Benjamin W. Murch Elementary School Modernization and Addition

A4LE 2022 PLANNING & DESIGN AWARDS

DISTRICT OF COLUMBIA PUBLIC SCHOOLS | WASHINGTON, D.C.

Scope of Work & Budget

Date of Completion	Summer 2018
Student Population	720
Site Area; Acres	3.8 acres
Building Area : Addition	70,831 SF
Building Area : Renovation	43,012 SF
Building Area : Total	113,843 SF
Number of Stories	2 stories
LEED for Schools 2009	Gold
Construction Cost	$83,000,000

Executive Summary

The Benjamin W. Murch Elementary School project involved a complex renovation of an existing 1920's building combined with a new, complementary, addition. The modernization and addition created a 21st century learning environment, providing an abundance of flexible spaces for learning both inside and outside the classroom.

The original school building was integrated with the 60,000 SF addition by the creation of a central spine, joining old and new in both massing and internal circulation. The two buildings connect at the "Nexus" — an open collaborative environment, which offers views of the entry and cupola on the Second Level. The spine ties the individual learning pods together creating a visually coherent addition.

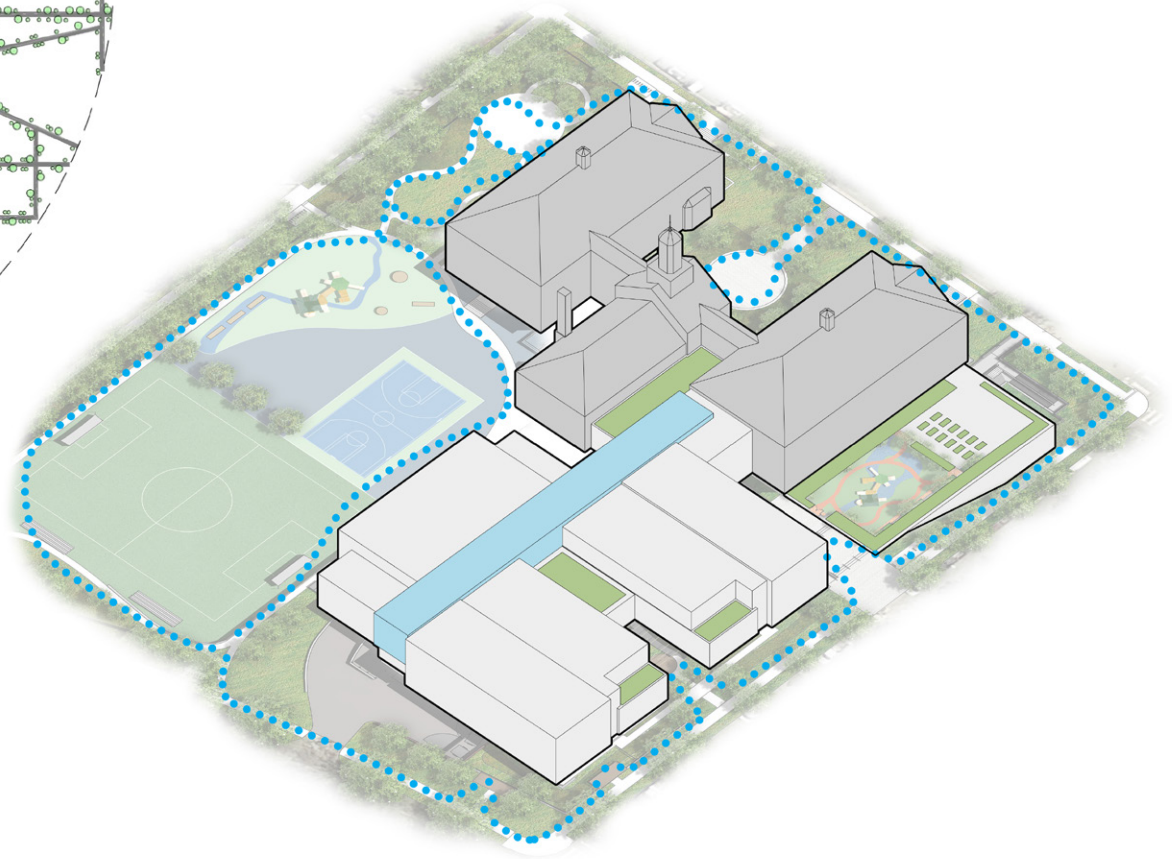
Adding to the usual challenges of any project on a tight urban site, this one also involved coordination with the National Parks Service (NPS) as some of the site was on NPS land designated for recreational outdoor purposes only.

