
EDspaces
Designing the Future of Education
Columbus, OH | November 5-7, 2025
Learning Reimagined:
Designing Schools for the Future of Education
Wednesday, November 5 at 8 am
CANNONDESIGN

Today's Presenters

Lauri Pendred

Former Principal
Ehrman Crest Elementary School
Seneca Valley School District

Jeremy Dwyer

K-12 Client Leader
Vice President
CannonDesign

Sarah Holton

Education Planner
Vice President
CannonDesign

Troy Hoggard

Design Principal
Principal
CannonDesign

Learning Objectives

- **Understand the principles of museum-inspired educational design in schools.** Attendees will learn how the principles of children's museums, hands-on interaction, multi-sensory engagement, and self-directed exploration can be integrated into school design to create a more dynamic and inspiring educational experience.
- **Explore the collaboration process between architects and educators.** Attendees will gain insights into the collaborative process between architects, educators, and organizations like the Children's Museum of Pittsburgh, emphasizing the importance of co-creating spaces that support diverse learning styles and modalities.
- **Discover innovative design features of Ehrman Crest Elementary and Middle School.** Attendees will learn how the building is used as a teaching tool exploring elements such as interactive exhibits, engaging artwork, and tactile features were incorporated into the school's design to support student engagement, curiosity, and autonomy in learning.
- **Envision the Future of Learning Environments.** Attendees will explore how innovative, exploration-driven design strategies—like those inspired by children's museums—can shape future schools. Through the lens of hybrid building types that blend educational and experiential learning spaces, attendees will discover how design can foster creativity, adaptability, and lifelong learning in an evolving educational landscape.

We shared Ehrman Crest Elementary and Middle School with you three years ago...

Partnership

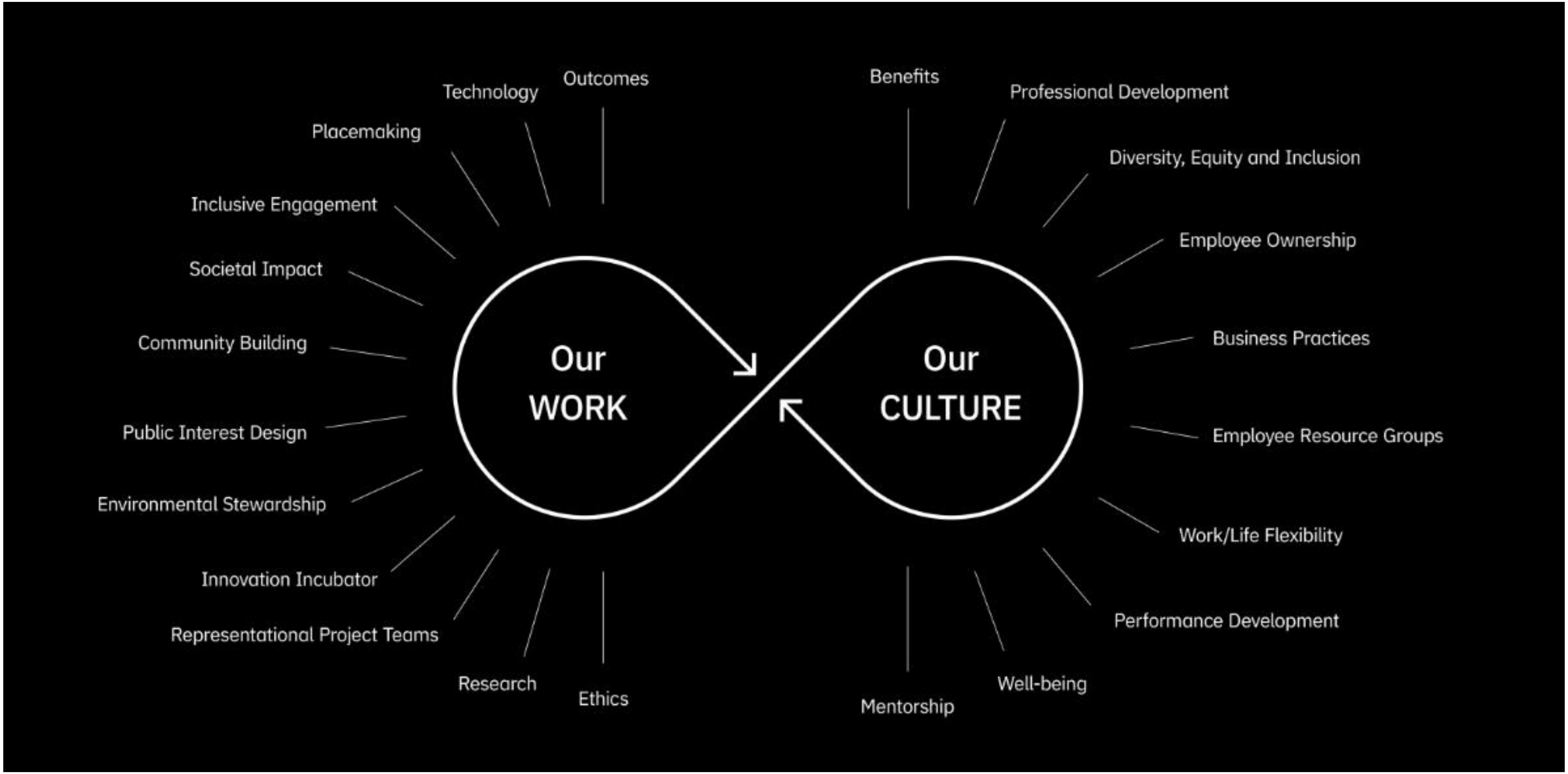
“We want to teach to the whole child...in a building that is a tool for teaching.”

Dr. Tracy Vitale, Superintendent,
Seneca Valley School District

CMP Design Philosophy: Play with Real Stuff

Open-ended exploration of real tools, materials and processes leads to authentic and memorable experiences

Living-Centered Design is our firm's ethos



‘HYPOTHESIS’

When a school bus approaches a children’s museum, it shakes with anticipation and energy.

How can we recreate that anticipation and energy when arriving at school on a typical day?

(Re)Think Design Process

CANNONDESIGN

(Re)Think Process

What would happen if you imagine you are designing a children's museum instead of a school?

1 Engage adult stakeholders differently.

Recognize that they have an active role in the life of the school. Parents and teachers 'go the school' too

2 Focus Groups – Ask questions differently to get more useful information from students and teachers.

Take a show me, don't tell me approach.

3 Follow Up – Stay involved with the project during the first year of operations.

A school is more like a house than an office. People live in it and will make themselves comfortable, regardless of the architect's design intent.

(Re)Think Process
Engage Stakeholders Differently

(Re)Think Process
Engage Adult Stakeholders Differently



It's hard, the theme is something parents should be responsible for too, the educators have so much on their plate and they can present the subject but part of that is up to us to relate it to real life.

(Re)Think Process

Engage Kid Stakeholders Differently

It's so important to get real materials and different materials in our kids hands and getting them to actually build things and do things and get their brain working outside of technology, but it's also the world that they're living in.

