



CAPITOL HILL MONTESSORI AT LOGAN

A4LE Planning & Design Awards
2023

“As we observe children, we see the vitality of their spirit, the maximum effort put forth in all they do, the intuition, attention and focus they bring to all life’s events, and the sheer joy they experience in living.”

Dr. Maria Montessori, *The Child, Society and the World*

Executive Summary



SCOPE AND BUDGET

OWNER:
District of Columbia Department
of General Services

LOCATION:
215 G St NE,
Washington, DC 20002

OCCUPANCY DATE:
July 2022

GRADES:
Primary through Adolescent
(PK-8th)

SITE AREA:
102,000 SF/ 2.35 Acres

BUILDING AREA:
103,000 GSF
(53,000 Existing/ 50,000New)

STUDENT CAPACITY:
354 Students

SUSTAINABILITY:
LEED Gold Certified



School and Community Research and Engagement

ENDURING LEGACY

Washington, DC has been the center of cultural shifts, national identity, and artistic representation since the creation of the United States. Developed in 1793 and named after Rome's Capitoline Hill, the Capitol Hill neighborhood is the largest historic residential neighborhood in the city. Originally called Swampoodle Park, the neighborhood housed impoverished laborers and became a respite for individuals seeking new opportunities, particularly Irish immigrants fleeing famine and freed enslaved individuals following the Civil War. As the neighborhood continued to expand, a second school was constructed in 1934 to accommodate the community needs. The original Logan School, was constructed in 1891 and augmented with an additional school building that was constructed across the street and was one of only a few such projects to continue construction following the 1929 stock market crash and the onset of the Great Depression, further solidifying its historic role in educating students amidst hardship. The original structure, used as an annex until an expansion of the current structure was completed in 1949, was purchased and transformed into condominiums. The school desegregated in 1954 and has remained in the system since that time.

“We didn’t have a playground...We played in the street. They would block it off and we would play on G Street.” — Ms. Alice Stewart

Ms. Alice Stewart attended the original Logan School in 1945, known then as the Annex. She was born and raised in Capitol Hill and interviewed shortly before her passing.

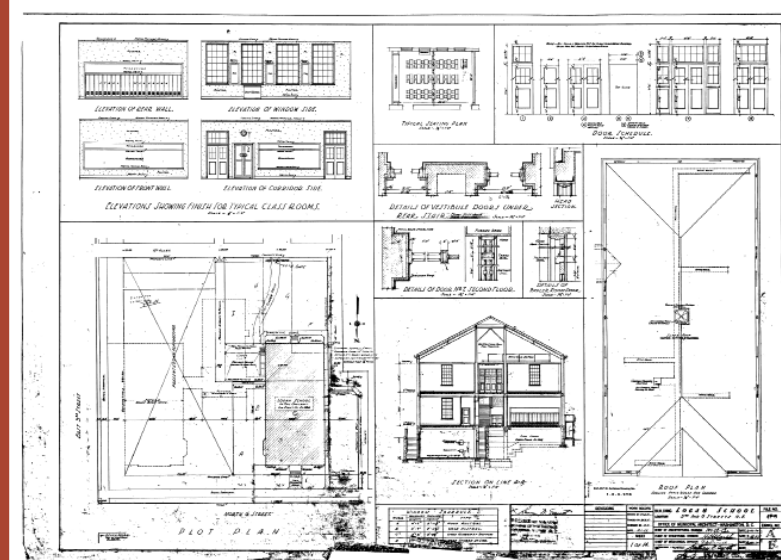
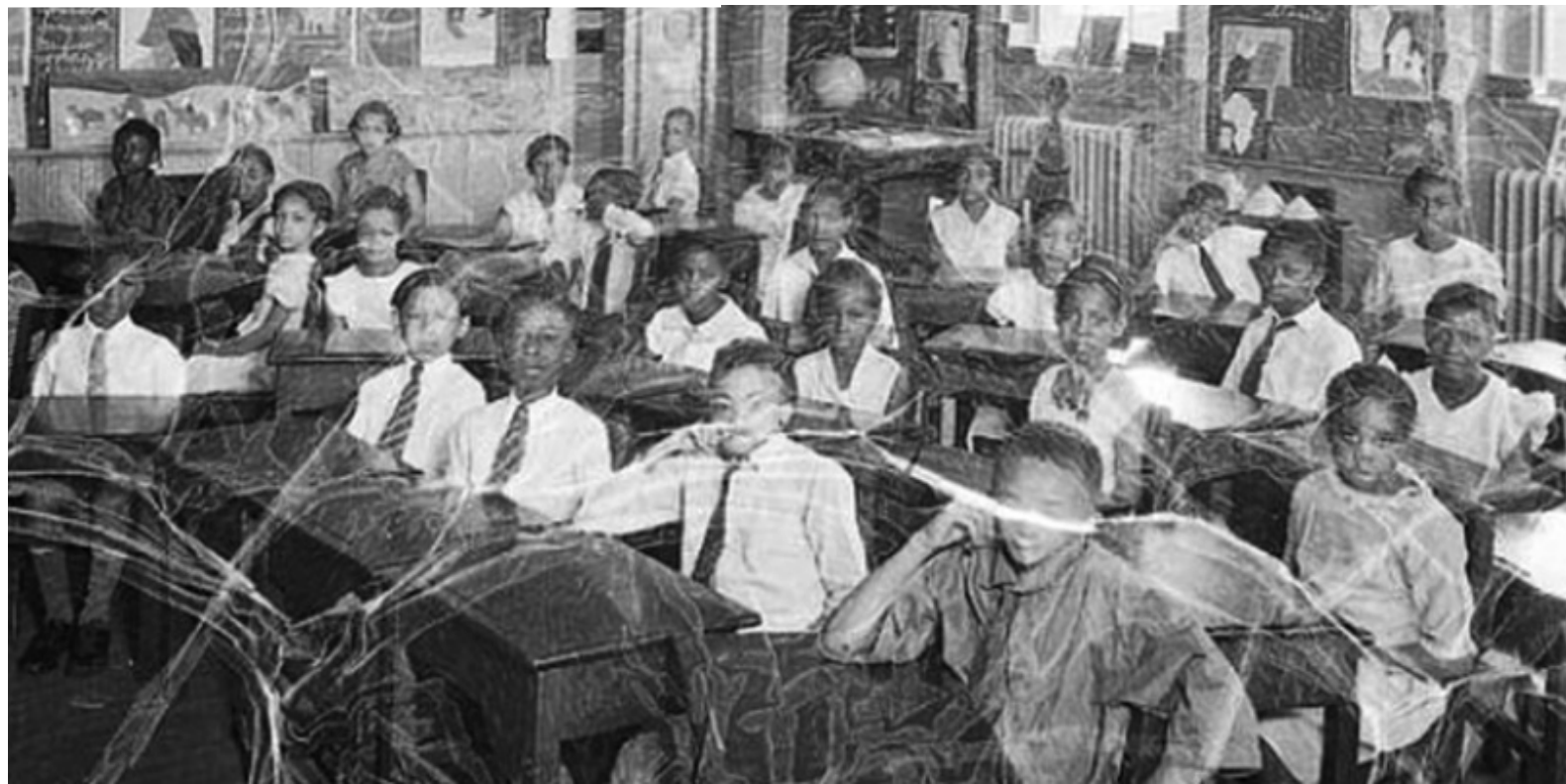
*Quotes and Images are from the Story of Our Schools Exhibit in Capitol Hill Montessori



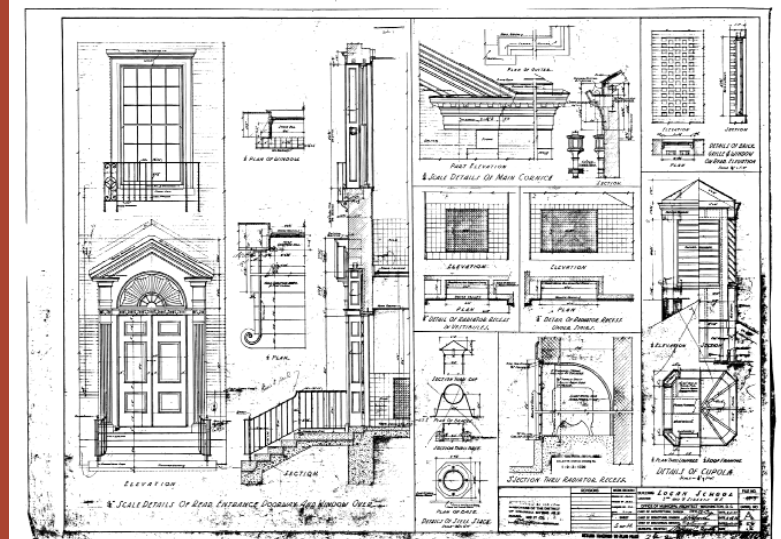
The original Logan School, located on the corner of Third and G Streets, was constructed in 1891 to educate this new African American community amidst a time of segregation.



