

STRENGTHENING NEIGHBORHOODS THROUGH THEIR SCHOOLS

Lessons Learned from DC for
Urban School Revitalization
Programs



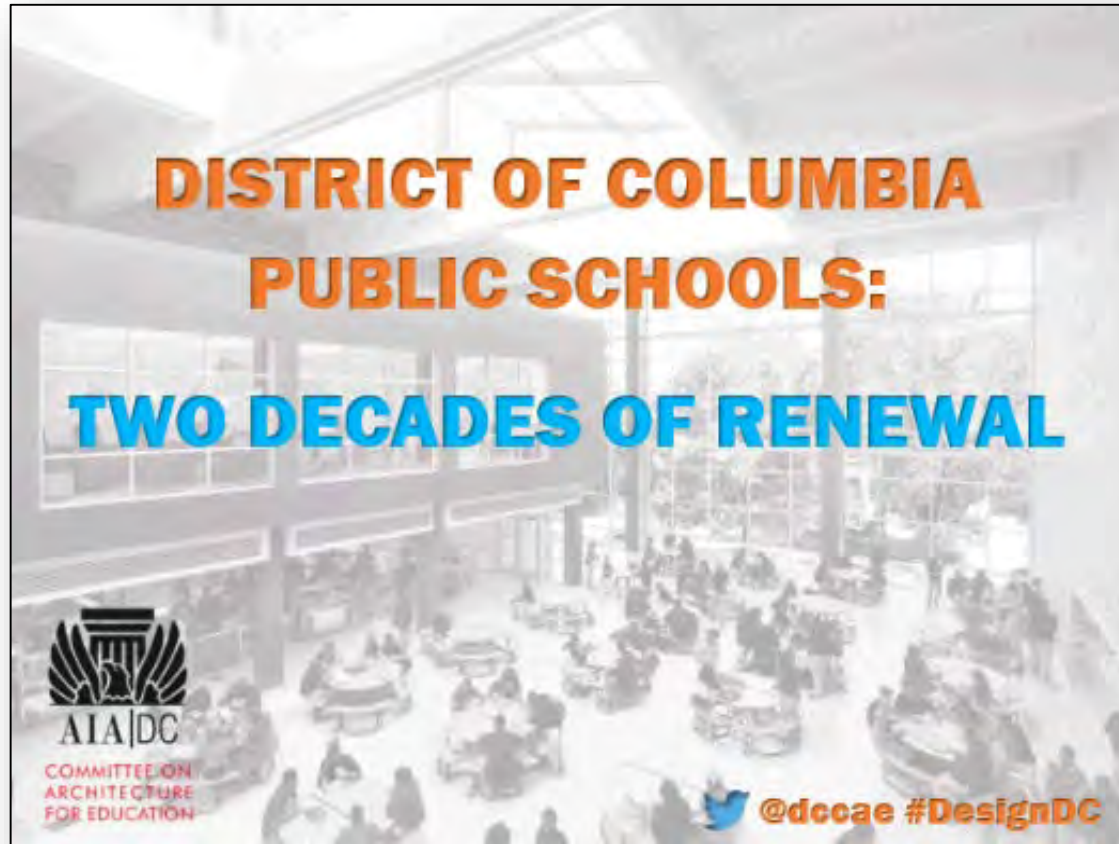


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PANEL

WHERE WE WERE...





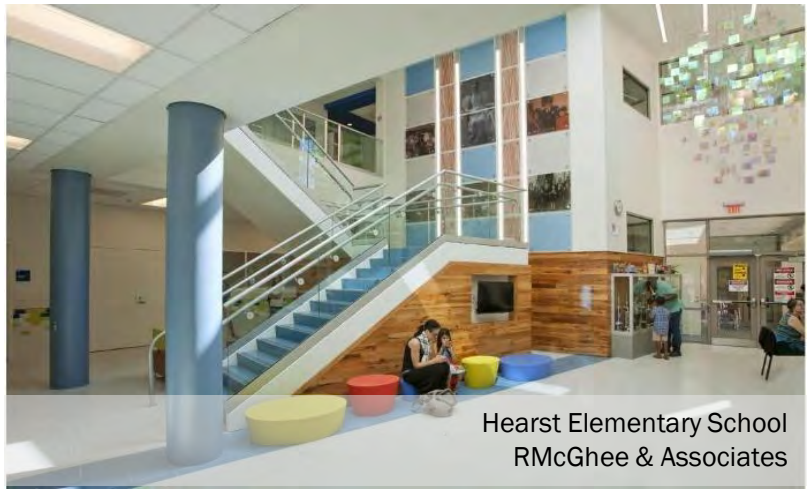
WHERE WE WERE...

THE DC SCHOOLS MODERNIZATION PROGRAM

- Dedicated Funding Source
 - School Modernization Financing Act of 2006
- Shared Oversight
 - Deputy Mayor for Education
 - District of Columbia Public Schools (DCPS)
 - DC Department of General Services (DGS)
- Long-Term Investment
 - \$3.2B to date



SCHOOL DESIGN FRAMEWORK



SCHOOL DESIGN FRAMEWORK



Marie Reed Community Learning Center
Quinn Evans Architects



Duke Ellington School of the Arts
cox graae + spack architects

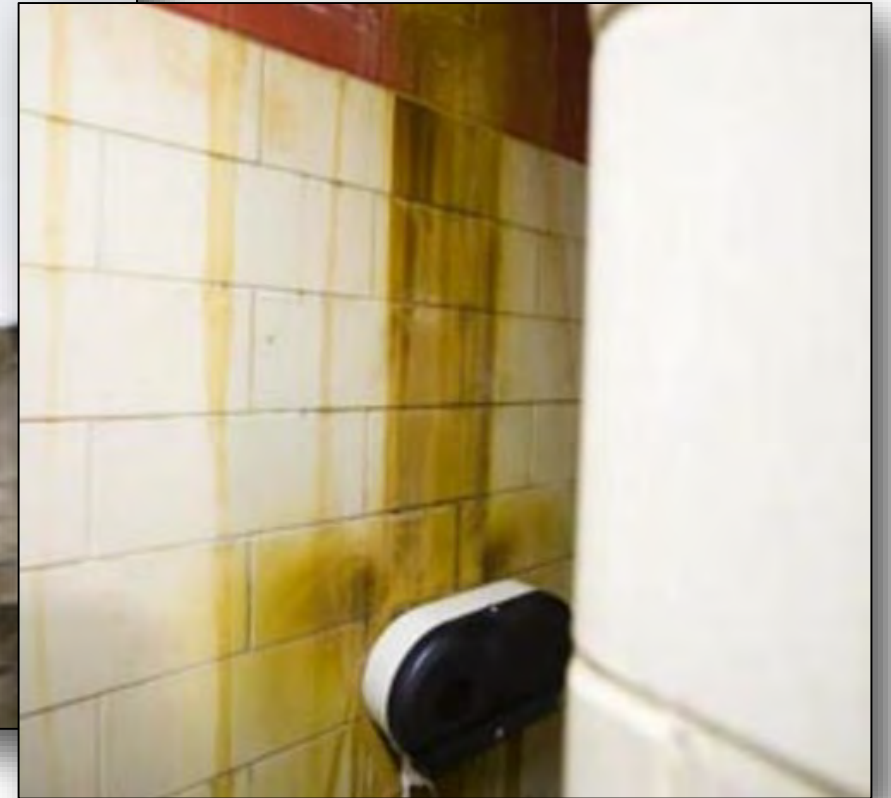


Dunbar High School
Perkins Eastman



Stoddert Elementary School & Community Center
Perkins Eastman

REMEMBER THIS?



LOOK AT IT NOW!

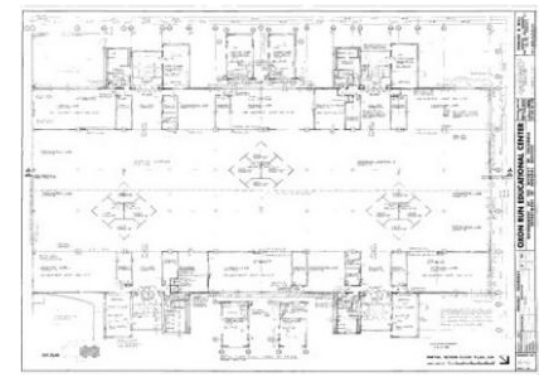
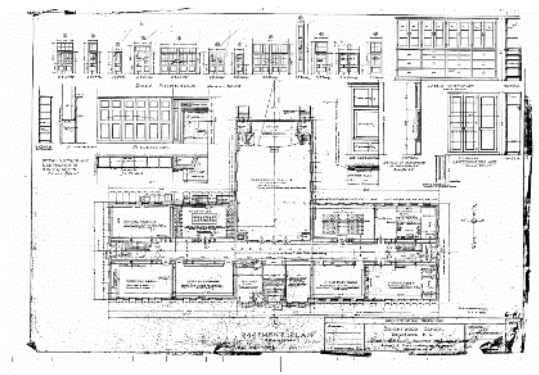
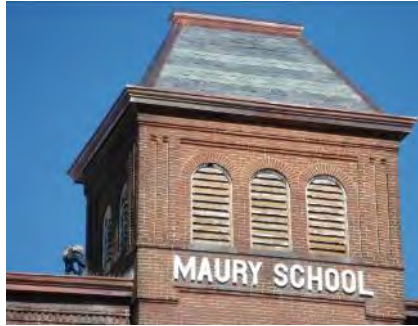