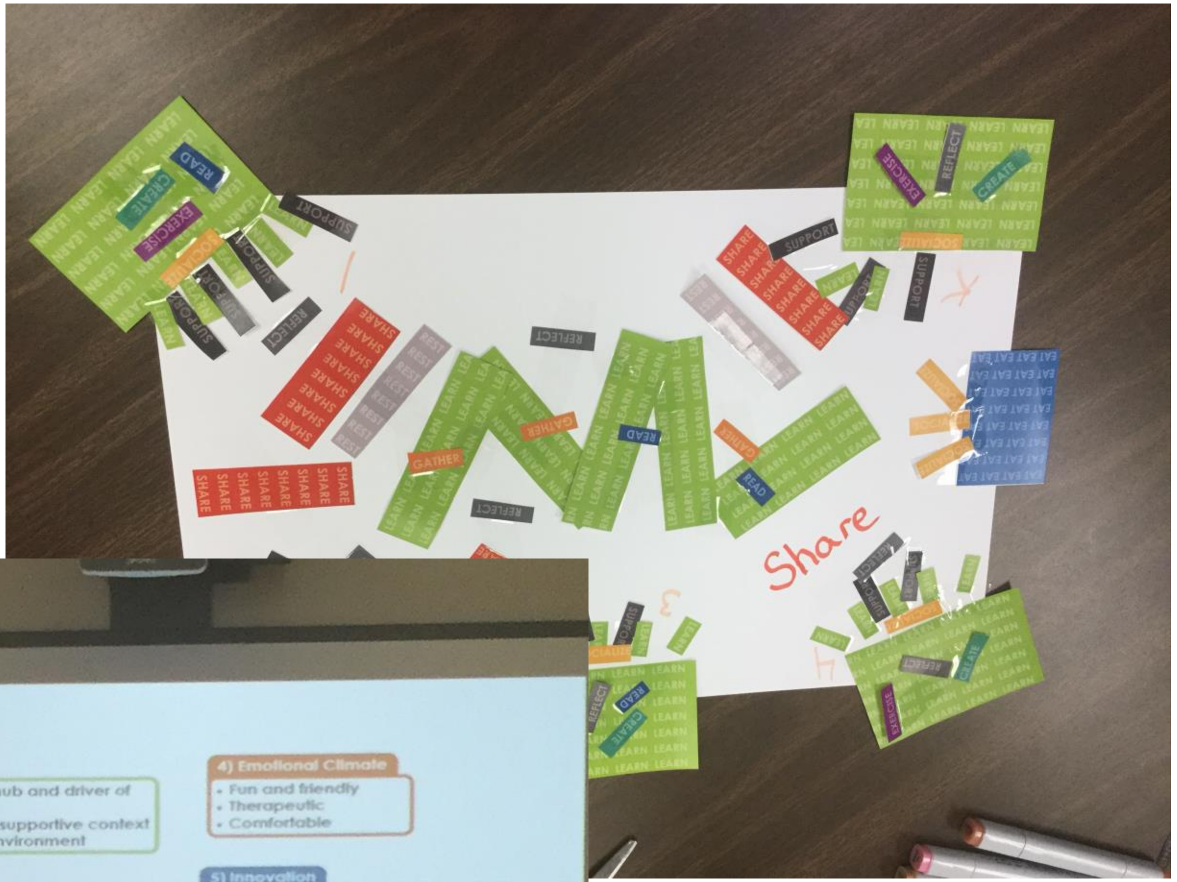
(Re)Think Process

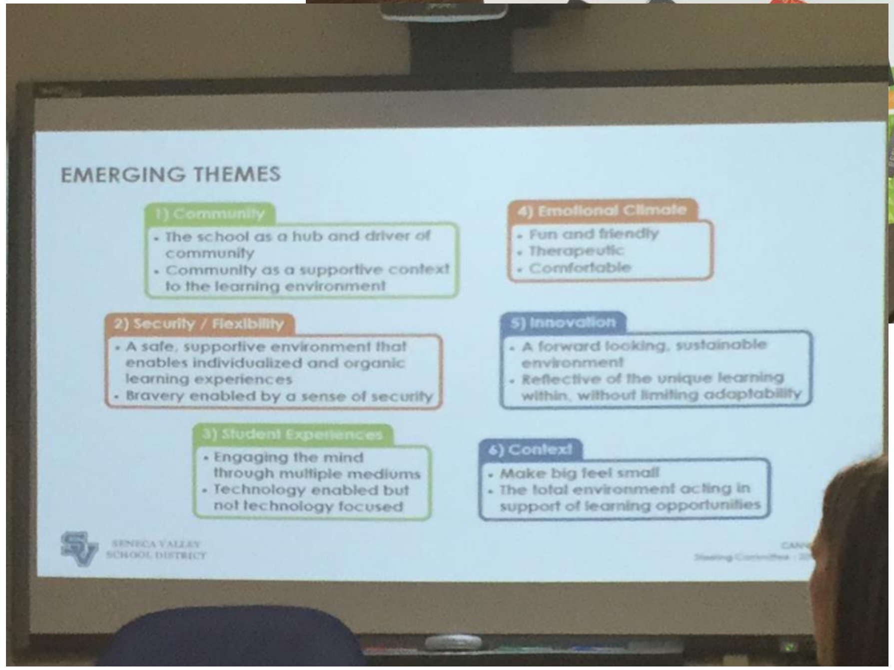
see where they align – needs and wants remarkably similar

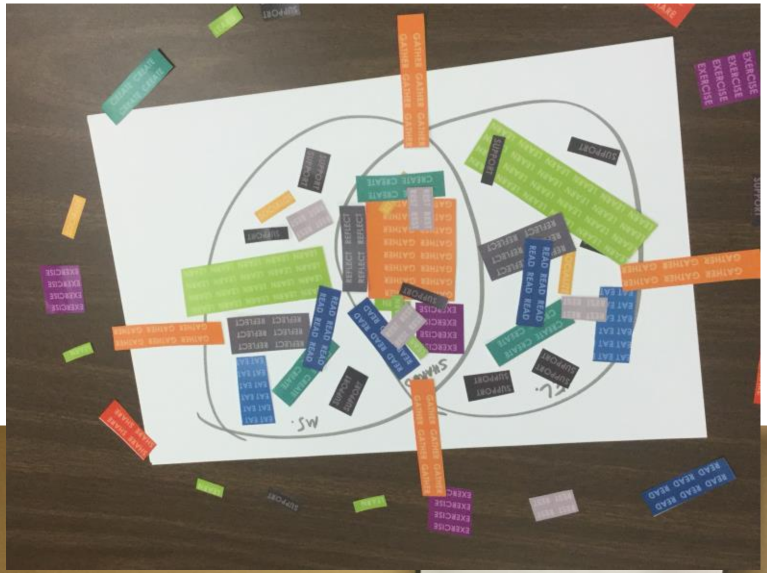
If you're not having fun, what the heck? You learn a lot more when you're having a good time.

