

**Building on History:**

# High Performance School Design that Honors Community and Cuts Carbon

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Oyster-Adams Bilingual Campus • Washington, D.C.

Presented by:  
Chandler Householder • StudioMB  
& Marisa Britton • Sustainable Building Partners





## STUDIOMB

1601 Connecticut Ave NW, Suite 300,  
Washington, DC

### AREAS OF SPECIALTY

- Urban Context Projects
- Sustainable Design
- Projects of Civil Importance
- Approvals
- Community Engagement

### EDUCATIONAL DESIGN

StudioMB team members boast experience working on a variety of campus projects including:

#### District of Columbia Public Schools

- Capitol Hill Montessori at Logan
- Adams Education Campus
- Whitlock Elementary Modernization
- Drew Elementary School
- Breakthrough Montessori
- Kenilworth Elementary Swing

#### Georgetown University

- Georgetown Lounge
- Georgetown Yates
- Georgetown Men's Locker Room
- Pedro Arrupe Residence Hall
- Georgetown Campus Standards
- Georgetown Observatory
- Alumni Square Student Residences

#### American University

- Howard University Northern Gateway
- Roper Hall
- Clark Hall

#### Higher Education

- Howard University Northern Gateway
- Georgetown White Gravenor Hall
- American University President's Office
- American University Cyber Range
- Tucker Hall Adaptive Reuse, William and Mary
- Grinnell College Zone of Confluence
- Sherman and Gloria H Cohen Center, William and Mary



Office Outing



Capitol Hill Montessori at Logan



Whitlock Elementary School



Adams Education Campus



## Interdisciplinary Firm

Sustainability Consulting

Energy Analysis

Enclosure Performance

Systems Performance



**Just.**

- Sustainability, Wellness & ESG Support
- Building Performance Modeling
- Energy Analysis & Code Compliance
- Commissioning & IAQ Testing
- Full Enclosure Consulting Services
- Thermal Comfort & Unit Air Leakage
- Embodied Carbon & Zero Carbon
- Measurement & Verification
- Post-occupancy analysis & audits
- Entitlement programming & support
- LEED, WELL, fitwel, Arc, ENERGY STAR
- NGBS, Enterprise Green Communities
- IgCC, IECC, ASHRAE 90.1, Code
- New, Existing, Historic (*all markets*)