The current structure was completed during the Great Depression, with an addition in 1934 to accommodate further expansion of student enrollment.



Logan School Floor Plans, 1934, Washington, DC



Logan School Floor Plans, 1934, Washington, DC

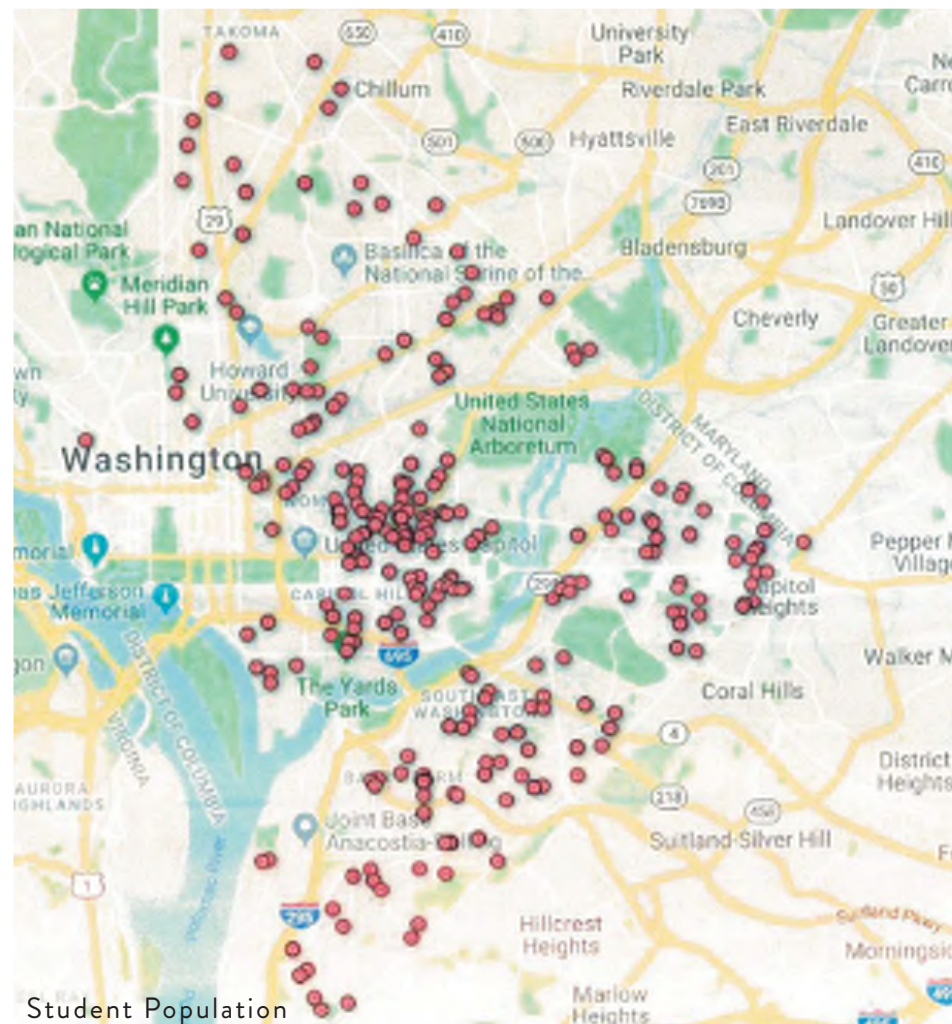
“It was a real neighborhood, a real community...There are certainly people who went to Logan with me who I still know and work with today.” — Vincent Gray (DC Council Member and former Mayor)

In the 1950s, Mr. Gray attended Logan School from kindergarten to 6th grade. A lifelong DC resident, Mr. Gray has served as the Ward 7 DC Council member from 2005–2006 and as the Chairman of the DC Council from 2007–2010. He served as mayor of Washington, DC from 2011–2015. Following his mayoral term, he returned in 2017 to serve as Ward 7 DC Council member.



CURRENT COMMUNITY

Capitol Hill Montessori at Logan (CHML) is the only Montessori program in the city’s public school system and acts as a “Magnet” program open to all city residents. Centrally located in one of the most vibrant and diverse neighborhoods in the city, the program allows for an array of unparalleled educational opportunities. Many of the nation’s renowned artistic, cultural, and historic centers are all within a 30-minute walk, allowing students to expand their global understanding while still remaining near the school. The proximity to Union Station further benefits students, as it provides local train service to and from the site, expanding access for a diverse student body.



Student Population



NEARBY CULTURAL SITES

MUSEUMS

- The National Museum of African American History
- The National Museum of Asian Art
- United States Holocaust Museum
- The National Gallery of Art

HISTORIC SITES

- The Washington Monument
- Ford’s Theatre
- The Supreme Court
- The Library of Congress
- The United States Capitol



CHALLENGE

Dense urban site without much connection to a natural setting

Co-Location of Elementary and middle school together, atypical at urban and rural Montessori campuses

Compliance with district-wide standards that are not easily aligned with Montessori techniques

Challenging site access from a narrow alley shared by local residences and businesses.

Limitations of the existing historic building including the lack of an elevator and high window sills restricting views

ASSET

Proximity of public transit/metro

Cherished structure and established program in the heart of an historic neighborhood

Trusted design team that leads the nation in Montessori based educational environments

Relatively large site in a historic district providing opportunity to expand

Highly engaged staff and community

STAKEHOLDERS

1. DC Public Schools
2. CHML staff and students
3. Department of General Services
4. Local Community
5. Capitol Hill Restoration Society
6. Historic Preservation Review Board
7. US Commission of Fine Arts



VALUE PROCESS AND PROJECT AT LARGE

Montessori pedagogy guided the design of the facility as the team looked to capture the school's spirit of community and reflect Montessori themes throughout. Montessori educational principles of community, diversity, self-discovery, responsibility for learning, and respect for the natural world were incorporated into the site, building, and classroom design.

Multi-age classrooms, access to natural light, independence to move into adjacent and protected green spaces and for students to move to an advanced classroom independently are all characteristics of a Montessori based education that were integrated into the design solution. Throughout the school natural materials and indoor-outdoor learning areas were developed through intensive coordination among design team, community, faculty and staff.

Finally, the design thoughtfully incorporates a Middle School into the project, a level of education not typically included with the traditional "Children's House" years. By placing these students on a 2nd story wing set apart from younger students and providing them an independent entry, the team achieved needed separation, while including age-appropriate functions.

ENGAGEMENT FOSTERING JUSTICE, DIVERSITY AND INCLUSION

1. School Improvement Team work sessions with staff, parents, and neighbors.
2. Meetings to receive feedback from students and faculty.
3. Local neighborhood community meetings
4. Sustainability – LEED Gold



Educational Environment

MONTESSORI IN THE U.S. LOGAN SCHOOL

1907

Since 1907, when the first Casa dei Bambini opened in Rome, Maria Montessori's idea of the prepared environment has guided the design of both indoor and outdoor Montessori spaces throughout the world. Her education principles guided the design at all levels.



Casa dei Bambini
Rome, Italy

1913



First Montessori School in the United States,
Tarrytown, NY

1989



MacDowell Montessori School,
Milwaukee, WI

2021



Montessori Magnet School at
Annie Fisher

2023



Breakthrough Montessori,
Washington, DC

1934

Built in 1891, the Logan school educated the working-class community until the secondary school was constructed in 1934. In 2011, Capitol Hill Montessori moved into the building.



