

SMMA

A4LE Northeast Conference 2023

# Comprehensive Learning

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*at Somerville High School and  
Waltham High School*

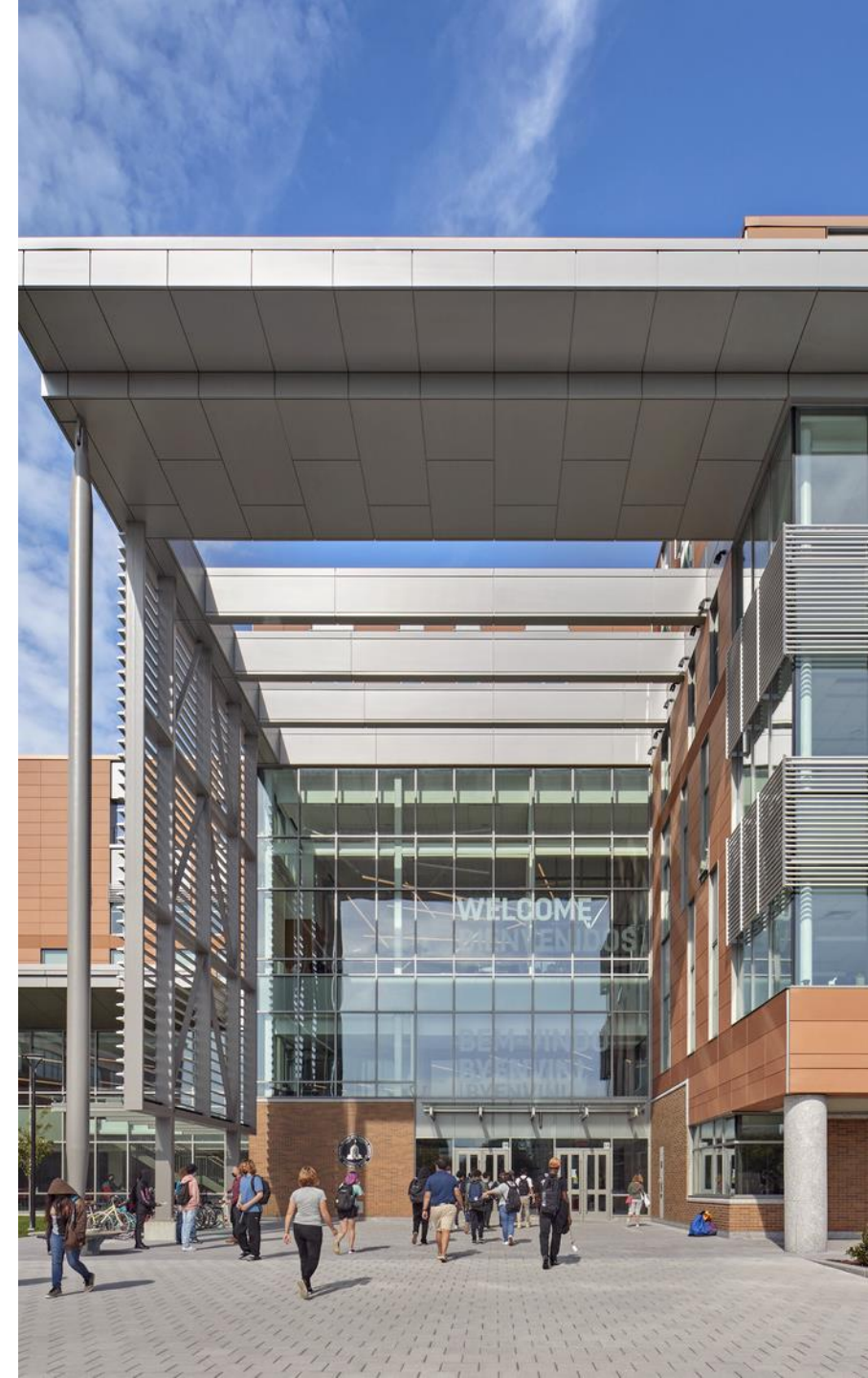
4.29.2023



# Learning Objectives

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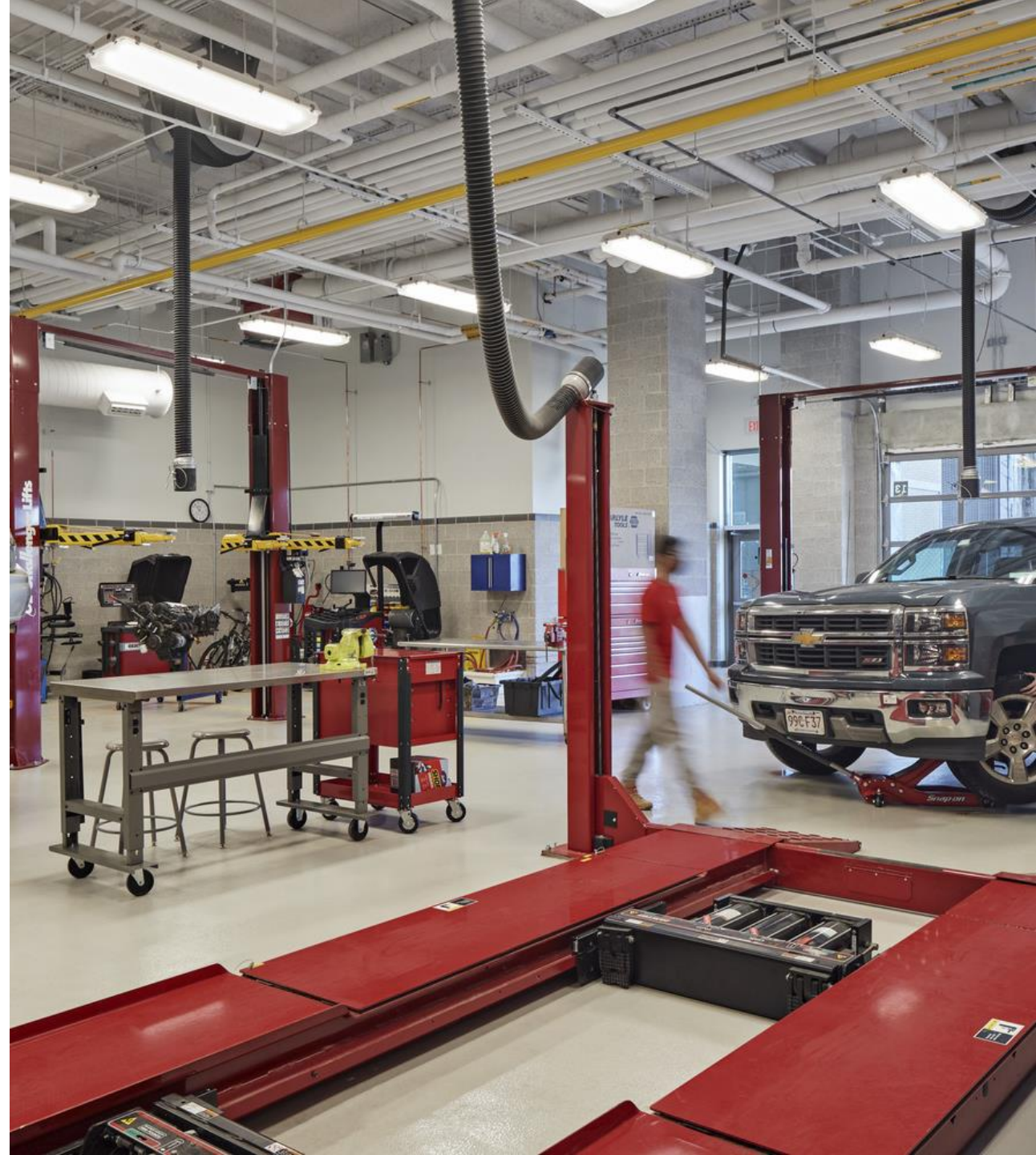
- » Identify the key differences and opportunities of a comprehensive high school when compared to a typical academic only or vocational only high school
- » Recognize the manner in which a comprehensive high school can provide an inclusive educational environment that responds to the needs of a diverse student body and community at large
- » List strategies to leverage the full potential of CTE (Career Technical Education) spaces for all learners, regardless of learning modality
- » Identify methods for CTE programs to connect to and enrich communities and local businesses



SMMA

# Comprehensive High Schools & School Diversity

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# Comprehensive High School – Curriculum



**Student  
Makeup**

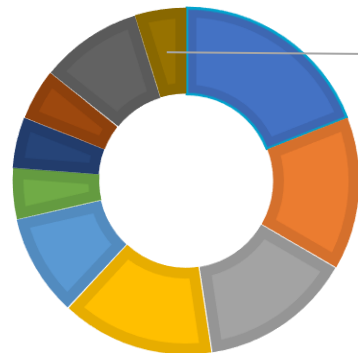


Academic

Career Tech Ed

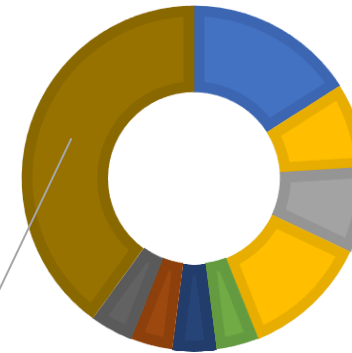


Credit  
Hours to  
Graduate



**5% CTE**

**40% CTE**



Credit  
Hours to  
Graduate



## Somerville High School

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 **53** from Brazil

 **46** from Central America

 **11** from other countries

## Waltham High School

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 **400** from Central America  
*361 from Guatemala*

 **41** from Africa  
*22 from Uganda*

 **35** from Central America  
*24 from Haiti*

*48 from Asia, 31 from South America, 12 from Europe*

# Who are Newcomers?

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Working definition:

- » Students who have recently migrated to the United States from another country.
- » Students who have enrolled in US public schools for the first time during the current or previous school year.

