Doherty Memorial High School



Massachusetts School Building Authority

Funding Affordable, Sustainable and Efficient Schools for Local Communities

LPA|A

newvistadesign

Envisioning Future Ready Schools

AGENDA

1. **Introduction and Setting the Stage** | John Staley, DMHS Principal
2. **Visioning Process** | David Stephen, New Vista Design
3. **Detailed Programming** | Christina Bazelmans, LPA|A
4. **CTE Programming** | John Staley, DMHS Principal
5. **Design Impacts of Visioning** | Chris Lee, LPA|A
6. **Final Design and Unique Spaces** | John Staley, DMHS Principal
7. **Conversation Panel / Questions**

JOHN STALEY | Principal

INTRODUCTION AND SETTING THE STAGE

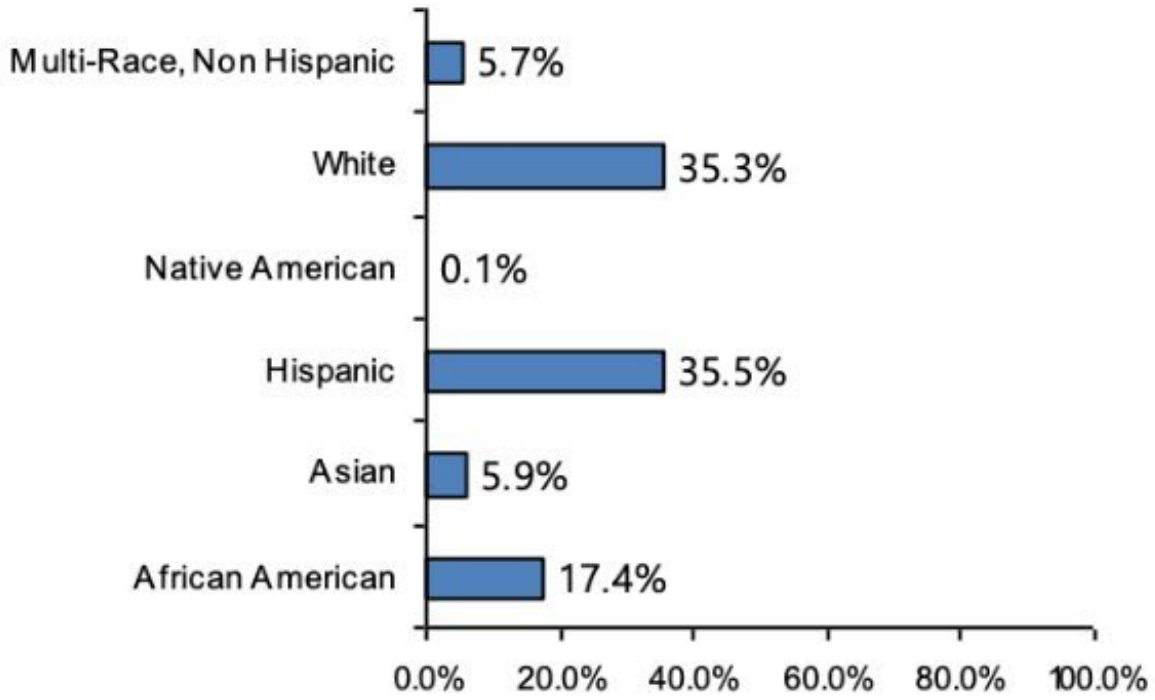


Quick Facts

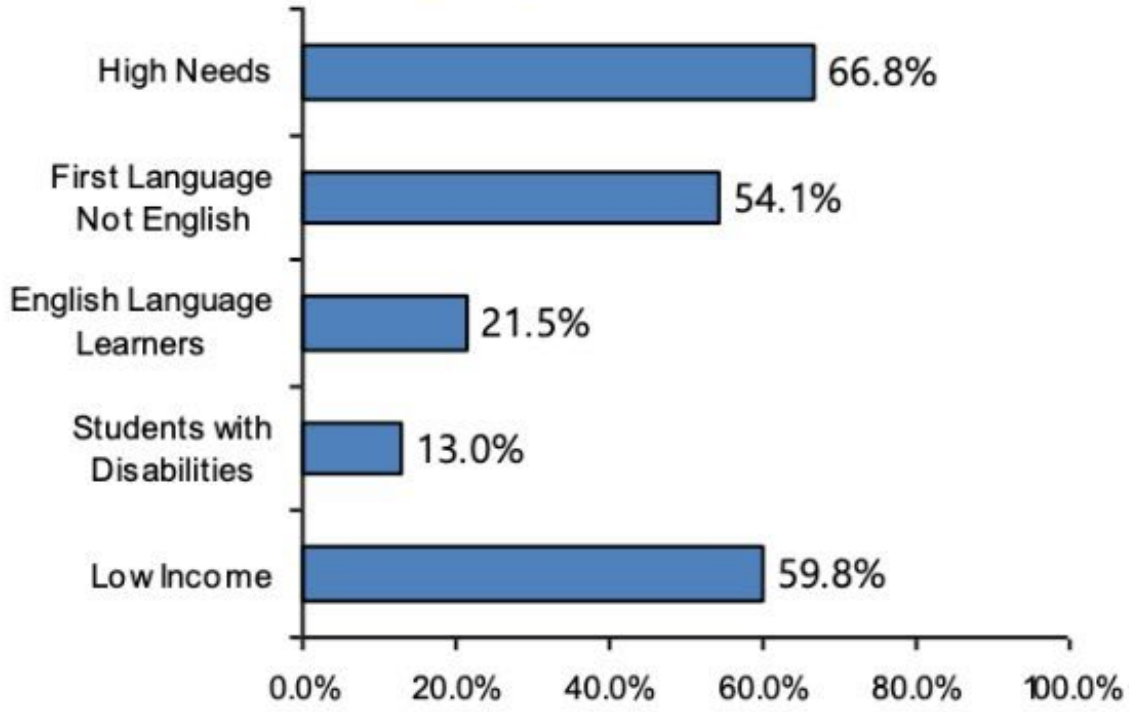
Quadrant	Doherty	Enrollment	1,573
Grades	9-12	Graduation Rates	89.1%
Year Built	2024	Student Attendance	90.0%
Square Footage	422,000		



Student Race And Ethnicity



Student Demographics



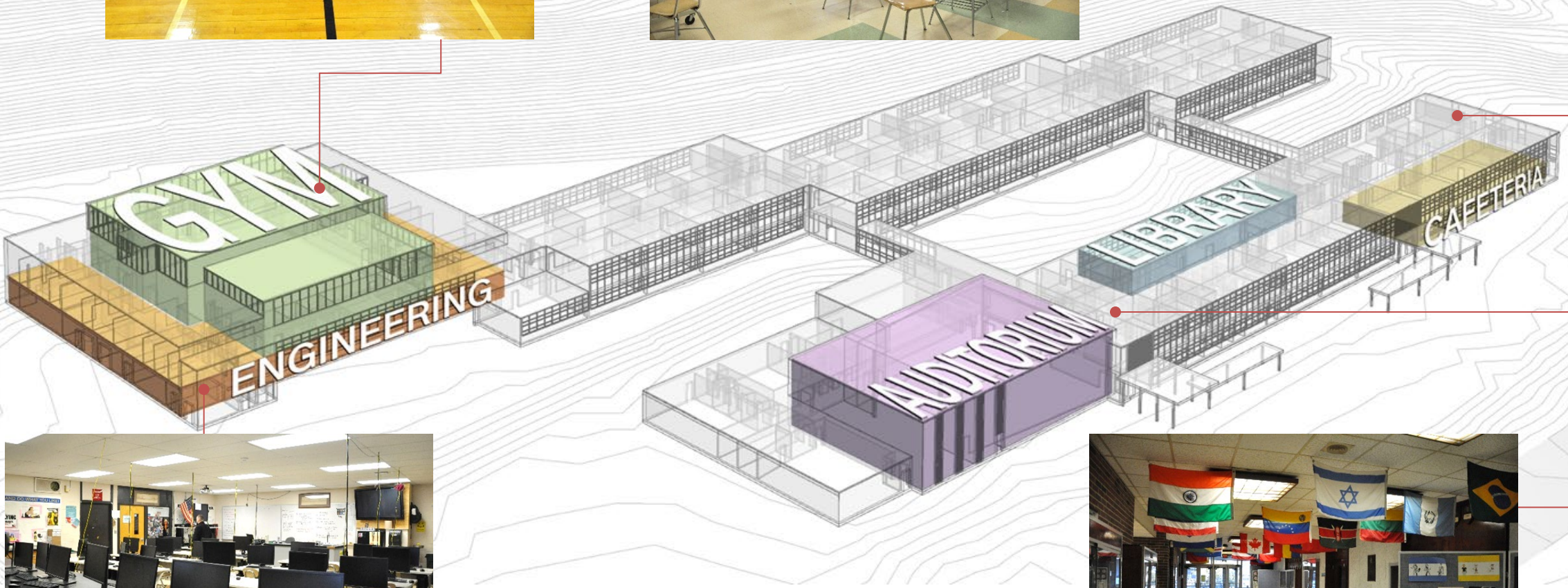
EXISTING CONDITIONS

Robust Athletics Program



Community Partners





Ch. 74 Engineering & Technology Program

A Melting Pot of Cultures & Languages





DISTRICTWIDE VOCATIONAL SCHOOL









CITY OF WORCESTER

DAVID STEPHEN | New Vista Design

THE VISIONING PROCESS



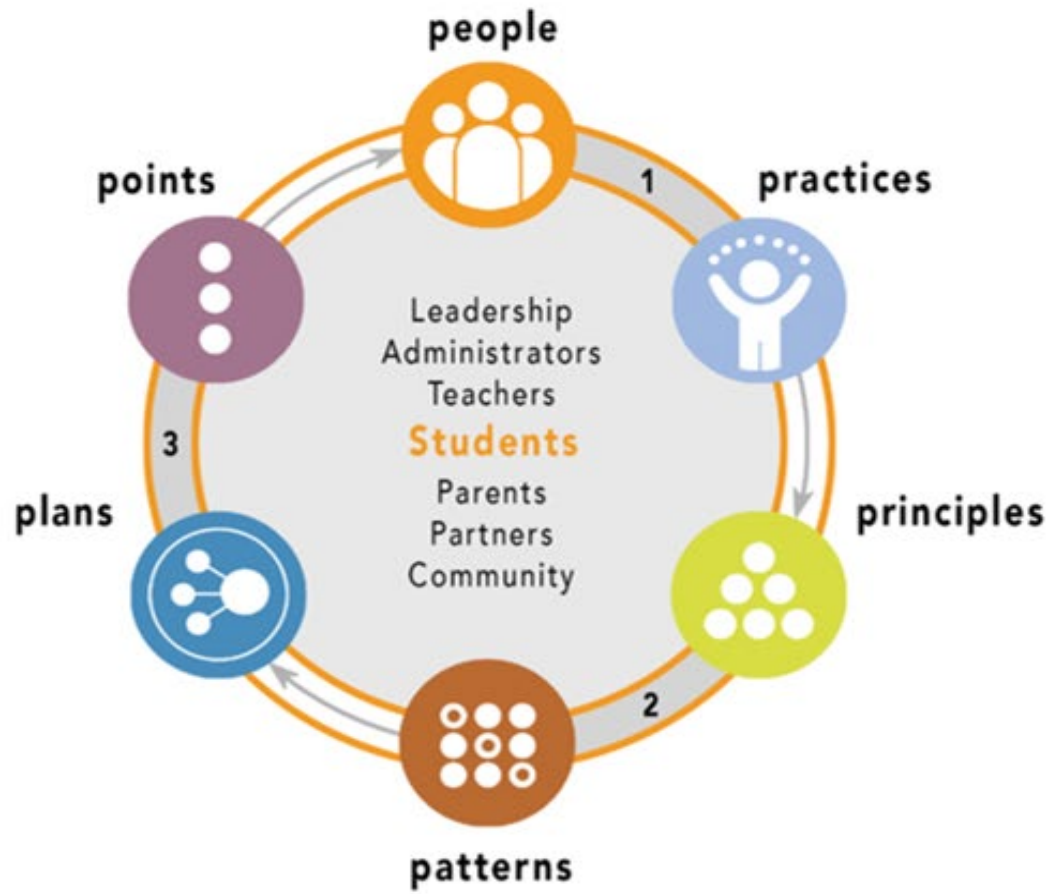
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The Visioning Process

