



Exploring Health Equity and the Built Environment through the Social Determinants of Health

Traci Rose Rider, NC State
Victoria A. Lanteigne, NC State
J. Aaron Hipp, NC State
Kia E. Baker, Baker Ingenuity Group
Rosa McDonald, NC State

NC STATE Design

NC STATE
UNIVERSITY

College of
Natural Resources


Robert Wood Johnson Foundation 

Image courtesy of RATIO Architects

Background



Emphasis is being placed on the built environment's role in impacting health equity (Frumkin 2021).



Addressing health equity includes the active removal of barriers that impact one's ability to be as healthy as possible (Brooks-LaSure et al. 2021).



Connections between the built environment and public health are now widely recognized.



Scholars, industry leaders, and policymakers are beginning to look more closely at the built environment's role in advancing health equity (Fedorowicz et al. 2020; Frumkin 2005).

Social Determinants of Health

Economic Stability

Education access and quality

Health care access and quality

Social and community context

Neighborhood and built environment



Image courtesy of RATIO Architects

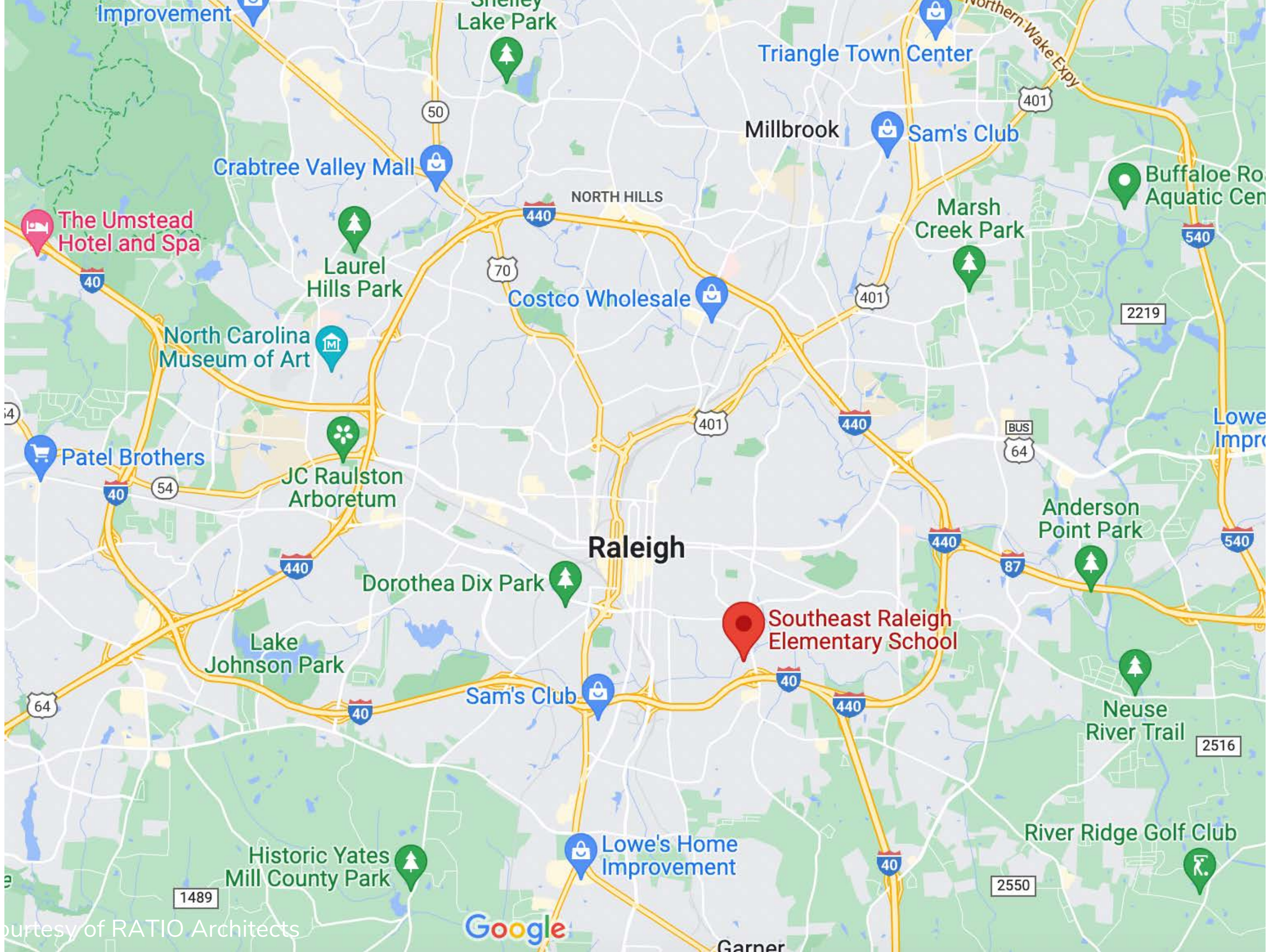




Image courtesy of RATIO Architects

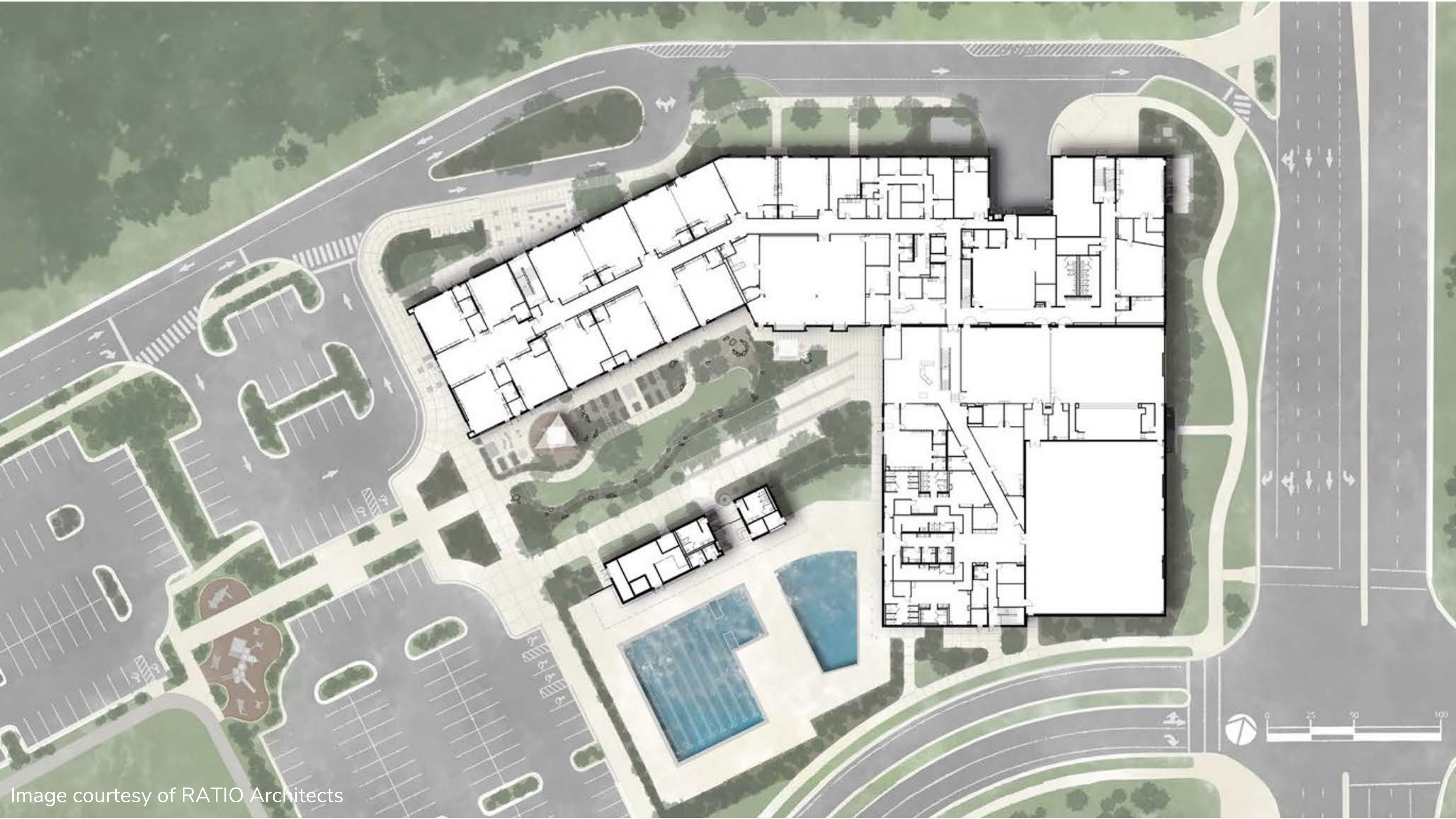


Image courtesy of RATIO Architects



Image courtesy of RATIO Architects

How does the unique designed environment of a hybrid YMCA/elementary school impact the mental and physical wellness of students, families, staff, and the greater community?

- 1) What are ways in which design can impact health equity?
- 2) What are the current barriers to health equity that can be impacted by design?
- 3) What opportunities exist to increase health equity through design?

Research Question(s)

Quantitative Research

Qualitative Research



Methodology: Case Study



Image courtesy of RATIO Architects

Case study methodology
(Yin 2006)

Occupant surveys, in-person
interviews, building
assessments, & community
canvassing

Purposive sampling: 90% non-
white; 56% of households
earning less than \$40,000/year;
only 21% of adults w/ college
education

Matched elementary school

Focuses on findings from
participant surveys



Data Collection

Online, anonymous survey (Sp-Su 2021)

Mix of open and close-ended questions developed with SDOH as guiding categories

Each SDOH “module” had 3-5 Likert scale questions aiming to operationalize health equity in school environments

"Neighborhood and built environment" module contained 10-15 close-ended questions about participant experiences and indoor/ outdoor environments