"A School in the Park"

Responding to History & Place at the Urban Scale

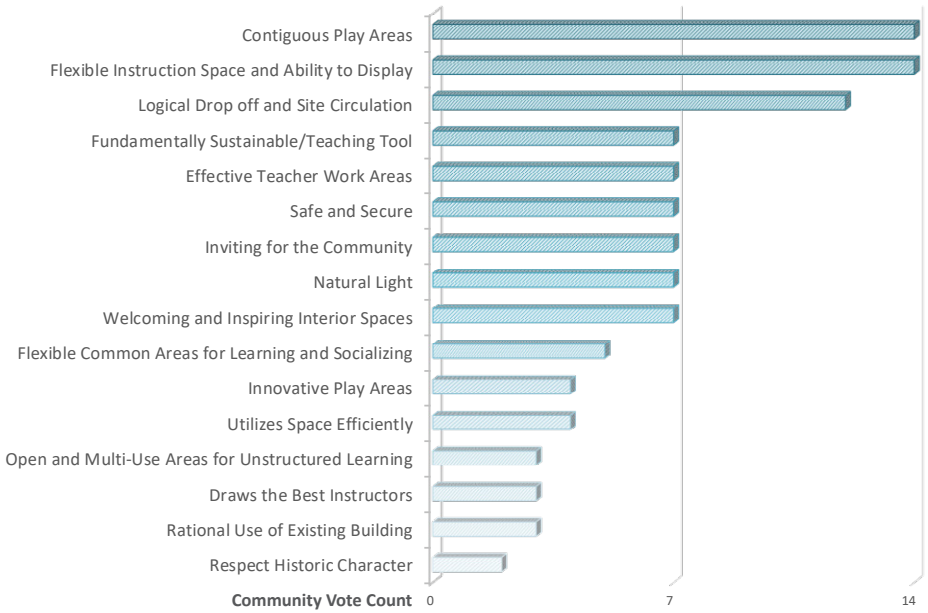
The site of Benjamin W. Murch Elementary School is situated along a path of contiguous green space that cuts through the dense residential area of northwestern Washington, D.C. This open space has become the beating heart of the surrounding community, and the design team made a concerted effort to respect the scale of adjacent single-family homes while at the same time maximizing the amount of open space on and around the building itself. The resulting building massing allowed the design team to nestle the new addition seamlessly into this context.

As the project site was part of the ring of the Civil War Defenses of Washington, adjacent to the site of Fort Reno, the design team conducted an archeological investigation of the site to assure no historic artifacts were damaged during the construction of the project. Since the site was part of this ring, a portion of the site was deeded to the District of Columbia from the National Park Service for use for recreation of the citizens of Washington. This meant that that portion of the site, could not have any physical buildings or parking lots built on it. The design of the playgrounds and gardens utilized native species, managed rain water and attracted pollinators to this portion of DC.



