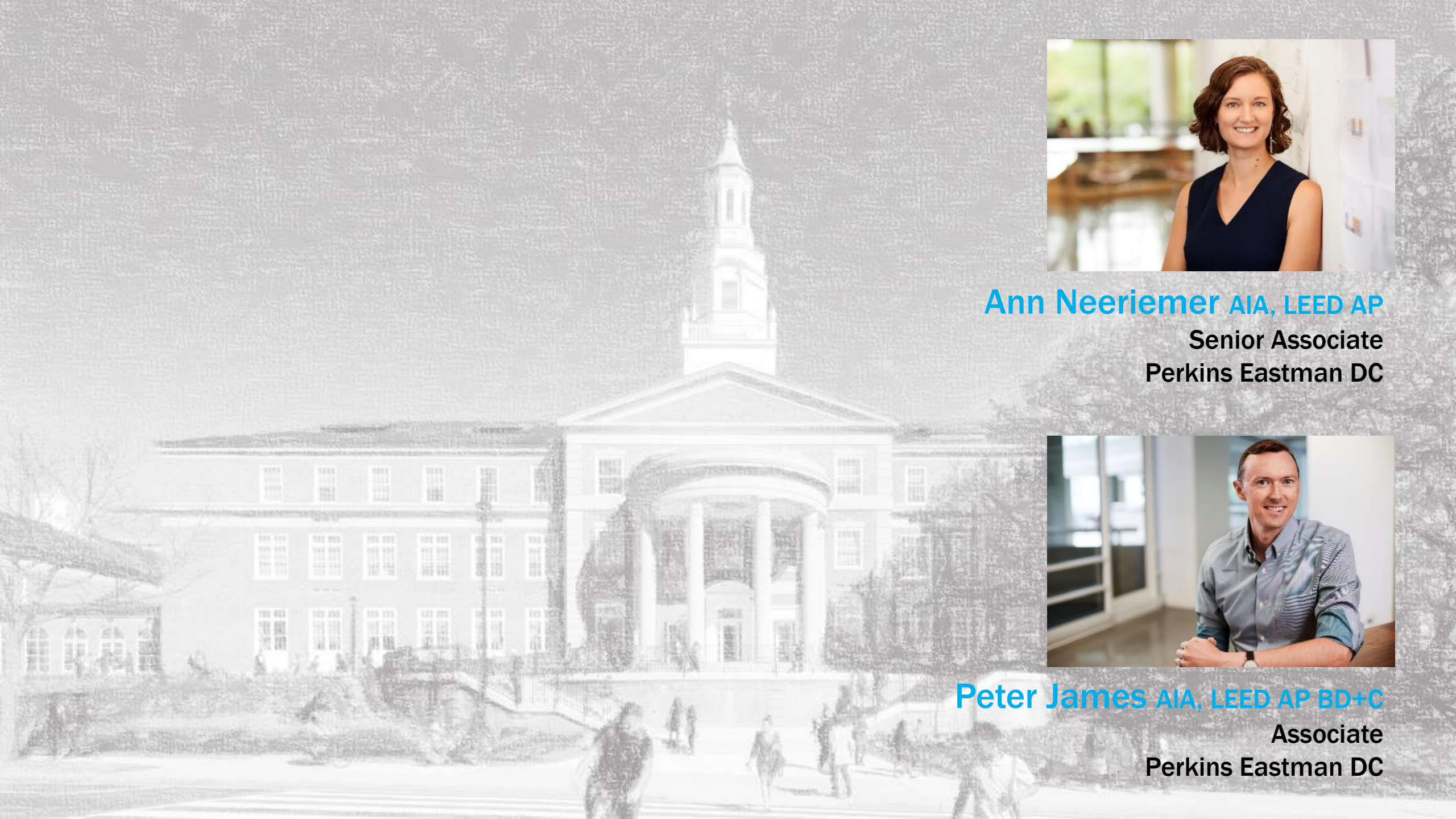


# STRENGTHENING NEIGHBORHOODS THROUGH THEIR SCHOOLS

Lessons Learned from DC for  
Urban School Revitalization  
Programs







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**Senior Associate**  
**Perkins Eastman DC**



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**Associate**  
**Perkins Eastman DC**





**RESILIENCE** is the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of **chronic stresses** and **acute shocks** they experience.

Source: **100 Resilient Cities**



**CHRONIC STRESSES** are slow-moving disasters that weaken the fabric of a city:

- **Unemployment & poverty**
- **Deteriorating transportation infrastructure**
- **Endemic crime & violence**
- **Hunger & food deserts**

**Source: 100 Resilient Cities**

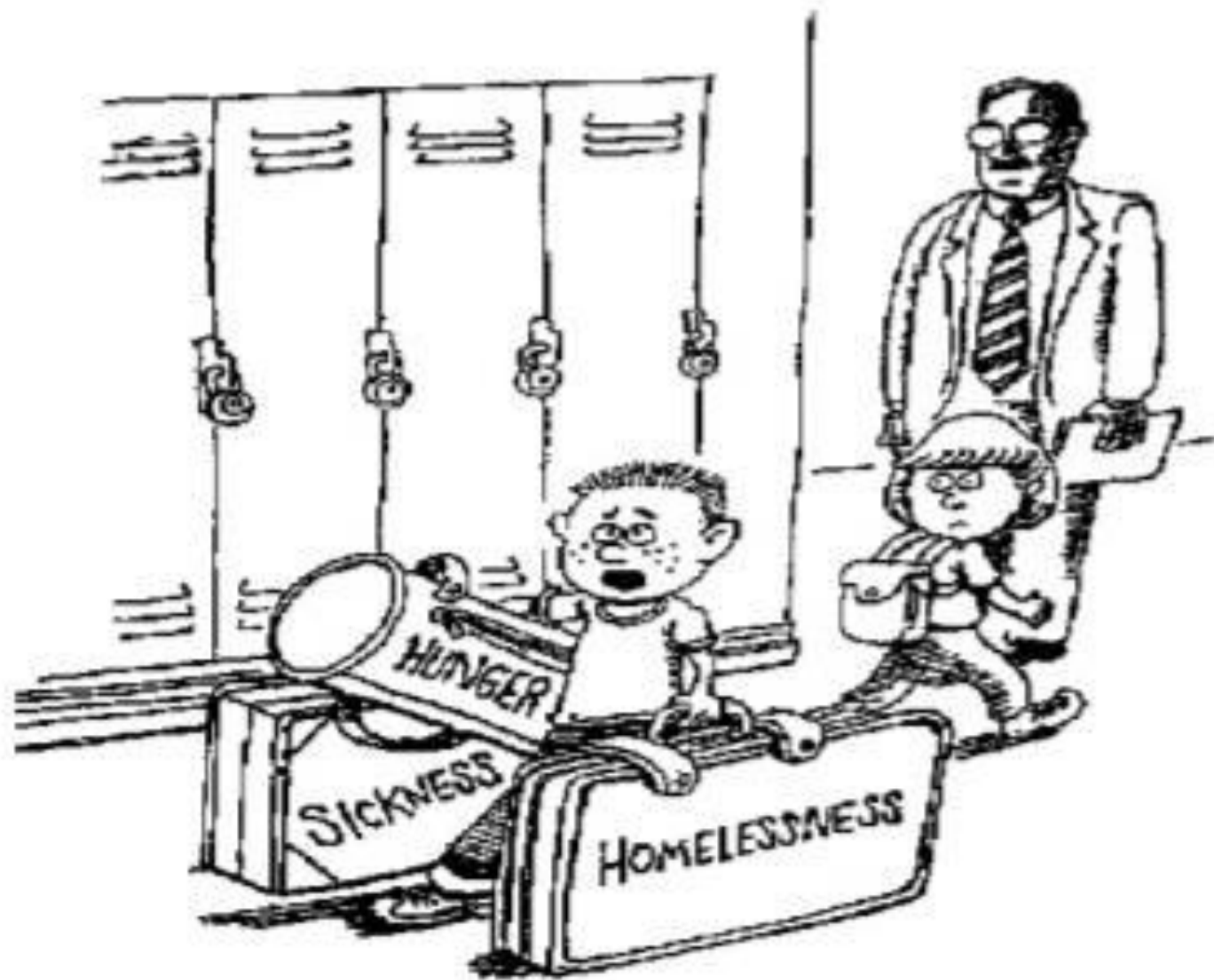


**ACUTE SHOCKS** are sudden, unpredictable events that threaten a city:

- **Natural disasters**
- **Terrorist attacks**
- **Disease outbreaks**
- **Political/social unrest**