*Most are multilingual students who enter schools as classified English learners.*



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# Somerville High School

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Some.Yoga.Studio

EXXON

Good Gas

Sarma

Small Plates \$\$\$

Gilman Square - Green Line T

Somerville City Hall

Kaya Beauty Spa & Salon

Nick Shrewsbury Life and Relationship...

Somerville High School

Great Eastern

Vintage Somerville  
Vintage clothing store

Dog Park at  
Edward Leathers...

Edward L.  
Leathers  
Community  
Park

Somerville Public Library

Central Hill Playground

Burton F.  
Faulkner Towers

Burton F.  
Faulkner Towers  
Always

Rob Moreno

**1,590 Students**  
**(640 CTE students)**

**14 CTE Programs**

**\$199M / \$256M**

**Budget**

**Includes Alternative  
MS/HS, Teen Health  
Center, City Cable,  
Daycare**

**396,000 GFA**

**Building**



# 2015 Site Plan



1. City Hall

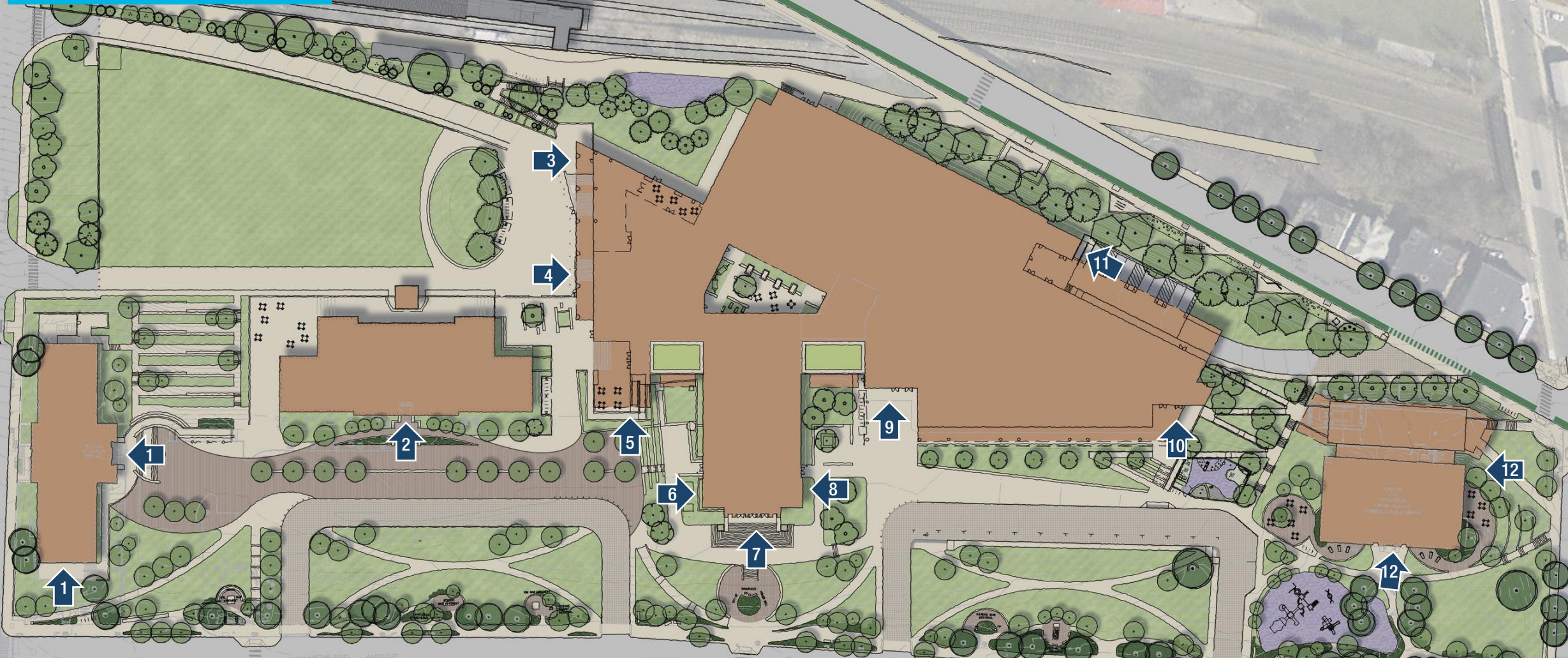
2. 1895 Building

3. Somerville High School

4. Gilman Station

5. Central Library

# 2023 Site Plan



1. City Hall

2. City Hall Services

3. NW FC

4. Auto Tech

5. Student Cafe

6. City Cable

7. Auditorium

8. Cosmetology

9. High School

10. Daycare

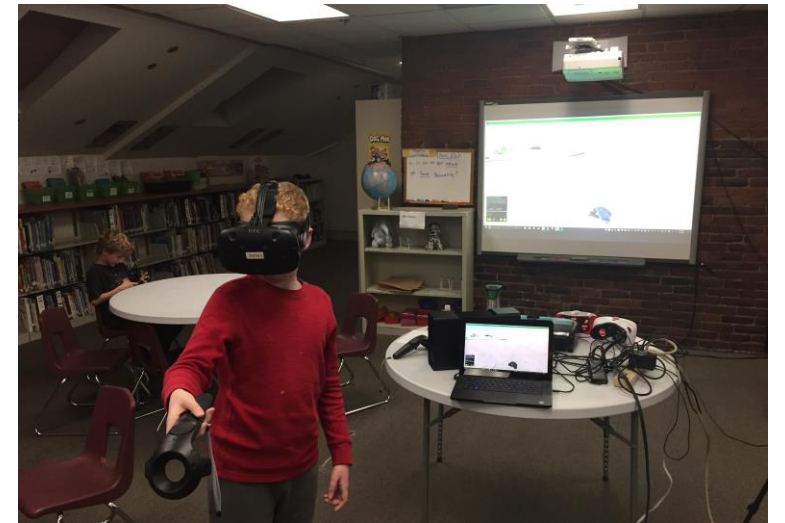
11. Fabville

12. Library



# Student Engagement

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# 110

Newcomers enrolled at Somerville High School during Semester 1 of SY 2022





# Somerville High School Communities

## BEACON COMMUNITY

Students with last names  
starting with **A-F**

## HIGHLAND COMMUNITY

Students with last names  
starting with **G-N**

## ELM COMMUNITY

Newcomers in the Multilingual  
Learner Education (MLE)  
program

## BROADWAY COMMUNITY

Students with last names  
starting with **O-Z**

# Intentionally Supporting Newcomers: Why it Matters

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- » Diploma attainment and preparation for an array of post-secondary opportunities are the goal for every SHS student.
- » Diploma attainment impacts lifetime earning potential
- » Multilingual Learners are at higher risk of leaving school without a diploma
  
- » **Newcomer Seminar began SY 2023 to provide additional support**
  - Community building activities
  - Extended orientation topics
  - Academic and social/emotional support
  - Explore SHS elective courses, including CTE