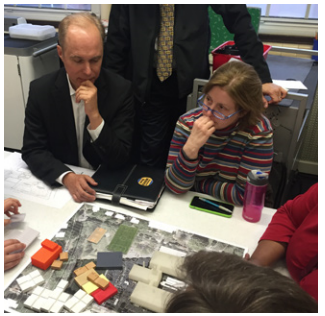
School & Community Engagement

Inclusivity of Students, Staff, & Stakeholders



The school district created a School Improvement Team (SIT), which partnered with the design team from the beginning of concept design through construction. The SIT committee consisted of teachers, staff, parents, students and neighborhood stakeholders. The design team used various activities to solicit hopes, concerns, generate ideas and receive feedback. These meetings were instrumental in shaping the final design. Early in the project we divided into small groups and placed 3D printed program blocks on the site.

The SIT used this activity to illustrate one of their clear goals for the project; maximizing the site's contiguous open play space. Conducting multiple meetings and participating in these activities allowed the community's voice to be heard and led to concrete changes in the design, such as placing the parking in a garage under the gym and placing the cafeteria under the Pre-K / K playground in the Southeast corner of the site.



2015

02-11	CONCEPT START
03-03	SIT
03-25	SIT
05-05	SIT
05-20	HIST. PRESERVATION
06-01	HIST. PRESERVATION
06-03	SIT
06-09	COMMUNITY MTG
06-29	SIT
07-01	COMMUNITY MTG
07-02	SD / DD START
08-06	SIT
10-15	SIT

2016

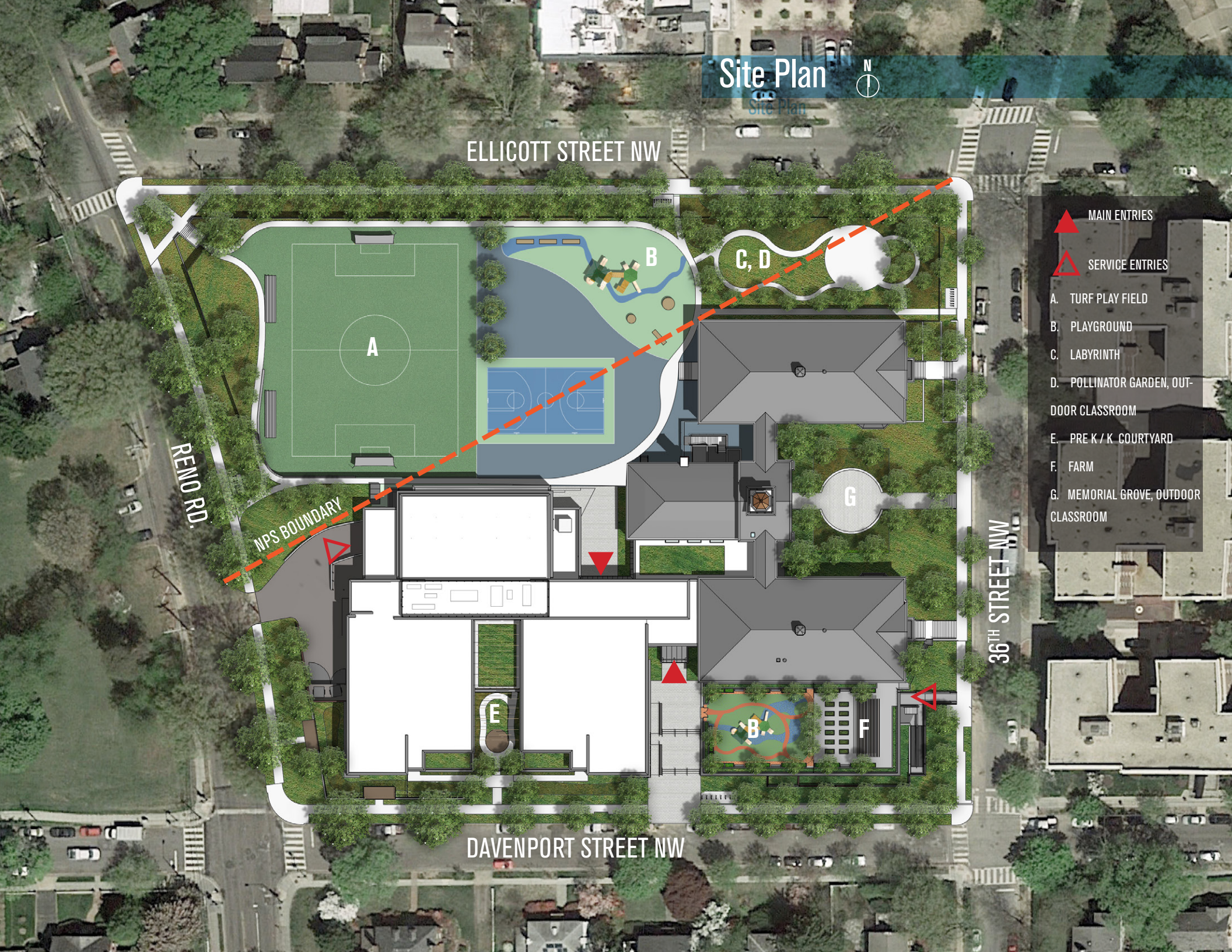
03-14	SIT
09	PERMIT SETS
09-20	SIT
10-06	SIT
10-13	COMMUNITY MEETING
10-21	GMP APPROVAL
11-30	100% CONST. DOCUMENTS
12-06	SIT