**Source: 100 Resilient Cities**





***“Could someone help me with these?  
I’m late for math class.”***











# 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**
  - \$250M/year, \$3.2B to date



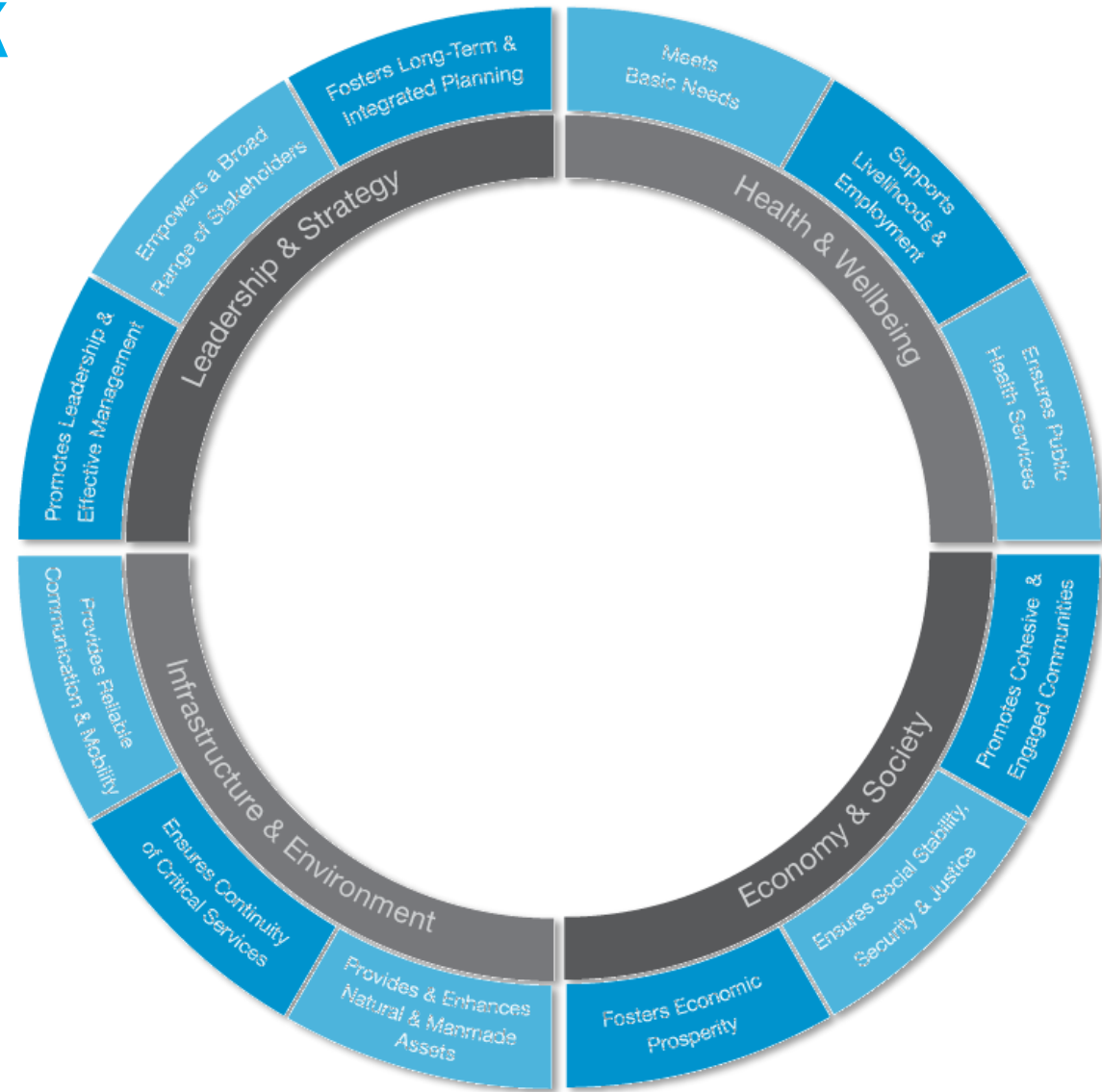


# STABILIZE, MODERNIZE, OPTIMIZE



# CITY RESILIENCE FRAMEWORK

- **Leadership & Strategy**
- **Health & Wellbeing**
- **Infrastructure & Environment**
- **Economy & Society**



**Leadership &  
strategy**



Fosters long-term & integrated planning  
Empowers a broad range of stakeholders  
Grows future generations of leaders

**Economy &  
society**



**Health &  
wellbeing**



**Infrastructure &  
environment**





Leadership &  
strategy



Economy &  
society



Fosters economic prosperity  
Promotes equality and social justice  
Builds community

Health &  
wellbeing



Infrastructure &  
environment



Leadership &  
strategy



Economy &  
society



Health &  
wellbeing



Meets basic needs  
Contributes to public health  
Promotes recreation & wellness

Infrastructure &  
environment



Leadership &  
strategy



Economy &  
society



Health &  
wellbeing



Infrastructure &  
environment



Improves the natural and manmade environment  
Provides emergency services  
Promotes environmental stewardship



## Leadership & strategy



Fosters long-term & integrated planning  
Empowers a broad range of stakeholders  
Grows future generations of leaders

## Economy & society



Fosters economic prosperity  
Promotes equality and social justice  
Builds community

## Health & wellbeing



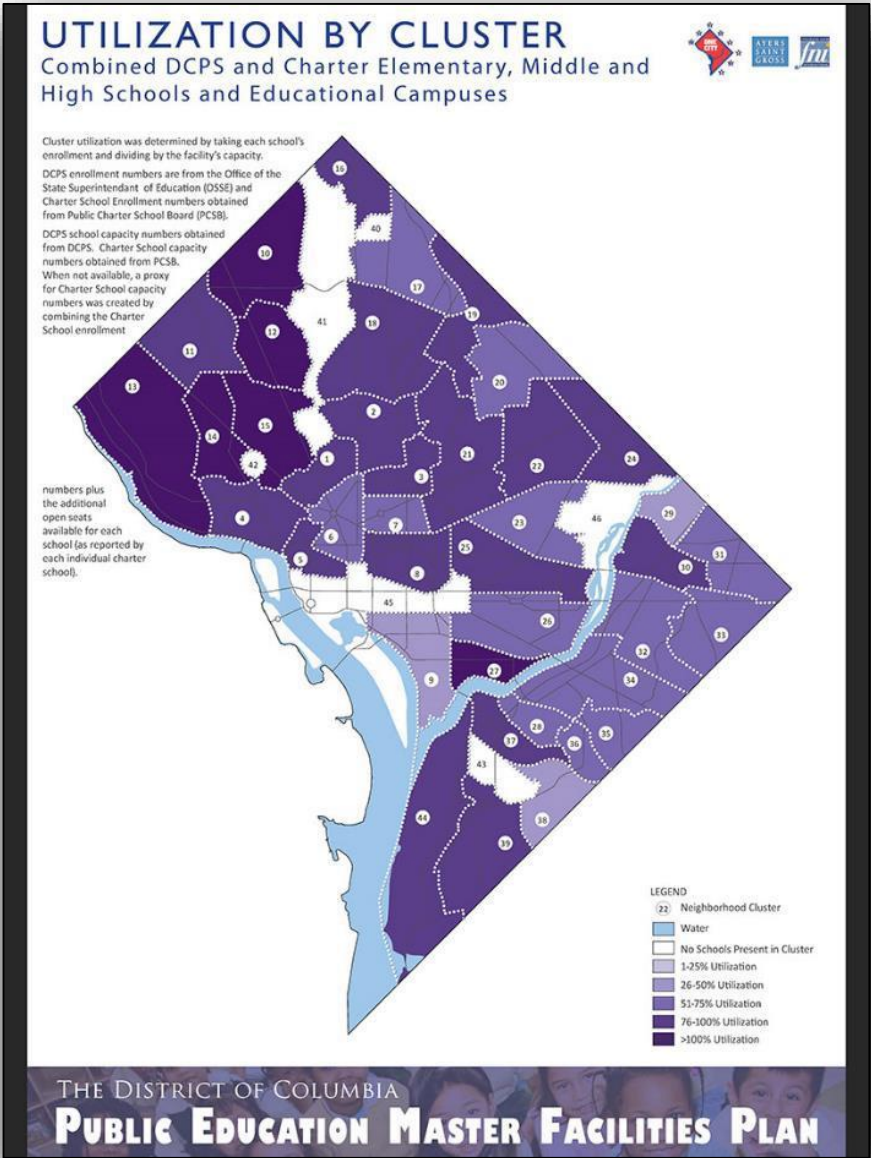
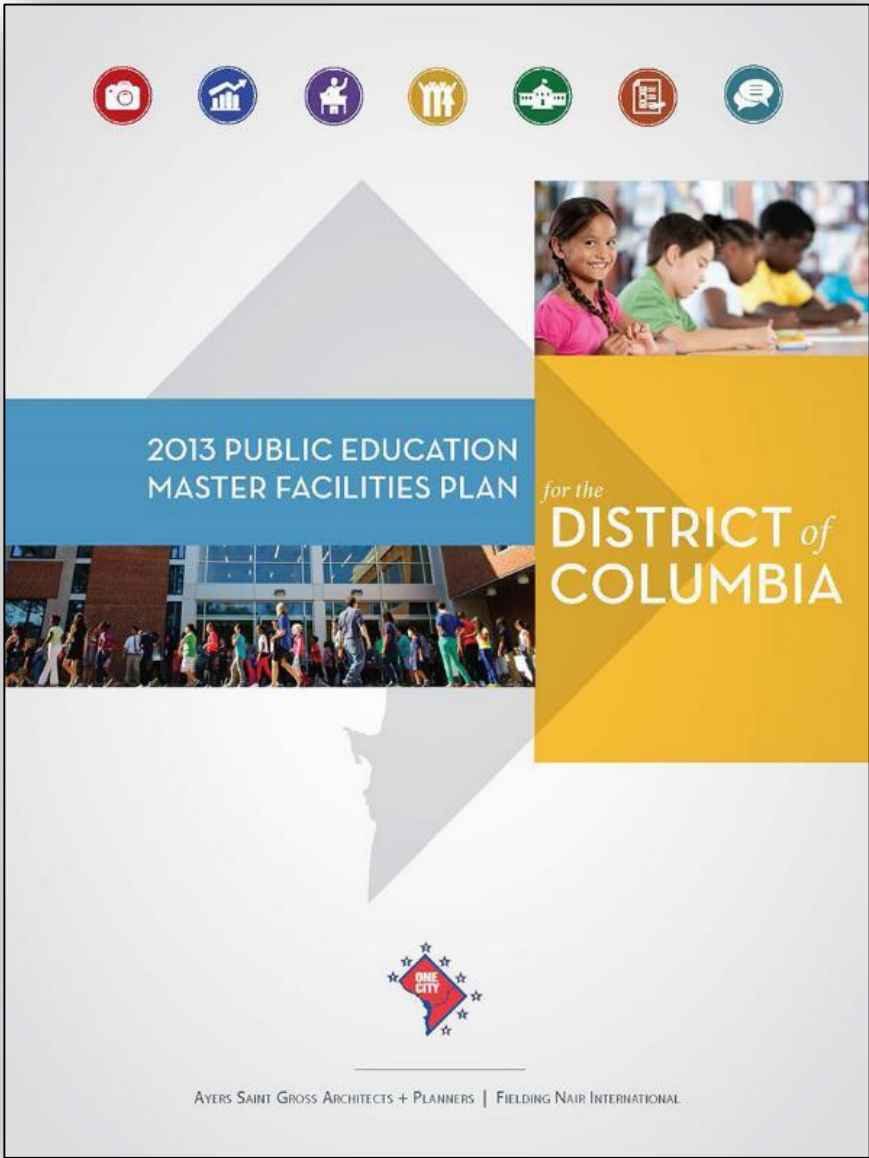
Meets basic needs  
Contributes to public health  
Promotes recreation & wellness