WELCOME FRIENDS

L. SALVADOR

SALVADOR

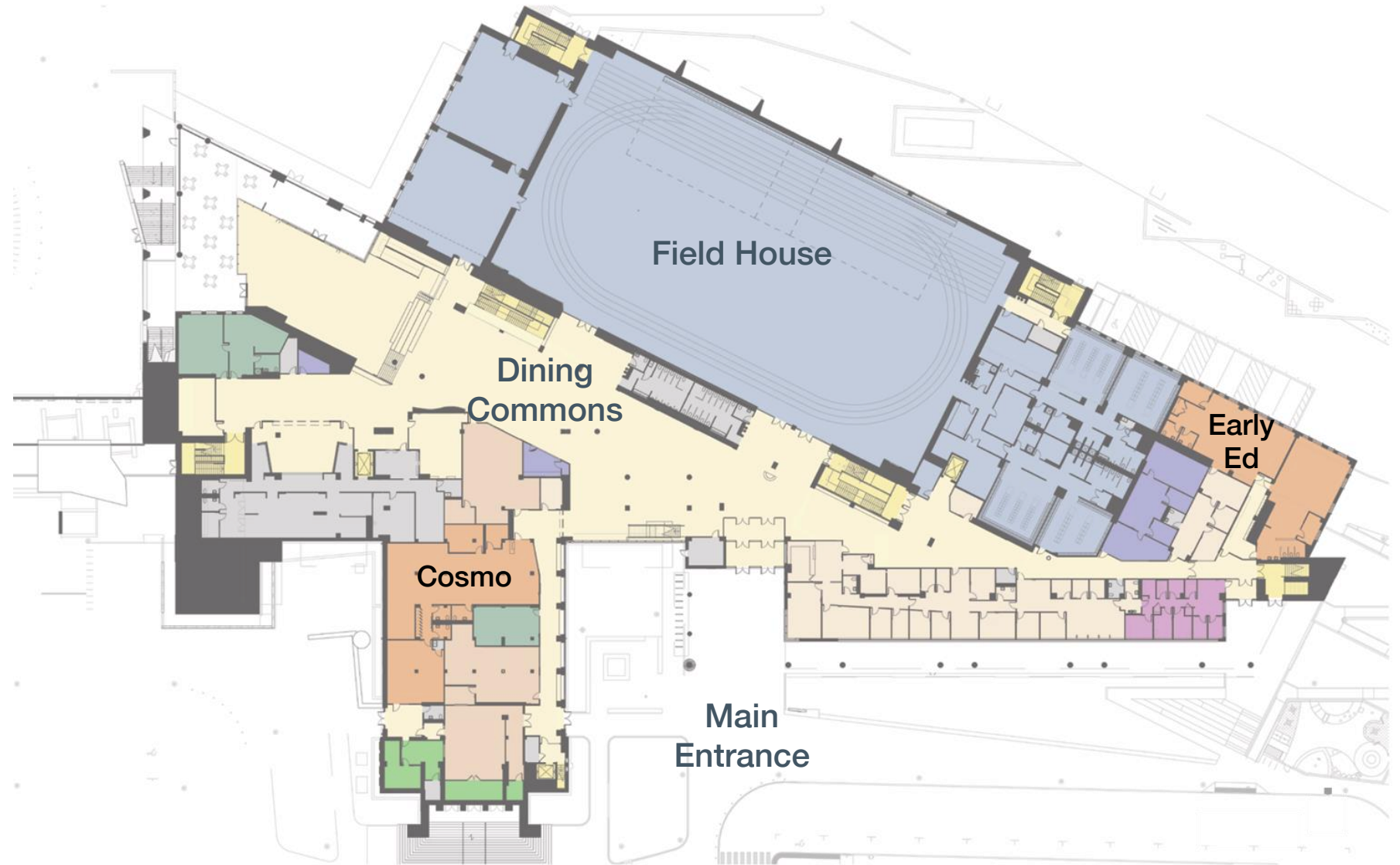




# Level 1 Plan

## PROGRAM PLAN LEGEND

- Administration & Guidance
- Chapter 74 Vocational Spaces
- Circulation
- Core Academic
- Custodial & Maintenance
- ELL / ESL / SEI
- Kitchen
- Science Classroom & Support
- SPED
- Vertical Circulation
- Vocations & Technology











# Section

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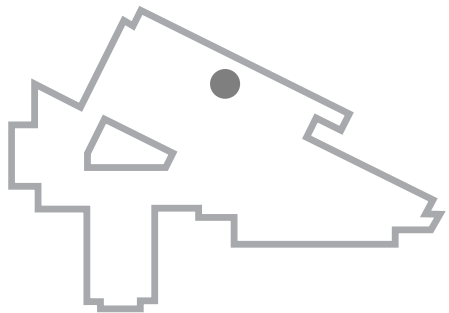
# Lower Level Plan

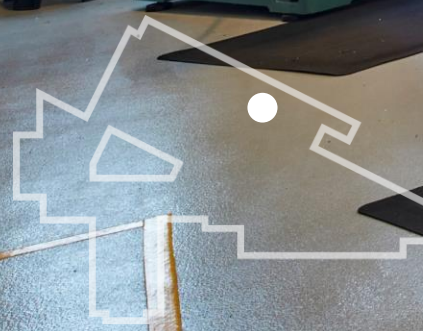
## PROGRAM PLAN LEGEND

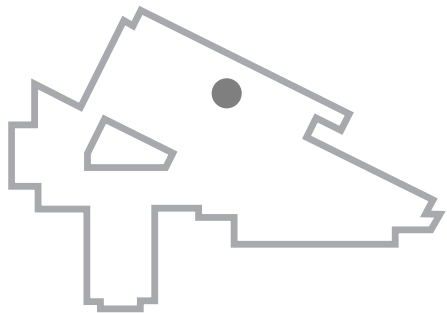
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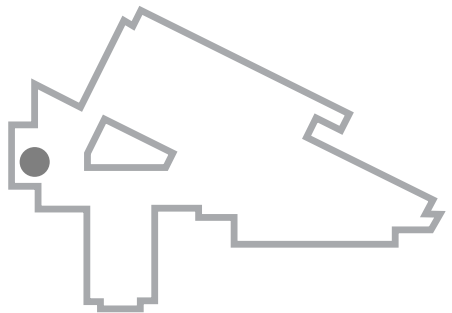


# Level 2 Plan

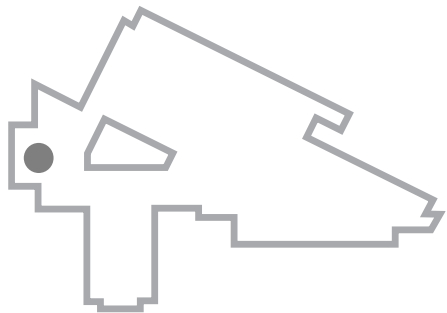
## PROGRAM PLAN LEGEND

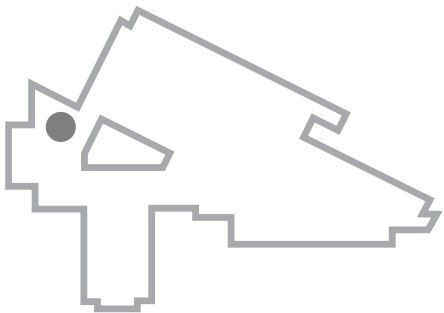
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- SPED
- Vertical Circulation
- Vocations & Technology













# Section

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# Level 3 Plan

## PROGRAM PLAN LEGEND

- Administration & Guidance
- Chapter 74 Vocational Spaces
- Circulation
- Core Academic
- Custodial & Maintenance
- ELL / ESL / SEI
- Kitchen
- Science Classroom & Support
- SPED
- Vertical Circulation
- Vocations & Technology





- 1 Small Group Study Rooms
- 2 Graphic Design CTE Space
- 3 Flexible Study Tables
- 4 Moveable Stacks
- 5 Classroom Instruction Areas
- 6 Open Collaboration Areas
- 7 Circulation Passageway
- 8 Clerestory Windows
- 9 Study Tables
- 10 Intensive Green Roof
- 11 Extensive Sedum Green Roof
- 12 Circulation Desk
- 13 Maker Space
- 14 Main Entrance Below











# Section

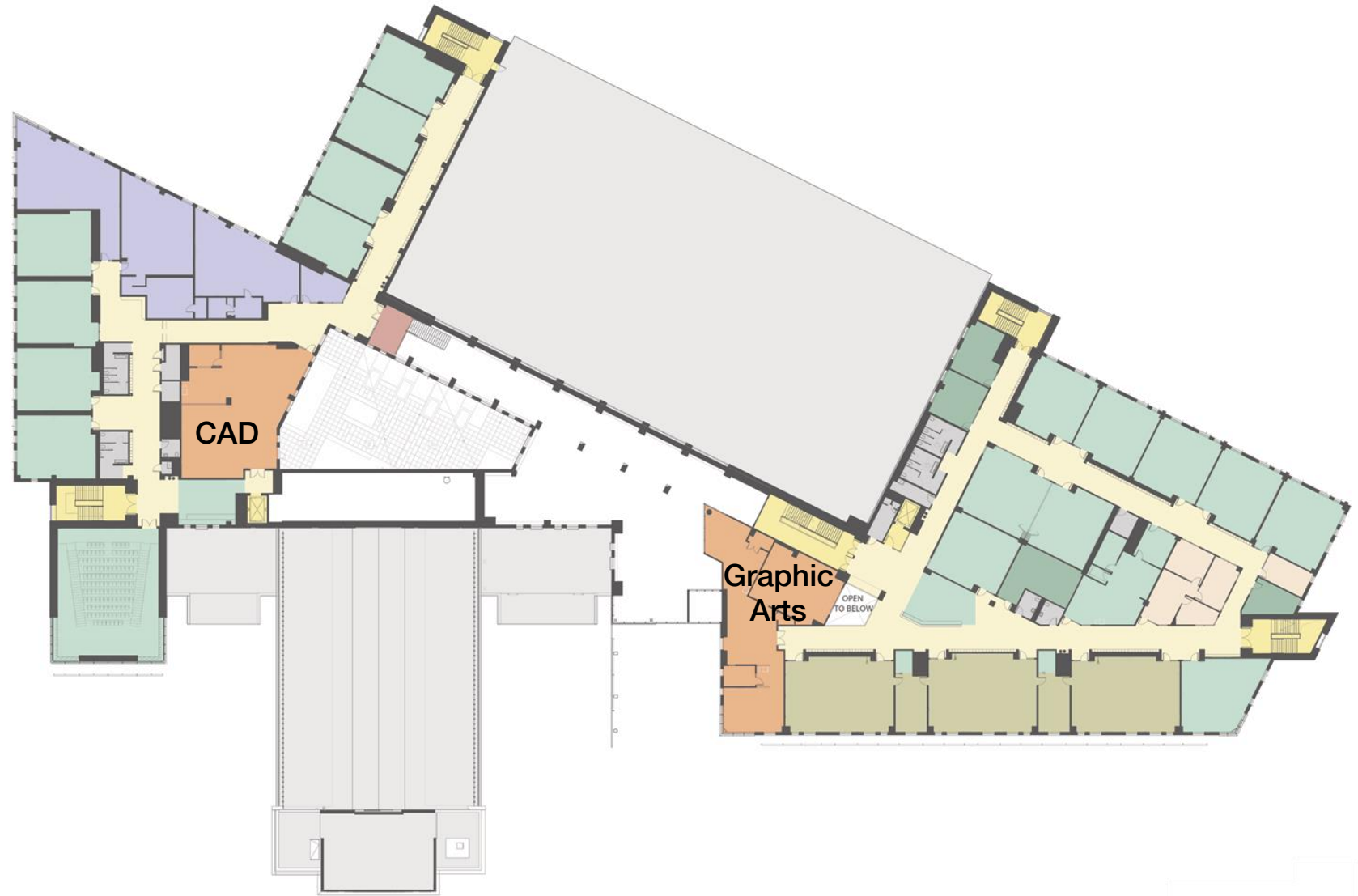
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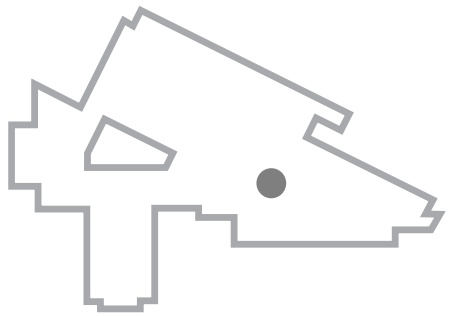
# Level 4 Plan