HD Woodson STEM High School
cox graee and spack architects

STABILIZE, MODERNIZE, OPTIMIZE



SCHOOL BUILDING TYPES/ERAS



1880s - 1915

PRE-WWII

POST-WAR

ENERGY & SOCIAL CRISIS

HOW TO BUILD STRONGER COMMUNITIES



**PROMOTE
EQUITY**



**ENABLE
MULTI-AGENCY
COOPERATION**



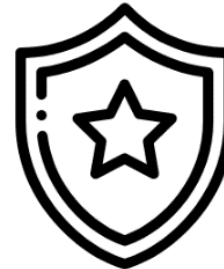
**INVOLVE THE
SCHOOL
COMMUNITY**



**IMPROVE
PUBLIC
HEALTH**



**BUILD
SUSTAINABLE
INFRASTRUCTURE**

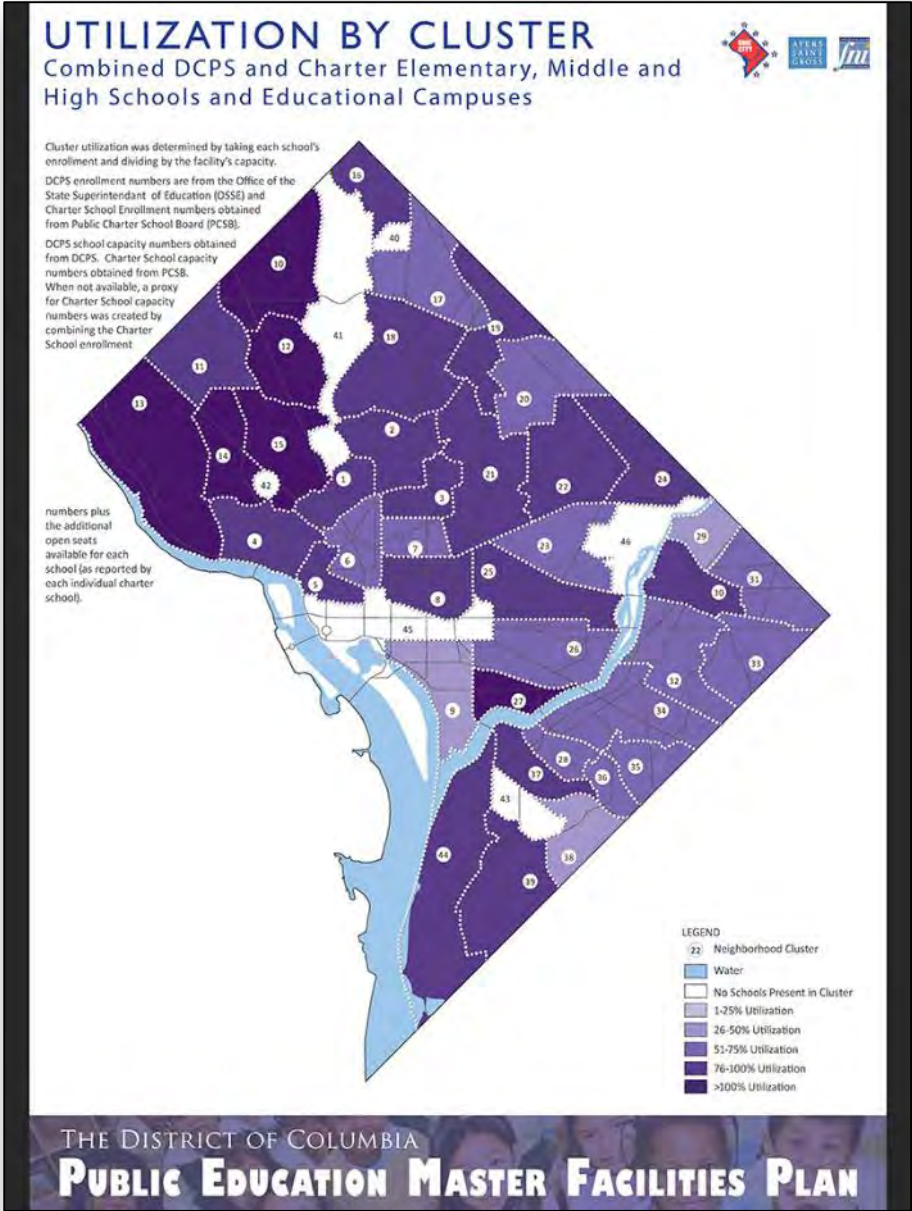
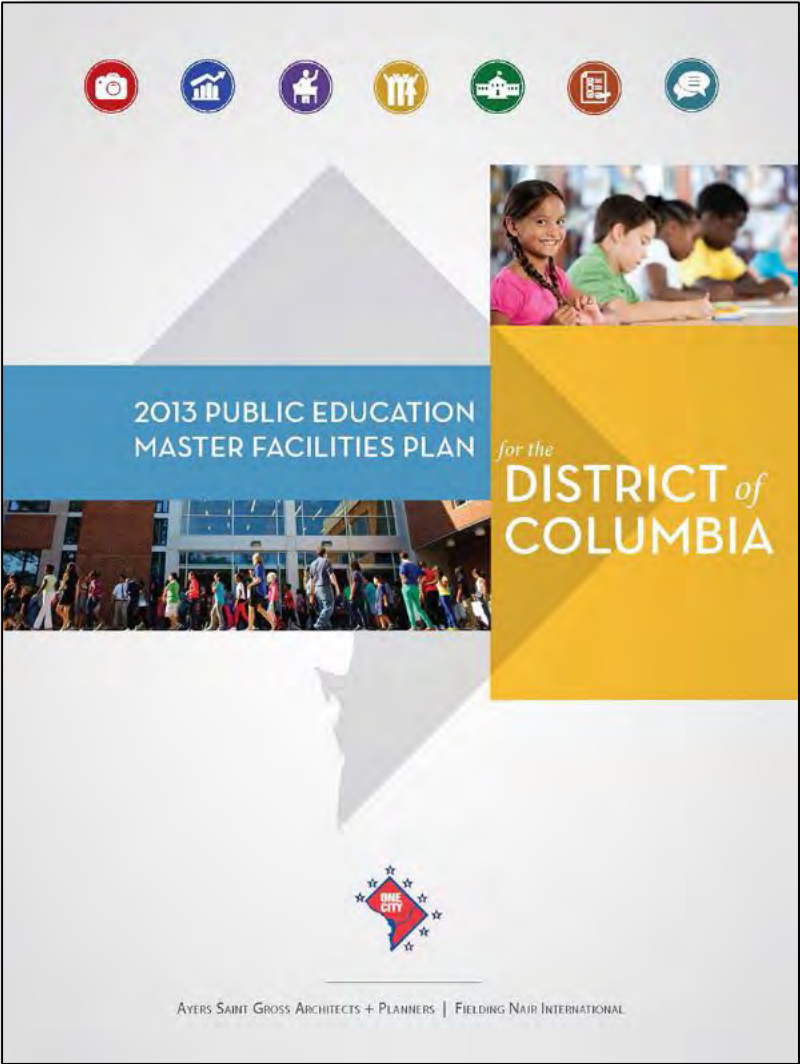


**DESIGN
SAFE SCHOOLS**



**CREATE
HIGH-PERFORMANCE
LEARNING ENVIRONMENTS**

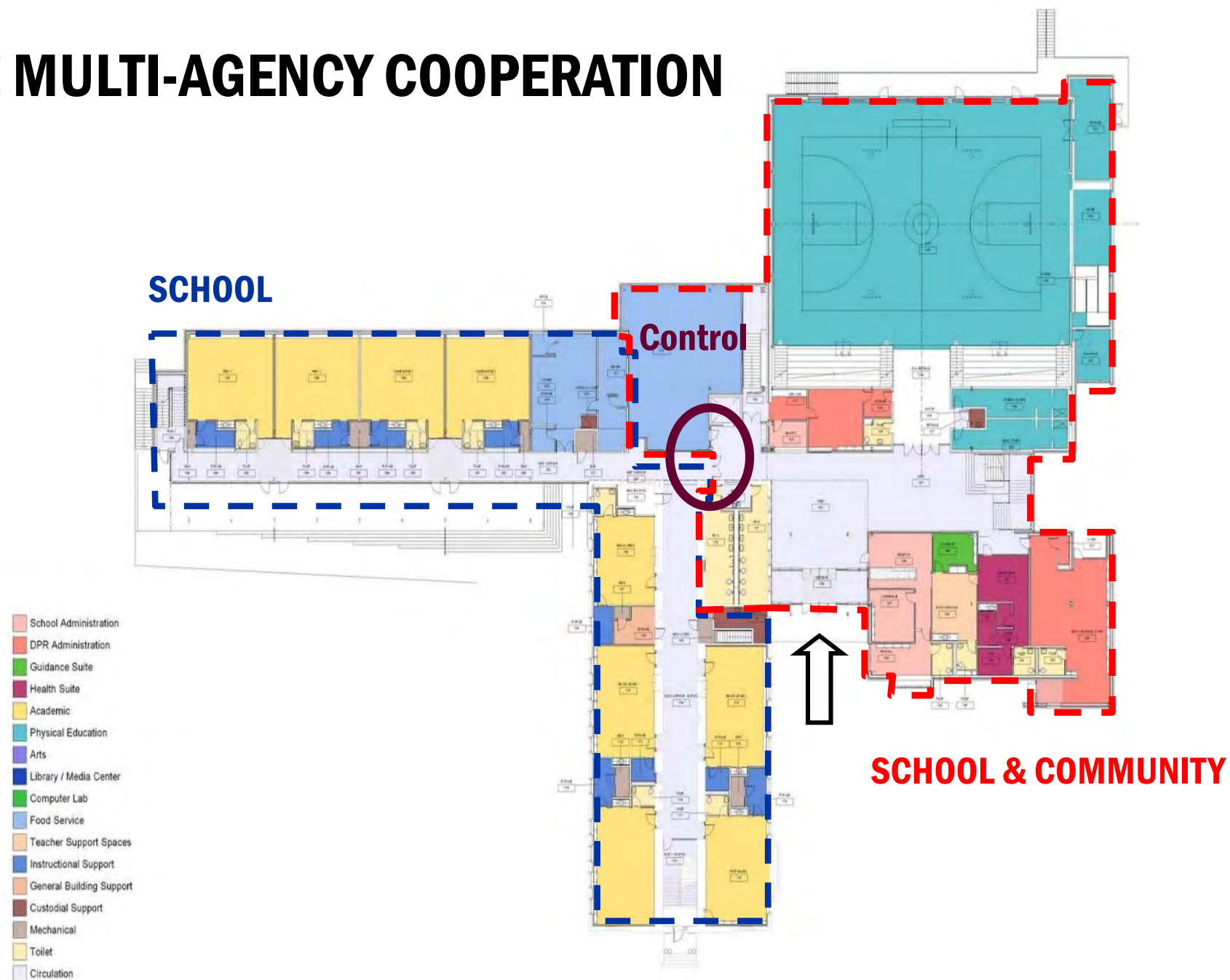
PROMOTE EQUITY



ENABLE MULTI-AGENCY COOPERATION



ENABLE MULTI-AGENCY COOPERATION



INVOLVE THE SCHOOL COMMUNITY



Coolidge High School SIT Meeting Photos
HOK <https://dcpsplanning.wordpress.com/2016/07/>



Coolidge High School SIT Meeting Photos
HOK <https://dcpsplanning.wordpress.com/2016/07/>

INVOLVE THE SCHOOL COMMUNITY



- **Involve** community stakeholders throughout the design process
- **Learn** the history of the community, the school, and the people
- **Identify** programs & spaces for joint use by the community
- **Reinforce** the civic identity of the school in the design
- **Mentor** students in design and construction
- **Hire** local businesses and artists to work on the project

IMPROVE PUBLIC HEALTH



My School DC @MySchoolDC · 9 Dec 2017

Having fun exploring the 200+ **schools** featured at #EdFEST17? Well, what if we told you there's even more to experience? Come over to the @DCDPR's booth to enjoy recreational activities for all ages!

IMPROVE PUBLIC HEALTH



Joyful Food Market
Run by Martha's Table



Watkins Elementary School
Perkins Eastman DC

BUILD SUSTAINABLE INFRASTRUCTURE



**ENERGY**

A ground-source heat pump system (also known as a geothermal system) under the athletic field and radiant flooring in the Armory support Dunbar's commitment to energy efficiency.

**EXTERIOR**

The building exterior, or "envelope," is like your skin – it protects you from sun, wind, rain, and snow. The envelope is designed to allow natural light and fresh air into the building while keeping excess heat and cold out.

**INTERIOR**

Low-emitting, recycled and regional materials, green housekeeping, and pervasive daylighting and views enhance the quality of the interior environment.

**SOLAR**

Solar panels, also known as photovoltaic (PV) panels, convert natural energy from the sun into clean, reliable electricity.

**WATER**

Rainwater collection and water efficient fixtures reduce demand for fresh water and help retain storm water runoff.



Protecting our waterways from pollution is important. We need clean water for drinking, bathing, washing our dishes and clothes, and irrigating crops. Wildlife, including fish, birds, amphibians, and reptiles, also need clean water to thrive.

Watkins has many water-friendly features:

- STORMWATER STORAGE TANK**
A 62,000-gallon tank hidden under the parking lot holds stormwater (rain and snow) that falls on the roof, then releases it slowly into the city sewer system. This prevents flooding and sewer overflows into the Anacostia river during heavy storms. Better water quality means cleaner drinking water and healthier fish!
- GREEN ROOFS**
Watkins has two green roofs. Vegetated roofs capture rainwater, keep the building cool during hot weather, and trap excess carbon dioxide in the atmosphere. Desert plants called sedum are used on green roofs because they survive in extreme temperatures and don't need to be watered.
- WATER-SAVING PLUMBING FIXTURES**
Each person in the DC area uses 80 to 100 gallons of water per day! Reducing water usage saves energy and money, and helps keep pollution out of the river. Watkins has water-saving sinks, toilets, and other plumbing fixtures. The school uses 30% less water than the average new school in the U.S.
- BIORETENTION LANDSCAPING**
Watkins has two bioswales in the front yard along 12th Street. Like an all-natural water filter, the plants and gravel in a bioswale trap dirt and pollutants in stormwater before it enters the city sewer system. Every year, the bioswales will capture and treat 37,000 gallons of stormwater.

