

# Building Blocks of Growth: A Pathway to Nature and Net Zero

David Mindess Elementary School | Ashland, MA



# Executive Summary

**Complete:** 2023

**Construction Cost:** \$68,000,000

**Project Cost:** \$80,000,000

The new David Mindess Elementary School is located in a distinctly New England landscape, surrounded by rolling hills and near a historic main street. Accessed from Concord Street, a scenic route, the school's tree-lined approach frames views of the new school as the site opens to reveal play fields to the west, the entrance and student drop-off areas to the east, and mature woodlands beyond to the north. This new public school was designed and constructed in collaboration with the Massachusetts School Building Authority (MSBA).

The 105,000 gsf building nestles into an existing wooded hillside to reduce its perceived scale while creating a place for direct exploration of mature native trees and understory plant life. Athletic fields, the play area, and the building itself all overlook an expansive wetland to the south, providing a new campus that expands educational opportunities beyond the classroom. The building's configuration maintains a compact footprint yet still allows the academic 'houses' to shift and stretch east to west across the hillside to create unique outdoor learning nooks and gardens. Large gathering spaces serve as bridge elements between these academic houses, connecting them internally while maximizing both visual and physical access to outdoor educational opportunities.

A high-performance building envelope with efficient insulation and glazing reduces heating and cooling loads. A hybrid heat pump system meets these loads using electricity under most conditions and provides backup during power failures. Future renewables will help achieve the town's net zero energy goals. High-efficiency plumbing fixtures and rainwater management contribute to creating a LEED Silver building.



**Ashland Public Schools**

*Make-up air units have been localized to the northwest corner, out of view from the scenic route and resulting in ample open roofscape for future photovoltaic arrays.*

# School & Community Research and Engagement: Community and Timeline

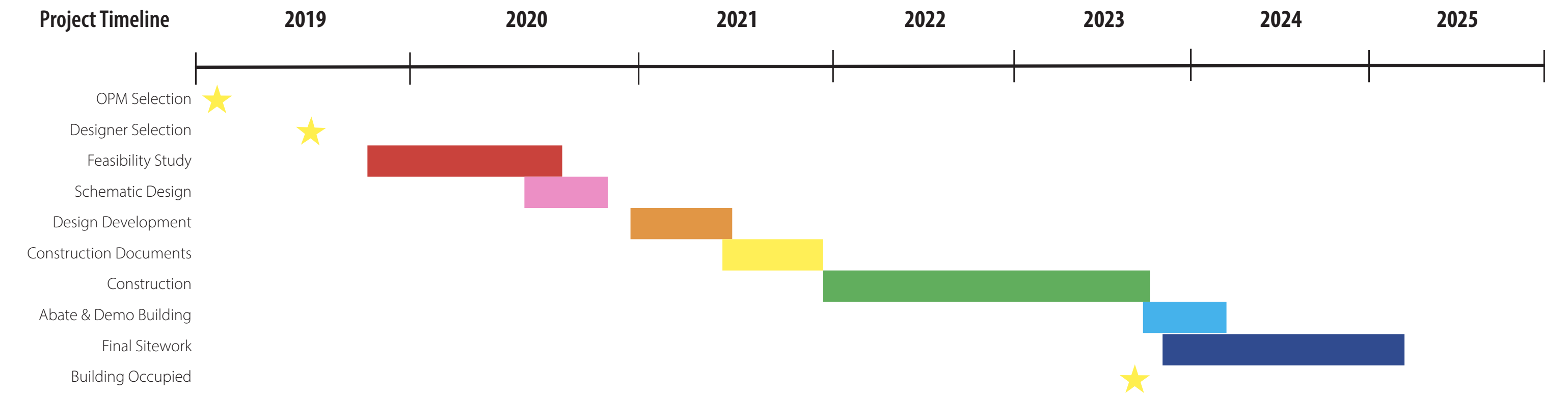


Artist-created watercolor renderings played a pivotal role in visually communicating design possibilities to the community during the early stages of the project, fostering engagement and shared vision.

## Community

Ashland, Massachusetts is a town of about 18,000 residents located in Middlesex County, within the MetroWest area of Boston. It is conveniently accessible via Routes 135 and 126, as well as the nearby I-90 and I-495 highways. The town also has a stop on the Framingham/Worcester Commuter Rail Line. Ashland operates under an Open Town Meeting form of government with a five-member elected Select Board and an appointed Town Manager. There is also an elected School Committee and an appointed Finance Committee. The David Mindess Elementary School Building Committee, appointed by the Select Board, was responsible for managing the new school project with a focus on sustainability, as Ashland is designated a Massachusetts Green Community.

Ashland had five public schools serving students from preschool through high school. The oldest, Pittaway School (1929), housed 120 preschoolers. Henry Warren School served grades K–2 and was over capacity with 660 students in a building meant for 597, prompting the addition of modular classrooms. David Mindess Elementary, served grades 3–5, had 630 students in a building designed for around 600. Ashland Middle School accommodated grades 6–8 and had room for more students, with 615 enrolled in a building built for 977. Ashland High School, built in 2006, was also operating under capacity with 832 students in a facility designed for 1,050. The school district had experienced a nearly 12% increase in enrollment since 2013.



# School & Community Research and Engagement: Stakeholders



Above: a series of public visioning workshops were held across multiple school sites to engage a broad range of stakeholders, including educators, families, students, and community members.



Above: Students celebrate the last piece of steel being placed at the official Topping Off Ceremony  
Below: The Community, Stakeholders and Project Team celebrate the Ribbon Cutting of the new school



Community engagement was fundamental to the evaluation process. The School Building Committee (SBC) worked diligently to maintain an open and transparent process for the public. Multiple community informational forums and meetings we’re held regularly including building committee, school committee, parent advisory council, community informational forums, selectmen, and town departments. During these meetings feedback has been requested, received, and responded to. Main considerations for evaluating the options included educational benefits, minimizing disruption to students, long-term investment to the town, maximizing benefits to the most students across the district, spaces benefiting the community, traffic management, and shared campus resources. The following is a list of key stakeholders involved in this project, each contributing valuable perspectives.

## Students

635 Young Learners

## Elementary School Building Committee

A 18-member committee, representing city government, school district administration, elementary school faculty and administration, and the broader community, was formed to guide the project.

## Community Members

18,000 Residents

## Ashland Public Schools

Ashland Public Schools is located in Ashland, Massachusetts, approximately 30 miles from Boston. They have five schools and educate over 2,900 students who speak more than 20 languages.

## Massachusetts School Building Authority

The Massachusetts School Building Authority (“MSBA”) is a quasi-independent government authority created to reform the process of funding capital improvement projects in the Commonwealth’s public schools. The MSBA strives to work with local communities to create affordable, sustainable, and energy efficient schools across Massachusetts. The MSBA’s grant program for school building construction and renovation projects is a non-entitlement competitive program. The MSBA’s Board of Directors approves grants based on need and urgency as expressed by the City, Town, Regional School District or independent agricultural and technical school and validated by the MSBA. Once the MSBA Board of Directors invites a District to participate in the MSBA’s grant program, the District and the MSBA work together, in a collaborative process.

# School & Community Research and Engagement: Vision Process

## Visioning Sessions

As part of the planning process for the future of Ashlanda’s elementary schools, a series of public visioning workshops were held across multiple school sites to engage a broad range of stakeholders, including educators, families, students, and community members. These sessions offered participants the opportunity to learn about 21st-century educational practices and explore how modern academic programs and school facilities are evolving to support dynamic, student-centered learning. Attendees were encouraged to share their perspectives on what they believe is essential for the future of elementary education in Ashland, helping to shape both the vision and priorities of the district moving forward.