(Re)Think Process

and carry this throughout the design process,

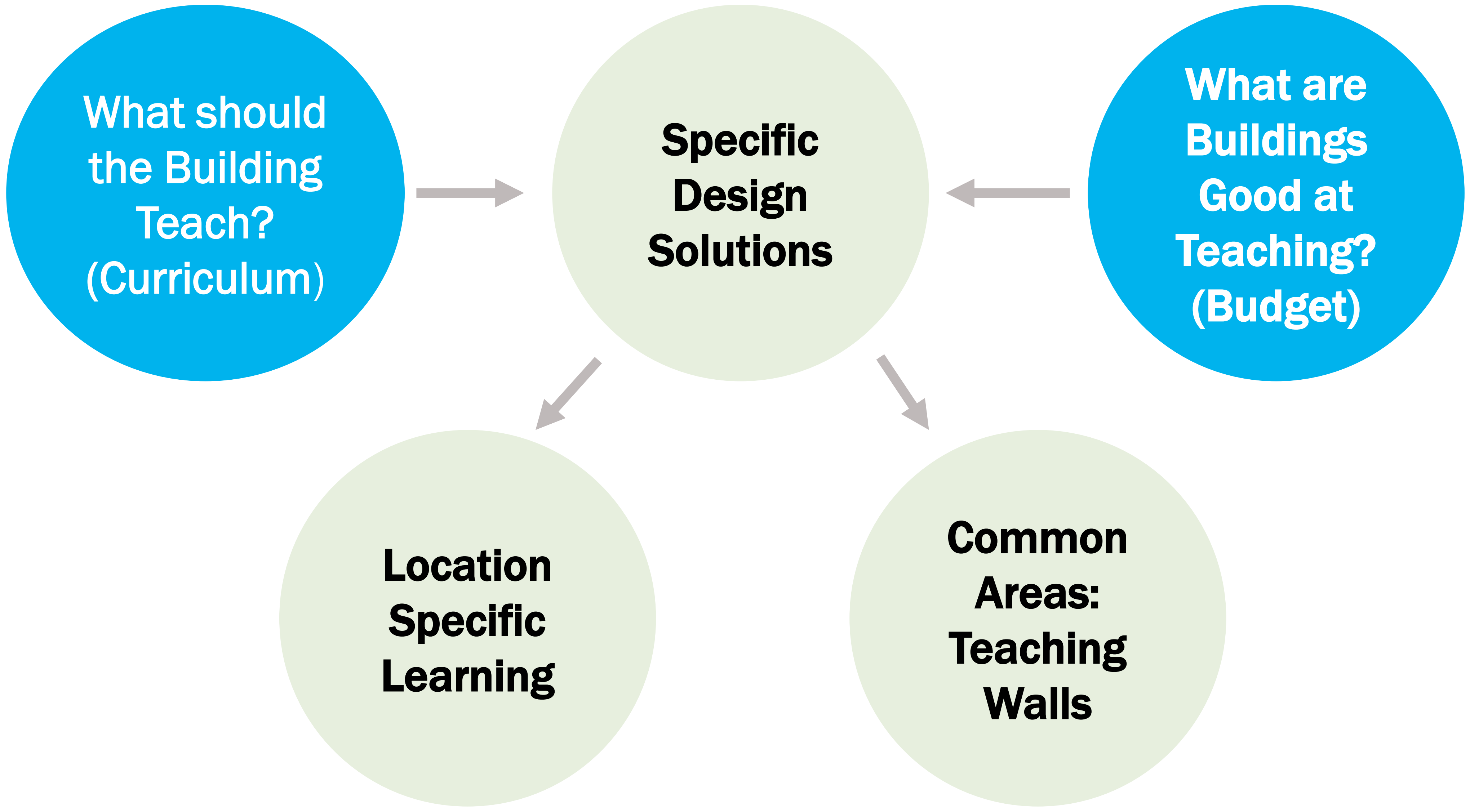




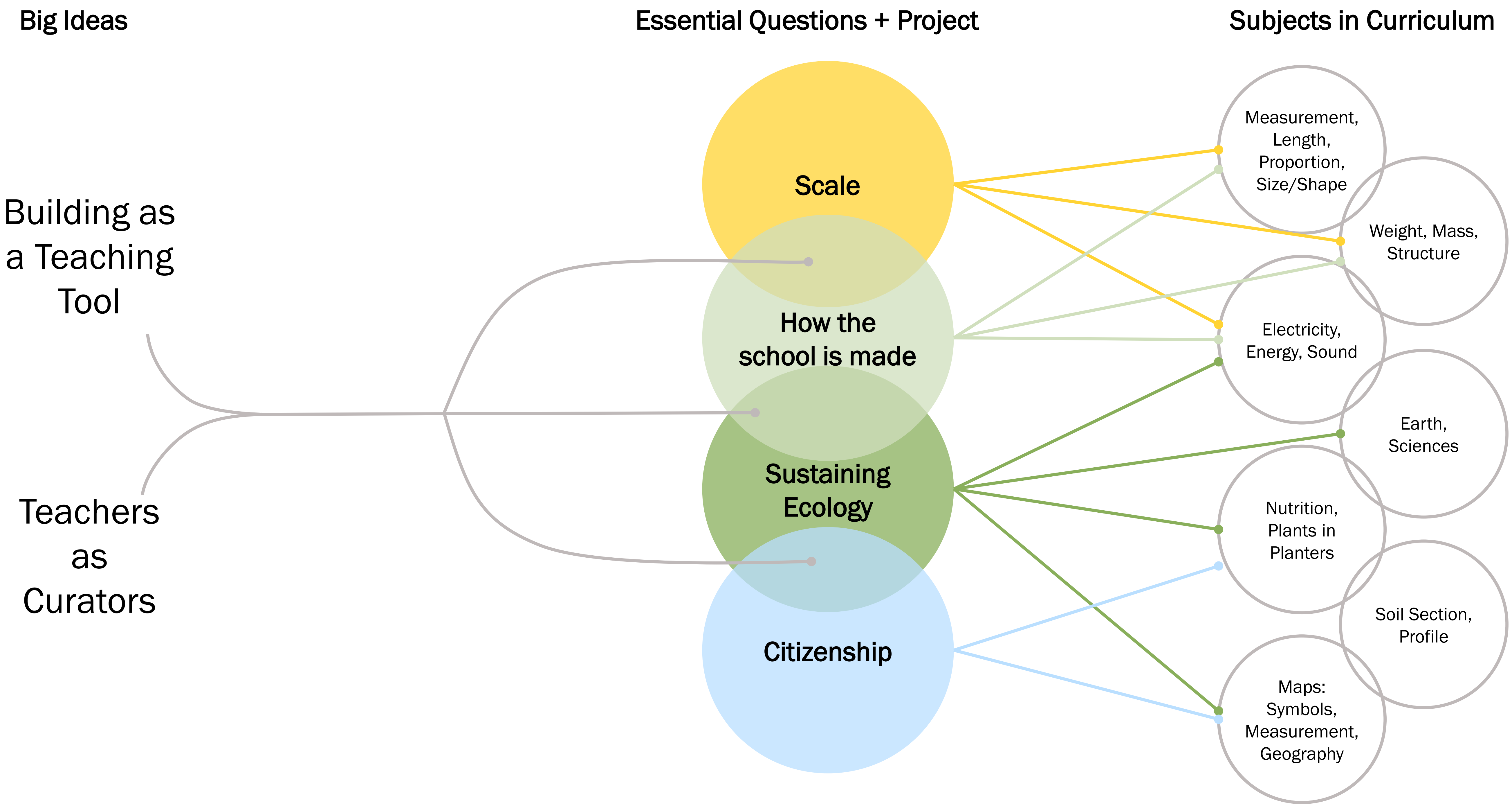


Building as a Teaching tool

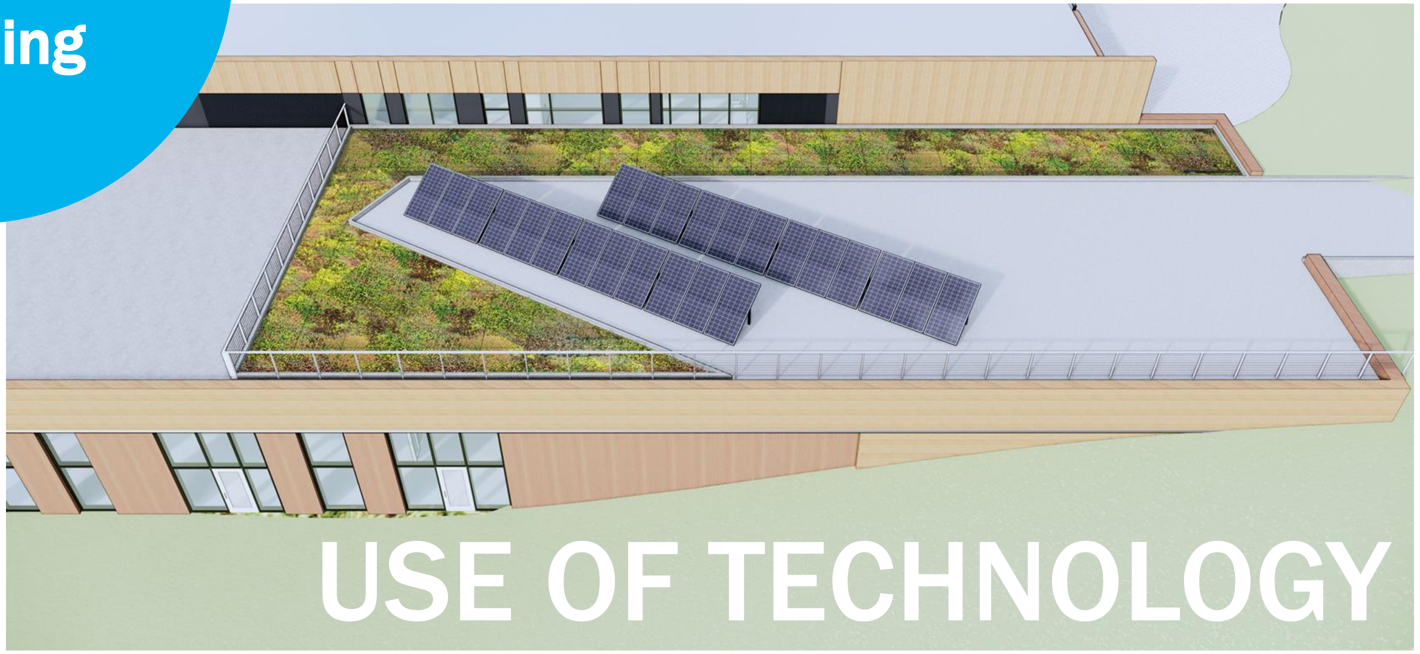
Building as a Teaching Tool



What Should the Building Teach?