## *The Question We Were Tasked With....*

*"How do we modernize a historic school without losing what makes it matter?"*



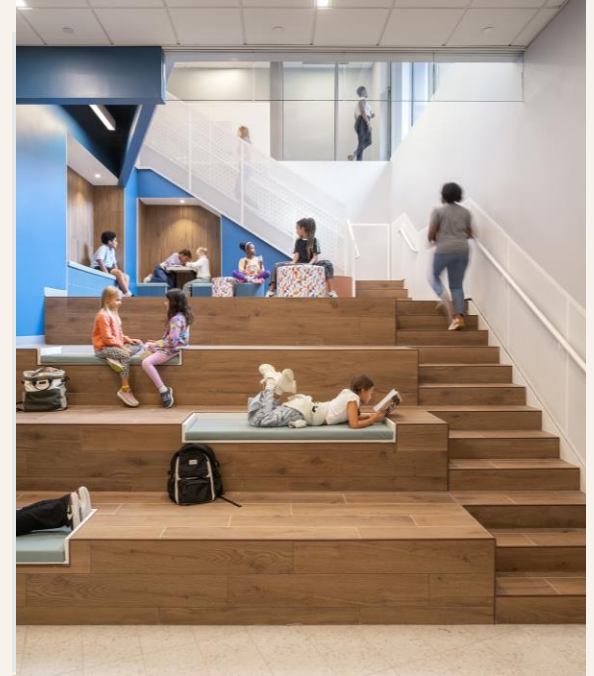
### **Preservation**

Honor community identity & historic character



### **Performance**

Meet modern health, energy & LEED standards



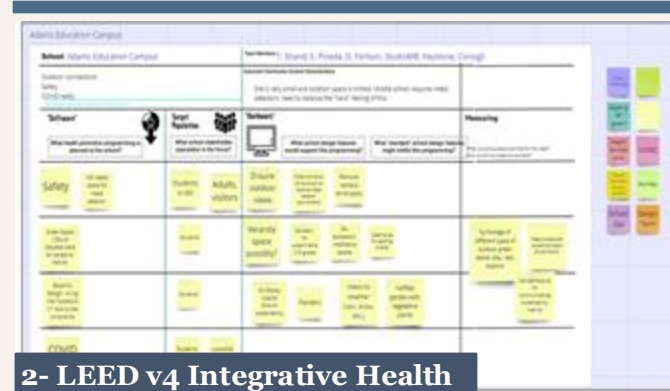
### **Community**

Responding & Delivering upon the Community needs

# Four things you'll leave with — and how we'll get there



**1- Structured Engagement**



**2- LEED v4 Integrative Health**



**3- Adaptive Reuse & Embodied Carbon**



**4- Biophilic Strategies**

# Introducing Oyster-Adams Bilingual Campus: Location



**Historic Districts**  
*Washington, D.C.*

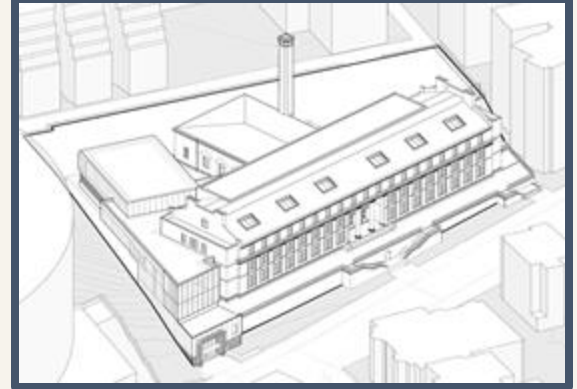
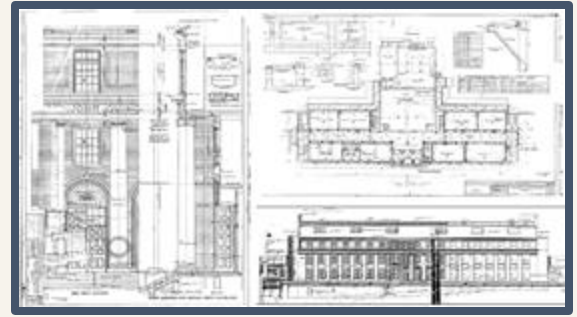