2017

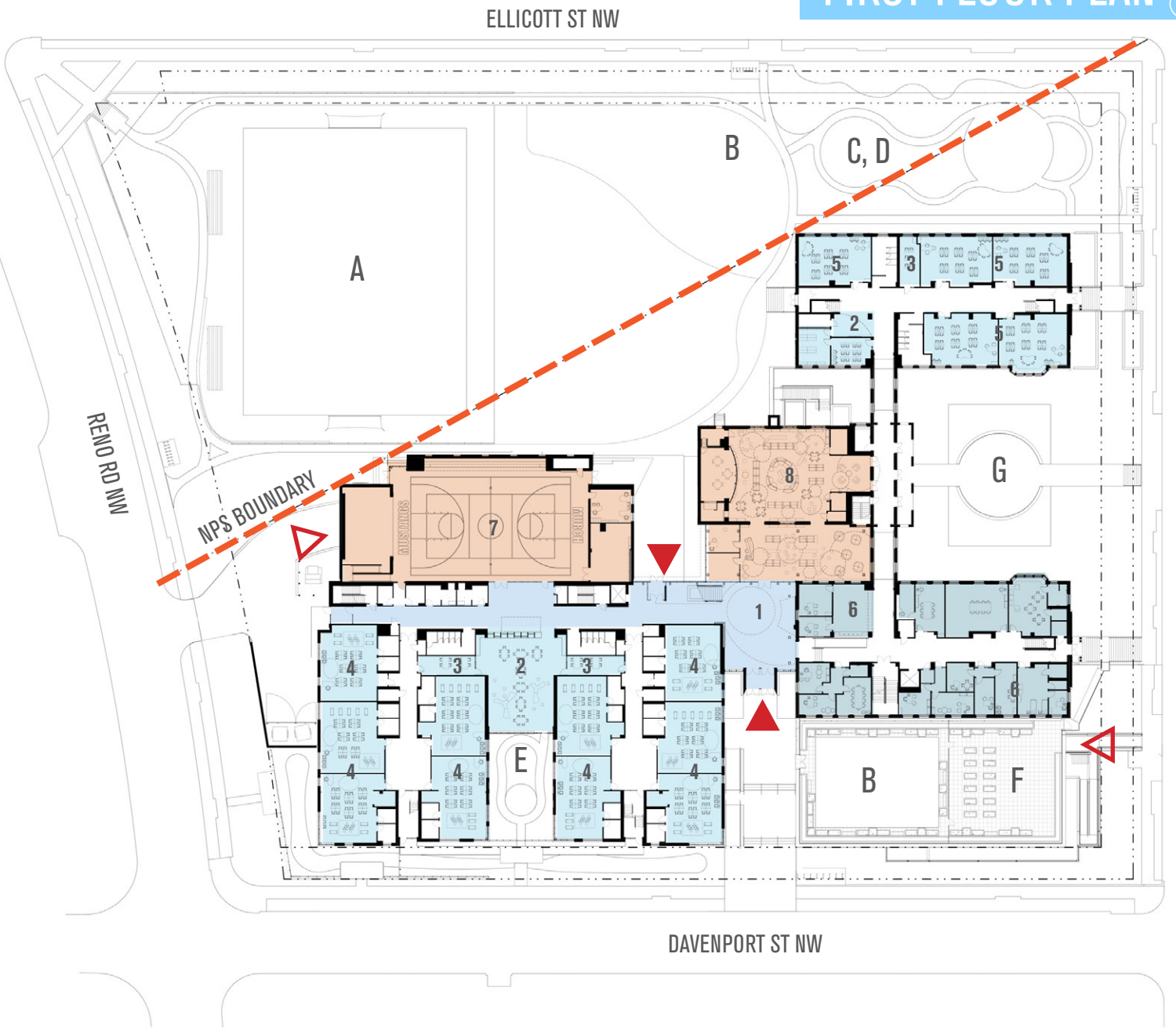
01-11	PLAYGROUND STUDENT ENGAGEMENT
02-28	COMMUNITY MEETING
08-16	PUBLIC ART COMMISSIONING