Engaging, customizable, and inclusive

- key people
- desired practices
- guiding principles
- design patterns
- adjacency plans
- talking points

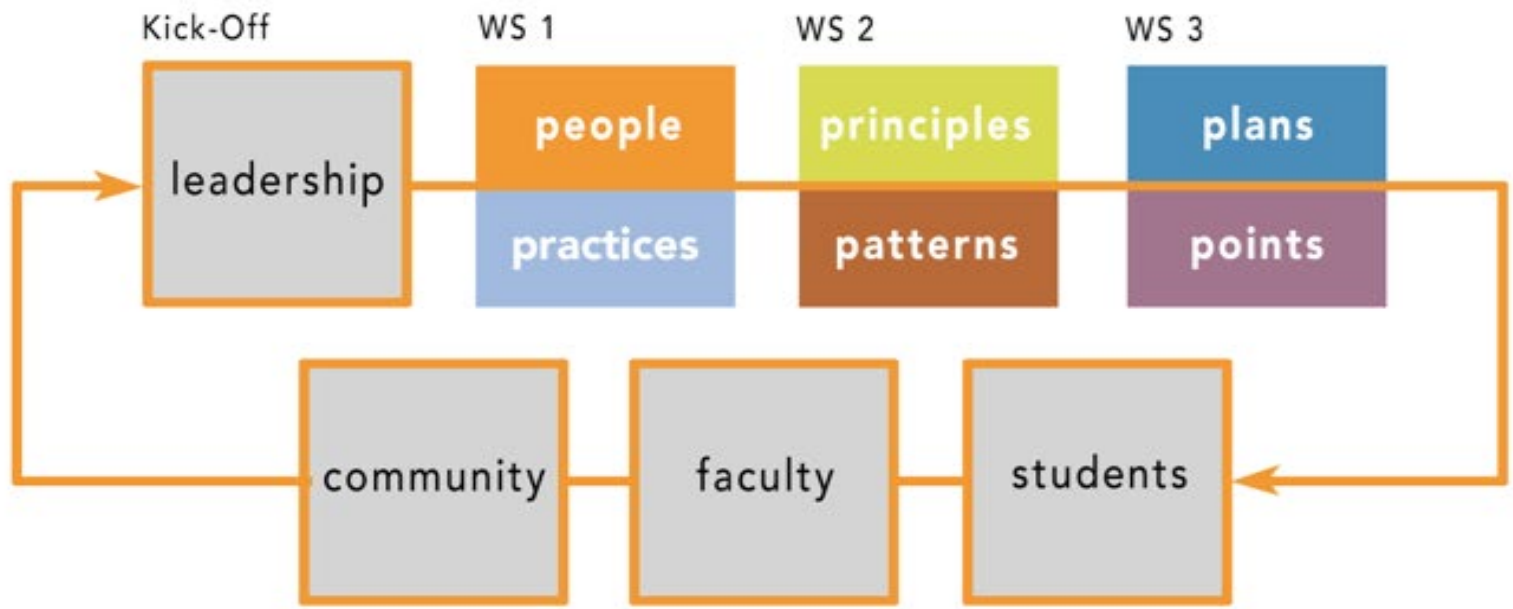


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The Visioning Process

Engaging, customizable, and inclusive

- Leadership
- Teachers
- Specialists
- Students
- Parents
- Partners
- Community



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Future Ready Learning Goals

The following set of priority "21st Century Learning Goals 1.0 for Doherty Memorial High School students was developed by the Educational Working Group (EWG) during Workshop One. Four teams of five participants worked to create their own set of learning goals, after which each team presented to the larger group. Each team's list was then grouped by like goals, with each Learning Goal receiving 5 votes for appearing on an original list.



Civic Responsibility
- Empathy, Caring and Humility
- Multi-Cultural Literacy and Global Awareness
- Social Skills and Reasoning
- Service and Compassion
- Integrity and Ethical Decision Making
- Respect and Inclusion

Creativity
- Culture of Innovation
- Curiosity and Imagination
- Initiative and Entrepreneurship
- Joy

Critical Thinking and Problem Solving
- Assessing and Analyzing
- Computational Thinking
- Understand, Apply, Create

Mastery of Academic Content
- Academic Excellence and Diversity
- Career Pathways

Collaboration and Leadership
- Learning to Live and Work Together
- Embracing Diversity

Communication
- Digital Age Literacy
- Global Communication
- Oral, Written and Presentation Skills
- Expression of Identity & Mental Health

Adaptability and Resilience
- Managing Complexity
- Responsibility for Learning
- Learning to Learn/Self Direction
- Perspective

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Priority Design Goals

The following priority goals for the design of the renovated and/or new Doherty Memorial High School were recorded during the participant introduction section of the Educational Working Group's (EWG) Workshop One that took place on June 5, 2019. Priorities have been grouped by theme. The EWG is a group of approximately 20 participants that includes Worcester Public Schools leadership, as well as administrators, teachers, parents and community partners.



Community Use

- Multi-functional building
  - Community use / after school
  - A community area for gathering
- Community Resources
  - Food pantry
  - Clothing
  - Washer/dryer

Welcoming and Inclusive

- Build on inclusive / welcoming aspect of school
- Welcoming universal design
- Multi-lingual signage - environment of welcome
- Locker rooms / restrooms / bathrooms for all / LGBTQ – safety
- Confidential meeting spaces

Supporting Innovative Programming

- More classrooms that allow for flexible learning
- Adequate technology for all classroom spaces
- Designing spaces that adapt to future use
  - Tap into innovative thinking
- An area large enough for whole school assembly
- Library & media Increased support for grade 9 - important transitions
- A language room - for community and students
- Dedicated student study areas
- Large group instruction areas
- Distributed dining
- More showcase areas
- Spaces for clubs

Flexible, Adaptable and Sustainable

- Flexible enough to not be outdated quickly
  - Systems adaptability
- A building that seeks LEED certification
- A net zero building environmentally integrated into site
- A building that will stand the rest of time for 50 years
- A school with room to grow 1700+
- Adequate site - if on Doherty site - improved traffic, etc.
- A site that provides the appropriate space/footprint
- Make sure all info gathered makes it into design

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Priority Design Goals

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Career Pathways

- Career pathways for post-secondary prep
- A design that accommodates different career pathways/trades
  - Multi-use labs-shops
  - A program for childhood education
- All the arts incorporated into the building
- More space dedicated to Radio Station, TV Studio, Instrumental, Podcasts
- Big and small opportunities
  - Greenhouse
  - Kiln
  - Fields



Wellness and Athletics

- Field house & gym
  - Address large number of kids doing track and field
- Having fields close to school
- A separate weight room/windows/lock
- Multi-purpose outdoor athletic complex
- A wellness facility that accommodates new health and wellness
- Room for yoga and relaxation

Thermal Comfort and Ease of Use

- All core systems work well
- Windows that open
- Ventilation systems as appropriate
- Wider hallways
- Improved traffic patterns
- Adequate parking for staff, students, visitors, deliveries

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Priority Future Ready Design Patterns

The following set of priority "Future Ready Design Patterns" for the design of the renovated and/or new Doherty Memorial High School was developed by the Educational Working Group (EWG) during Workshop Two and further refined during Workshop Three.

A. Clusters of Learning (42 votes)
- Teacher Teaming
- Classroom Neighborhoods
- Teacher Work Areas (Teams, Grade)
- Special Education Spaces
- Interactive and Connected Spaces



B. Sustainability (40 votes)
- Natural Light



C. Display and Exhibition (39 votes)
- Gallery Space Too
- Storytelling and Displays
- Classroom as 2nd Teacher



D. Welcoming Arrival (30 votes)
- Greeting and Gatekeeping
- Curb Appeal – Appropriate to an Urban Campus
- Visible and Welcoming Entry

E. Community Access (31 votes)
- Public Space
- Opportunity for Events
- Rentable Space
- Media Center, Cafeteria and Guidance as Commons Area



F. Agile Classrooms (29 votes)
- Multiple White Boards
- Maker Classrooms
- Technology



G. Safety and Security (27 votes)
- Single Entry with Security
- Locks, Buzzer System and Cameras



H. Indoor/Outdoor Connections (26 votes)
- Outdoor Learning Environments



I. Break Out Spaces (25 votes)
- Informal Collaboration

J. Gathering Hubs (24 votes)
- Variety of Gathering Spaces: Small, Medium and Large
- Forum Space
- Dining Hall



K. Flexible Furniture (19 votes)

L. Maker Spaces (19 votes)
- Maker Spaces
- Marker Spaces as Art Rooms

M. Varied Performance Venues (18 votes)



N. Learning Commons/Media Center (15 votes)
- Consider More Than One

O. Effective Storage (11 votes)

P. Professional Work Areas (10 votes)



Q. Branding and Identity (5 votes)

R. Building as Teacher (5 votes)
- Visible Systems

S. Universal Design (5 votes)



T. Quiet Spaces (11 votes)
- Not Too Small

U. Wayfinding and Streetscapes (5 votes)

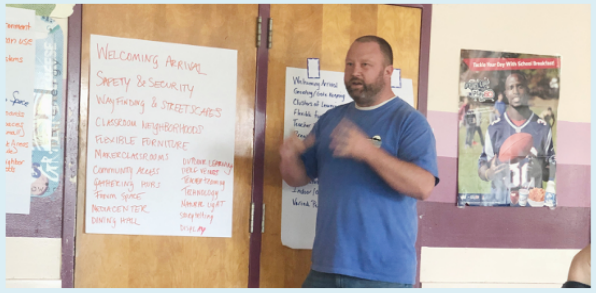
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Guiding Principles

Guiding Design Principles offer a framework of educational priorities that prove invaluable in helping stakeholders and design team members to set design goals and focus their work. This first iteration of Guiding Principles may continue to develop as the design process unfolds.