Logan School Students, Washington, DC, 1936

2011



May Day Celebration, Logan School
1941

2023



Capitol Hill Montessori at Logan
established, Washington, DC

2023



Capitol Hill Montessori,
Washington, DC



MONTESSORI EDUCATION

COMMUNITY

Strong bonds between students, adults, and the neighborhood that surrounds the school are essential for establishing respect, trust, and a template for healthy development.

SCHOOL DESIGN PRINCIPLES

SITE

The school is designed as a village, with a variety of communal spaces, such as libraries, gardens, cafes, and amphitheatres, preferably set within a natural environment.

ORDER

Meticulous attention to every detail of the learning environment enables purposeful movement.

BUILDING

A simple, uncluttered aesthetic guides the design, with natural light and warm materials, close connections between indoor and outdoor environments, and common use spaces for communal learning and reflection.

INDEPENDENCE

Student-centered learning is enabled by a highly enriched and structured classroom context. Adults support independence by maintaining a thoroughly prepared environment.

CLASSROOM

All spaces accommodate free movement, small group and individual lessons, and courteous interaction among adults and children, encouraging independent investigation and learning both inside and out.

EDUCATIONAL VISION

The Montessori Method originated in the early 20th century with Dr. Maria Montessori’s founding of the first Children’s House (Casa dei Bambini) in 1907 in an inner-city district of Rome to address a lack of educational opportunities for an under served worker community. Dr. Montessori broke conventional barriers from the beginning of her own education, studying engineering and medicine ahead of her time. Guided by a belief that children are naturally curious, she developed her methods based on scientific observation of children’s learning processes and designed a “prepared environment” in which children freely choose from a range of developmentally appropriate activities. At Casa dei Bambini, she worked with underprivileged children and eventual propagated her method by expanding public Montessori education beyond Italy. Over a century later, Montessori education can be found throughout the world, spanning from new borns to adolescents.

Over the years Montessori has shifted from the original intent of serving underprivileged communities, and in the U.S. the vast majority of Montessori schools today are private or charter schools, many catering to affluent families. As the only public, all-ward Montessori in the District of Columbia, CHML is continuing its legacy in ensuring that all students, regardless of background, have access to innovative education.

GUIDING MONTESSORI PRINCIPLES

1.

RESPECT FOR CHILD

Montessori philosophy revolves around the respect of each child. This necessitates respecting the individuality of each child, their freedom and interest to choose their activities and to correct their mistakes, and to work at their own pace.
2.

ABSORBENT MIND

Between the ages of 0-6, children experience an absorbent mind developmental stage. During this phase, children are able to absorb information directly from their environment. Emphasizing the child’s judgment and self-motivation promotes their individuality and independence and lays the foundation for their learning, intelligence, and personality.
3.

SENSITIVE PERIOD

The sensitive period follows that of the absorbent mind. During this period, children are more motivated to learn certain skills and they last only as long as it is necessary for the child to acquire the skills.
4.

EDUCATING THE WHOLE CHILD

Montessori education utilizes one’s intellectual, social, physical, and emotional development to nurture each child’s potential. In addition to courses such as mathematics and language, Montessori’s employ real-life experiences and sensory materials to further promote each child’s development.
5.

INDIVIDUALIZED LEARNING

Unlike traditional educational frameworks, each child works at their own pace in multi-age classrooms. In doing so, those who master concepts quickly can continue to progress while those who have longer processing times are not pressured or overwhelmed. Those who master subjects can then teach students who have not yet grasped specific concepts, thus fostering collaboration.
6.

MOVEMENT, CHOICE, AND NATURE

Dr. Montessori stressed that movement and choice are essential in development and learning. When children are free to move and engage with their interests, they become more motivated to learn. Montessori schools necessitate active spaces, particularly in classrooms and connections to the outdoors, to support the movement principle.
7.

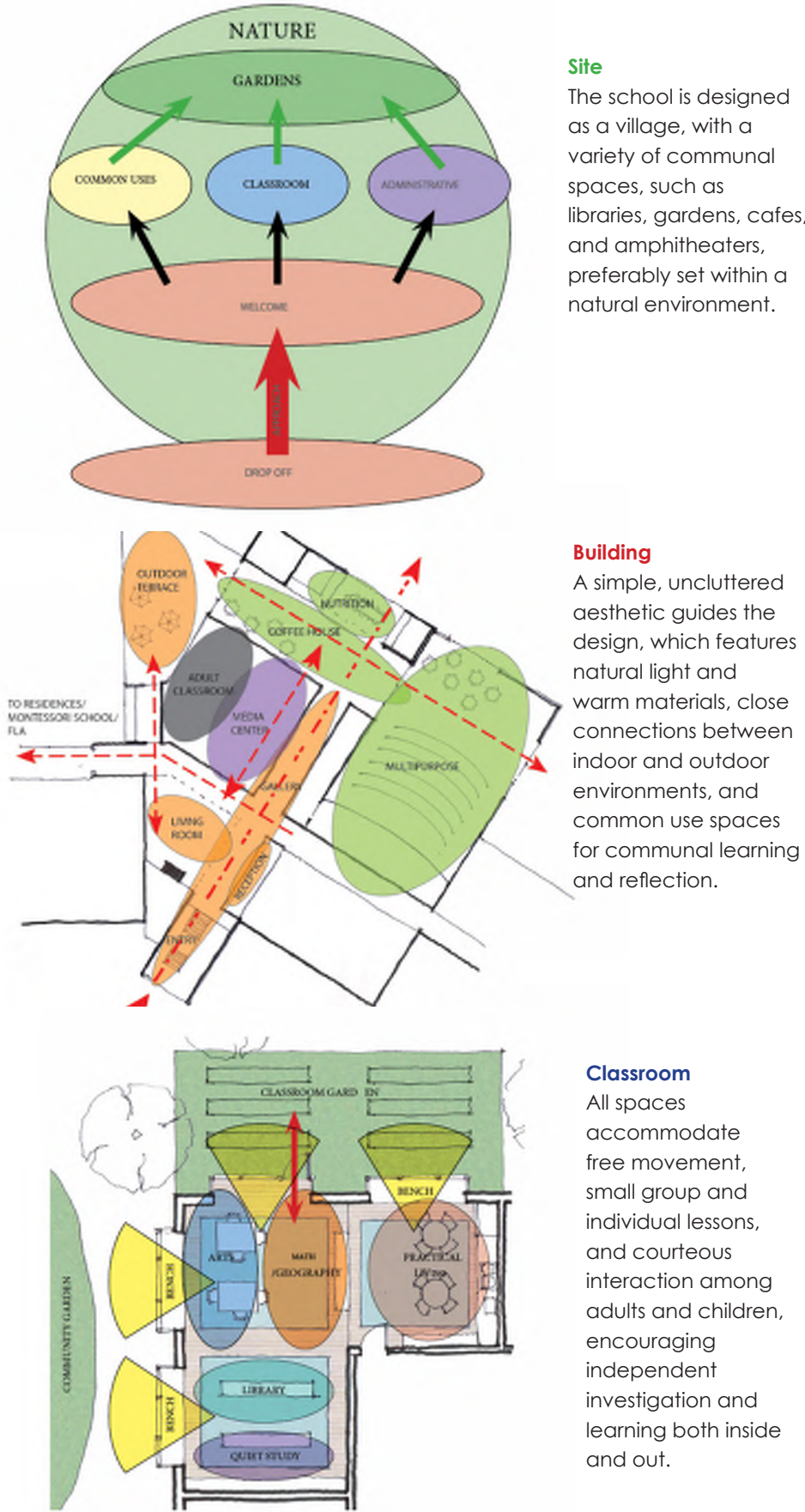
PREPARED ENVIRONMENT

Each Montessori classroom has a purpose, place, and order. The prepared environment allows children to fully immerse themselves with their surroundings and build upon their logical thought processes. In preparing a child-centered environment, students can work at their own pace, engage with their interests, and learn in a positive, motivated manner.
8.

MOTIVATION AND INDEPENDENCE

Montessori pedagogy wholly believes that children are able to educate and teach themselves if they are truly motivated and are provided stimulating learning environments.