## Educational Program Key Considerations

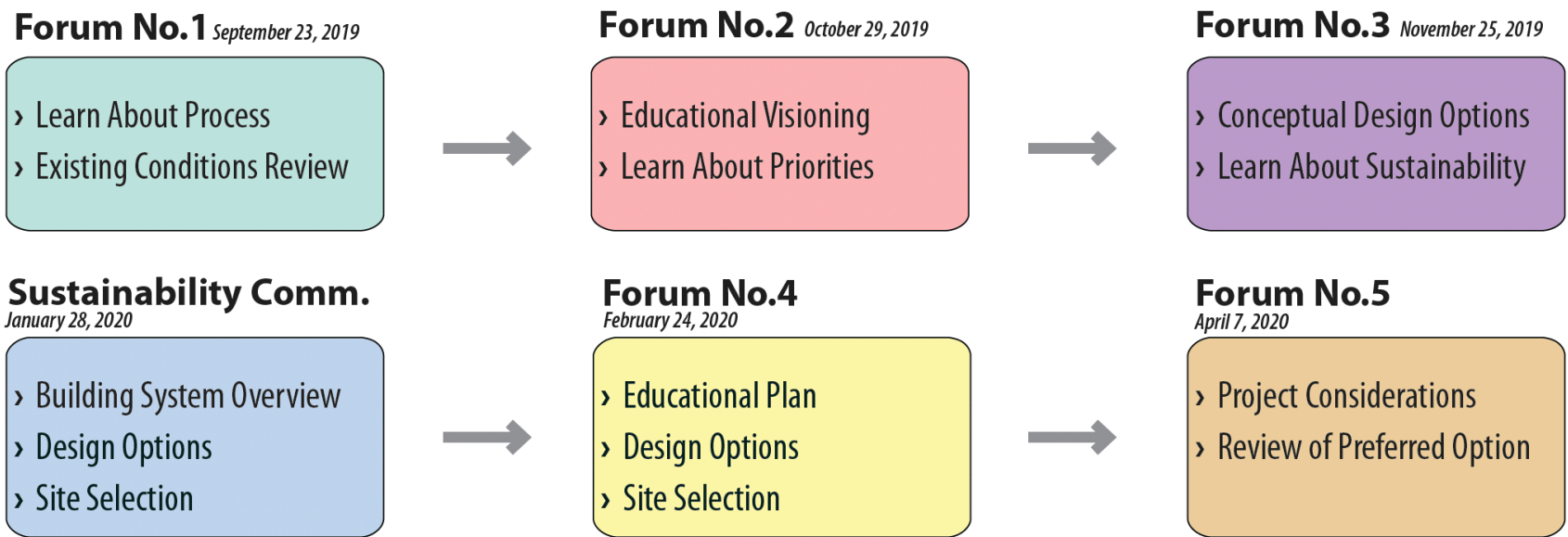
The teaching methodology is set to ensure student, faculty, and staff well-being is supported by teaching strategies, skills, and competencies necessary to maintain social-emotional health. It is designed to improve achievement for all students by providing individualized, equitable, and challenging opportunities in an environment that fosters growth and skill acquisition for each student.

### Educational Benefits of the Preferred Grade Configuration:

- Continuity of current services and programming
- Smooth transition to a Unified Mindess School
- Unify structure and instructional delivery
- Incorporate “Best Practices” currently in place at Mindess
  - Flexible, skill-based grouping
  - Allow for authentic mentoring opportunities
- Vertical and Horizontal Collaboration
- Access to curricular resources
- Potential Clusters and Specialized Programming
- District Curriculum alignment is currently based on a Grade 3-5 model
- Smaller population of students provides opportunity to know parents and students at a deeper level



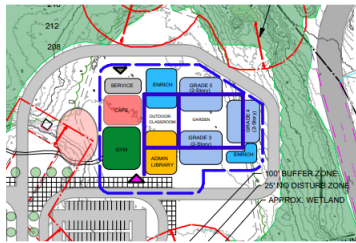
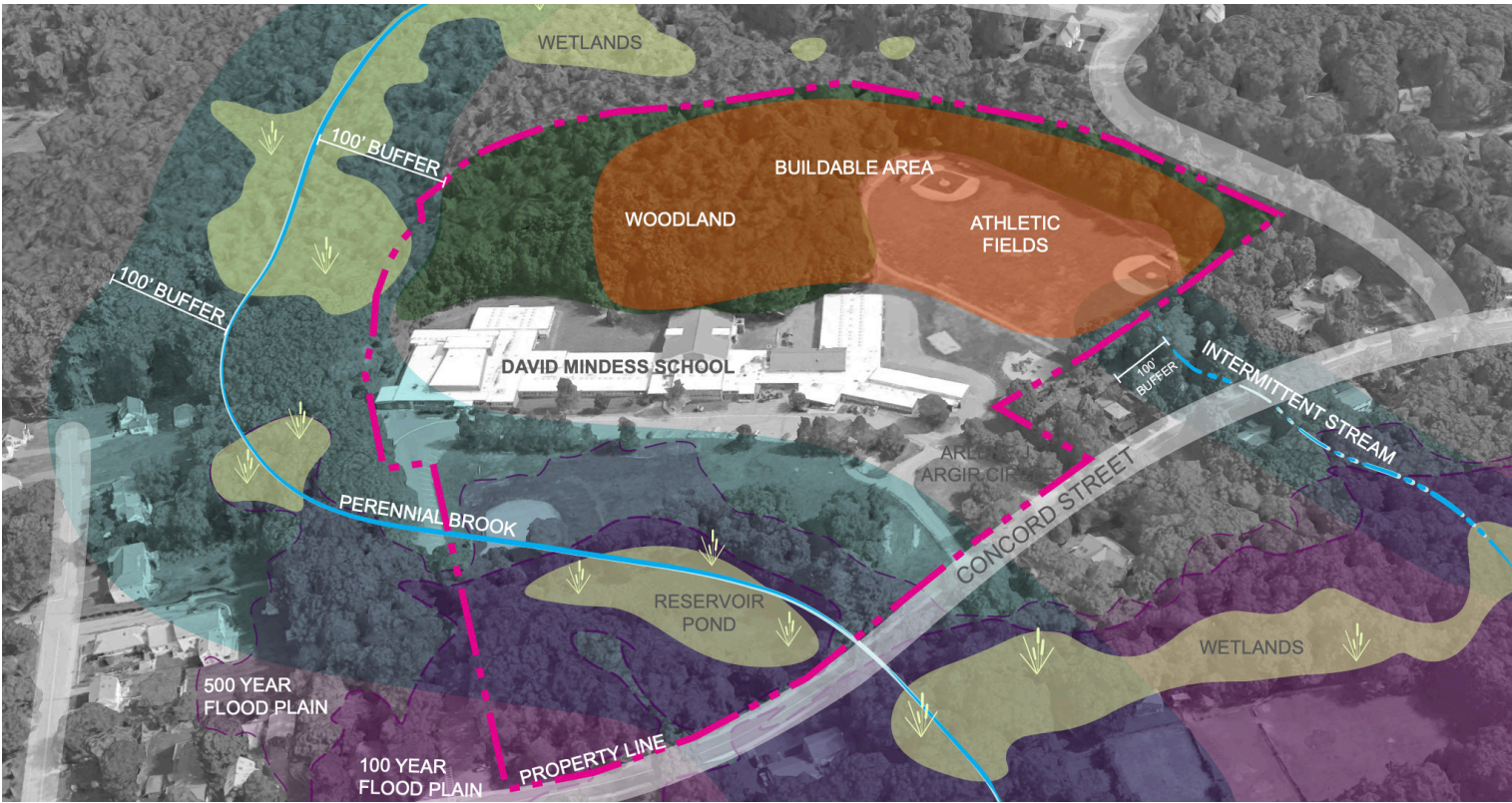
Above: A group of educators share ideas at initial visioning session.  
Below: A series of Forums were held solicit feedback from Community.



