



School Building Science Fridays™

Equity in Schools: Working Towards
Restorative Justice

May 13, 2022

Welcome!



About GBRI



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STATE OF RHODE ISLAND
ENERGY EFFICIENCY &
RESOURCE MANAGEMENT COUNCIL



**The American
Institute
of Architects**



COLLABORATIVE FOR
HIGH PERFORMANCE
SCHOOLS.

Welcome Home!

Let's join hands not only to build a greener world but also a equitable one.

GET STARTED



Let's join hands not only to build a greener world but also an equitable one!



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Green Building Research Institute
Provider Number: 40119134

A certificate of completion will be available for download within 24 hours of today's session.



Today's Webinar

- Welcome & Introduction: Craig Schiller, CHPS
- Speaker Presentations:
 - Dr. Erika Eitland, Perkins&Will
Erika.Eitland@perkinswill.com
 - Tracy Washington Enger, EPA,
Enger.Tracy@epa.com
- Audience Questions





Housekeeping

- Reminder: This session is being recorded.
- Post questions at any time in Q&A box and comments at any time in Chat box.
- All attendees have been muted to limit background noise.
- Recording and slides will be emailed to registrants and will be available on-demand on both CHPS and GBRI websites.
- Resources at end of deck for further learning.

About CHPS

WHO WE ARE: A non-profit collaborative of school districts, architects, builders, building scientists, health professionals, and consultants dedicated to fostering healthy learning environments.

WHAT WE DO: Provide technical resources for school design, construction, operations and maintenance standards through our extensive criteria programs and project reviewers.

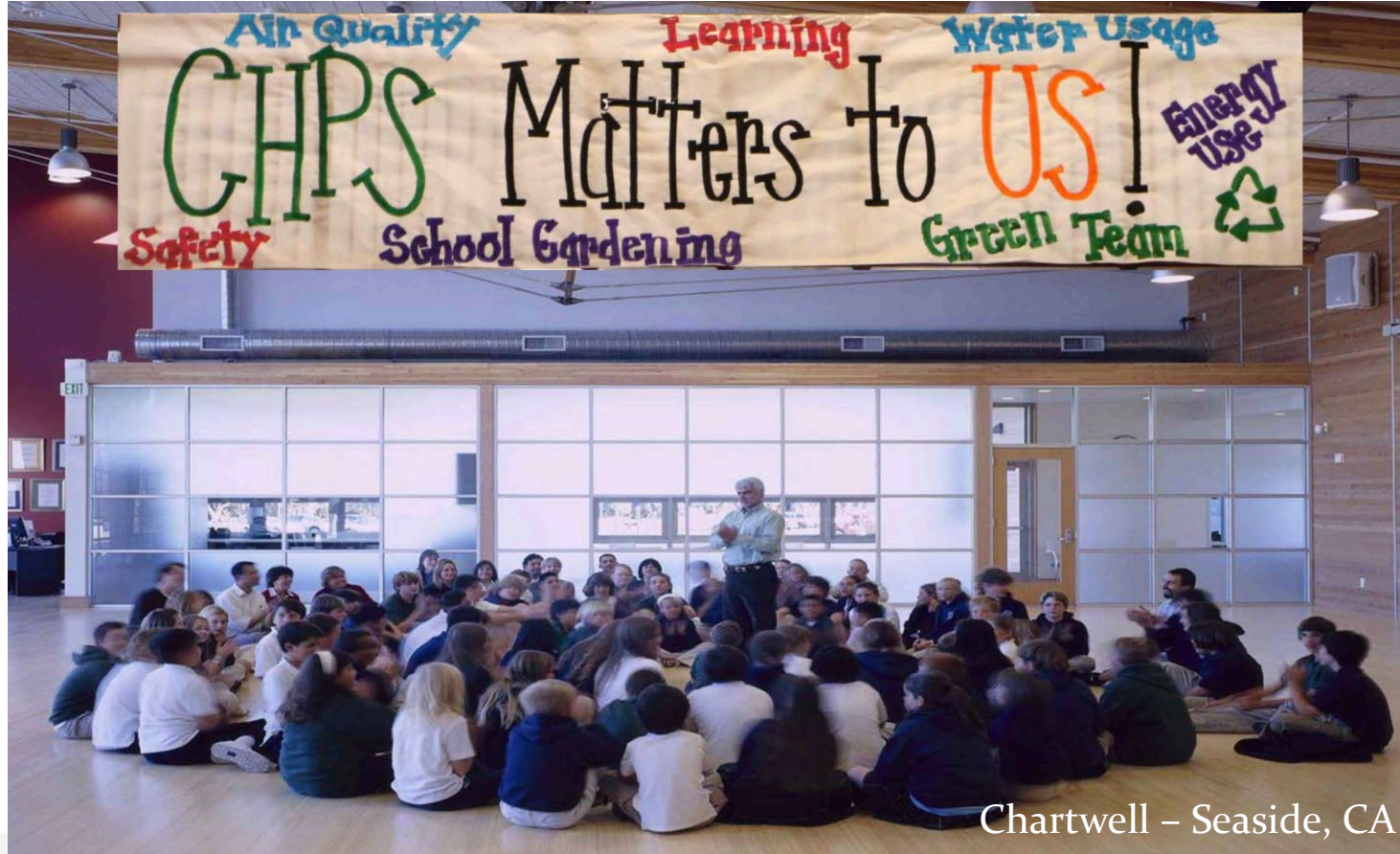
MEMBERSHIP: We rely on member support to do what we do. Please consider joining us.



<https://chps.net/join-us>

Our Impact

- Over **700** schools have been recognized as meeting the CHPS Criteria
- CHPS Criteria is in use in **14** states and has been adopted as the construction standard in over **60** public school districts.



Chartwell – Seaside, CA



With Gratitude to Our Sponsors



HEALTHY
SCHOOLS
NETWORK



What Is *School Building Science*?

- The body of knowledge that informs the design, construction, operations, and occupancy of school buildings for the benefit of students, educators, staff, and the environment.
- The body of knowledge ~~about the built environment~~ that impacts how children learn and thrive.



Mapleton Adventure School – Mapleton, CO



Learning Objectives



**Approved
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Education**

1. Identify the community health burden before a child enters their school building.
2. Understand strategies for a justice-oriented approach to school environmental quality.
3. Consider biases affecting building design, maintenance, and operations.
4. Inspire to move people to action at the building and community level.

School Building Science Fridays | May 13, 2022

Equity in Schools

Working Towards Restorative Justice

Tracy Washington Enger

Dr. Erika Eitland

Perkins&Will



Agenda

**1. Setting the
Stage**

**2. Defining the
Problem**

**3. Advancing
Restorative
Justice**



Setting the Stage

Restorative what?



European Forum for Restorative Justice

...an approach of addressing harm or the risk of harm through engaging all affected in coming to a common understanding and agreement on how the harm or wrongdoing can be repaired and justice achieved.

Elements of Environmental Restorative Justice



→

Forsyth et al, 2021

What's the difference?



