# Concept Design Report

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INTRODUCTION

Project Description
Marie H. Reed Community Learning Center is located at 2201 18th Street, NW. The existing building was constructed in 1977 and is approximately 140,000 square feet. The Marie H. Reed Elementary School occupies the great majority of the building. The current facility houses a swimming pool that is operated by the DC Department of Parks & Recreation which also shares other spaces with the elementary school. Three community partners provide day care and healthcare services to the Adams Morgan community at the center. At present the school is an “open plan” facility and straddles Champlain Street, NW.

The DC Department General Services and DC Public Schools has engaged Quinn Evans Architects for design services to renovate or modernize the Marie H. Reed Community Learning Center (the “Project”). It will be designed in such a way as to achieve, at a minimum, LEED for Schools - Gold certification.

Scope & Schedule
Construction of the Project is scheduled to begin in Spring 2016 and to be complete in August 2017, in time for the 2017-2018 School Year. To meet this deadline the Design Team is targeting the following interim submission dates:

- Concept Design (This Report) in July 2015
- Schematic Design in September 2015
- Initial work with the CM Advisor in October 2015
- Design Development in December 2015
- Permit Documents in February 2016
- Construction Documents in April 2016

Immediately following the work on this Report, the Design Team in collaboration with the DC Department of General Services, DC Public Schools and the School Improvement Team is proceeding with Schematic Design and we are planning to make presentations to the Community and the Commission of Fine Arts in September and October 2015.

Stakeholders
District of Columbia Public Schools (DCPS)
District of Columbia Department of Parks & Recreation (DPR)
Marie Reed Health Center - The Community of Hope
Children’s Hospital - Marie Reed Clinic
Marie Reed Early Head Start
Advisory Neighborhood Commission 1C (ANC 1C)
Adams Morgan Community

School Improvement Team (SIT)
DC Department of General Services (DGS)

Client objectives
Quinn Evans Architects to bring this project to fruition within budget while meeting all programmatic requirements and responding to stakeholder goals.

Design Team
Architect: Quinn Evans Architects
Landscape Architect: Bradley Site Design, Inc.
Civil / Site Engineer: Wiles Mensch Corporation
Structural Engineer: SK&A Structural Engineers
MPE & FP Engineer: JVP Engineers
Strategic Engineering & Energy Modeling: In Posse
Acoustics, AV & IT: Convergent Technologies
Foodservice Design: Nyikos Associates
Hazardous Material Consultant: Apex Companies
Cost Estimating: Forella Group

Elementary schools promote personal growth and a sense of identity within these contexts:
EXECUTIVE SUMMARY

Purpose
Consistent with the Owner’s Program and Schedule for the Project, this report presents results from the Concept Design Phase of the Project. The DC Department of General Services and the Community requested that we develop and evaluate concept designs intended to address at least 2 approaches to the Project, one focused on new construction and another focused on major modernization. The purpose of this phase is to develop and build consensus support for a Concept Design that includes a Site Master Plan, Building Plans, Phasing Recommendations, Preliminary Cost Estimates, and an updated Project Schedule.

Activity to Date
To this end, Quinn Evans Architects and our Consultant Team (the Design Team) have led a series of 5 School Improvement Team (SiT) Meetings, a larger Neighborhood Work Session and initiated the work on the following tasks:
- Program Confirmation
- Life Safety & Building Code Analysis
- Leadership in Energy & Environmental Design (LEED) Concept and Strategy Development
- Value Engineering Workshops
- Preparation of an Environmental Impact Screening Form (EISF)
- Survey of the Existing Facility
- Geotechnical Investigations
- Hydrant Flow Tests
- Alternative Mechanical Systems Evaluation
- Audio Visual and Acoustic Consultation
- Prepare and Submit a Phase I Archaeological Survey
- Concept Development

Findings – 2 Primary Approaches
Briefly stated, we have developed two approaches to the Project:

Concept Design A – Major Modernization
- Concept Design A - Major Modernization – this design recommends demolition of the existing Marie Reed Building west of Champlain Street, construction of a completely new school and recreation center building on the existing soccer play-field, and renewal of the existing Marie Reed Building east of Champlain Street to serve the community partner programs. Then to complete the works, a major site reconstruction and renewal project is needed to re-establish and enhance its place within the Adams Morgan Community.
- Concept Design B - Construction of a New School & Recreation Center & Selective Renovation – this design recommends demolition of the existing Marie Reed Building west of Champlain Street, construction of a completely new school and recreation center building on the existing soccer play-field, and renewal of the existing Marie Reed Building east of Champlain Street to serve the community partner programs. Then to complete the works, a major site reconstruction and renewal project is needed to re-establish and enhance its place within the Adams Morgan Community.