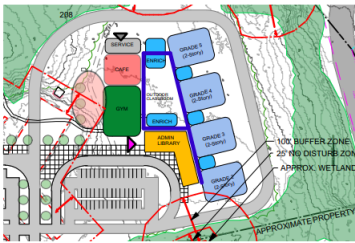
# School & Community Research and Engagement: Site Selection

## Site Evaluation

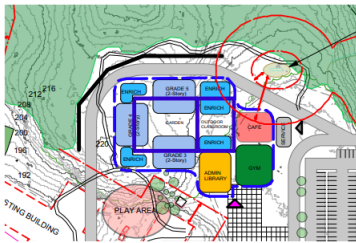
Two sites were evaluated to accommodate the school project. Many design options including a “code compliant” only, addition/renovation, and new construction alternatives were studied at the Mindess Elementary School site along with new construction alternatives at the Middle School site. Ultimately the community decided to move forward with the David Mindess location



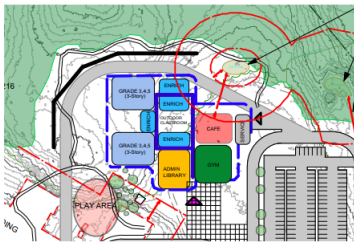
Option 1A, 635 Student Enrollment (2 Story)



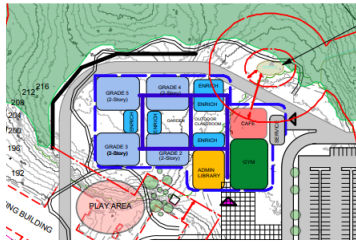
Option 1B, 845 Student Enrollment (2 Story)



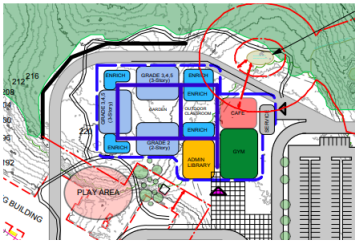
Option 2A, 635 Student Enrollment (2 Story)



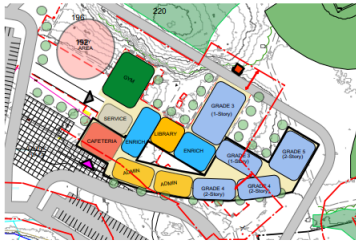
Option 2A, 635 Student Enrollment (3 Story)



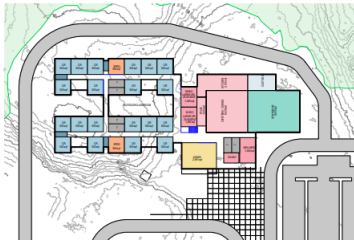
Option 2B, 845 Student Enrollment (2 Story)



Option 2B, 845 Student Enrollment (3 Story)



Option 3A, 635 Student Enrollment (Add/Reno-2)



Option 2A.2, 845 Student Enrollment (2 Story)



Option 2C.2, 845 Student Enrollment (2 Story)



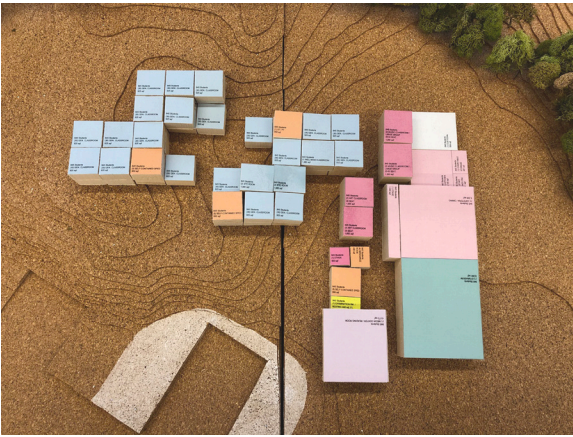
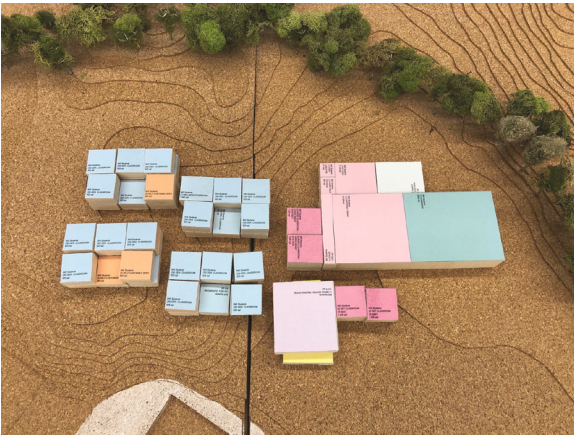
Option 2C, 635 Student Enrollment (2 Story)



Option 2D.3, 845 Student Enrollment (2 Story)



Option 2D, 635 Student Enrollment (2 Story)



## Modeling

Based on the information the design team learned in the visioning workshops, community forums and school building committee meetings they assembled a working study model of the campus using 3D blocks. The model allowed for an inclusive and interactive process which explored many different and evolving planning ideas.

## School & Community Research and Engagement: Results



*Above: Students celebrate the last piece of steel being placed at the official Topping Off Ceremony.  
Below: The Community, Stakeholders and Project Team celebrate the Ribbon Cutting of the new school.*



“In many ways you are the best and brightest and it is our obligation to give you the educational support that you not only need, but that you deserve, To build the future that you desire, To build the future that everyone here desires!”

*Massachusetts Senate President Karen Spilka at the Topping Off Ceremony*

# Physical Environment: Site Plan

## A. Neighborhood Response

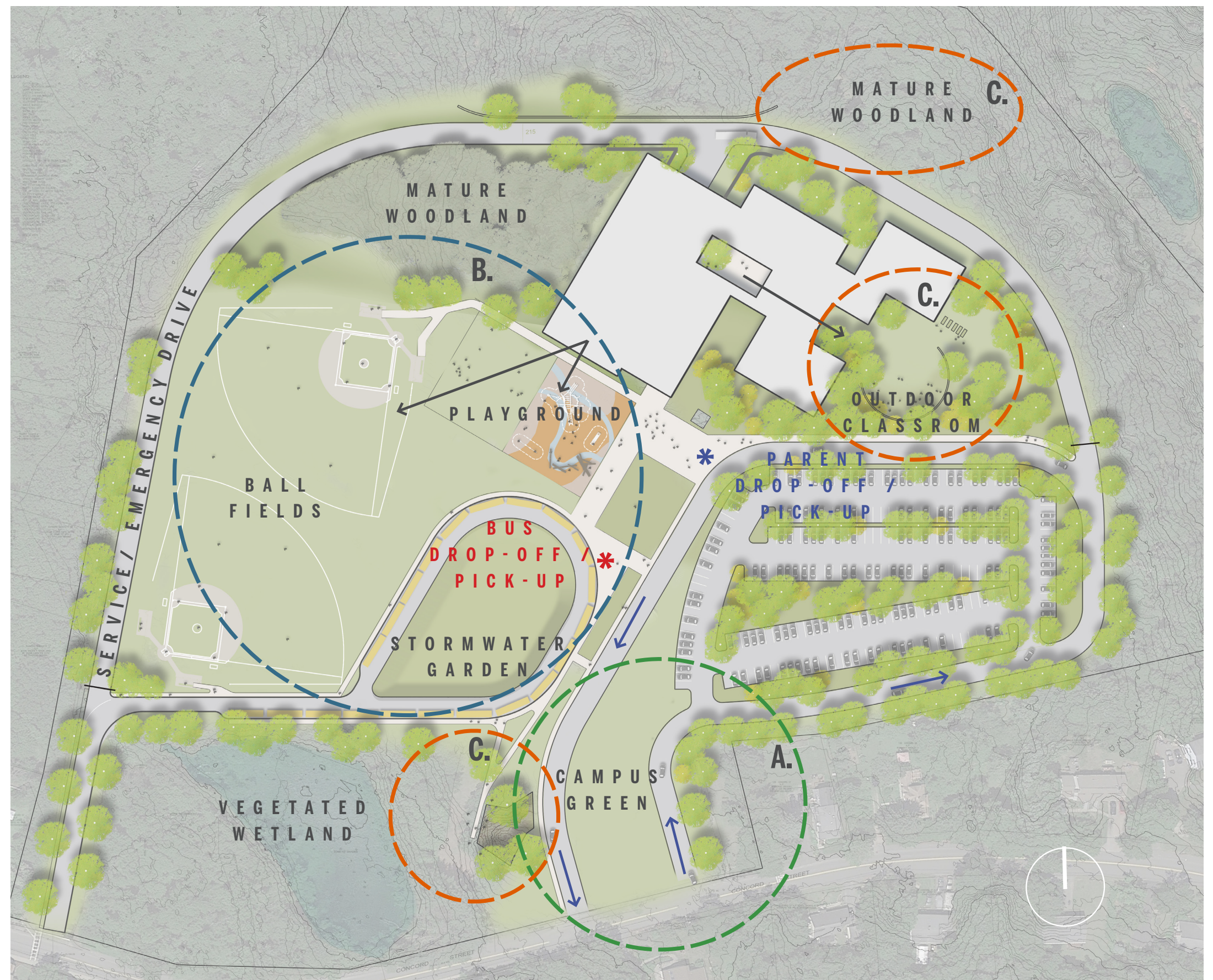
- Dense buffer plantings and existing woodland between residential neighborhood and parking and school building.
- Welcoming campus green along site's frontage on Concord Street.