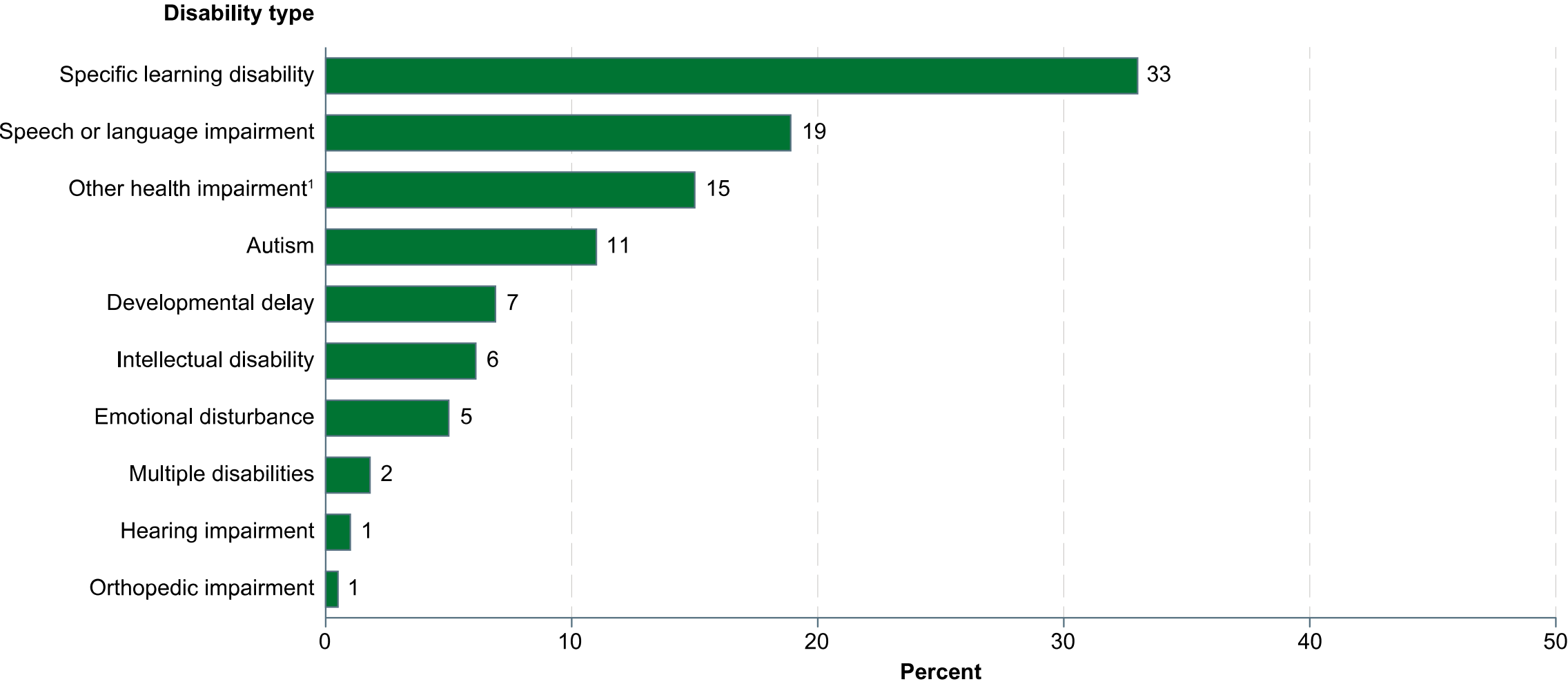
Built 1890



Built 1890

Percentage distribution of students ages 3–21 served under the Individuals with Disabilities Education Act (IDEA), by disability type: School year 2019–20

(NCES, 2021)



Resident district: _____	Date of last comprehensive evaluation: ____/____/____ Annual IEP meeting date: ____/____/____	INDIVIDUALIZED EDUCATION PROGRAM (IEP)
IDENTIFYING INFORMATION		
Child's name: _____	Parent/guardian name(s): _____	
MARSS ID#: _____	Relationship to child: _____	
Gender: <input type="checkbox"/> M <input type="checkbox"/> F	Address: _____	
Date of birth: ____/____/____	Phone (day/evening): _____/_____	
School: _____	Phone (cell): _____	
Grade: _____	Email: _____	
Providing District (Name/number): _____	_____	
School address (provide mailing address and street address if different): _____	_____	
_____	_____	

IEP: Individualized Education Program



Resident district: _____	Date of last comprehensive evaluation: _____ Annual IEP meeting date: _____	INDIVIDUALIZED <i>Equity</i> PROGRAM (IEP)
IDENTIFYING INFORMATION		
<i>Facility Manager:</i> _____	<i>Proximity to roadway:</i> _____	
MARSS ID#: _____	<i>Proximity to industrial site:</i> _____	
Gender: <input type="checkbox"/> M <input type="checkbox"/> F	Address: _____	
<i>Year Built:</i> _____	Phone (day/evening): _____ / _____	
School: _____	Phone (cell): _____	
Grade: _____	<i>Top 3 Health Concerns:</i> _____	
<i>Nurse: __ Full-Time __ Part-Time</i>		
(Name/number): _____		
School address (provide mailing address and street address if different): _____		

IEP: Individualized **Equity** Plan

Addressing Facility, Health, Academic Inequities



Equity in Action - Destination 2030

Achieving Equity in RCPS via Excellence, Engagement & Empowerment

Project Proposal

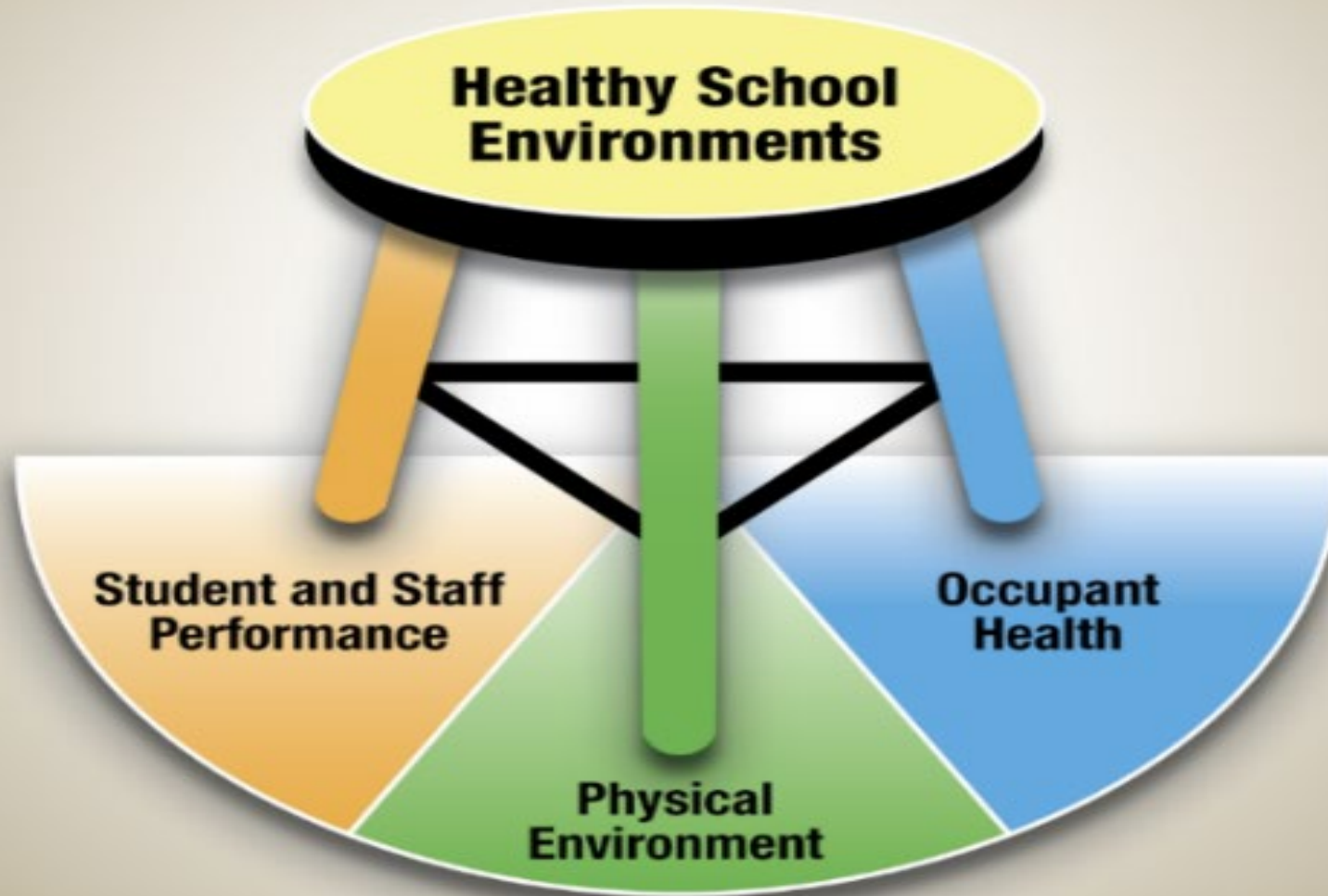
Presented by:

Verletta White, Superintendent

Roanoke City Public Schools, May 2021

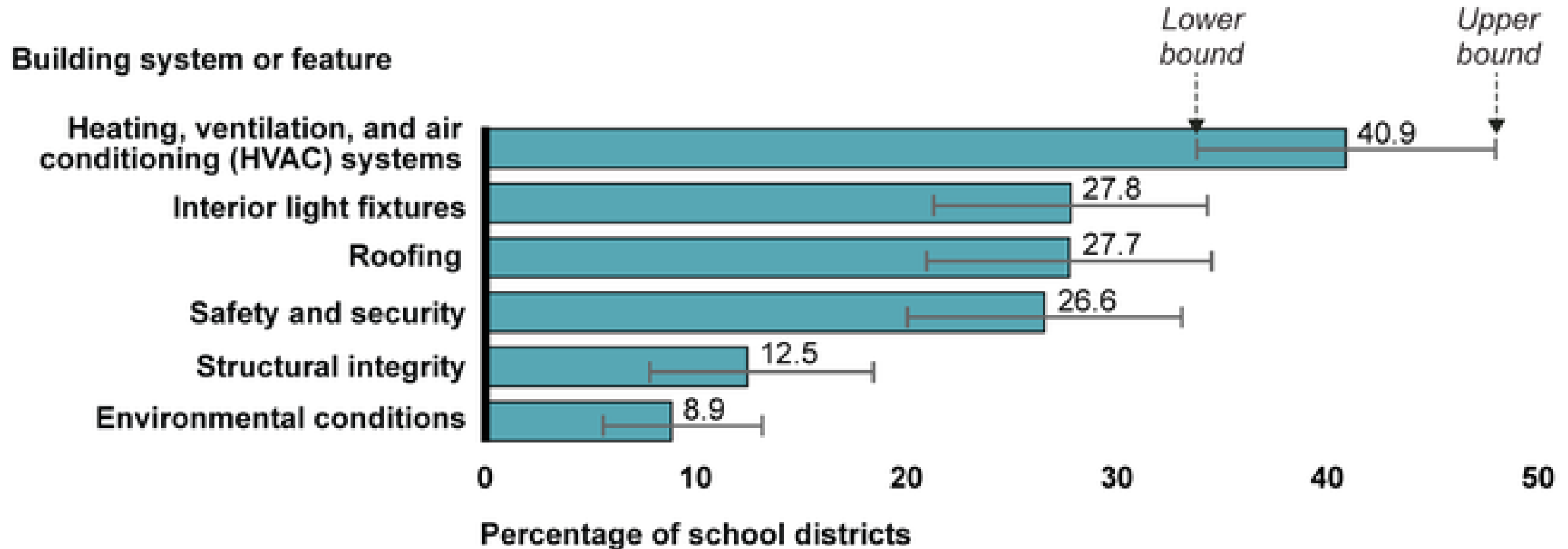


The Three-Legged Stool: Healthy School Environments



Estimated Percentage of Public School Districts in Which at Least Half the Schools Need Updates or Replacements of Selected School Building Systems and Features

(GAO, 2020)



Source: GAO analysis of school district survey data. | GAO-20-494

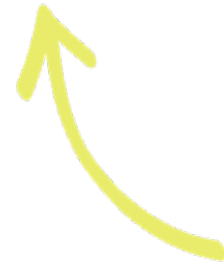
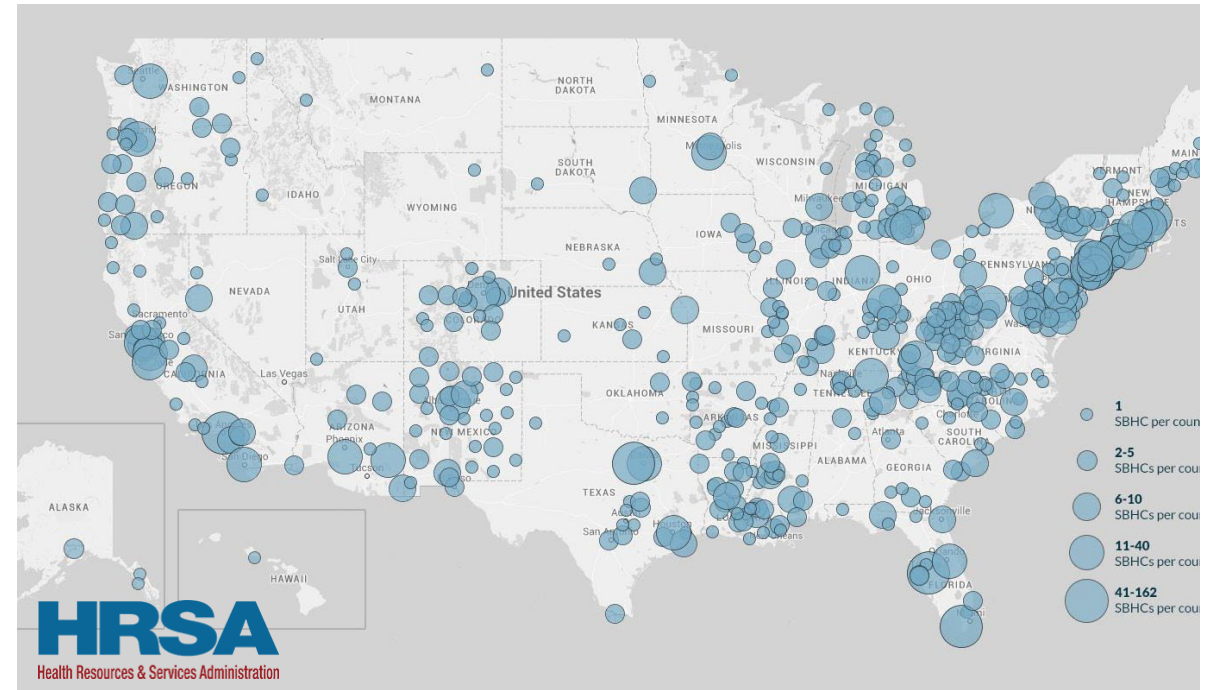
School-Based Health Centers