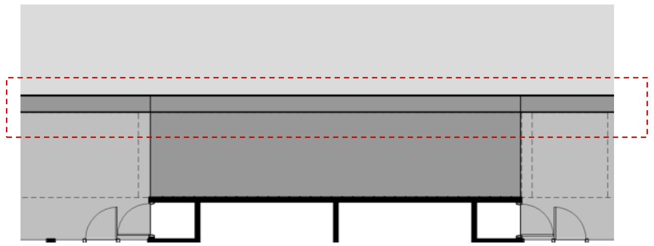
Location-Specific Learning



01 FLOOR PATTERN METRIC CONVERSION

12” tile pattern strip (12” x 50 cm) along corridor
Min. 3 LVT tile colors. Base floor is 50cm tiles. “Frames” the sensory path.

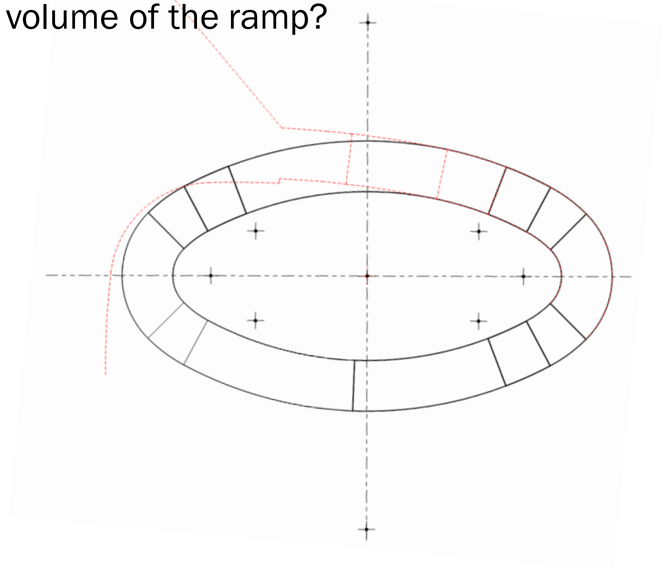
Learning:
Simple shapes
Measurement
Team, game organization
How long is the corridor? How many student can fit? How many Hands is the corridor?



02 RAMP GRAPHICS

Graphic pattern cut into floor (Rubber or LVT) of the ramp. Showing the geometric derivation of the elliptical shape

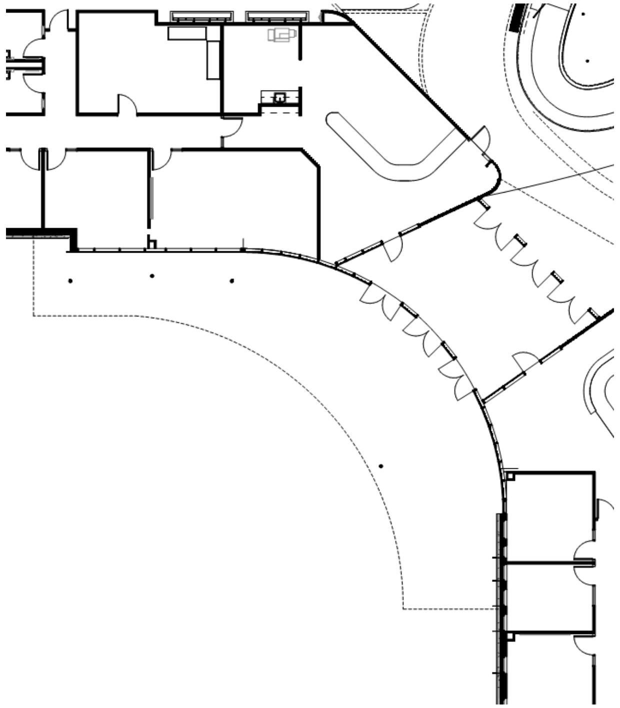
Learning:
Complex shapes, curves, Arcs
Graphing, Centroid
Design, Construction Geometry
What is the perimeter of the inner shape?
How long is the center of the ramp?
How many tennis balls would fill the volume of the ramp?



03 CANOPY COLUMNS

Canopy columns are labelled showing the Weight that they are supporting, Each varies, some are zero., why?

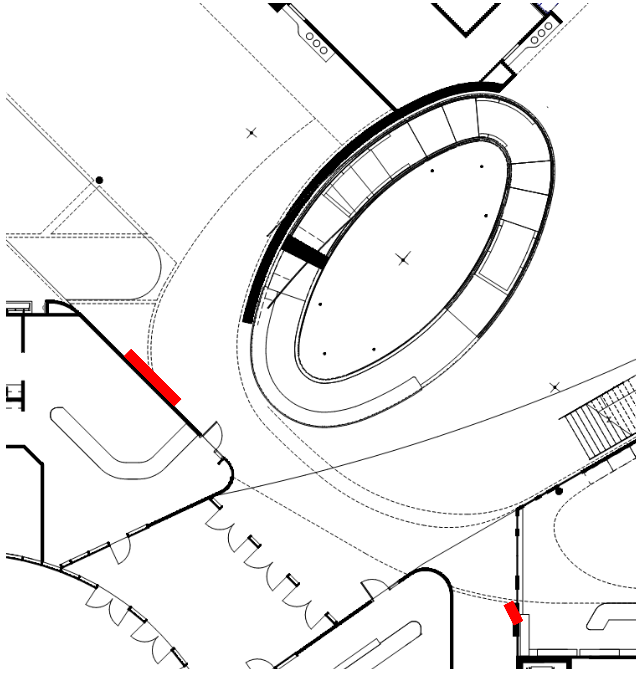
Learning:
Mass, Weight, Vectors
How much does the canopy weigh in lbs?
Do the angles effect efficiency of the columns? Could there be fewer?



04 ENERGY USE DASHBOARD

A small display of the current and trending energy consumption, and weather data.
Also available on-line.

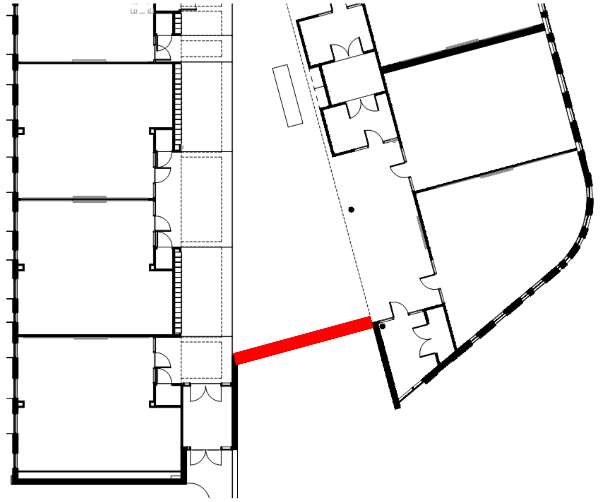
Learning:
How Does SVE compare to other school's energy use? Why is it having a (good) day today? Is there a way we can improve the data? Temperature vs. Climate vs. EUI



05 SUN DIAL WALL

Measure time and solar azimuth using a target and floor patterns

Learning:
Why is the sun arc different over seasons?
What time is it now? What effect overcast days have on temps. Why are temps different with Low e coatings?

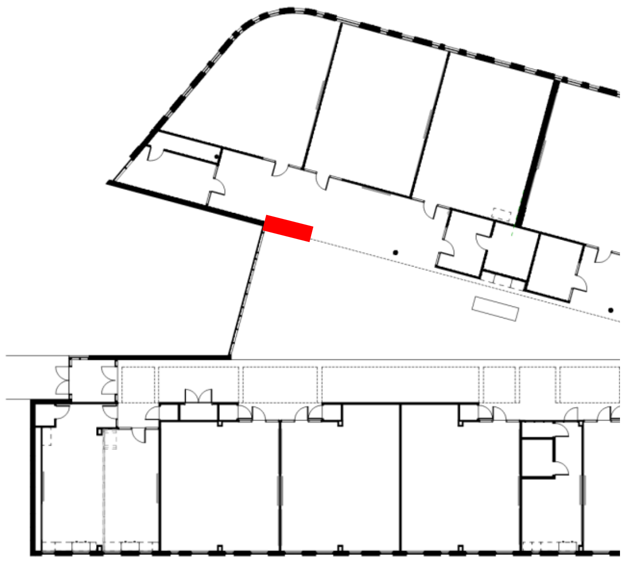


2nd floor end wall,
Middle School
South Exposure

06 WING WALL CONSTRUCTION

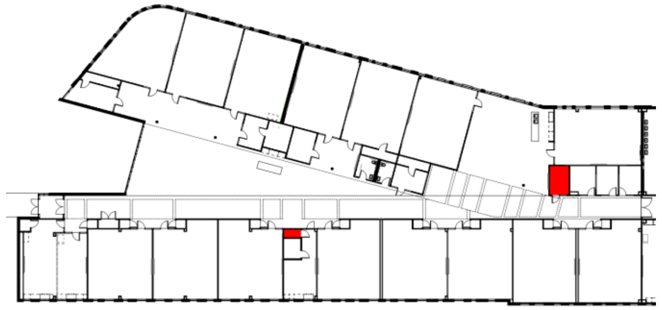
Expose section of wall showing, construction materials, piping and conduit. Acrylic enclosure with graphics. Or, model materials with 3D exhibit.

