

COLUMBINE ELEMENTARY SCHOOL:

A Landscape Master Plan for Elementary School Campus Improvements

Prepared For: Denver Public Schools
900 Grant St.
Denver, Colorado

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Approved _____ , _____
Principal, Columbine Elementary date

Approved _____ , _____
CDM Representative date

Approved _____ , _____
F. M., DPS Facility Management date

Approved _____ , _____
Grounds Supervisor, DPS Facility Management date

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PROJECT INTRODUCTION

The Challenge

Studies show that a well-planned and equipped exterior play area enhances the learning environment resulting in improved learning and achievement. Such play areas provide physical and mental challenges that translate to improved health and learning attention. Furthermore, with proper design, these areas themselves become outdoor classrooms or learning landscapes. One of the principal secondary goals of all schools, including elementary, is to provide a focus for community- a place to gather and to meet, a place to enjoy, a place that enhances the community's appearance. A reflection of this community importance is Denver's Mayor Wellington Webb's statement, "As Mayor, I have long recognized that we cannot have a great city and great neighborhoods without great schools."

Denver Public Schools [DPS] is an urban school district with many of the same challenges of other urban districts. The infrastructure is aging – the average facility age is almost 50 years. The ongoing 1998 General Obligation Bond [GOB] will increase the number of schools to 130 but contains no funding for existing elementary or any other existing school playground. Approximately 75 DPS elementary schools require moderate to extensive renovations or upgrades to meet adequate playground standards. These include replacing playground equipment, providing irrigation and sod [to eliminate gravel and dirt fields], providing American with Disability Act [ADA] accessibility, and providing an outdoor classroom learning environment. Playgrounds lacking appropriate choices for children become arenas to bully and tease. Recess should be a positive experience that compliments their academic development; a place where children develop their emotional, physical and social skills.

The Solution

The" Learning Landscape" program is an entrepreneurial community-minded alliance of public and private interests that seeks to strengthen Denver Public Elementary Schools and their surrounding neighborhoods by designing new multi-dimensional playgrounds and social gathering places. The success of this program is founded on a mutual respect of aesthetic, maintainability, safety, and recreational issues. The University of Colorado at Denver's Landscape Architecture department offers a seminar course called FINDING COMMON GROUND—EXPLORING THE URBAN EXPERIENCE. Students of landscape architecture, architecture and other disciplines have come together with Professor Lois Brink to research current educational, sociological, and environmental thought regarding urban space in general and elementary school grounds in particular. Each student in the course selects a school from a predetermined pool and uses this knowledge to develop a vision and master plan for each school. The master plan approach will suit a multi-faceted contemporary existence—

engaging a child's educational and recreational experience with that of the community at-large.

The Intent of the Master Plan

The master plan is a written report and plan that sets forth the structure for future campus improvements. Each school has a vision that speaks to the desires of the school and surrounding community. The vision is further delineated into goals that identify the major components for implementation. These goals are defined through the use of text and imagery. A programmatic list of uses is also developed. Lastly, each master plan sets forth the aesthetic ordering system or systems that will be used on the design phase to organize the programmatic uses. This plan once approved will provide a framework for fund raising and future construction.



Figure 1: Fairmont Elementary in Denver



Figure 2: Swansea Elementary in Denver

PART I: ASSESSING THE PRESENT SITUATION

Section 1: The Location

Columbine Elementary is located to the northeast of downtown Denver at 2540 E. 29th Ave., the corner of 29th Ave and Columbine Street, in the North City Park neighborhood. The student population lives in the surrounding area with the school boundaries at 36th to the north and 26th to the south. The school is located three blocks north of the City Park Golf Course and is surrounded by smaller neighborhood parks with Fuller Park to the west and NE Denver Community Park to the east. The secretary at Columbine said, "I wouldn't let my children play in Fuller Park because crime activity takes place there making it very dangerous."



Figure 3: Location of Columbine, Source: Mapquest.com

This community is predominantly a single-family residential neighborhood with sixty percent of the homes owner-occupied. Forty percent of the houses in this neighborhood were built before 1940 and are situated on medium-sized lots that allow for improvements and expansion. A majority of the houses are brick. There are not any apartment complexes in the area. Many African Americans moved into this area in the 1950's and 1960's and are currently elderly and retired. A majority of these elderly people are now grandparents or great-grandparents of the children that attend Columbine Elementary.

Section 2: History of the School and Neighborhood:

Columbine Elementary School and the North City Park Neighborhood have a rich history. The original Columbine school of 1888 was a one-room frame building in the middle of the prairie surrounded by cow pastures and a few brickyards. The school opened with one teacher and forty students, from settlements near the brickyards and dairy farms. By 1892, conditions were crowded and the school board decided to build a larger building finished in 1897. The historic Dora Moore elementary school at 9th and Downing appears to be the same architecture as the school built in 1897.

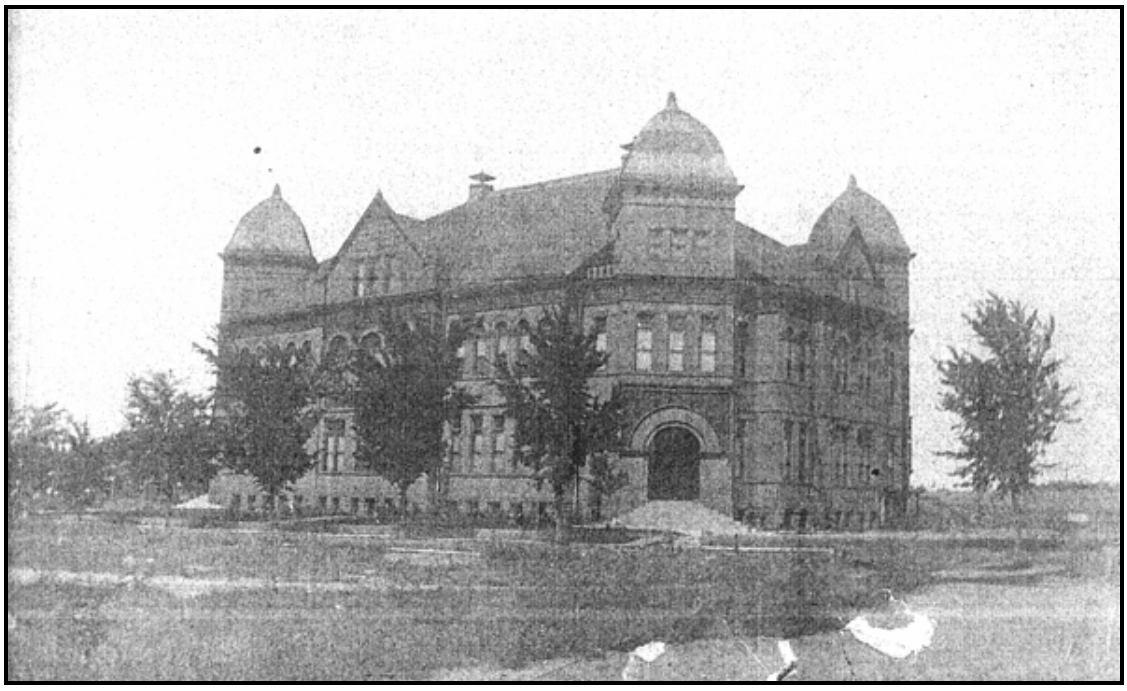


Figure 4: Columbine Elementary in 1917, Source: Columbine Elementary

The original one-room building was moved to the corner of Thirtieth and Columbine and is used as a residence today. The current Columbine building was built in 1960 and, for several years, these school buildings co-existed side by side on the same lot accommodating 1500 students. The historic building was located to the west of the existing building in the current primary play area. The beautiful school building completed in 1897 was demolished in the mid-1900's.