Concept Design A: Major Modernization - Recommended Approach
Concept A seeks to maintain the best of the past while looking to the future. Using the existing building as a framework for the facility addresses several key project objectives: a reduced construction impact, efficient use of existing resources and inspired way to celebrate the community history. The proposed major modernization will function as a new building in regards to the full range of design objectives including: environmental responsibility, appropriate architectural separations, daylight and views. Further, we intend to draw upon lessons learned from over thirty years of ongoing operation to improve the design of the renewed building.

One of the defining features of the existing building is its open plan layout and central skylights at the upper level. Respecting the acoustic and operational value associated with distinct classrooms, we proposed to ring the central areas with “traditional” classrooms, and then with skylights enhance the central areas to create inspired, shared learning environments. Replacing the existing concrete barrel vaults with a new steel and glass clerestory structure will transform the central spaces with refreshed, indoor/outdoor feeling that would be very expensive to replicate in new construction. In summary, working with the existing concrete frame enables a running start to the project and facilitates development of an inspired new school environment.

Concept B New Building(s): No Further Development
Replacement of the existing Marie Reed Structure with new buildings presents an array of construction challenges. Demolishing the existing concrete frame building requires powerful and high capacity heavy equipment; tons of concrete must be broken into manageable chunks and trucked off site and the resulting holes must be filled with compacted soil before we begin new construction. Then prior to development of the new building, a period of intense demolition and earth work is needed to prepare the site. And while placing the new building on the existing soccer field allows for continued occupancy of the existing building during construction; there is a risk the remnants from the original Morgan school will interfere with the new foundation work. Briefly stated the Concept B - New Building(s) approach presents additional risk and requires significantly more time and resources to complete than Concept A – Major Modernization.

Findings – Survey & Study Results
Consistent the Feasibility Study dated 10/10/13, this Report recommends Major Modernization of the existing Marie Reed Learning Center Building. The Design Team, the School Improvement Team and the Community are now more confident that with comprehensive work, the existing structure can be redeveloped to serve the Project Program. Following is a brief summary of the Concept Phase survey and Study findings.
- Program Confirmation - both proposed Concept Designs largely meet programmatic requirements defined by the Education Specifications.
- Life Safety & Building Code Analysis - A preliminary life safety and building code analysis has been completed, the design will be develop to meet current life safety and building code.
- LEED Concept and Strategy Development - Preliminary sustainable concept and strategies have been explored, the project will be designed to meet LEED Gold certification
- Value Engineering Workshops - Preliminary cost analysis have been developed, value engineering is and will be integral to the design process to assure that the Project can be completed with the allocated funds
- Preparation of an EISF - Documentation required to complete the Environment Impact Screening Form is underway.
- Survey of the Existing Facility - Preliminary survey of the existing facility has been performed, more detail surveys will be performed during the design process
- Geotechnical Investigations - Geotechnical borings and report will be performed once the design is solidified
- Hydrant Flow Tests - The needed Hydrant Flow Tests will be applied for in August 2015
- Alternative Mechanical Systems Evaluation - Multiple system are being evaluated in regards to efficiency, initial and lifecycle costs.
- Audio Visual and Acoustic Consultation - AV and acoustical strategies will be implemented as design progresses.
- Prepare and Submit a Phase I Archaeological Survey - the required survey will be initiated in August 2015.

