



# ROCK CREEK SCHOOL

A SCHOOL FOR STUDENTS WITH DIVERSE EDUCATIONAL & MEDICAL NEEDS

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FREDERICK COUNTY PUBLIC SCHOOLS - FREDERICK, MARYLAND



01

# Executive Summary



## Executive Summary

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### Exceptional Education and Equity

Rock Creek students have combined physical and cognitive challenges requiring **space accommodations unlike those in a typical school**. Prior to **project startup**, Rock Creek staff developed their own vision statement to supplement the Frederick County Public Schools vision for a new Rock Creek School.

*Rock Creek meets the individual needs of all students by **collaborating with families, staff members, service providers, curriculum specialists, and community members**. Students are actively focused on rigorous standards implemented through engagement and intervention in order to create a culture of high achievement for all students in an inclusive setting. Expectations are for every student to achieve academic goals, functional living skills, and **increase mobility and communication skills**; this will allow them to be able to apply and generalize environments. Rock Creek will provide an authentic setting to our students which incorporates current research-based adapted tools, materials, and technology. Students will develop **social competencies**, increase **independence**, and become **contributing members of a global society**.*

This vision statement, published in the Educational Specification for the Rock Creek replacement school, established the design parameters for a facility meeting the unique needs of its students and staff. The primary objective was to **create an educational environment** that provides **opportunities for inclusion, staff and family support and collaboration, communication integration** throughout the school day, student engagement, and movement, in a multi-sensory, flexible environment that **fosters independence**, and accommodates individual learner abilities. The mission was to provide space to aid each student in achieving their **potential**. Learning at Rock Creek School is continuous and diverse, and the new facility provides learning opportunities everywhere all the time. Circulation spaces serve as learning environments and storage space is prioritized to accommodate assistive technology and adaptive equipment used in instruction throughout the day.

Stakeholders were included at all stages of the project to ensure the project achieved a result serving multiple goals. Efforts resulted in a facility providing “...**exceptional education and equity for, every child, every day**.” Students are thriving and are proud to share their new school with their families and the community.



# 02

## Scope of Work & Budget

The project's scope included the design of a replacement school of approximately 80,000 gross sq. ft. with a state-rated capacity of 120 students and alternate construction to accommodate another 70 students. The team was asked to evaluate 7 potential sites located throughout the County and make a final site recommendation. The project scope also included confirmation of a previously prepared educational specification during the schematic design phase.

Due to the specialized nature of the facility, the design team consisted of a local architect, a design architect, a special needs architect, civil, structural, mechanical, electrical, and plumbing engineers, landscape architect, and food service, sustainable design, acoustical, communication/data network, and aquatic design consultants, and a playground specialist to develop the adaptive outdoor learning courtyard. To ensure budget compliance, the Construction Manager was brought onboard during design. The team was accountable to a Design Committee, comprised of Rock Creek administrators, staff members, and parents, and Frederick County Administrators.





## Scope of Work and Budget

### Planning Process

Planning began with the **site selection process**, followed by meetings to review the educational specifications with staff. Staff identified **deficiencies in the existing building** and assisted in defining improvements for the new facility. **Tours were also conducted** of other similar facilities to give staff and administrators ideas. The process culminated in meetings to review the proposed building layout on the selected site.



Tour



Planning - Bubble Diagram

The Design Team conducted **bimonthly meetings** with the District's Design Committee to discuss building requirements and review plans, elevations, and finish materials. **Special meetings** were held specific to mechanical, electrical, plumbing, security and technology systems, and the design of **specialized areas** including the therapy pool and adaptive playground. Additionally, the team worked with vendors to ensure **proper design and detailing** of lifting devices and coordination of layout and infrastructure for equipment in the Sensory Room.