Figure 5: Columbine Elementary in 2002, Source: Darby Brooks

In the same way that the school building of Columbine has changed from the beginning of the 20th century to present, the North City Park neighborhood has changed over the years. Prior to the 1950's, African-Americans were not permitted to live on the east side of York Street. German and Japanese people lived on the east side of York Street. During the 1950's, African-Americans slowly began to move across York inhabiting the area they called "Struggle Hill". Today the neighborhood is predominantly African-American with a growing Hispanic population.

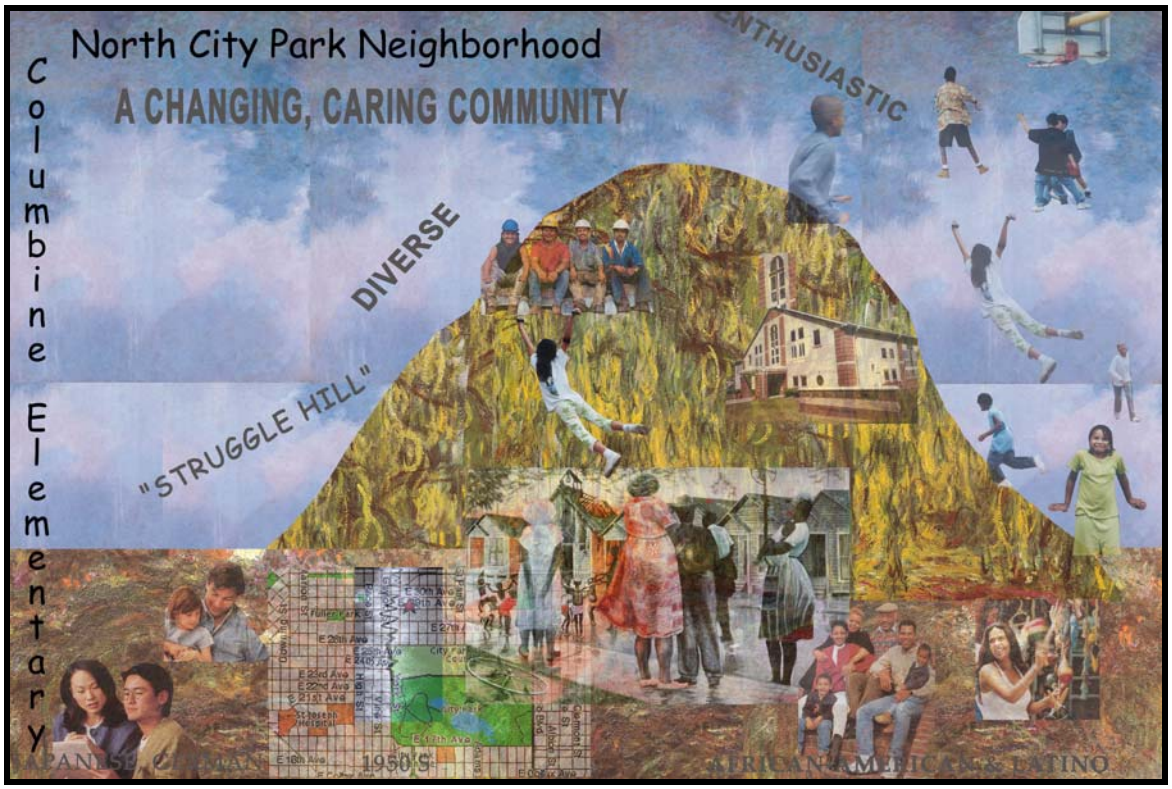


Figure 6: Collage Inspired by Community and School; Source: Darby Brooks

Section 3: Demographics of the Community And School

While the North City Park neighborhood is a distinctive community within Denver, demographers, the City of Denver and the U.S. Census classify it as part of the Skyland neighborhood. The neighborhood consists of 65% African American, 22% Hispanic, 10% White, 1% Native American, and 2% Asian/Pacific Islander. There is an increasing number of Hispanics moving into the neighborhood while elderly African Americans are becoming deceased. Currently, 3,375 people live in the Skyland/ North City Park neighborhood with children comprising 27% of the total population. Thirty-three percent of these children live in single parent households; 37% of these children are born to mothers with less than a 12th grade education. According to the principal at Columbine, many of the children that attend Columbine Elementary do not live with their birth mothers but with their aunts, sisters, and grandparents.

North City Park is a low-income neighborhood, in which the average annual wage is $21,000 and the average home costs $150,000. Seventy percent of the jobs held by North City Park community members are service jobs. Property crime at 55% is much higher than violent crime at 5%.

Columbine Elementary operates as one school with two sites: ECE and Kindergarten are located across Columbine Street while first through fifth grade are located in the main building. (However, the plan is to move ECE and Kindergarten to the main building.) Three hundred eighty-six students are enrolled in the school with 27

ECE children, 77 kindergarteners, 164 primary students, and 118 intermediate students. The Columbine student body consists of 61% African-American, 30% Hispanic, 5% Asian, 3% White, and .5% Native American reflecting the neighborhood demographics.

Section 4: The Constituents

Students

Approximately 90% of the students qualify for free or reduced lunches. A child on free and reduced lunch has an 11 times greater risk of not going to college. Poverty can often be associated with acts of rebellion and low test scores. During the 2000-2001 school year, eighty-one students were suspended; sixty of the students that were suspended were male. Special programs offered at Columbine include a golf program for third through fifth graders, Success For All Reading, Character Education, Developmental Learning for Kindergarten students, and Before And After School tutorial and mentoring program. The Success For All program assesses that only 37% of students are reading at grade level. Less than 30% of the students scored proficient or advanced on the CSAP tests. However, the CSAP scores have improved since 2000 and 2001.