## B. Community Play / Athletics

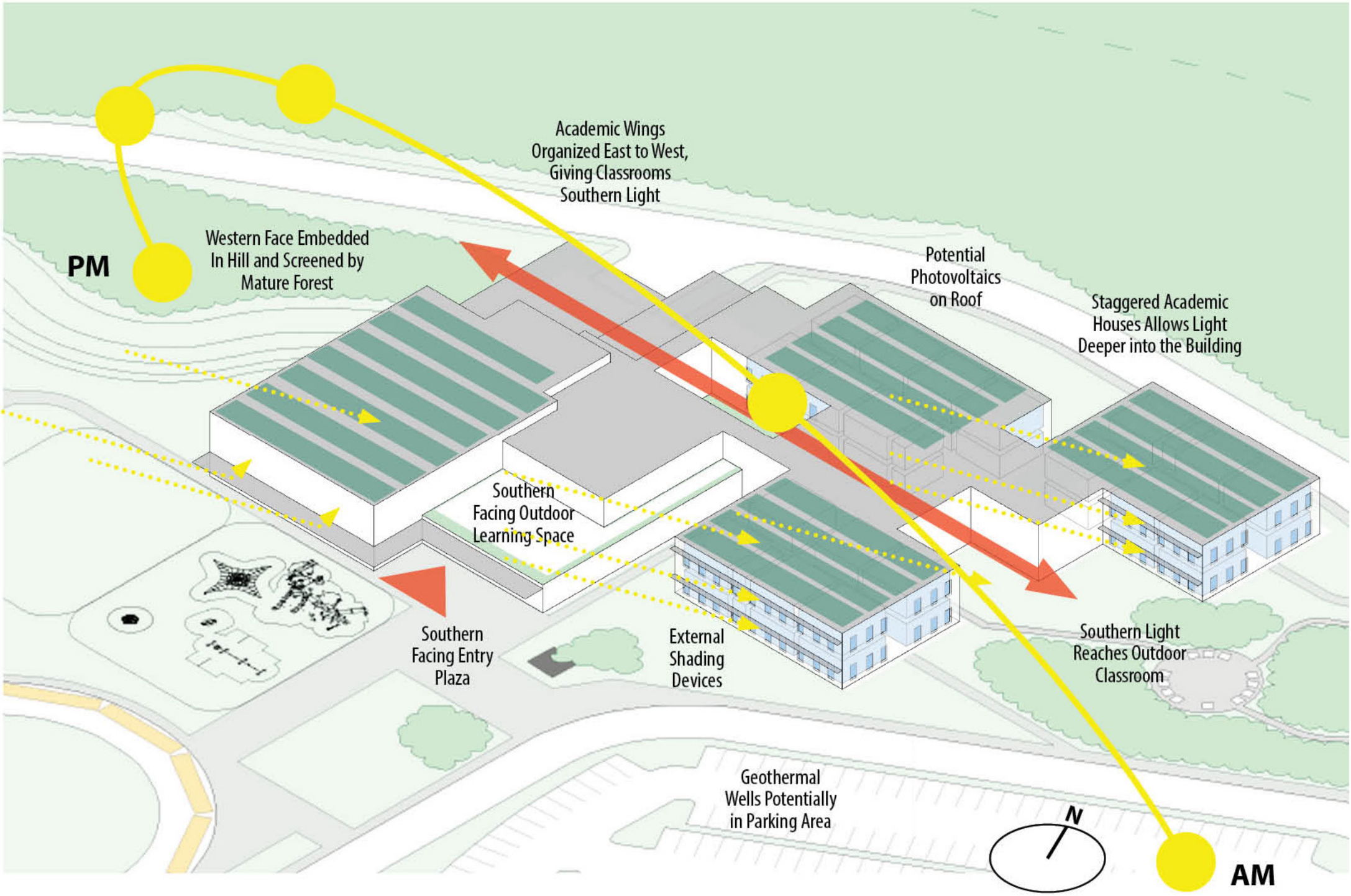
- Interior and exterior programming are linked - Play area and ball fields are located immediately adjacent to the gymnasium and the cafeteria.
- Play area, ball fields, gymnasium and cafeteria are additional resources to the community during non school hours.
- Heavy wooded area to far west between fields and neighboring residences.

## C. Outdoor learning opportunities

- Interior and exterior programming are linked - classrooms, outdoor learning areas and gardens are located at the quiet, recessive portion of the site, providing students with daily views of nature.
- Existing natural features such as wetlands, ledge outcroppings and mature woodlands provide students with unique learning experiences.
- Mature woodland can provide community with areas for woodland trails and exercise paths.



# School & Community Research and Engagement: Sustainability



## Sustainability

The new building is thoughtfully designed to seamlessly transition to electricity with plans to incorporate future renewable energy sources. This will enable the building to align with the town's net zero energy goals.