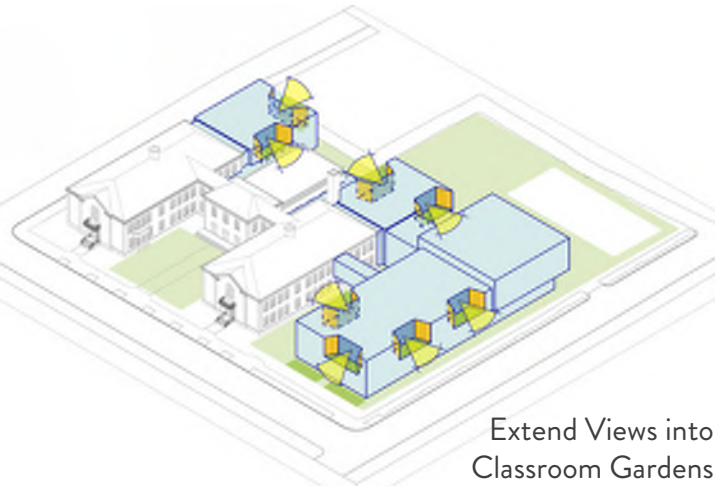
ARCHITECTURAL VISION



HOW THE ENVIRONMENT SUPPORTS THE CURRICULUM

Montessori pedagogy relies heavily on movement and access to nature which is reflected in the design of the school/ Classroom proportion and layout allows teachers to monitor the individual activity of multi-age students while an open layout promotes student movement and circulation between subject areas. Windows are placed toward both outdoor classrooms and hallways to allow teachers to monitor activities while allowing for views from deep inside the school toward the outdoors. All younger age classrooms also have direct and independent access to secure outdoor learning spaces, promoting movement while limiting interruptions to others.

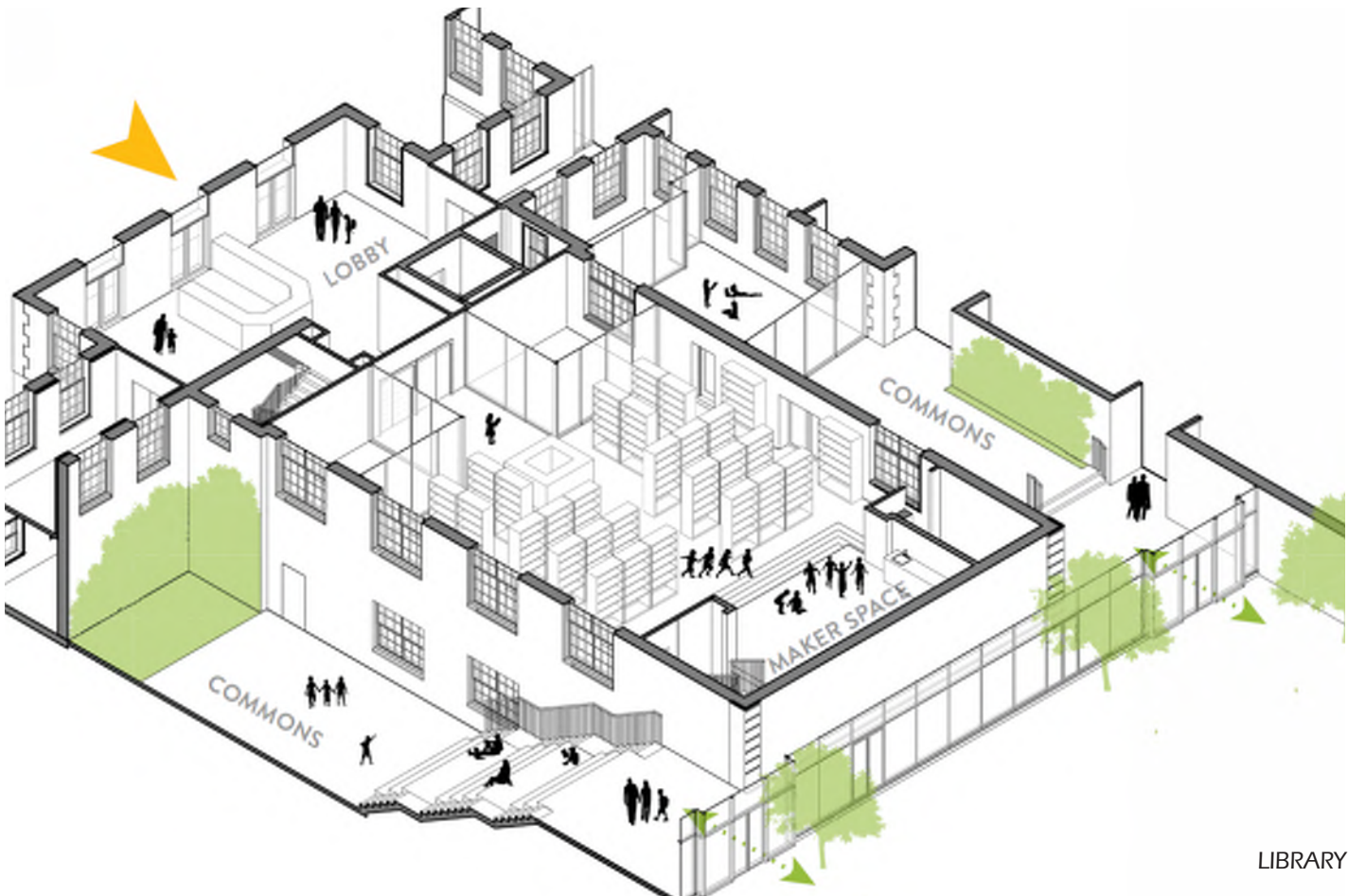
Shared pantries and nap rooms between 2 classrooms aid in developing communities within the community and encourage collaboration and support between teachers. Shared en suite bathrooms also promote independence and limit encourage focused attention. A subtle palette of natural material on the interior and exterior limits distractions and further boosts focus.



1ST FLOOR CLASSROOM WITH DIRECT ACCESS TO OUTDOOR CLASSROOM



DISCOVERY COMMONS

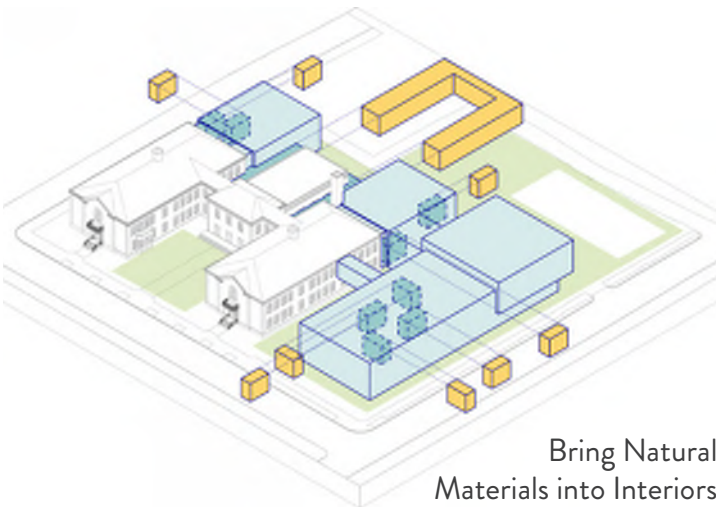


LIBRARY

VARIED LEARNING STYLES

Adapting to different learning styles is woven into Montessori pedagogy and is evident through the expanded and renovated school. As evidenced in one of the guiding principle of Individualized Learning, CHML recognizes children have different personalities, motivations, interests, and learning styles and the design employs a variety of solutions to support varied learning styles.

Each classroom is equipped with standard DCPS teaching walls concealed behind built-in millwork to allow teachers to switch to traditional teaching methods if necessary. Hallways further stimulate cross grade interaction and mentorship with a range of breakout spaces for independent activities, an integral part of any Montessori education. Development "Practical Life Skills" is supported by shared teaching kitchens, allowing children to learn personal responsibility through meal preparation and cleanup. Maker space, science labs, and teaching gardens further emphasize sensory learning, and the library and technology/computer lab spaces are design to support Montessori thinking.