reducing our environmental footprint

water

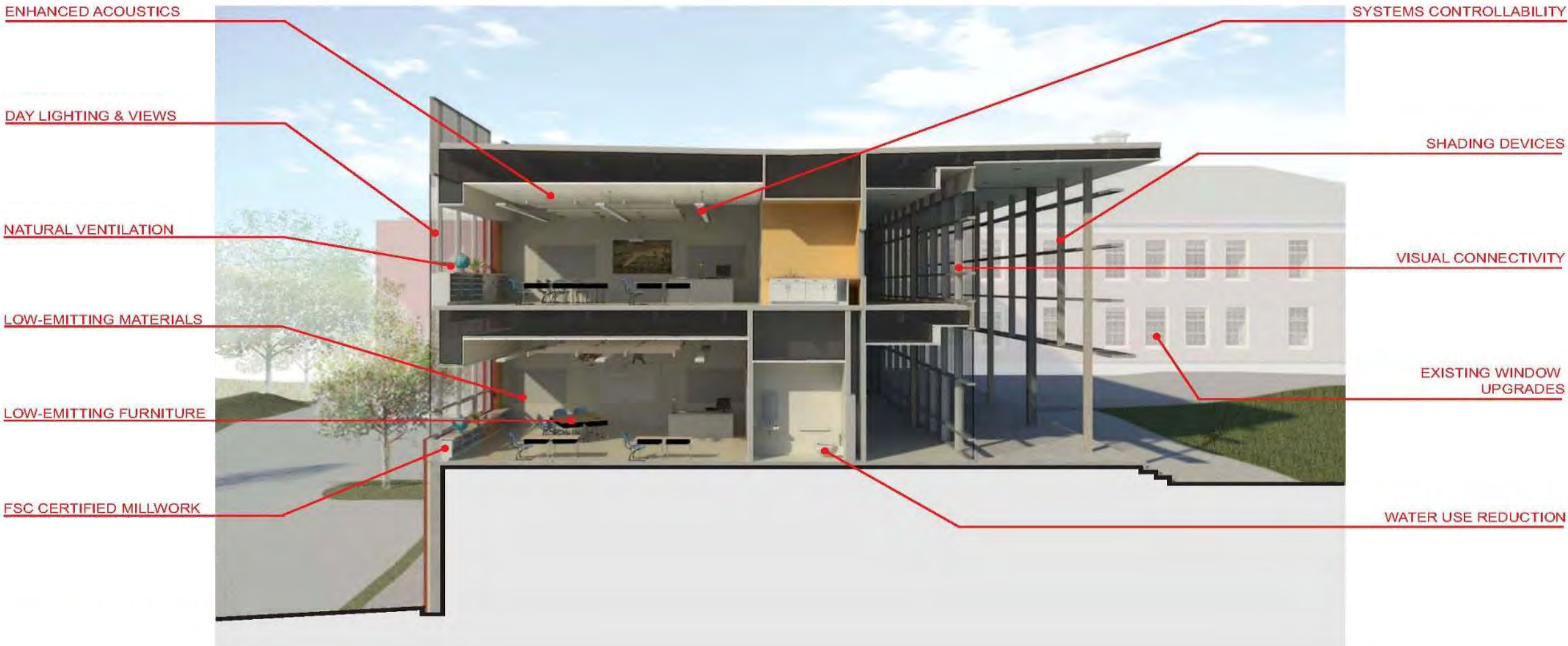
DESIGN SAFE SCHOOLS



CREATE HIGH-PERFORMANCE LEARNING ENVIRONMENTS



CREATE HIGH-PERFORMANCE LEARNING ENVIRONMENTS



STRATEGIES RECAP



**PROMOTE
EQUITY**



**ENABLE
MULTI-AGENCY
COOPERATION**



**INVOLVE THE
SCHOOL
COMMUNITY**



**IMPROVE
PUBLIC
HEALTH**



**BUILD
SUSTAINABLE
INFRASTRUCTURE**



**DESIGN
SAFE SCHOOLS**



**CREATE
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CASE STUDIES



ROOSEVELT SENIOR HIGH SCHOOL



DUNBAR SENIOR HIGH SCHOOL

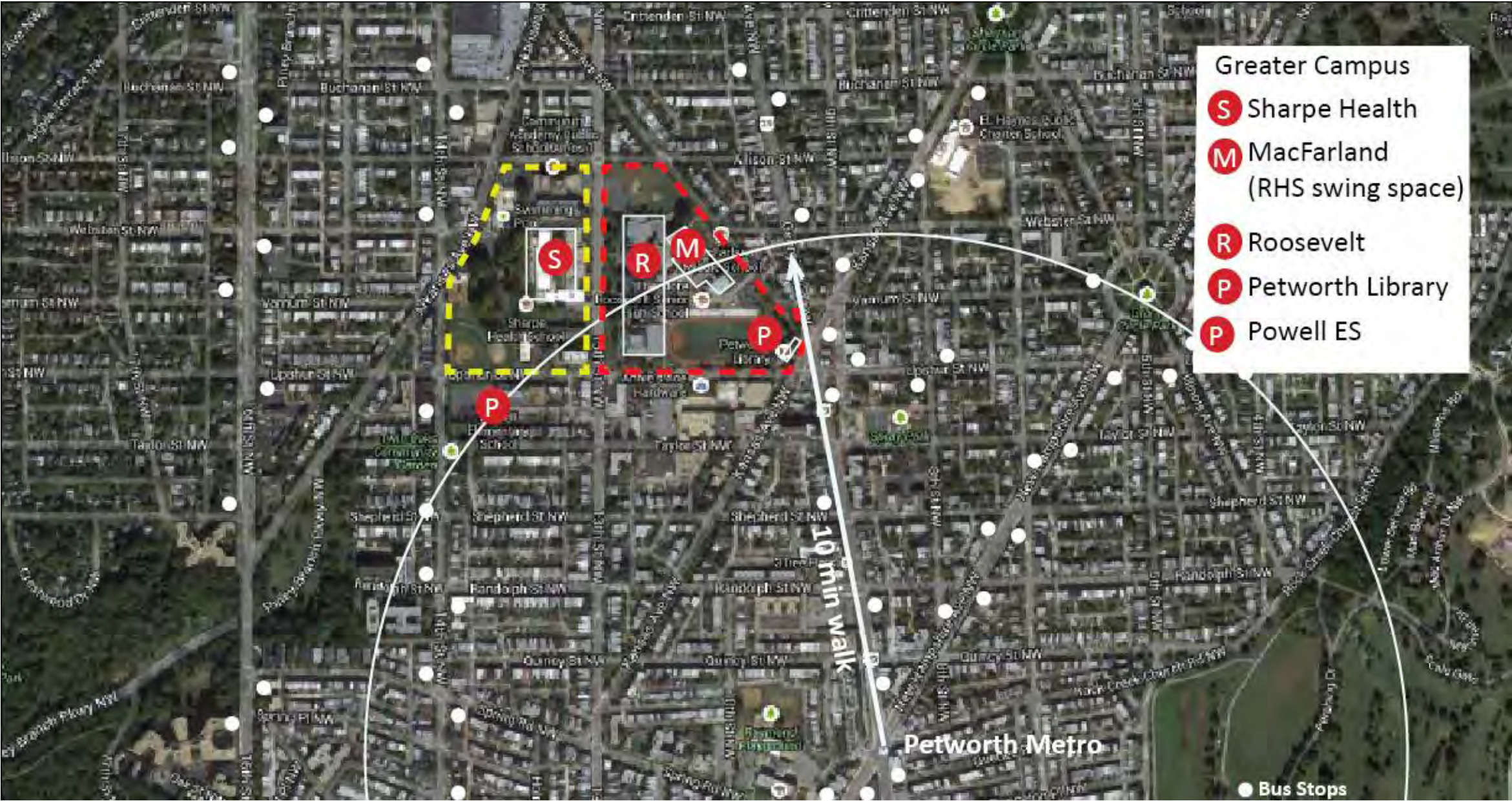
CASE STUDY: ROOSEVELT SENIOR HIGH SCHOOL



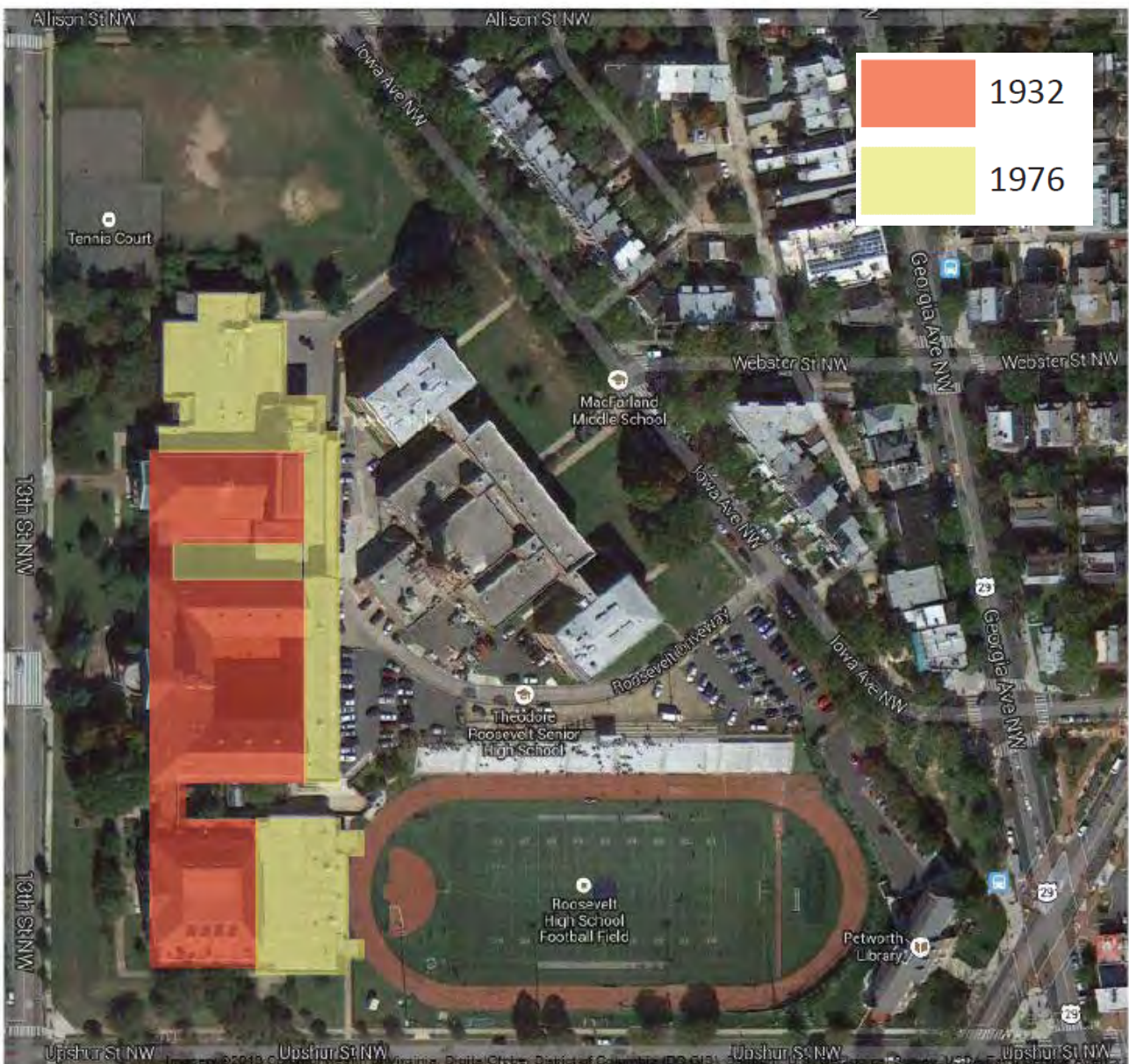
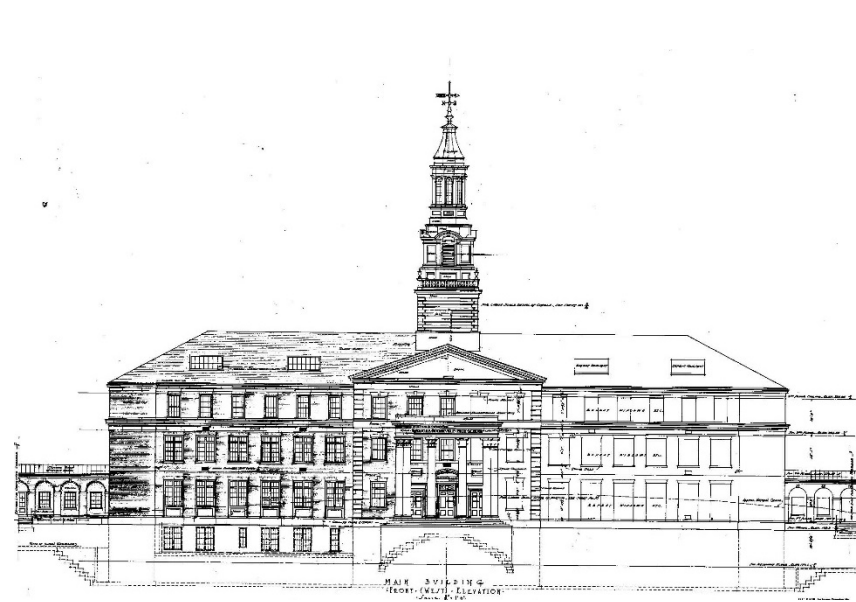
PETWORTH NEIGHBORHOOD