2,584 centers nationwide

94% of SBHCS are located on school property

70% of students in schools with access to SBHCS are eligible for free or reduced-price lunch

Students and families receive primary medical care, mental/behavioral health care, dental/oral health care, health education and promotion, substance abuse counseling, case management, and nutrition education

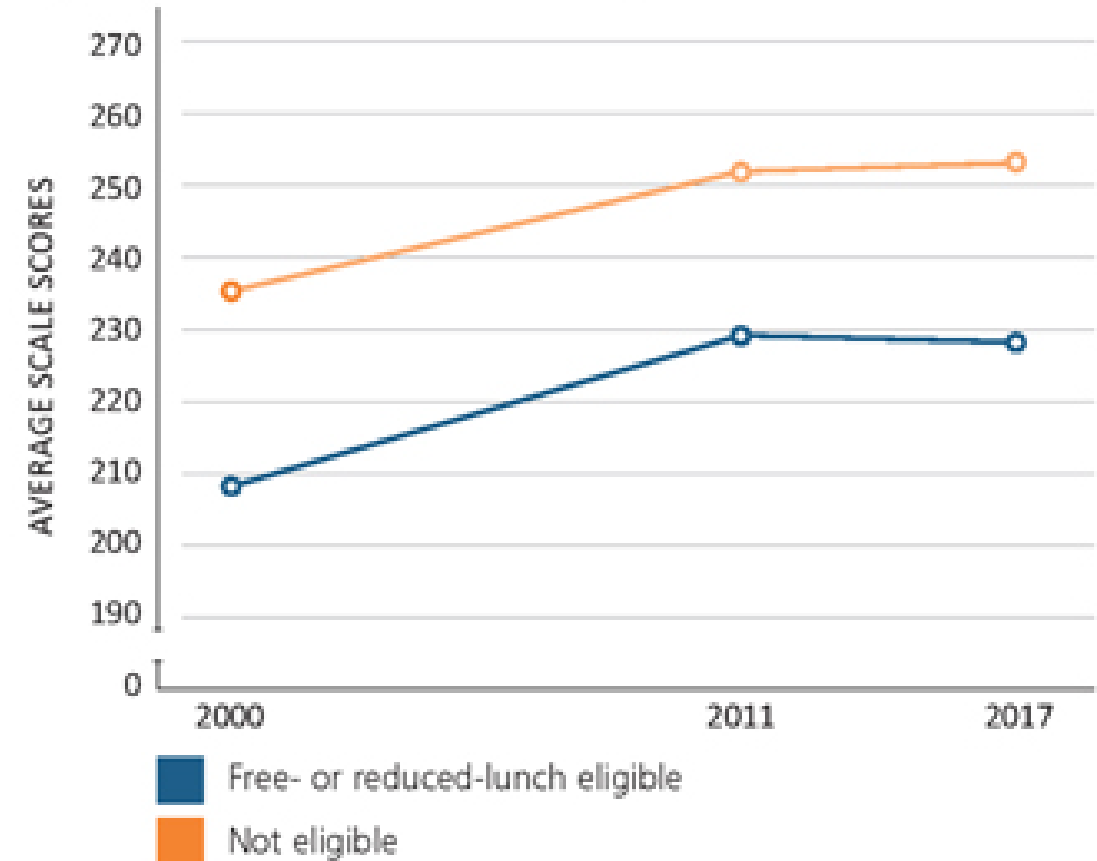


They serve students and communities in **48 of 50** states and the District of Columbia and Puerto Rico

Achievement gap: refers to outputs—the unequal or inequitable distribution of educational results and benefits.

Opportunity gap: refers to inputs—the unequal or inequitable distribution of resources and opportunities.

Fourth-Grade Math Achievement by Socioeconomic Status, 2000-2017



Source: *The Nation's Report Card, National Assessment of Educational Progress-Data Explorer, 2017*

Economically disadvantaged schools and communities experience...



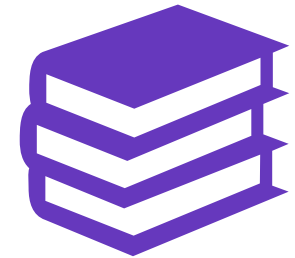
less-effective teaching,



due to overcrowded schools and dilapidated facilities,



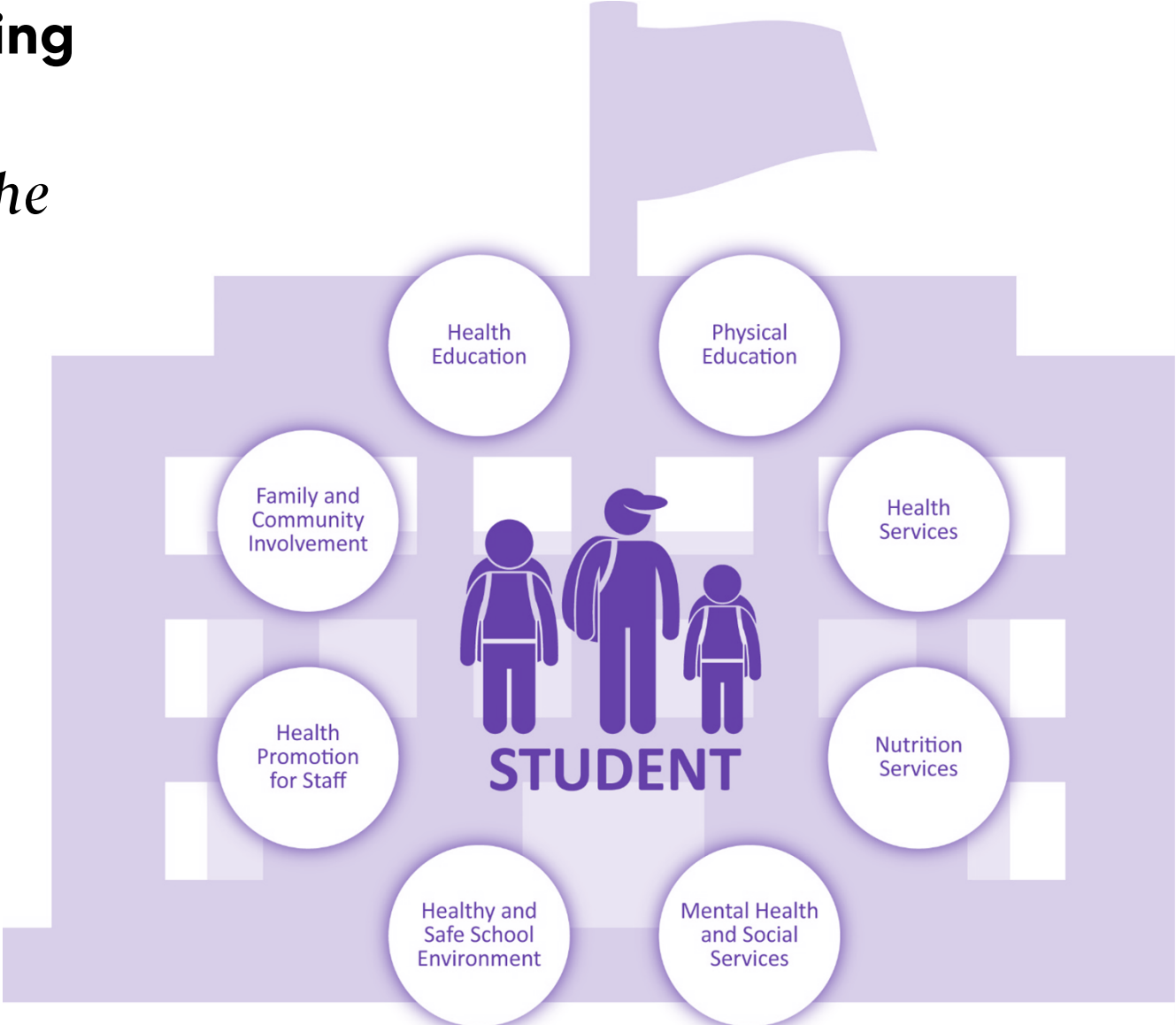
and inadequate educational resources, programs, and opportunities