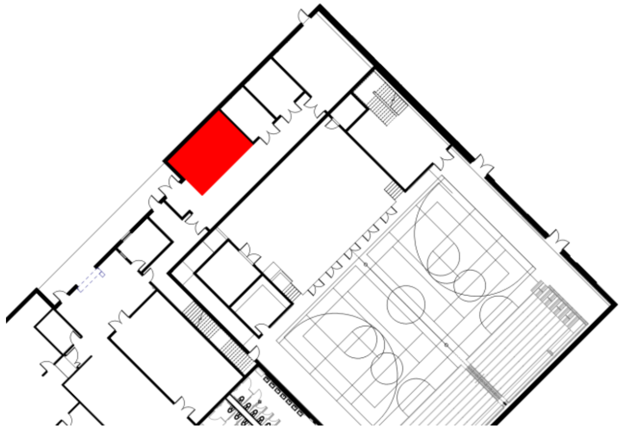
Learning:
What is the purpose of each layer, object and material? What other materials could have been used? Why did the designers choose these materials, in this order?



07 VISIBLE MEP CLOSETS

Large glazed sidelight on two mechanical closets: One showing ventilation coming down from roof-top units, another showing heating / cooling pumps into classrooms.



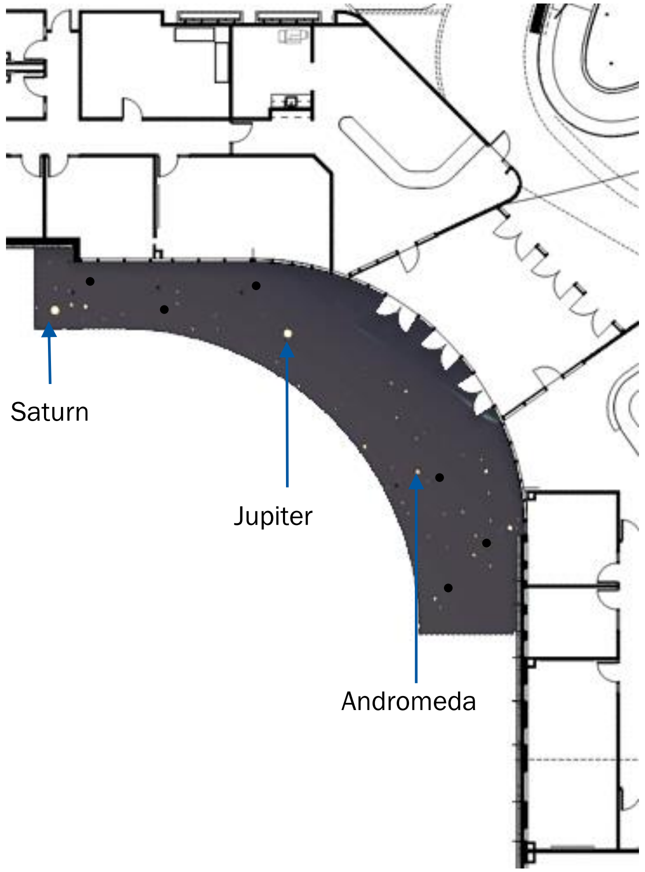


Learning: What does each component do? How do they use (evaporation, condensation, gravity, conduction, convection) to change the temperature of air? Why use water to store energy? What happens when we move the thermostat?

08 CANOPY: NIGHT SKY

The lighting of the canopy will map the night sky on opening day of the school: September 2022, with Jupiter and Saturn visible to the east. Using small / med/ large can lights.

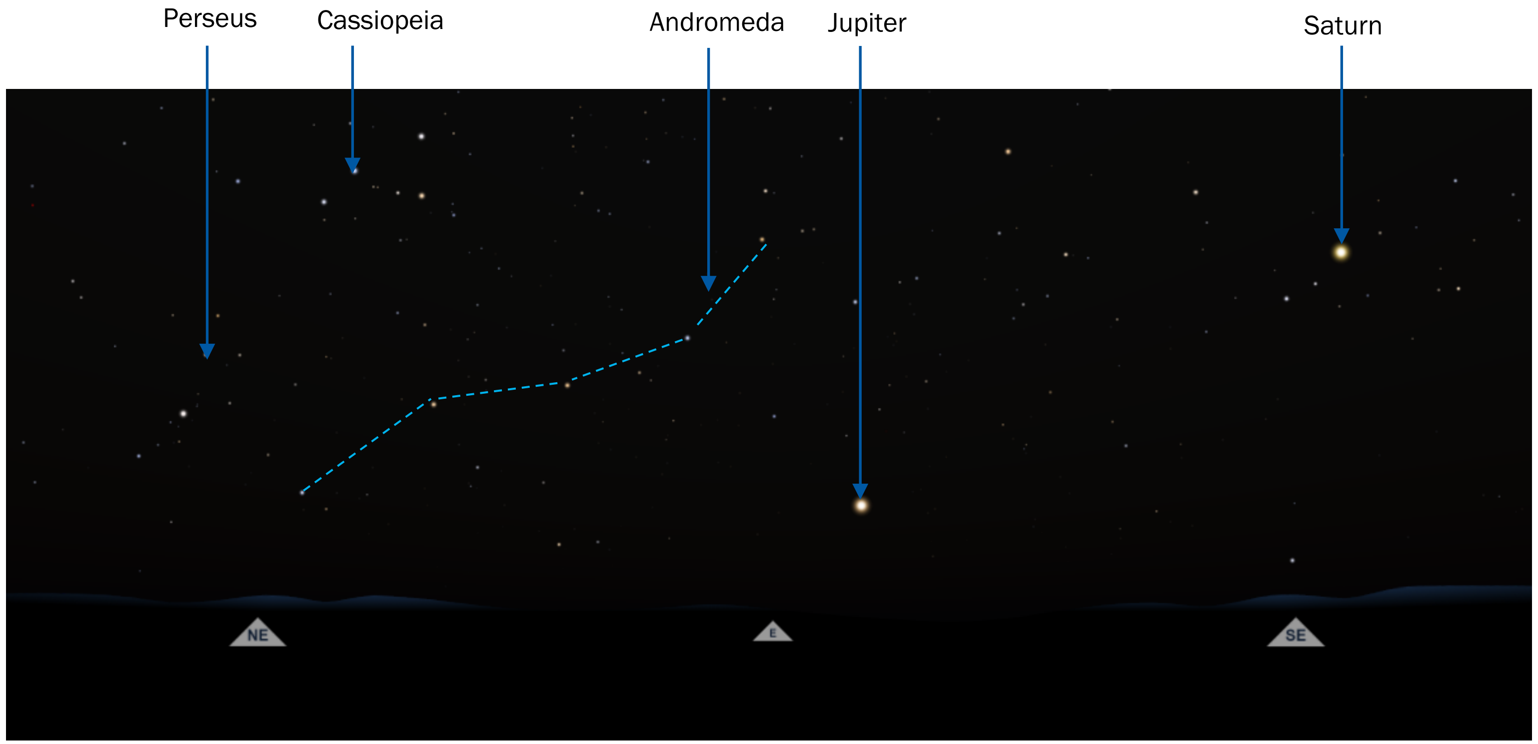
Learning: How is the night sky different tonight? Why is it different?