Next Steps
Given Approval of this Concept Design Submission, the Design Team will continue work on a Schematic Design that is largely consistent with and improves upon the Recommended Concept A presented herein.
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SITE DESIGN PRINCIPLES

Place
- Project a unique sense of place and identity to school community and the community at large
- Create a sense of arrival that defines entry
- Provide design elements of defensible spaces on the site
- Provide a diversity of gathering places that supports small and large groups
- Provide spaces for all student populations, including specials needs

Play
- Provide multi-sensory environments that stimulate well being and promote exploration and discovery
- Provide both active play and recharging environments in which students can take respite during outdoor time

Landscape
- Provide indigenous, sustainable plant selections that accommodate seasonal and temporal change
- Use the vertical changes of the site as opportunities for creative solutions
- Seamlessly integrate sustainable practices and storm-water management into the design

Learning
- Provide landscape environments which support outdoor teaching and learning
- Landscaping should reinforce narratives about natural systems, stewardship, and connectivity with nature
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BUILDING DESIGN PRINCIPLES

Community
• Organization of program spaces to support the school’s existing culture of collaboration and promote interdisciplinary learning
• School to support engagement by the parents, community, and industry leaders and role models
• Spaces should be flexible to support both school time and after-school activities, enabling community partners to be culturally integrated into the school

Learning
• Learning environments to cultivate and inspire a passion for lifelong learning in preparation for the 21st century workplace
• Furnishings and technology are carefully considered for various modes of learning
• Student galleries to provide opportunities to personalize their respective learning communities, fostering a positive school culture
• Manifest the dual language program in the design

Pride
• Promote a sense of identities - Community, Neighborhood, School, Grades, Classes and Student places
• Display of student work provides an understanding of the standards of exemplary work, and fosters a sense of pride and ownership
• Promote sustainability, a sense of stewardship and global awareness as a shared value for the community and the school in a manner that reinforces the educational curriculum

Fitness
• Feedback loops promote educational achievement, physical fitness, and sustainable literacy
• Through athletics and kinesthetic activities, the school to support learning and physical fitness

Creativity
• The cafeteria and student commons to promote positive social interactions and support formal and informal student expression through dance, art, spoken word, and music
• The school should support visual and performing arts - both traditional and emerging media - with adequate facilities to create and share art

Environment
• Provide a safe and secure environment that supports the policies and procedures developed by DCPS and the School
• Provide circulation and adjacencies that foster daily routines and sequence of activities
• Provide universal design throughout
• Provide daylighting and visual access to exterior
• Provide thermal comfort
• Provide access to outdoor space
The following list of sustainable design strategies shall be considered during Schematic Design:

**Sustainable Sites**
- Use native plants
- Green roof
- Innovative and integrated storm water management best practices
- Underground cistern or storage system
- Garden
- Living vertical wall

**Water Efficiency**
- Low flow fixtures

**Energy & Atmosphere**
- Employ photo-voltaic panels
- Purchase power generated from renewable resources (sun, wind)
- Provide immediate feedback on energy use to facilitate student monitoring and learning
- Employ a waste water source heat pump system
- Employ solar thermal panels for hot water

**Material & Resources**
- Use of local materials wherever possible
- Use of material containing recycled content wherever possible

**Indoor Environmental Quality**
- Use of shading devices on west facade to minimize glare and solar gain.
- Use of light shelves to bounce light further into spaces
- Use of skylights to increase daylight in spaces

**Innovation in Design**
- Alternative pool water treatment system (bromine)
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PRECEDENT STUDY

Case Study - Claire T. Carney Library

Claire T. Carney Library, located at the University of Massachusetts Dartmouth, was originally designed by Paul Rudolph between 1962 and 1974. It is of the same era in history as Marie Reed (1971-1977), and of a similar building style. In 2013, the building underwent a transformative renovation that enhanced the interior environment, increased daylight and visual connection to the exterior, all while respecting the quintessential character of the original building.
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ANC 1C RECOMMENDATIONS

Celebrate the Community
- Embrace the ideas expressed in the Advisory Neighborhood Commission 1C Marie Reed Vision Statement of 20 April 2015.

Provide a better sense of center, a town square
- Improve the facility presence and provide improved access for DCPS, DPR, and other community partners.