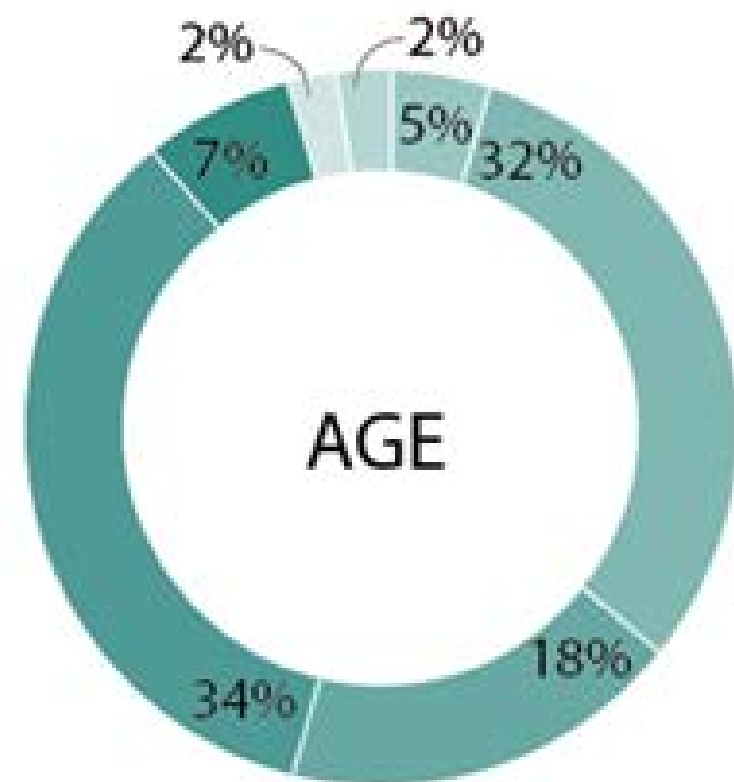


Request for Conducting Research

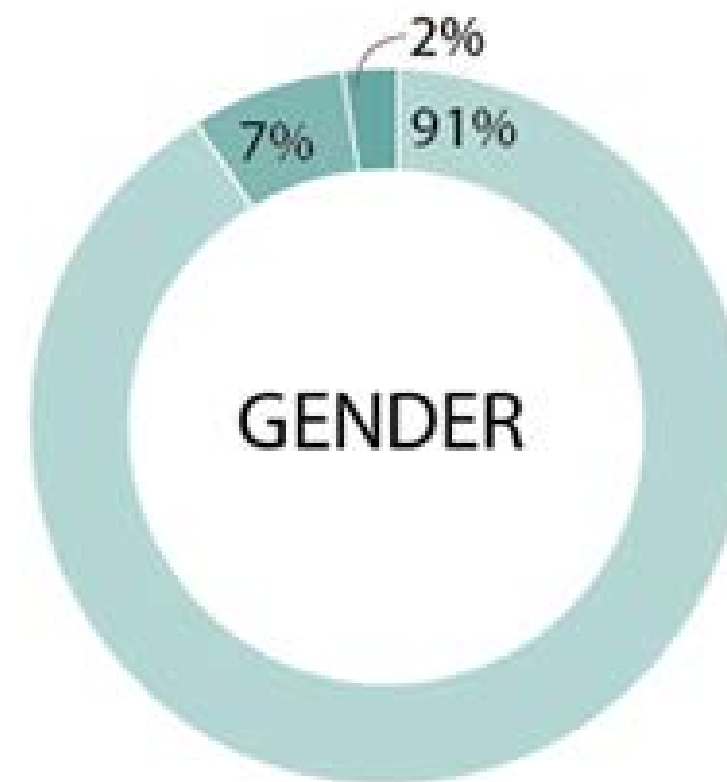
Due to the COVID-19 pandemic, we have suspended all in-person data collection from teachers, students, and parents until further notice.

A. Conducting Research in WCPSS

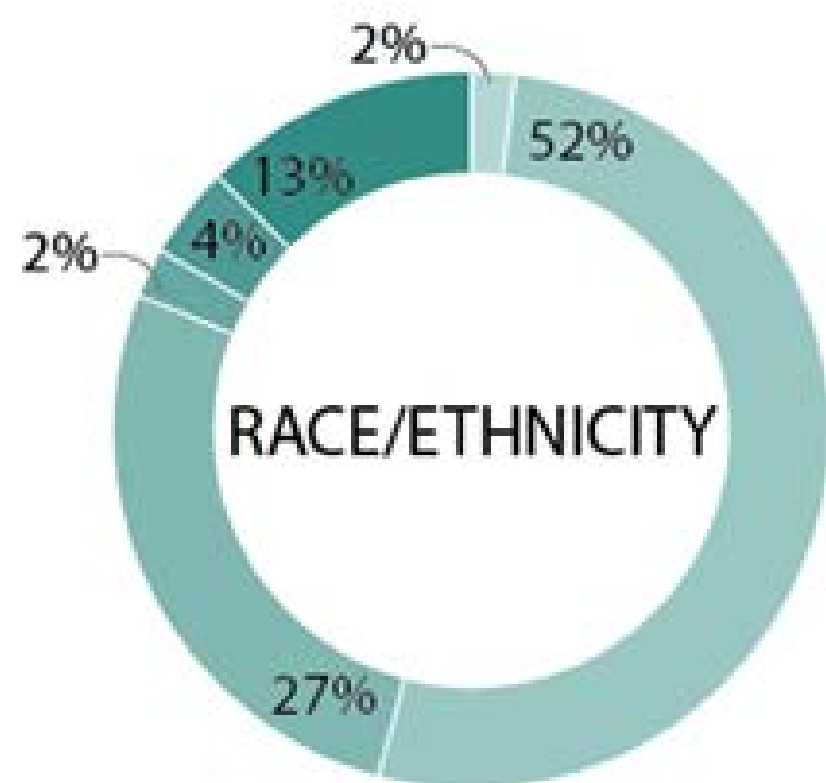
The Wake County Public School System (WCPSS) is committed to conducting and facilitating original research to improve outcomes for students, teachers, and staff. To that end, the department of Data, Research, and Accountability (DRA) cultivates partnerships with individuals affiliated with universities and