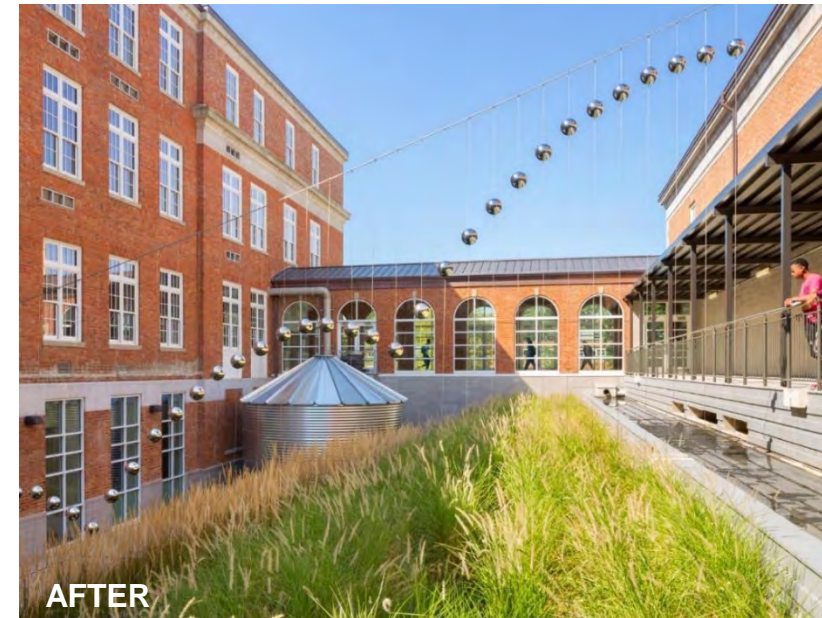
PETWORTH EDUCATION CAMPUS



ROOSEVELT SENIOR HIGH SCHOOL



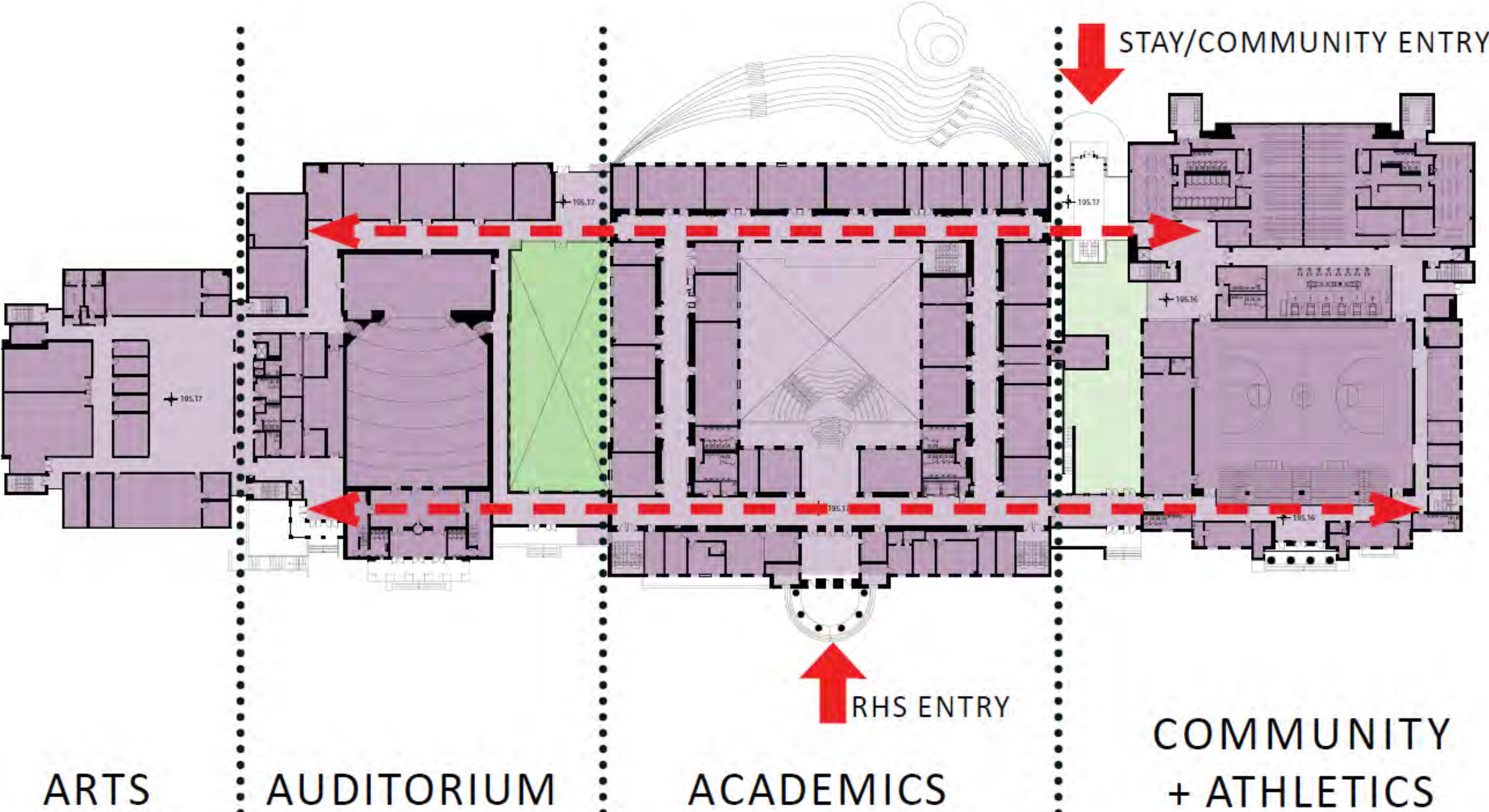
UNDO FORMER DAMAGE



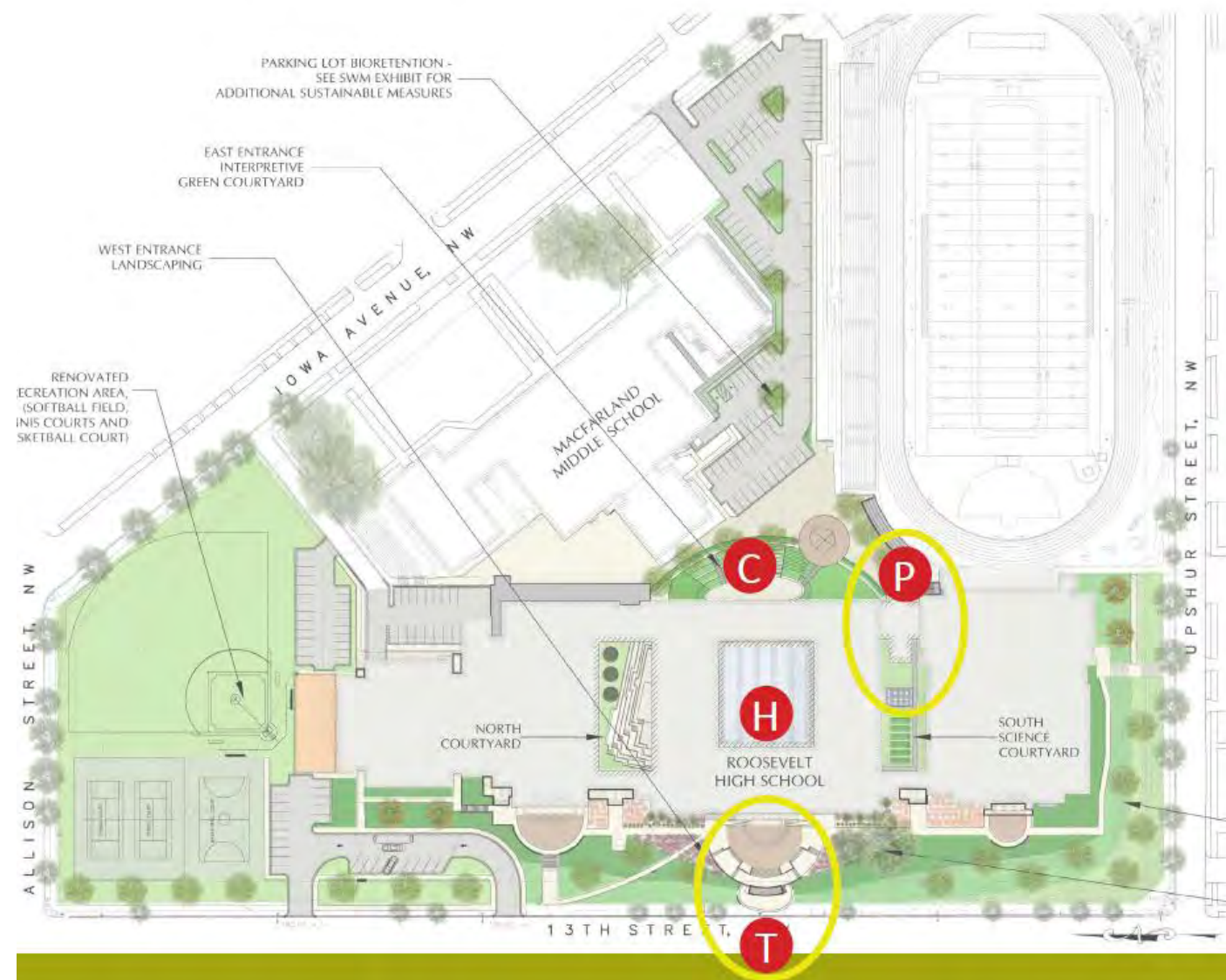
MODERNIZE THE HISTORIC BUILDING



FUNCTIONAL ORGANIZATION



PROGRAM ORGANIZATION



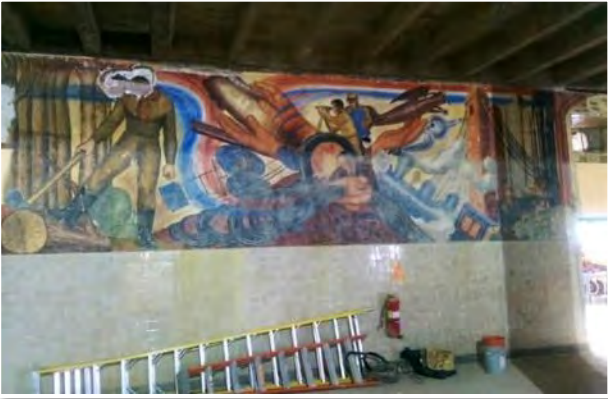
- C** “The Outdoor Classroom”
- P** “The Pavilion”
- H** “The Heart”
- T** “The Terrace” + “The Portico”



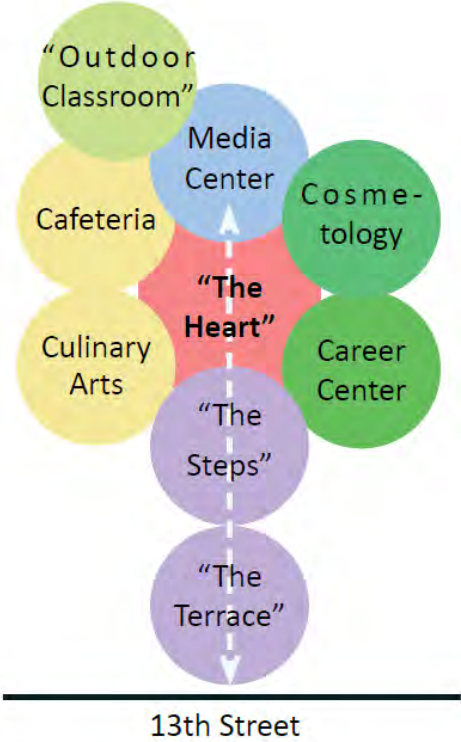
A WELCOMING ENTRANCE



UNCOVERING THE PAST



CREATING THE HEART OF THE SCHOOL



BEFORE

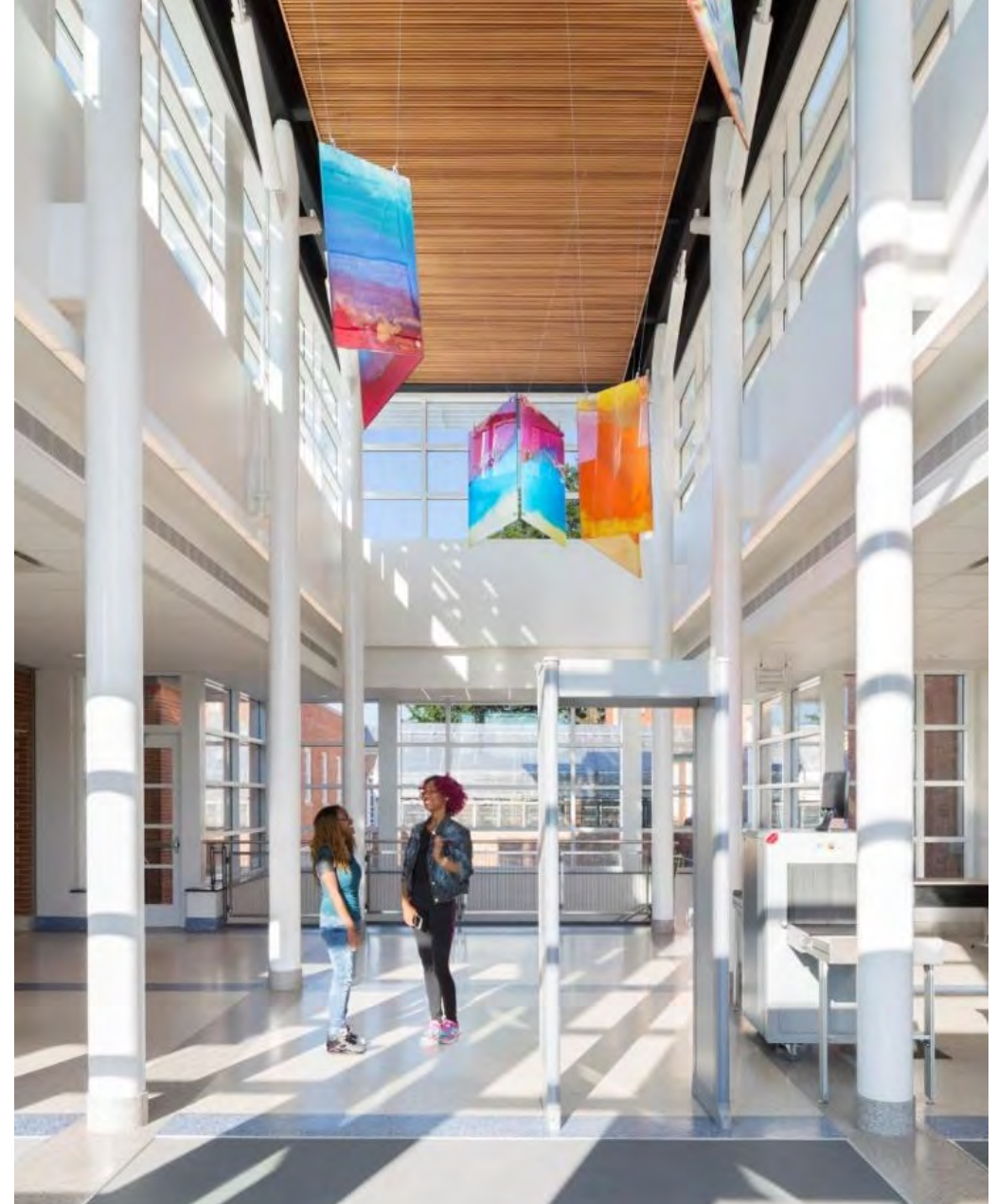
CONNECTING TO THE COMMUNITY



CONNECTING TO THE COMMUNITY



Community Entry: The new Pavilion addition now provides a gracious entrance for the alternative STAY program and for after-hours community use of the health clinic, gym, and pool.