Consider Alternatives
- Renovate
- Build new
- A (hybrid) combination: some renovation and some new construction
- Confirm adequate funding and assure quality renewal

Develop a “green” building
- Provide comfort
- Assure energy efficiency
- Apply best practices in regards to environmental responsibility

Provide clear physical delineations
- Define appropriate entrance locations and boundaries between facilities
- Define a place for the Elementary School, the Recreational Facilities and the Health Facilities and other Partners

Honor history for facility to serve as a “civic heart”
- Celebrate the re-conceptualization of Adams Morgan as a place that has embraced a diverse racial, cultural, and socio-economic community

Minimize disruption during construction
- Maintain continuity of programs to the greatest extent feasible
- Build quickly

Refresh and expand the recreational facilities
- Provide for soccer, swimming and gymnasium facilities
- Provide playgrounds, tennis and related game courts
- Provide needed support facilities – restrooms and lockers

Develop an excellent elementary school facility
- Fulfill the DCPS Educational Specifications

Provide place for community use
- Support community meetings
- Support adult learning
- Support performance events

Provide expanded space for the Women, Infants and Children program (WIC)
- Support provided to over 200 clients each month
- Support the synergistic relationship between the WIC and the Community of Hope

Support expanded development of the early childhood learning center
- Support growth beyond the current 16 child limit

Maintain and expand the Community of Hope health center
- Provide a facility well designed to accommodate over 13,600 patient visits per year
- Anticipate growth

Consider and allow for development of a new branch library
- Anticipate future funding and development of a new branch library
- In the meantime, assure that quiet reading spaces are provided for within the existing Elementary School and Community Center
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NARRATIVE - CONCEPT DESIGN A

CONCEPT A - EXTERIOR
Enhancing the Image of Marie Reed

The Marie H. Reed Learning Center is a unique building within Adams Morgan that contributes to the history and character of the neighborhood. It represents the vision of a community that is dedicated to the health, welfare, and achievement of all its residents regardless of age or background. The same goals that inspired the existing facilities are valid today. For this reason it is important to consider the reuse and renovation of the existing building as an alternative to the complete demolition and rebuild of the facility.

Concept A maintains the best of the past while looking to the future. Using the existing building as a framework for new spaces is not only an efficient use of resources but also represents the goals of the community - to build upon the values of the past. A renovation of the building will integrate new design goals such as environmental responsibility, acoustic needs, daylight and views that either were not fully met in the original design or have fallen into disrepair. The renovation approach will use the lessons learned from the existing facility to improve the design of the renewed building.

Responding to External Conditions

A large building that spans multiple blocks, Marie Reed Learning Center has a to address multiple circulation paths and neighborhood scales. On its east side, the building faces a primarily residential neighborhood with town-homes from the early 1900’s. Ontario Rd which bounds the east of the site is relatively less trafficked by both pedestrians and automobiles. Concept A proposes that the school entry at this edge of the site be a secondary entry for younger children. Architecturally this entry and facade should be less pronounced and articulated at a smaller more residential scale.

Along the south-east, the site fronts a combination of industrial and commercial uses. In particular, the building edge along Old Morgan School Place is isolated from the majority of neighborhood due to the large, industrial type uses which bound the site. The concept design proposes the use of this building edge for back of house uses including entry to the underground parking, loading, and garbage collection. The southern facade along Old Morgan School Place will be designed to shield unwanted views of back of house functions. At the upper levels, the facade will be articulated in way appropriate for the school function.

Subdividing the site into east and west sections is Champlain Street. This axis through the site links a residential area to the north with a commercial area to the south. Currently serving the lower levels of the building and separated from the upper level school entries, it is the natural access for partners spaces that are located on the ground floor of the building.

The south-west facade overlooking the playing fields has sweeping views over the city. The facade here would take advantage of these existing views particularly at the upper levels that are dedicated for school use. Below at the ground level the facade would allow for strong visual connections between the recreation uses at the south end of the site and the recreation center uses at the lower level. The main entry to the recreation center will be located between the existing and new buildings. It will be adjacent to the transverse access across this portion of the site.

On the west side of the site, the character is primarily commercial along the 18th Street corridor. This is the existing front door to the building as the majority of school...
and recreation occupants enter from this direction. Concept A proposes using the natural grading of the site to create two distinct main entries for the school and recreation center. The entry to the school will be located in its current location. However, the new architectural expression at the entry will break the horizontal stacking of the overall building massing to clearly identify this as the primary entry to the school. A north-south internal circulation spine between these two entries will be expressed in the massing along the west facade.