Bring Natural Materials into Interiors

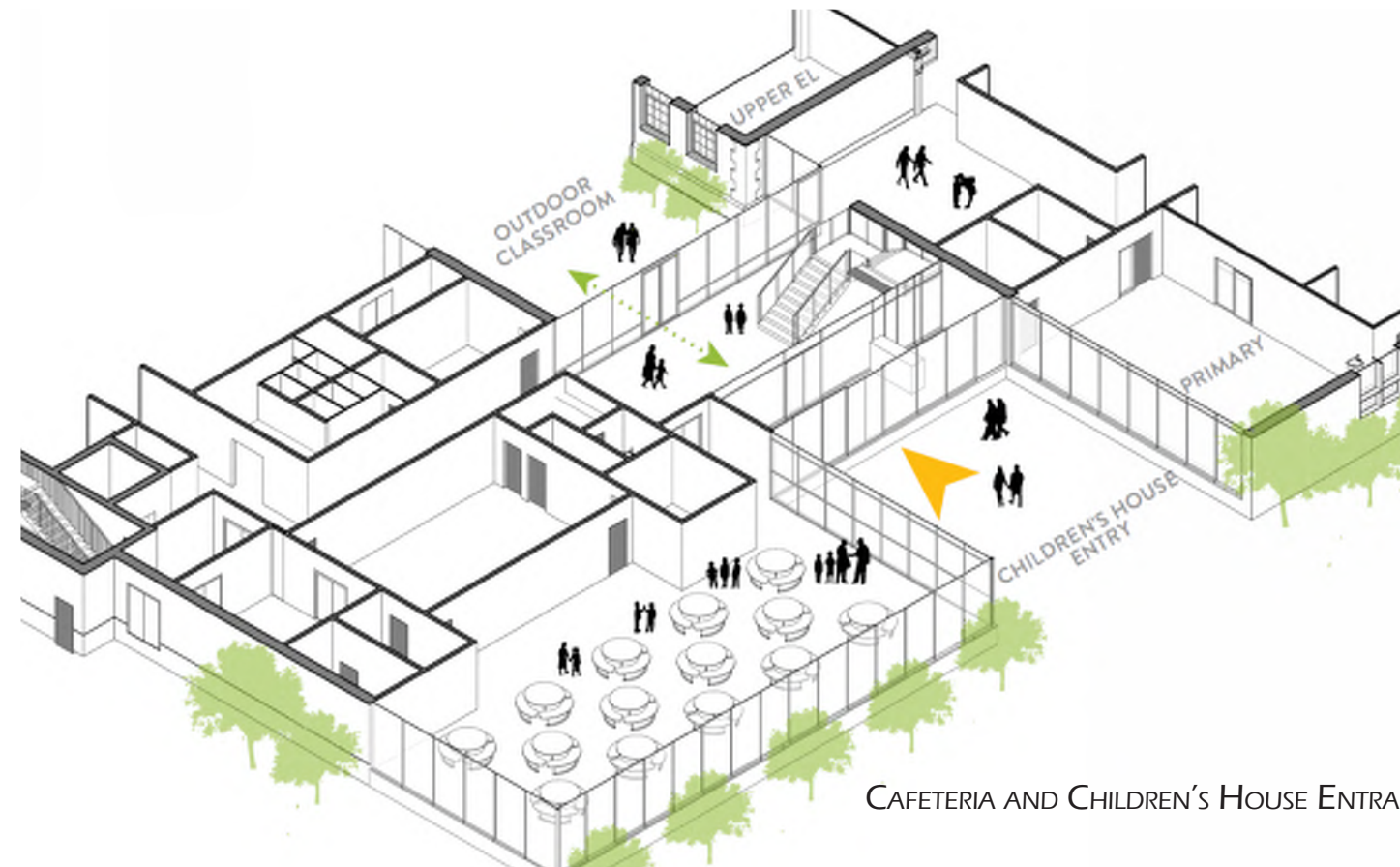
ADAPTABLE ENVIRONMENT

Montessori's focus on individualized learning necessitates adaptivity and flexibility and is reflected through the school. As with other neighborhood schools, CHML is a community cornerstone, providing spaces for the community to gather and connect for a variety of school and non-school functions. Natural playgrounds benefit neighborhood children who are allowed to utilize the equipment during non-school hours. Outdoor learning spaces allow teachers to adjust to any obstacles that arise, and while designed prior to the COVID-19 pandemic, provided outdoor instruction that was invaluable during that period.

Finally, spaces for gatherings and assemblies occur throughout, including formal and informal spaces such as the gym which doubles as an auditorium capable of accommodating a variety of seating arrangements. Between the lower level classrooms, the design includes shared nap rooms that also serve as crafting and testing rooms.



SHARED CLASSROOM DIAGRAM



CAFETERIA AND CHILDREN'S HOUSE ENTRANCE



INNOVATIVE EDUCATION

As the only public, all-ward Montessori school in the District of Columbia, CHML represents an innovative and unique education to benefit the entire city. One such element is the shared spaces between classrooms. Shared program elements in these situations facilitates cooperation between both classroom communities. Another innovative element is the treatment of the Middle School program, which has a separate 2nd story location supported by an independent entry and interior/ exterior "hang-out" spaces as well as an outdoor learning terrace connected to both a science classroom and commons space.

Despite its location in the heart of the city the building connects to the natural world through outdoor balconies, natural playspaces, and teaching gardens. A rooftop playfield further enhances the environmental connection amidst an urban location and reflects the Montessori principle of movement.



MIDDLE SCHOOL LEARNING TERRACE

FIRST FLOOR PLAN



PROGRAM LEGEND

- ACADEMIC SUPPORT
- ADMIN
- BUILDING SERVICES
- CIRCULATION
- CLASSROOM
- DINING
- GROSS UP
- LIBRARY
- PHYS. ED.

1. SHARED KITCHENS



2. STUDENT DINING



3. CHILDREN'S HOUSE ENTRY



4. LIBRARY



5. DISCOVERY COMMONS



SECOND FLOOR PLAN



PROGRAM LEGEND

- ACADEMIC SUPPORT
- ADMIN
- BUILDING SERVICES
- CIRCULATION
- CLASSROOM
- DINING
- GROSS UP
- LIBRARY
- PHYS. ED.