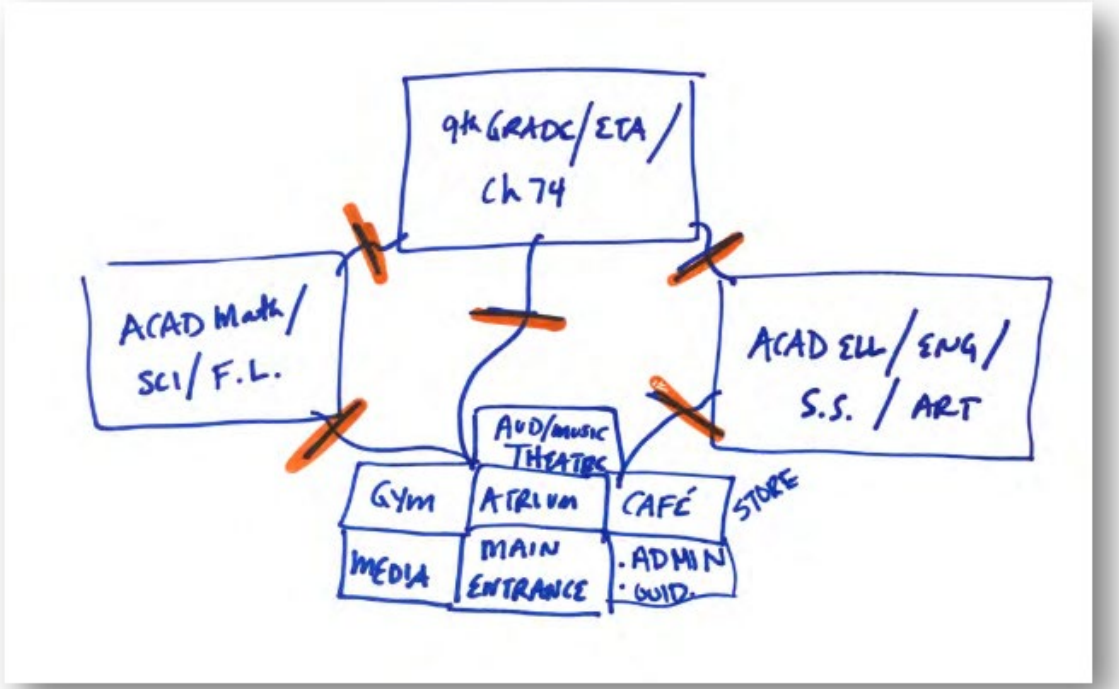
1. Mastery Based Learning
   - Citizen, Artist Scholar
   - Academic Excellence
   - Academic Diversity
   - Career Pathways
   - Career and College Readiness
2. Real World Education
   - Innovation, Creativity and Diversity
   - Authentic Learning
   - Real World Education
   - Citizens of the World
   - Teaching All Students
   - Internships
   - STEM and STEAM
3. Personalization and Ownership
   - A Comprehensive School Community with Everything on One Site
   - Engagement in School Culture
   - Visible Learning and Transparency
   - Keep it Fun and Engaging!
4. School as Community Resource
   - Community Access
   - Community Space to Learn, Play and Connect
   - Community Connections
5. Flexibility and Utility
   - Adaptability and Evolution
   - Technology Integration
6. Sustainability
   - Outdoor Connections and Learning
   - Building as Teacher



Bubble Diagramming

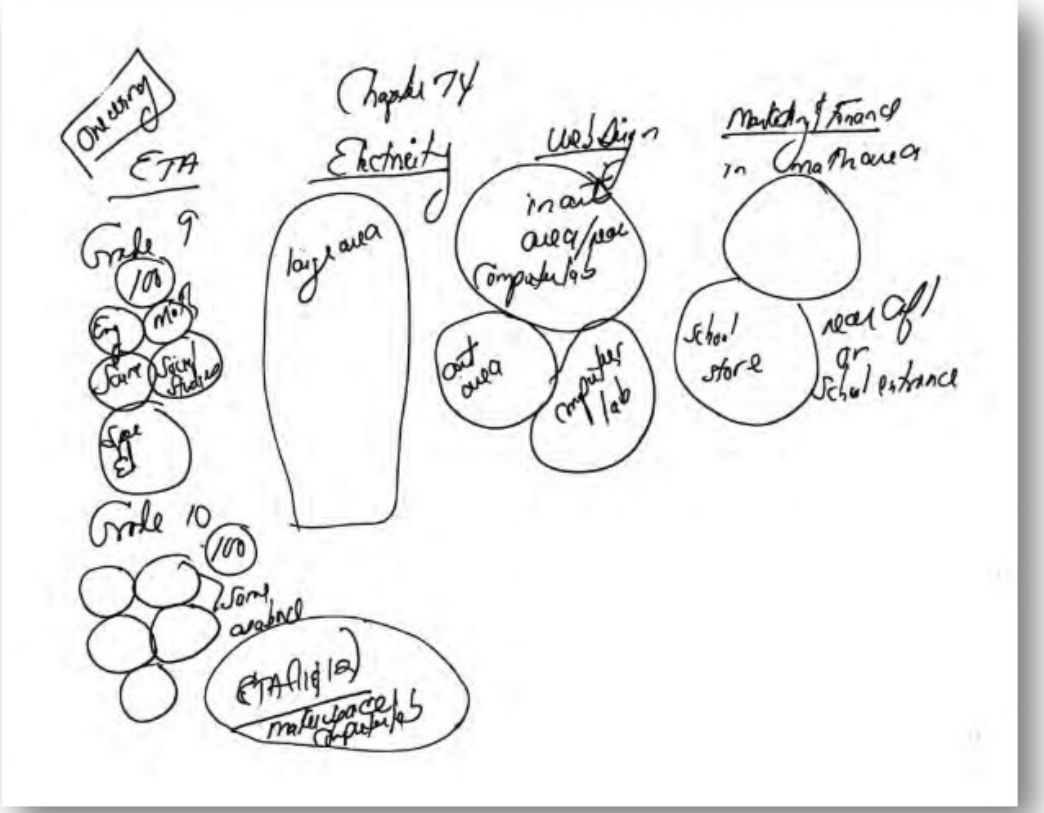
Whole School Diagram One

This Whole School Adjacency Diagram was created by a small group of workshop participants in order to communicate their ideas about space adjacencies for the renovated and/or new Doherty Memorial High School.



Whole School Diagram Two

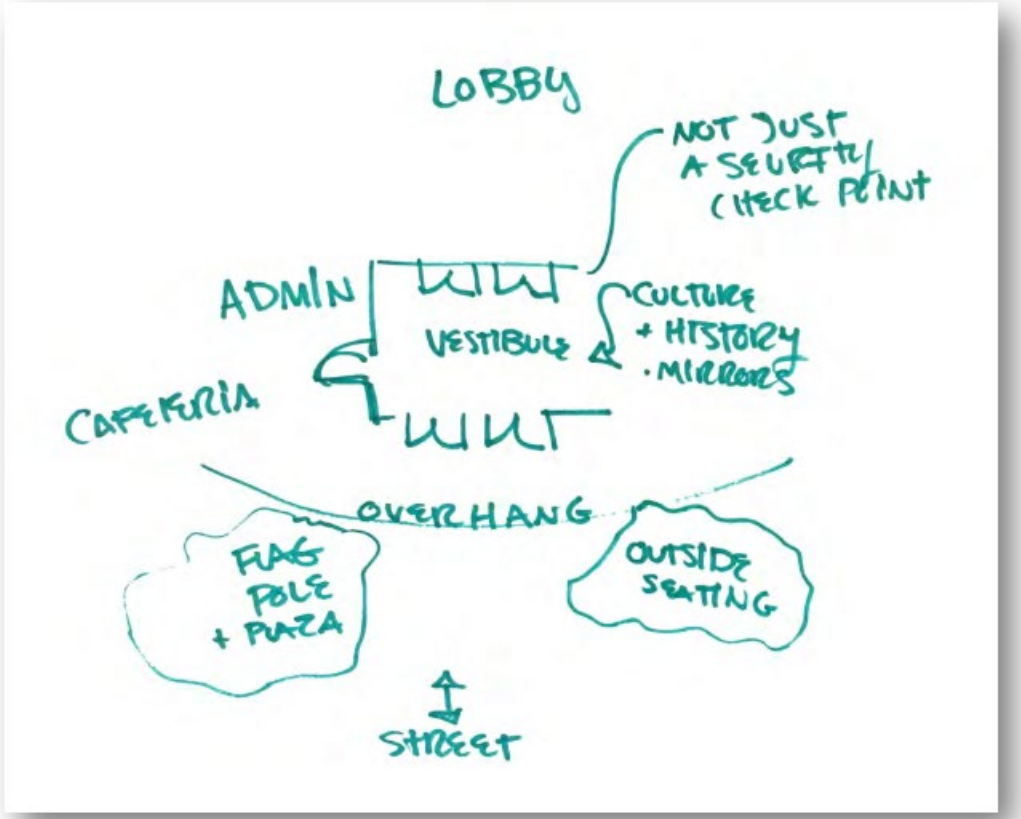
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Bubble Diagramming