### Planning Meeting



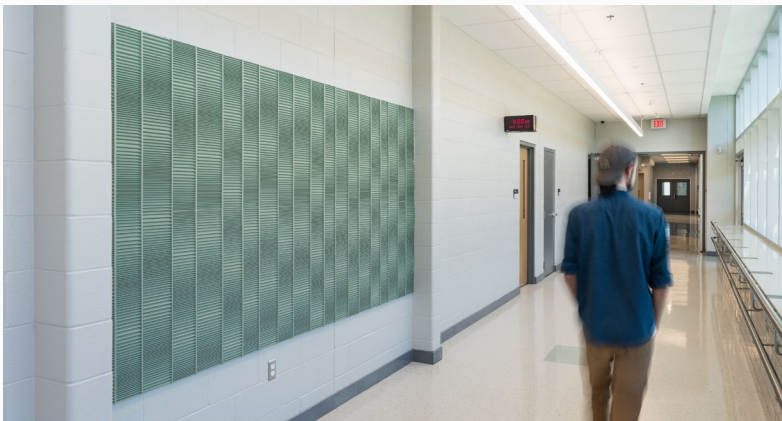
PROJECT NAME	Rock Creek School
CITY	Walkersville
STATE	Maryland
DISTRICT NAME	Frederick County Public Schools
SUPT / PRESIDENT	Dr. Cheryl L. Dyson
OCCUPANCY DATE	September 2019
GRADES HOUSED	Pre-Kindergarten – High School
CAPACITY (STUDENTS)	120
SITE SIZE (ACRES)	13 Acres buildable area on shared site
GROSS AREA (SQ FT)	81,100
PER OCCUPANT (PUPIL)	676 sf per student
SITE DEVELOPMENT	\$12,291,565.00
BUILDING CONSTRUCTION	\$29,691,547.00
TOTAL	\$41,983,112.00

## Scope of Work and Budget

### Visualizing the future

The Design Team utilized Building Information Modeling (BIM) and rendering software to aid the Design Committee in **visualizing layouts, determining scale, and understanding building features**. This software was especially useful in illustrating color schemes and proposed graphics; notably the theme walls and tactile features used in the corridors, inspirational wall text in the library, and acoustic panels in the lobby.

Extensive meetings were also held with the local Walkersville Community to **answer questions** and concerns regarding the project. In addition, the **special requirements** (medical & security needs in particular) the building occupants presented required numerous meetings with various **Authorities Having Jurisdiction** to ensure full code compliance coordinated with meeting occupants needs.



*Tactile Feature*



*Corridor Graphic Rendering*



*Main Lobby Rendering*





**Courtyard and Accessible Playground**



**Accessible Bus Canopy and Front Entrance**



# 03

## School & Community Research / Engagement



### The Community

The Frederick County Public School mission is **to inspire, innovate & motivate**. The School District serves over 280,000 residents, and 45,000 students, in 12 municipalities in Northern Maryland. They are committed to providing “...**exceptional education and equity for “every child, every day”**.”

Rock Creek School provides individualized special education programs for Frederick County students with severe intellectual, physical, emotional, hearing, visual and learning disabilities. Students range in age from age 3 through the school year they reach 21. Students may transition at age 18 to the **SUCCESS program** for further vocational training. Students who remain until age 21 receive a certificate of completion and are eligible to enter an adult day program.

The Rock Creek community is **more of a family than a school**. Staff and Administrators form close relationships with school families and together they nurture and develop the academic, physical, social, and **emotional growth** of the Rock Creek children.

**Staff is vital to program success**. Special Education Instructional Assistants support students with their daily needs in the classroom. Specialized staff provide Occupational and Physical Therapy, Speech & Language, and Reading and Behavior Support. Special Education teachers and the administrative team provide classroom instruction, and two registered nurses care for the **varied medical needs** of the students. Some students travel with and attend school utilizing private duty nurses.

Planning efforts for the replacement school were focused around meeting the Rock Creek family's unique needs. The endgame was to provide an affordable, easily maintained, sustainable facility equal to other new schools in the district: **A place that students are proud to attend** and share with their families and the community.



## School & Community Research / Engagement

### Site Selection Rubric

#### EXISTING SITE FEATURES

##### 50 Total Points

- Buildable Area Size & Quality
- Roadways/Traffic
- Vehicular Access Points & Sight Distance
- Pedestrian Access to and from adjacent sites
- Availability & Capacity of Public Utilities

#### ACCOMMODATE ED SPECS

##### 175 Total Points

- Ed Spec Compliant and Optimized Building Footprint
- Bus Loop Capacity & Functionality
- Parking Capacity & Functionality
- Size & quality of Playgrounds, Outdoor Educational, and PE elements
- Ability to provide a meaningful connection to other buildings on site

#### ACCESS & EQUITY

##### 175 Total Points

- Proximity to appropriate peer and age group connections
- Proximity to Public Transportation
- Access to vocational and employment opportunities
- Adjacent to Community Services
- Central location in County
- Anticipated Ambulance response time

#### REGULATORY & FUNCTIONAL

##### 100 Total Points

- Costs – Construction
- Costs – O&M Transportation
- Staging/ Phasing / Access for Construction
- Maximizes LEED Site Credits
- Aligns with IAC Site Selection Criteria