RESTORING SCHOOL PRIDE

- Daily attendance has increased
- Student re-enrollment has increased by 10%
- Student safety is reported as having increased by 9%
- Participation in AP courses has increased by 16%
- Successful completion of AP courses has increased by 8%



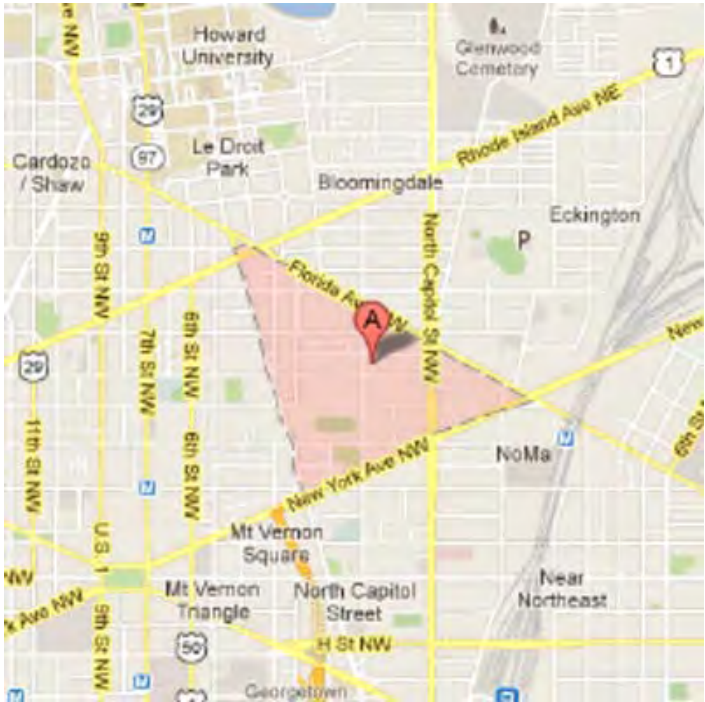
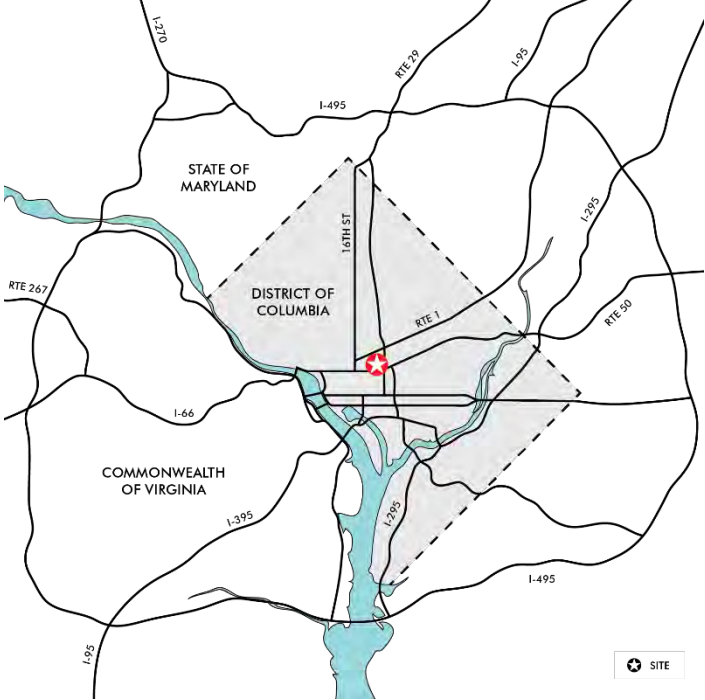
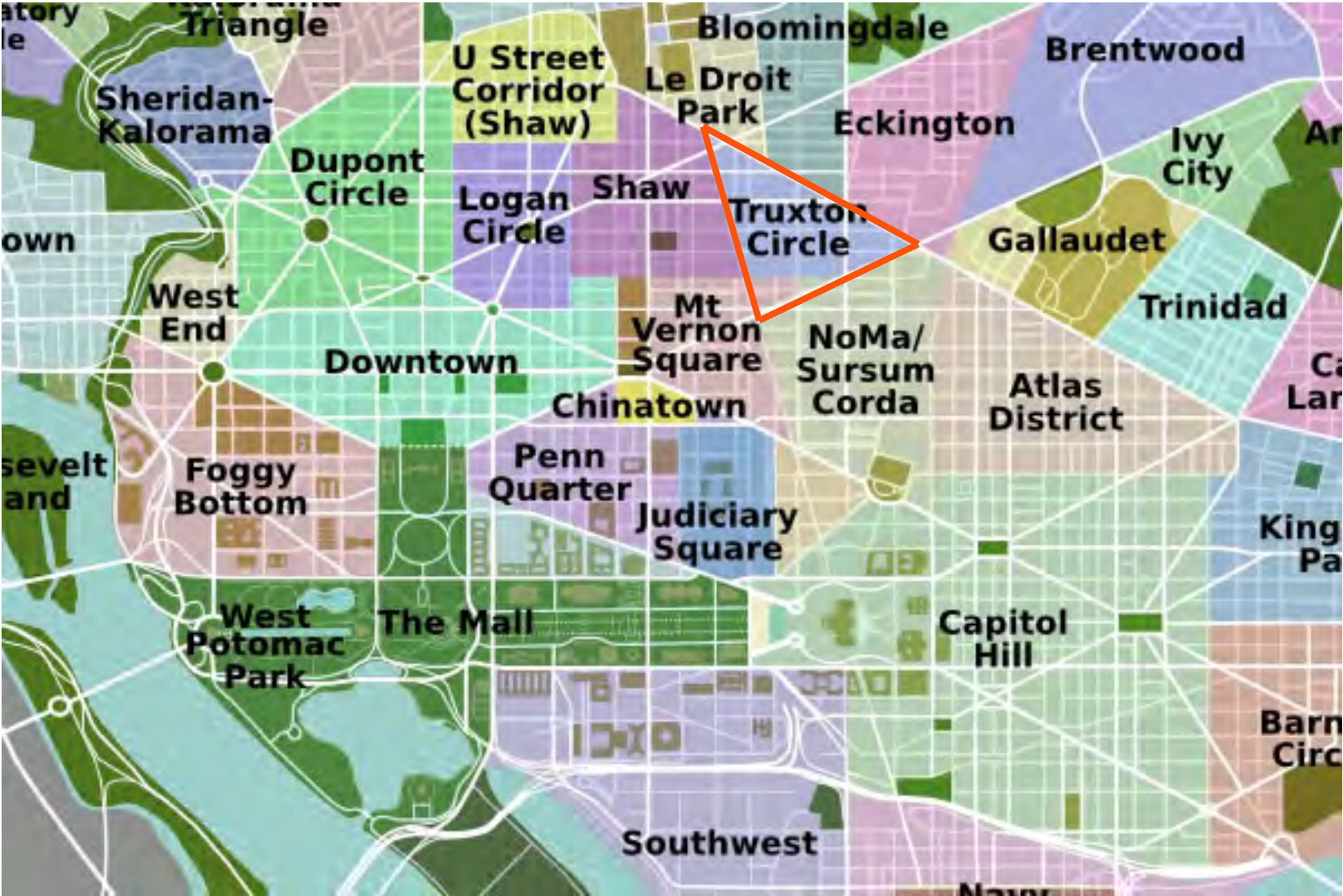
RESTORING NEIGHBORHOOD PRIDE



CASE STUDY: DUNBAR SENIOR HIGH SCHOOL



URBAN CONTEXT



1917 CAMPUS

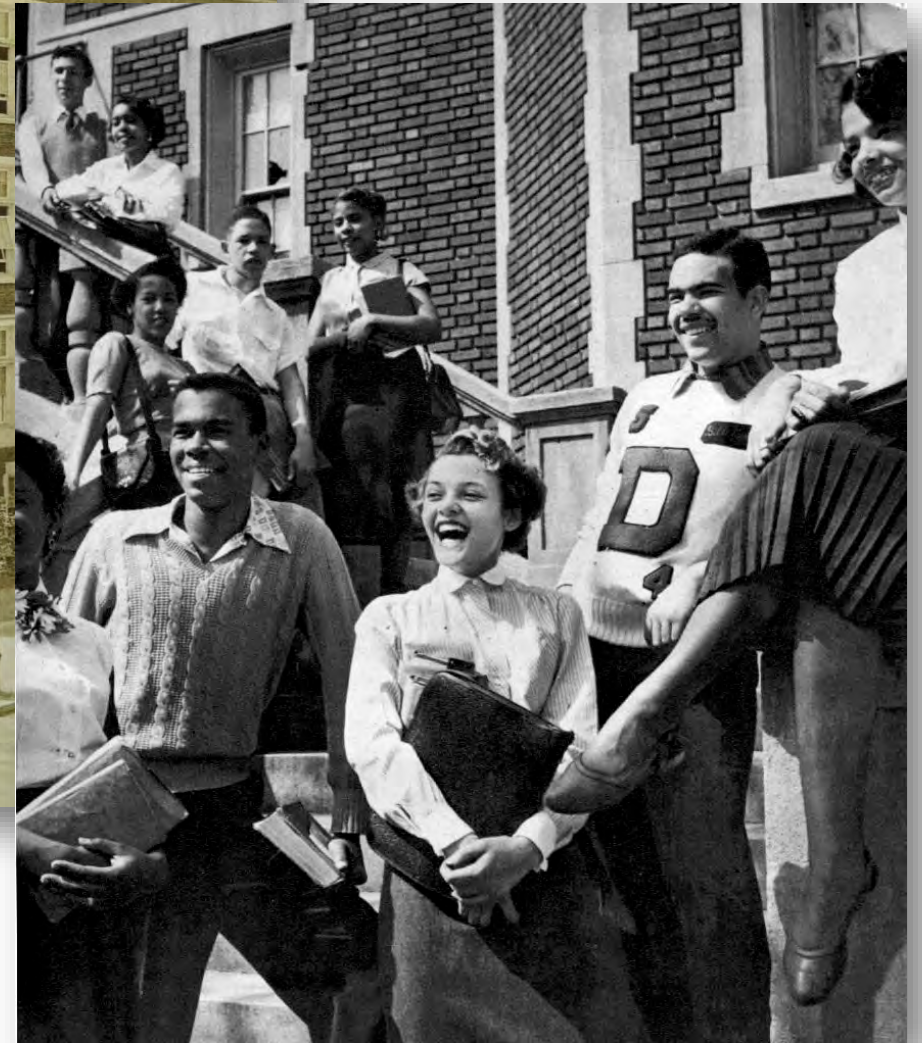
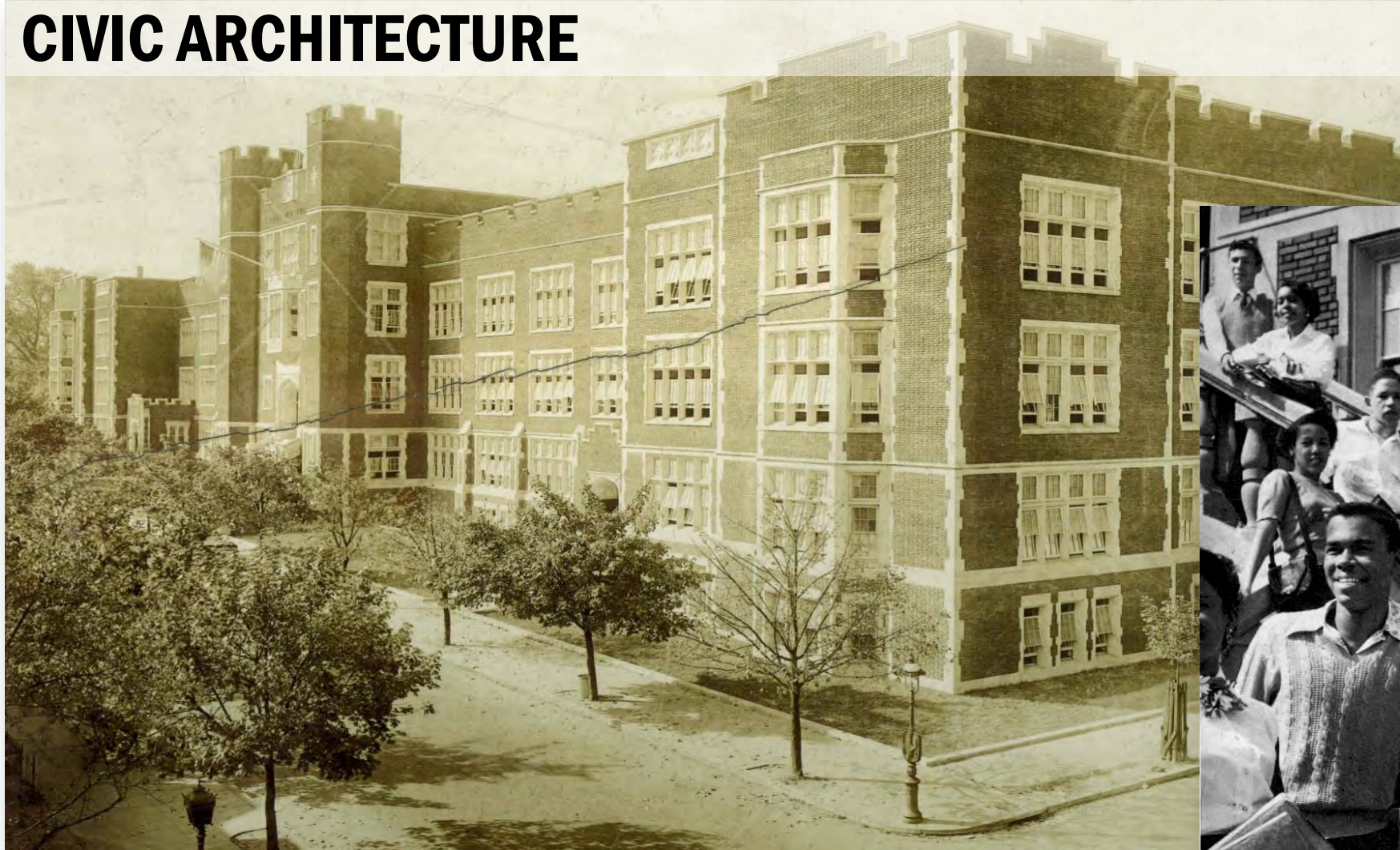
THE FIELD