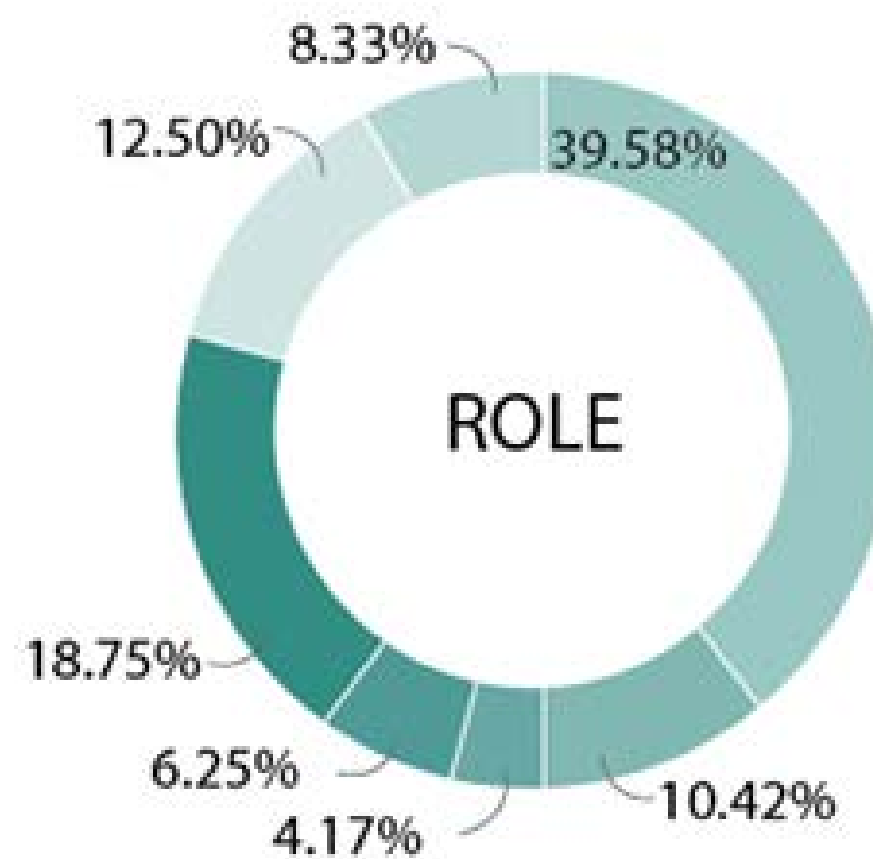
- Prefer not to say
- 66+
- 18-25
- 26-35
- 36-45
- 46-55
- 56-65



- Women
- Men
- Prefer not to say



- American Indian or Alaska Native
- Black or African American
- White
- Mixed
- Prefer not to say
- Hispanic/Latinx



- Instructional Assistant
- Specialist Teacher
- Teacher
- Administrator
- Other
- Prefer not to say
- Support Staff

I believe my school actively promotes...

Diversity

Inclusion

A sense of belonging

CASE SCHOOL



74%



74%



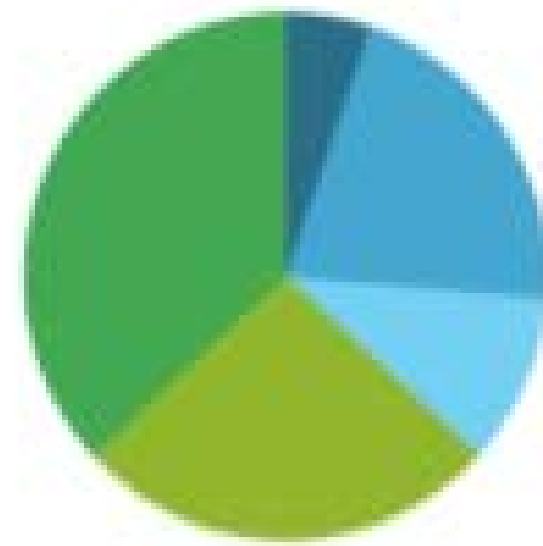
70%



MATCHED SCHOOL



74%



63%



42%



My school actively engages the community

I feel connected to the community

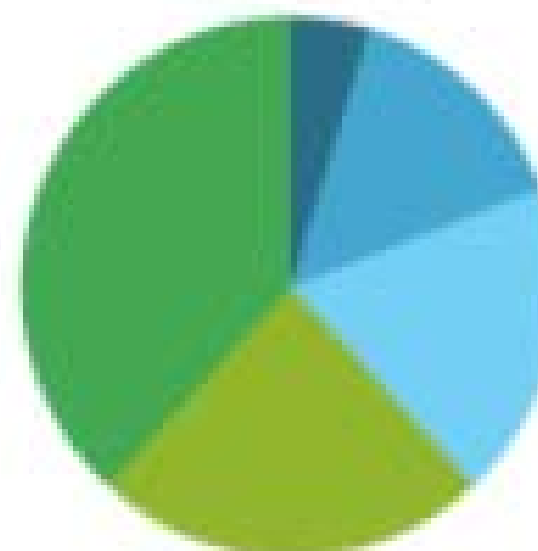
I believe the community feels connected to my school