which contributes to lower educational performance or attainment

Building Equity and Operationalizing Environmental Restorative Justice

Plan, Design, Build and Operate for the Student-Centered Educational Home



Defining the Problem

Facility, Health, Academic Inequities



School buildings impact our health...



HARVARD T.H. CHAN
SCHOOL OF PUBLIC HEALTH

Promote health & safety without compromising students' learning potential



Educational Adaptation

Strategies that support behavioral, logistical, and technology flexibility during shifting teaching needs.



Health Promotion

Strategies that promote physical and mental health, social cohesion, and a sense of belonging and safety.

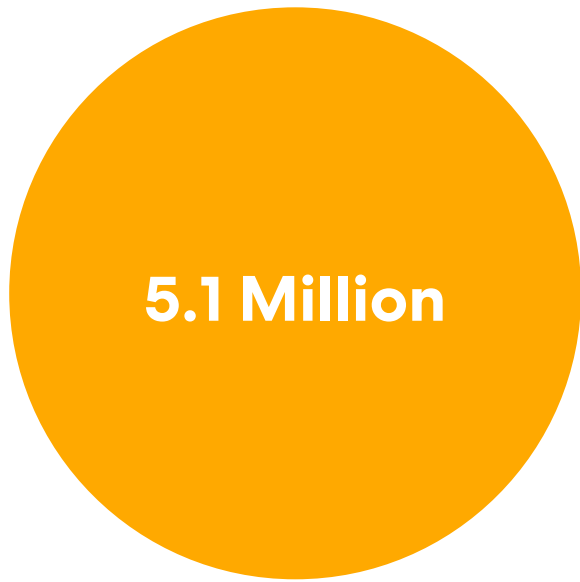


Risk Mitigation

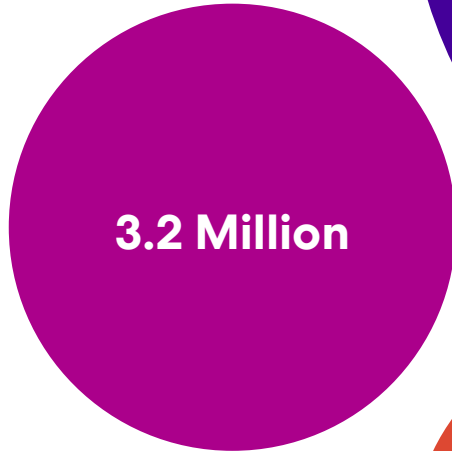
Strategies for reducing adverse environmental exposures that influence school occupant health and performance.

Each Year

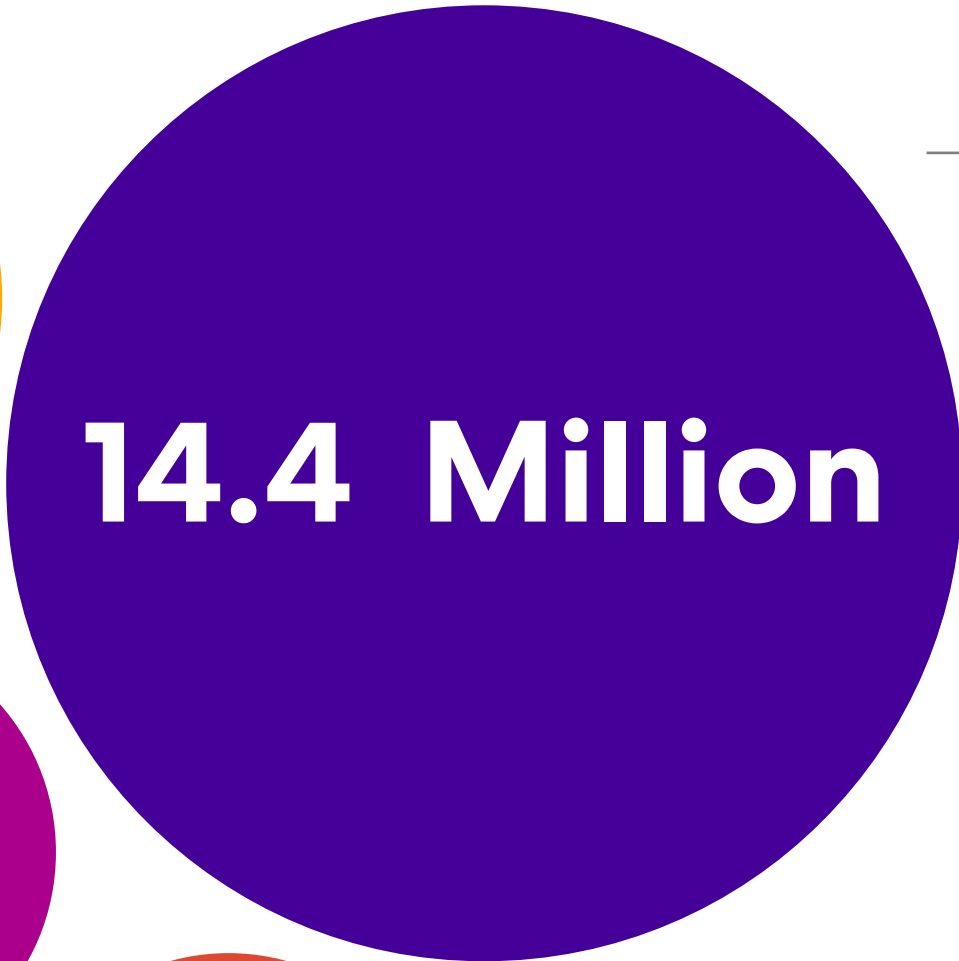
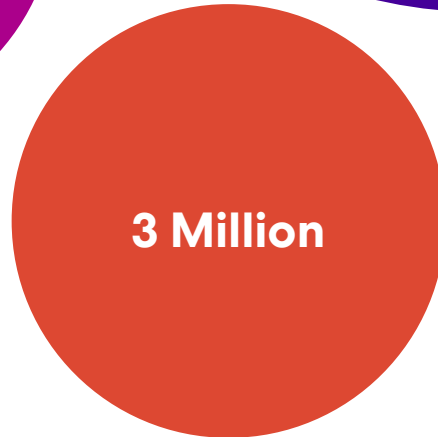
*Children with
Asthma* —



*Student victims of
bullying* —



*Children exposed
to gun violence* —



— *Obese children
and adolescents*

\$14.3 billion

direct costs of childhood obesity

A study of 432,302 children ages 2 to 19 years found the rate of body mass index (BMI) increase nearly doubled during the COVID-19 pandemic compared to a pre-pandemic period.