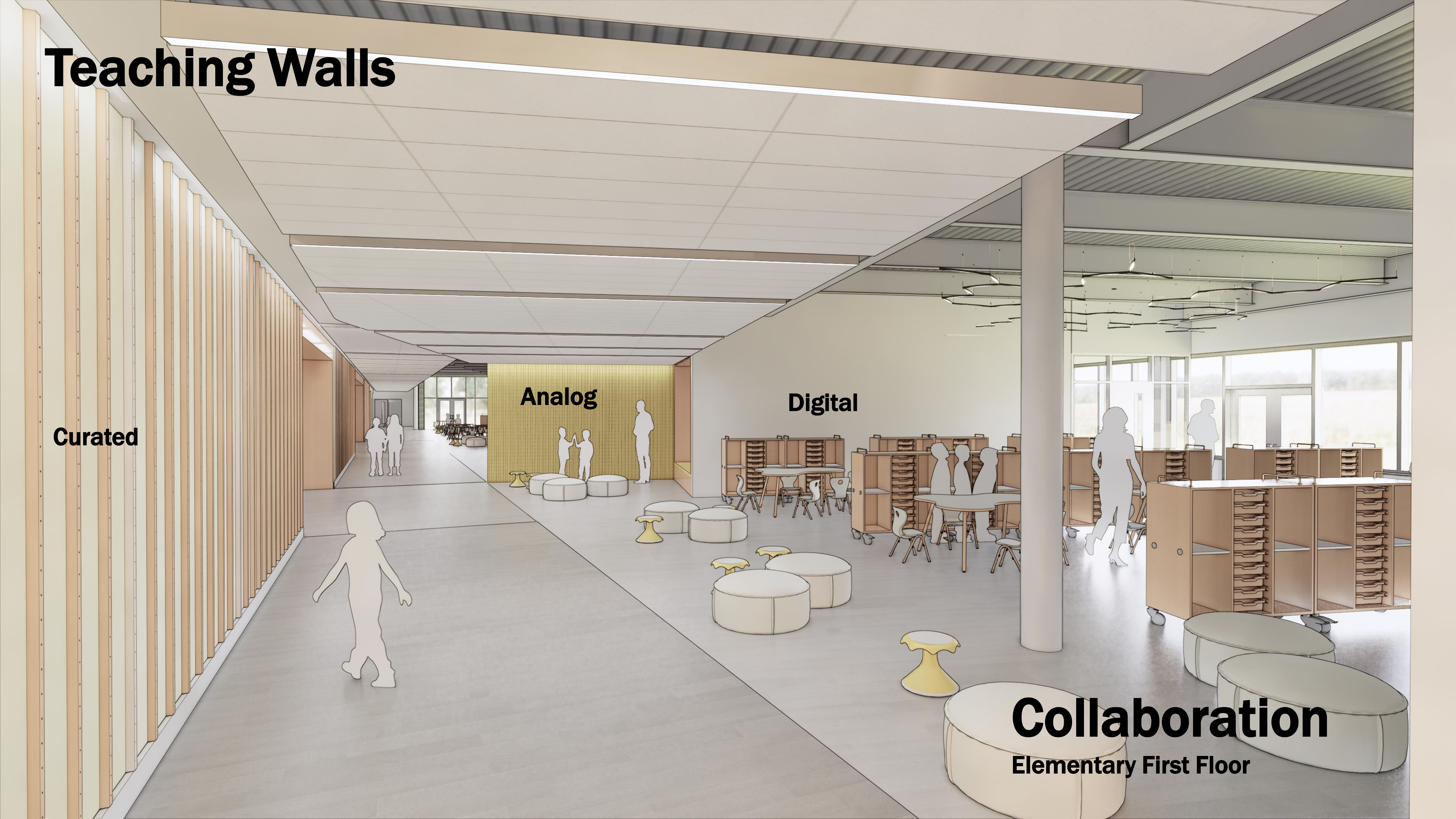
Planets Visible in Pittsburgh

Day: 15 Month: September Year: 2022 Go

	Planetrise/Planetset, Thu, Sep 15, 2022			
Planet	**Rise**	**Set**	**Meridian**	**Comment**
Mercury	Thu 8:22 am	Thu 7:40 pm	Thu 2:01 pm	Extremely difficult to see
Venus	Thu 6:10 am	Thu 7:11 pm	Thu 12:41 pm	Slightly difficult to see
Mars	Thu 11:09 pm	Fri 1:51 pm	Fri 6:30 am	Perfect visibility
Jupiter	Thu 7:56 pm	Fri 8:04 am	Fri 2:00 am	Perfect visibility
Saturn	Thu 6:04 pm	Fri 4:14 am	Thu 11:09 pm	Perfect visibility
Uranus	Thu 9:41 pm	Fri 11:46 am	Fri 4:44 am	Average visibility
Neptune	Thu 7:29 pm	Fri 7:09 am	Fri 1:19 am	Slightly difficult to see



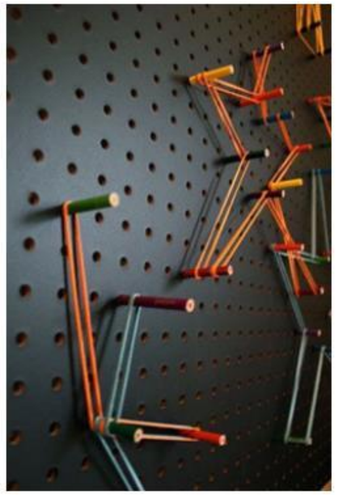
Teachers and Students as Curators


Teaching Walls
Curated
Analog
Digital
Collaboration
Elementary First Floor

Vertical Peg Board

+

+



+

Flexible / Durable

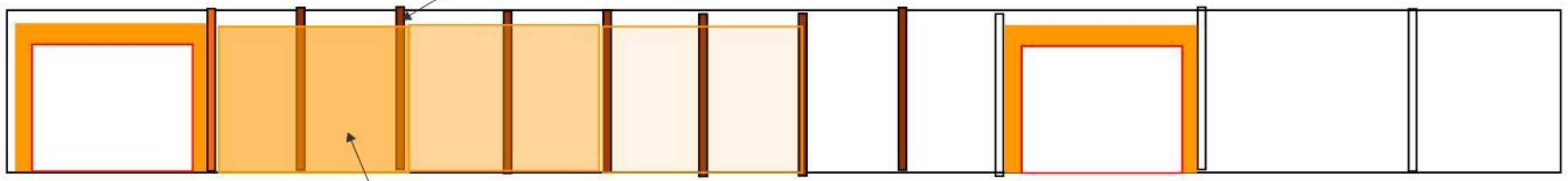
Color & Pattern

Interactive

Collaboration
Walls

"Vertical Pegboard" 2x2 pine strips

Magnetic wall covering behind



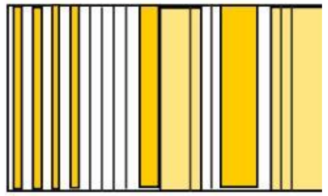
Classroom
Portal

Color way tone or graphic

Engaging at 3 scales

Classroom
Portal

Analog
Walls



"Butcher block" of
120 x 2" wide 60 h

Magnetic Environmental Graphic Maps

Topics

- -Geography
- -Languages
- -Ecosystems
- -Resources
- -Ancestry

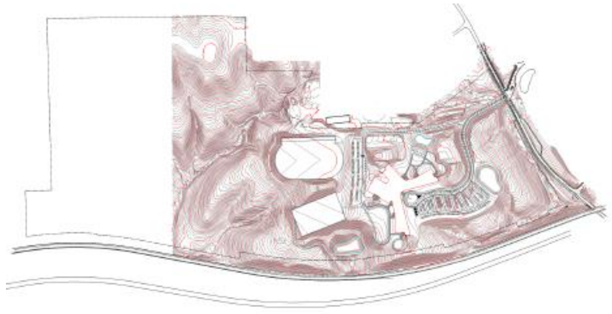
- -Base 10
- -Maps: Symbols
- -Plants + Animals
- -Citizenship: Resources
- Citizenship: Jobs

- -Site Water/Hydrology
- -Species Identified/Counted
- -Design Ideas, Next Buildings
- -Future Events
- -Room Recognition/Award