## Electric Vehicles

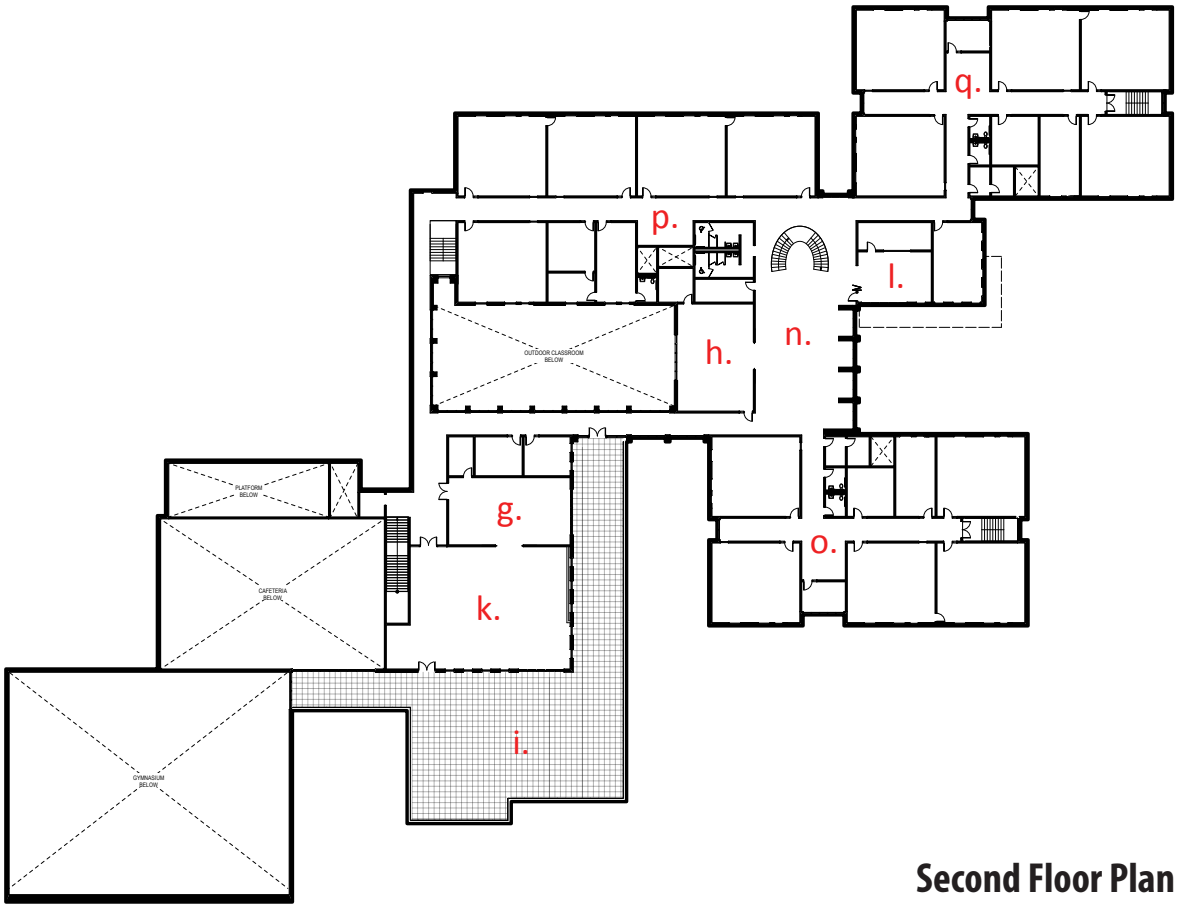
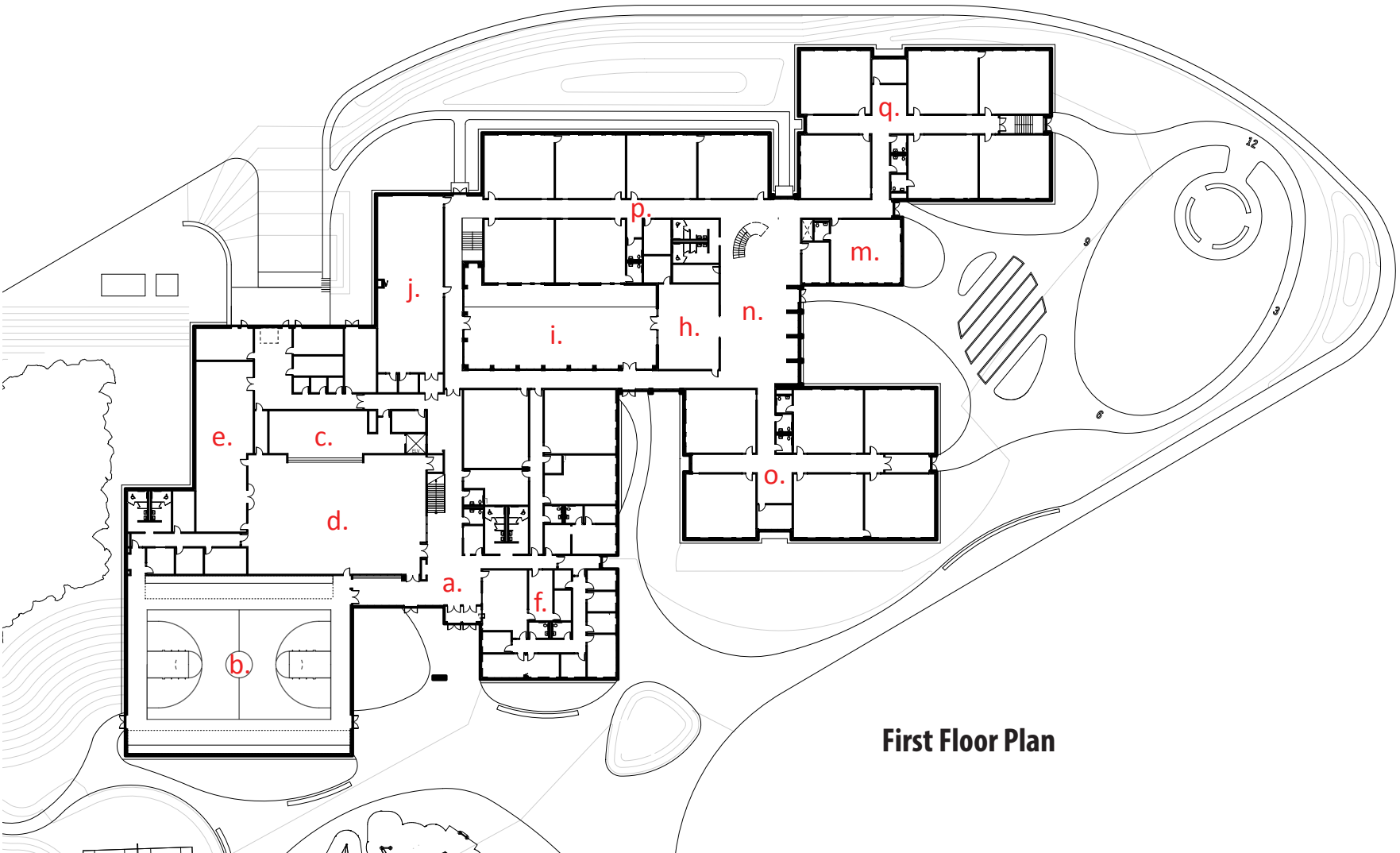
The David Mindess Elementary School plans to be Electric Vehicle ready by installing infrastructure for future Electric Vehicles.

## Down Streaming Equipment

The school down streamed 2,504 pieces of surplus school furniture totaling 74,901 pounds, 37.45 tons, to recipients in Dakar, Senegal through The Reuse Network nonprofit partners.



- |    |             |    |                        |    |                            |    |                   |
|----|-------------|----|------------------------|----|----------------------------|----|-------------------|
| a. | Entry Lobby | f. | Offices/Administration | k. | Media Center               | p. | Third Grade House |
| b. | Gymnasium   | g. | STEM Project Room      | l. | Technology Integration Lab | q. | Fifth Grade House |
| c. | Stage       | h. | Art                    | m. | Special Education          |    |                   |
| d. | Cafeteria   | i. | Outdoor Classroom      | n. | Collaboration              |    |                   |
| e. | Kitchen     | j. | Music                  | o. | Fourth Grade House         |    |                   |





## Physical Environment: Welcoming Entrance

### Limited Irrigation

Only limited irrigation is used at the David Mindess Elementary School since the project team selected native and adaptive plant species. Irrigation is only used at the play fields, reducing the consumption of water.

### Universal Design

The play scape features inclusive elements such as smooth, accessible surfaces, sensory-rich activities, and equipment that accommodates a wide range of physical, cognitive, and social abilities. These features ensure all children can play, explore, and interact together.

## Wayfinding

Each grade level has a specific pop color painted on walls to help young students navigate their school. These colors become a visual element that students identify with, fostering a sense of belonging and group identity.

## Biophilic Design

The school's design integrates views of green spaces to create a calming and engaging learning environment. This connection to nature supports student well-being, reduces stress, and enhances focus, contributing to improved academic and emotional outcomes.



## Commons

The commons provide access to the academic houses, enrichment spaces such as art and outdoor learning opportunities. The space is an active hub supporting team collaboration, gatherings, and casual interactions.