O STREET

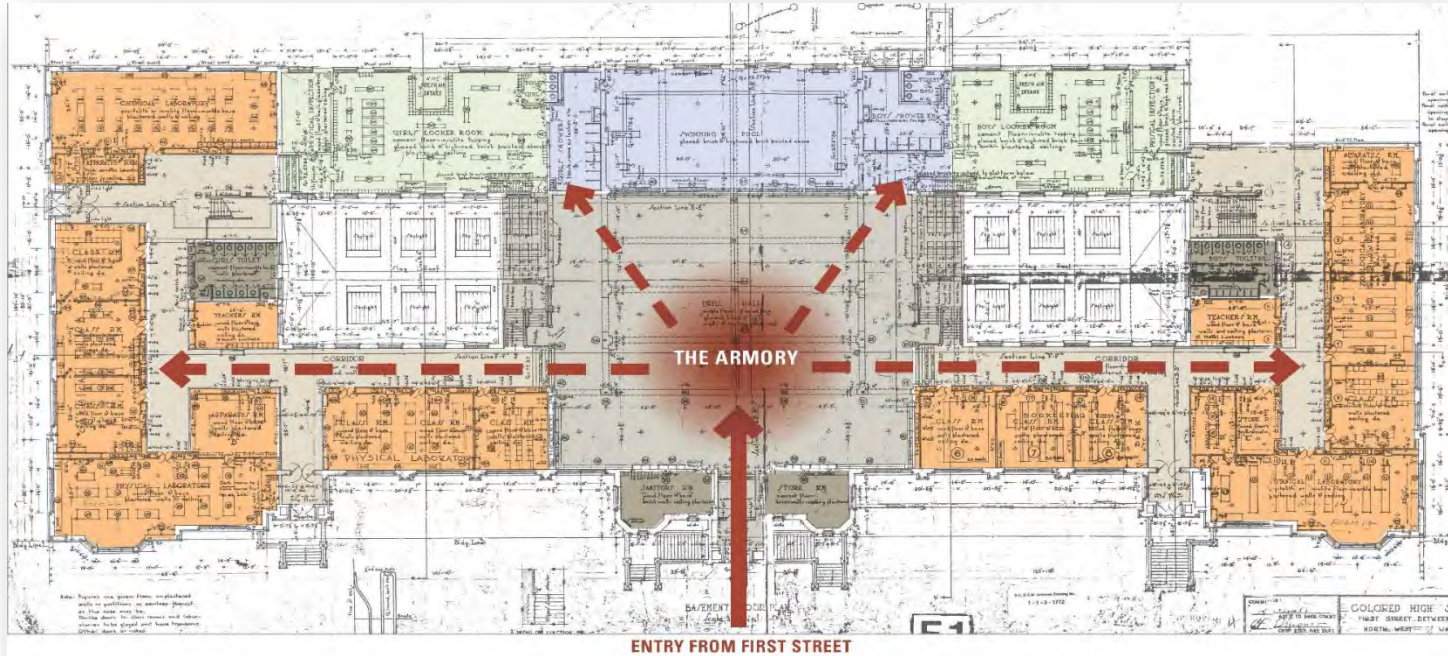
ARMSTRONG
TECHNICAL HS

DUNBAR HIGH SCHOOL , CIRCA 1965

CIVIC ARCHITECTURE



ARMORY AS “HEART OF THE SCHOOL”