Graphics + Iterations

World Map

Region Map



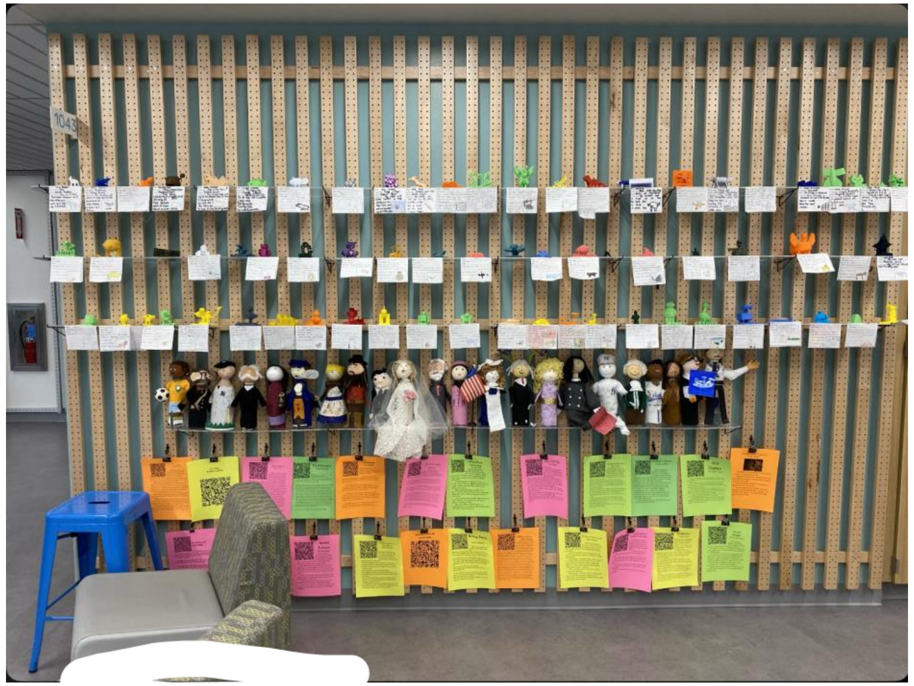
Site Map

Lessons Learned

CANNONDESIGN

What the shared spaces look like today

What the hallways look like today




Gettysburg
KIND

Lessons Learned at Ehrman Crest

COLLABORATION

Smaller classrooms = more teachers push out into collaborative zones

AGENCY

Students and teachers are curators

MOVEMENT

Kindergarteners stay active on the ramp

FLEXIBILTY

Every surface can be used for learning

How can we apply these lessons to spaces for older students?

CANNONDESIGN

Applying Lessons at the Intermediate High School

COLLABORATION

Forums provide digital and analog tools

AGENCY

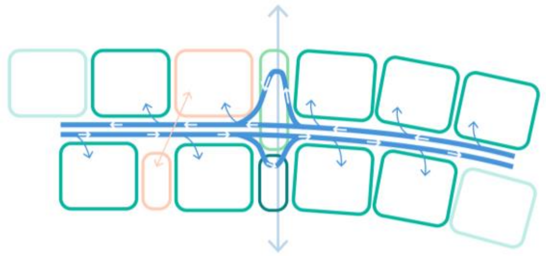
Students consider point of view and perspective throughout the building

MOVEMENT

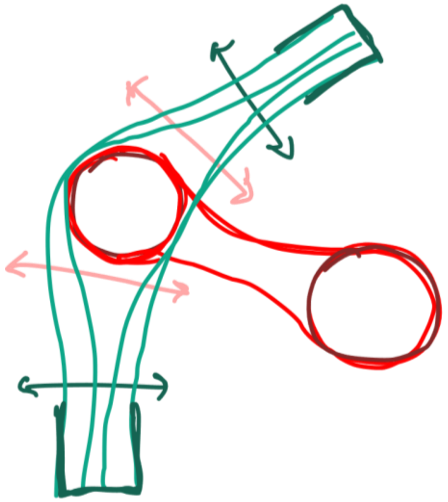
School buildings are linked on multiple floors