**Washington Heights Historic District,**  
*Washington D.C.*



**Adams Morgan,**  
*Washington D.C.*

# Introducing Oyster-Adams Bilingual Campus





SECTION 2 · PROJECT CONTEXT



**SPACE NEEDS**  
 Original Historic GSF = 62,000  
 Required SF per Ed Spec = 90,000



# Community Engagement

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From discovery to design



# Who Was at the Table

Make Graphically Heavy

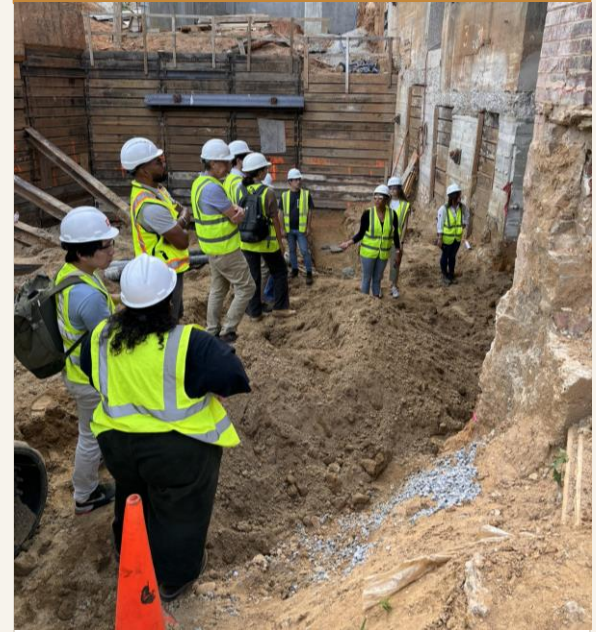
## INTERNAL COMMUNITY



## EXTERNAL COMMUNITY



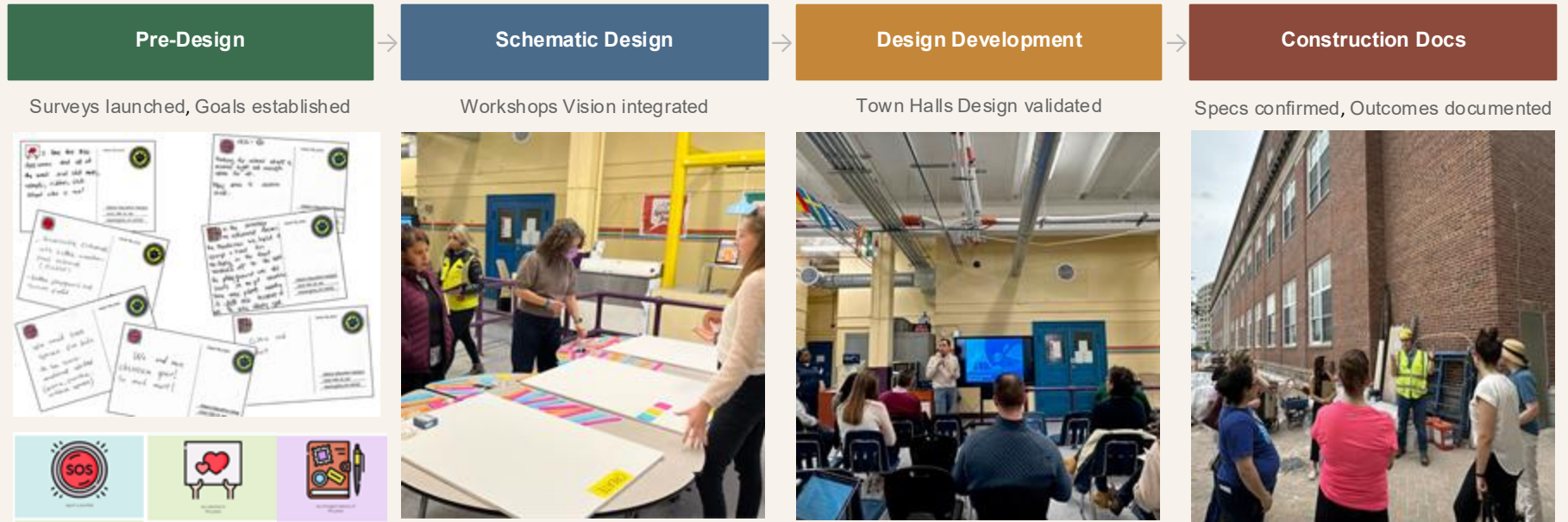
## DESIGN TEAM



*Facilitating breadth — internal AND external community — is what makes this process distinctive.*

# When: The Critical Engagement Timeline

*Engagement must happen before schematic design closes off options.*



Critical Engagement Window

# Community Engagement: Structure & Intent

*Multi-pronged LEED IP & DC School Improvement Team (S.I.T.) process... — paired with LEED v4 Integrative Process for Health Promotion*



**1. Discover**



**2. Articulate**



**3. Communicate**

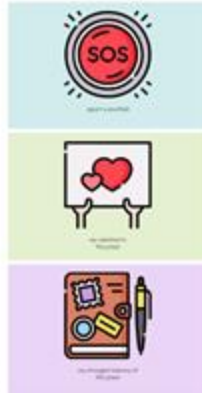
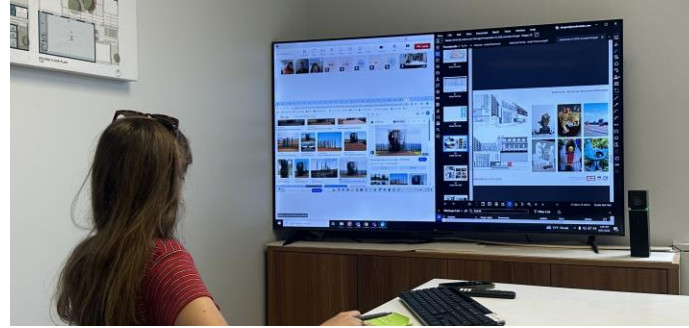