## PROGRAM PLAN LEGEND

- Administration & Guidance
- Chapter 74 Vocational Spaces
- Circulation
- Core Academic
- Custodial & Maintenance
- ELL / ESL / SEI
- Kitchen
- Science Classroom & Support
- SPED
- Vertical Circulation
- Vocations & Technology









PERIODIC TABLE OF THE ELEMENTS

H	He																	Ne																													
Li	Be	B	C	N	O	F	Ne																	Ar																							
Na	Mg	Al	Si	P	S	Cl	Ar																	Kr																							
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr																	Xe													
Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe																	Rn														
Cs	Ba	La-Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn																	Og													
Fr	Ra	Ac-Lr																																													
																		La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu																
																		Ac	Th	Pa	U																										

The Periodic Table of the Elements

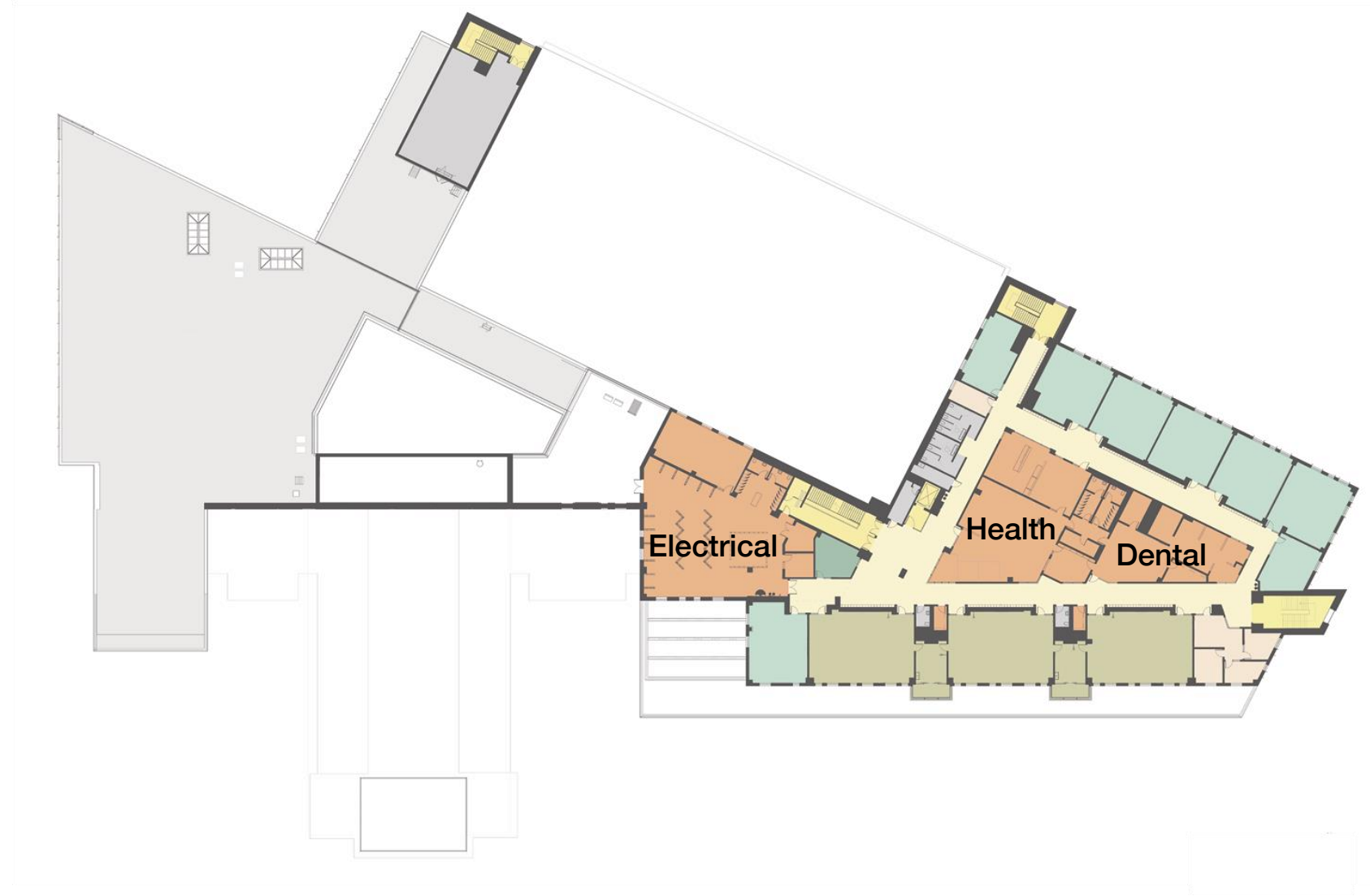
																		La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu																
																		Ac	Th	Pa	U																										



# Level 5 Plan

## PROGRAM PLAN LEGEND

- Administration & Guidance
- Chapter 74 Vocational Spaces
- Circulation
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- Vertical Circulation
- Vocations & Technology









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# Waltham High School

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# The City of Waltham – An industrial history

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- » First settled in 1634
- » Early center for the labor movement
- » Major contributor to the American Industrial Revolution
- » Waltham Watch Factory opened in 1854, first company to make watches on an assembly line – Won gold medal at 1876 Philadelphia Centennial Expo!
- » The original home of the Boston Manufacturing Company – first integrated textile mill in the US.
- » A prototype for 19th century industrial city planning
- » Late 19th & early 20th century, home to the automobile manufacturer Metz, where the first production motorcycle in the U.S. was built.
- » Raytheon invented the mass production of the magnetron tube used in radars in World War II