## Infrastructure & environment



Improves the natural and manmade environment  
Provides emergency services  
Promotes environmental stewardship

# PROMOTE EQUITY AND ACCESS TO RESOURCES CITY-WIDE





# ENABLE MULTI-AGENCY COOPERATION





# INVOLVE THE SCHOOL COMMUNITY IN THE DESIGN PROCESS



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/>

# CREATE PLACES FOR FITNESS & RECREATION THAT CAN BE USED BY COMMUNITY OUTSIDE SCHOOL HOURS





# PARTNER WITH COMMUNITY ORGANIZATIONS TO OFFER NUTRITION AND WELLNESS SERVICES



Joyful Food Market  
Run by Martha's Table



OUR MISSION | to improve the health and quality of life for low-income, homeless and underserved families and individuals in the District of Columbia by providing healthcare, housing with supportive services, educational opportunities and support.

OUR VALUES | Serving with compassion, integrity and respect. Striving for excellence.

Marie Reed Health Clinic  
Quinn Evans Architects  
<https://s3-media1.fl.yelpcdn.com/bphoto/bIYx4CDG7tT8Rj3xra92RQ/o.jpg>



# ENSURE STUDENTS ARE SAFE AT SCHOOL

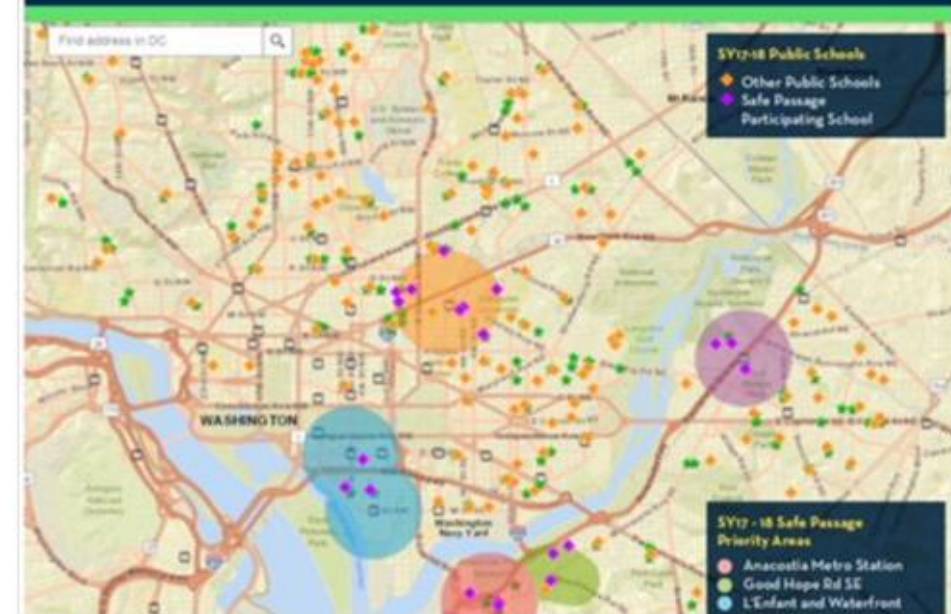


DC Parks & Recreation @DCDPR · Feb 8

Find out how we are keeping students **safe** as they travel to and from school and map out your **safe route** to school using our new interactive map at [dme.dc.gov/safepassage](https://dme.dc.gov/safepassage) #EdWeekDC

## SAFE PASSAGE TO SCHOOL

Ensuring our students can travel to and from school safely every day.





# PRACTICE SUSTAINABLE DESIGN AT ALL SCALES



**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

chESAPEAKE bay 100 miles  
atlantic ocean 180 miles

graphic design by  
Jill Edman DC  
© 2017  
printed on 100% recycled paper  
material made from  
recycled plastic bottles