6. OUTDOOR CLASSROOMS



7. GYM



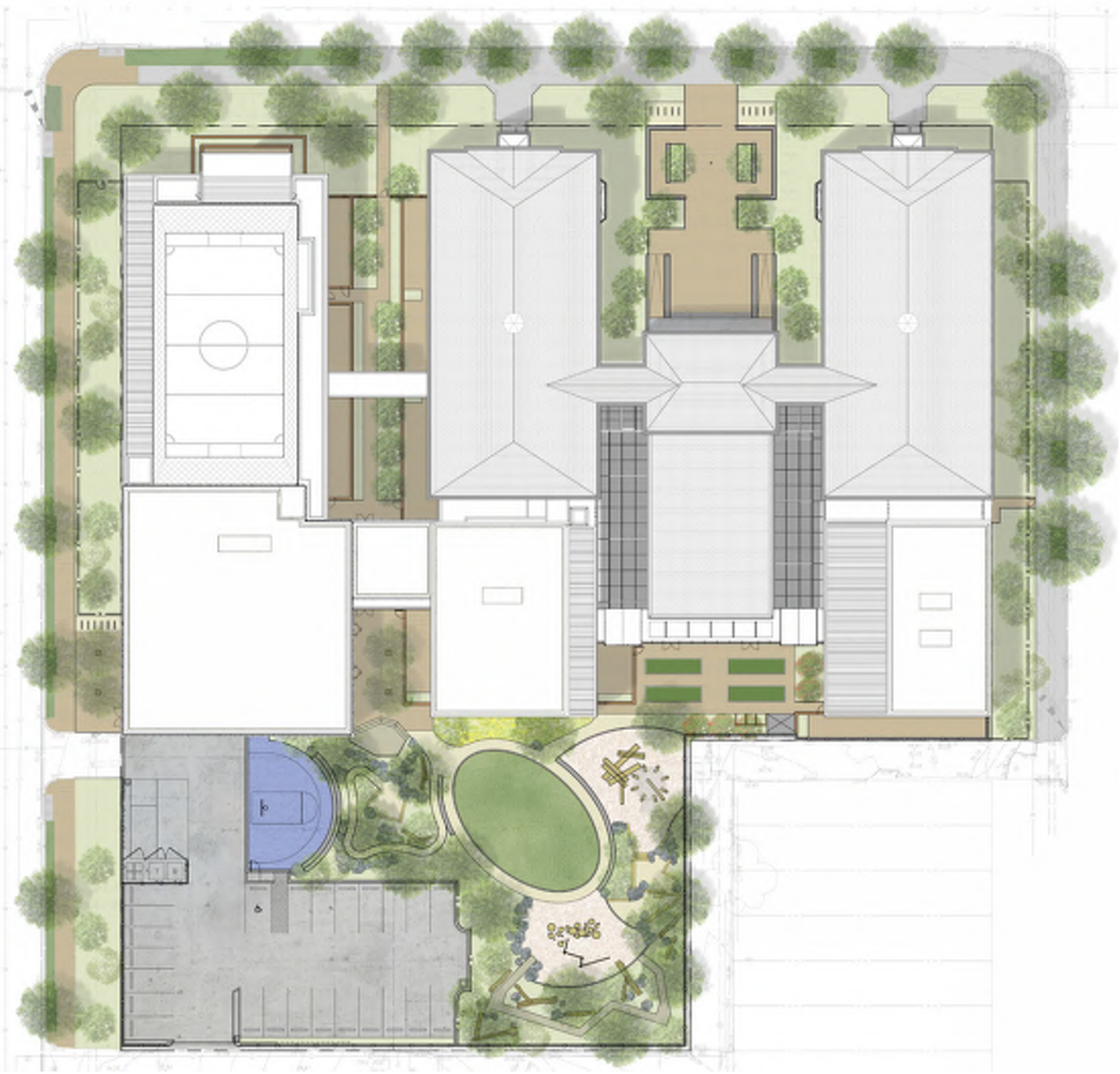
8. MIDDLE SCHOOL COMMONS



9. MIDDLE SCHOOL TERRACE

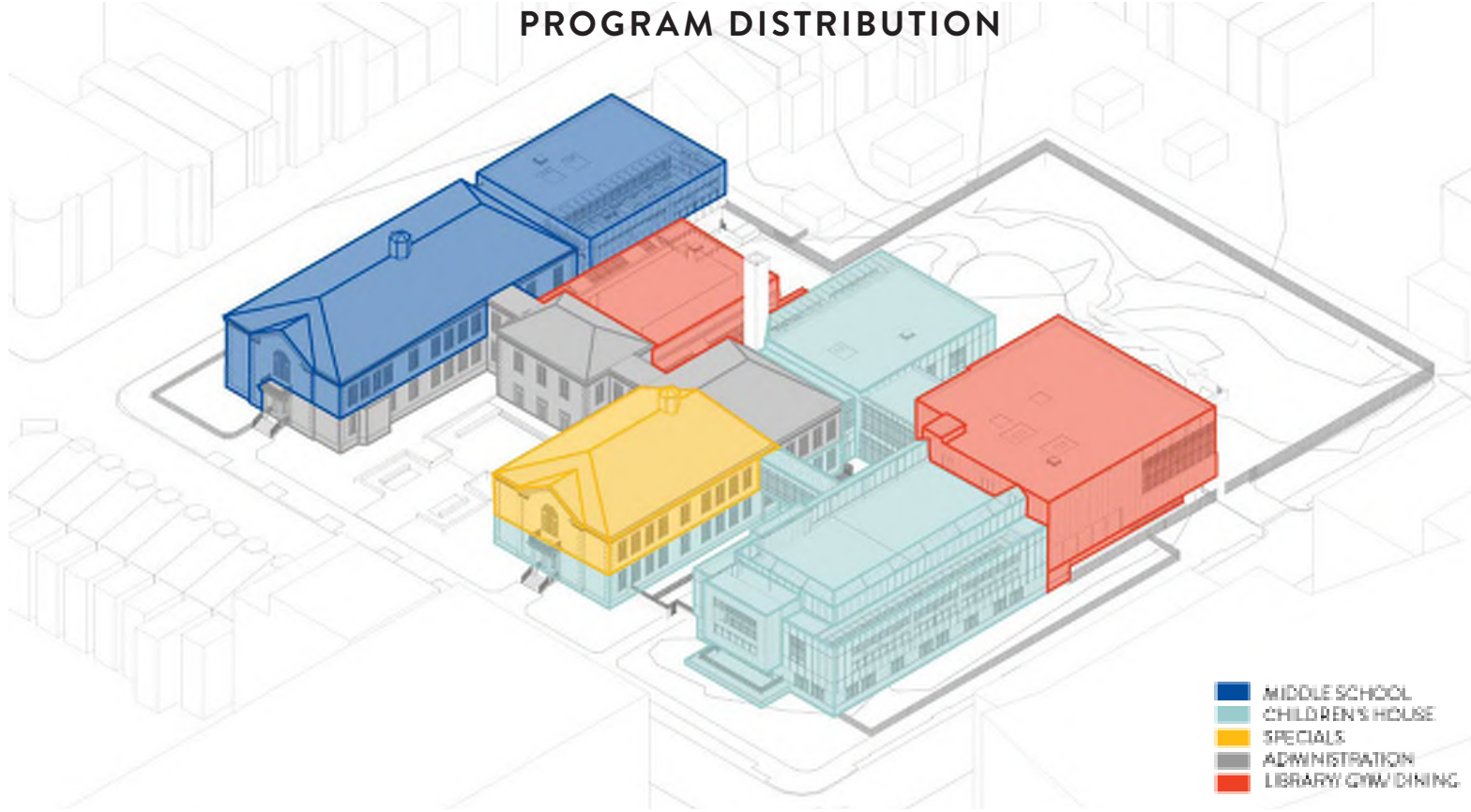


SCHOOL SITE PLAN



GROUND LEVEL PLANTING, 1ST AND 2ND FLOOR OUTDOOR CLASSROOMS. NEW ROOFTOP AND GROUND LEVEL GREEN SPACES AND PLAY AREAS ME THE SCHOOL AN URBAN OASIS FOR NEIGHBORHOOD KIDS

PROGRAM DISTRIBUTION



OUTDOOR ACCESS





Results of Process

EDUCATIONAL GOALS AND OBJECTIVES

The eight essential Montessori principles are interwoven into the fabric of the expanded building. The program’s vision for a seamless connection between nature and the classroom is fulfilled by individual and shared outdoor classrooms where students of all ages easily engage in visual, sensory, and emotional experiences. The freedom of movement that is so important to both the curriculum and the health of the students is provided through a middle-school sized gym, bicycle traffic garden, and rooftop play field, offering children an array of physical, hands-on learning options.

The Middle School program has been upgraded from a small, poorly equipped, temporary structure to being housed in the main historic structure with all the necessary supporting program of a gymnasium, science lab, and technology lab. Room for expansion has also been provided to accommodate the expected increase in enrollment.



SCHOOL DISTRICT GOALS AND OBJECTIVES

- 1. PROGRAM - Bringing the Middle School into the historic building and moving the elementary program to the additions allowed the classrooms to be rightsized and more tailored to their respective age groups
- 2. ACCESS - Providing an independent “Children’s House” entry to the west to disperse congestion and allow convenient access from the subway, while providing expanded bike parking which a variety of transportation modes
- 3. SECURITY - Bringing the building additions to the street edge provided security and surveillance to the school’s edges and allowed for courts within the site for safe outdoor learning.

VALUE AND STEWARDSHIP

CHML utilizes sustainable practices to ensure value and financial stewardship. As a LEED Certified Gold Facility, CHML uses energy savings from efficient lighting systems and geothermal HVAC. It likewise employs low flow plumbing fixtures to reduce water consumption. The construction of the school featured locally based materials and equipment with long warranty periods to reduce replacements and maintenance. All of these tactics ensure that the school is financially and economically sustainable.



IMMERSIVE COMMUNITY

CHML serves the greater community by providing public spaces such as the gym and cafeteria for community gatherings and performances. The school’s location on the street’s edge allows for easy community access while expansive outdoor spaces and play areas are open to the public after school hours. The school likewise hosts a variety of educational and recreational community events, such as an outdoor movie night open to the community.