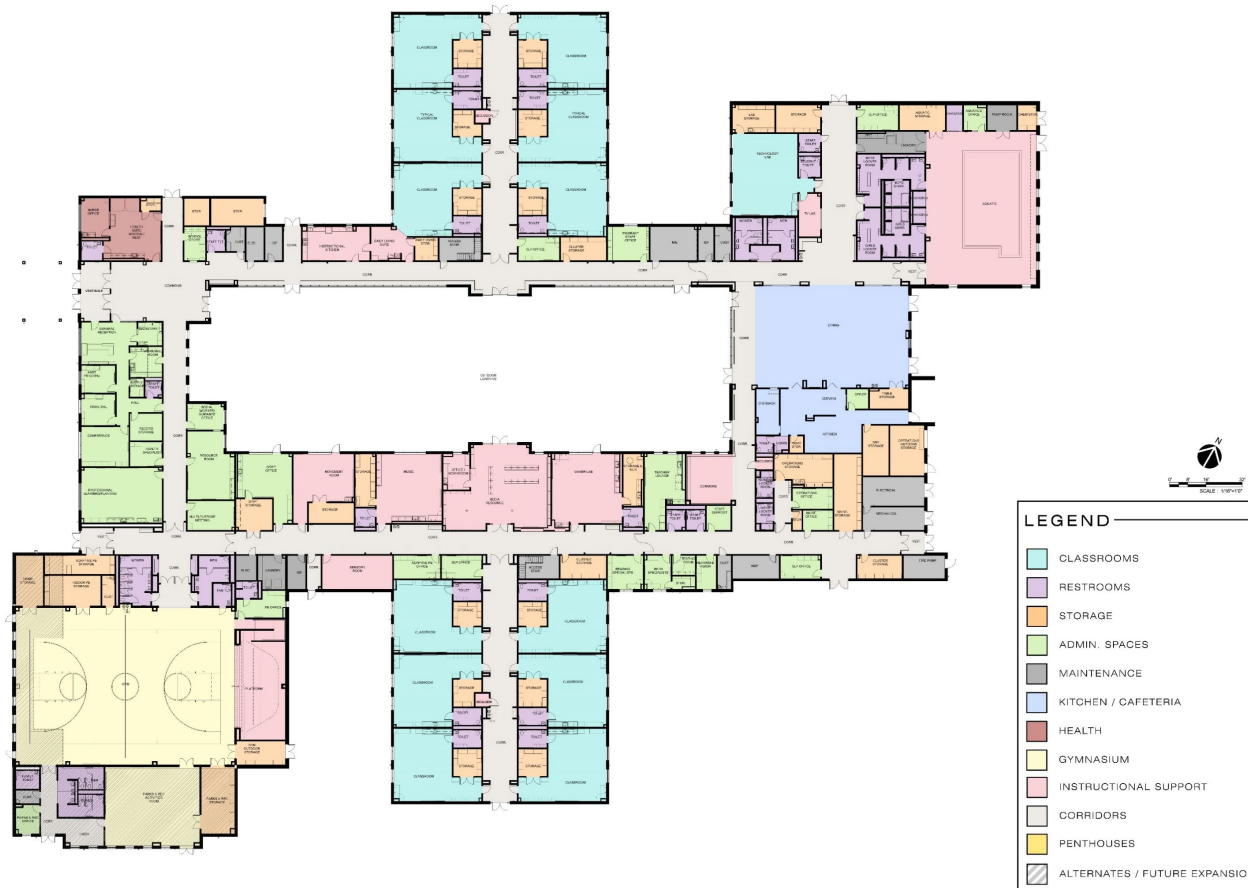
**Exhaustive time** was spent finding the **right site** for the new school. The Team visited seven potential sites to gauge existing conditions, and met with associated local **City, County, and Town planning departments**. Over 3 review meetings, the **Design Committee developed a rubric** to identify selection criteria in the four categories identified above. Each site was then scored.

Although not central to the County, the Walkersville Middle School site was selected due to readily available access to **public transportation**, vocational and employment opportunities, and community services, all deemed critical to program success. Additionally, the adjacent Walkersville Middle School, and proximity of Walkersville Elementary and High School **provided integration opportunities** with varied grade level students.

# School & Community Research / Engagement

## Project Challenges

The project budget was tight and value engineering occurred throughout design. The team identified complicated alternates to ensure the project budget would be met. The design included alternate construction for a middle school wing, a learning common in each classroom wing, a specialized alternative instruction wing, a greenhouse, and additions for an expanded parks and recreation gymnasium. The expanded gym was the only affordable alternate accepted on bid day, providing the community with an adaptive gymnasium for the Rock Creek and Frederick County communities.





# 04

## Educational Environment Design

### Education Vision and Goals

The **mission** of Rock Creek School is to provide a **safe, respectful, caring, and enjoyable learning environment** in which students can develop communication and independent-living skills to help them achieve their **full potential**.