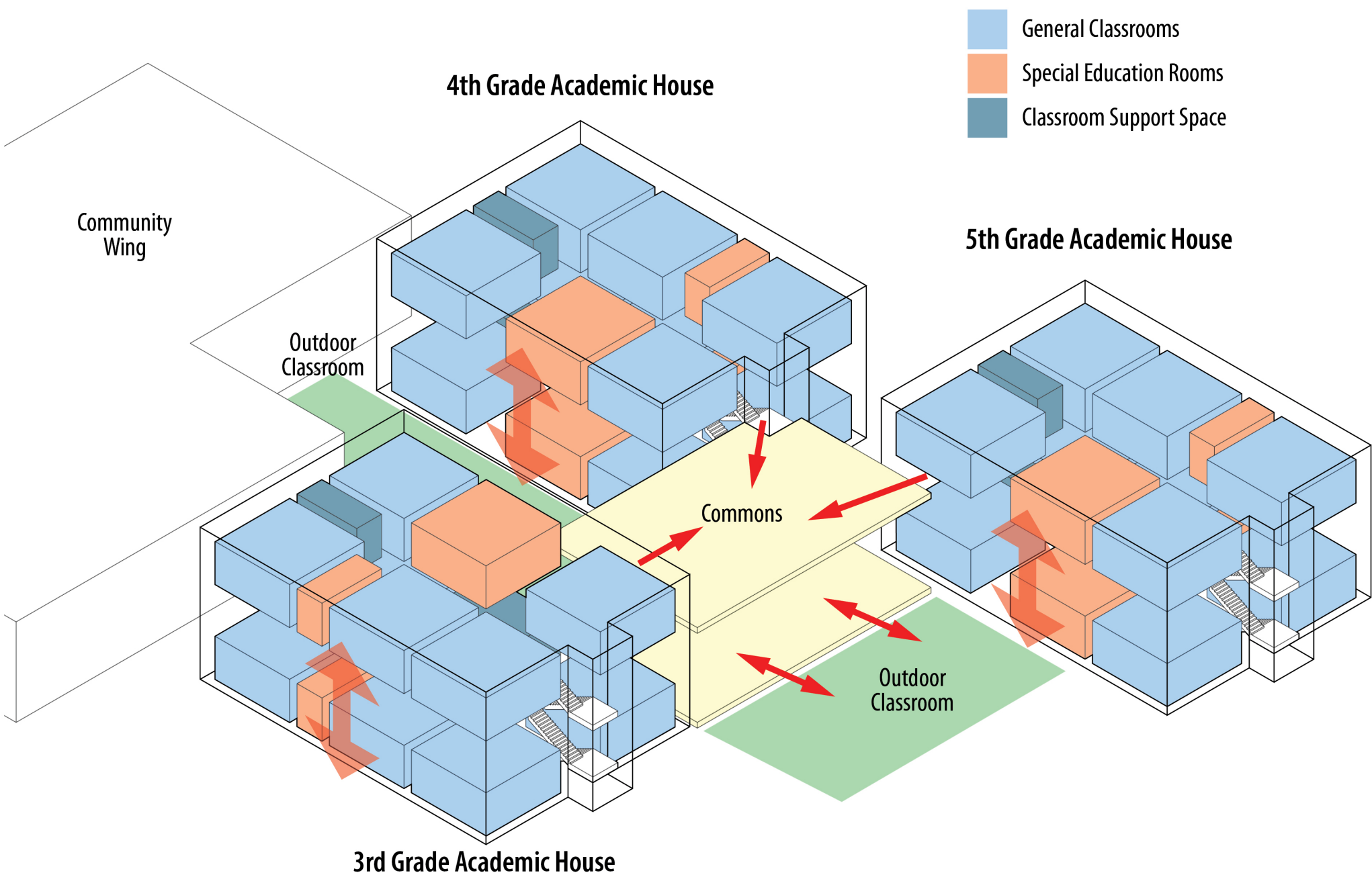
## Building Blocks

To create a building that's scale appropriate to our youngest learners, the building steps back in a series of "building blocks". These blocks may use materials and textures to enhance articulation. Building blocks are recognizable simple shapes and use a playful strategy to break down what could be considered a large building.



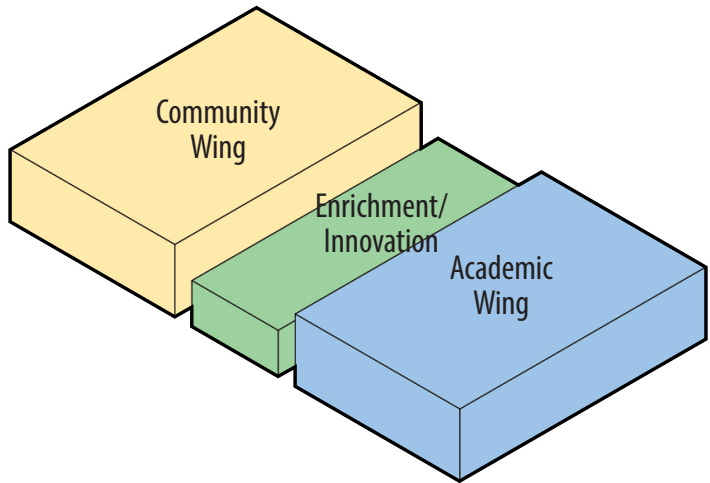
# Educational Environment: Academic Houses

- Each academic house contains special education rooms, classroom support space, and 10 general classrooms with 5 rooms split between two floors.
- Academic houses group classrooms together taking away the need for long hallways.
- This provides more opportunity for outdoor connections (visual and physical) and increases interaction and collaboration opportunities between the academic houses.