Boston Manufacturing Company



*1,830 Students (680 CTE Students)*

*14 Chapter 74 CTE Programs*

*\$299M / \$375M Budget*

*Athletic Field, Structured Parking*

*414,854 GFA Building*



*View from Lexington Street*

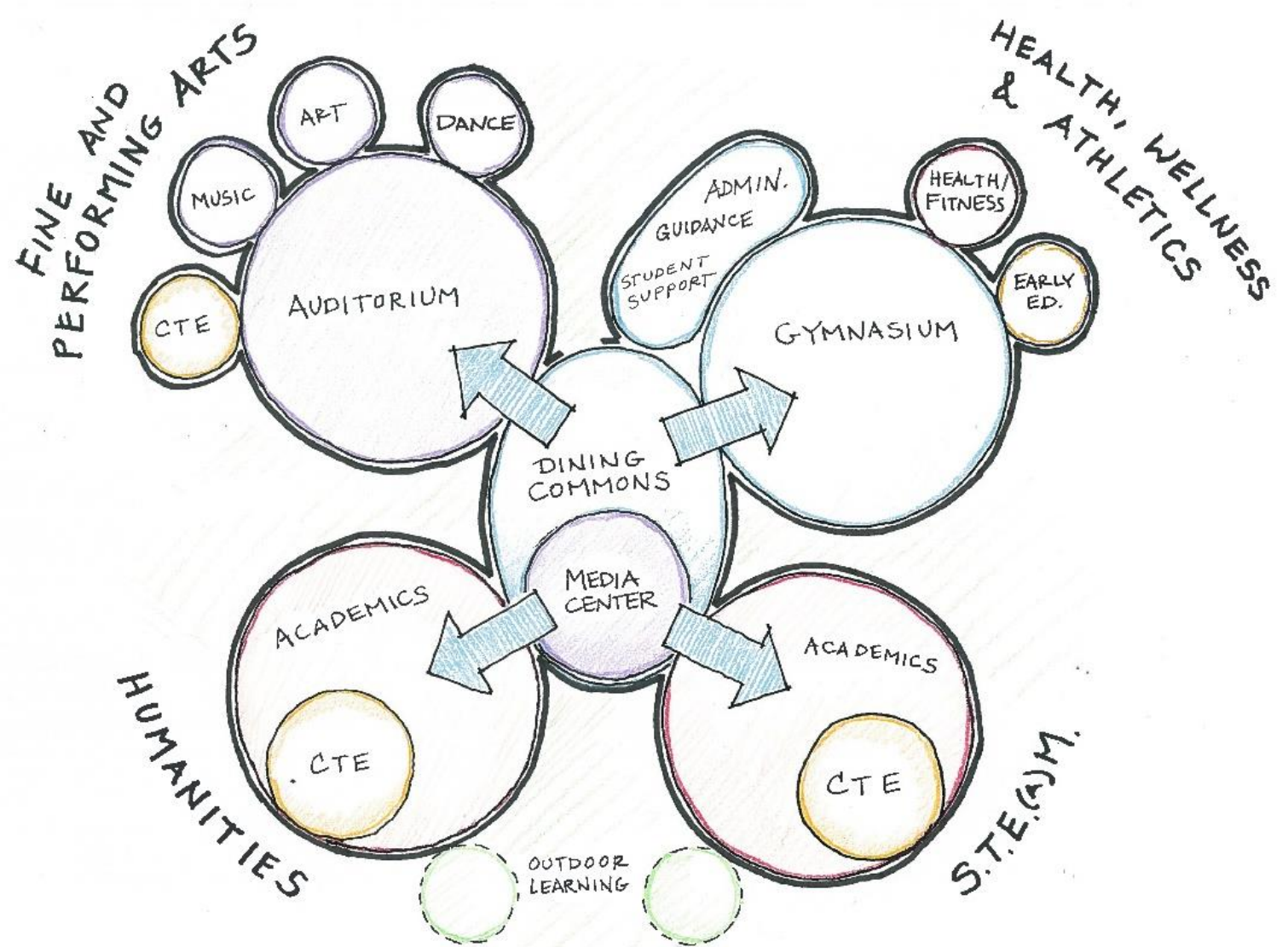


WALTHAM HIGH SCHOOL

# Program Integration

Educational Program  
Priorities:

- » Four Academic Clusters
- » Centralized Commons Space
- » Interdisciplinary Adjacency
- » Connectivity

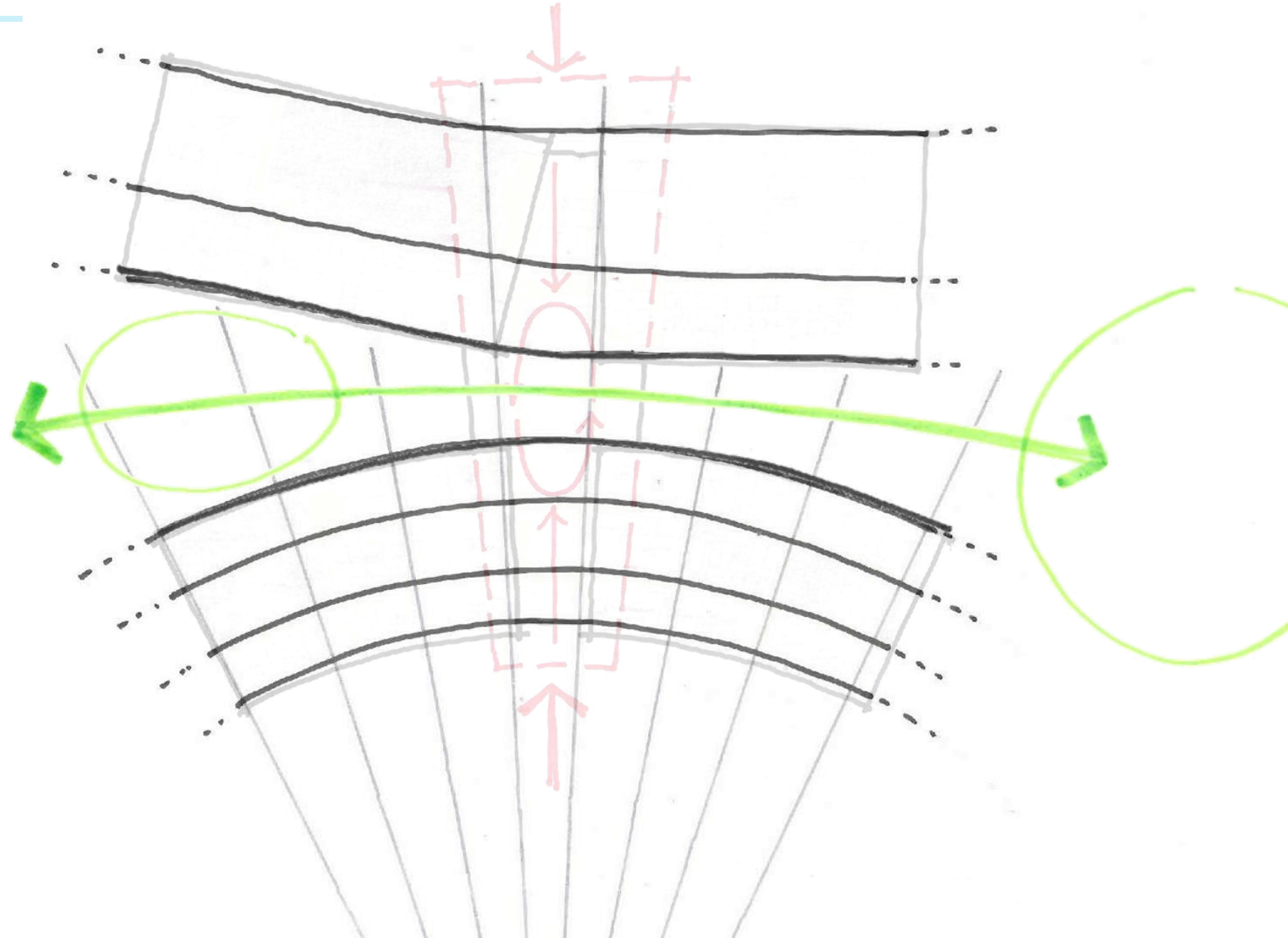


# Massing Concepts

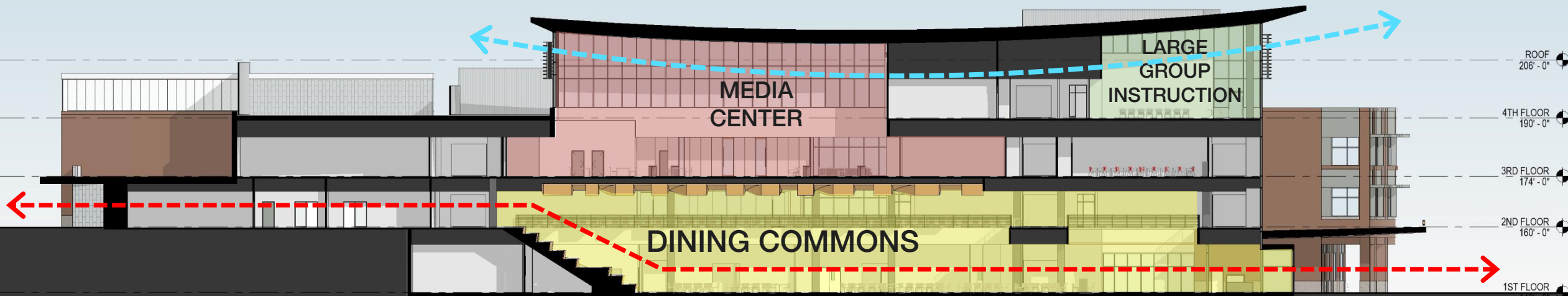
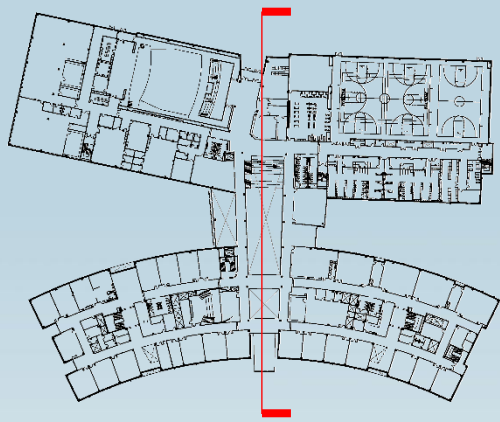
Four Academic  
Clusters Unified by a  
Central Commons

Connections to  
Nature

Unifying Geometry of  
Radials and Ripples







Building Section through Central Spine

# 21st Century Teaching and Learning

- » Student-Centered
- » Interdisciplinary
- » Technology-Infused
- » Community-Connected
- » Problem and Project- Based
- » Process and Product-Oriented

## Chapter 74 Certified and Approved:

1. Automotive Technology
2. Collision Technology
3. Carpentry
4. **Cosmetology**
5. Culinary Arts
6. Early Education and Care
7. Electrical Technology
8. Electronics
9. **Environmental Science & Tech**
10. Graphic Design & Communications
11. **Health Assisting**
12. **HVAC-R (inc. Plumbing)**
13. **Programming and Web Development**
14. Television Broadcasting

*(Red = New Program)*



# Thematic Environments

## STEAM Cluster

HVAC	Physics or Gen. Sciences
Plumbing	Robotics
Horticulture and Landscaping	Mathematics
Automotive Technology	Social Studies
Collision Technology	English
Electrical Technology	SPED
Electronics Technology	Business
Programming and Web Development	
STEAM Maker Space / Fab Lab	

## Humanities Cluster

Culinary Arts / Restaurant	Art
Family & Consumer Science	World Languages
Lab	English
Radio & TV Broadcasting	Social Studies
Learning Commons	History
Language Lab	Science
Writing Center	SPED
Maker Space	