		Unsatisfactory	Partially Proficient	Proficient	Advanced
Grade 3	Reading 2000	38%	31%	20%	2%
	Reading 2001	30%	41%	27%	2%
	Reading 2002	29%	33%	38%	0%
	Writing 2002	22%	57%	19%	2%
Grade 4	Reading 2000	46%	26%	17%	1%
	Reading 2001	42%	37%	13%	0%
	Reading 2002	37%	37%	24%	0%
	Writing 2000	36%	36%	9%	1%
	Writing 2001	31%	46%	10%	0%
	Writing 2002	20%	57%	24%	0%
Grade 5	Reading 2001	35%	32%	29%	0%
	Reading 2002	37%	30%	33%	0%
	Writing 2002	9%	67%	24%	0%
	Math 2001	57%	31%	10%	0%
	Math 2002	30%	39%	28%	2%

Twenty percent of the students speak Spanish as their native language, which is too low for Columbine to be a bilingual school. Statistics show that the Spanish-speaking students lack proficiency in Spanish or English literacy. Fifty percent of the students have attended this school for three consecutive years, while the Spanish-speaking students have the highest mobility rate. The student mobility rate is so high that there is an “In and Out” Board near the office that presents pictures and names of the students coming in and leaving on a daily basis. When asked to speculate on the reason why the mobility rate is so high, the principal said that many parents rent houses in the area and lack the stability to stay in one place.



Figure 7: Students at Columbine Elementary,

Source: Darby Brooks

The children that I have met are creative, curious, and energetic. Their individual personalities shine on the playground and in the classroom as they play and learn. They are very accepting of each other and willing to cooperate and assist their teachers.

Teachers & Administrators:

In 1999, a new administration was assigned to Columbine, including 75% of the teachers. Janice Spearman has been a principal for the last six years and a principal at Columbine for the past three years. Fifty-five percent of the teachers have three years or less experience, 21% have 4-10 years of experience, and 25% have 11 years or more experience. Twenty-one percent of the teachers have a Masters degree. Several of the parents, local artists, and community members along with the principal and some teachers are part of a committee set up by Jami Powell, Columbine's site coordinator, that are committed to the school and are working with me in the learning landscape master plan and design process.

The teachers and administrators that I have met are easy-going, great with children, and excited about the improvements that will be made to their playground. The principal tells me that many of the students probably will not pursue a higher education, which must be a discouraging thought as an educator. " In this neighborhood", she says, "teenage girls begin having babies at an early age and lose their desire to stay in school".

Community & Parents:

Many apathetic and under-educated parents are not involved in their child's education. There is not a PTA program because in years past only one or two parents attended meetings. Columbine's principal calls the North City Park neighborhood

"tough". Many parents have a drug problem and are incarcerated. The school becomes a safe haven for many children.

A large number of parents only speak Spanish. The school created a program to teach English to the Spanish-speaking parents but participation is minimal. A language barrier between African Americans and Hispanics creates a rift between parent groups.

The North City Park Community Group (NCPCA) meets monthly at the YMCA to discuss community issues and address problems. There are 400 members in the organization and monthly meeting attendees average around fifty. The North City Park neighborhood appearance is important and a priority to the community. With programs such as "Yard of the Month" club, the group encourages residents to care for their yards promoting neighborhood pride. In addition, a Housing and Neighborhood Development Committee is working on improving the commercial area on 28th and Colorado Blvd by encouraging more restaurants and discouraging liquor store establishment.

Section 5: Site Inventory And Safety Assessment

Safety Issues

The playground is visible from the street on all sides but is unsafe at night because there is not any lighting. A boy was killed about six years ago in a drug related incident at night on the west side of the playground. Syringes and condoms are frequently found on the grounds surrounding Columbine indicating that illegal activity and sexual promiscuity occurs on the playground, most likely at night. Lighting could potentially help these situations making the playground a safer place.

General Surface Area

The parking lot was formerly located on the west side of the building, but was moved a few years ago to the east side of the building directly in front of the main entrance. The current parking lot interferes with the intermediate playground. The school building divides the primary and intermediate play areas with the primary playground on the west side of the building and the intermediate playground on the east side. This division makes monitoring the children difficult. The old parking lot was converted to basketball courts and tetherball for the primary play area.



Figure 8: Primary Play Area on the West Side of the Building; Source: Darby Brooks

The expansive cracked asphalt of the former parking lot, currently the primary playground, dominates the primary play area, which accommodates 66 out of 164 primary students. A large bleak field of pea gravel (soft surface) dominates the intermediate playground, which accommodates 51 out of 118 intermediate students. The

playgrounds only accommodate a small majority of the student body, which is unacceptable.



Figure 9: Intermediate Play Area on the East Side of the Building; Source: Darby Brooks

Asphalt	23%	48,514 Square Feet
Concrete	12%	24,888 Square Feet
Soft Surface	31%	63,363 Square Feet
Irrigated Turf	18%	37,011 Square Feet
School Building	16%	34,129 Square Feet
Total Area	100%	207,905 Square Feet

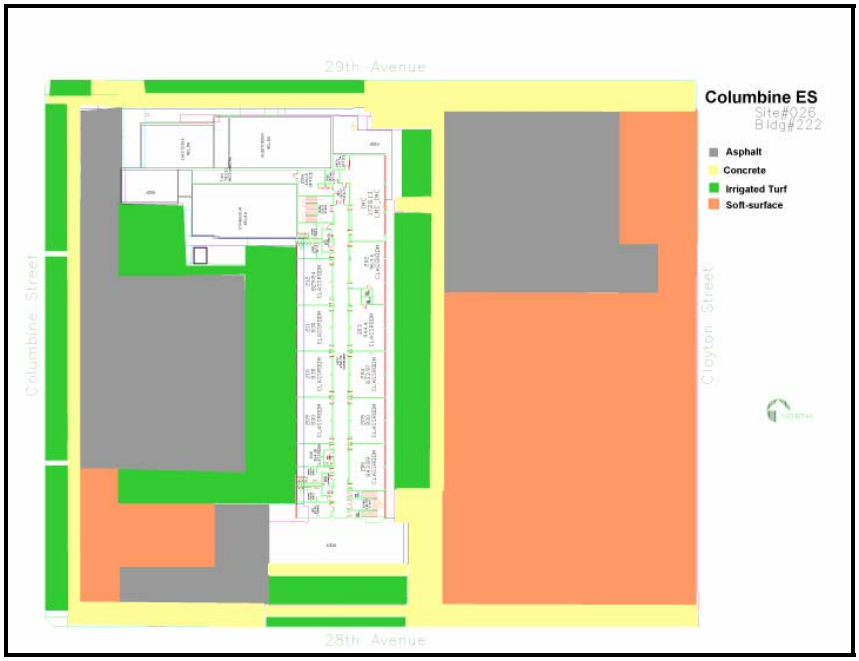


Figure 10: Columbine Elementary; Source: DPS modified by Darby Brooks

The blocks of orange represent soft surface, or pea gravel. The blocks of gray represent asphalt, and the yellow represents concrete. The green areas represent the irrigated turf.