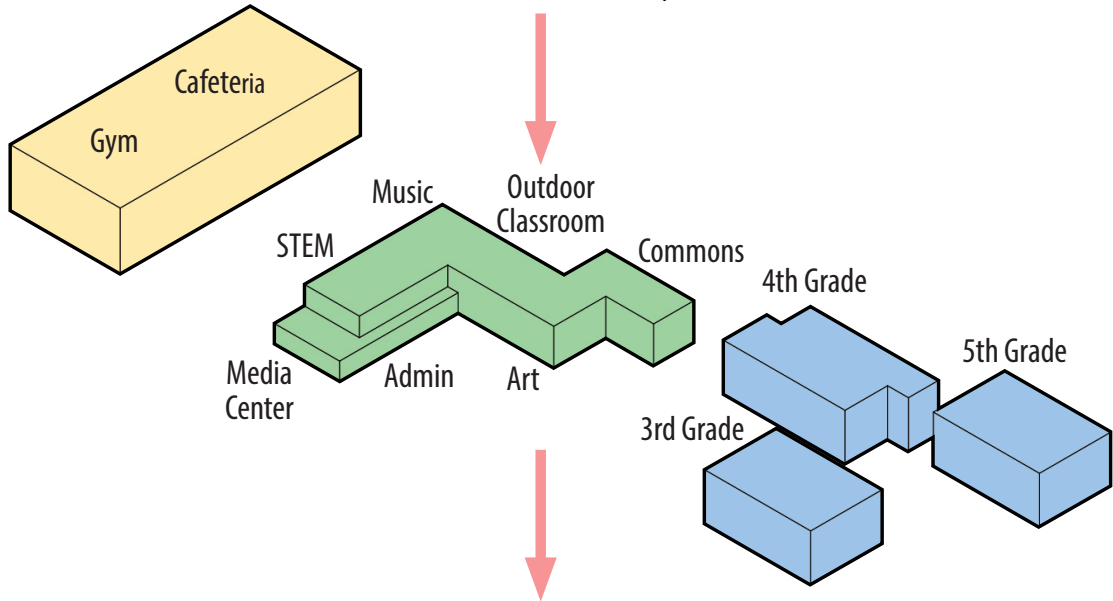


# Educational Environment: Consolidation

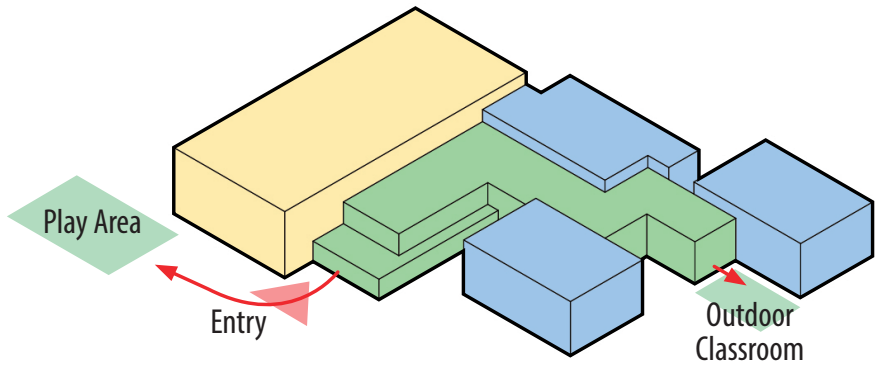
## Basic Building Blocks



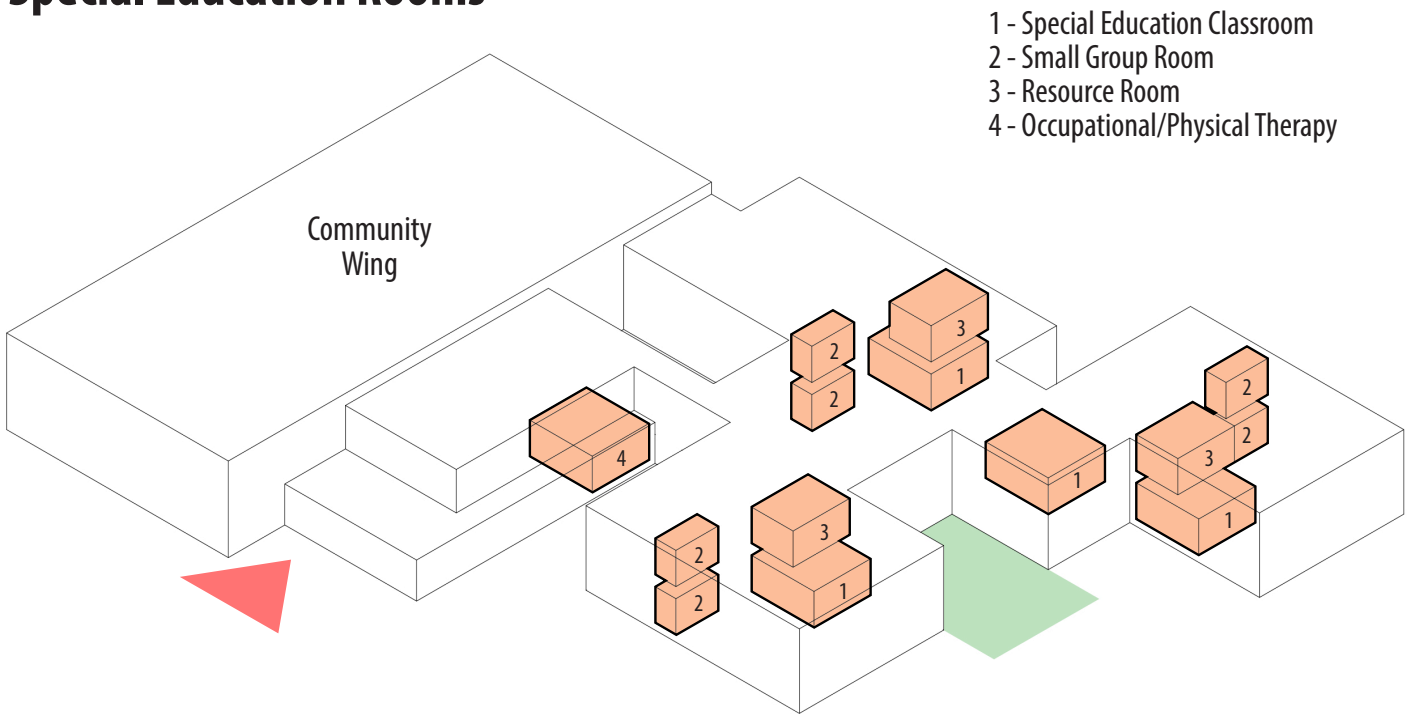
## Block Formation



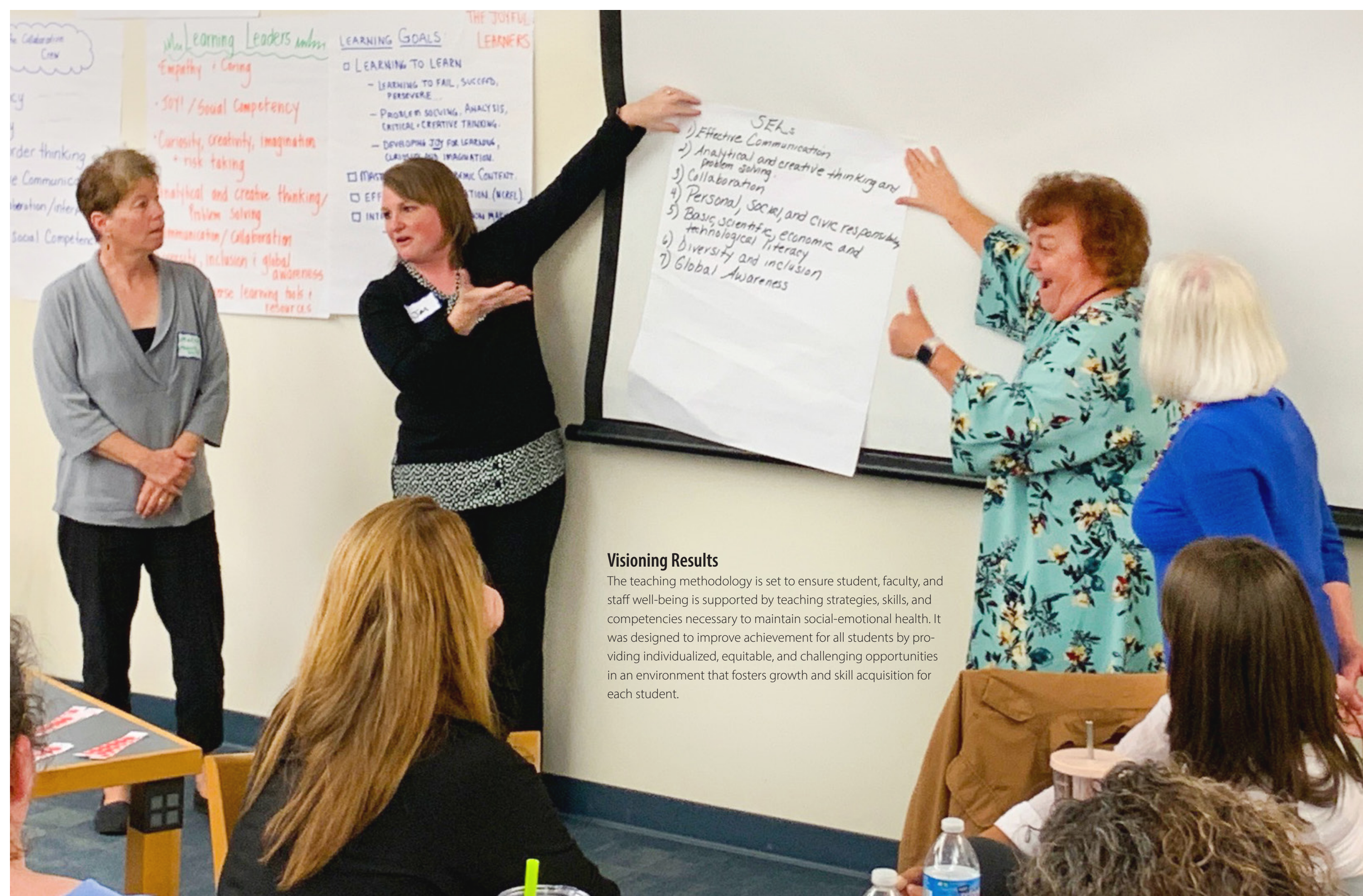
## Consolidation



## Special Education Rooms



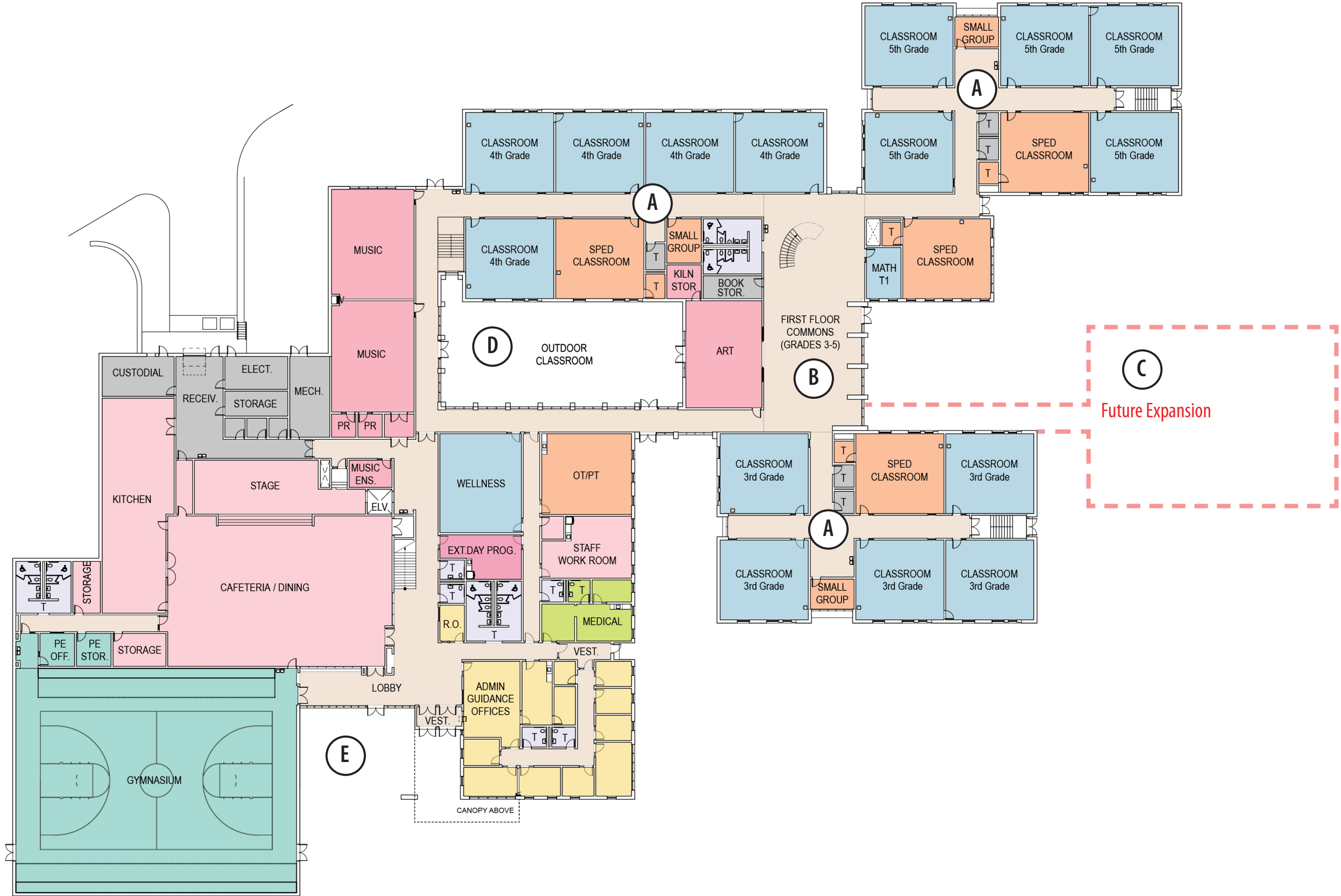
- The community wing becomes one large block housing the gymnasium, cafeteria, stage, and kitchen.
- This zone can be locked off from the academic wings for greater community use and supervision.
- The academic wing is broken up into three academic houses to support each grade.
- There are a variety of enrichment and innovation spaces that connect the community wing.



### Visioning Results

The teaching methodology is set to ensure student, faculty, and staff well-being is supported by teaching strategies, skills, and competencies necessary to maintain social-emotional health. It was designed to improve achievement for all students by providing individualized, equitable, and challenging opportunities in an environment that fosters growth and skill acquisition for each student.

# Educational Environment: Level One



A. Three-Pod Configuration provides distinct grade level academies and an “all-school” experience by floor.

B. Satellite resource library adjacent to the commons provides additional student and teacher support.

C. The commons provides access to the academic houses, enrichment spaces such as the arts and outdoor learning opportunities. This space is envisioned as an active hub supporting team collaboration, gatherings, and casual interactions.

D. The future expansion area provides room for the school to grow while staying within the framework of the new building.

E. Playground and field access directly from the cafeteria and Gymnasium.

G. The Outdoor Classroom provides natural daylight into the core of the school with visual and physical connections to the Arts, music, wellness and OT/PT. The space is envisioned as hardscape for ease of maintenance.

## BUILDING AREAS

- Core Academic Spaces - 31,630 SF
- Special Education - 7,550 SF
- Art & Music - 5,000 SF
- Health & Physical Education - 8,300 SF
- Media Center - 3,528 SF
- Dining & Food Service - 8,369 SF
- Medical - 670 SF
- Admin. & Guidance - 2,771 SF
- Custodial & Maintenance - 2,235 SF
- Other - 400 SF
- Total Gross - 104,900 SF

# Educational Environment: Level Two



- A. Three-Pod Configuration provides distinct grade level academies and an “all-school” experience by floor.
- B. Satellite resource library adjacent to the commons provides additional student and teacher support.