**4. Integrate**

*Core idea: Community discovery must happen before design decisions lock in.*

# How: The Methods That Actually Worked

Talk with a lot the two most important potential uses of outdoor spaces



# Sustainability Focused - Community Engagement

## Leveraging Health through the LEED Rating System - Integrative Health Promotion

**STEP 1:** Public Health Partner

**STEP 2:** Identify the Community

**STEP 3:** Goal-Setting Workshop

**STEP 4:** Evaluate and Inform the Design

**STEP 5:** Establish Metrics

Adams Education Campus		Team Members: T. Shand, E. Pineda, D. Fortson, StudioMB, Keystone, Consigni	
School: Adams Education Campus Outdoor connections Safety COVID Ready		Impact Community Center Characteristics Site is very small and outdoor space is limited. Middle school requires metal detectors; need to balance the "hard" feeling of this.	
<b>"Softwars"</b> What health promotion programming is planned at the school?	<b>Target Population</b> What school stakeholder population is the focus?	<b>"Hardware"</b> What school design features would support this programming?	<b>Measuring</b> What "standards" school design features might inhibit this programming? What would success look like for the plan? How would we measure success?
<b>Safety</b> MS needs space for metal detector	Students in MS Adults, visitors	<b>Ensure outdoor views</b> Eliminate windows or barriers that block views Remove barriers blind spots	
<b>Green Space</b> 75% of requests were for access to nature	Students	<b>Veranda space possibly?</b> Gardens for experiments (7th grade) On-pavement medians Overhang for seating area	<b>5x footage of different types of outdoor green space (play, rest, explore)</b> More use as student/parent area/office Use outdoors for communicating sustainability message
<b>Biophilic Design</b> - bring the "outdoors" in due to site limitations	Students	Art walls around sustainability Planters Views to weather (rain, snow, etc.) Rooftop garden with vegetative items	
<b>COVID Ready</b>	Students and staff Subtotal staff		



# What the Community Told Us

Increase Image  
Ratio to Text

*These became the design brief — not from the client, but from the community.*

01

## Preserve Historic Character

This building is integral to the Washington Heights Historic community. Protecting its identity was non-negotial



02

## Community-oriented, Healthy Learning Environments

Support physical well-being mental health, and safety emerged as top priorities from parent and teacher surveys.



03

## Adaptable & Inclusive Spaces

Spaces that support bilingual pedagogy and evolve with future-ready teaching models.