1977 REPLACEMENT BUILDING



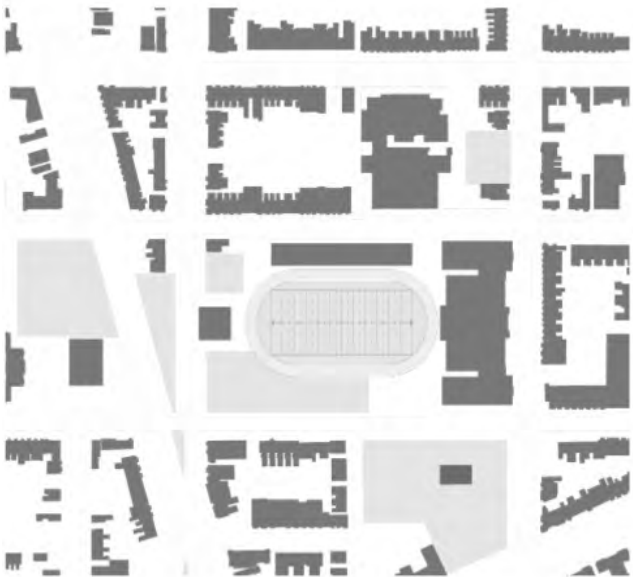
INWARD-FOCUSED FACILITY DESIGN



EVOLVING URBAN DESIGN APPROACH



1917



1977



2013



ENGAGING THE NEIGHBORHOOD



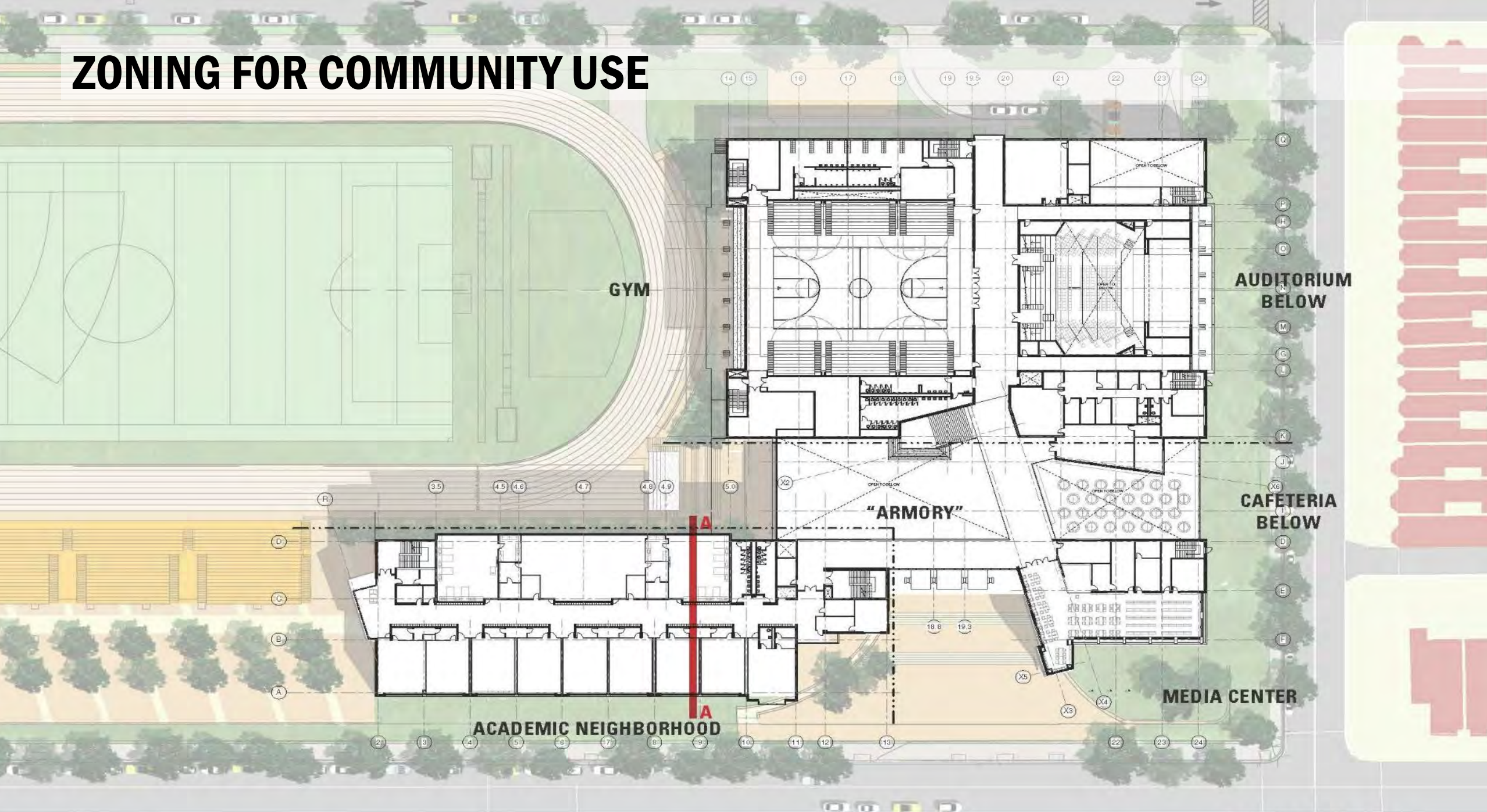
DEVELOPMENT SITE

OPENED STREET

Built

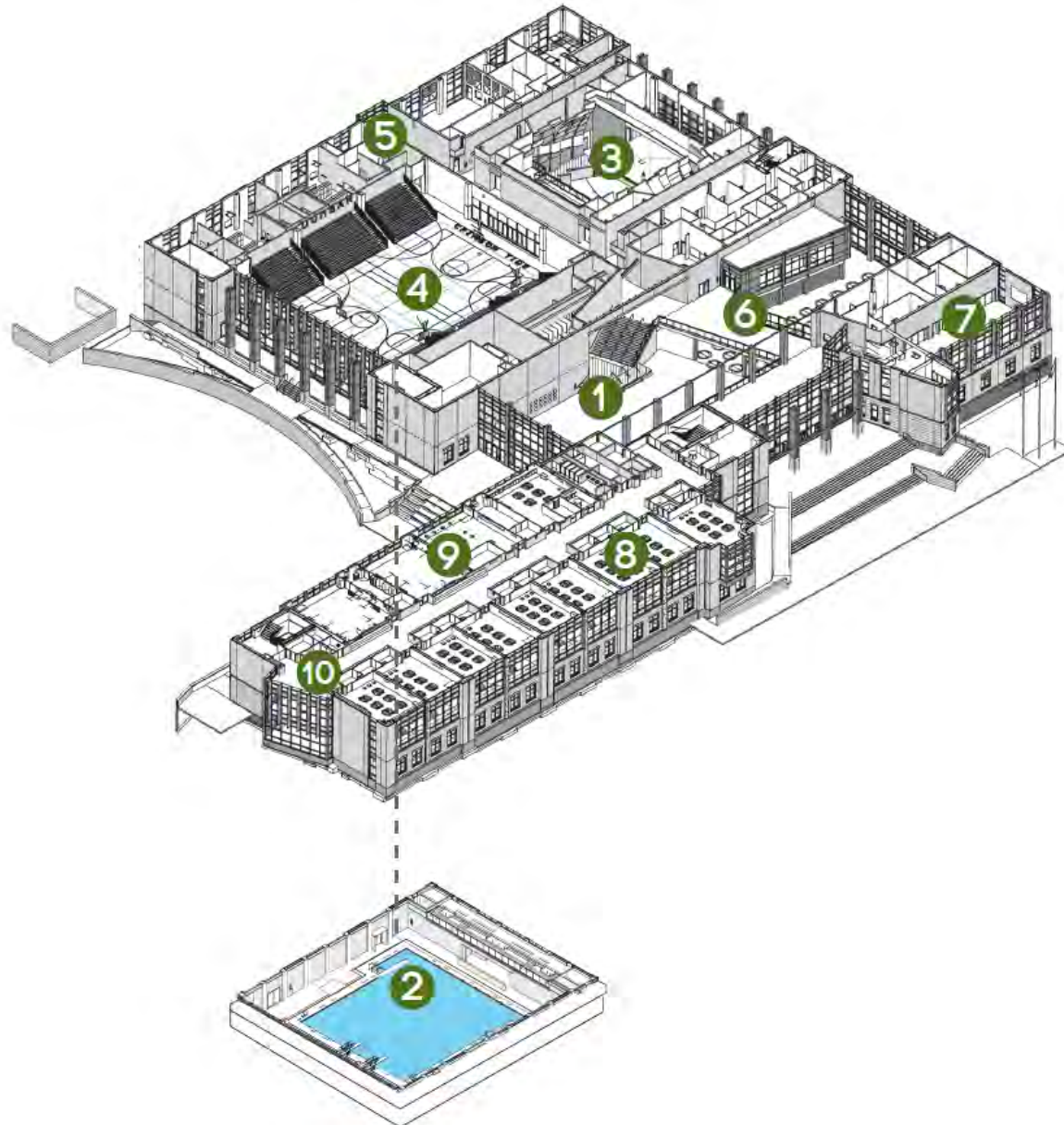
REC CENTER + PARK

ZONING FOR COMMUNITY USE



SECOND FLOOR PLAN

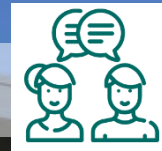
ZONING FOR COMMUNITY USE



- 1 ARMORY
- 2 POOL
- 3 THEATER
- 4 GYM
- 5 O STREET
- 6 THE BRIDGE
- 7 MEDIA CENTER
- 8 CLASSROOM
- 9 SCIENCE LAB
- 10 EXTENDED LEARNING



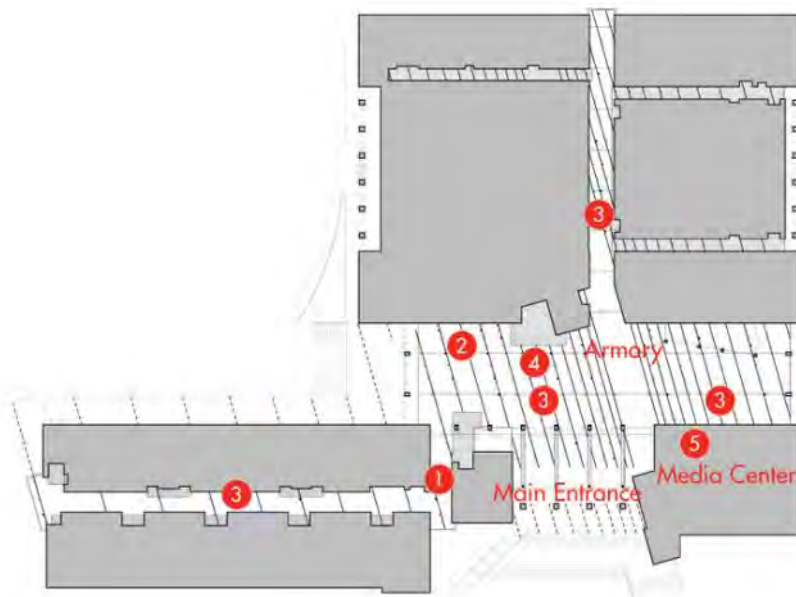
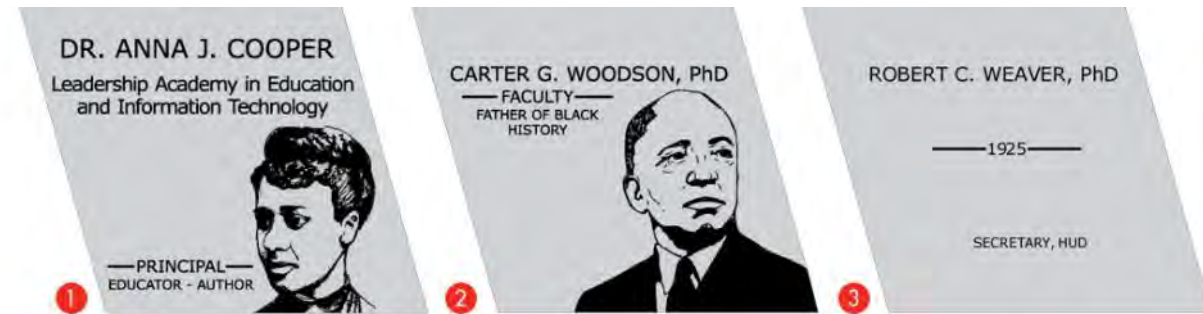
A CONTEMPORARY CIVIC DESIGN



A REIMAGINED ARMORY



SETTING HIGH EXPECTATIONS FOR SUCCESS



BRINGING SUSTAINABILITY HOME



STORYTELLING



ENERGY

A ground-source heat pump system (also known as a geothermal system) under the athletic field and radiant flooring in the Armory support Dunbar's commitment to energy efficiency.



EXTERIOR

The building exterior, or "envelope," is like your skin — it protects you from sun, wind, rain, and snow. The envelope is designed to allow natural light and fresh air into the building while keeping excess heat and cold out.



INTERIOR

Low-emitting, recycled and regional materials, green housekeeping, and pervasive daylighting and views enhance the quality of the interior environment.



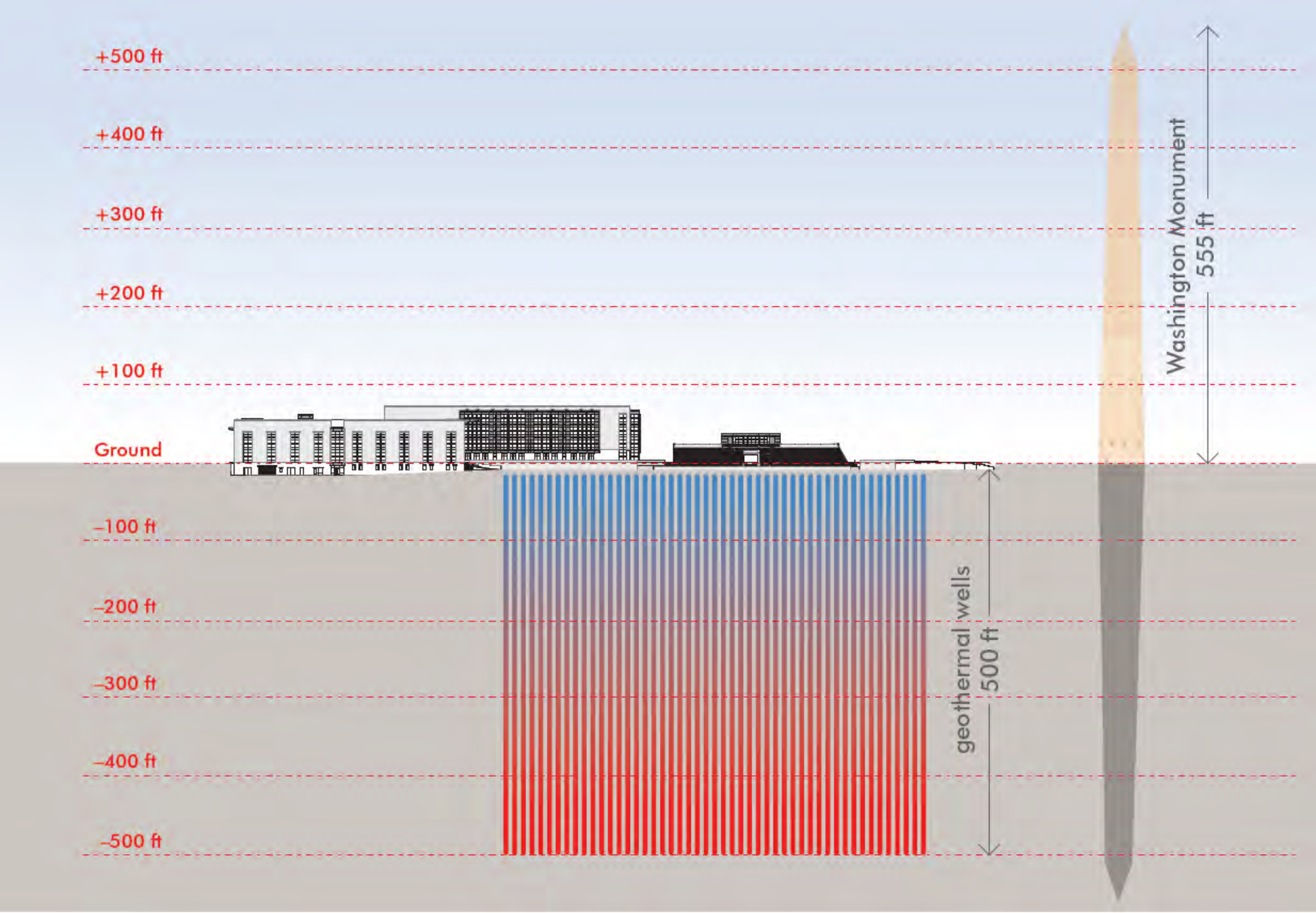
SOLAR

Solar panels, also known as photovoltaic (PV) panels, convert natural energy from the sun into clean, reliable electricity.



WATER

Rainwater collection and water efficient fixtures reduce demand for fresh water and help retain storm water runoff.





Where Does the Water Go?

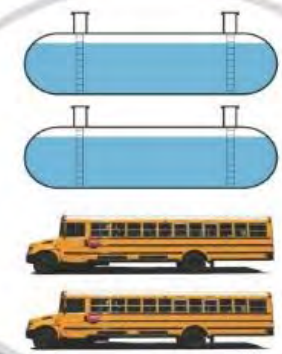
Dunbar High School is situated within the Anacostia River watershed. The Anacostia is one of the most polluted rivers in the country. To help improve the quality of the river, new developments in the city must capture and treat storm water so that it does not rush into the river, carrying dirt and pollutants. By collecting and reusing rain water, the school will minimize the impact of runoff on the Anacostia and beyond.

DID YOU KNOW THAT...

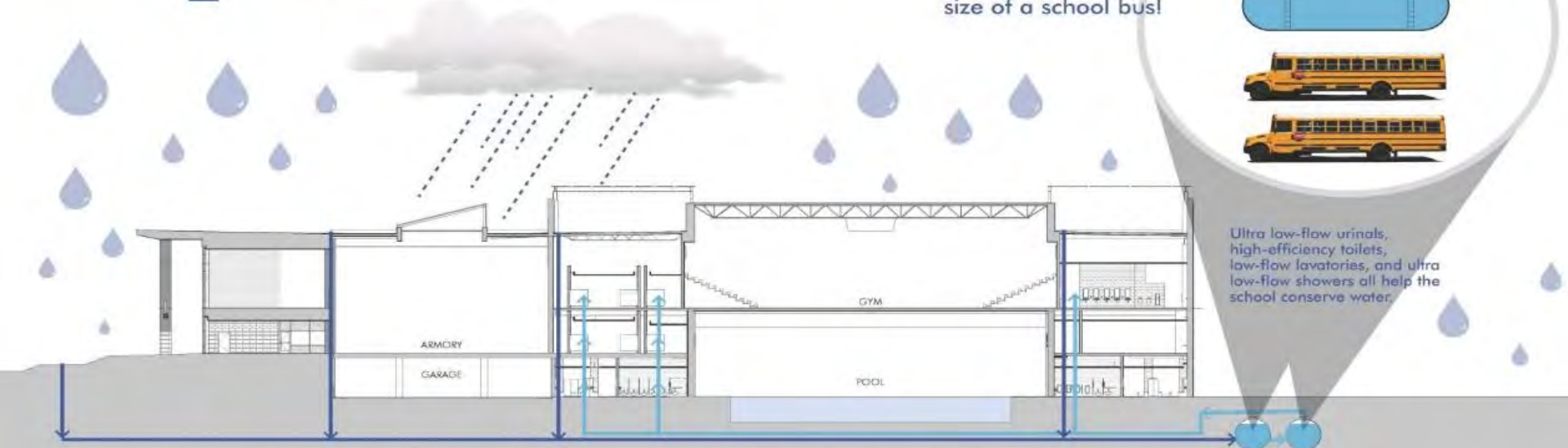
- Water reduction measures decrease water usage by 50%.
- Saving 1,400,000 gallons per year compared to a typical high school.
- Approximately 486 million gallons of water is used daily in the Washington DC area. Each person uses about 80-100 gallons per day.