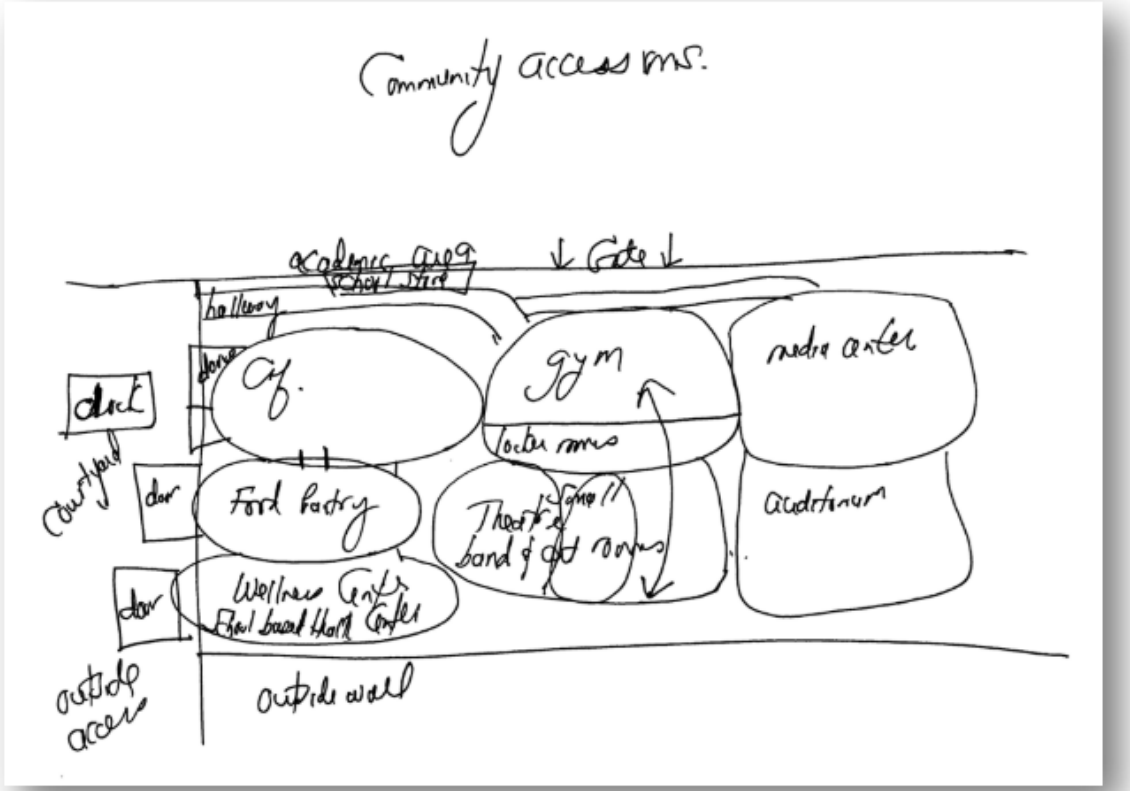
Entry Area Diagram One

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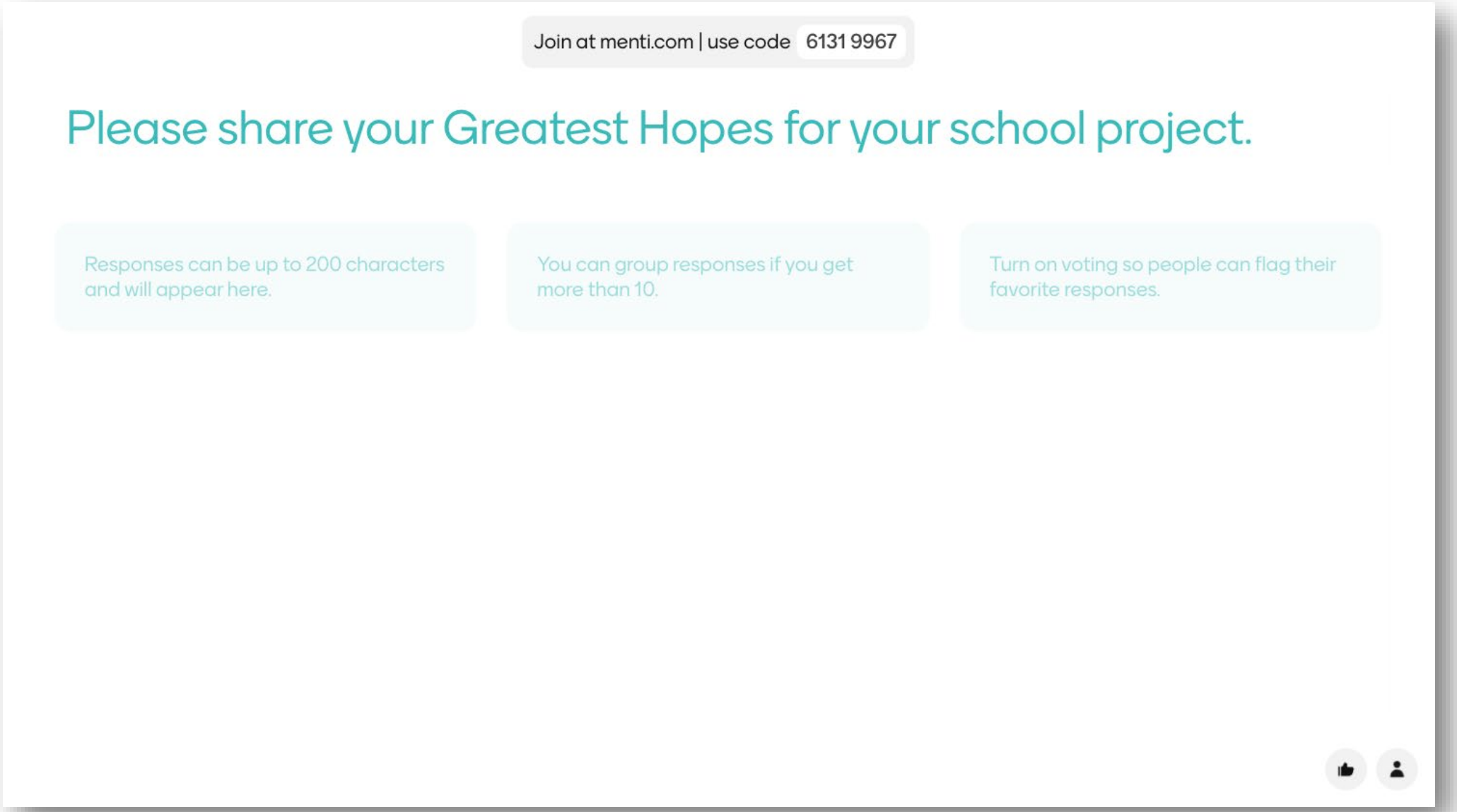


Community Access Diagram

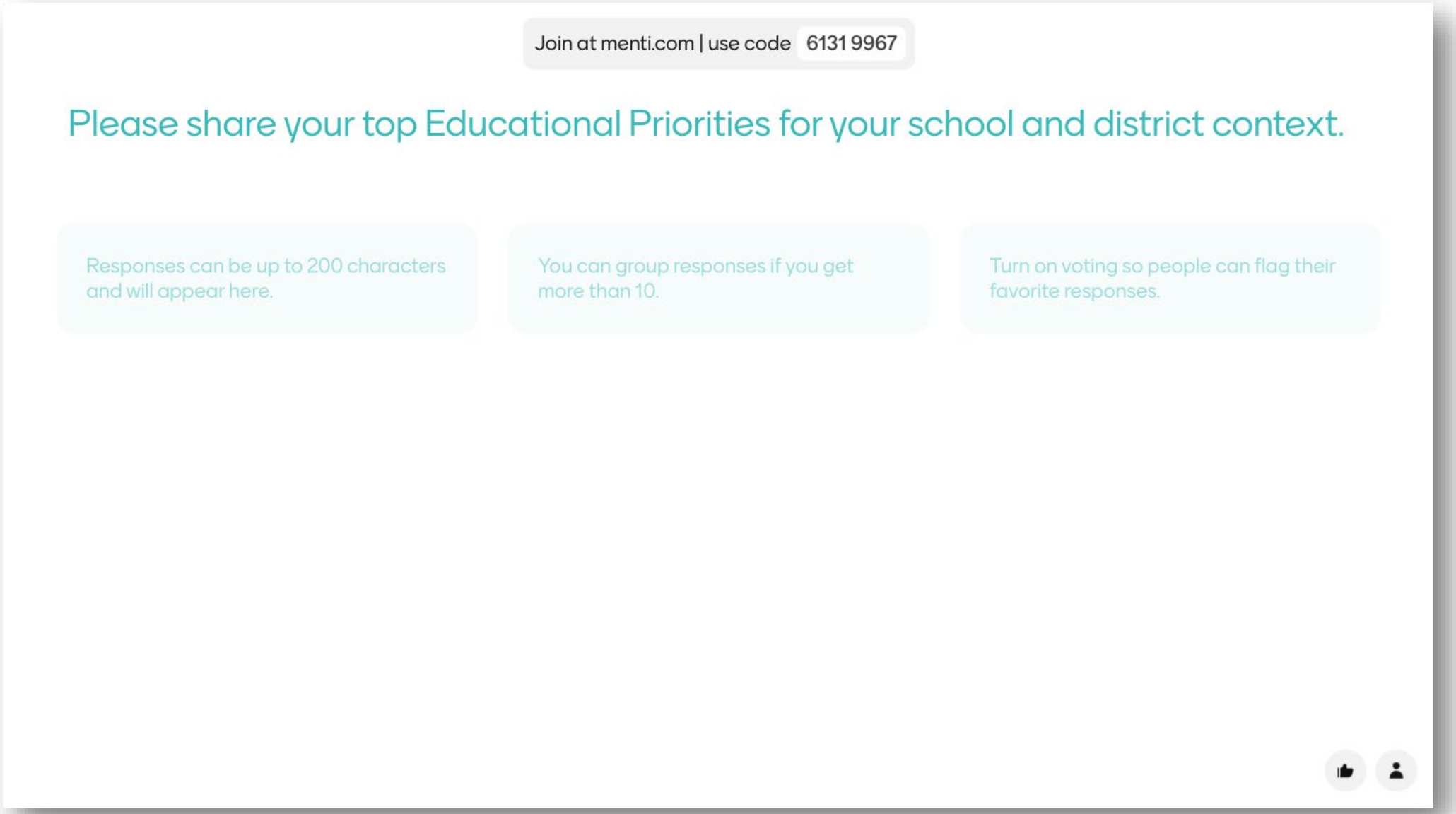
This Community Access Adjacency Diagram was created by a small group of workshop participants in order to communicate their ideas about space adjacencies for the renovated and/or new Doherty Memorial High School.



Mentimeter Interactive Prompt



Mentimeter Interactive Prompt



CHRISTINA BAZELMANS | LPA|A

DETAILED PROGRAMMING



LPA|A

PDP: PROGRAM DEVELOPMENT

Doherty Memorial High School Visioning

* Required

Staff & Teacher Survey

Lamoureux Pagano Associates Architects (LPA|A) is excited to be selected as the architect to conduct a Feasibility Study for the Doherty Memorial High School improvements. Through the study process, it will be determined if an addition/renovation or a new construction option is best for a 1670 student high school.

In order to develop the program for this important project, we ask that you share your vision of Doherty's future educational goals and priorities through the questionnaire below. The questionnaire should take about 15 minutes to complete, please provide your input by May 31, 2019.

What is your name?

Your answer

What is your Department? *

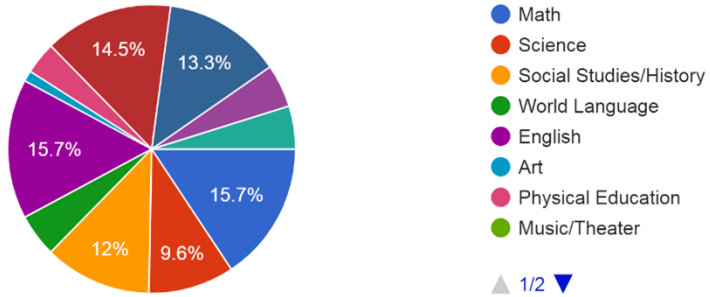
Choose

Which grade(s) do you teach?

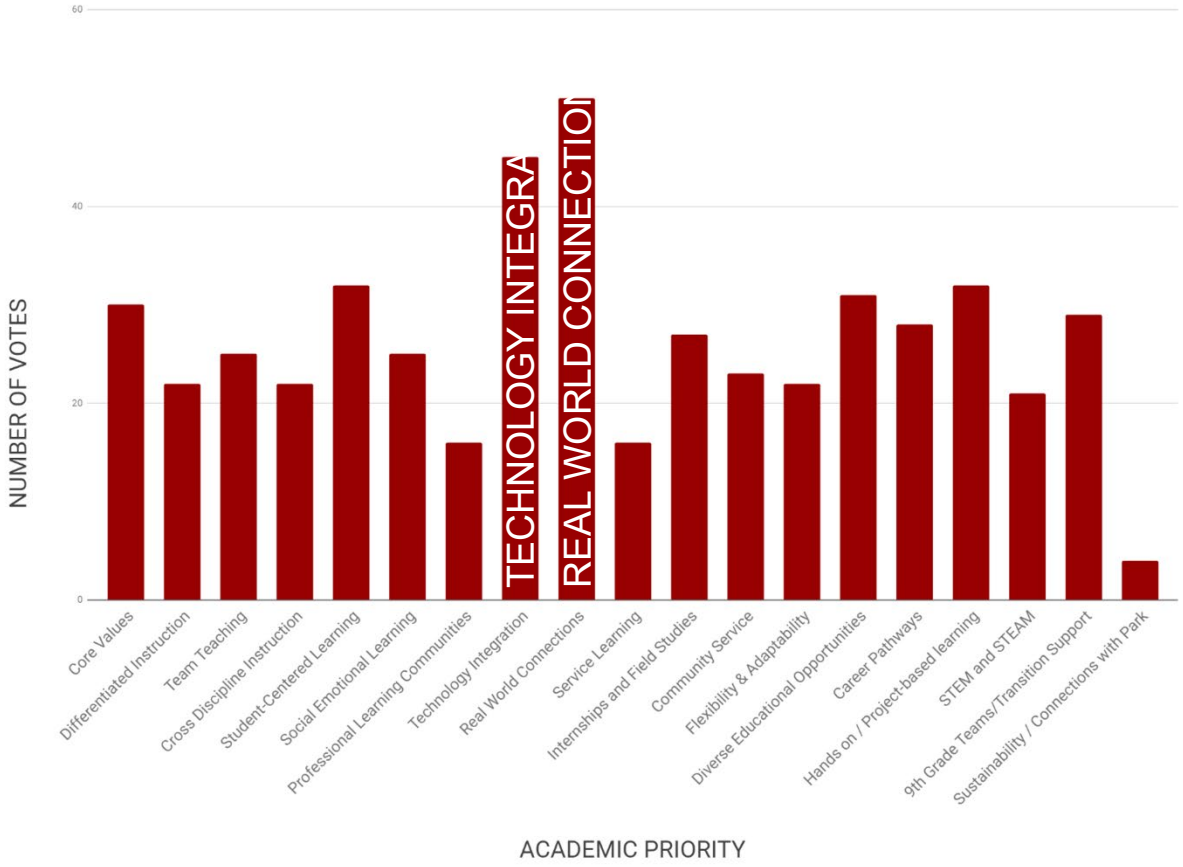
- [ ] 9th
- [ ] 10th
- [ ] 11th
- [ ] 12th

What is your Department?