- C. The commons provides access to the academic houses, enrichment spaces such as the arts and outdoor learning opportunities. This space is envisioned as an active hub supporting team collaboration, gatherings, and casual interactions.
- H. Green Roof Area expands the learning environment to the outdoors. This Green Roof Area is accessed from the STEM and Media Center. It is southern facing to optimize solar exposure.
- I. The Media Center and STEM/Project room are adjacent to one another and provide a space for quiet learning and creative exploration with natural southern light, direct outdoor access, and room to spread out.

## BUILDING AREAS

	Core Academic Spaces - 31,630 SF
	Special Education - 7,550 SF
	Art & Music - 5,000 SF
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	Media Center - 3,528 SF
	Dining & Food Service - 8,369 SF
	Medical - 670 SF
	Admin. & Guidance - 2,771 SF
	Custodial & Maintenance - 2,235 SF
	Other - 400 SF
	Total Gross - 104,900 SF



## Outdoor Classroom

This Outdoor Classroom provides natural daylight into the core of the school with visual and physical connections to the Arts, Music, Wellness and OT/PT. The space is predominantly hardscaped for ease of maintenance. Outdoor Classrooms, as well as other outdoor common spaces, have been shown to have positive impacts on physical development, classroom harmony, increase in productivity, and improvement in communication skills through projects and group activity.

# Educational Environment: Results

## Media and STEM Center

The Media Center and STEM/Project room are adjacent to one another and provide a space for quiet learning and creative exploration with natural southern light, direct outdoor access, and room to spread. The Media Center utilizes large windows to bring natural light into an interior space. Studies have shown that natural lighting has positive effects on building performance and human health.

## Sunshading at Class Rooms

Through performance analysis, the sun shading devices at the David Mindess Elementary School were designed to shade only the necessary zone of sunlight to reduce solar gain and glare during warm months, and allow for direct sunlight in cooler months, while optimizing views to the outside.

## Building Material

The David Mindess Elementary School utilizes many materials such as brick, precast concrete and wood. While these products create an exciting architectural experience, the selected products also are low in VOCs and contain recycled content.





## Community Play / Athletics

Interior and exterior programming are linked - Play area and ball fields are located immediately adjacent to the gymnasium and the cafeteria. Play area, ball fields, gymnasium and cafeteria are additional resources to the community during non school hours.