To support the surrounding community, the design provides a space to feature a “Story of our Schools” exhibit which is a researched and curated exhibition by students that detail the school’s rich and complex history. Students paired with DC historical institutions, constructed an exhibition committee, and interviewed community members to create this narrative for their school. Located in Middle School lobby, this endeavor allowed students to immerse themselves within the community and become a part of the school’s history.

UNINTENDED RESULTS

Reopening during the height of the COVID-19 pandemic created multiple obstacles, but staff did find that the transition was eased through the ability to teach portions of their classes in the outdoor spaces created across the site. Outdoor gardens directly accessible to each classroom allowed for safe distancing and increased natural ventilation, making these a desirable feature even for schools in the District without a Montessori program.



Physical Environment

PHYSICAL ENVIRONMENT

Bookended between Union Station and the stately rowhomes of Capitol Hill the school design perfectly adjusts to a blend of urban and residential street edges. While recess is not a typical component of Montessori education, it is a necessary element of DC Public School’s program and therefore the design team sought to synthesize these frameworks with the introduction of natural play spaces. Different age group playgrounds on the site are composed of boulders and both fixed and movable wood logs to encourage climbing, balance, and exploration. This creates an experience with fewer prescribed play activities, similar to playing in the woods, and stimulates the creativity of the users. These play areas are also integrated with the rain gardens on the site to provide an opportunity to learn about native plants and stormwater management

FACILITY CONTEXT

CHML fits into the broader community through the preservation of its historic Capitol Hill setting and original school structure and with its new outdoor and community amenities. Additions complement the historic school structure in materials and massing and create an equitable experience across all spaces and maintain the Montessori preference for natural materials that are not distracting or overstimulating. While the historic entry is retained as a Middle School entry, an equally important Children’s House entry on the opposite corner of the site has been created for younger students to avoid undermining the mentoring role of the upper elementary children to the lower and primary children.



JUSTICE, EQUITY, DIVERSITY

Not only are justice, diversity, and equity pillars of Montessori pedagogy, but they serve as the design foundation for CHML. The school ensures ADA accessibility throughout the campus, including two elevators and numerous compliant ramps to accommodate movement between the historic structure and the new addition. Speech, OT/PT, and special education spaces have similarly been provided and intermingled with the other classroom spaces to create a sense of community and inclusion.

To ensure the school is available to the greater community of Washington, DC, an integrated traffic and parking strategy provides dispersed bike spaces and entry arrangement which allows for alternative and energy-efficient modes of transportation to the all-ward facility and ties into the environmentally responsible stance of DCPS. Finally, the library is located in the heart of the lobby, thus reinforcing the accessibility to knowledge for the students and community.

INSPIRATION AND MOTIVATION

- 1. VARIETY - A variety of spaces with different scales and characteristics encourage both independent and group learning. The pantries, breakouts, and outdoor classrooms facilitate independent, hands-on learning beyond the walls of the classroom.
- 2. CREATIVITY- A significant portion of the budget for the school was set aside for the installation of public art which the design team coordinated locations and concepts for a range of Montessori focused sculptures, murals, and mosaics. These wonderful interpretations are incorporated at entries and major circulation areas to make art an integral part of the students' everyday experience.



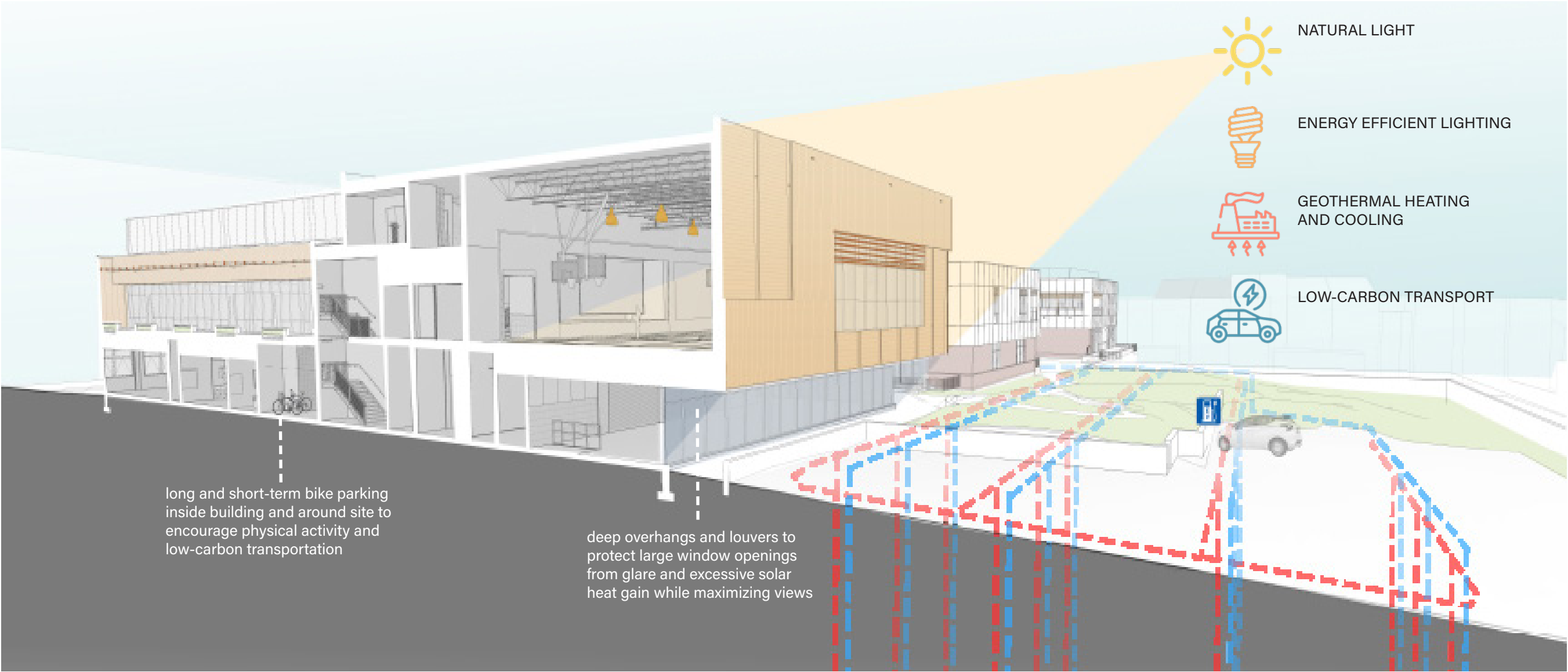
FOSTERING SUSTAINABILITY AND WELLNESS

The school's physical environment promotes sustainability and wellness in alignment with Montessori pedagogy. Gardens allow students to learn about food production and nutrition, as well as botany. Natural play space encourages movement and sensory exploration while Bio retention areas and green roofs are incorporated into the play spaces and outdoor classrooms to introduce the concepts of stormwater management and habitat preservation. Access to natural light in all classrooms and core learning spaces was a key priority for adequately lighting tasks and contributing to student wellness and mood. Finally, the building design encourages movement through biking with many new bike storage areas at both the exterior and interior.