2018

07-30	SCHOOL COMPLETE


Site Plan
N
ELLICOTT STREET NW
RENO RD.
NPS BOUNDARY
36TH STREET NW
DAVENPORT STREET NW
A
B
C, D
E
F
G
MAIN ENTRIES
SERVICE ENTRIES
A. TURF PLAY FIELD
B. PLAYGROUND
C. LABYRINTH
D. POLLINATOR GARDEN, OUT-DOOR CLASSROOM
E. PRE K / K COURTYARD
F. FARM
G. MEMORIAL GROVE, OUTDOOR CLASSROOM

FIRST FLOOR PLAN



MAIN ENTRIES

SERVICE ENTRIES

1. SPINE
2. COMMONS
3. GROUP STUDY
4. PRE K / K CLASSROOMS
5. CLASSROOMS
6. ADMINISTRATION
7. GYMNASIUM
8. LIBRARY
9. MUSIC
10. ART
11. PARKING GARAGE
12. CAFETERIA
13. NEXUS
14. FOREIGN LANGUAGE

A. TURF PLAY FIELD

B. PLAYGROUND

C. LABYRINTH

D. POLLINATOR GARDEN, OUTDOOR CLASSROOM

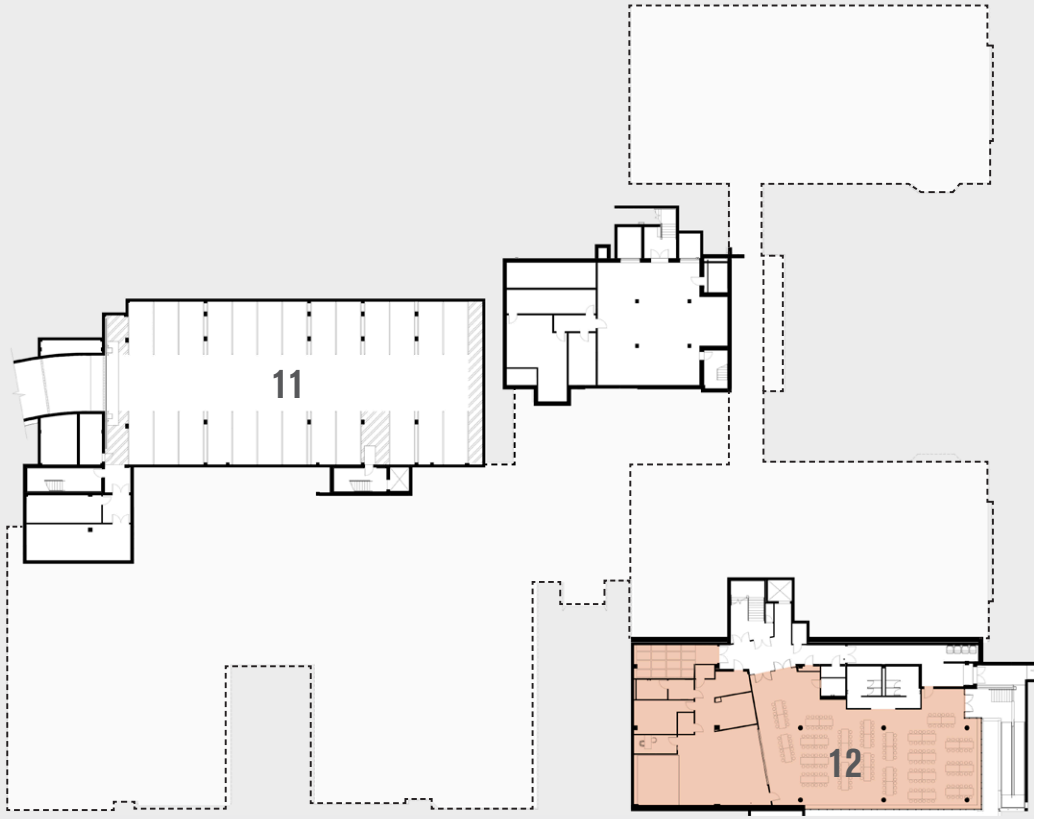
E. PRE K / K COURTYARD

F. FARM

G. MEMORIAL GROVE, OUTDOOR CLASSROOM

BASEMENT LEVEL & SECOND FLOOR

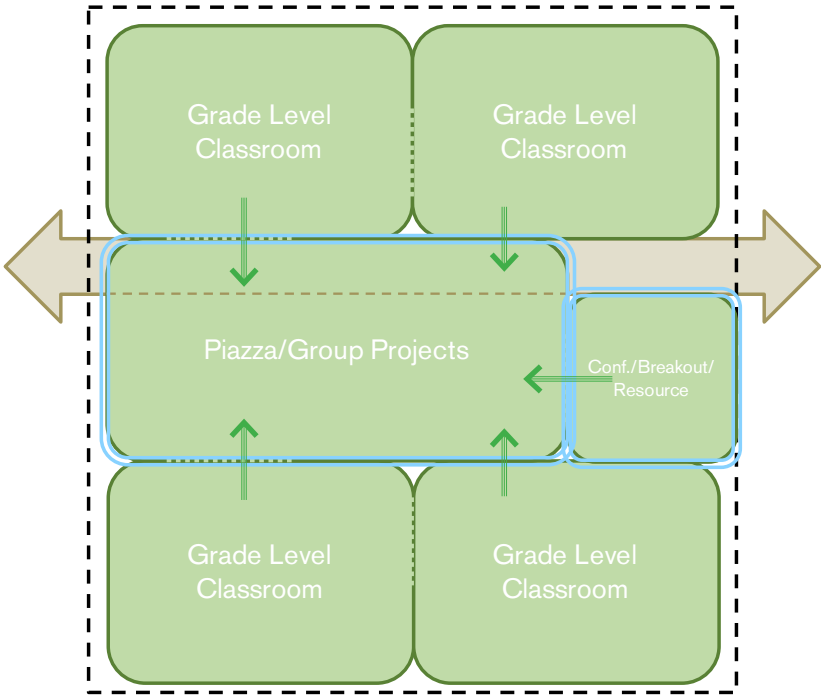
1. SPINE
2. COMMONS
3. GROUP STUDY
4. PRE K / K CLASSROOMS
5. CLASSROOMS
6. ADMINISTRATION
7. GYMNASIUM
8. LIBRARY
9. MUSIC
10. ART
11. PARKING GARAGE
12. CAFETERIA
13. NEXUS
14. FOREIGN LANGUAGE