CASE SCHOOL



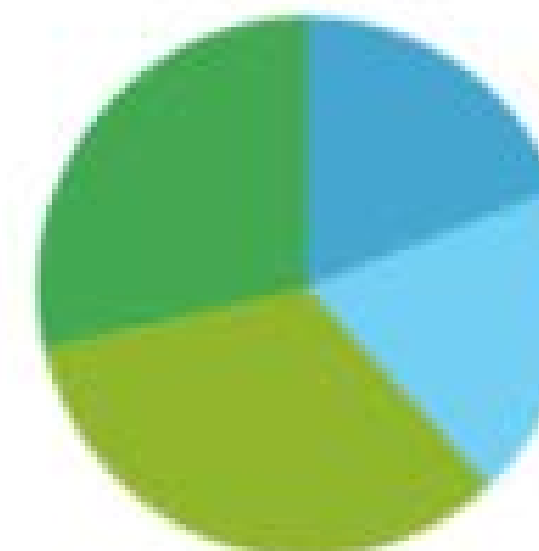
62%

CASE SCHOOL



62%

CASE SCHOOL



62%

MATCHED SCHOOL



32%

MATCHED SCHOOL



32%

MATCHED SCHOOL



21%

Strongly Disagree
 Somewhat Disagree
 Neutral
 Somewhat Agree
 Strongly Agree

My school actively prioritizes the students'...