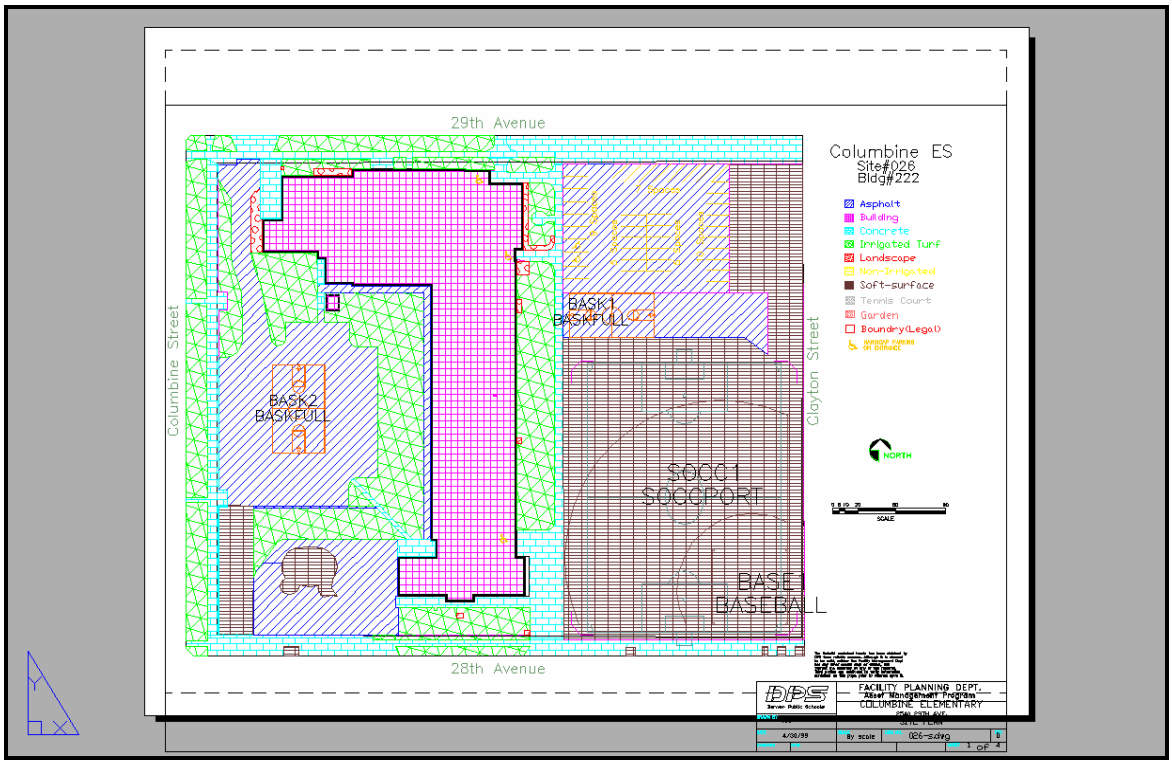


Figure 11: CAD Drawing of Columbine Elementary; Source: DPS

Asphalt and pea gravel (soft surface) cover the largest amount of surface area on the site. The playground suffers from an outdoor environment and athletic fields dominated by pea gravel, few grassy areas, chain link fences and few trees – along with fenced-in equipment considered unsafe to use. The playground is inadequate - accommodating only 33% of the students that are enrolled at Columbine Elementary.

Asphalt

The basement of the old Columbine building remains underneath the expansive area of asphalt near the primary playground on the west side of the building. The cracked asphalt seems to be sinking and is in very poor condition. The asphalt on the east side of the building was poured more recently and is in fairly good condition. The parking lot is located between the front door and the intermediate play equipment, which separates the playground from the school building. The teachers and administrators despise the current location of the parking lot and think that it should be moved back to where it was once situated.



Figure 12: Parking Lot and Intermediate Play Area on the East Side of the Building; Source: Darby Brooks

Concrete

Concrete occupies the sidewalks next to the street and the pathways to the entrances of the building.

Soft Surface

Pea gravel is considered a soft surface and covers the playing field. The children are not allowed to play football on the pea gravel because the risk of getting hurt on such a rough surface is too great. The field of pea gravel is dusty, desolate, and depressing consuming 30% of the total surface area of the site. In most areas, the pea gravel does not meet DPS and Consumer Product Safety Commission minimum depth of 12 inches.

Irrigated Turf And Trees

Irrigated turf hugs the school building. On the east side of the building, three mature and beautiful conifers are growing in the midst of the turf providing a little shade for several benches.



Figure 13: Trees on east side of building

On the west side of the building, three mature deciduous trees are growing in the strip of grass next to the building. Grass is planted in front of the building on 28th Street and along Columbine Street where children do not congregate or play.

Play equipment

The school has three levels of traditional play equipment: ECE & Kindergarten, primary and intermediate. The ECE and Kindergarten playground is located across Columbine and accommodates 10 out of 104 students. The plan is to re-locate the ECE and Kindergarten classrooms and play area to the main campus.



Figure 14: ECE play equipment; Source: Darby Brooks

The ECE and Kindergarten playground consists of one piece of play equipment that is less than 10 years old and has two slides, a climber, horizontal bars, and a horizontal ladder. The playground is minimal and unimaginative.

The primary play equipment is older than 10 years. The bridge is sagging. There are seven slides, a fire-pole, two climbers, two horizontal ladders, and eight swings accommodating 36 out of 164 students.



Figure 15: Primary Play Equipment; Source: Darby Brooks

The swings are located near Columbine Street and the facility manager complains that the children kick the pea gravel into the street as they swing. There are two tetherball courts, one basketball court, two four-square courts, and three funnel balls. The

playground offers too many competitive games and not enough cooperative play opportunities.

The intermediate play equipment is older than ten years and is in poor condition. There is one slide, four swings, two climbers, two horizontal ladders, and two horizontal bars accommodating 18 out of 118 students. The secretary says that the non-compliant swings and travel rings often pinch the students resulting in complaints and bruises. Some of the play structures are rusting, and lack of shade means that children in the summer months are at risk for burning themselves using slides or metal grab rings.



Figure 16: Intermediate Play Area



Figure 17: Intermediate Play

The intermediate play equipment is located in between the parking lot and an ugly alley, an unfortunate situation. There are two tetherball courts, two basketball courts, and one four-square on the linear strip of asphalt adjacent the parking lot. Basketball is a popular sport with the students and the courts are often occupied on the weekends and after school. However, there are not enough basketball courts to accommodate many children. Once again, there are too many competitive games and not enough cooperative play opportunities. The playgrounds do not offer interactive and creative play.

Drainage:

The playgrounds are too flat and do not drain adequately. Water pools after rain events.

Vehicular & Pedestrian Access/ Parking

There are twenty classrooms and thirty-six parking spaces, including two handicap spaces, located in front of the main entrance on 29th Avenue. According to DPS standards, there should be forty parking spaces. Pedestrian and service accessibility are the same. The service vehicles park on 29th Avenue and use the main entrance. Dumpsters located on the west side of the building are also accessible from 29th Avenue. The RTD bus stop is on 28th Avenue in front of the south entrance of the school.