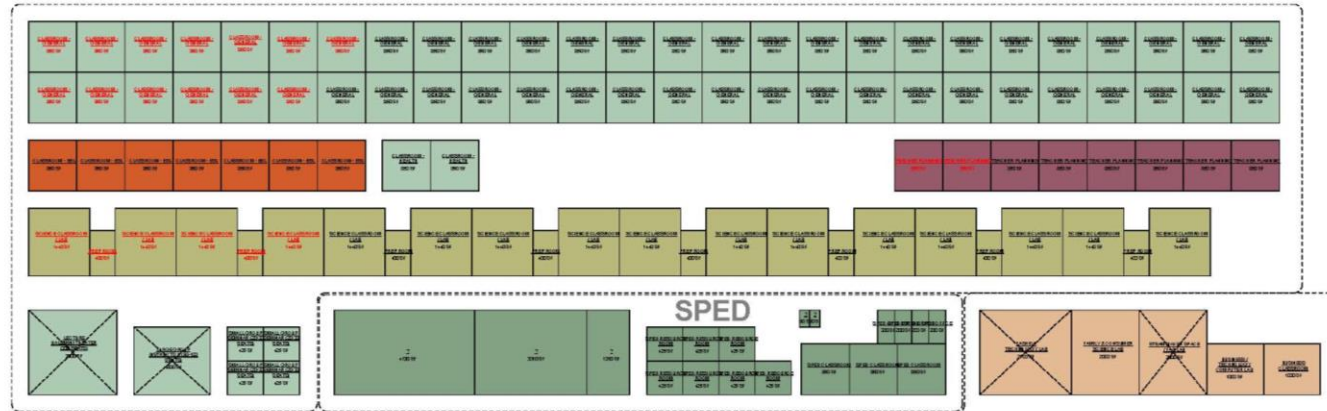
## Fine and Performing Arts Cluster

Carpentry (Set Design)	Art
Cosmetology	Music
Auditorium	Dance
Graphic Communications	Drama
Fashion Technology Lab	

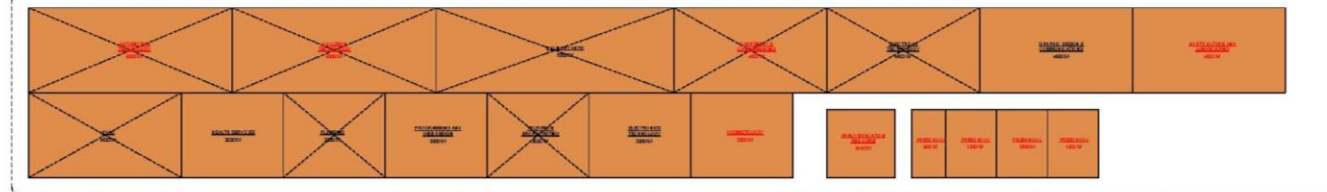
## Health, Wellness and Athletics Cluster

Early Education and Care	SPED/Lifeskills
Preschool	Biology
Health Services	Chemistry
Gymnasium	Mathematics
PE Alternatives	English
	ELL