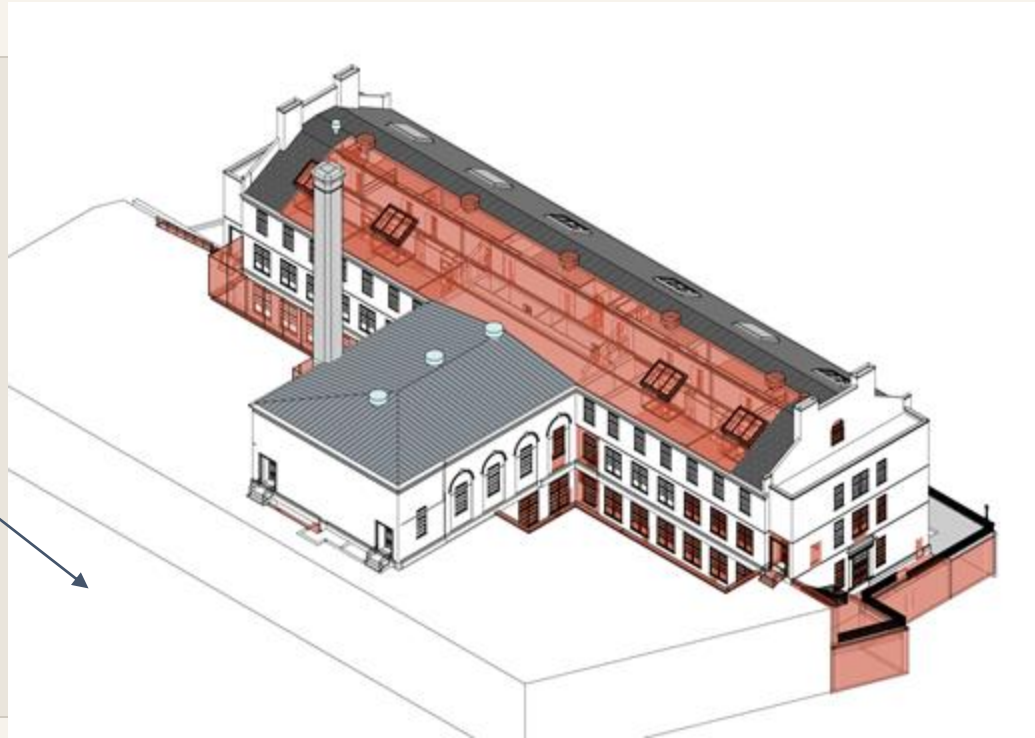
SECTION 4

# Adaptive Reuse, Health Design & Performance

Community goals to high-performance outcomes



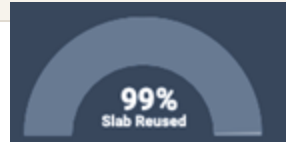
# What We Kept — and Why It Matters



➔ **> 90% of Existing Building Reuse**

## Floor Slabs

Avoided new slabs



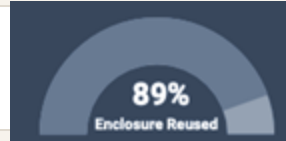
## Roof Structure

Improved with insulation and roof membrane



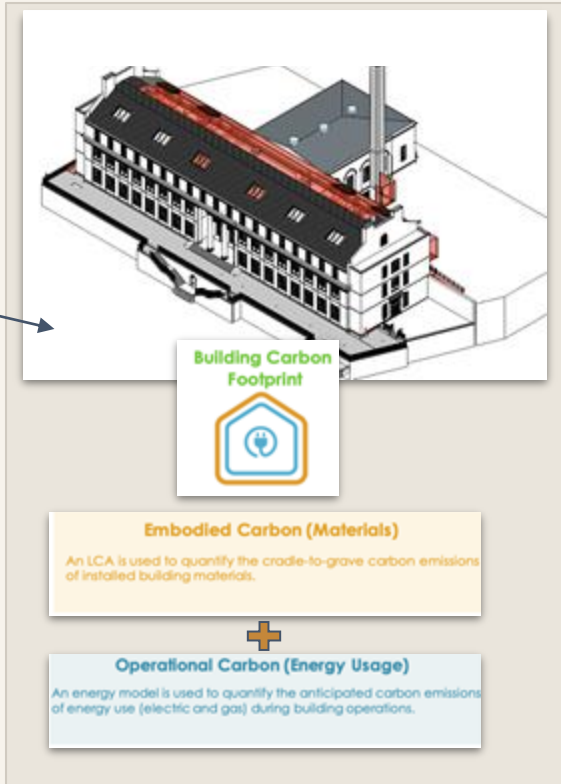
## Historic Facade

Retained the 1929 historic facade

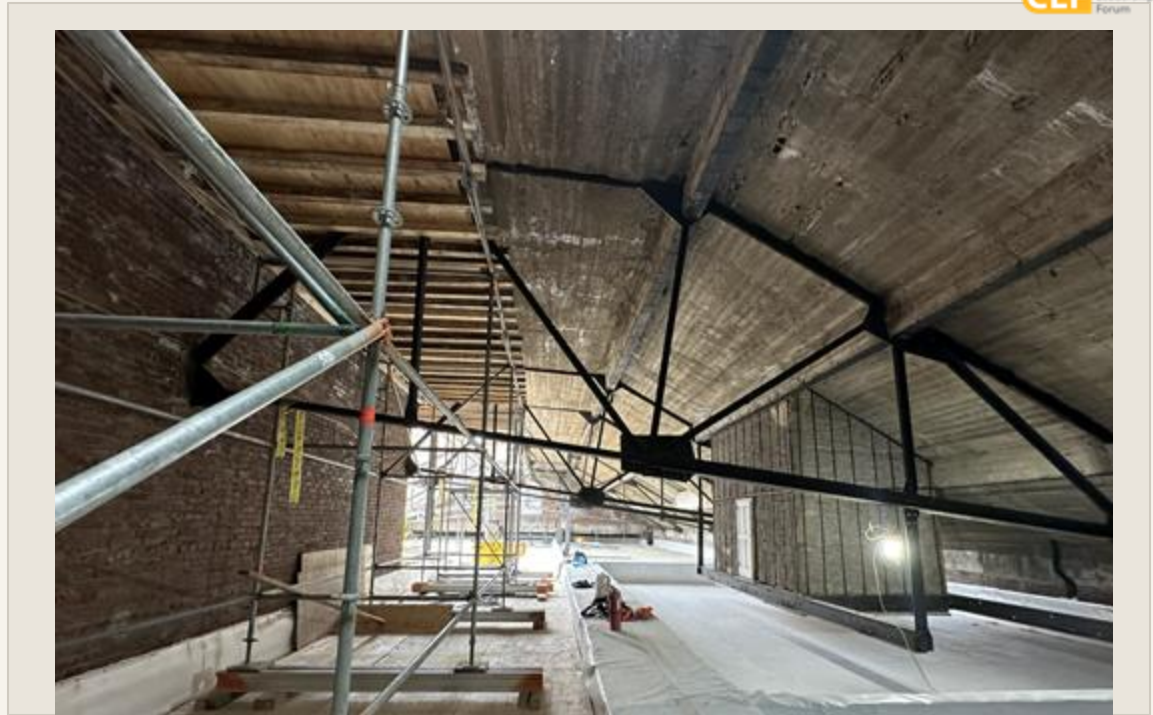


➔ **Construction waste to landfill reduced by 92%**

# Embodied Carbon: The Numbers



**Adaptive Reuse = 40 - 70% Embodied Carbon Reduction**

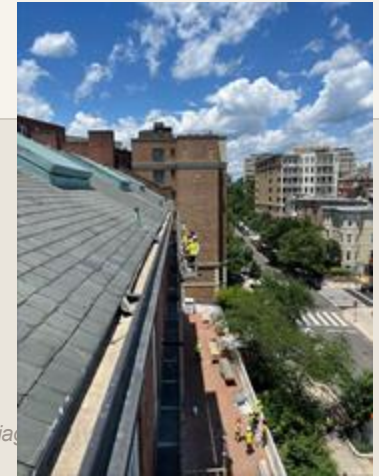