The north facade of the building faces a primarily residential section of the neighborhood. This edge is the least prominent of all the edges as the grade rises at this end of the site. The architectural modifications of this edge would address the smaller scale of the adjacent neighborhood. Entries along this edge will be secondary and less prominent.

The predominant axis of the existing building is north-south. The building’s largest surface areas face the eastern and western sun. This condition often creates a high level of solar heat gain along the western face of the building. The design of the mechanical system can overcome this effect. However, to improve the energy efficiency of the building, the cladding can be designed to reduce heat gain on the west and southern faces. Shading that limits solar gain on the western face of the building will respond to the low angle of the sun late in the day. This could be expressed as vertical fins or screens. The smaller southern faces of the building will also be designed to reduce solar heat gain in the middle of the day. A potential design option would be horizontal light shelves. The design of all facades of the building will be considered with regard to solar orientation.

Communicating Sustainability
A complete sustainable building strategy includes a multitude of tactics including, but not limited to, energy efficiency, air quality, and water use reduction. The strategies employed are often hidden to the occupants of the building. However, in a learning environment, it is particularly important to implement techniques that are expressive and are reinforced throughout the built environment. The concept design proposes identifying a cohesive sustainability story that illustrates multiple sustainable methods for addressing an important environmental theme. This story or grouping of strategies should be graphically illustrated in a cohesive way both inside and outside the building.

In particular, the exterior cladding will address the following issues:
- Heat Island Effect
- Site and Stormwater Management
- Energy Efficiency
- Daylight and Views
- Acoustics

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NARRATIVE - CONCEPT DESIGN A

**CONCEPT A - EXTERIOR** (Continued)

**Site Circulation**

**Horizontal Building Circulation**

**Vertical Building Circulation**

**Communicating Sustainability**

- Heat Island Effect
- Site and Stormwater Management
- Energy Efficiency
- Daylight and Views
- Acoustics
Envelope Design Criteria

The exterior cladding system will be determined based on a set of criteria that has been generated from the client program requirements and school/community input. The intent is to explore a series of cladding options that will be vetted based on their ability to meet these needs. Due to the scale of the building and the multitude of functions, a variety of systems will likely be employed. The criteria assessment will assist in determining where to best locate the cladding options.

- Contextually appropriate for Adams Morgan neighborhood and Washington, DC
- Architecturally represents the building functions both at the whole building and space planning level.
- Ability to be hung or attached to either the existing or proposed structural system
- Contributes to sustainability of the whole building in the following categories:
  - Energy Efficiency - including solar loading and insulation
  - Local and Regional Materials
  - Renewable Resources
  - Daylight to interior spaces
  - Acoustics
- Ease of maintenance and durability including impact resistance and graffiti removal
- Availability of manufacturers and installers
- Ease of phasing construction
- Budgetary constraints
- Bidding Requirements - US manufacturer, lead times, CBE requirements

Exterior cladding systems and materials currently under consideration include, but are not limited to:

- Terracotta Rain Screen
- Ceramic Tile Rain Screen, such as Porcelanosa
- Curtain Wall - Stick Built
- Curtain Wall - Unitized
- Sloped glazing system
- Fritted glass for curtain wall systems and skylights
- Metal screen panels with custom cut openings
- Metal panel system, such as Alucobond, Sobotec
- Fiber Cement Panel rain screen system, such as Eternit
- Brick cavity wall
- Pre-cast concrete panels
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NARRATIVE - CONCEPT DESIGN A

CONCEPT A - INTERIOR

Design Opportunities

The existing Marie Reed facility has a variety of unique characteristics that provide opportunities for a renovation of the building. The building has a large floor plate with wide column grid spacing. Floor to floor elevations are typically 12'-0" which is adequate to provide system routing through the ceilings and allow for typical ceiling heights in the 8’-0" to 9’-0" range. At the lower level, large spaces containing recreation spaces span multiple floors. These spaces provide the opportunity for reuse as recreation spaces or as infill for other, smaller scale functions. One of the defining features of the existing building is its open plan layout and central skylights at the upper level. Though a complete open plan learning space is currently not asked for in the education specifications, these areas provide opportunities for common spaces to be shared learning environments.