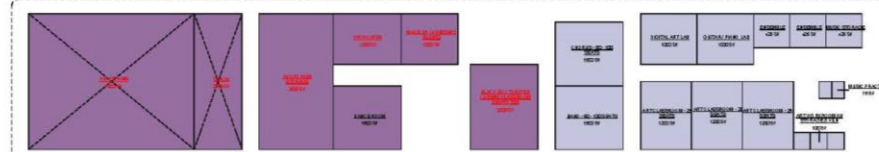
## ACADEMIC



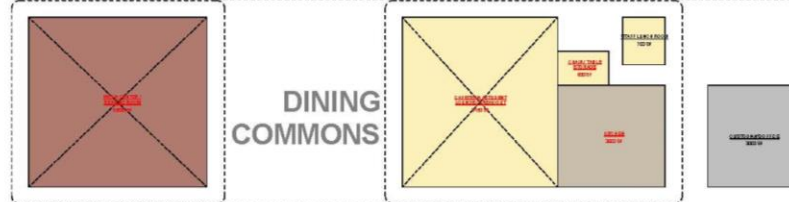
## VOC/TECH CHAPTER 74



## FINE & VISUAL ARTS



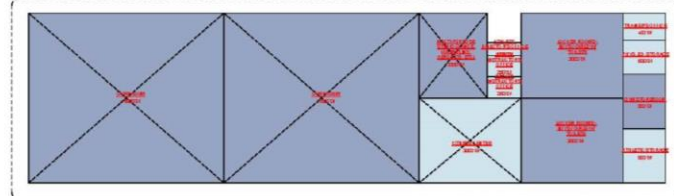
## LEARNING COMMONS



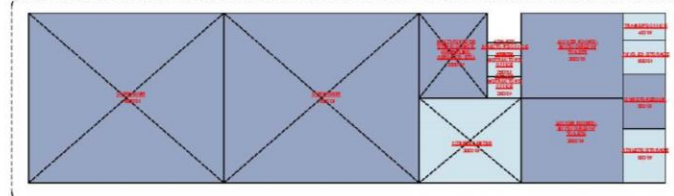
## LOCAL ADMIN



## DINING COMMONS



## ATHLETICS

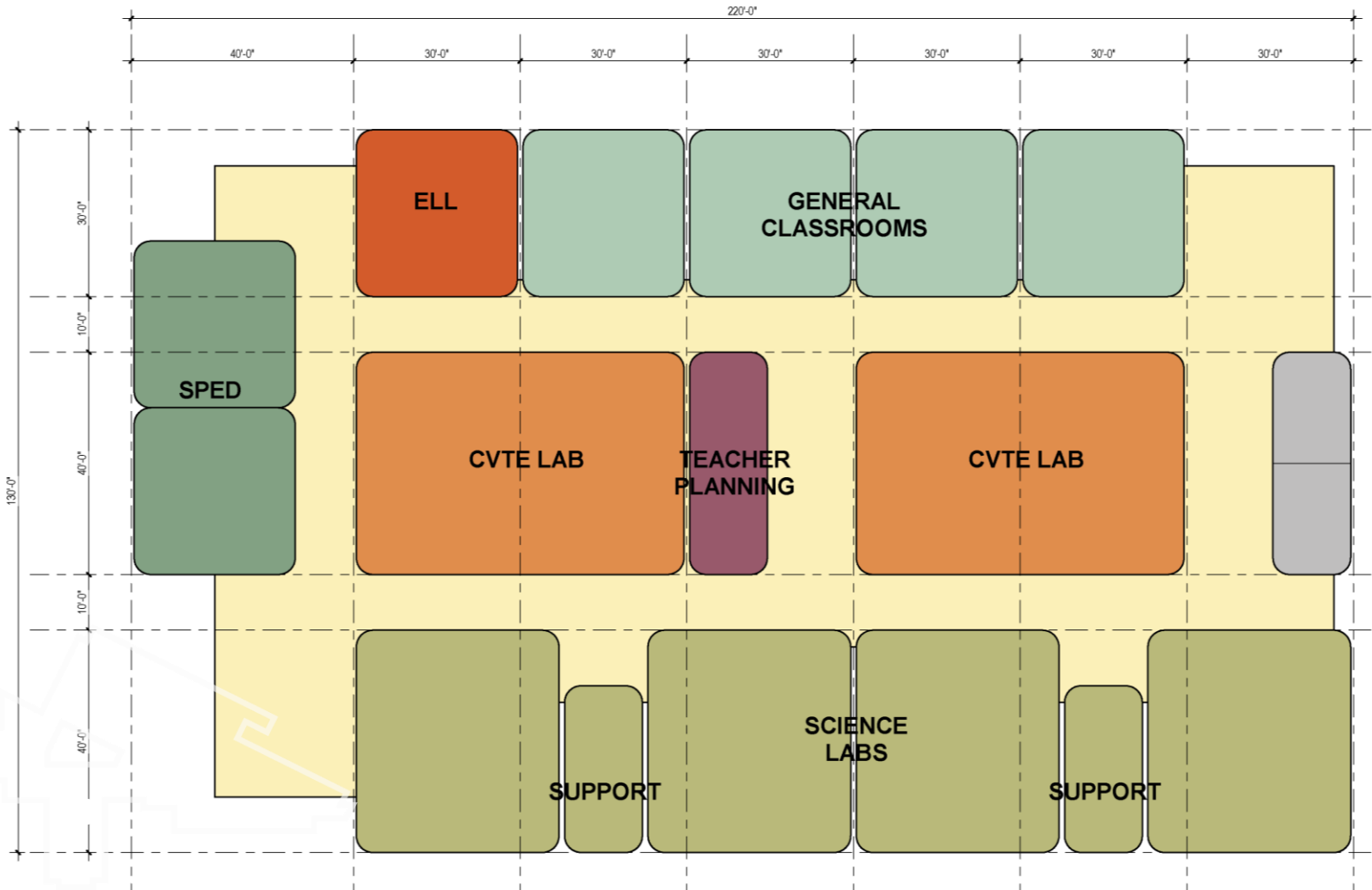


**New High School Space Program**  
**276,569 sf (NSF) X 1.5 = 414,854 sf (GSF)**











# Planning for Interdisciplinary Learning

## Upper Level Cluster Template



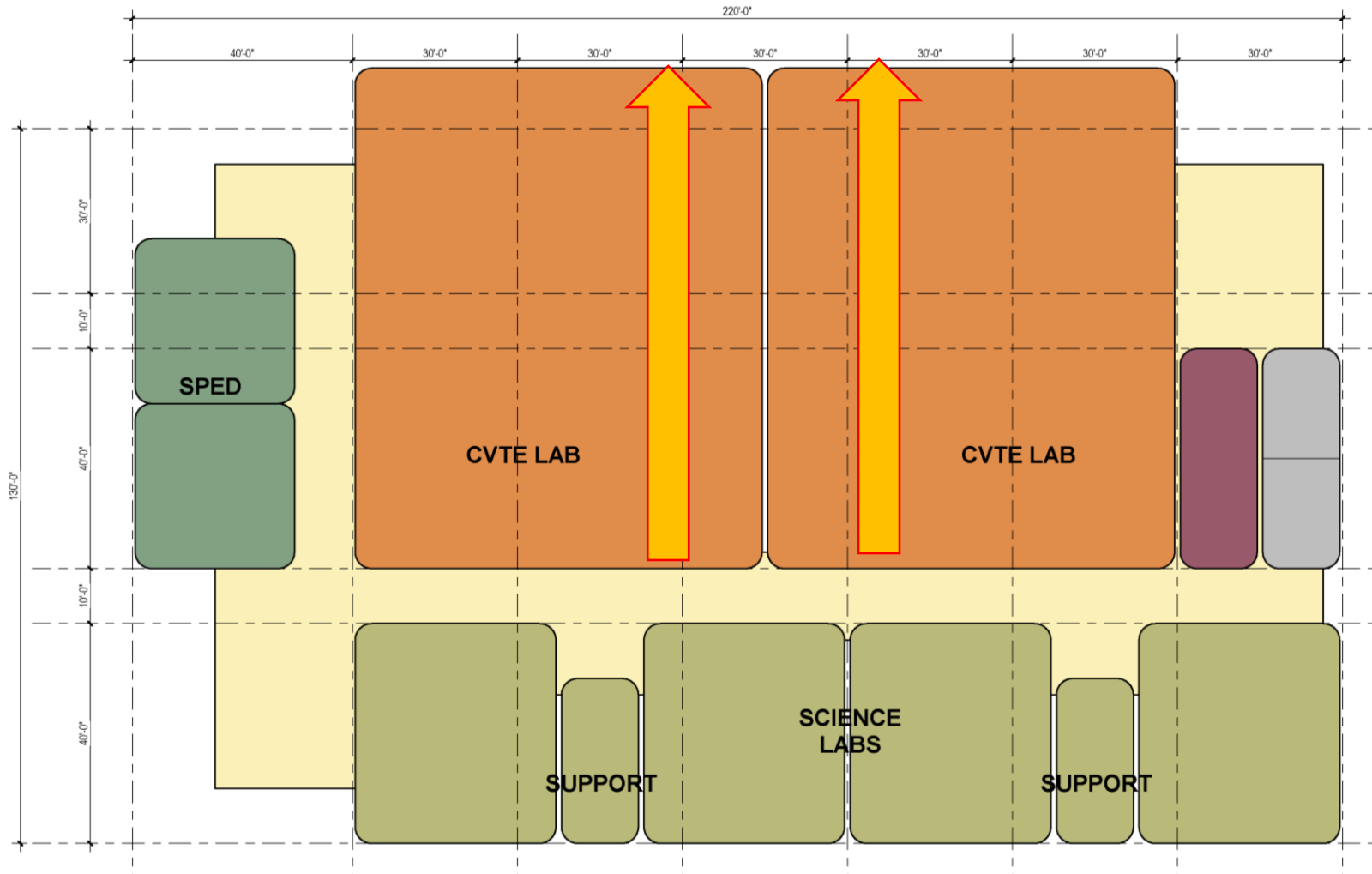
### Program Legend

- |   |  |
|---|--|
|  Classroom       |  Phys Ed. Athletics |
|  Chapter 74      |  Administration     |
|  Performing Arts |  Kitchen            |
|  Art/Music       |  Circulation        |