Designing for the Reggio Emilia Approach

The Murch ES project was designed to promote student success. This included incorporating the best Reggio Emilia inspired learning spaces enhancing the existing pedagogy, collaborative work areas for faculty/ staff and design, and outdoor learning and recreation space for the school and community. As part of the student success, we also focused on the wellbeing of the student. The team used biophilic strategies to create interior and exterior environments that help facilitate mental wellbeing by reducing stress and promoting increased cognition.

The school is designed with a range of formal and informal learning environments throughout. Whether it is small breakout rooms, the Lower School Commons, or the Nexus, students and teachers have different sizes and types of spaces to meet. The corridors are designed with large tackable surfaces to maximize opportunities for display and learning.



Varied & Flexible Learning Environments

In working with the SIT and the DC Public School District, we were able, together, to shift program square footages, find efficiencies and use the building's pod layout to create opportunities for the school's curriculum. This is best demonstrated by how the Pre-K and K pods have direct access to a variety of learning spaces, which include the lower school commons, group breakout rooms and an outdoor learning courtyard.

The site includes sports fields, several play structures, colorful site furniture and a number programmed outdoor learning environments. These environments include a bird and butterfly pollinator garden, a labyrinth and school farm, which sit on top of the green cafeteria roof off the main entrance. A special courtyard is also designed for Pre-K and K students containing a learning garden and play turf.

Surmounting Site Utilization Constraints

The historic Murch school offered a severe site utilization challenge. Guidance from the Historic Preservation Office indicated their desire for the street-facing elevations to be as visible as possible, retaining primacy on the site. The steep slope of the site to the west created an opportunity for the cafeteria program to be a primary new face for the school at the SE corner by the lowering the cafeteria below the historic elevation, opening the southern and eastern faces to views and light and installing a rooftop Pre-K play area that becomes an inviting front entry element to the main entrance.

The new main entrance provides a clean, fully glazed separation between the existing and new classroom wings. The entry is reduced in scale to avoid interrupting the existing building's quoins and cornice. The color of the brick and the arrangement of the classroom windows are influenced by the existing building's rhythm.

Universal Access

Integrating a Two-Sided Entrance

The front door to a school is a critical access point, and is an expression of how a school opens up to its neighbors. In conversations with the SIT committee, the design team understood the need to have a centralized entry that could be accessed on two sides. These conversations led us to place the entry off Davenport Street and make it easily accessible from the playground.

Playground Entrance

Davenport St. Entrance

“A School in the Park”

Using Biophilic Design to Enhance Student Success

Due to site and construction constraints, each floor of the new addition is two feet lower than the existing building. On Level Two, the need for this transition led to the Nexus. The Nexus is a circular breakout learning space, large enough for a class to meet, which also happens to have a ramp and stair. It is here the details of the existing building are exposed, and careful attention was paid to patterns, form, and material selection.