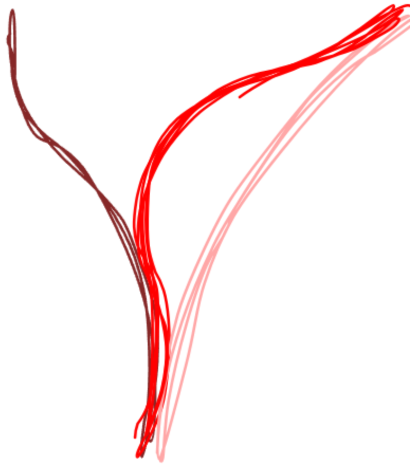
FLEXIBILTY

Right sized instructional space supports future growth

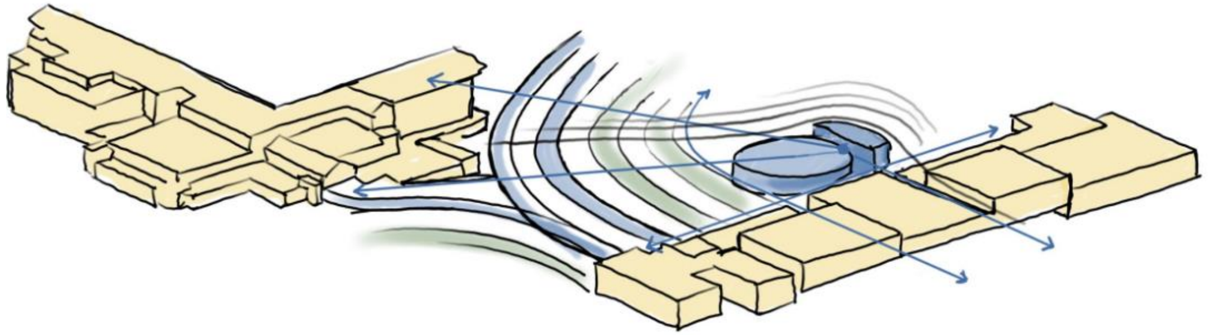


Connecting Destinations





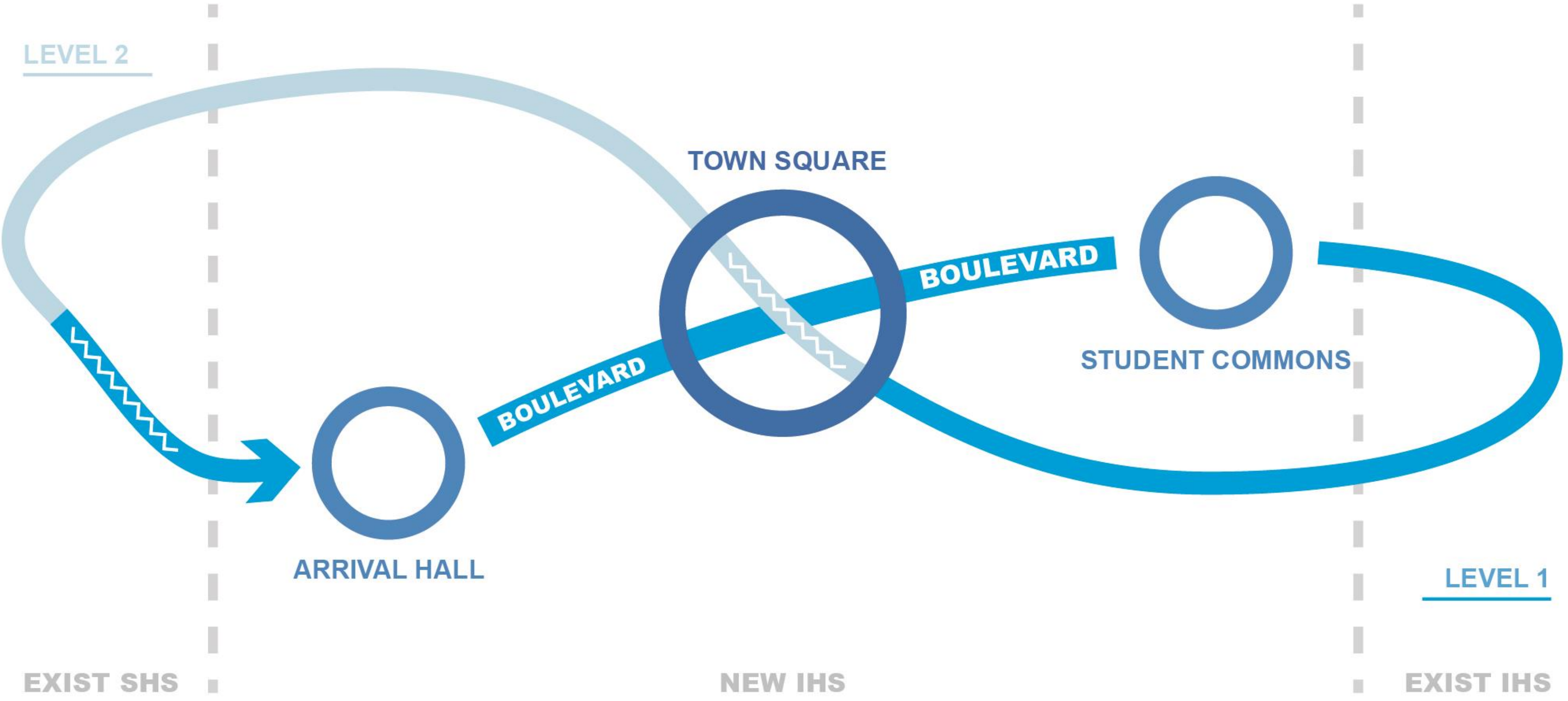
Projecting Inspiration & Beauty



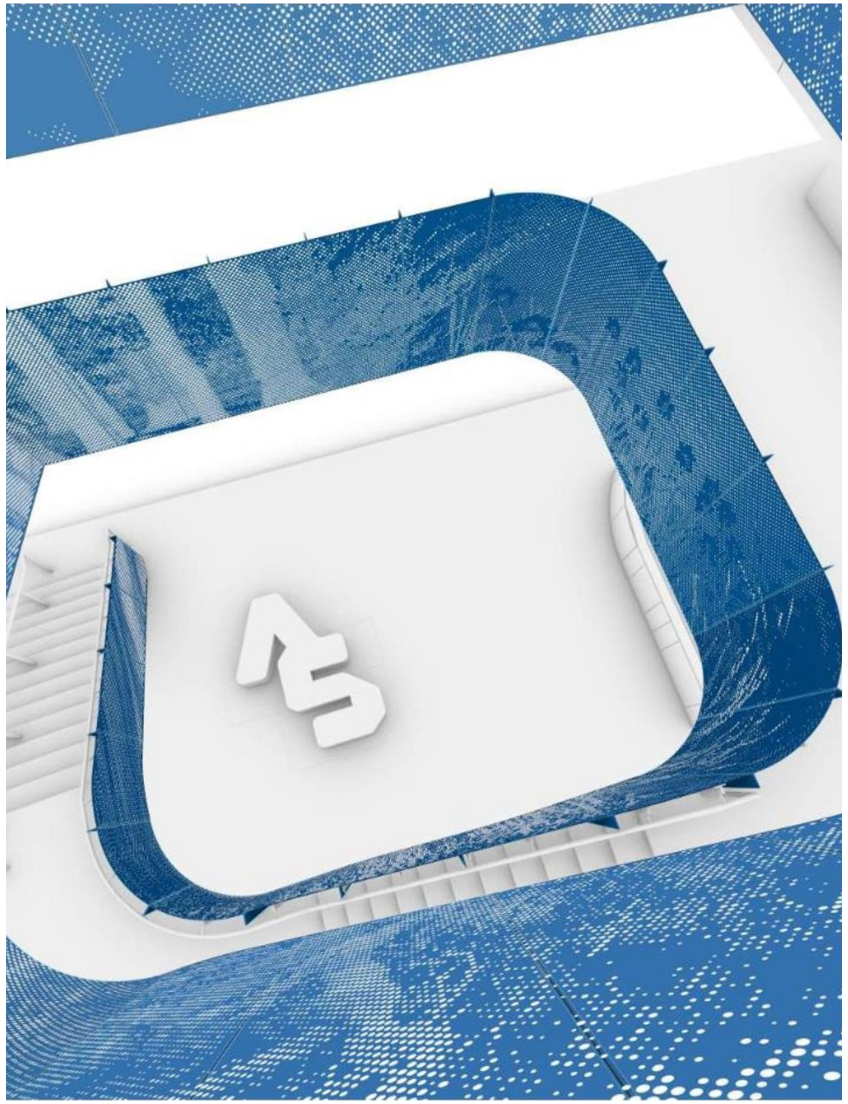
CANNONDESIGN


INTERMEDIATE
HIGH SCHOOL

Circulation



CANNONDESIGN


45

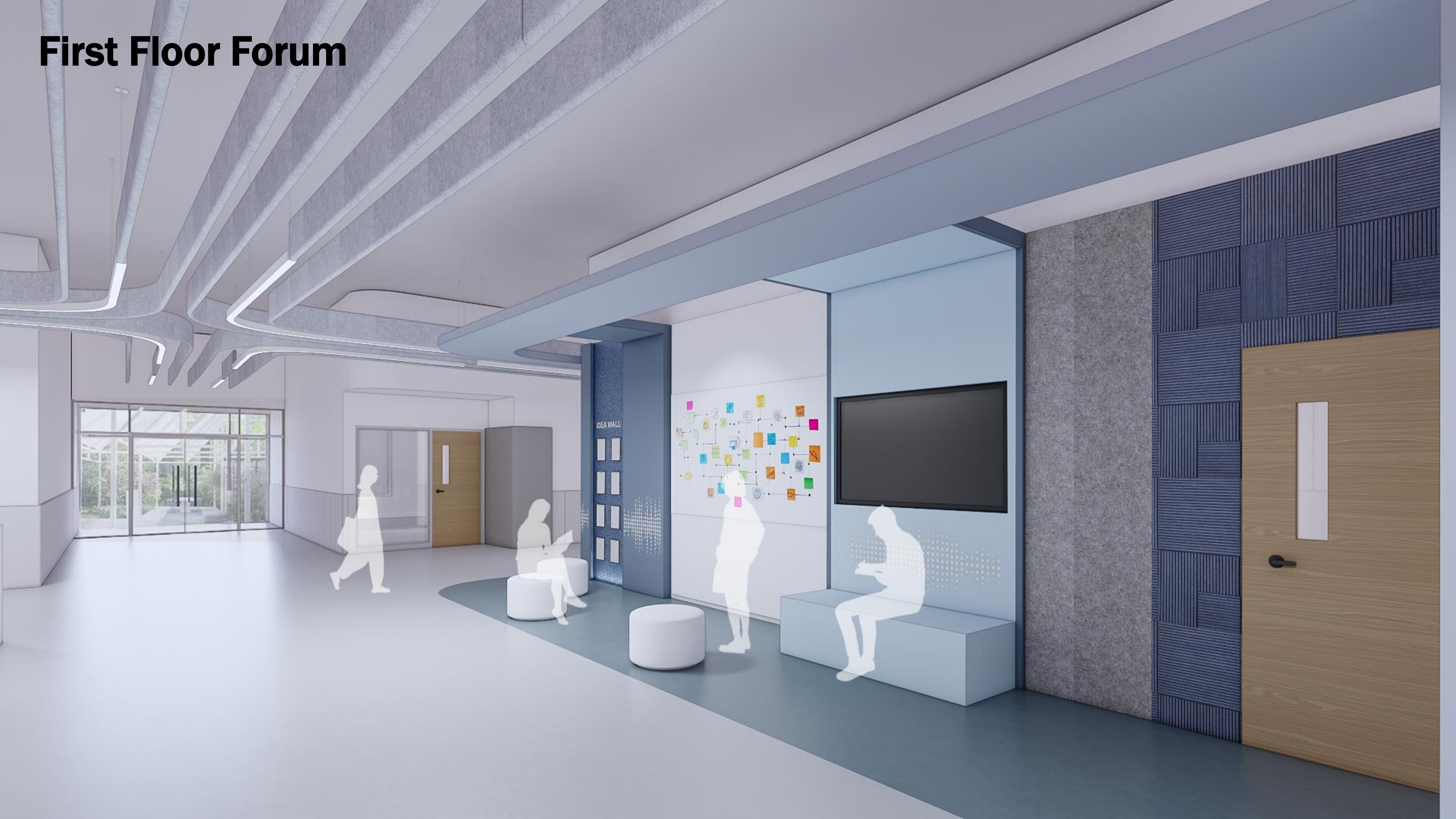
Library

Library

Typical Classroom – Perspective 1

First Floor Forum

First Floor Forum



First Floor Forum

First Floor Forum

Theater Pre-Function

Theater Pre-Function

Theater Pre-Function

Theater Pre-Function


EDspaces
Designing the Future of Education
Columbus, OH | November 5-7, 2025
Please scan the QR code to provide session feedback.
EDspaces
Thank you!
CANNONDESIGN