# Planning for Interdisciplinary Learning

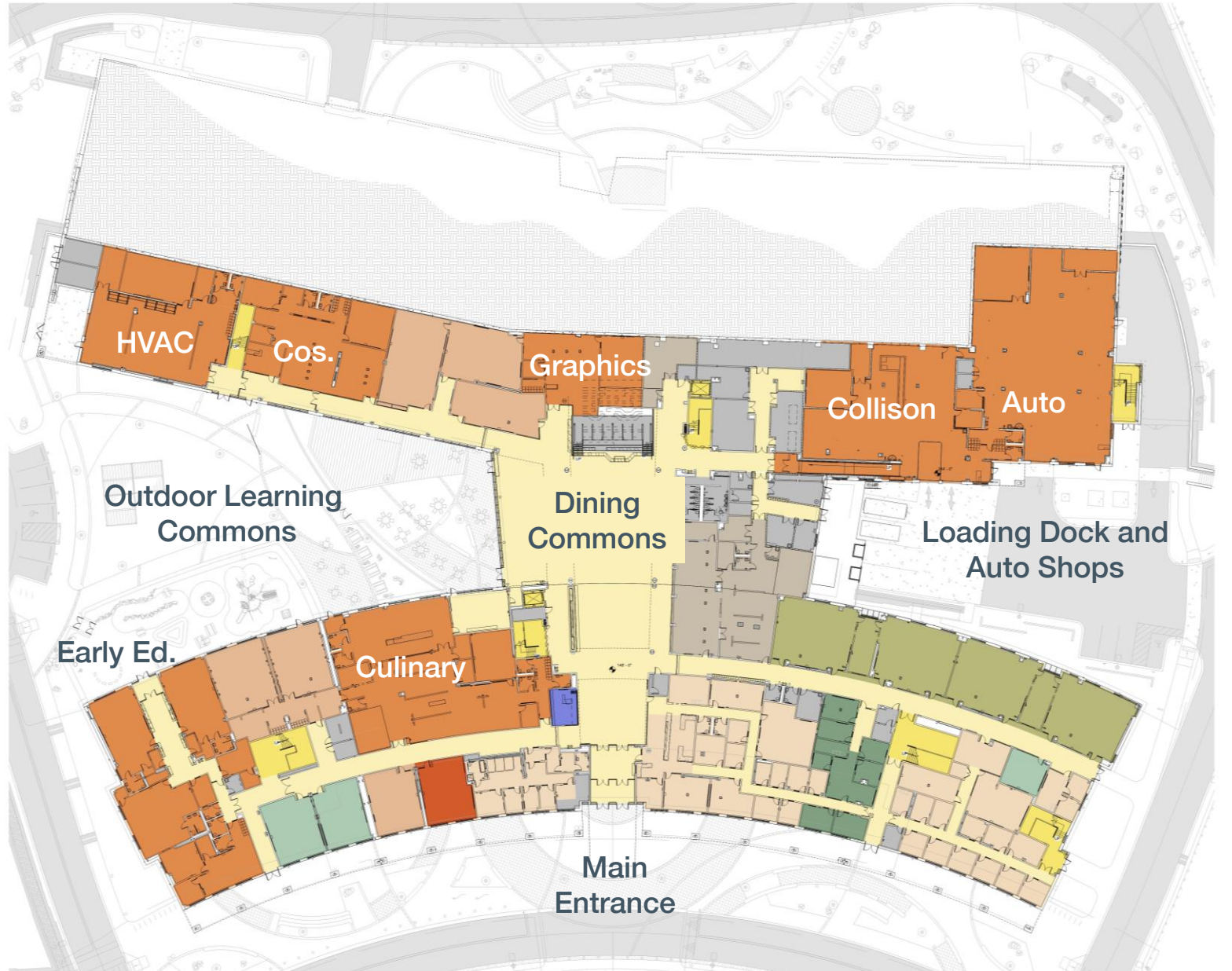
## Grade Level Cluster Template



# Level 1 Plan

## PROGRAM PLAN LEGEND

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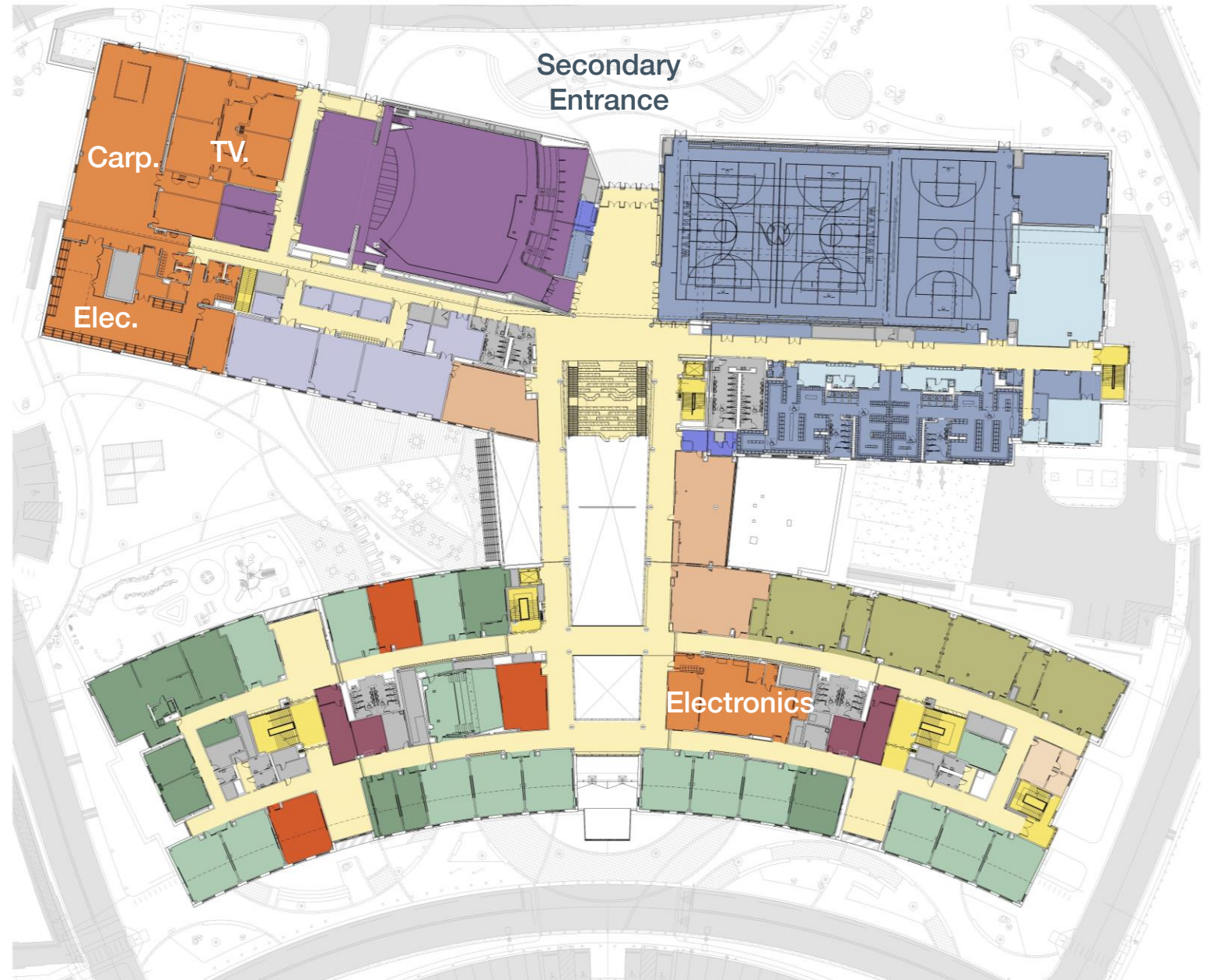




# Level 2 Plan

## PROGRAM PLAN LEGEND

- Administration & Guidance
- Chapter 74 Vocational Spaces
- Circulation
- Core Academic
- Custodial & Maintenance
- ELL / ESL / SEI
- Kitchen
- Science Classroom & Support
- SPED
- Vertical Circulation
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# Level 3 Plan

## PROGRAM PLAN LEGEND

- Administration & Guidance
- Chapter 74 Vocational Spaces
- Circulation
- Core Academic
- Custodial & Maintenance
- ELL / ESL / SEI
- Kitchen
- Science Classroom & Support
- SPED
- Vertical Circulation
- Vocations & Technology





# Level 4 Plan

## PROGRAM PLAN LEGEND

- Administration & Guidance
- Chapter 74 Vocational Spaces
- Circulation
- Core Academic
- Custodial & Maintenance
- ELL / ESL / SEI
- Kitchen
- Science Classroom & Support
- SPED
- Vertical Circulation
- Vocations & Technology





# Survey Goals & Findings

## Community

63 RESPONSES

We want to know how community members view the city and how they envision the high school benefiting the community.

## Staff

49 RESPONSES

We want to know how the school has changed, how students learn and are most engaged, and what is celebrated in the school.

## Students

708 RESPONSES

We want to understand what the student perspective is on Waltham, the school, and what they are passionate about.

*How do you describe Waltham to friends and family?*

Diverse	32
Industrial/historical	21
Green spaces	9
Blue collar	8
City/Small Town Mix	8
Acceptance/welcoming	6
Changing/gentrification	5

*In what ways will the new school benefit the community?*

Promote Learning	16
Community space/Inclusive	12
Vocational/CTE	7
Empower students	4
Empower students	4
Contribute skills back to community	2
Sustainable	1
Career ready	1
College ready	1

*What skills do you want students to leave WHS with?*

Preparedness	14
Critical thinking	12
Empathy/social skills	10
Responsibility to community/social justice	8
Sense of culture/community	7
Life skills	7
Confidence	6
Respect for others	6
Collaboration	3
Creativity	1
Adaptability	1
Professionalism	1

*How do you prefer to engage with your school work?*

Hands-on	354
Writing/essays	161
Drawing/art	117
Presentations	92
Groups	28

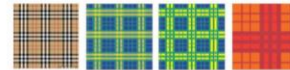
# Main Theme: Diversity and Inclusion

*Celebrating Waltham's history in textile manufacturing and the City's current culture*

Waltham



English



Armenian



Guatemalan



Indian/Hindu



Ukrainian



Chinese



Haitian



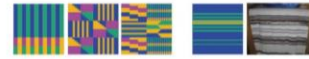
Scottish



French



East African



Native American



Arabic



Brazilian



Taiwanese



Irish



Canadian



Italian



Mexican



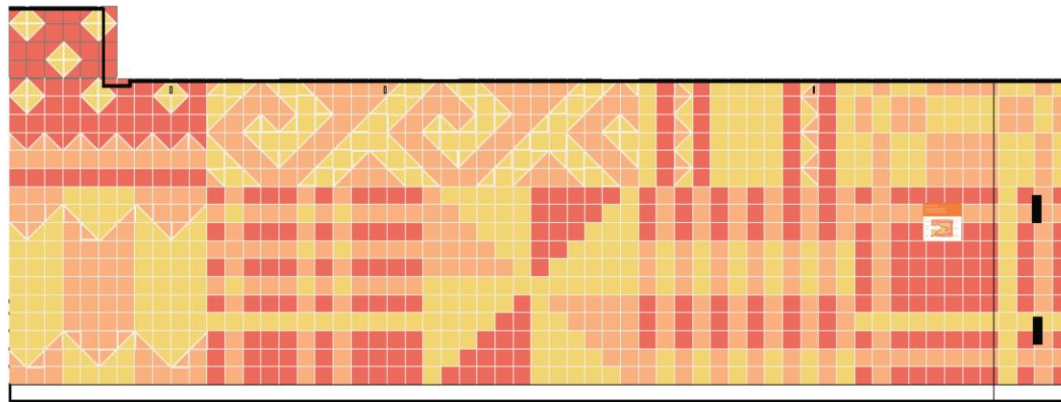
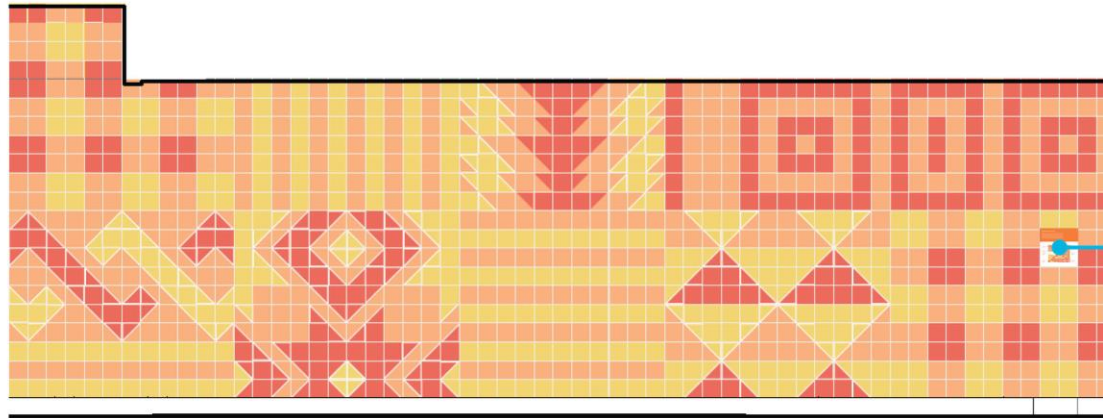
Bangladeshi



*List created from survey responses, focus groups, and current school data*



# Textile Integration in Tiled Hallway Breakouts



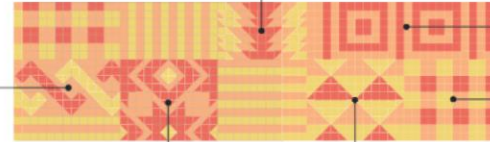
## Weaving Cultures

We celebrate the diversity of Waltham High School students through the weavings of cultures across the world. Each unique pattern comes together to create a larger mosaic, embodying the unity and strength of the Waltham community. The art of weaving ties together the artistry and representation of various cultures, with the history of Waltham's revolutionary textile industry.

Ceinture  
Fléchée  
Canada

Celtic Knot  
Ireland

Textile  
El Salvador



Wampum Belt  
Algonquin Tribe

Lenca Cloth  
Honduras

Traditional  
Basket  
Uganda

# Celebrating Culture...



Haitian



Armenian



East African



Guatemalan



West African



Scottish



# ...and Innovation



Molecules

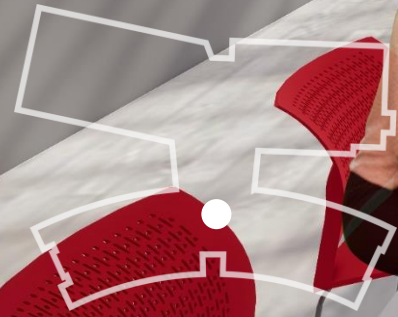
DNA

Gears

Circuit Board

Bionary Code

Keyboard









WALTHAM HIGH SCHOOL







# Thank You

**Matt Rice, AIA, ALEP**  
**Lorraine Finnegan, AIA**