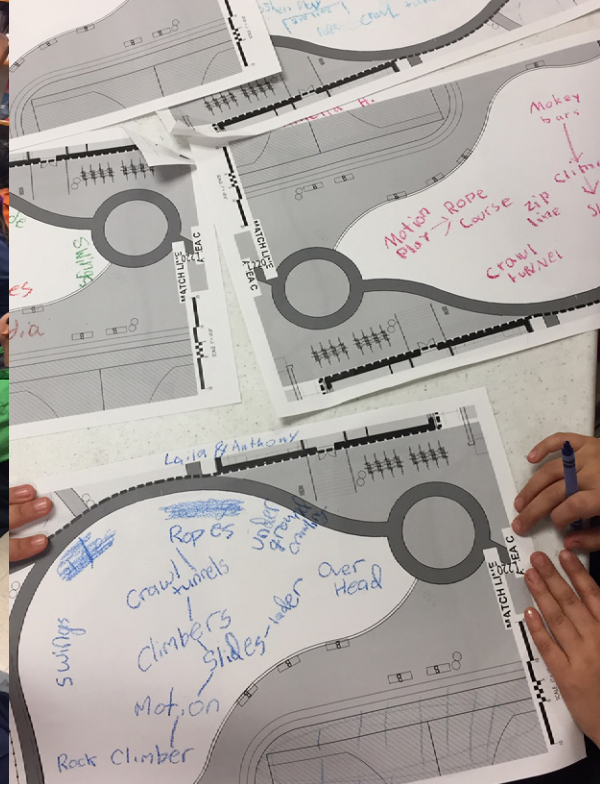
This is one of the areas where the notion of “A School in a Park” is brought in and through the building. Where large expanses of glass enhance views to the exterior, the visual transition from inside to outside is softened by a canopy of wood slats and Biophilic design elements. A second example is taking what ordinarily would be a simple gymnasium pre-function space deep in the center of the floor plate, and transforming it into a light-filled, vibrant hub of natural materials and varied patterns.

"We are creating beautiful and constructive environments for students, teachers, families, and the entire Murch community to think bigger and more boldly about their future."

Murel Bowser, Mayor of District of Columbia

Student-Centered Design

The Murch project involved intense engagement with parents, neighborhood stakeholders, review agencies and Murch students. Upon visits to the school after occupancy, the design team observed that the enlarged "piazzas" at each of the addition's classroom cores have been immediately adopted into the curriculum, with various student projects on display. These enlarged spaces at the ends of the corridors have allowed for an exchange of ideas and creative energy that was not possible with straight corridors and separate rooms.



Designed By and For the Community

The amount of open space that was preserved for public use is a testament to the school district's commitment to the success of the neighborhood it is situated in. The variety of outdoor spaces provided enjoys near-constant use by the school and community. The final recreation, landscape and garden designs, involved design session with students of all grades to determine the right mixture of open and structured play elements on the site.

As the configuration of the playgrounds were being finalized, we engaged a group of students in a variety of activities to inform the type and arrangement of the playgrounds. Their input influenced the final design, aligning the daily student flows and equipment placement, making the final design a resounding success.

Sustainable Site Design

The Murch Design Team targeted building and site sustainability from the project onset. The Teamwide charrette identified achievable goals which included aggressive site redesign and restoration, including adjacent public space areas outside site boundaries. The Team's civil engineer and landscape architect used multiple site walks with agency, community and student stakeholders to identify key site elements (trees, permeable walkways and play areas) to be incorporated so the building and site served to connect the neighborhood together to all adjacent blocks through safe and interactive walkways.

Site work used native and adaptive plants, uncompromising protection of existing heritage trees, an "R" tank underground storm water retention and re-infiltration system, extensive use of permeable paving, and no potable water irrigation at all areas. All parking was put underground in a structured parking garage under the gymnasium which minimized the impact parking on pedestrian circulation and maximized the use of the site for education and recreation.

Sustainable Building Design

Flexible, Interactive, Light-filled

The strategies utilized were deeply embedded in sustainable design including abundant natural light, green roofs, and interactive raingardens and bioswales. The Murch School is LEED-Schools 2009 Gold Certification level, and features high quality and low-VOC finishes, a highly efficient HVAC system with low operating cost, and advanced technological systems. Additionally, the project modernizes and retains over 65% of the existing building and implements restorative practices to preserve existing historical elements. Our Whole Building Energy Simulation modeled an EUI of 28, and we achieved an energy savings of 35% per LEED-Schools 2009.

Understanding how the brain reacts to natural patterns and daylight allowed the design team to introduce natural light and views to as many learning spaces as possible. Exposure to natural light is linked to benefits to alertness, circadian rhythm regulation, and metabolism. Maximizing children's access to daylight is essential to their well-being during the school day.