# CREATE HIGH-PERFORMANCE LEARNING ENVIRONMENTS



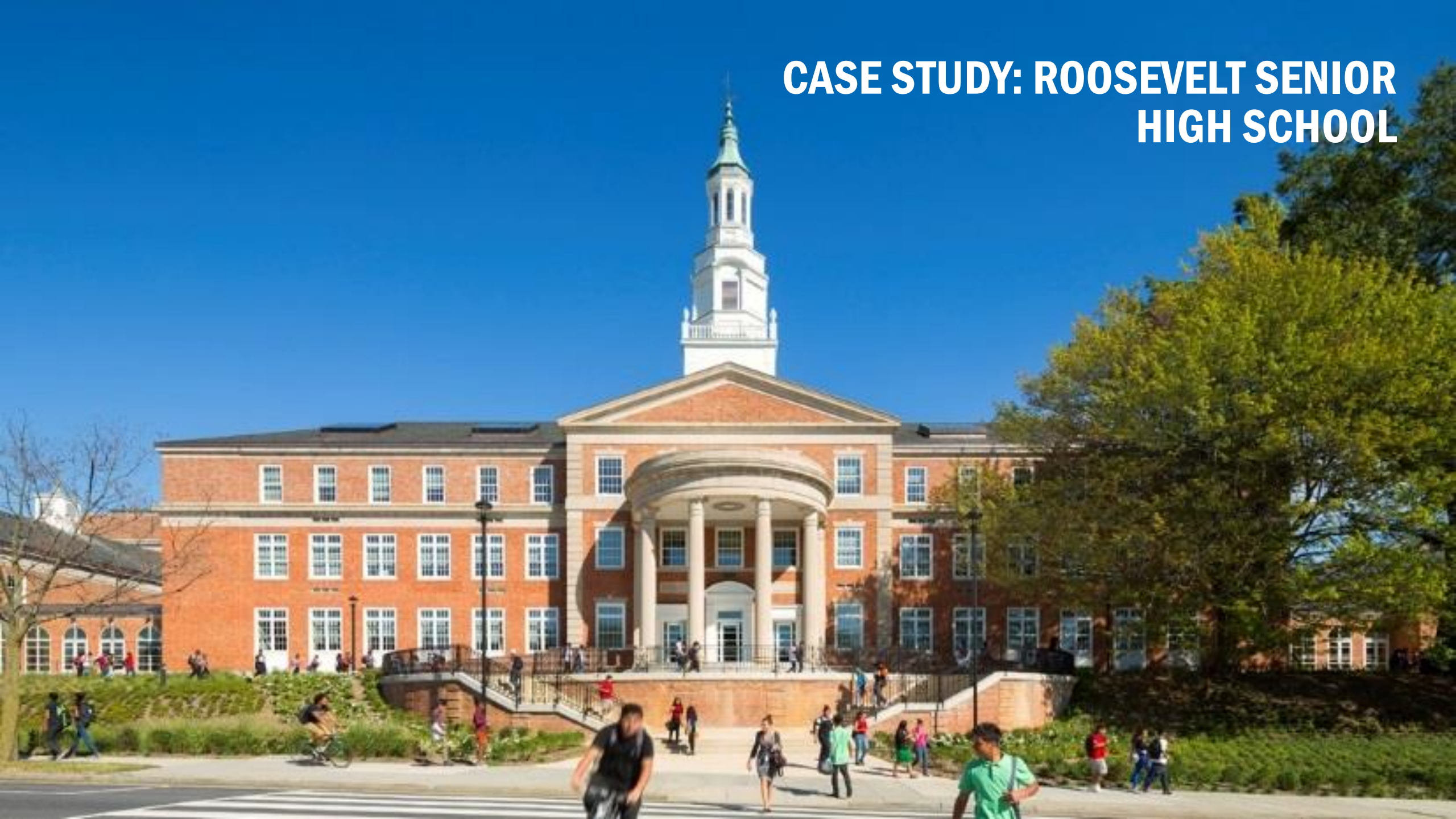


# CASE STUDIES



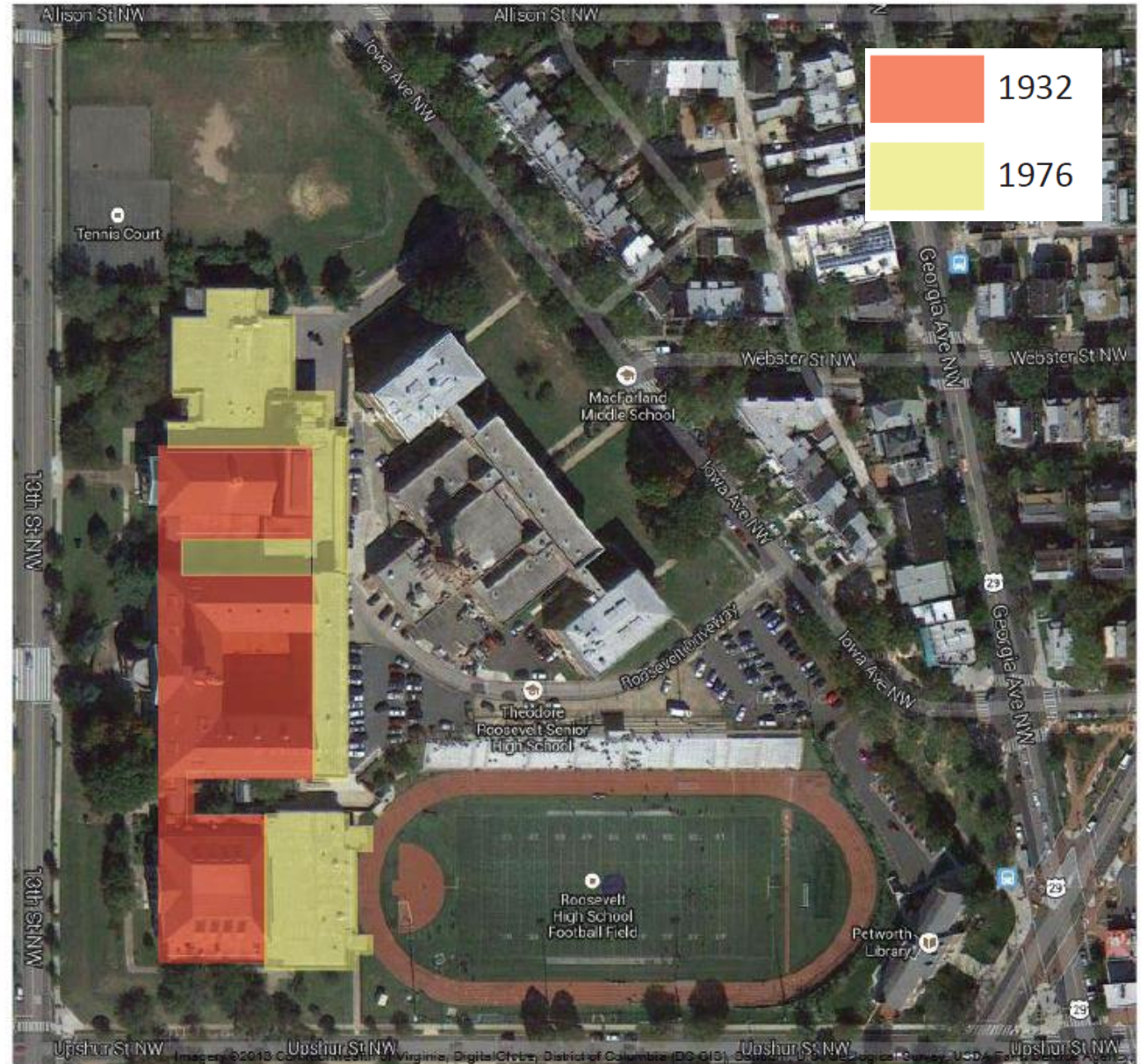
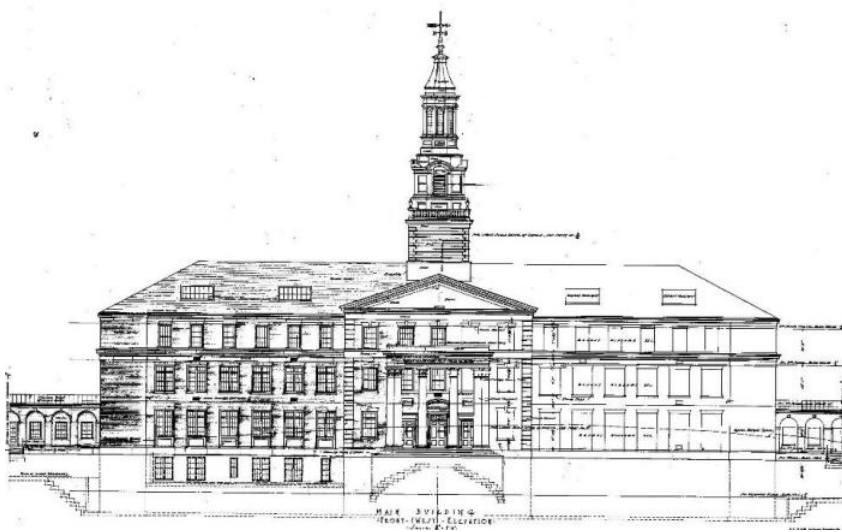


# **CASE STUDY: ROOSEVELT SENIOR HIGH SCHOOL**





# A HISTORIC NEIGHBORHOOD SCHOOL

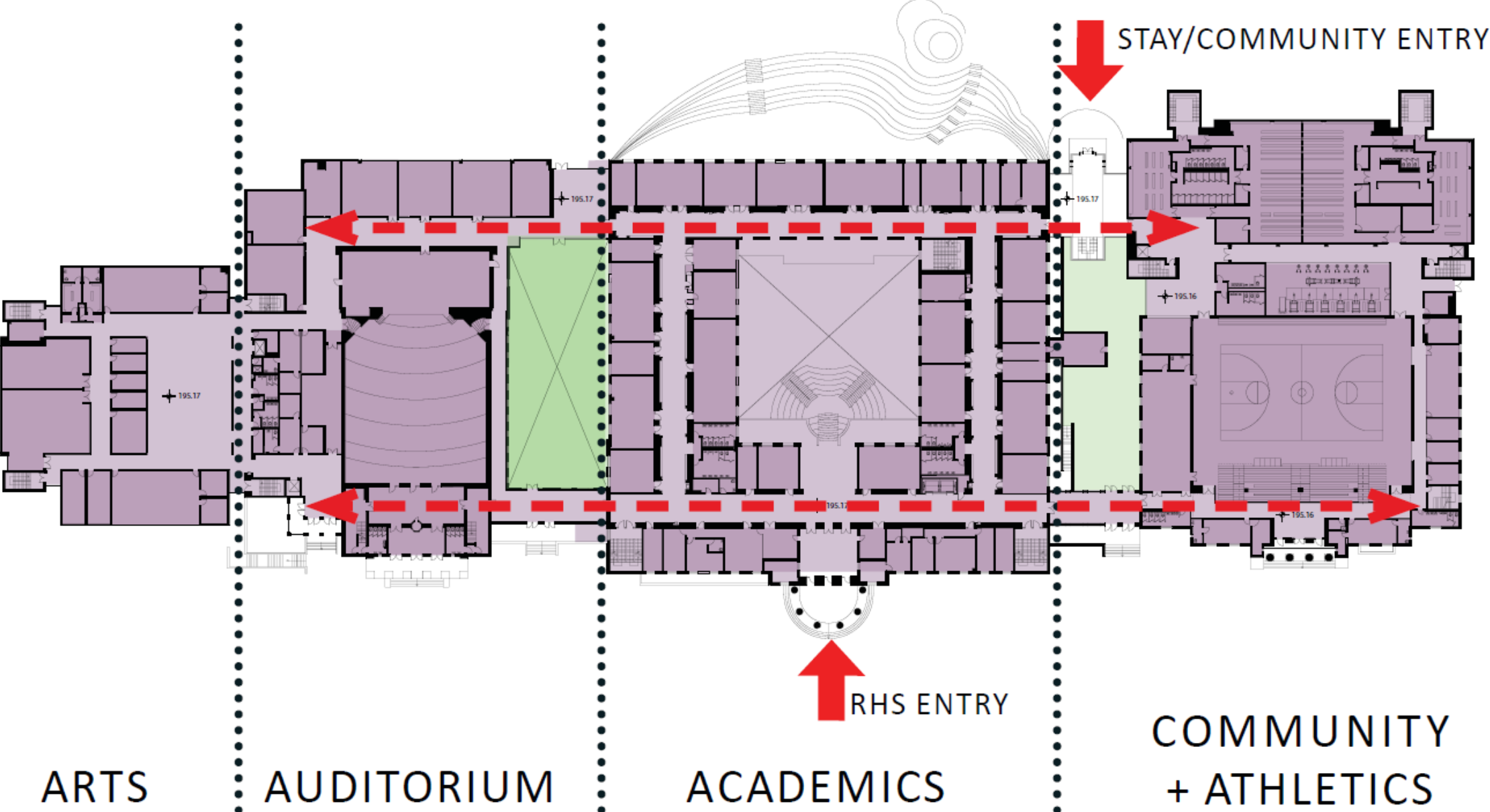




# A WELCOMING ENTRANCE



# FUNCTIONAL ORGANIZATION





# 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.



Leadership  
& strategy



Economy  
& society



Health &  
wellbeing



# HEALTH CLINIC & SHARED RECREATION



Health &  
wellbeing

Sean O'Donnell liked

 **DC Public Schools** @dcpublicschools · Feb 27

The team from the @MedStarGUH clinic at @RooseveltHSDC provides students free physicals, sick visits and much more at the full service health care facility - in the school building!! Meet them at the high school Resource Fair! @DOHDC @MayorBowser



1 3 14



# CREATING A 'HEART'



Health &  
wellbeing



BEFORE



# CONNECTING TO THE COMMUNITY



Economy  
& society





# THE 'WATERWORKS' | TEACHING BUILDING



Infrastructure  
& environment



## FOOD PRODUCTION

The greenhouse and garden serve the school and community as teaching tools for local, sustainable agriculture.

Growing food locally puts us in touch with the seasons, yields fresh and tasty fruits and vegetables, and reduces pollution from long-distance shipping and refrigeration.



## DAYLIGHT & VIEWS

Ample natural light and views to the outdoors improve the quality of the interior environment and enhance learning.

Natural light is provided to over 90% of classrooms and offices at Roosevelt. Daylighting and views to the outside have been correlated with improved student performance, while glare and direct sunlight can be negative factors. To allow ample daylight yet prevent excessive brightness and glare, the building uses high-performance glazing, and interior roller shades.



