STRENGTHENING NEIGHBORHOODS THROUGH THEIR SCHOOLS
Lessons Learned from DC for Urban School Revitalization Programs
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DISTRIBUTION OF COLUMBIA PUBLIC SCHOOLS:
TWO DECADES OF RENEWAL

@docae #DesignDC
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
LOOK AT IT NOW!
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
ENABLE MULTI-AGENCY COOPERATION
ENABLE MULTI-AGENCY COOPERATION
INVOLVE THE SCHOOL COMMUNITY
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

Marie Reed Health Clinic
Community of Hope Health Services

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

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

A ground-source heat pump system (also known as a geothermal system) under the athletic field provides heating, cooling, and hot water for all buildings and resident halls. The system uses the ground as a natural heat reservoir, providing a more consistent and cost-effective energy source compared to traditional HVAC systems.

The exterior of the building is designed with energy efficiency in mind. The use of high-performance windows and insulation helps reduce energy consumption. The building’s energy management system controls lighting and HVAC to optimize energy use.

Solar panels are installed on the roof to generate electricity. These panels convert sunlight into electricity, reducing the building’s reliance on fossil fuels.

Green roofs are used to reduce stormwater runoff, improve the building’s insulation, and provide a habitat for wildlife. The green roofs also help to absorb heat, reducing the urban heat island effect.

Stormwater management systems are in place to reduce runoff and pollution. These systems include rain gardens, permeable pavers, and underground storage tanks to manage water runoff effectively.

Water-efficient fixtures and appliances are used throughout the building to reduce water consumption. These include low-flow toilets, faucets, and showerheads. Water-saving strategies also include greywater recycling and rainwater harvesting systems.

The building’s landscaping is designed to enhance the environment and reduce the building’s carbon footprint. native plants and trees are used to provide shade, improve air quality, and attract local wildlife.

Overall, the building is designed to be sustainable, with a focus on energy efficiency, water conservation, and environmental stewardship.
DESIGN SAFE SCHOOLS
CREATE HIGH-PERFORMANCE LEARNING ENVIRONMENTS
CREATE HIGH-PERFORMANCE LEARNING ENVIRONMENTS

- Enhanced Acoustics
- Day Lighting & Views
- Natural Ventilation
- Low-Emitting Materials
- Low-Emitting Furniture
- FSC Certified Millwork
- Systems Controllability
- Shading Devices
- Visual Connectivity
- Existing Window Upgrades
- Water Use Reduction
STRATEGIES RECAP

- Promote Equity
- Enable Multi-Agency Cooperation
- Involve the School Community
- Improve Public Health
- Build Sustainable Infrastructure
- Design Safe Schools
- Create High-Performance Learning Environments
CASE STUDIES
PETWORTH NEIGHBORHOOD
ROOSEVELT SENIOR HIGH SCHOOL
UNDO FORMER DAMAGE
MODERNIZE THE HISTORIC BUILDING
FUNCTIONAL ORGANIZATION

ARTS
AUDITORIUM
ACADEMICS

STAY/COMMUNITY ENTRY

RHS ENTRY

COMMUNITY + ATHLETICS
A WELCOMING ENTRANCE
UNCOVERING THE PAST
CREATING THE HEART OF THE SCHOOL
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
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
ZONING FOR COMMUNITY USE

- GYM
- AUDITORIUM BELOW
- CAFETERIA BELOW
- MEDIA CENTER
- ACADEMIC NEIGHBORHOOD
- "ARMORY"
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 insulating against heat and cold out.

INTERIOR
Low-emitting, recycled and regional materials, green housekeeping, and passive 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.
ADDRESSING COMMUNITY CONCERNS

Local

Bloomingdale, D.C.: Flooded 3 times in 2 weeks
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.

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

There are two 20,000 gallon cisterns adjacent to the building. Each cistern is equal to the size of a school bus.
INVITING THE COMMUNITY IN
IT TAKES A VILLAGE
MEASURING PROJECT SUCCESS

DUNBAR SENIOR HIGH SCHOOL

SAFETY AND SECURITY

VALUES OF COMMUNITY

ACHIEVEMENTS

SUSTAINABILITY

LEGENDS LEARNED

FINANCIAL PERFORMANCE
MEASURING PROJECT SUCCESS

SENSE OF SAFETY: WELL FOSTERED BY THE SCHOOL

- Hallways, stairs and elevators: 29% (63%)
  - Increase: 34%
- Bathroom and lockers: 29% (60%)
  - Increase: 31%

STUDENTS’ SENSE OF COMMUNITY: WELL FOSTERED BY

- Informal: 0% (70%)
  - Increase: 70%
- Formal: 6% (55%)
  - Increase: 49%

DUNBAR ACHIEVEMENTS

- Graduation rates: 10% increase
- Enrollment rates: 20% increase
- 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 COOPERATION
- INVOLVE THE SCHOOL COMMUNITY
- IMPROVE PUBLIC HEALTH
- BUILD SUSTAINABLE INFRASTRUCTURE
- DESIGN SAFE SCHOOLS
- CREATE HIGH-PERFORMANCE LEARNING ENVIRONMENTS
THANK YOU