83 responses



STAFF VISION OF ACADEMIC PRIORITIES



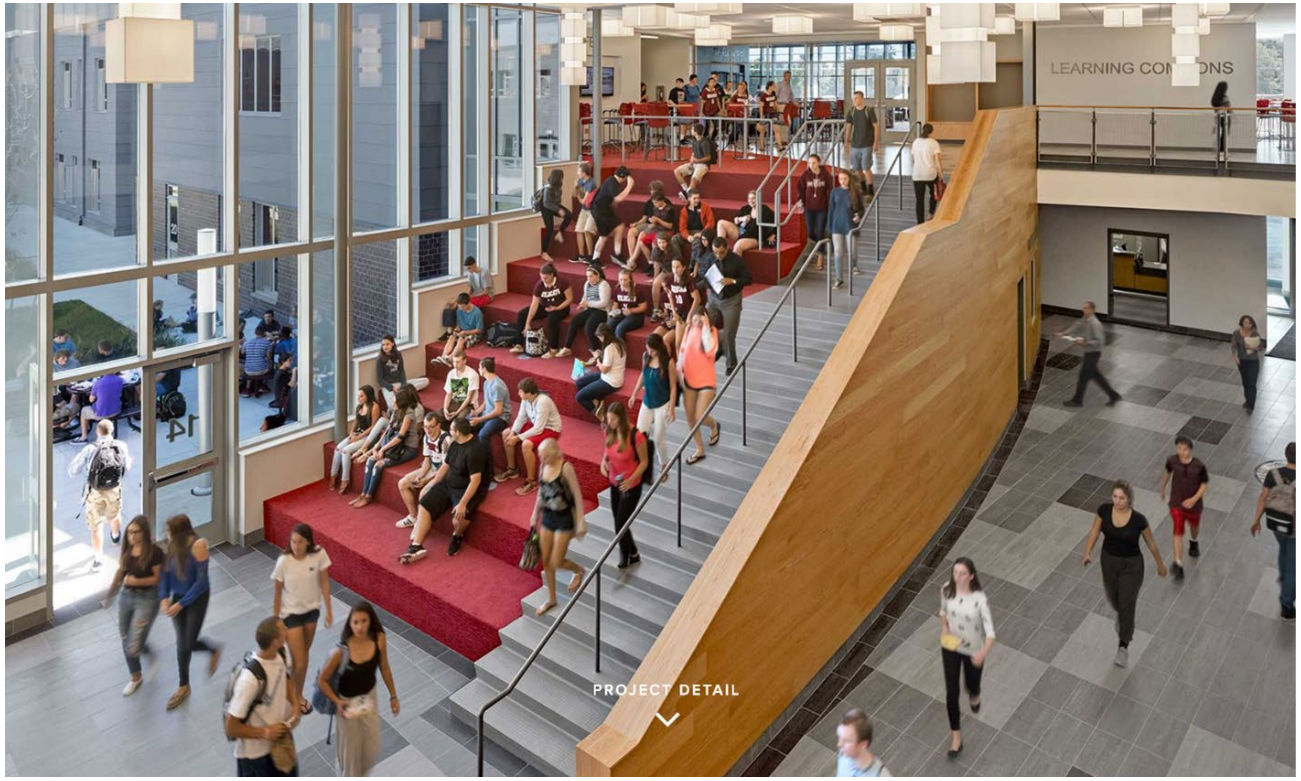
Members of the design group, including architects and school representatives, sought input and insight from numerous facilities around the region.

- West Bridgewater Middle/High School
- Billerica Memorial High School
- Dearborn STEM Academy (Roxbury, MA)
- Putnam Vocational Technical Academy (Putnam, CT)
- B.M.C. Durfee High School (Fall River, MA)
- New England Laborers Training Facility (Hopkinton, MA)

DMHS is happy to reciprocate and host school teams in their MSBA supported design phase.