## RECYCLED CONTENT

Selecting products made with recycled content keeps useful materials out of landfills and preserves natural resources.

Twenty percent of the building materials at Roosevelt, including windows, doors, ceramic tile, and acoustic ceiling panels, are made with recycled content.



## GEO THERMAL

A ground-source heat pump system (also known as a geothermal system) under the north athletic fields supports Roosevelt's commitment to energy efficiency.

The geothermal system, made up of more than 200 wells that measure 500 feet deep, takes advantage of the earth's constant year-round temperature to help heat and cool the building. This system reduces the building's demand for energy from fossil fuels.



## WATERWORKS

Rainwater harvested from the roof is stored in three cisterns in the Waterworks Courtyard and reused for flushing toilets and urinals.

With two 35,000-gallon cisterns buried below the landscaped terraces and one 25,000-gallon cistern above ground, the school can collect up to 55,000 gallons of rainwater for reuse.

By diverting rainwater from running off the site, the Roosevelt campus will reduce its impact on the Anacostia River watershed.



## ELECTROCHROMIC

The atrium skylight features electrochromic glass, which automatically tints throughout the day based on the amount of sunlight. This keeps the atrium comfortable and saves energy.

Electrochromic glazing on the south-facing sections provides daylight and views while blocking solar heat gain and glare. This "smart" skylight helps reduce the need for air conditioning in the warmer months.



# 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%



## Leadership & strategy



- Involve the community throughout the design process
- Reinforce the civic identity of the school in the design
- Hire local businesses and artists to work on the project

## Economy & society



- Learn the history of the community, the school, and the people (community banners)

## Health & wellbeing



- Identify programs & spaces for joint use by the community
  - Public health clinic
  - Partnership with parks & recreation

## Infrastructure & environment



- Storm water management
- Solar Energy
- Educational signage

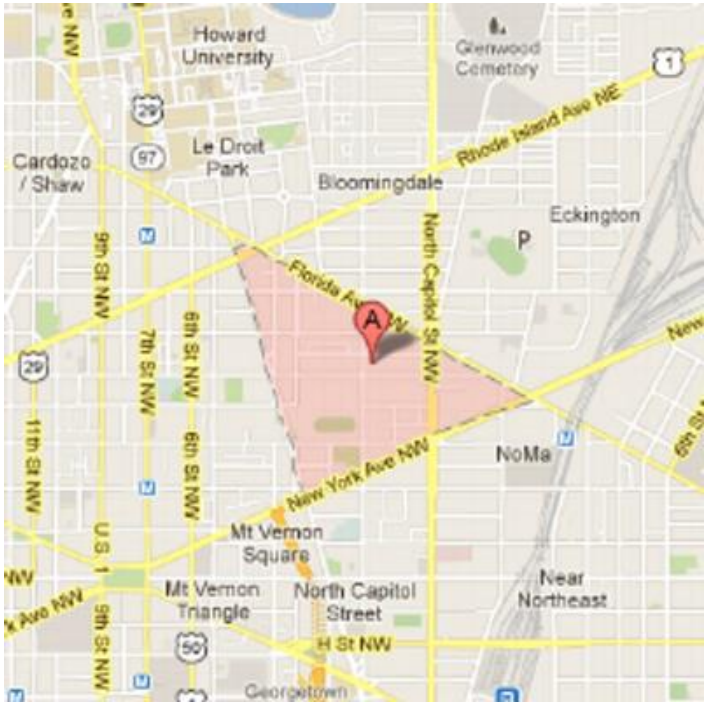
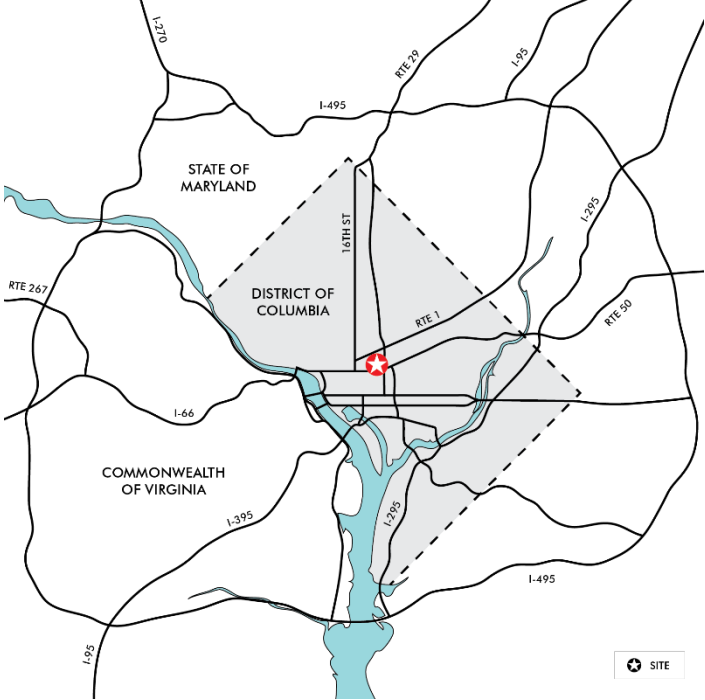
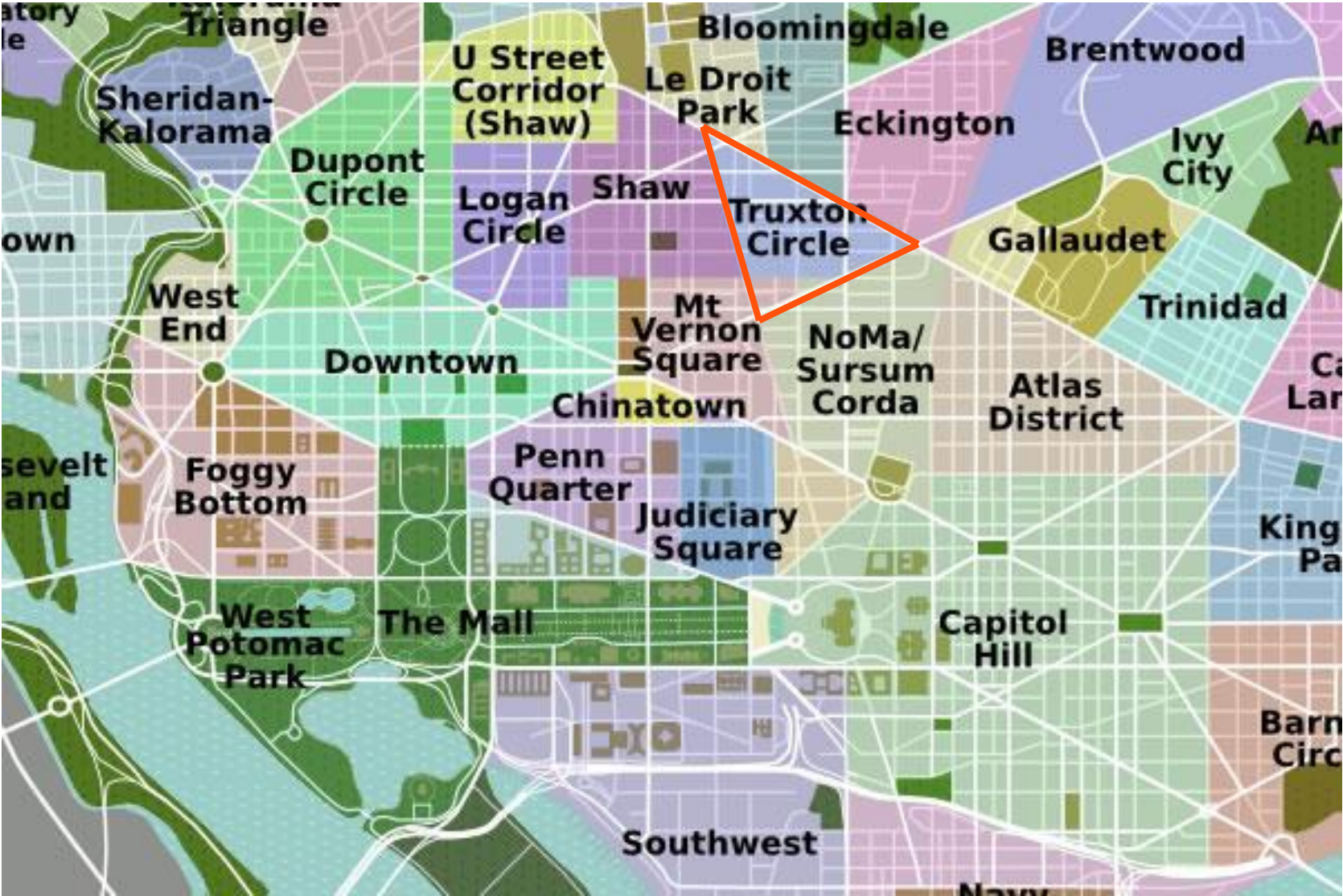