Space design had to support **8 guiding principles**:

1. **Inclusive Opportunities**
2. **Communication**
3. **Student Engagement**
4. **Movement**
5. **Sensory**
6. **Independence**
7. **Responsiveness**
8. **Continuous Learning**

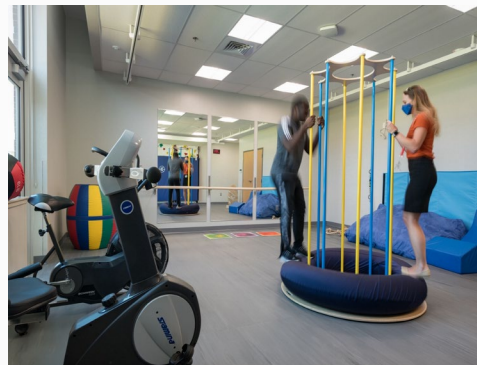


At Rock Creek, students are taught to **adapt to the environment**. This philosophy is embodied in the school mascot, a chameleon, known for its ability to **change and adapt**.



*At Rock Creek, every space provides a learning experience.  
Learning happens everywhere: Inside and outside,  
in classrooms & corridors!*

*Independence*



*Movement*



*Continuous Learning*

# Educational Environment Design

## Supporting Learning Styles

Student instructional **needs are diverse**. Learning styles and methods of delivering instruction are supported by **classroom clusters, specialty classrooms, and support services** off a main corridor surrounding an **outdoor learning courtyard**. Color-coded textured wall panels and floor accents adorn entrances to classroom clusters. High and low grab bars along the main corridor provide an indoor walking path used for physical therapy. The lobby and a small open breakout space provide spaces to **rest, socialize, and collaborate**. The Cafeteria which is open to the main corridor allows for views to the courtyard, provides social seating options and an area for **large group instruction**. Classrooms provide space for individual and small group instruction.

Specialty classrooms include a living skills kitchen, vocational skills room, technology lab, maker lab, music room, movement room, sensory rooms, adaptive gym, heated aqua therapy pool, and a library. These spaces support the mission and the **8 guiding principles**.



*Socialization and Large Group Instruction*



*Physical Therapy*



*Rest, Socialization, and Collaboration*



# Educational Environment Design

## Adaptable Design

The New Rock Creek School design meets the needs of the staff and **enhances community use opportunities**.

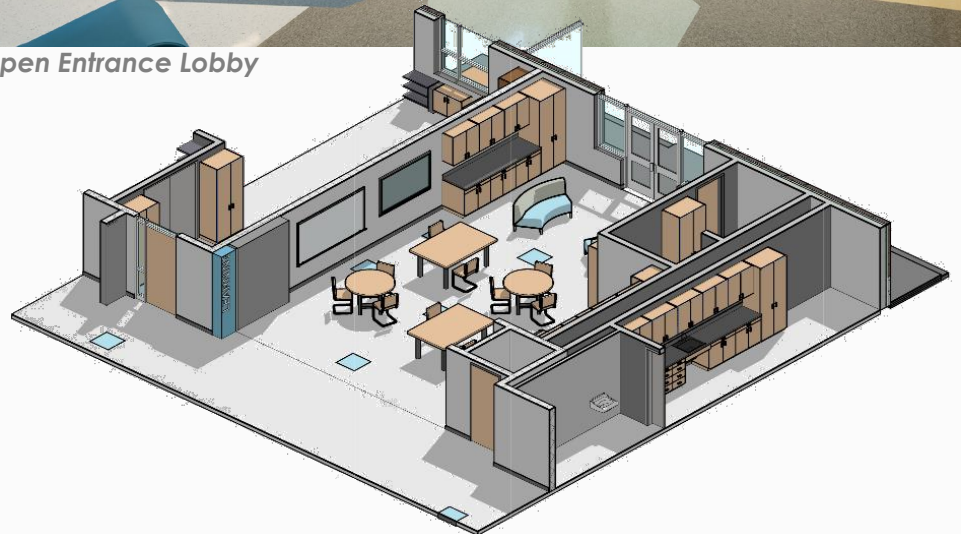
The Main Office is accessed through a secure vestibule at the bus loop. Once checked in, visitors enter a **warm and welcoming lobby** which serves as a socialization and collaboration space for students, staff, visitors, and parents. The Health Suite, **crucial to school operations**, is located directly off the lobby and accommodates easy daily access and quick medical emergency response. Offices for **specialized and itinerant staff** and specialized instruction spaces are located along the corridor loop, along with resource and professional learning and planning rooms, a teacher lounge, and staff bathrooms.