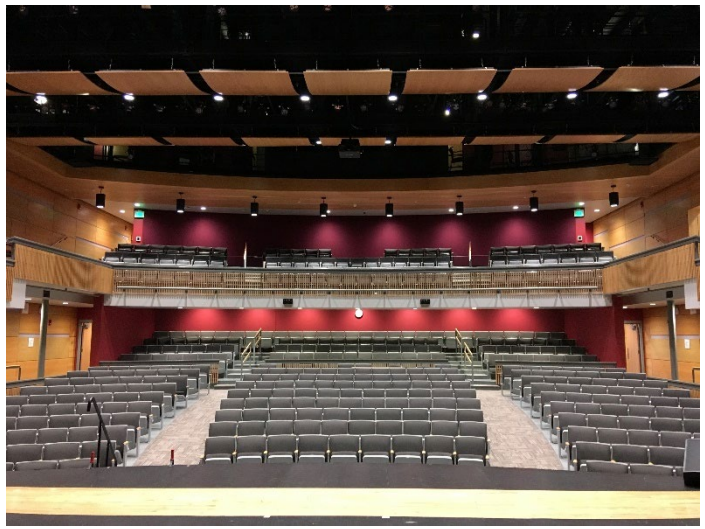
SCHOOL TOURS

SCHOOL TOURS





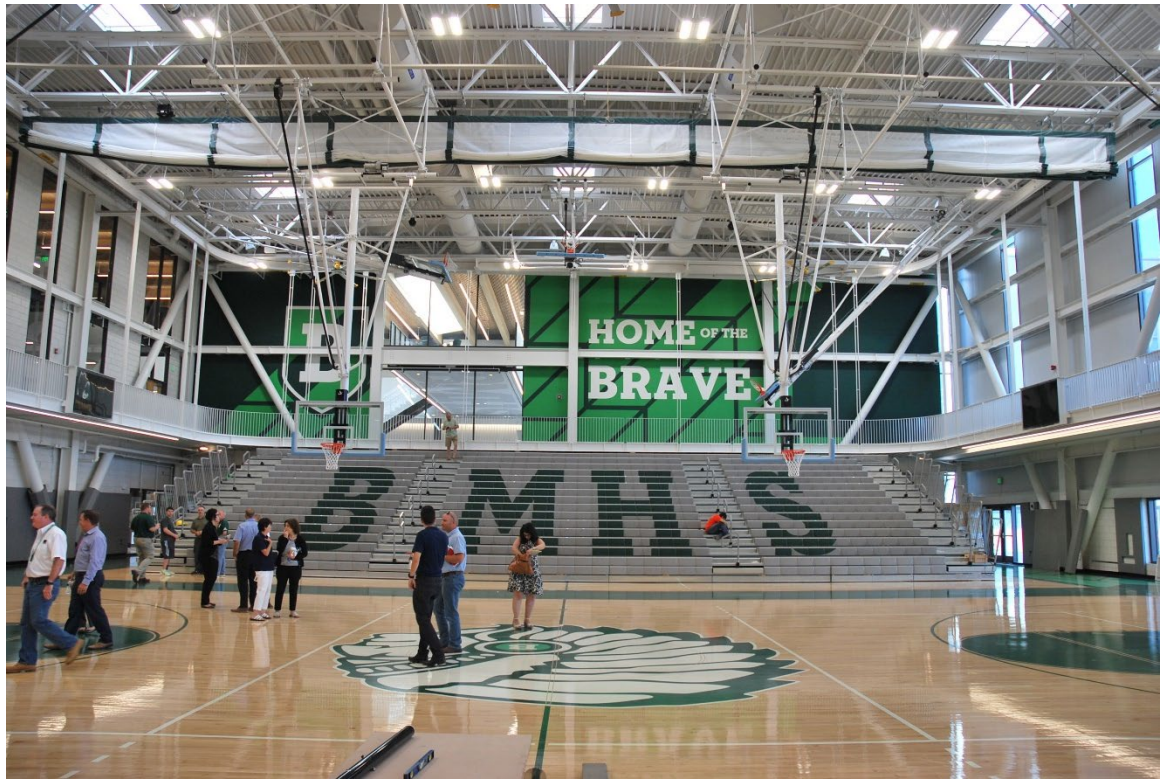


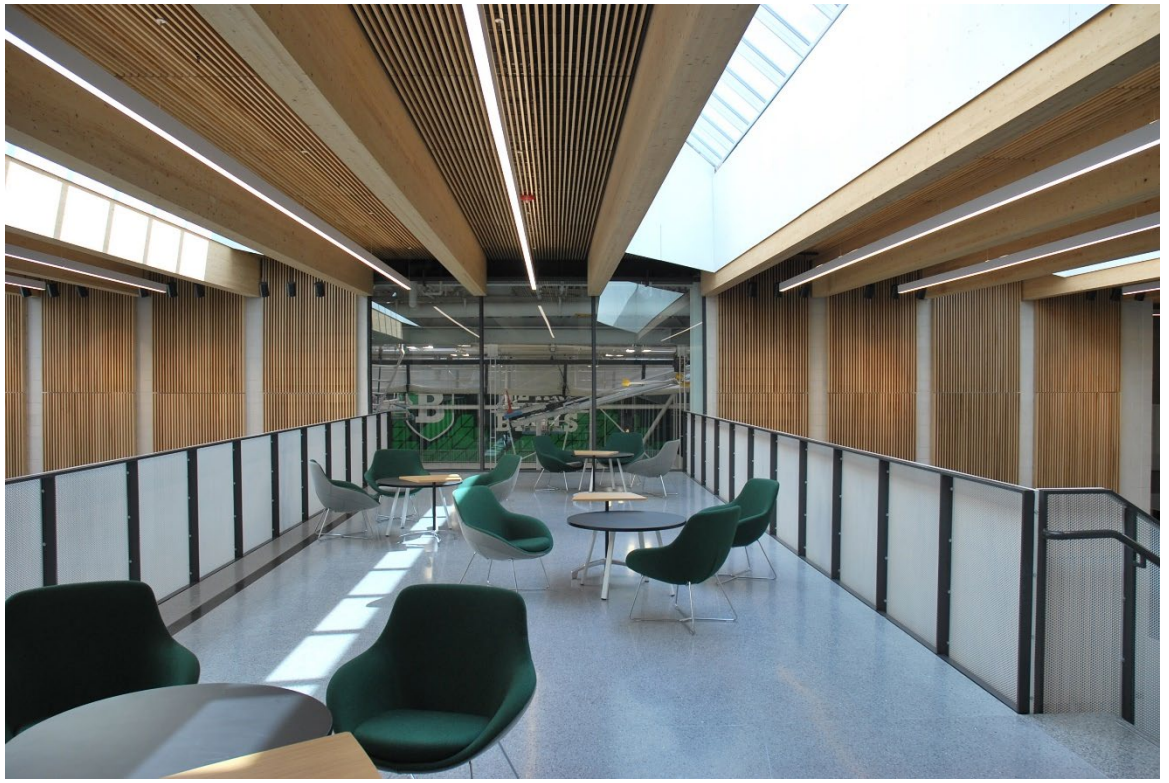




WEST BRIDGEWATER MIDDLE SENIOR HIGH

SCHOOL TOURS





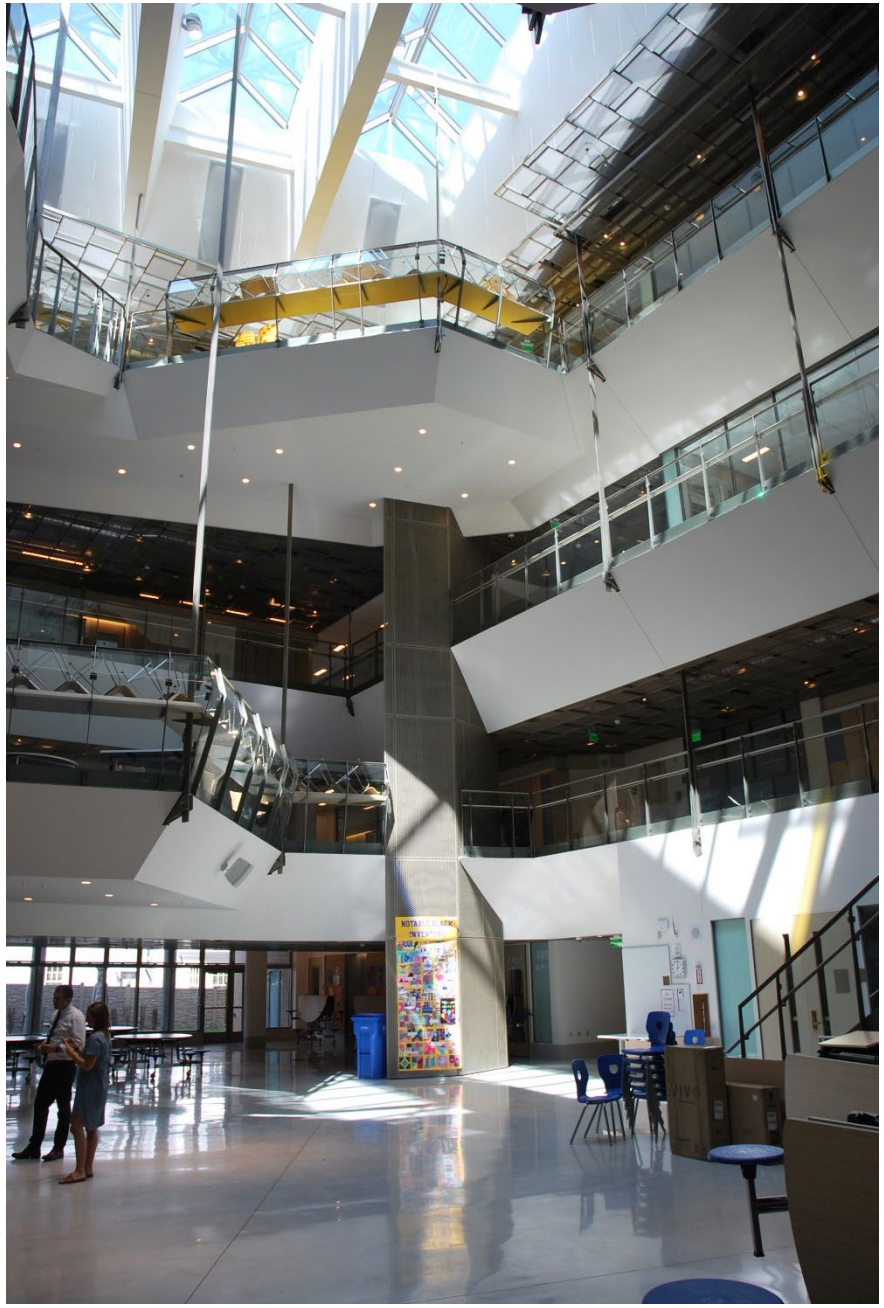






BILLERICA MEMORIAL HIGH SCHOOL

SCHOOL TOURS



DEARBORN STEM ACADEMY







Topics

- Academic Organization
- Core Spaces, Community Use
- Administration, Guidance, Medical
- Chapter 74, CTE
- Special Education
- Art, Music Theater
- Space Summary
- Athletic and PE programs
- Groups/Departments
- School based administration
- School Staff, Students
- School Committee
- Finance and Operations
- Security, Emergency Services
- Facilities, Building Systems
- District nursing and community health

COMMUNITY ENGAGEMENT



JOHN STALEY | Principal

CTE AND ADVANCED ACADEMY PROGRAMS



How did we settle on these programs?

Occupational Projections and Research

- Massachusetts Employment Projection: Executive Office of Labor and Workforce Development
- U.S. Employment Projection: U.S. Department of Labor, Bureau of Labor Statistics
- Central Massachusetts Regional Workforce Blueprint
- Current WPS programming at all secondary schools
- Student interest surveys (grades 8-10), issued through Naviance

What did the research show?

- High employer demand, high wage opportunities
- Talent gaps
- Career pathways
- Strong employer engagement - employers willing to become actively engaged in working with workforce stakeholders
- Low barriers to employment - opportunities that do not exclude, do not create barriers (e.g. requiring a bachelor's degree or higher)
- Alignment with high-needs job-seeker populations

DMHS Program Expansion Overview

- **Goal:** Strengthen and expand the career and technical curriculum 4-year program offerings at the new high school. Note: A formal Chapter 74 Programming Submission needs to be submitted to the MSBA.
- **Doherty's Expansion:**
  - Biomedical Technology Pathway (new 4-year science elective, application-based admissions)
  - Engineering & Technology (pre-existing CTE program, expanded and strengthened
  - Programming and Web Development (new CTE program)
  - Marketing, Management and Finance (new CTE program)
  - Construction Craft Laborer (new CTE program)

- **Eligibility & Admissions:**
  - Available to all students across the district.
  - Worcester residents in Grade 8 are eligible to apply.
  - For Doherty: No ninth-grade exploratory program planned. Students will identify and rank their desired program in the application.

ASA BioMedical and BioTechnology

Program Details (Existing & Expanded)

- **Capacity/Staffing:** 200 students total (approx. 50 per grade), taught by licensed and PLTW certified teachers.
- **Industry Focus:** Biotech sector, including Apprenticeship and post-secondary trades.
- **Curriculum Highlights:** Hands-on training in biotechnology, biomedical sciences. Hard sciences.
- **Space Requirements:**
  - Uses standard science laboratory.
  - Laboratory space must be versatile for varied projects.

Engineering & Technology Academy (ETA) Program

Program Details (Existing & Expanded)

- **Program Capacity:** Up to 400 total students (approx. 100 per grade)
- **Staffing:** 4 CVTE Engineering teachers (20:1 student-to-teacher ratio)
- **Space Requirements:**
  - Four dedicated classrooms paired with three shared laboratory spaces.
  - Minimum lab space: 2200 sq. ft. for a class of 20.
  - Requires 1:1 desktop computer ratio in classrooms.
  - Classrooms must support collaborative, project-based work.

Three Distinct Laboratory Spaces Needed:

1. **Manufacturing & Fabrication:** To support skills like woodworking or machining.
2. **Electrical Engineering:** To support circuit design, robotics, programmable logic controllers, and testing.
3. **Prototyping:** To enable students to engage with 3-D printing, prototyping, and CNC technologies.

Facility Adjacency:

- Proximity required between the four classrooms and three labs.
- Must be adjacent to the proposed Construction Craft Laborer vocational program to share laboratory spaces.
- Labs require exterior access for material/equipment delivery and installation, dust collection systems (two labs), and shop sinks.


legrand
NO EXIT


FIRE
EXTINGUISHER
PULL
AIM
SQUEEZE
SWEEP
DROP
ROLL
SDS

Programming and Web Development

Program Details (NEW)

- **Capacity/Staffing:** 200 students total (approx. 50 per grade), served by 4 teachers.
- **Industry Focus:** Professional and Tech Services.
- **Curriculum Highlights:**
  - Programming fundamentals (Python), algorithm-based thinking (Java).
  - Web development (HTML, CSS, JavaScript, dynamic frameworks, relational databases).
  - Robotics, visual programming, and game development.
  - Advanced Placement coursework: Computer Science Principles and Computer Science A.
- **Space Requirements:**
  - Four combination laboratory space/classrooms.
  - Minimum lab space: 2200 sq. ft. for a class of 20.
  - Requires 1:1 desktop computer ratio.
  - No required adjacency to any other program within the school.


STUDENT

Marketing, Management and Finance

Program Details (NEW)

- **Capacity/Staffing:** 200 students total (50 per grade), served by 4 teachers.
- **Industry Focus:** Retail/Hospitality (region's 2nd largest employment sector).
- **Curriculum Highlights:** Sales, management, advertising, customer service, and quantitative/qualitative analysis. Students can earn industry-recognized credentials.
- **Space Requirements:**
    - Four combination laboratory space/classrooms.
    - Minimum lab space: 2200 sq. ft. for a class of 20.
    - Should have adjacency to, or be in proximity with, the proposed school store.




NEW STUDENT MERCH
DOUGHILICOUS
Doughilicous Cookies

Construction Craft Laborer

Program Details (NEW)

- **Capacity/Staffing:** 150 students total (approx. 35-40 per grade), served by 4 teachers.
- **Industry Focus:** Construction Industry ('hard trades'), including Apprenticeship trades. Entry level laborer is the number one occupation facing significant shortages in Central MA.
- **Curriculum Highlights:** Hands-on training in carpentry, framing, rigging, blueprint reading, and masonry, using hand and power tools.
- **Space Requirements:**
    - Four combination laboratory space/classrooms.
    - Minimum lab space: 3375 sq. ft. for a class of 15.
    - Laboratory space must be versatile for varied projects.
- **Facility Adjacency:**
    - Required adjacency with the Engineering Technology vocational program area, as students and staff will share laboratory spaces.
    - Labs require exterior access for large material/equipment delivery and installation.
    - Labs must include shop sinks.


TULEX

Comprehensive Schools with CTE Programming

Traditional vocational school model

- A/Z Week
- Alternating academic and vocation shop weeks
- Completion of MassCore requirements for diploma (e.g. 4 years English, 4 years Math, etc.)
- Attainment of 900 CTE hours
- Ability for coop, internship opportunities in grade 12

DMHS Model

- Classes need to meet every day
- No ‘shop’ or ‘academic’ week
- Completion of MassCore requirements for diploma (e.g. 4 years English, 4 years Math, etc.)
- Attainment of 900 CTE hours
- Ability for coop, internship opportunities in grade 12

CTE Program Hours (900 hour min.)

DESE Requirements:

The Department anticipates that a program designed to provide students with the requisite experience and training to successfully complete the requirements of a Chapter 74 program as outlined in the curriculum frameworks would include at least 900 hours of program-related instruction for each participating students. Program-related instruction includes:

- "shop" time;
- Program-related classroom time
- Time devoted to work-based learning (e.g., cooperative education, internships, clinical rounds)
- Any other classes or portions of classes that address VTE Frameworks Strands 4, 5, or 6.

	SHOP CLASS (including work-based learning during shop hours)	SHOP-RELATED CLASS
NAME OF OTHER CLASS		
PROGRAM YEAR 1	135	135
PROGRAM YEAR 2	135	135
PROGRAM YEAR 3*	135	135
PROGRAM YEAR 4*	135	135
COLUMN TOTALS	540	540
	GRAND TOTAL	1080

CTE Sample Student Scheduling

Sample Student Schedule: Core classes and elective choices
Students are able to meet both Mass Core Competency Determination as well as CTE program requirements.