# CASE STUDY: DUNBAR SENIOR HIGH SCHOOL





# URBAN CONTEXT





# 1917 CAMPUS

THE FIELD

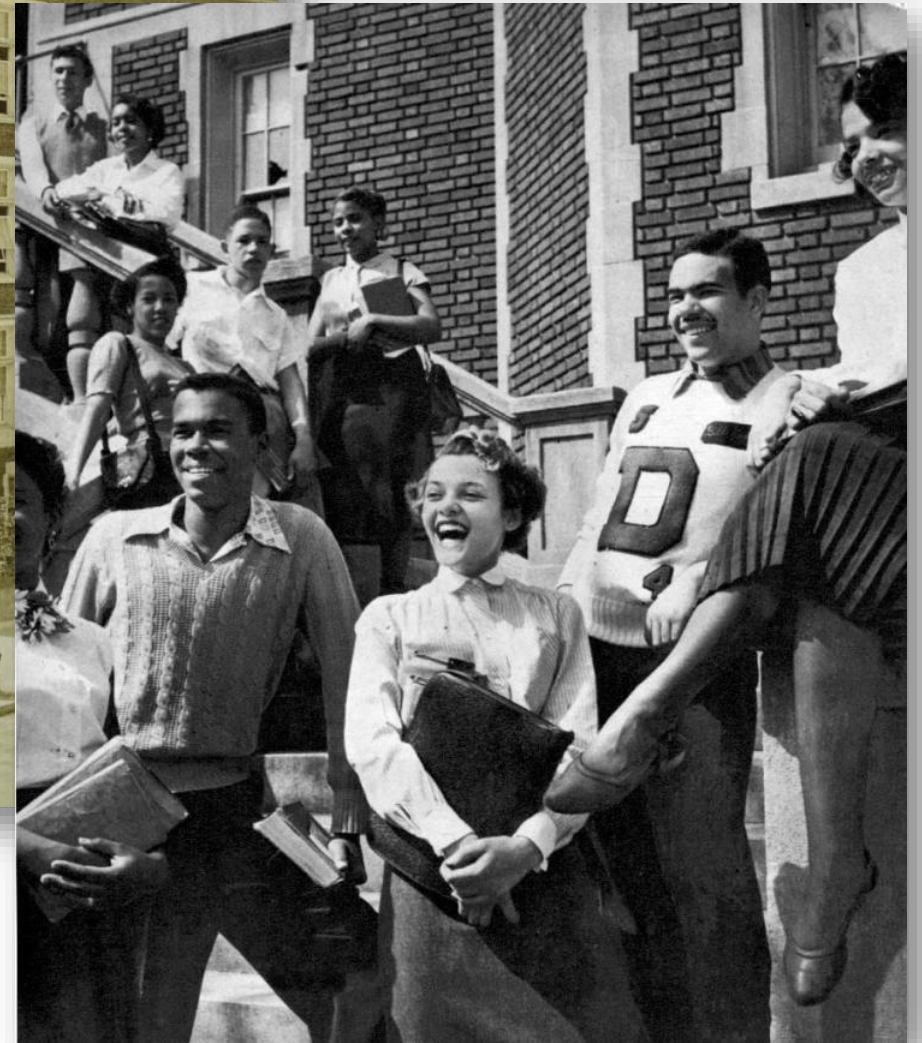
O STREET

ARMSTRONG  
TECHNICAL HS

DUNBAR HIGH SCHOOL , CIRCA 1965

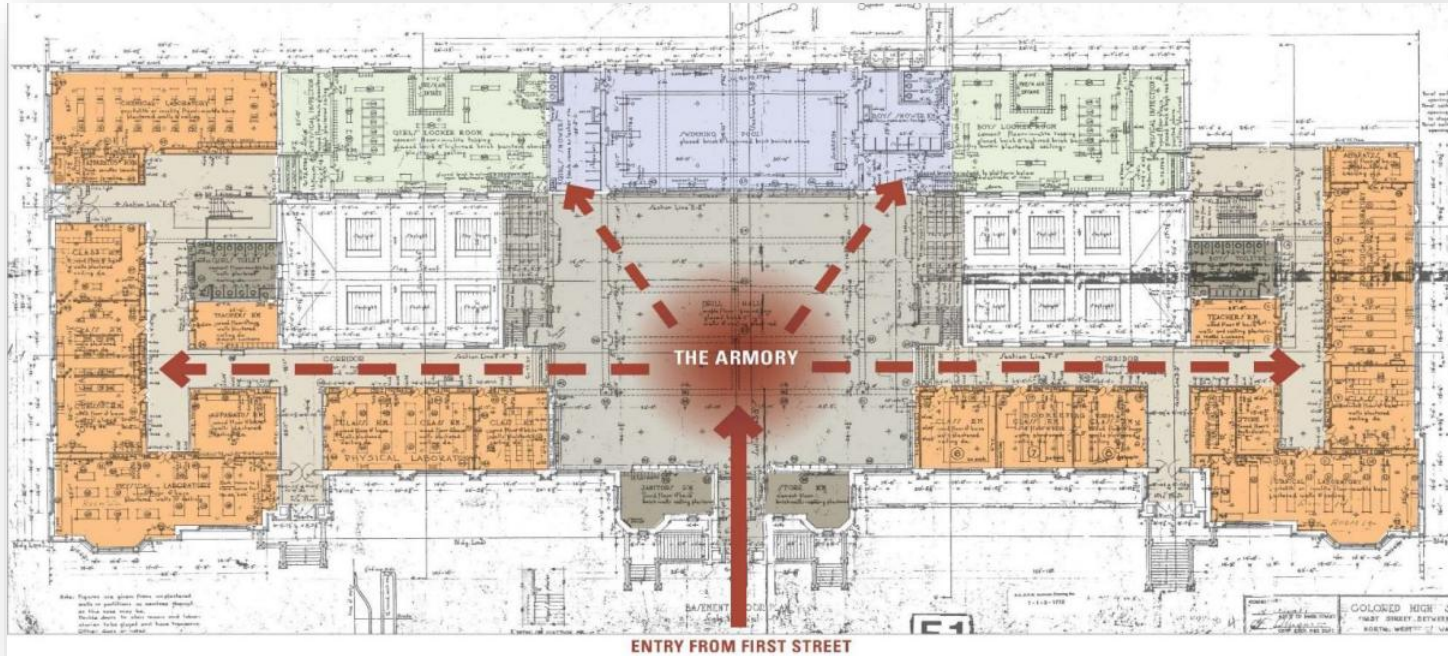


# ASPIRATIONAL ARCHITECTURE





# ARMORY AS “HEART OF THE SCHOOL”



# 1977 REPLACEMENT BUILDING

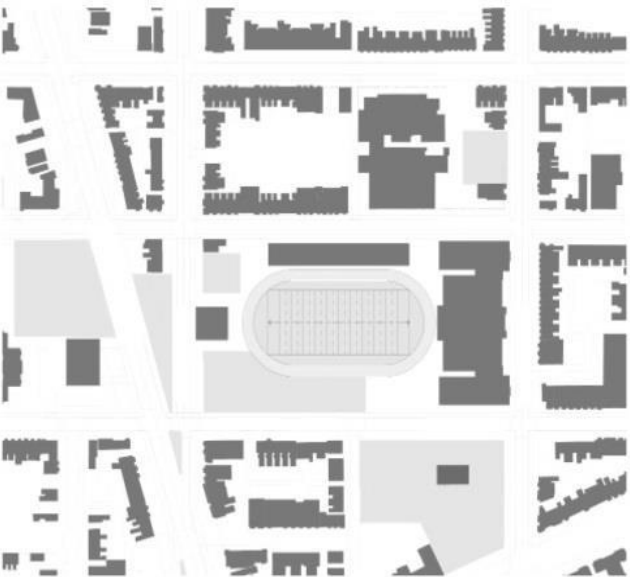




