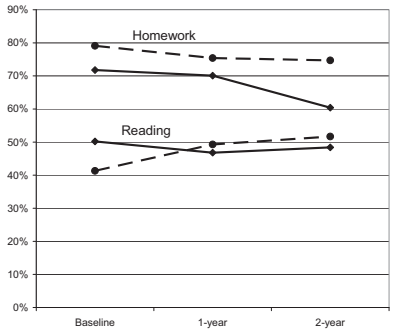

Figure 1C.