Physical activity

Mental health

Social and emotional health

CASE SCHOOL



74%



79%



84%

MATCHED SCHOOL



61%



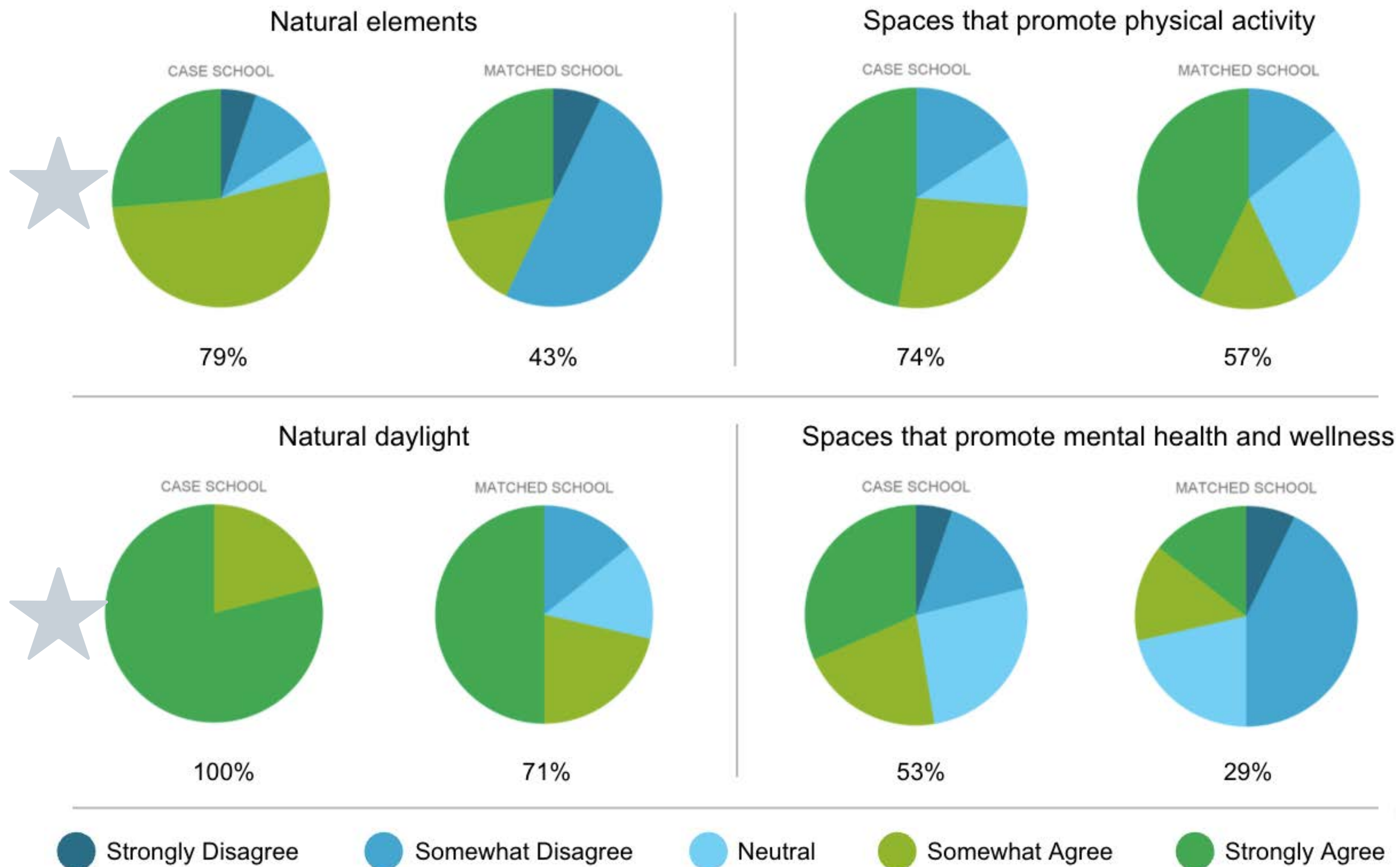
50%



56%

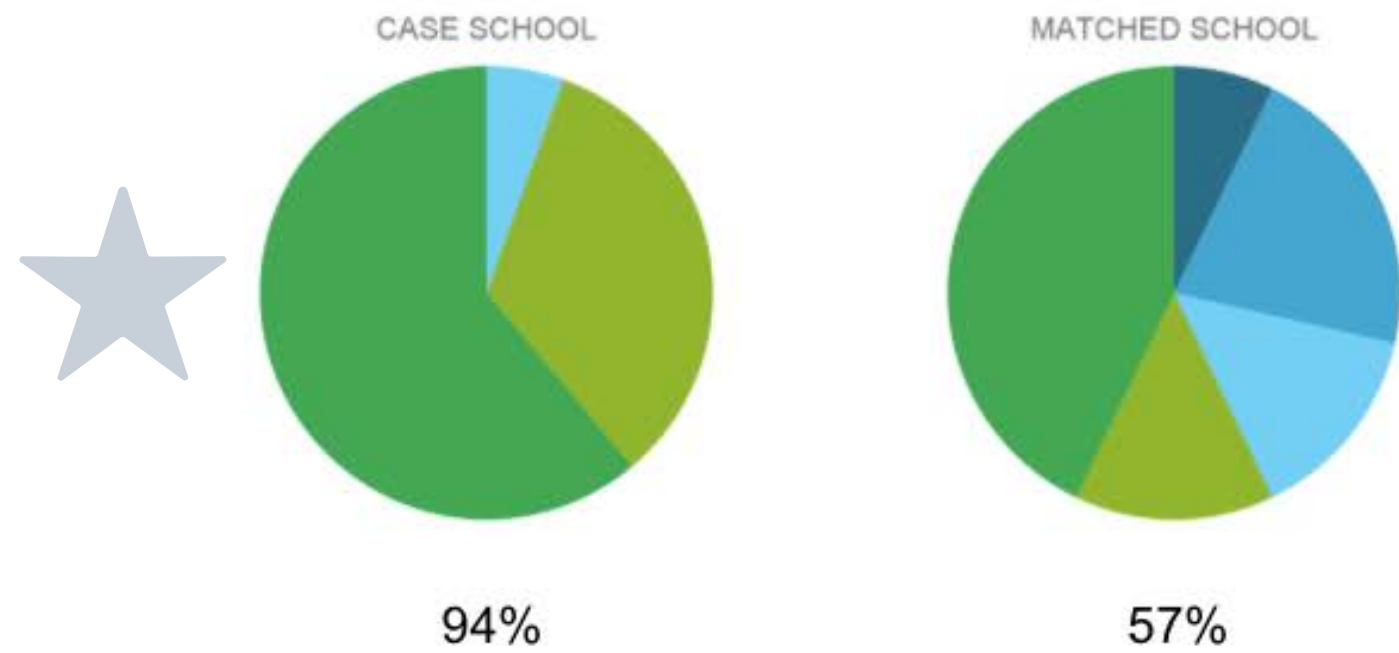


When I am inside my school, I feel I have access to...