Section 6: Survey of Constituent Needs And Desires

Columbine's Mission Statement:

"With an emphasis on the Character Education and Success For All programs, the Columbine staff will use intentional instruction to ensure student mastery in the core subjects of reading, writing, math, science and social studies; thus enabling students to score at the proficient or advanced level on the CSAP." Goals for Columbine are to attain a rating of at least average on the State Accountability Reports, to reduce the number of students scoring below proficient on the CSAP test by 7%, and to reduce the number of students being suspended by 75%.



Figure 18: Playground Wishes; Source: Columbine 5th Grade Student

Students:

As these images illustrate, the fifth grade class made a list of playground desires including a shade structure, swings, taller slides, trees, picnic tables, monkey bars, a climbing wall, grass, and a water fountain. Other children expressed interest in a grassy field to play ball, boulders to climb around on, and artistic features.



Figure 19: Playground Wishes; Source: Columbine student

Teachers/ Administration:

The teachers and administration want to re-locate the parking lot to the west side of the building freeing up the entire east side for primary and intermediate play. A planted berm is requested to separate the parking lot from the playground. The committee also wants a small hill planted with shrubs and trees interspersed with boulders to extend the entire eastern edge of the playground defining the edge and partially blocking unsightly views into the adjacent alley and street. The teachers and administration want topographic changes and various surfaces throughout the playground. They want to break up the extensive sea of asphalt with interactive areas, such as boulder hills. Gardens are desired; at least one or two should be representative of Colorado eco-zones and another garden is for the students to plant and care. A shady outdoor classroom, a shade structure, and shaded seating with tables are requested.

There is a program at Columbine set up to teach third through fifth graders how to play golf. Currently they use the North City Park Golf Course located near the school. Many teachers would like a few holes of golf to be incorporated into the playground. More specifically, the golf teacher wants a 12' wide "T-line" made of synthetic turf located on the edge of the playing field so that balls can be hit long distances onto the field. Several putting holes on the "T-line" located five feet apart are also desired. The committee requested that the programmed activities span the entire length of the playground rather than having the playing field on one side and all of the other activities on the other.

The site coordinator requested 6 tetherball courts for the intermediate students and 4 tetherball courts for the primary students with a separation of play areas between the two ages. When asked about possibly reducing the number of competitive games like tetherball, she replied, "The kids love tetherball." The committee requested a full basketball court with four half courts. The teachers want a clear division between the intermediate and primary play areas. The teachers and principal want to keep the existing primary play equipment and let the ECE and Kindergarteners use it if it is age appropriate. The principal requested that the playing field not be a full size soccer field freeing up room for other programmatic features and reducing the amount of grass that will need irrigation.

Murals will be designed and painted by a local artist on the east side of the building and other art pieces like flags or banners are desired. A mural maze designed by the same local artist is desired in the front of the building on 29th Ave. and on the south side of the building adjacent 28th Avenue. The artist also spoke of other creative art pieces such as an interactive pyramid that the children could help design. The teachers and administration expressed interest in a creative gateway that becomes the threshold into the site.

Community:
The community members want a place to gather with the children on the weekends. They expressed interest in a community park that provides opportunities for exercise and walking becoming a focal point for the neighborhood. The Neighborhood Beautification Committee wants the school grounds to become aesthetically pleasing as opposed to the bleak and depressing place it is now.

PART II – THE MASTER PLAN, CREATING THE FUTURE

Introduction

There are 5 components to this master plan that are intimately intertwined in the development of the playground:

The vision and goals;
The list of programmatic elements;
The spatial concept; and,
The organizational concept.

The vision and goals were created in response to the needs and desires of the school and the surrounding community. The vision concisely states the overall objective of the playground design. The goals lay out more specifically how the vision will be fulfilled. The list of programmatic elements quantifies the physical elements and games that will occupy various spaces on the playground. The spatial concept diagrammatically describes how the programmatic elements spatially relate to one another and to the surrounding context. Finally, the organizational concept sets up a method for organizing the programmatic elements on the grounds.

Together, these five components become the driving force for the actual design of the playground. Since these components are derived from the initial research and analysis, they powerfully address the needs and concerns of the school and surrounding community. And, as such, they are the seeds and the soil from which a fruitful, thoughtful design grows.

The Components:

Vision:
The Columbine campus will be the stitch that pulls together all aspects of education (academic, physical, social, and cultural) revealing and celebrating the context of the North City Park neighborhood.

Goals:

1) To design a landscape that facilitates learning through interactive and creative play.
2) To create spaces that accommodates multiple uses.
3) To provide a gathering place for the North City Park neighborhood.
4) To celebrate and reveal the cultural history of the North City Park neighborhood – "Struggle Hill".

List of Programmatic Elements:

Play Equipment
Primary playground equipment area (40'x 50')
Intermediate playground equipment area (40'x 60')
Existing equipment to remain for ECE and Kindergarten
Twelve swings
Hard Surface Play
Two four-square courts
Two hopscotch courts
Six - eight tetherball courts
One full size basketball court with four half-courts
Soft Surface Play
Grassy playing field
Track (crusher fines)
Golf "T-line"
Gathering Areas
An outdoor classroom – 25'x 25'
Shade structure – 400 square feet
Picnic tables and benches
Interactive Hills/ Boulder Areas
Gardens
Colorado ecosystem gardens:
Alpine garden
Grasslands hill garden (low grow/ low water zone)

Student community garden

Art Features
Two Gateways (10'-15' width)
Wall Mural
Mural Maze
Two Art Plazas with art pieces (flags, a pyramid, sculpture, columns)

The Spatial Diagram:

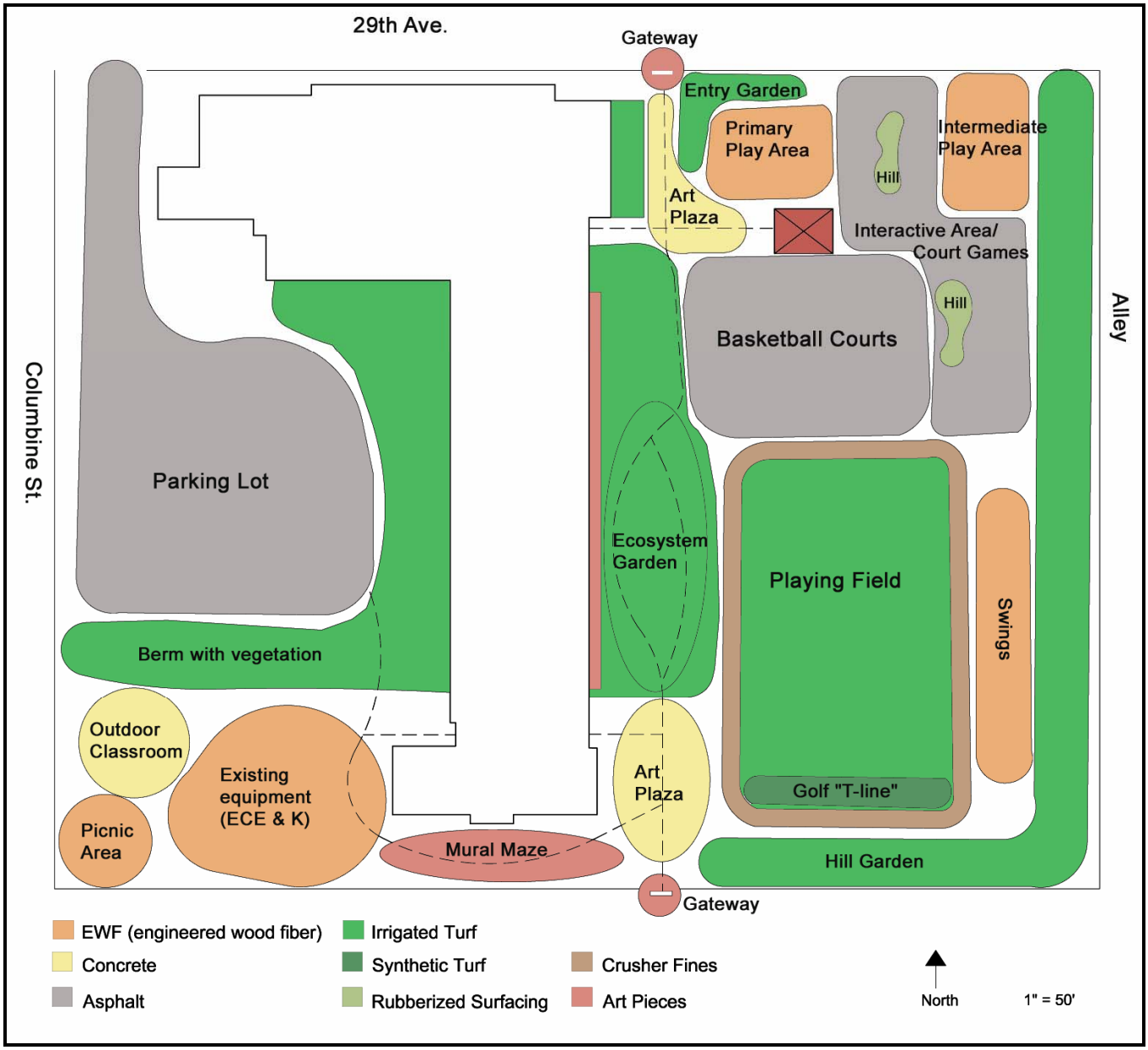


Figure 20: Spatial Diagram; Source: Darby Brooks

The Organizational Concept:

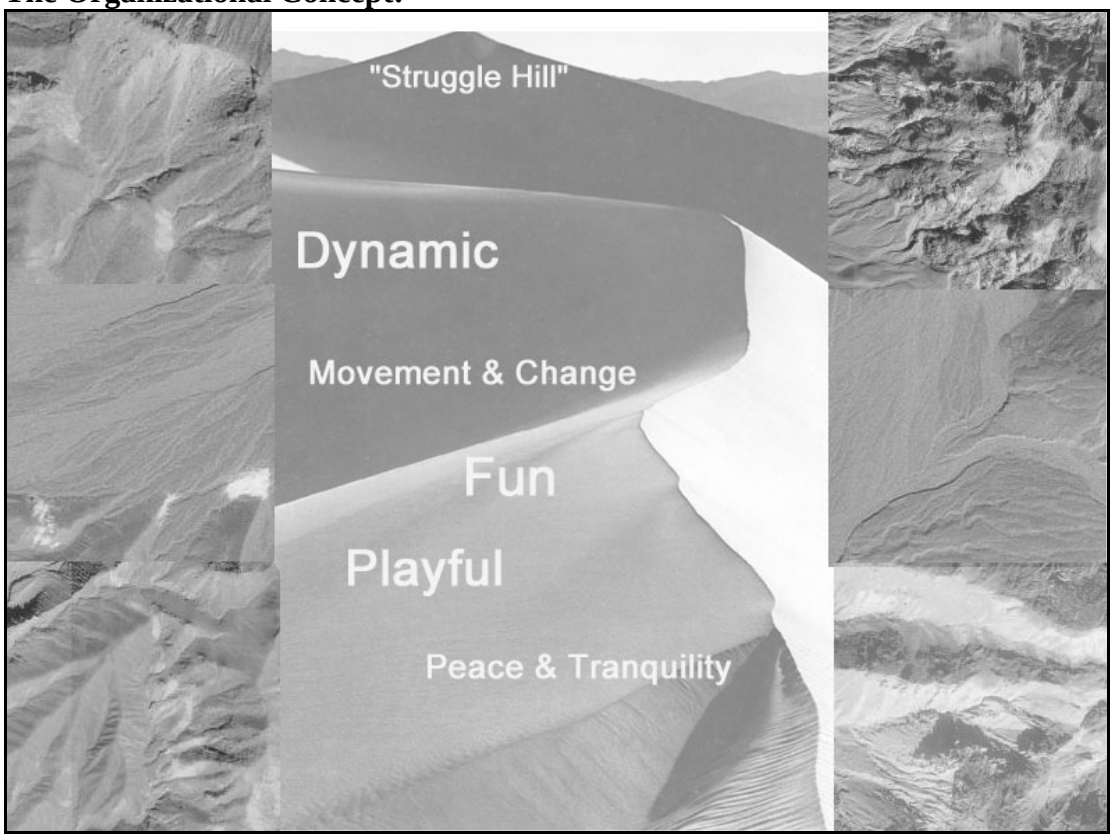


Figure 21: Aerial Photographs of Sand Dunes; Source: Darby Brooks

How the Goals Will Be Fulfilled:

The vision states that the Columbine campus will be the stitch that pulls together all aspects of education (academic, physical, social, and cultural) revealing and celebrating the context of the North City Park neighborhood. One of the goals is to design a landscape that facilitates learning through interactive and creative play. Other goals are to create spaces that accommodate multiple uses, and provide a gathering place for the North City Park community.

Goal #1:

The spatial diagram, including programmatic elements and the organizational concept, work to fulfill the vision and the goals. Physical education opportunities are combined with creative interactive areas that promote academics. For example court games, including basketball, tetherball, and four-square, encourage physical activity.



Figure 22: Interactive Hill; Source: Google images.com

Interactive hills, possibly comprised of different types of boulders like sedimentary and metamorphic rocks or rubberized surfacing contoured to mimic aerial sand dune formations, divide up the extensive sea of asphalt while providing opportunities for creative and intellectual play.



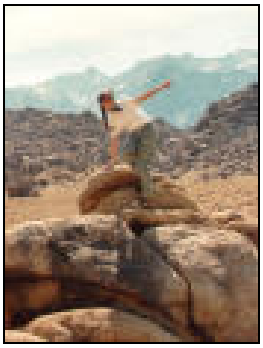


Figure 23: Boulder Fields; Source: Google images.com

The playground facilitates movement, like running, walking, and climbing with the play pits, court games, track, swings, field, and interactive areas.