Before COVID, Asthma...



\$3 billion

in losses due to
missed work and
school days due to
asthma

10.2%

Of children living in
poverty suffer from
asthma.

~14 million

school days a year are
missed due to asthma

5x

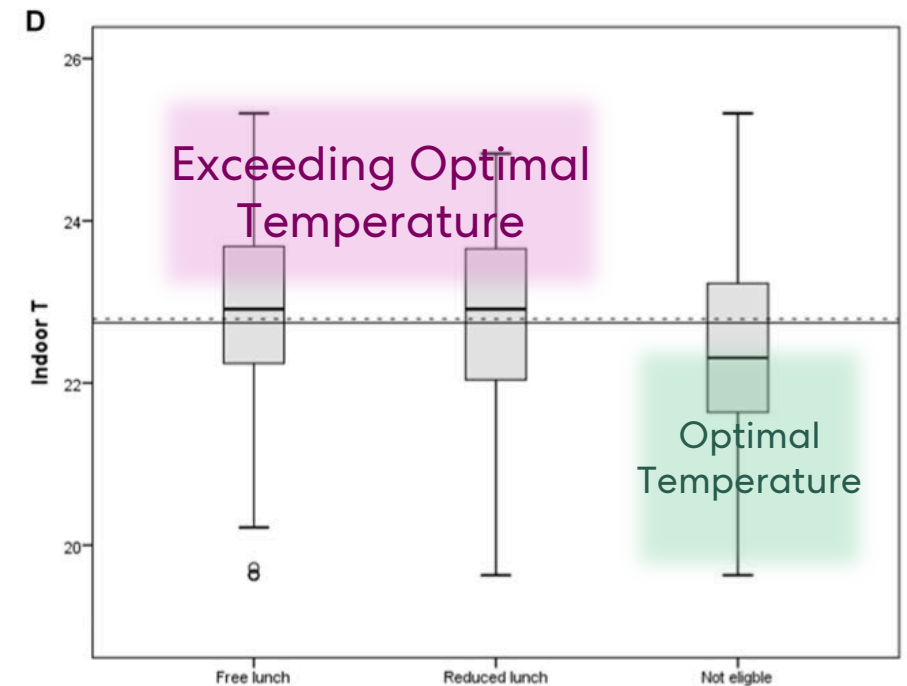
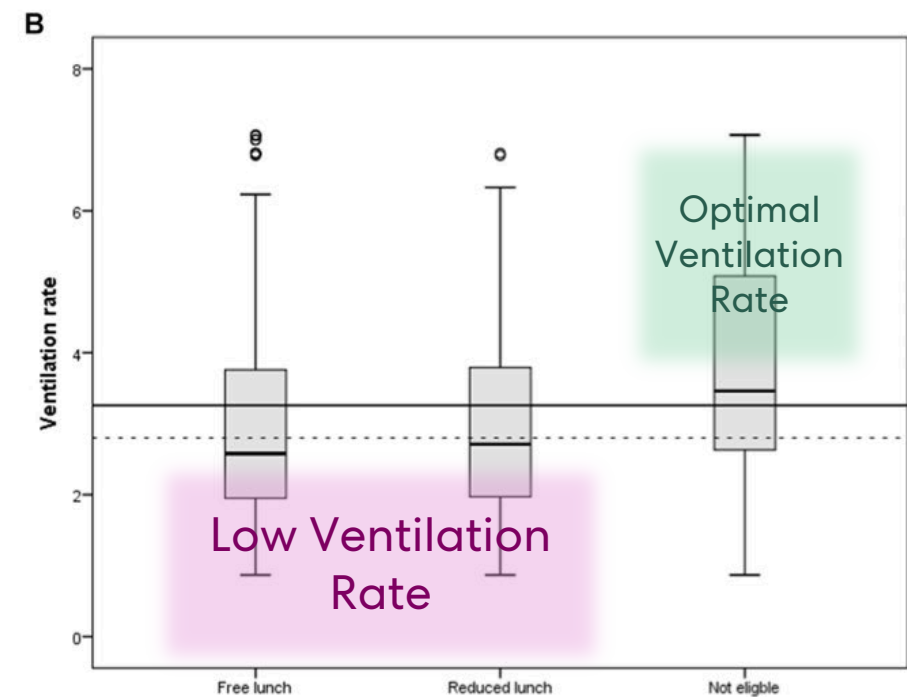
Black Americans were
more likely to visit the
ED due to asthma

Within School

When looking at ventilation and indoor temperature by ethnic group & eligibility for free lunch.

African American and Hispanic students, as well as free lunch eligible were **exposed to lower ventilation rates and higher temperatures.**

Haverinen-Shaugnessy et al., 2015



Exposure to indoor school environments by the time they graduate...

$$\begin{array}{ccccccc} 180 & \times & 13 & \times & \sim 6.5 & = & 15,210 \\ \text{DAYS IN A} & & \text{YEARS OF} & & \text{HOURS PER} & & \text{Hours} \\ \text{SCHOOL YEAR} & & \text{EDUCATION (K-12)} & & \text{SCHOOL DAY} & & \end{array}$$

Why are kids unique?

Physiology Behavior Efficacy Growth

Perkins&Will

Teachers had the highest rate of occupational asthma after mining workers (McHugh et al, 2010)



How did we get here?

We need to address the opportunity gap

1900: \$44 Million



1920

Schools receive a flat grant or set dollar amount per student

1930: \$372 Million



1930

States begin to adjust formulas to address extra costs associated with student population

1990: \$17.8 Billion



1980

Adjusting funding formulas to account for regional & district differences and performance incentives

2016: \$182 Billion



2016

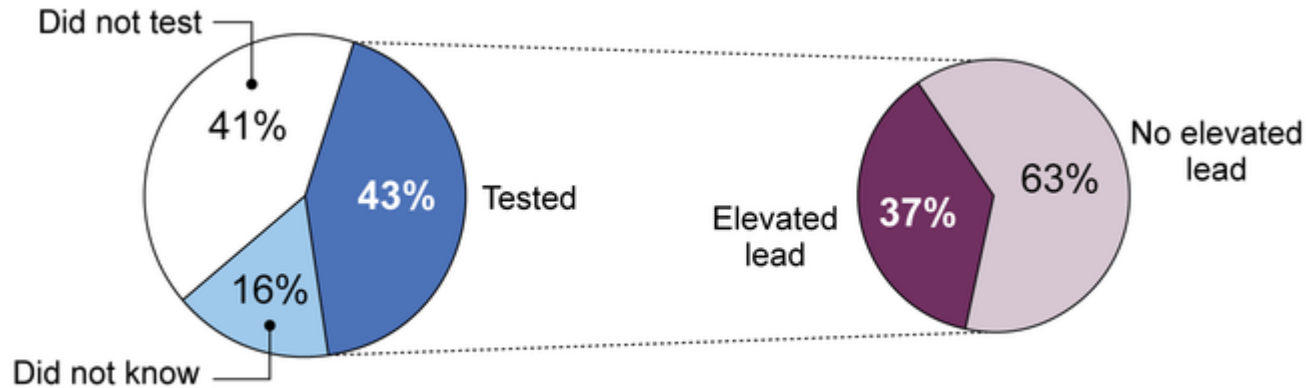
Complex & overlapping formulas

Implications

Disinvestment leads to poor quality buildings & chronic adverse health exposures

Disproportionately effects BIPOC communities

Widens educational disparities



Source: GAO survey of public school districts. | GAO-18-382

Perkins&Will

Table 1.—Year of school construction and mean age of school, by school characteristics