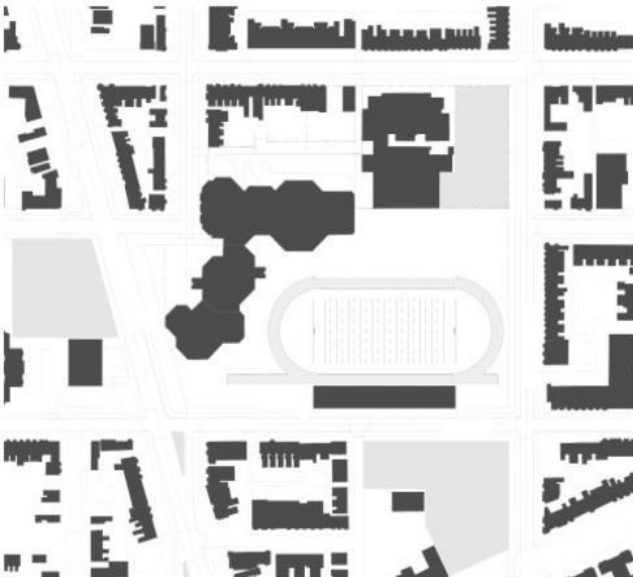
# EVOLVING URBAN DESIGN APPROACH



1917



1977

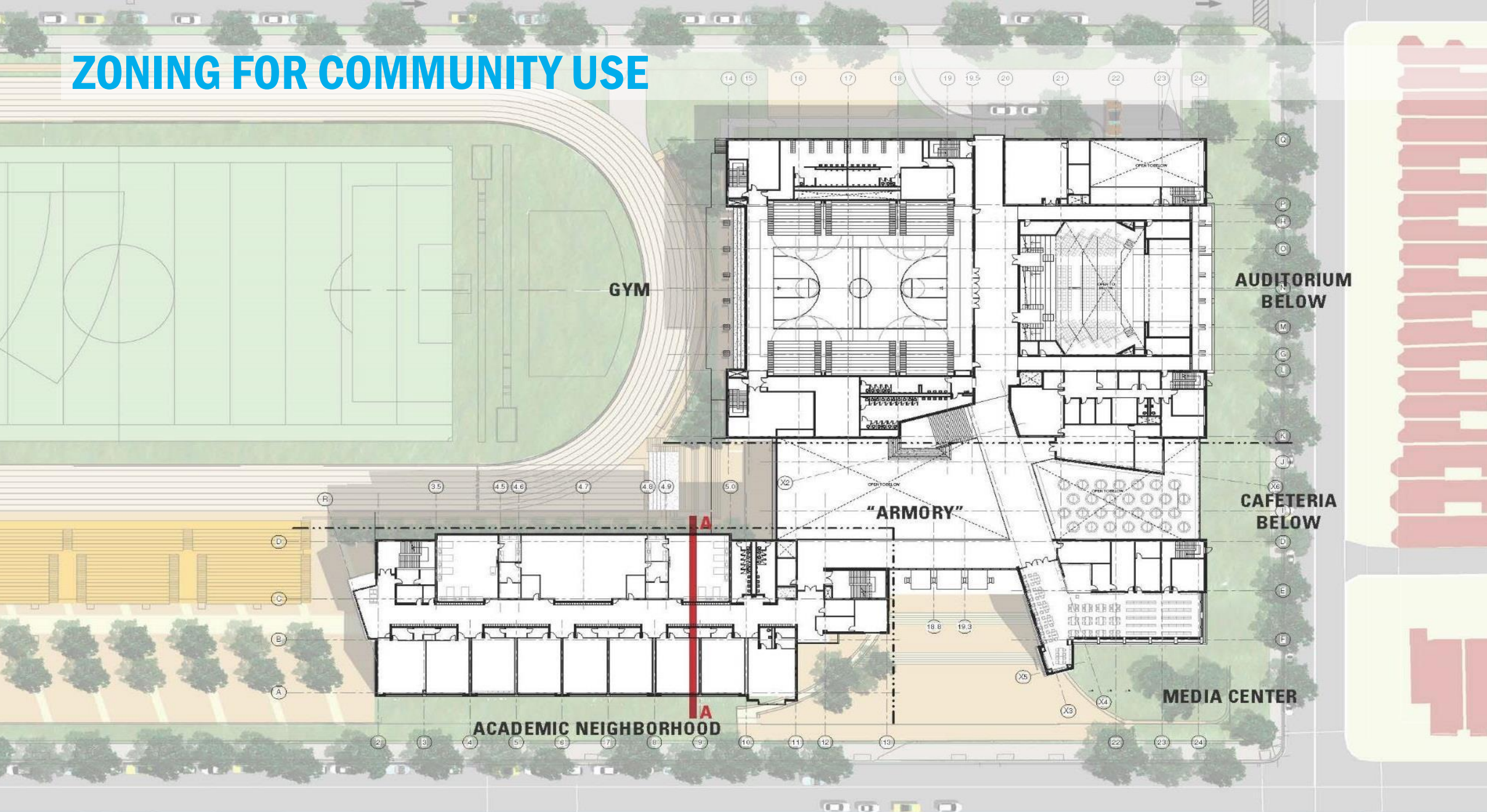


2013





# ZONING FOR COMMUNITY USE



SECOND FLOOR PLAN



# A CONTEMPORARY CIVIC DESIGN





# A REIMAGINED ARMORY

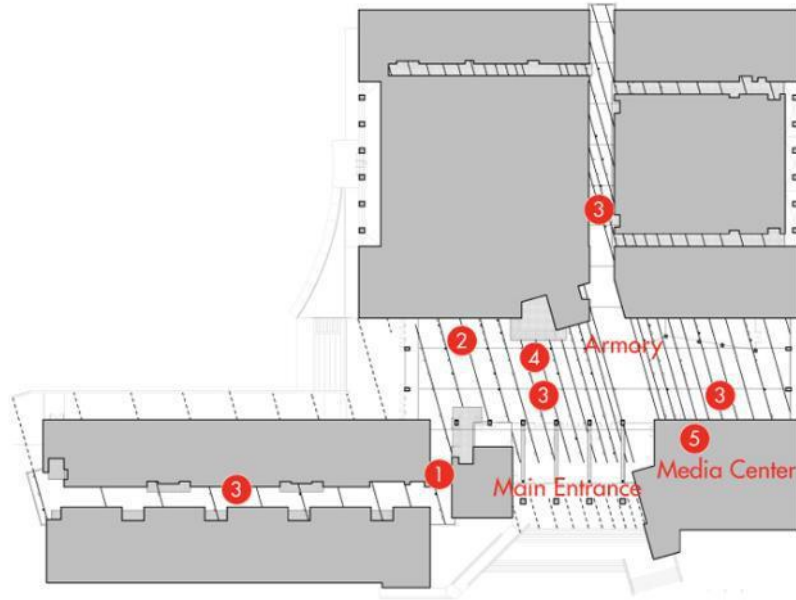
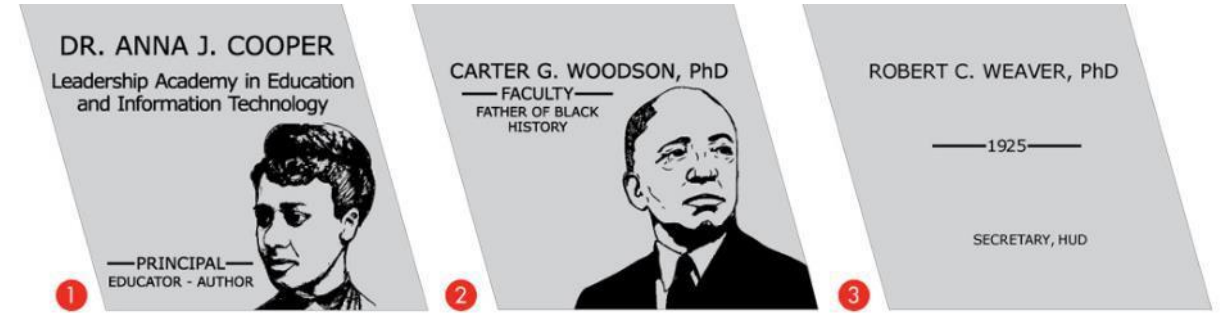