There are two 20,000 gallon cisterns adjacent to the building. Each cistern is equal to the size of a school bus!



Ultra low-flow urinals, high-efficiency toilets, low-flow lavatories, and ultra low-flow showers all help the school conserve water.



Rainwater harvested from the roof and site will be stored in the cisterns to be filtered and reused for flushing toilets throughout the building.

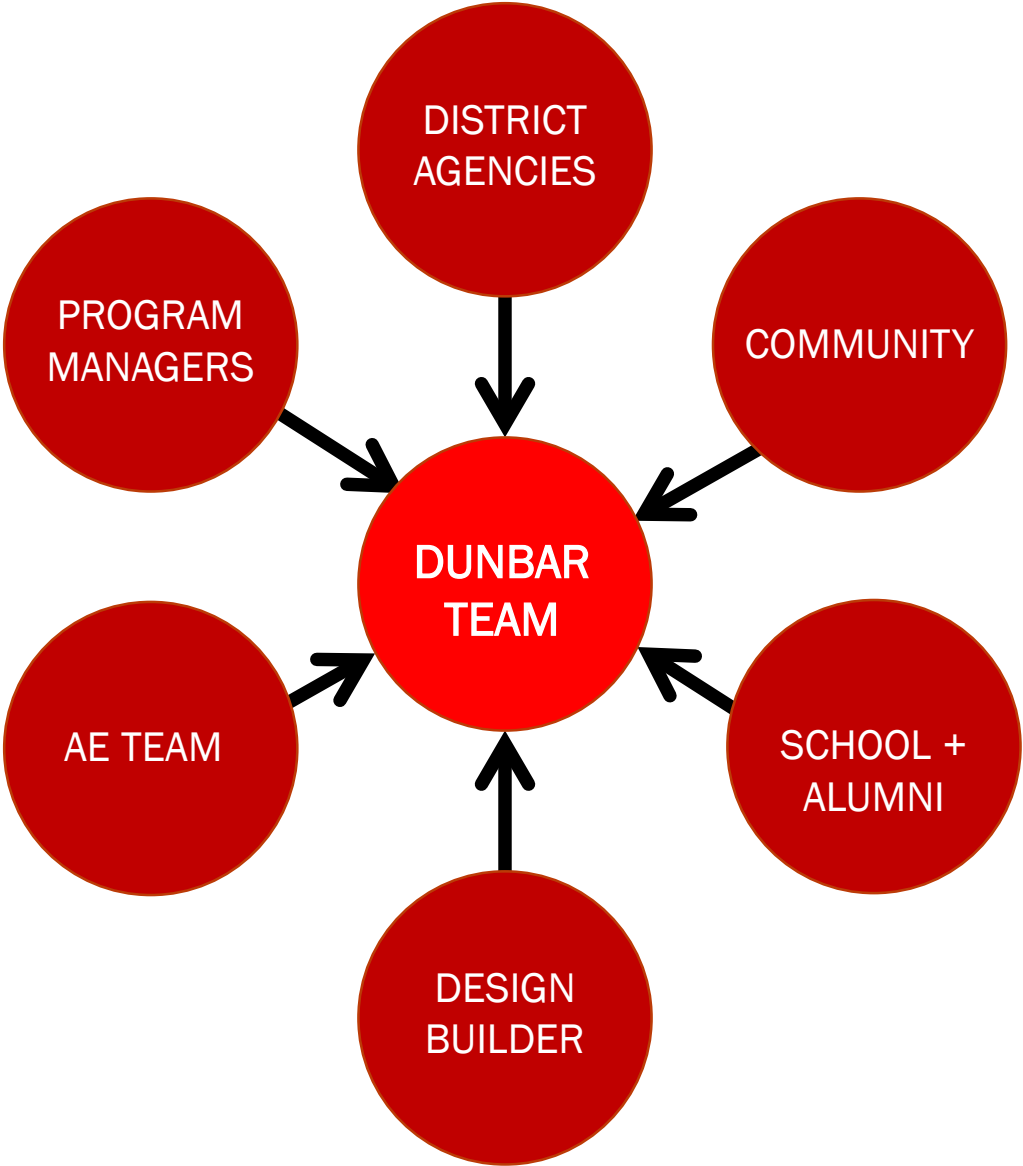
SETTING THE BAR FOR STORMWATER MANAGEMENT



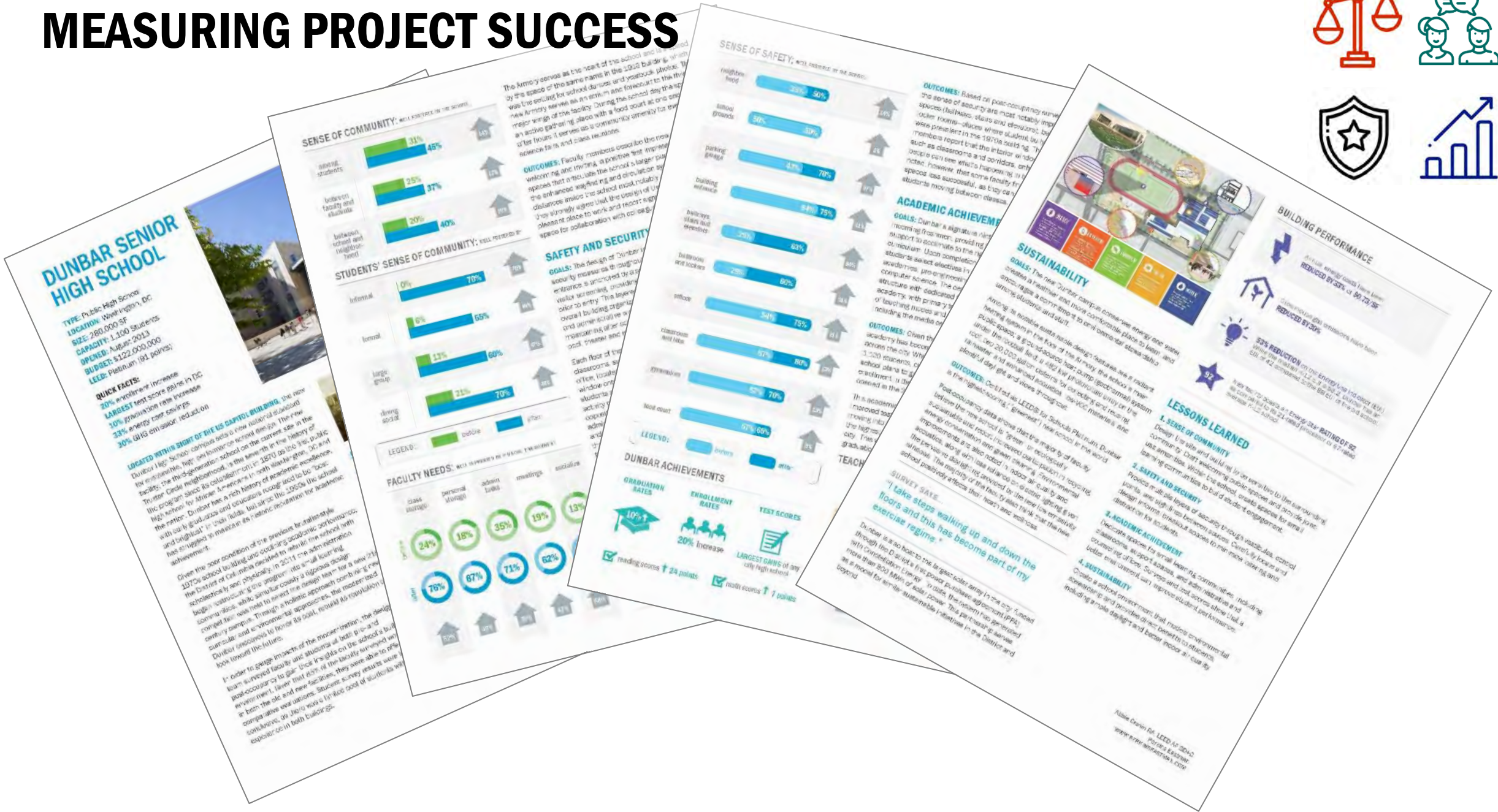
INVITING THE COMMUNITY IN



IT TAKES A VILLAGE

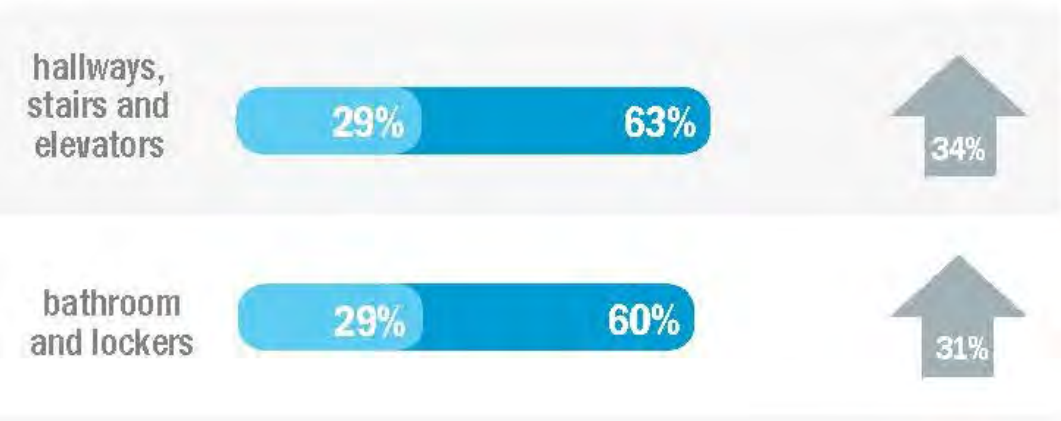


MEASURING PROJECT SUCCESS

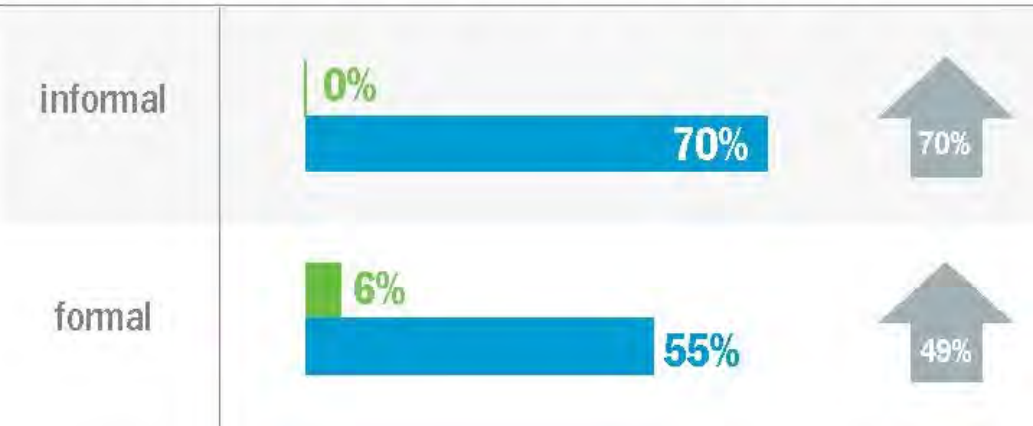


MEASURING PROJECT SUCCESS

SENSE OF SAFETY: WELL FOSTERED BY THE SCHOOL



STUDENTS' SENSE OF COMMUNITY: WELL FOSTERED BY



DUNBAR ACHIEVEMENTS

GRADUATION RATES



ENROLLMENT RATES



TEST SCORES



LARGEST GAINS of any city high school



reading scores ↑ 24 points



math scores ↑ 7 points



91 Credits, LEED Platinum

The highest scoring new school in the world

"A masterpiece of a green learning environment..."
- USGBC Center for Green Schools



SCHOOL AS COMMUNITY



TAKEAWAYS



**PROMOTE
EQUITY**



**ENABLE
MULTI-AGENCY
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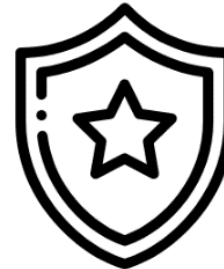
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THANK YOU