Figure 24: Track; Source: Google images.com





Figure 25; Garden Exploration; Source: Google images.com

Gardens define spaces through the use of vertical elements like trees and encourage exploration or quiet contemplation while teaching about ecosystems.



Figure 26: Garden Walk; Source: Google images.com

Intimate spaces like niches in the gardens and underneath the shade structure promote socialization. The open areas that support athletics and games strengthen team building

skills and group socialization. The playground offers physical, academic, and social educational opportunities through programs organized in the spatial diagram.

Goal #2:

Spaces in the playground accommodate multiple uses. For example the field can be used for ball games such as soccer, baseball, or kickball while the "T-line" provides opportunities for aspiring golfers participating in Columbine's golf program.



Figure 27: Golf "T-line"; Source: Google images.com

In order to practice golf swings, golf balls can be hit into the field. Another space that accommodates multiple uses is the asphalt court game area located adjacent the shade structure. The raised shade structure can be a stage for ceremonies such as graduation while the audience congregates on the courts.



Figure 28: Graduation on the Playground; Source: Google images.com

The berm surrounding the edge of the playground will be planted with trees and shrubs, with boulders interspersed, and will act as a buffer or semi-screen against the ugly alley while providing seating and exploratory play.

Goal #3:

> "Places are important sources of individual and communal identity, and are often profound centers of human existence to which people have deep emotional and psychological ties." (*The Resurgence of Place*, Don Alexander).

The playground of Columbine Elementary, which is currently uninspiring and ignored, has the opportunity to become a very special place that impacts children in a positive way. The North City Park neighborhood is a dynamic community with a rich history, ie. "Struggle Hill". The historic cultural context of the North City Park neighborhood is revealed through the continual use of hills to physically represent the abstract notion of "Struggle Hill".

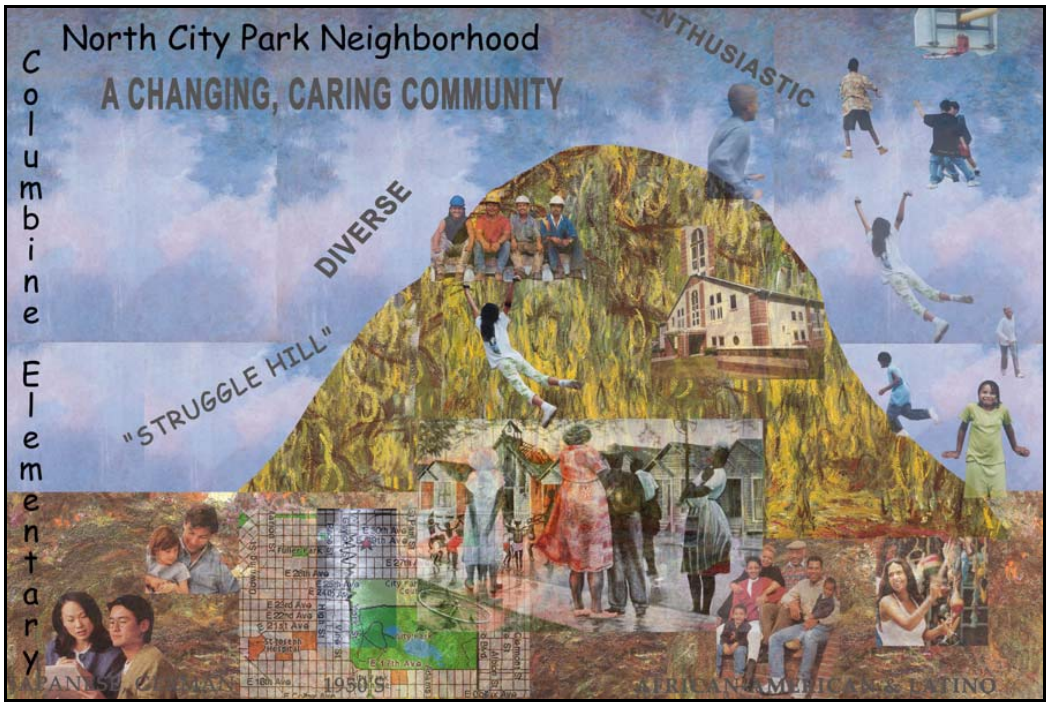


Figure 29: "Struggle Hill" Collage; Source: Darby Brooks

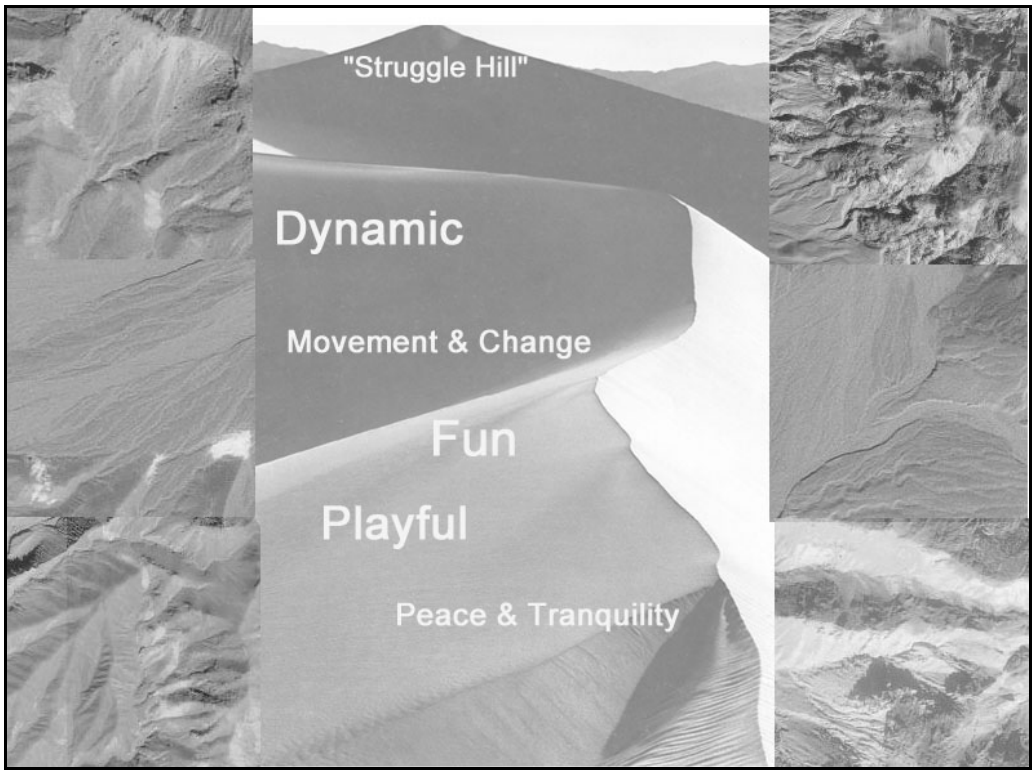


Figure 30: Aerial Views of sand Dunes; Source: Darby Brooks & Mapquest

Aerial views of sand dunes are an aesthetic ordering device. They are guided by the concept of "Struggle Hill", weaving North City Park history into the playground design. The dynamics of the sand dunes relate metaphorically to the dynamics of the neighborhood. Like sand dunes that are constantly redefining their shape in response to the wind and other environmental factors, the York Street boundary eventually eroded away. York Street should be represented on the playground, possibly as the main walk or a path that intersects play areas. The intent is for the playground to become a gathering place for the North City Park community giving the neighborhood some communal identity in celebration of its context.