**Accessible public restrooms** are conveniently located adjacent to large gathering and public spaces, with a lift provided at each restroom. An **adaptive aquatic area** and Parks and Rec gymnasium accommodate the **larger community**.

Each wing was designed to convert a classroom **to a collaborative learning commons** when the middle school wing was built.



*Open Entrance Lobby*



# Educational Environment Design

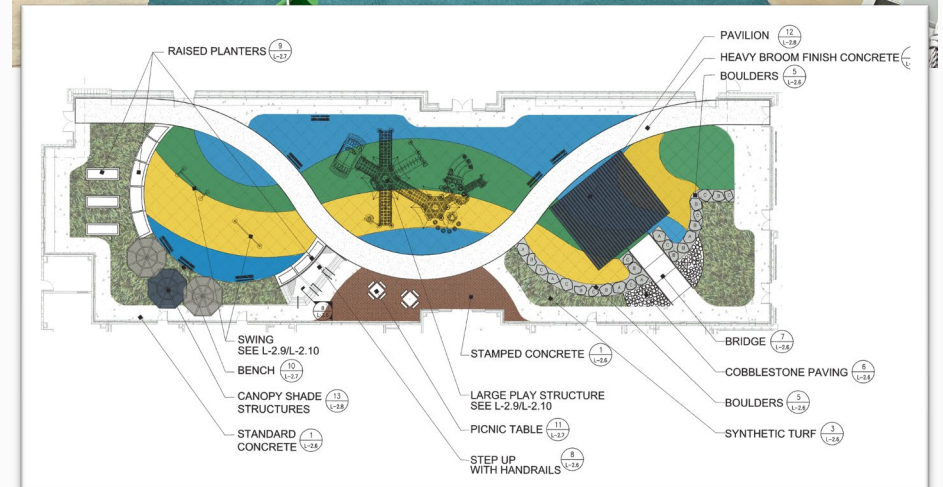
## Accessible Playground

Although not included in the original educational specification, the Design Committee chose to feature an accessible playground inside a central outdoor learning courtyard. Equipment includes play structures, swings, canopy shade structures, and pavilion. Picnic tables and benches are provided at strategic locations. All amenities are connected via ramps and stairs, walk paths, and bridges. An accessible concrete walk follows the perimeter of the courtyard. Raised planting beds are also provided. For textural variation, flooring materials include standard, stamped, and heavy broom finish concrete, synthetic turf, and cobblestone paving.

The courtyard is accessible from the Lobby, Library, Cafeteria, OT/PT Office, Movement Room, Maker Lab and at multiple locations along the Main Corridor loop. As an unintended achievement, this outdoor learning space became invaluable during the Covid-19 pandemic years.



Playground Equipment





# Educational Environment Design

## Sensory Room

Individuals with multiple disabilities often have sensory impairments. In the **Sensory Room**, **equipment controlling sensory input** can eliminate distractions and assist students in attending to specific objects that may help them make sense of their external environment. In this room sensory equipment is utilized **to create a controlled sensory-focused environment**, allowing sensory experiences to be individually **tailored to the specific needs** of the student. The amount and intensity of the sensory experience is **monitored and controlled** by the staff to prevent overstimulation and stress and provide sensory integration therapy to students with sensory processing challenges. This designed space serves students, facilitators, teachers, and parents. Staff reports this is **everyone's favorite space!**