School characteristic	Year built				Mean age
	Before 1950	1950–1969	1970–1984	1985 or after	
	(Percent of schools)				
All public schools	28	45	17	10	42
Instructional level					
Elementary	29	46	15	11	43
Secondary	24	46	23	8	40
Size of enrollment					
Less than 300	40	39	14	8	48
300 to 999	24	48	17	11	40
1,000 or more	23	44	22	11	39
Locale					
City	34	44	13	9	46
Urban fringe	20	53	17	10	40
Town	24	47	20	9	40
Rural	32	38	17	12	42
Region					
Northeast	30	49	15	6	46
Southeast	23	43	20	14	37
Central	33	46	14	8	46
West	25	44	19	13	39
Percent of students eligible for free or reduced-price school lunch					
Less than 20 percent	20	48	20	11	39
20 to 49 percent	29	44	16	11	41
50 percent or more	34	42	14	10	44

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Survey on Advanced Telecommunications in U.S. Public Schools, Fall 1996," FRSS 61, 1996; "Survey on Advanced Telecommunications in U.S. Public Schools, K–12," FRSS 57, 1995; "Survey on Advanced Telecommunications in U.S. Public Schools, K–12," FRSS 51, 1994.

—Equity and Access Considerations



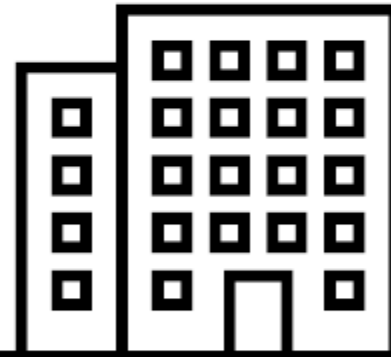
Family

- Parents with work commitments and no additional childcare
- Students living with multigenerational family members



Student

- Housing and food insecure
- Students with disabilities
- English-language learners (ELL)
- Limited internet connectivity



Buildings

- Deferred building maintenance and operations
- Mold and moisture present



School Siting

- Proximity to industrial facilities and/or superfund sites
- Ambient air pollution

“The evidence is clear. No matter how good the curriculum, the teachers or administrators, we can’t achieve world-class education with crumbling school facilities.”

Mary Filardo, 2021 State of Our Schools

Advancing Restorative Justice

Learning from doing

Characteristics of **Environmental** Restorative Justice:

Healing-Oriented

Those with power take direct responsibility to make change

Use of storytelling & dialogue

Identification of harm, victims, power players

Accountability

Recovery School District

The power of the charette

— New Orleans, Louisiana

Recovery School District New Orleans

Elements of
Environmental
Restorative Justice

Healing Oriented

Direct Responsibility

Storytelling &
Dialogue

Identify Harm

Accountability

IAQ Design Challenge School District

BACKGROUND PART 1

12/20/10

Louisiana Recovery School District

New Orleans, Louisiana

Guiding Principles

- We believe appropriate, sustainable facilities provide environments for successful learning.
- We believe these schools are a reflection of the community, and that children see themselves reflected in the school buildings.
- We believe every student and every staff person deserves a healthy learning and teaching environment.

Primary Stakeholders

Operations Department

- Chief Operating Officer
- Executive Director of Operations
- IAQ Coordinator and Project Manager

Health Services

- Coordinator of Health Services

Capital Budget

- Director of Capital Improvements
- Capital Budget Analyst

Facilities Department

- Facilities Manager

CSRS, Inc. (Maintenance Management)

- Project Manager

U.S. Green Building Council, LEED for Schools

- New Orleans Green Building Coordinator

Louisiana Department of Health and Hospitals, Division of Toxicology

- Environmental Health Scientist Coordinator

Key Challenges

- A complicated district administrative structure (direct-run schools, charters, parish-run schools) impacts facility operations and management, resulting in lack of centralized oversight and inconsistent practices within facilities throughout the district.
- Large infusion of capital funding and massive, rapid new school construction, while beneficial, create challenges in oversight and coordination among departments responsible for facility maintenance, operations and management. This also presents larger challenges to maintaining and sustaining new buildings long-term, when the initial capital has been expended.
- Managing community expectations about building upkeep/upgrade issues while creating a sense of fairness and equity knowing that rebuilding takes time.
- Managing communications among a large, diverse set of district stakeholders and providing follow up to the air teams in each school.



SCHOOL DISTRICT PROFILE

District Type: Urban
Number of Facilities: 69 (including 42 charters)
Facility Age Range: 0 – Over 100 years old, Average age over 70 years old
Staff: 1,571
Students: 27,021
Percentage of students qualifying for free or reduced lunches: 87%

The district's mission is to provide the support and intervention necessary to put academically struggling schools on a path toward success.



Mission:

The district's mission is to provide the support and intervention necessary to **put academically struggling schools on a path toward success.**

Key Challenges:

Managing community expectations about building upkeep/upgrade issues while **creating a sense of fairness and equity** knowing that rebuilding takes time.

Collaborative Design for Equity and Academic Success



William E. Carter School

— Boston, MA

Perkins&Will

Healing-Oriented

“This is a school, and we want our students to be seen as learners, not medical patients.”