THE HISTORIC ARMORY - CEN

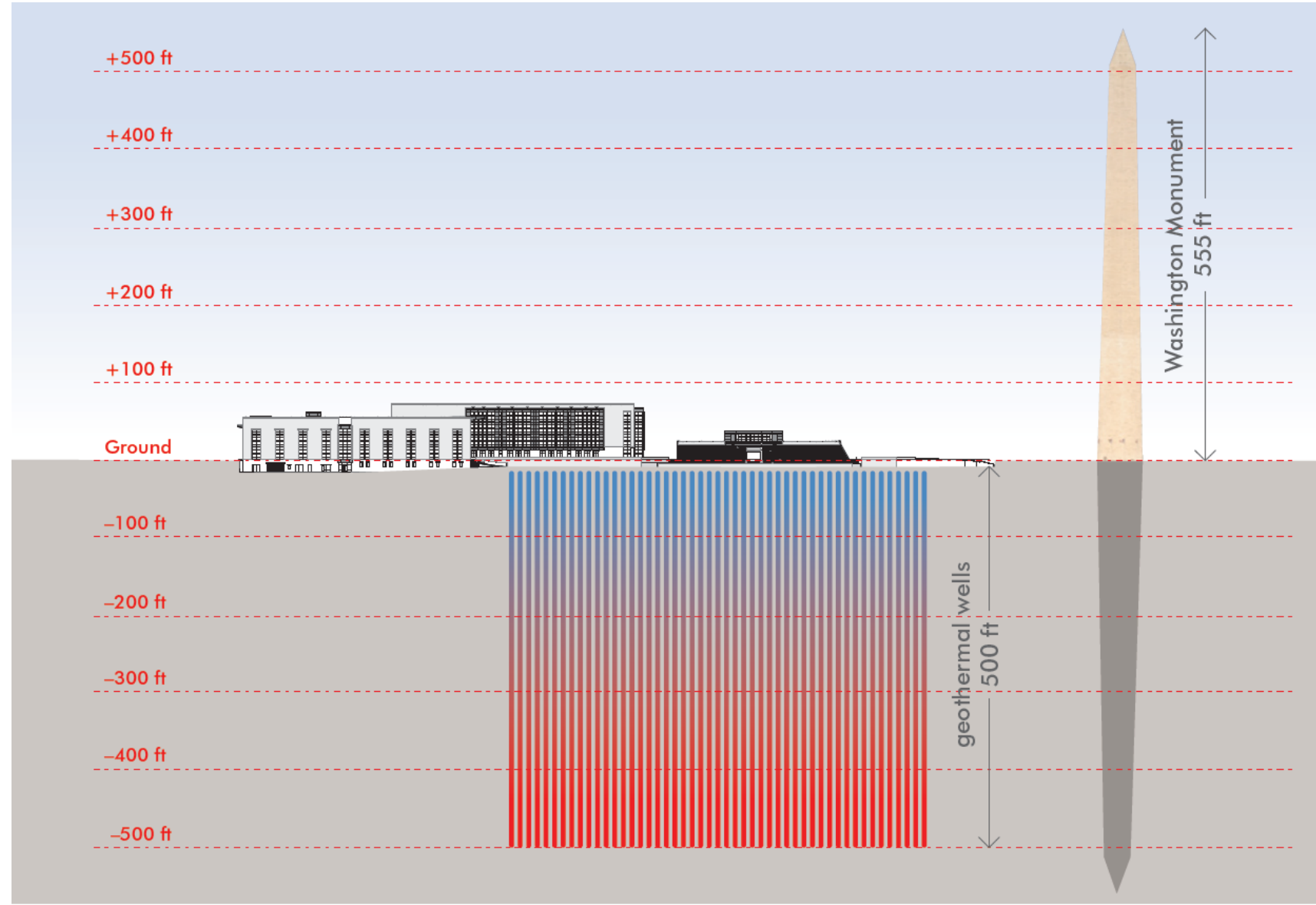




# SETTING HIGH EXPECTATIONS FOR SUCCESS

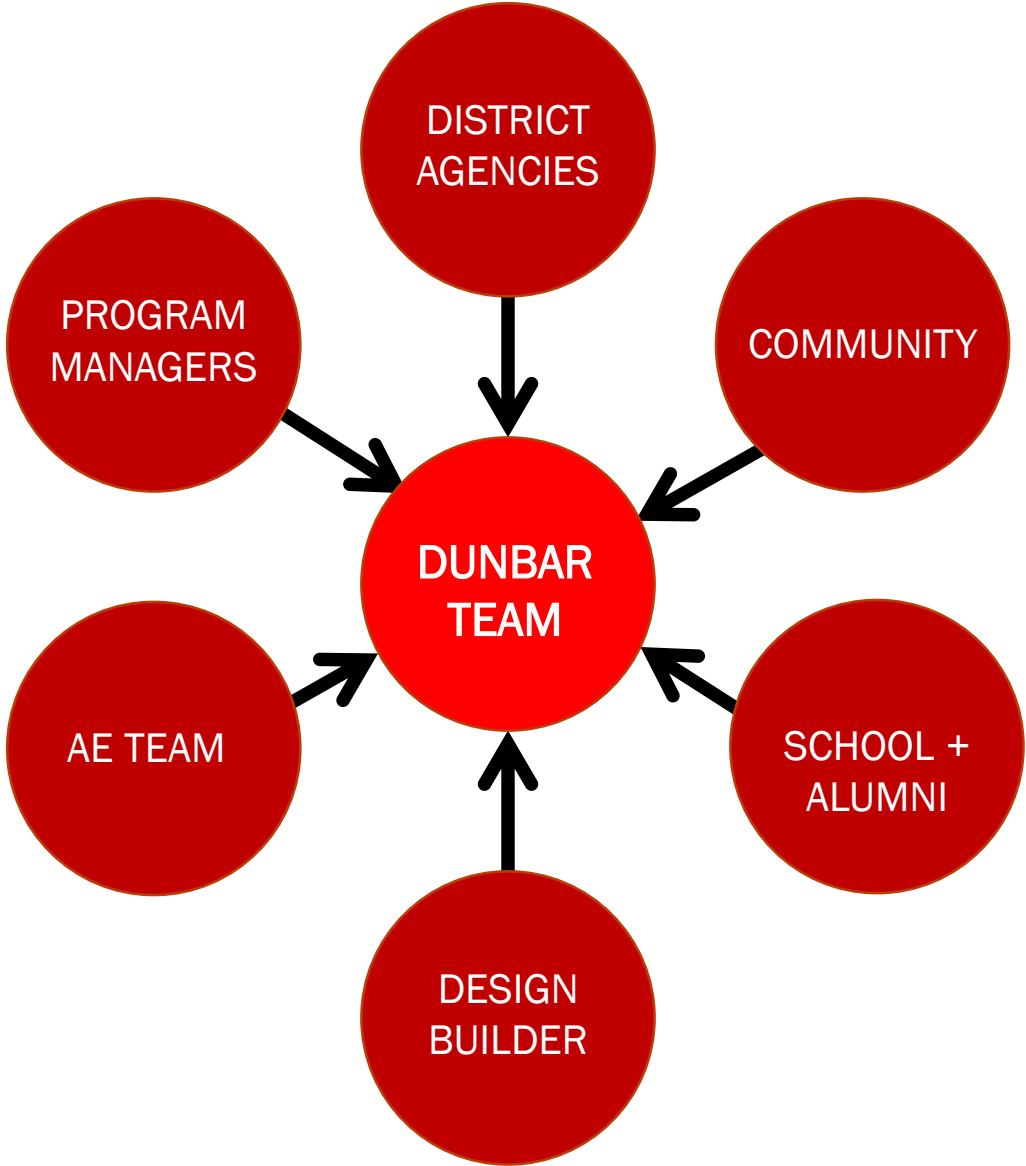


# TELLING THE SUSTAINABILITY STORY



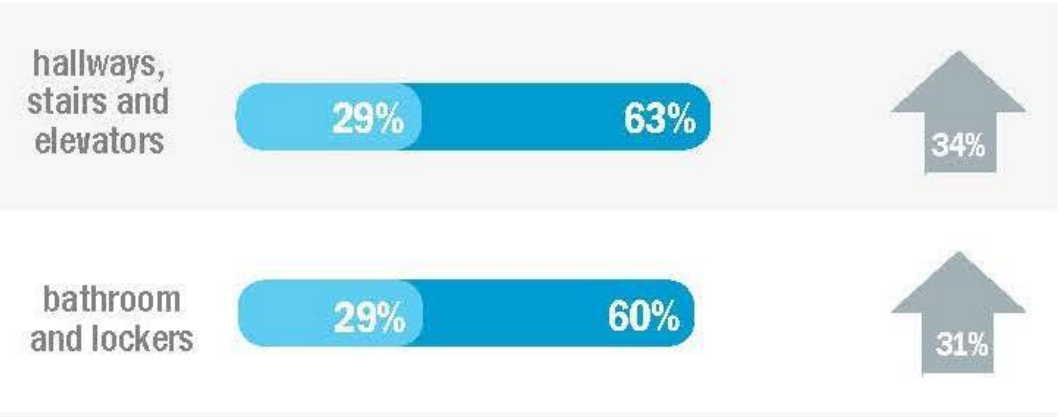


# IT TAKES A VILLAGE

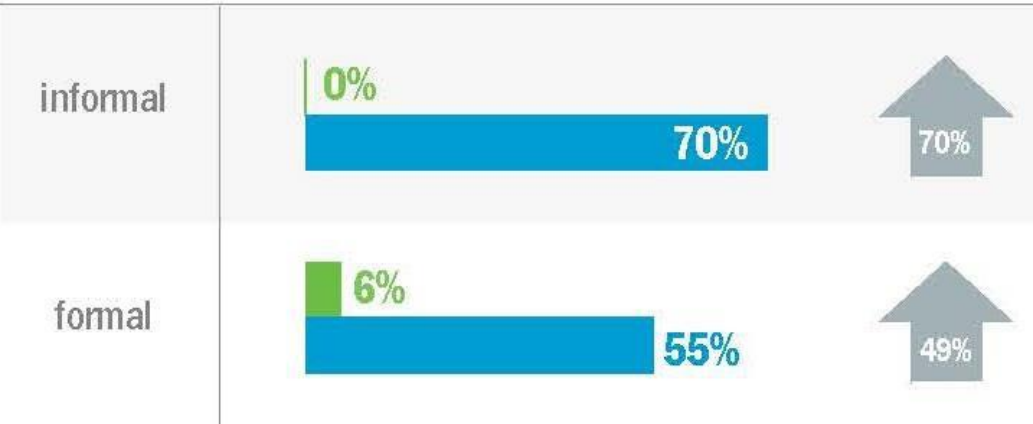


# MEASURING PROJECT SUCCESS

## SENSE OF SAFETY: WELL FOSTERED BY THE SCHOOL

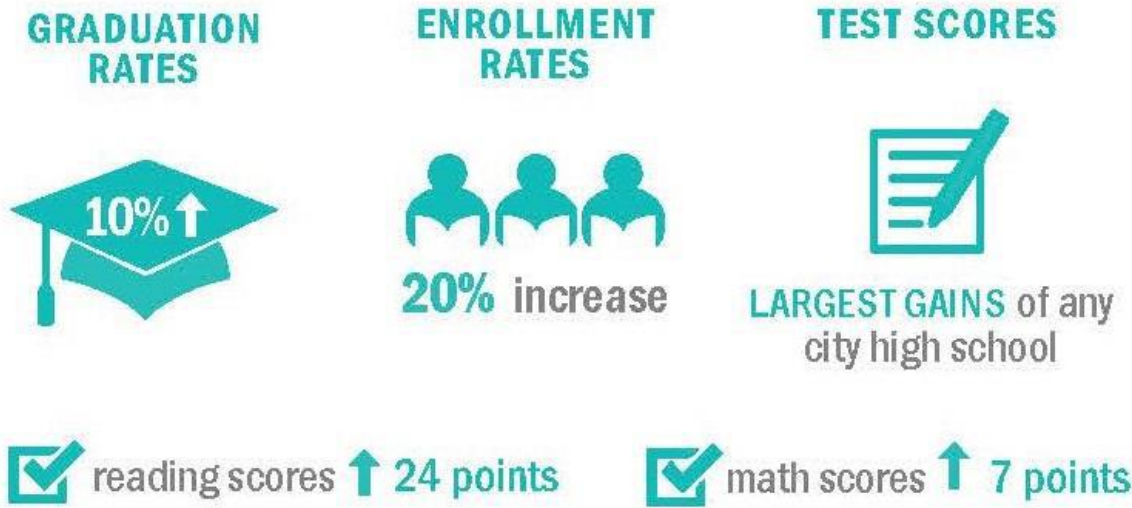


## STUDENTS' SENSE OF COMMUNITY: WELL FOSTERED BY



**91 Credits, LEED Platinum**  
The highest scoring new school in the world  
“A masterpiece of a green learning environment...”  
- USGBC Center for Green Schools

## DUNBAR ACHIEVEMENTS





## Leadership & strategy



- Reopened O Street to spur local development and improve neighborhood connectivity and safety
- Engaged alumni community in school planning and design, and invited them to milestone events

## Economy & society



- Recognized illustrious African-American alumni and created aspirational school environment
- Hired local workers and artists to work on the building

## Health & wellbeing



- Worked with multiple agencies to design joint-use library, health clinic, pool & gym

## Infrastructure & environment



- Solar power purchase agreement
- Stormwater BMP in public space (O Street)
- Raising the bar for DC public buildings—LEED Platinum

**NOW IT'S YOUR TURN...**





## Leadership & strategy



Fosters long-term & integrated planning  
Empowers a broad range of stakeholders  
Grows future generations of leaders

## Economy & society



Fosters economic prosperity  
Promotes equality and social justice  
Builds community

## Health & wellbeing



Meets basic needs  
Contributes to public health  
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Improves the natural and manmade environment  
Provides emergency services  
Promotes environmental stewardship