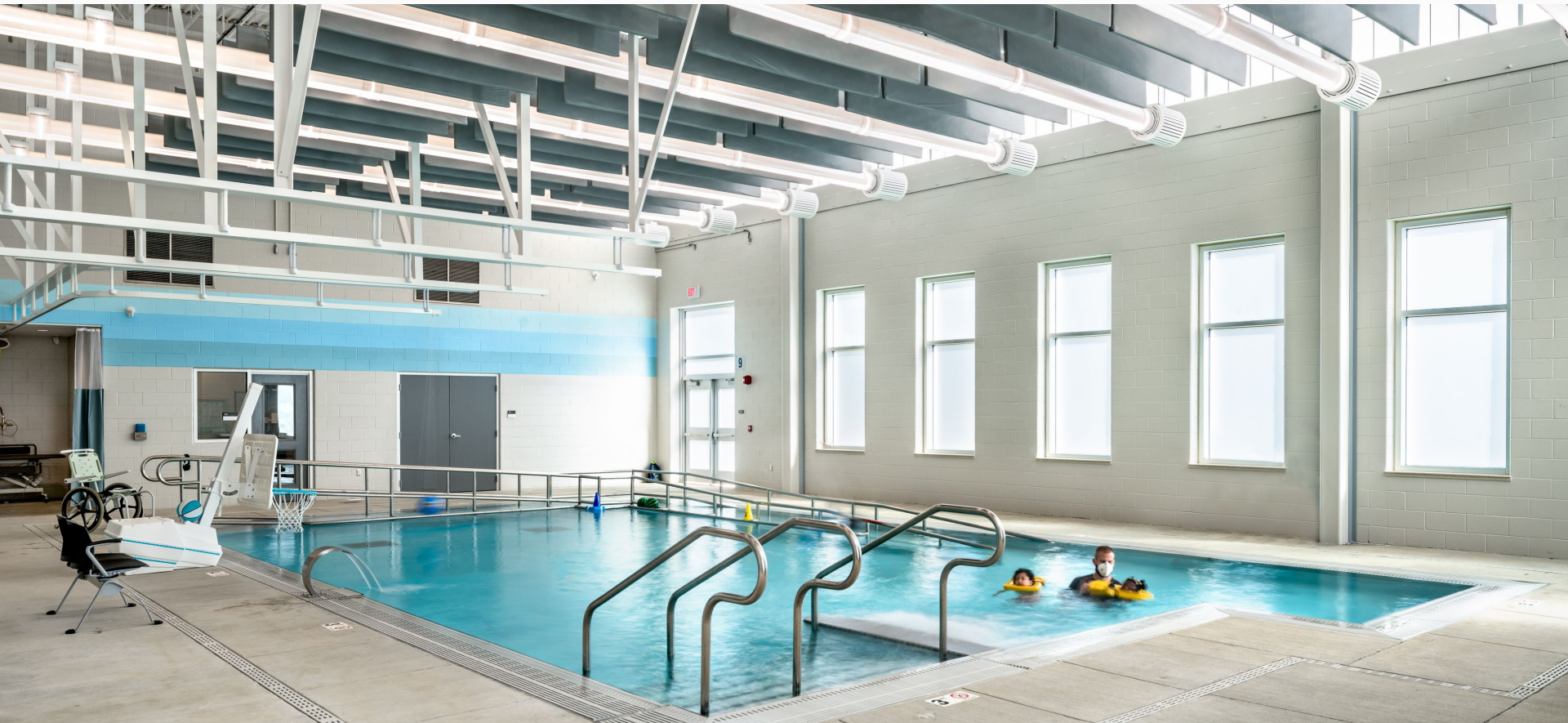
## Educational Environment Design

### Therapy Pool / Aquatics Area

“...exceptional  
education and equity  
for “every child,  
every day”

The therapy pool provides opportunities for students to **work on mobility skills**, aided by an instructor for one on one or small group instruction. The pool's location on the North section of the facility allows for **ample natural lighting** providing for a **bright cheerful space**.

Features of the Aquatic Area include a ramp, wheelchair parking area, wide decks on 2 sides of the pool, 3 changing areas along the pool deck, perimeter trench drain, adjacent locker rooms, storage rooms, and steel support for 4 overhead lifts. **Special attention was given to acoustics**, with acoustical decking and ceiling hung acoustic baffles.





# Educational Environment Design

## Library

The old Rock Creek School had a small Library, often used as a conference space. To alleviate confusion with changed terminology, the staff opted to maintain that name in the new building rather than change it to Media Center or Learning Commons. The Library color scheme is a combination of all building colors. Natural wood accent ceilings compliment the warm wood furnishings. The space includes an instruction area with lift, computer area, office/workroom room, and direct access to the outdoor learning courtyard.



*Open Instruction Area*



# 05

## Results Of The Process & Project

### Project Success

The New Rock Creek School **provides limitless opportunities for students and staff.**

The design meets the overall program requirements and the **8 guiding principles**. The New Rock Creek School accommodates...

- ...purposeful **inclusive opportunities** for meaningful engagement with age-appropriate peers.

- ...opportunities for **communication** integrated throughout the school day.

- ...**student engagement** in daily life with opportunities for self-expression and individual choice.

- ...freedom and ease of **movement** in personal and public spaces.

- ...multi-sensory, flexible environments offering individual control and access to **sensory engagement** in learning.

- ...maximum **independence** in authentic activities of daily living and education.

- ...individual learner abilities and needs are met via a flexible, **adaptable** learning environment.

- ...**continuous learning** opportunities for family support and collaboration.



Movement Room



Aquatic Center



Accessible Playground



## Results of the Process & Project

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### A Facility to Thrive In

Unlike its predecessor, the Rock Creek replacement school provides “...exceptional education and equity for, **every child, every day**” thereby achieving the school district's mission. The school location accommodates opportunities for integration between the Rock Creek and Walkersville Elementary, Middle, and High School populations. Rock Creek students have readily available access to **public transportation**, vocational and employment opportunities, and community services identified by the school district to be critical to program success.