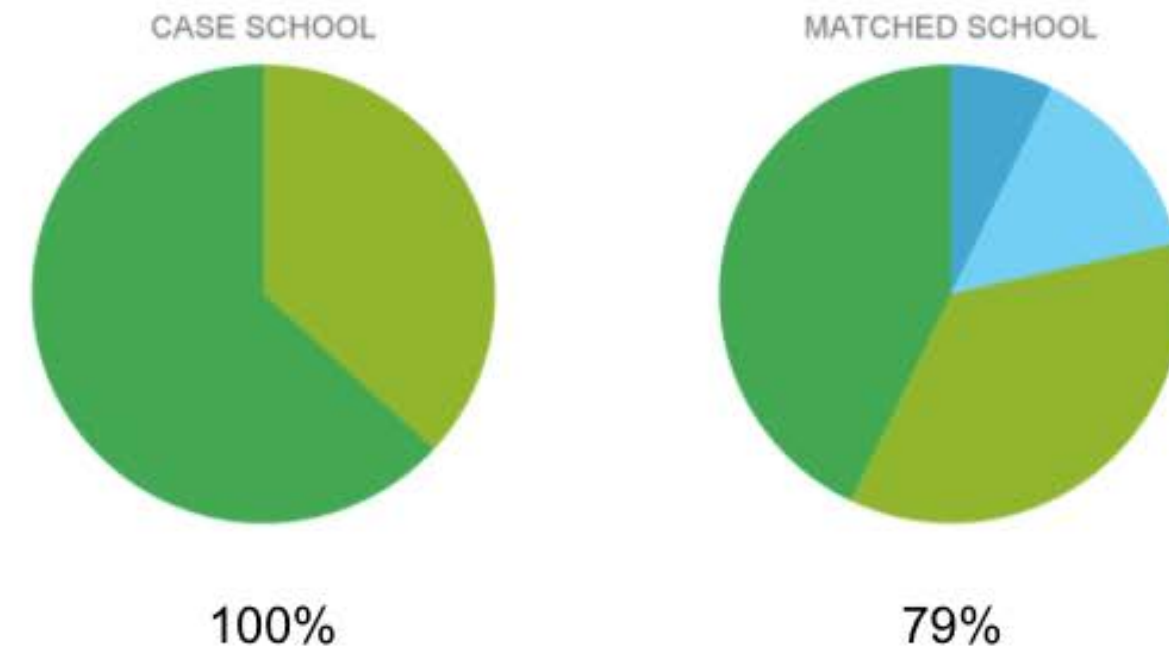


When I am inside my school, I feel I have access to...