Mark O’Connor, Principal

Students will range from 3-22 years old

Classroom Ratio

5 Students : 3 Teachers or Staff



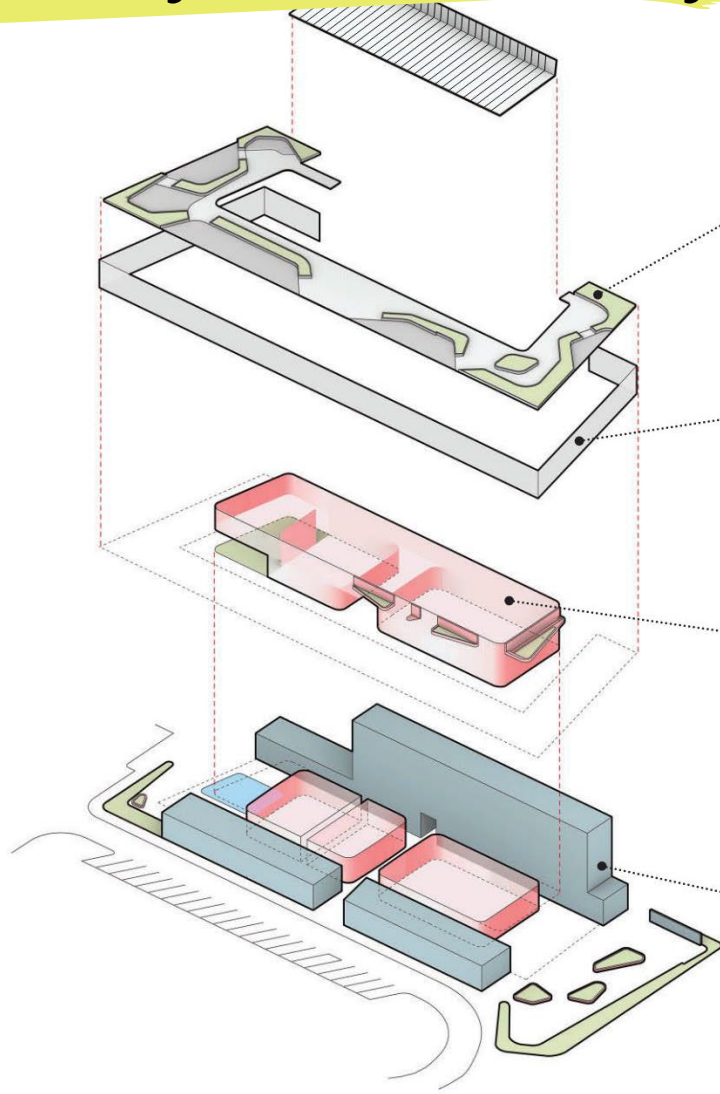
Responsibility & Identification



Perkins&Will

The Carter School Virtual Visioning

Responsibility & Accountability



SENSORY GARDEN

The School's roof and ground level gardens are designed to offer a stimulating and accessible connection to nature.



DAYLIGHT MEDIATOR

Glare mitigation is critical for Carter's students due to their impairments. The skin is designed to maximize daylight while minimizing glare.



SENSORY SPACE MAKER

The inner ribbon of the plan provides a home for tactile and auditory installations where students socialize.



AUDITORY BUFFER

The core of the building's support spaces is used as an insulating liner to the adjacent transit corridor.

Research Layers

Wrap-Up

Where next?

**Elements of
Environmental
Restorative Justice**

Healing Oriented

Direct Responsibility

Storytelling & Dialogue

Identify Harm

Accountability

**K-12 Opportunities for
Environmental Restorative Justice**

Draft an IEP: Individualized Equity Plan | Understand health priorities

Focus on the opportunity gaps | objective measures via sensors

Survey teachers and staff | build trust & relationships

Provide environmental controllability | Healthy Material Selection

Support ongoing evaluations (PPOE/POE) | IEQ standard | Engage states

CHPS is uniquely prepared to take on restorative justice in schools

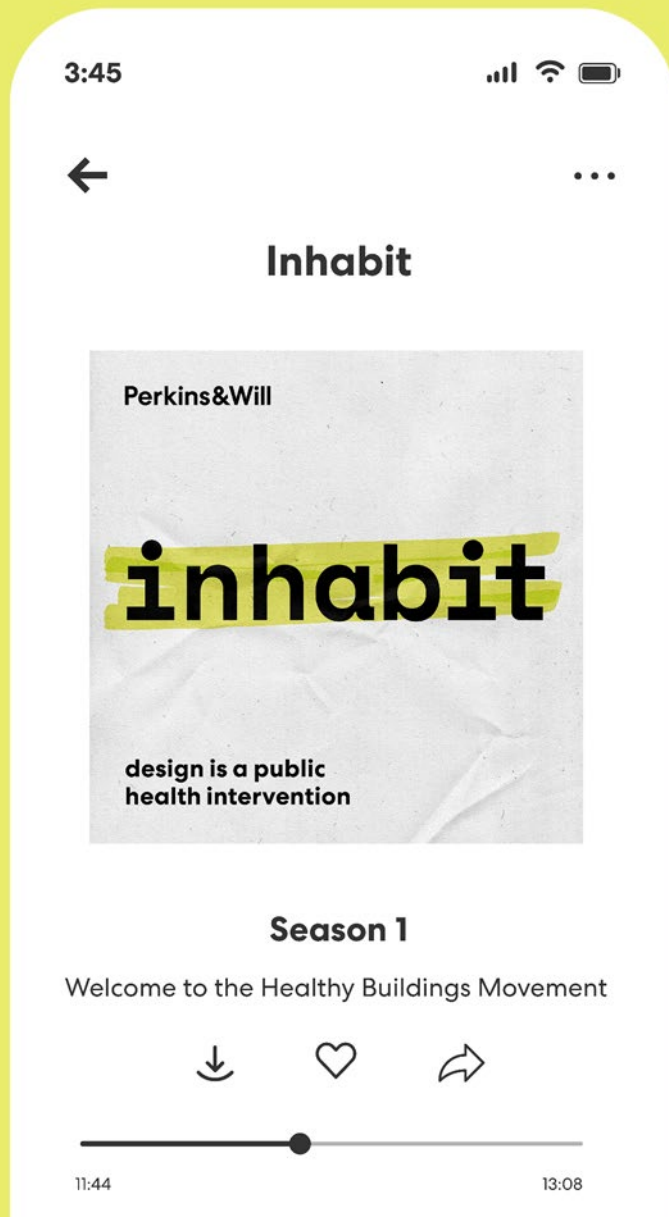
CHPS V2 Verified



- II C8.1 Biophilic & Responsive Design
- EQ C2.1 Pollutant & Chemical Source Control
- EQ C14.1 Electric Lighting Performance & Circadian Lighting
- EQ C15.1 Enhanced Acoustical Performance
- OM C5.1 Indoor Environmental Management

“Not everything that is faced
can be changed. But nothing
can be changed until it is faced.”

James Baldwin



inhabit

“What we do in our schools is magic. It should happen in temples. It should happen in palaces.”

— Tracy Washington Enger

U.S. Environmental Protection Agency

[Inhabit.perkinswill.com/listen](https://inhabit.perkinswill.com/listen)

References

- https://www.euforumrj.org/sites/default/files/2020-05/EFRJ_Thematic_Brief_Restorative_Environmental_Justice.pdf
- <https://www.gao.gov/products/gao-20-494>
- <https://nces.ed.gov/programs/coe/indicator/cgg>
- https://regnet.anu.edu.au/sites/default/files/publications/attachments/2021-04/A_future_agenda_for_environmental_restorative_justice.pdf
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- <https://www.epi.org/publication/the-racial-achievement-gap-segregated-schools-and-segregated-neighborhoods-a-constitutional-insult/>
- www.epa.gov/sites/production/files/2014-08/documents/evaluation_resource.pdf
- www.epa.gov/iaq-schools/how-does-indoor-air-quality-impact-student-health-and-academic-performance

Health Indicator Databases

- CDC Places:
<https://www.cdc.gov/places/index.html>
- City Health Dashboard:
<https://www.cityhealthdashboard.com/>

Access to all of Tracy's great resources at the EPA:

<https://www.epa.gov/iaq-schools>

“You can call it institutionalized racism or institutionalized inequality, but what I say is that any system that operates to maintain inequality is a corrupt system and must be addressed.”

Robert D Bullard



Audience Questions

Please type your questions in Q&A box.





For More Information on CHPS

<https://chps.net>

- Studies & reports on high performance schools: <https://chps.net/knowledge-library>
- School Building Science Fridays Webinars: <https://chps.net/school-building-science-fridays>
- Our Criteria for New Construction & Major Renovation: <https://chps.net/chps-criteria>
- Membership info: <https://chps.net/join-us>



Thank you to Erika and Tracy

Thank you all for joining us today!

Please join us for the final session in our 10-part
School Building Science Fridays series:

Understanding and Selecting Healthy Materials
June 10, 2pm Eastern

Watch for registration link here: <https://chps.net/school-building-science-fridays>