	Grade 9	Grade 10	Grade 11	Grade 12
CTE Curriculum	Grade 9 CTE	Grade 10 CTE	Grade 11 CTE	Grade 12 CTE
CTE Related Theory	Grade 9 RT	Grade 10 RT	Grade 11 RT	Grade 12 RT
English	English I	English II	English III	English IV
Mathematics	Algebra	Geometry	Algebra II	Pre-Calculus
Science	Biology	Chemistry	Human Anatomy	Physics
World Language (assume that student needs at least 2 years to be college ready)	Language 1	Language 2 (at minimum, need to start the 2 year sequence in grade 10)	Language 3 (possible)	
Social Studies	World History II	US History I	US History II	
Credit total	7 credits (full schedule)	7 credits (full schedule)	7 credits (full schedule)	5 credits

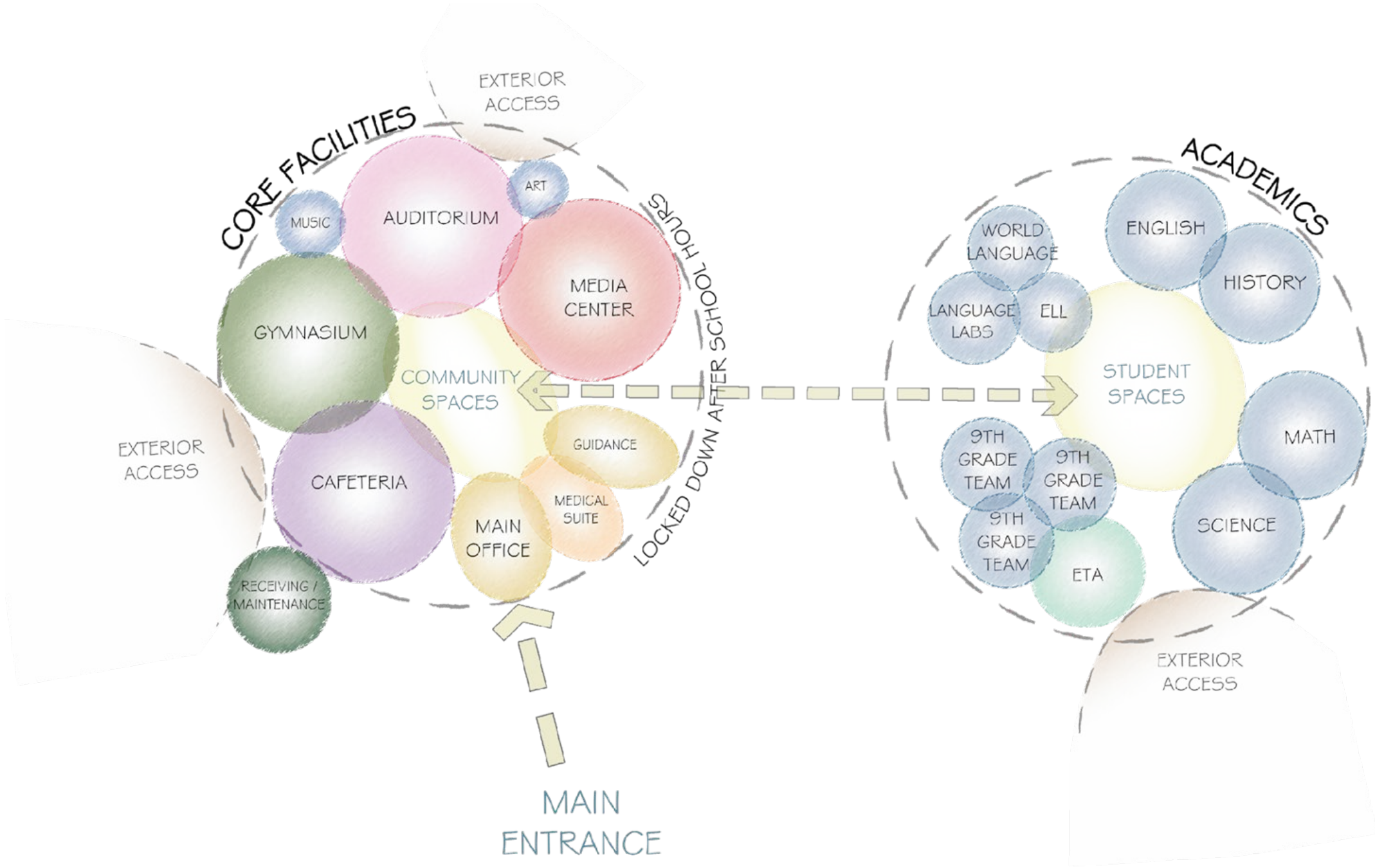
CHRIS LEE | LPA|A

THE IMPACT OF VISIONING ON DESIGN



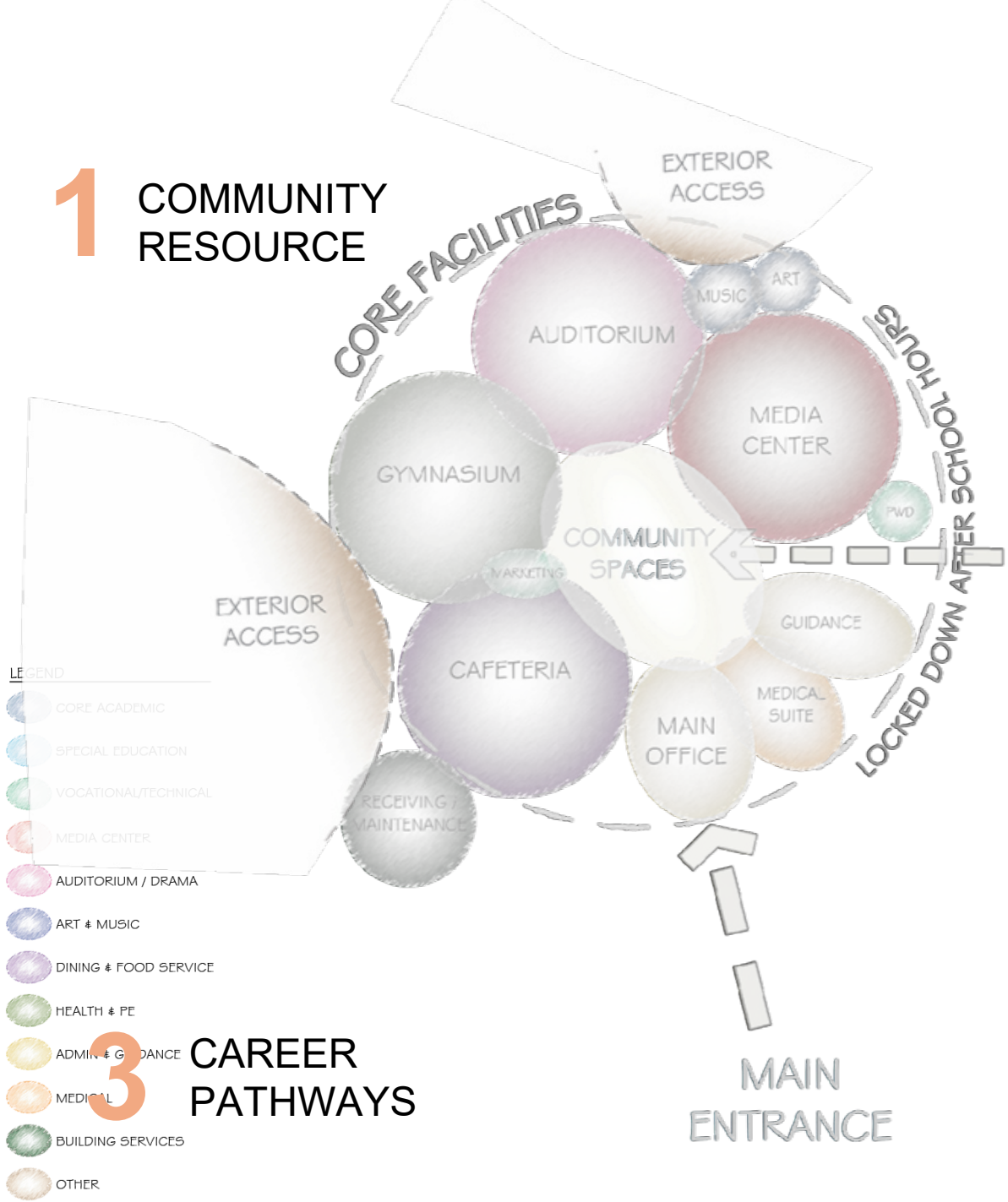
LPA|A

BUBBLE DIAGRAMS

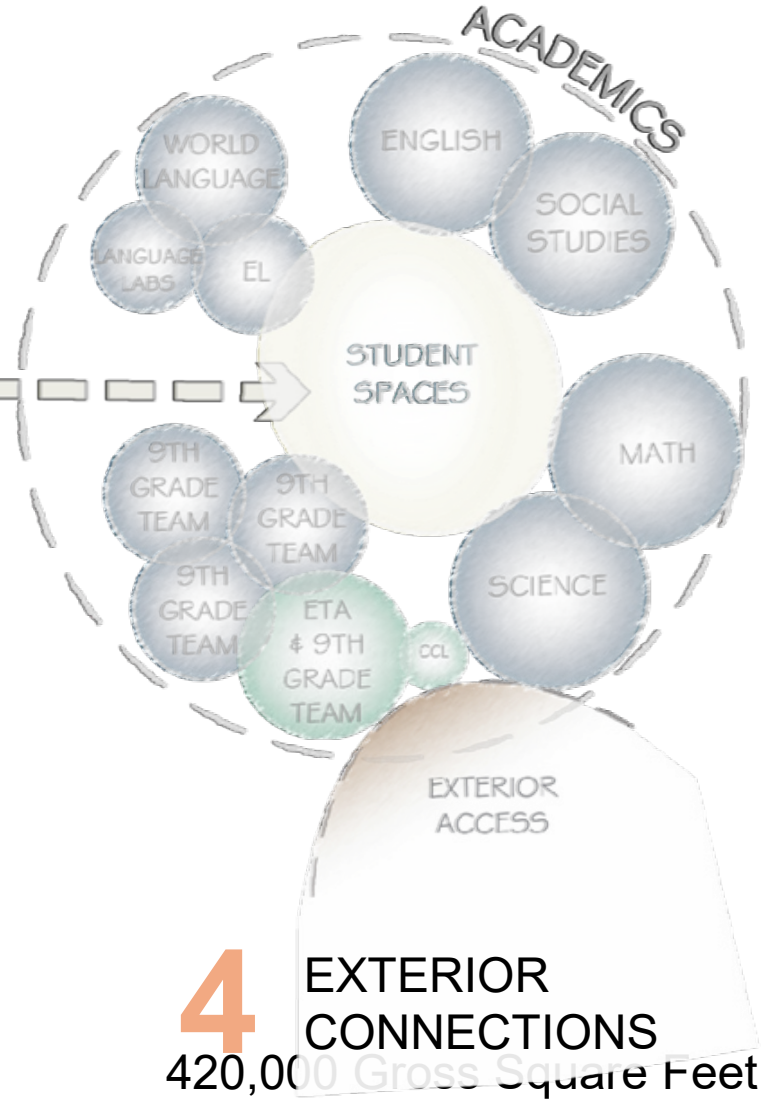


PROJECT GOALS

1 COMMUNITY RESOURCE



2 CLUSTERS OF LEARNING



3 CAREER PATHWAYS

4 EXTERIOR CONNECTIONS

420,000 Gross Square Feet Required by Proposed Educational Program



EXISTING SITE

PROPOSED SITE



0 100 200 400

PROPOSED SITE PLAN

JOHN STALEY

FINAL DESIGN & UNIQUE SPACES



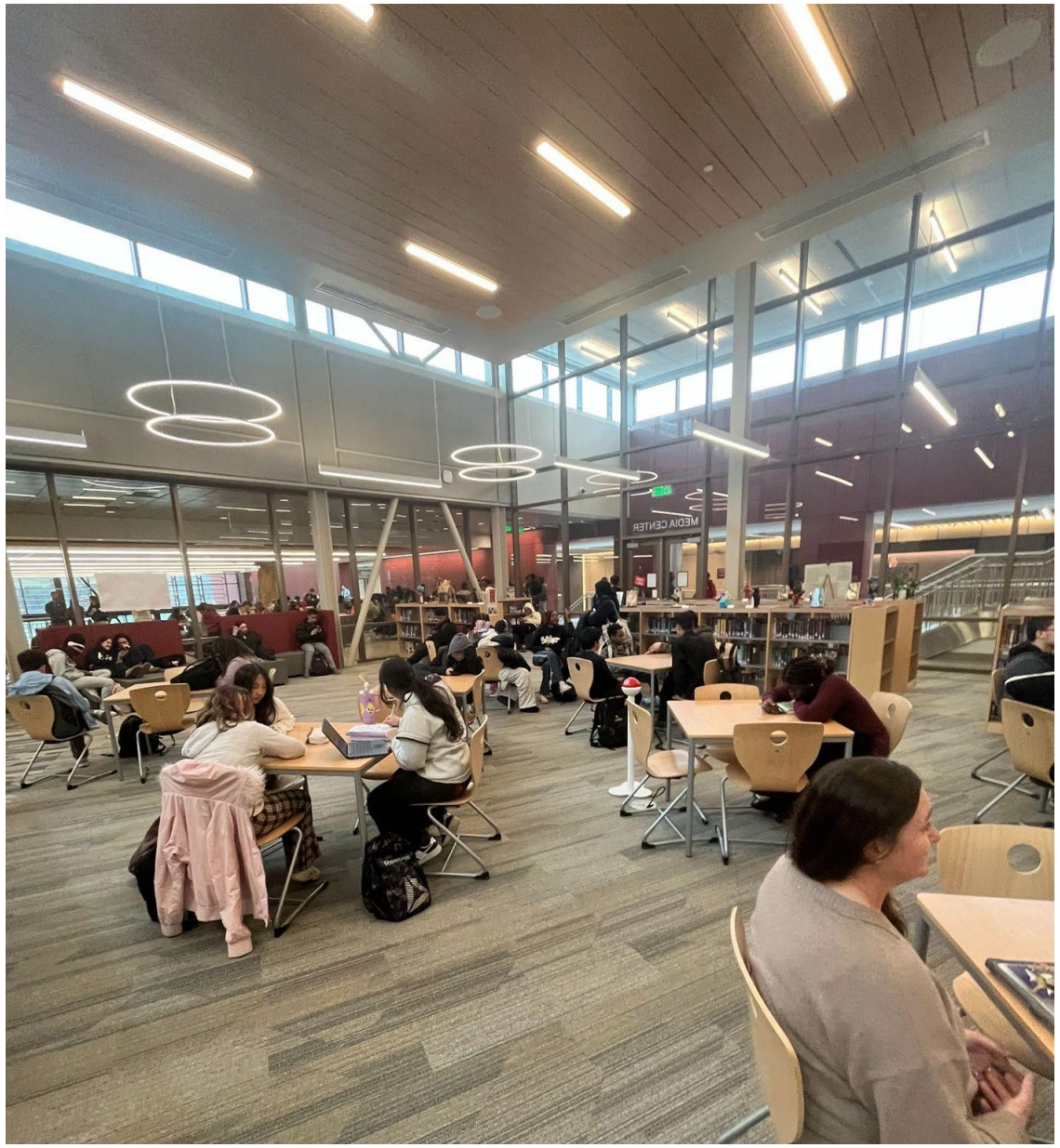
Media Center

Clear spaces for group work make collaboration easier and more productive

Students use these areas for projects, discussion, and peer support

Result: more meaningful collaboration without disrupting other learners






MEDIA CENTER

Makerspace: Supporting Creativity and Innovation

Purpose-built space for hands-on learning and creation

Students use tools like 3D printers and Cricuts to bring ideas to life

Result: increased engagement through creative, project-based work

Design Features: pull-down power outlets, projector and sound system, flexible seating





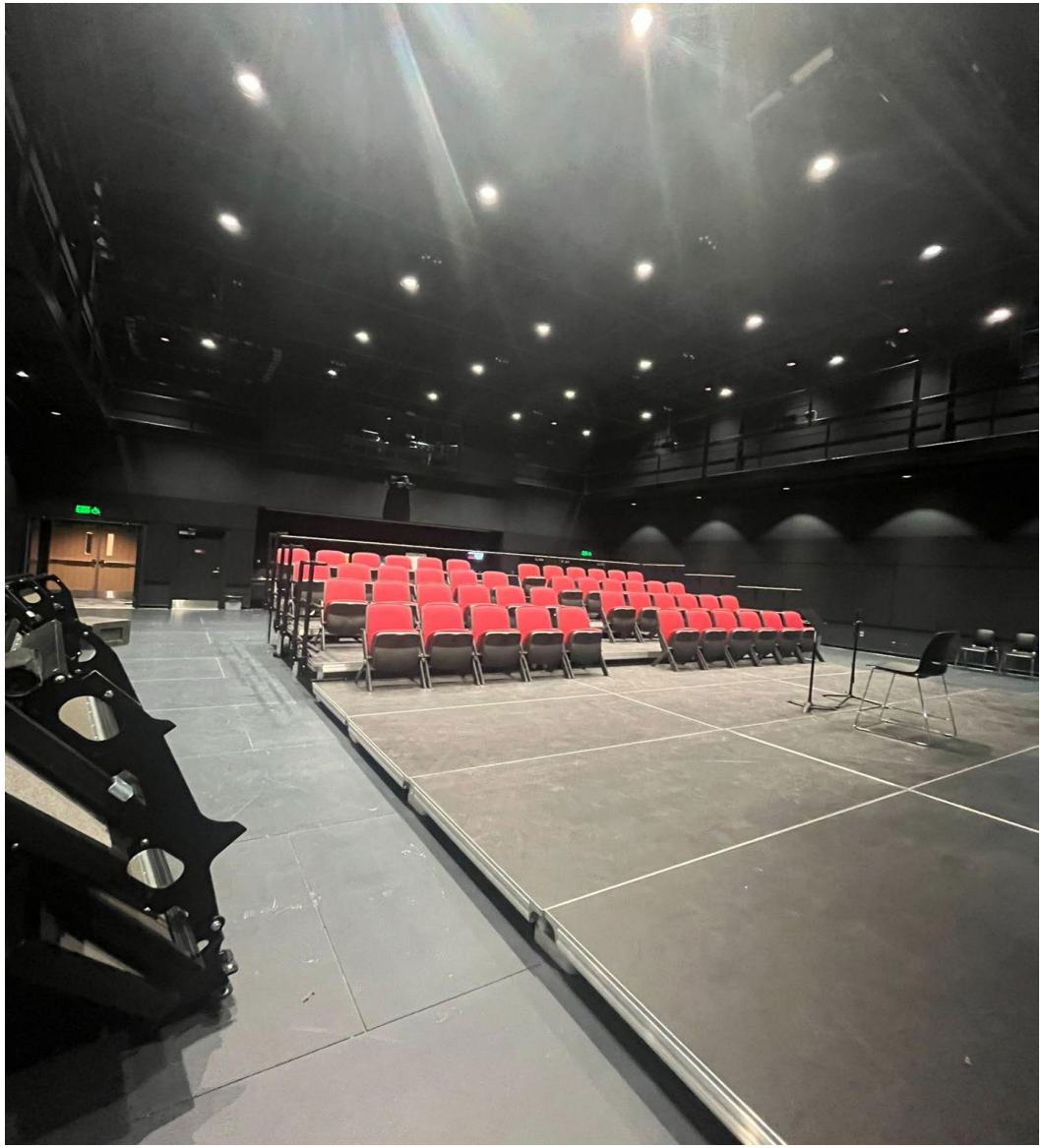
Black Box Theater

Purpose:
A flexible performance space designed to support theater, presentations, and interdisciplinary learning experiences.

Student Use:
Students can use the space for drama performances, rehearsals, student-led productions, and presentations across content areas, with adaptable seating and staging configurations.

Result/Impact:
Students build confidence, creativity, and communication skills through authentic performance experiences and active audience engagement.

Design Features:
Flexible staging, movable seating, professional lighting and sound, and an intimate setting that allows for multiple configurations.




EXIT

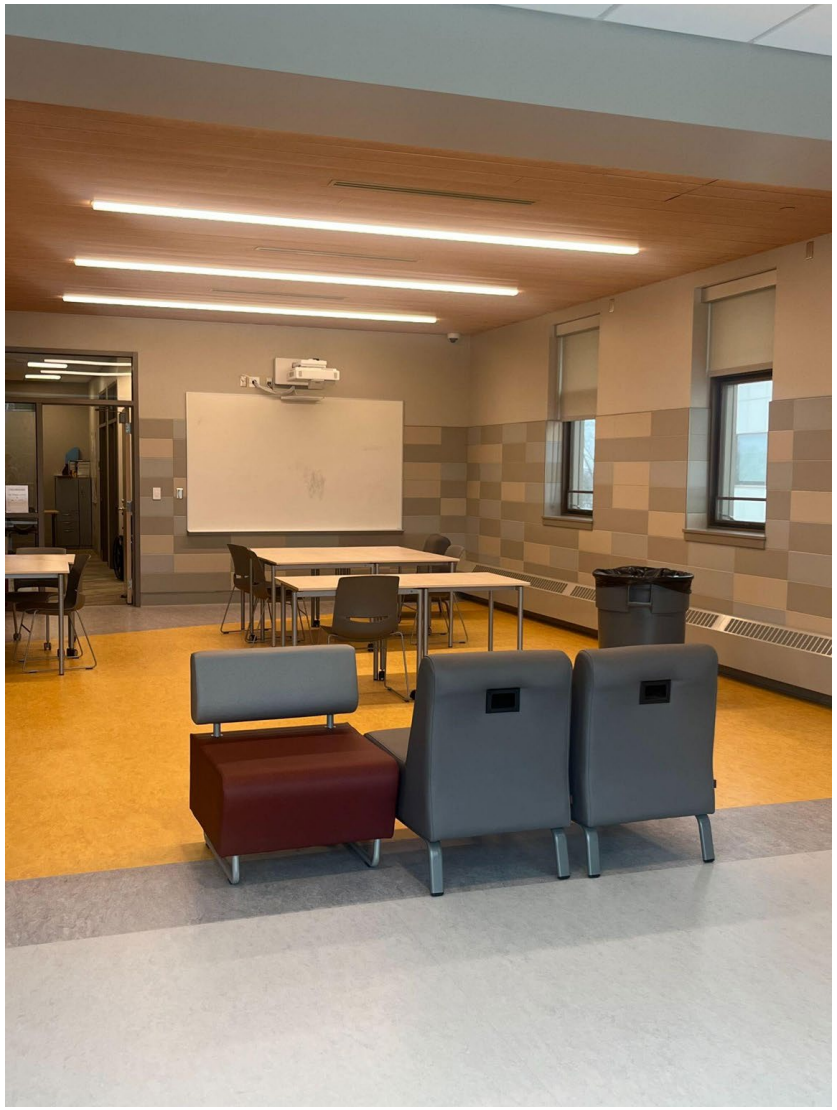
Common Areas

Purpose:
To extend learning beyond the classroom by providing flexible spaces for collaboration, small group work, and informal instruction.

Student Use:
Students use these areas for group projects, peer collaboration, independent work, and small group instruction during and beyond class time.

Result/Impact:
Students have increased opportunities for collaboration and independence, leading to deeper engagement and more student-driven learning.

Design Features:
A mix of tables, chairs, soft seating, and integrated projection technology to support a variety of learning activities.




EXIT
B

Cafeteria

Purpose:
To create a comfortable, flexible environment where students can connect, recharge, and build community.

Student Use:
Students choose between indoor and outdoor spaces to eat, socialize, and collaborate in both structured and unstructured time.

Result/Impact:
Improved student well-being and engagement, as students have autonomy and choice in their environment.








SCHOOL STORE

CONVERSATION PANEL

QUESTIONS AND COMMENTS



Massachusetts School Building Authority
Funding Affordable, Sustainable and Efficient Schools for Local Communities

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newvistadesign
Envisioning Future Ready Schools