Rock Creek students and staff are **proud** to show off their new school and students are thriving in a facility where **educational opportunities abound**.

*Students are thriving in a  
facility where  
**educational  
opportunities** abound!*



## Results of the Process & Project

### Achieving Community Goals

The gymnasium provides a space for students to engage in **physical activity**: instruction, sports, and play. The Gym was expanded to accommodate a **shared after-hours Parks and Recreation facility** with a larger gym and support spaces. In partnership with the County, the New Rock Creek school provides an adapted Parks and Rec program for the community. Parks and Rec support spaces include an activities room, storage room, office, and toilet facilities to include a family room with changing table and lift. The overall space was designed to accommodate and **separate shared from non-shared use functions**. Parks and Rec spaces can be accessed from the school or from a separate after-hours entrance near the Parks and Rec office.

High translucent glazing provides **natural light** and minimizes glare. In keeping with previously established standards, the gym is the only place in the school where the official school color is used: **Red**.

The gym floor is **resilient athletic flooring** with special striping and shapes to **support games and activities**. The ceiling is exposed acoustic steel deck. **Wall-mounted acoustic panels** also help control sound.



Shared Gymnasium



Shared Gymnasium

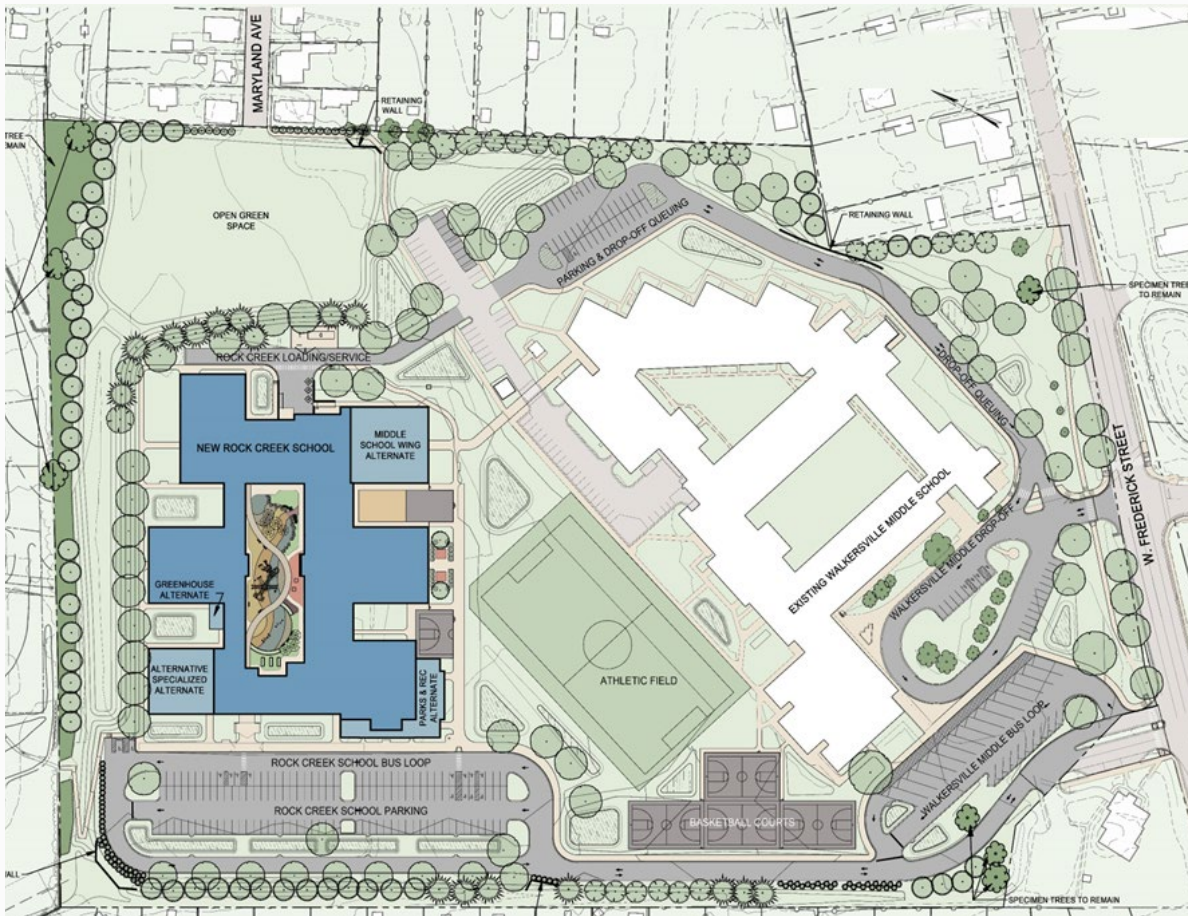


# 06

## Physical Environment Design

### Site Plan

The New Rock Creek School is located at the rear of an existing Middle School property. The area behind the middle school housed a dilapidated track that **was re-allocated for the new school**. Outdoor amenities are combined and utilized by both schools, and **drive aisles are shared as well**. The Rock Creek bus loop and main parking area are accessed from the same entrance that serves the Middle School bus loop and the Rock Creek loading area is accessed via the Middle School's loading and staff parking entrance. **As much as possible**, services and access were designed to facilitate traffic flow and shared use of the site, and the site was designed to provide **access and connection between the two schools**.



An exterior **walk/bicycle path** circles the school providing opportunities for **movement, independence, and integration**. Along the path, students may rest on benches at the memorial garden. Bricks engraved with the names of prior students that have passed away were relocated from the original school and are now **displayed in the garden**.





# Physical Environment Design

## Classroom Corridors

Wayfinding is accomplished throughout the building via color and themes. The Design Committee selected **Creek Ecosystems** as the school theme and designated a color for each.

Paw Prints: **Purple** | Foliage: **Green** | Sun and Flowers: **Yellow**

Large thematic graphic panels at the entrance of classroom corridors help students find their place in the building. Specialty classrooms are designated in Blue.

**Wide classroom corridors** accommodate 2 wheelchairs passing side-by-side. Equipment parking areas provided along the corridor are **designated by a darker tile color**. Color-coded accent blocks run along the center of corridor floors, and accent paint on protruding soffits designate classroom entrances. **The themes are also expressed in room signage.**

Finish materials were selected by the custodial staff based on familiarity and maintainability.