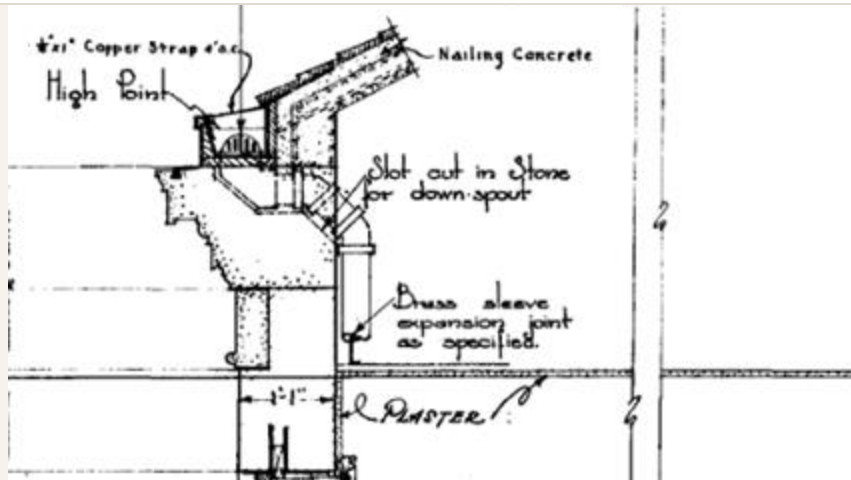


# Managing Risk on Reuse

*You inherit unknowns when you keep an existing building.  
The mitigation strategy: Building Enclosure Commissioning (BECx).*

## 01 Investigate

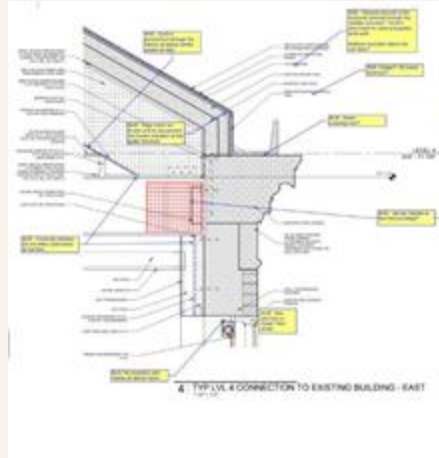
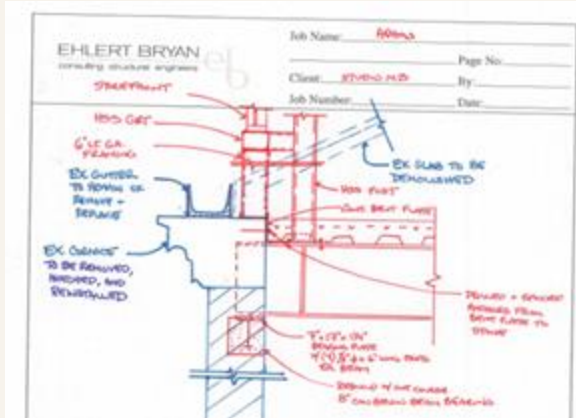
Third-party assessment of existing envelope conditions — moisture, air barriers, thermal performance



# Managing Risk on Reuse - Recommend

## 02 Recommend

Design recommendations informed by findings — where to repair, where to upgrade, where to accept



# Managing Risk on Reuse

*You inherit unknowns when you keep an existing building.  
The mitigation strategy: Building Enclosure Commissioning (BECx).*