Concept A proposes replacing the barrel vault and clerestory with larger skylights that define central common spaces between more traditional classroom spaces. These central spaces will each have unique learning environments that will define the classroom neighborhoods which surround them.

In addition to the skylights that are the defining architectural elements of the upper level, the existing building has exterior patio areas adjacent to the entry at the west and the auditorium at the east. These spaces provide opportunities for clearly defined exterior learning spaces adjacent to interior classrooms.

Design Challenges

The existing Marie Reed facility is a large building that spans multiple blocks. Though the size of the building provides the ability to house multiple functions, it also provides a challenge for wayfinding and separation of uses within the space. Defining entries and functions through exterior massing and cladding design will be integral to articulating the multiple uses of the building. Additionally, creating a clear internal organization and connection points between functions will create a legible building that is easily accessed by its occupants.

The large floor plates which are an opportunity at the upper level also pose challenges at the lower levels where access to skylights are not available. The interior spaces may not have the desired access to daylight and views. Classrooms and core learning spaces will be placed at the perimeter to take advantage of natural light. Additionally, providing vertical openings between the upper and lower levels may provide shared daylight from the upper level skylights. These openings can also provide a visual connection and wayfinding opportunity within the space.

Interior Organization

Concept A proposes organizing the building vertically. Typically, partner and recreation functions will be located at the lower levels with dedicated, separate entrances. The upper levels will be slated for school functions. The entrance for the school will be maintained at the west, 18th Street facade.

The ground floor west of Champlain Street will house the recreation functions of the building. A separate, identifiable entrance to the recreation function will be located at this level. The concept also proposes a possible pool addition to the west of the building. The shared gym space will bridge the school and recreation functions to the north.
CONCEPT DESIGN A

A multipurpose room will be located in the existing pool location. The visual barrier between the site and this space will be removed to create a connection between interior and exterior recreation functions. These visual connections between the lower site and interior recreation functions will create a welcoming space that supports the new recreation entry at this end of the building.

Across Champlain Street, partner functions including the daycare, clinic and WIC will be housed in the ground floor level of the east wing. An entry to the community clinic off of Champlain will be enhanced to create a welcoming entry that addresses the pedestrian scale. The partner functions that are accessible to the community at large will be clearly separated from the school functions above.

The top two floors of the building - first and second - bridge Champlain Street with an internal connector. Due to the size and scale of the school function, the program best fits at these upper levels. The internal organization of the school will address adjacencies to entries and also clearly define school neighborhoods based on the grade level of core academic spaces.

Adjacent to the primary entry at the west, the administrative and cafeteria functions are proposed. Crossing the bridge to the first floor east wing, the early childhood neighborhood will be located. This location provides on grade access to exterior play spaces and also provides a strong connection to the administration. The east and west wings of the second floor will contain the lower and upper level neighborhood, respectively. Each wing will not only house the core academic functions but also supporting resource and special classrooms.

Internal Circulation

Three nodes, one at the east and two at the west, define the internal circulation of the proposed building. Each of these nodes connects vertical and horizontal circulation paths that knit the building and its multiple functions together.

At the west, the existing entry to the school continues to be an important node that welcomes students and connects the school and recreation functions. This becomes the main gate to the school where the administrative functions can oversee the entry from both the exterior and public recreation spaces. This node will be highly visible on the exterior through massing and cladding design.

To the south of the school entry, the entry to the recreation space becomes the second node in the west wing. It is connected to the school node with an internal circulation spine. This cascading spine connects the large scale recreation spaces along the west facade of the building.

At the east the vertical circulation that connects the two levels of the school becomes an important third node. This space will be defined by the vertical circulation element. It should be visually connected and identifiable from the entry node at the west. In addition to providing vertical circulation functions, it will also bring daylight from the upper level skylights to the space below. The natural light is an important feature that will enliven the space and reinforce the architectural design - one which is characterized by its use and manipulation of daylighting elements.