PART III – THE COST ESTIMATE

Columbine Elementary
Preliminary Opinion of Probable Costs
Master Plan
Darby Brooks

Category	Unit	Unit Cost	Quantities	Total Cost
Project Start Up				
Mobilization	LS	5%	1	$ 16,367.00
Demolition				
Sawcut and remove Asphalt	SY	$ 8.50	460	$ 3,910.00
Remove all play equipment	LS	$ 4,000.00	1	$ 4,000.00
Fence Removal	LF	$ 2.00	900	$ 1,800.00
Clearing and Grubbing	AC	$ 15,000.00		$ -
Remove structural concrete at W 8th Ave	CY	$ 25.00		$ -
Remove structural concrete at ECE playground	CY	$ 25.00		$ -
Remove wood curbing	LF	$ 1.00		$ -
Remove existing irrigation equipment	LS	$ 1,500.00		$ -
Excavation				
Excavate & Stockpile Squegee	LS	$ 5,000.00	1	$ 5,000.00
Earthwork	CY	$ 3.00	3000	$ 9,000.00
Unforeseen Sub-grade Condition	LS	$ 5,000.00		$ -
SUBTOTAL				**$ 40,077.00**
Site Work				
Asphalt				
Seal Coat Asphalt	SF	$ 0.50	18000	$ 9,000.00
Asphalt Type B = 4"	SY	$ 16.00		$ -
Pavement Markings (paint)				$ -
4-square	EA	$ 150.00	2	$ 300.00
Grid/Specialty Painting	LS	$ 2,000.00	0	$ -
Stamped asphalt	LS	$ 4,000.00	0	$ -
Tetherball	EA	$ 150.00	6	$ 900.00
Basketball/Wall Ball	EA	$ 500.00	3	$ 1,500.00
Hopscotch/"The Wave"	EA	$ 150.00	2	$ 300.00
Concrete				
4" Flatwork	SF	$ 5.00	850	$ 4,250.00
Concrete curb cut for drop off/pick lane	LS	$ 35,000.00		$ -
Concrete curb cut	LS	$ 2,500.00		$ -

Concrete curb and gutter	LF	$ 5.00		$ -
Concrete Ramp	EA	$ 1,000.00	3	$ 3,000.00
2' High Stem Wall	LF	$ 30.00	0	$ -
Soft Surfaces				
Crusher Fines, installed w/ geofabric	SF	$ 1.20	800	$ 960.00
Install Squegee	SF	$ 0.20		$ -
Engineer Wood Fiber (delivered)	CY	$ 15.00	880	$ 13,200.00
Install Engineer Wood Fiber	SF	$ 1.00	23000	$ 23,000.00
Edging-concrete block, installed	LF	$ 30.00	690	$ 20,700.00
Edging-concrete block (material only)	LF	$ 11.00		$ -
Edging-concrete block (labor only)	LF	$ 19.00		
Poured in Place Rubber Surface	SF	$ 15.00	1000	$ 15,000.00
Edging-concrete block, installed	LF	$ 30.00	690	$ 20,700.00
SUBTOTAL				**$ 103,810.00**
Metal				
Shade Structure	LS	$25,000.00	1	$ 25,000.00
4' Chain Link Fence	LF	$12.00		$ -
6' Chain Link Fence	LF	$14.00		$ -
Alley fence repair	LS	$10,000.00	1	$ 10,000.00
Gateway	LS	$4,000.00	2	$ 8,000.00
Chain link pedestrian gate	EA	$386.00		$ -
SUBTOTAL				**$ 43,000.00**
Plumbing				
Clean out existing storm drain	EA	$500.00		$ -
SUBTOTAL				**$ -**
Recreation Play Equipment				
ECE Play Structure	LS	$20,000.00		$ -
install play structure	25%			$ -
Primary Play Structure	LS	$25,000.00	1	$ 25,000.00
install play structure	25%		1	$ 6,250.00
Intermediate Play Structure	LS	$25,000.00	1	$ 25,000.00
relocate existing equipment	LS	$5,000.00		$ -
install play structure	25%		1	$ 6,250.00
2-Bay Swings	EA	$600.00	6	$ 3,600.00
Baseball/Basketball Court Backstops	EA	$1,200.00	6	$ 7,200.00
Tetherball poles	EA	$500.00	6	$ 3,000.00
SUBTOTAL				**$ 76,300.00**
Interactive Areas				
Ecosystem/Habitat Gardens	LS	$4,000.00	2	$ 8,000.00
Classroom garden	LS	$3,000.00	1	$ 3,000.00
Boulder Field	LS	$3,000.00	2	$ 6,000.00
SUBTOTAL				**$ 17,000.00**

Art Elements				
Art project	LS	$5,000.00	1	$ 5,000.00
banner poles and flags	EA	$300.00	4	$ 1,200.00
Game table	LS	$1,500.00	0	$ -
Wall mural	LS	$3,500.00	2	$ 7,000.00
SUBTOTAL				**$ 13,200.00**
Additional Elements				
Picnic Table, metal	Unit	$2,000.00	1	$ 2,000.00
Benches, metal	Unit	$2,000.00	2	$ 4,000.00
Signage/Kiosk	LS	$3,000.00		$ -
Trash Can	EA	$1,000.00	1	$ 1,000.00
SUBTOTAL				**$ 7,000.00**
Landscape Planting				
2" Caliper Street Tree	EA	$400.00	15	$ 6,000.00
Irrigation tap	LS	$25,000.00		$ -
2" Caliper Interior Shade Tree	EA	$400.00	30	$ 12,000.00
Low Grow/Low water zone	SF	$1.25	2000	$ 2,500.00
Irrigation	SF	$1.25	15000	$ 18,750.00
Hydro mulch & seed-low water	SF	$0.16	2000	$ 320.00
Sod w/ soil prep	SF	$0.25	15000	$ 3,750.00
SUBTOTAL				**$ 43,320.00**
Miscellaneous				
Unforeseen Repairs	LS	$1,000.00	1	$ 1,000.00
Final Power Wash	EA	$ 330.00	1	$ 330.00
SUBTOTAL				**$ 1,330.00**
Hard Cost Subtotal				**$ 343,707.00**
Soft Cost				
A/E Fees	8%	Constr Costs		$ 27,496.56
Contingency	10%	Constr Costs		$ 34,370.70
Soft Cost Subtotal				**$ 61,867.26**
GRAND TOTAL				**$ 405,574.26**