*Sun and Flowers*



*Foliage Room Sign*



*Paw Prints*



*Foliage*





## Physical Environment Design

### Classrooms

A large storage room and student cubbies are at the classroom entrance. Classrooms are sized to **accommodate specialized equipment** and furniture, and an open floor area for mats.

In a typical classroom the instructional wall is at the front of the room. A changing station is located along the back wall with table, custom corner supply cabinet, lift, and privacy curtain. Also, a curtain extends the classroom's full width to provide a secluded area for **specialized instruction and medical examinations**. Fixed casework and a sink are located along the back wall, painted in an accent color unique to the wing.

Paint colors are muted to **maintain a sense of calm**. The bathroom room is located off the back of the room. The bathroom room layout provides accessibility **exceeding ADA guidelines** to meet program requirements for individual student supply cubbies, lifts, grab bars, and space for staff to assist users.

Classroom design decisions were driven by the need to not only satisfy the program but to help **lessen the physical demands** placed on the staff, and in turn, providing the students with exceptional **learning opportunities**.



# 07

## Sustainability and Wellness

### LEED Silver Certified

The replacement school is a LEED Silver certified building complying with v4 BD+C: School Construction requirements.

The entire building is served by a variable refrigerant volume/flow (VRV/VRF) heating, ventilation, and air conditioning system. Fan coil units are provided for each space to provide conditioning, while centralized DOAS units provide ventilation air. A web-based Direct Digital Control (DDC) Automation System ties into the County Central Energy Management System (EMS). Exterior and interior LED light fixtures are installed throughout, in combination with vacancy, occupancy, and daylighting sensor controls.



To achieve LEED credits for **Heat Island Reduction**, energy-efficient mechanical and electrical systems were supplemented by an **energy-efficient cool roofing materials** that absorb less heat; thereby **reducing energy use** and its associated air pollution and greenhouse gas emissions. LEED credits for Building Product Disclosure and Optimization resulted in adoption of products **optimizing full life-cycle impacts**. The project achieved credits for **Environmental Product Declarations and Material Ingredients**, which were particularly important given the potential health impacts on fragile occupants. Applicable products included high performance coatings to **increase durability and cleanability** of wall surfaces in spaces throughout this facility.

Due to the physical limitations and health concerns of the students, acoustics, lighting controls, temperature controls, and indoor environmental quality were key considerations of the design. The HVAC system is designed to be quiet, efficient, and provide flexible control. **Daylight is provided to all classrooms**, but window treatments are provided to allow adjustments in natural light as required. All lighting is dimmable, and controls are provided for a variety of lighting levels and configurations. **All interior materials were selected for durability, cleanability, and low maintenance.**