## 03 Verify

Construction-phase verification that envelope work meets performance intent



# The Benefits and Application of Biophilic Design

*Design that reconnects occupants with natural systems, patterns, and elements to support*

*Cognitive Performance*

*Attendance and Well being*

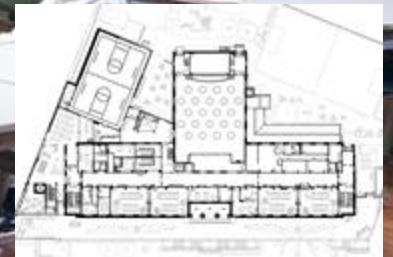
*Stress Reduction*



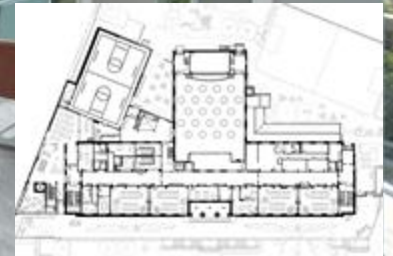
# Optimizing Daylight & Views



# Dynamic & Diffuse Lighting



# Adaptable Learning Environments



# Adaptable Learning Environments



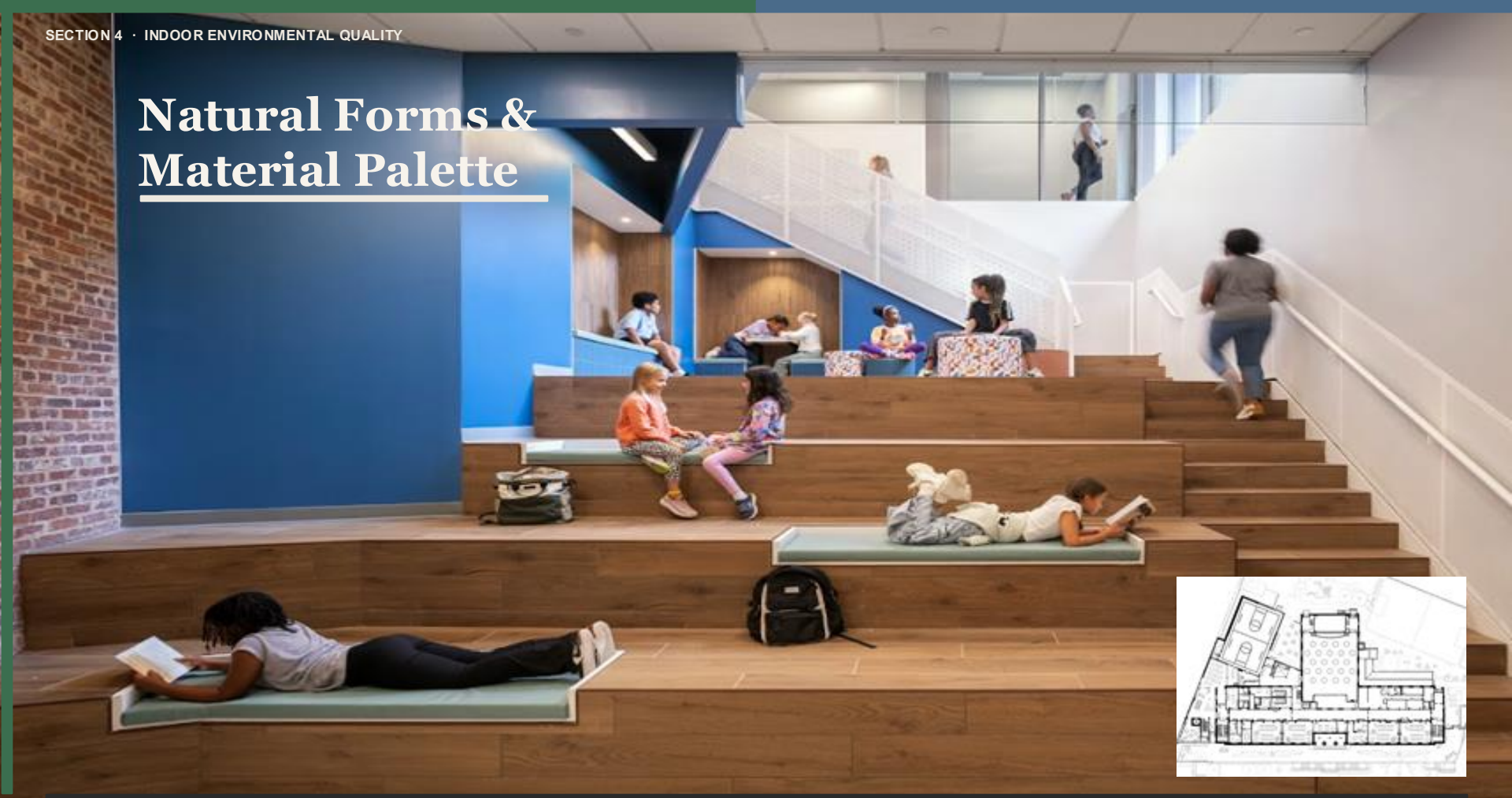
Image



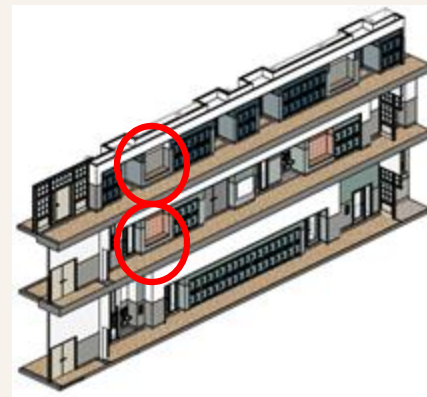
# Natural Forms & Material Palette



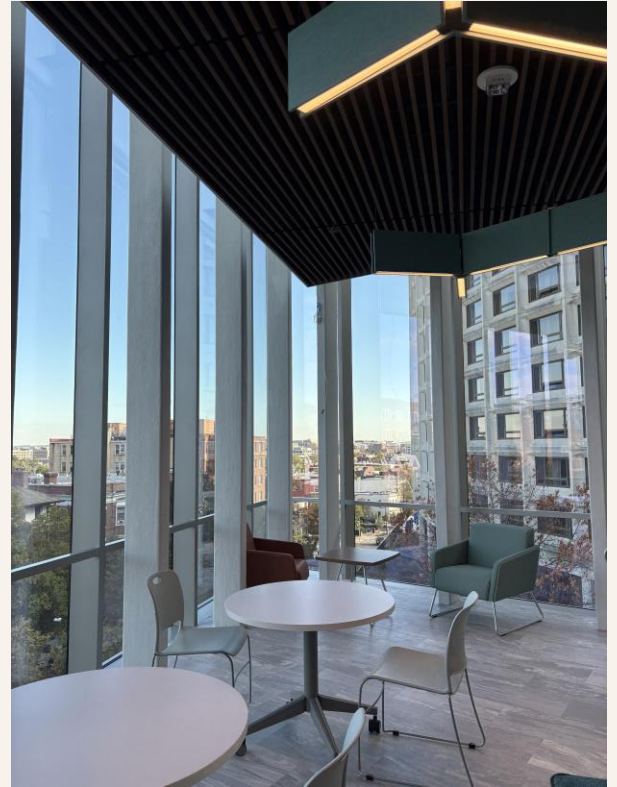
# Natural Forms & Material Palette



# Areas of Refuge



# Areas of Prospect



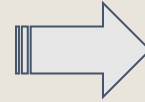
# Energy Goals & Strategy

## Innovative Ventilation Strategy

- 21.5 EUI
- Optimized Indoor Air Quality
- Long-life superior filtration
- Testing & Verification

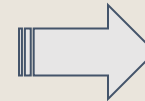


VRP Prescriptive-Based • Higher OA • No Verification



**Higher Energy**

IAQP Performance-Based • Reduced OA • Enhanced Filtration • Verification



**Reduced Energy**

# Balancing Energy & Health

*Key insight: Early coordination between mechanical, envelope, and sustainability avoids costly late-stage conflicts.*



SECTION 5

# Outcomes

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From community priorities to delivered design — and beyond



# The Design Outcomes

**Healthy Learning Environments • Community Responsive Design • Integrated Sustainability Strategy**



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Healthy Learning Environments • Community Responsive Design • Integrated Sustainability Strategy



# The Design Outcomes

Healthy Learning Environments • Community Responsive Design • Integrated Sustainability Strategy



# Key Wins & What Made Them Possible

**Adaptive Reuse - your most powerful carbon strategy**



**Structure Engagement Early**



**Leveraging LEED IP Health as a Decision Tool**



**Biophilic Strategies Trace to Community Needs**



QUESTIONS & DISCUSSION

# Thank You

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**Project Credits**

DC Department of General Services (DGS)  
Oyster-Adams School Community