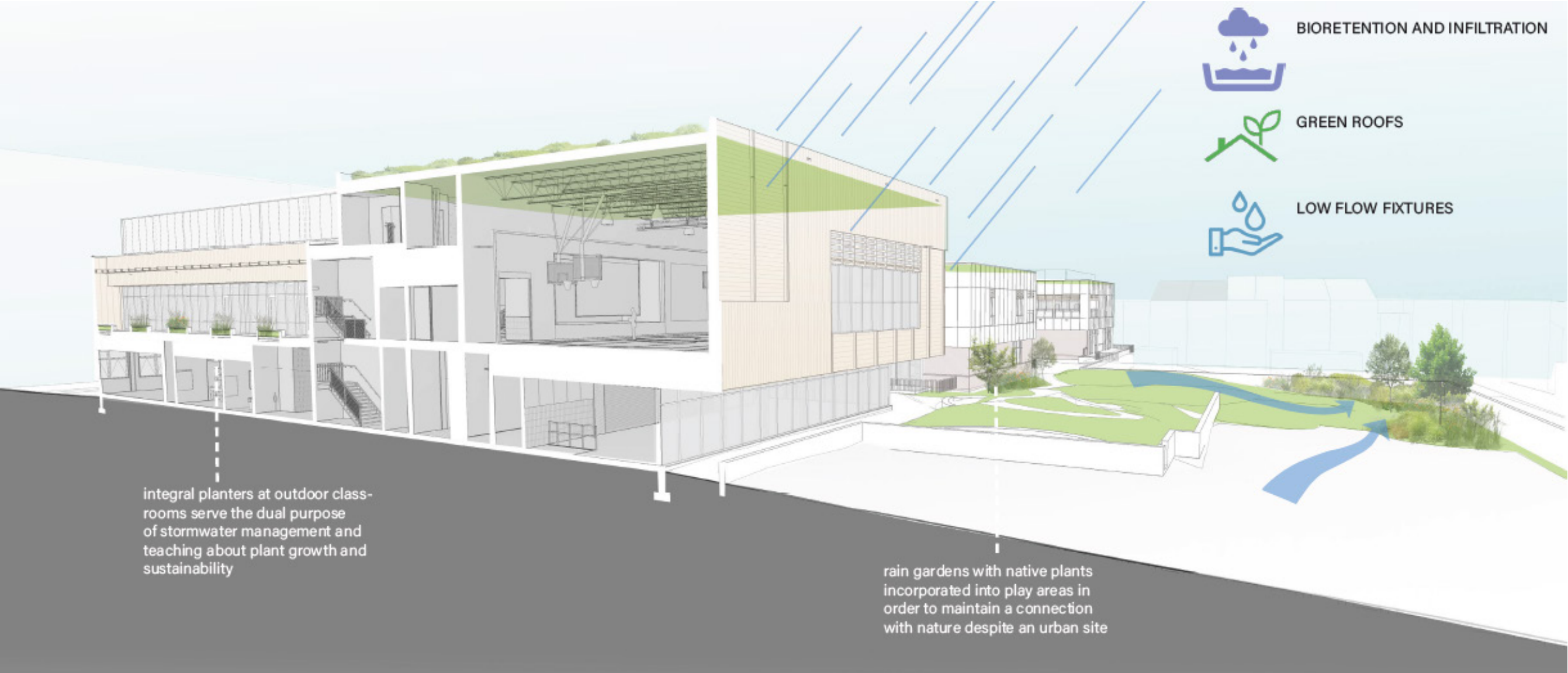


Sustainability and Wellness



ENERGY EFFICIENCY AND SUSTAINABLE ENERGY

Energy modeling was conducted throughout design phases to ensure compliance with energy use reduction goals of 25% annually through highly efficient HVAC systems, lighting, and envelope enhancement. The project team focused on lighting and thermal comfort for the building users, following ASHRAE standards and LEED guidelines. A new system of geothermal wells was installed beneath the play and parking areas to provide heating and cooling and was paired with variable refrigerant flow fan coil units in the building to allow for fine tuning of temperature in different rooms and more efficient use of space with the reduction in ductwork. Daylight is provided at core learning spaces and circulation areas and daylight harvesting was incorporated into the design of the system to adjust levels in response to the available natural light. Louvers and manually operable shades help control glare and give the users control over light conditions in all spaces. Most importantly, the existing historic building envelope was completely retained maximizing embodied carbon. Going beyond the building itself, energy reduction was considered in terms of getting users to and from the school. EV charging stations are provided in the new parking area, and both short term and long term bicycle parking is provided in many locations around and inside the building.



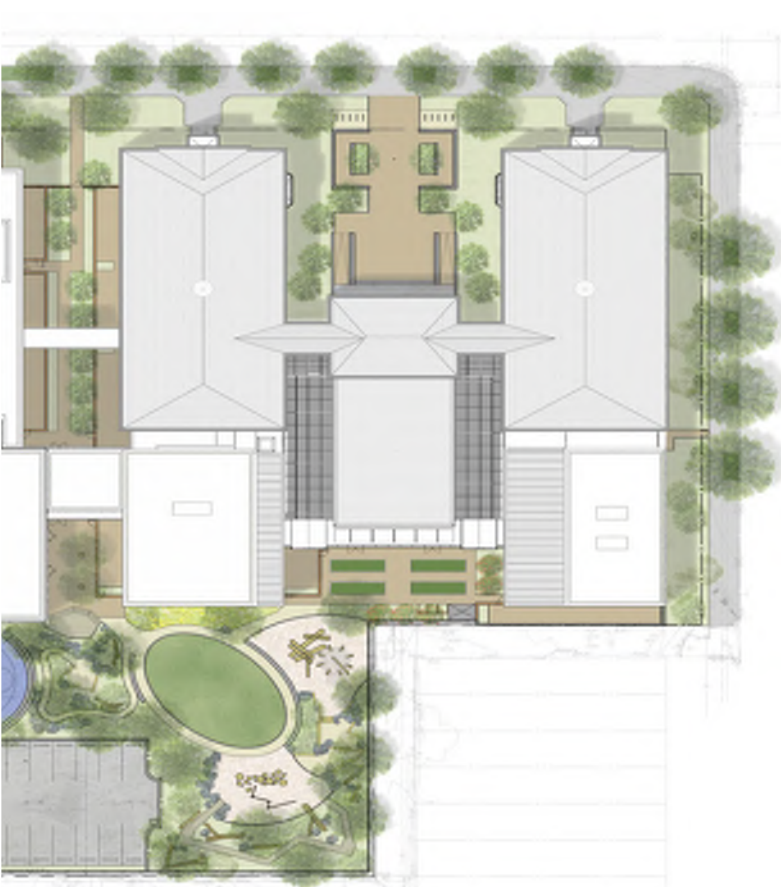
WATER TREATMENT AND CONSERVATION

Rather than just meeting stormwater and LEED requirements, the greenroofs and bio-retention areas in the project were used to beautify the play areas and outdoor classrooms, making them highly visible teaching tools for sustainability. A combination of gardens and permeable paving used at the redesigned historic entry court and new children’s house entry help to reduce any runoff from the hardscaped areas. Infiltration trenches were also utilized to maintain open area at the outdoor classroom areas while meeting the sites needs for stormwater management. Almost all of the new addition roofs have shallow greenroofs systems with low maintenance sedums to reduce water usage, provide filtration, and allow cooling and insulation simultaneously. Additionally the choice of low flow plumbing fixtures throughout the building reduced water usage significantly. These innovative water and energy saving features contributed the school’s achievement of LEED Gold certification.

DURABLE AND GREEN MATERIALS
RELATING TO MAINTENANCE

The design team engaged in meticulous detailing of the addition rain screen facade to ensure a long life for the envelope and a reduction in life cycle costs. Durable materials were selected to match the stately, permanent appearance of the existing historic building.

- 1. Brick - modular brick was used at the base of the building from a manufacturer that sourced all clay from within 7 miles of their facility. The brick and mortar joints are protected by the slightly overhanging second floor
- 2. Cementitious Panels - These panels were selected for their excellent freeze thaw resistance and natural appearance. The design team took special care to use as many standard size pieces as possible for easy replacement and reduced waste
- 3. Extruded Aluminum Cladding - Because of the school's need for durable, non-weathering materials, an extruded aluminum plank was used in lieu of real wood to clad the gym. This material was also used for louvers and slats to provide shading at large windows and outdoor classrooms.
- 4. Sedum Green Roof - sedum plants that would not require irrigation or extensive maintenance were selected for the new roof surfaces.



HEALTHY ENVIRONMENTAL ASPECTS

- 1. The meandering pathways and natural play structures encourage movement and sensory exploration around the site
- 2. A series of large planters was provided just outside the discovery commons area for a growing garden where students learn about food production and nutrition
- 3. Biophilic design was incorporated allowing views to plants and outside conditions from all classrooms.
- 4. All core learning spaces are provided with natural light and shading to control lighting conditions.
- 5. Numerous new bike racks were added around the site to encourage cycling and a traffic garden teaching children the valuable rules of the road in an urban environment was integrated with the play areas.



“If we are going to save
environmentalism and
the environment we must
also save an endangered
species. The child in
nature”

Richard Louv, *Last Child in
the Woods*