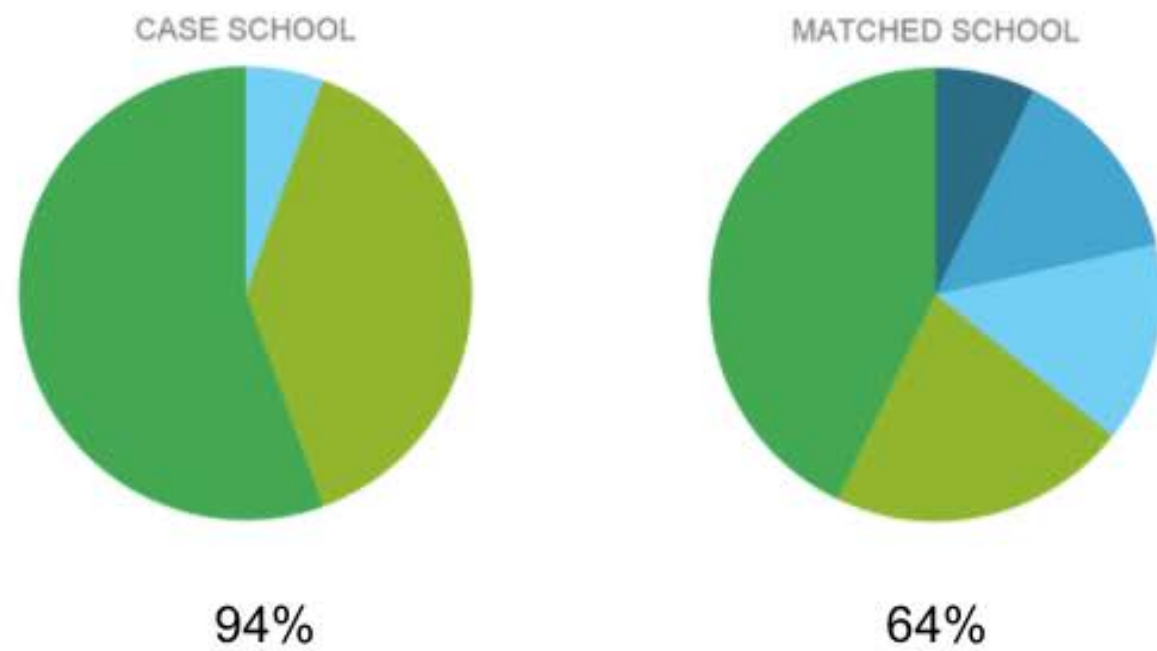
Pleasant views



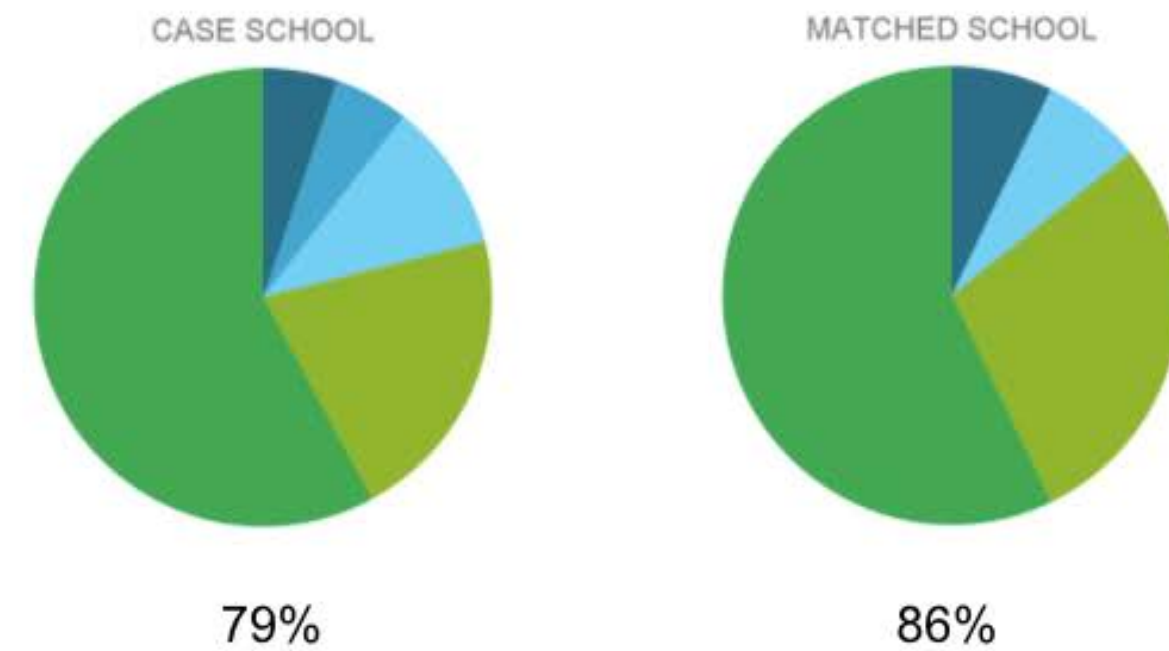
Quality lighting



Pleasant colors



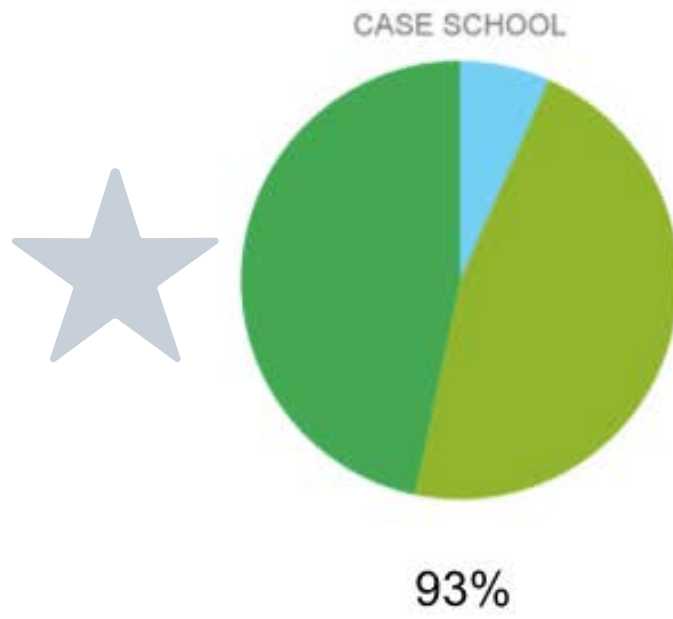
Clean Air



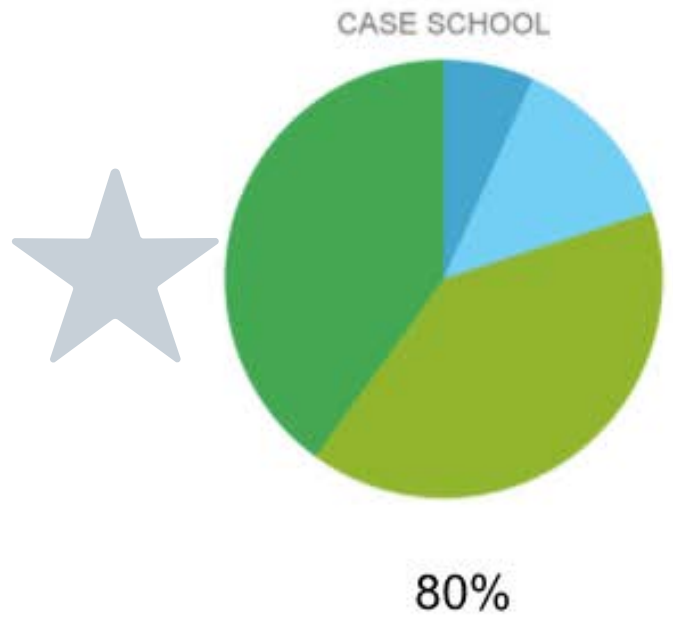
Prior to COVID-19, I believe my workplace/school supported...

Upon campus re-entry, I believe my workplace/school supports...

Employee development



General employee happiness



Strongly Disagree Somewhat Disagree Neutral Somewhat Agree Strongly Agree

Prior to COVID-19, I believe my workplace/school supported...

Upon campus re-entry, I believe my workplace/school supports...

My ability to conduct my work safely



My ability to work from home as needed



● Strongly Disagree ● Somewhat Disagree ● Neutral ● Somewhat Agree ● Strongly Agree

Discussion



It is possible that the **built environment had an increased beneficial impact** on learning and educational development by **facilitating a sense of belonging** and supported social connection by providing programming and collaborative spaces that foster community engagement.



Design strategies can be based on participant agreeing/strongly agreeing with responses emphasizing certain health-promoting design features.



Barriers to health equity in the built environment can be environments failing to promote a sense of belonging, community engagement, and health.

Thank you.

**Built environments matter.
Design for health equity.**

Traci Rose Rider, NCSU
traci_rider@ncsu.edu

Aaron Hipp, NCSU
jahipp@ncsu.edu

Kia E. Baker, Baker Ingenuity
Group
Victoria A. Lanteigne, NCSU
Rosa McDonald, NCSU