



Executive Summary

Located in the heart of Somerville, Massachusetts—
New England's most densely settled municipality—the
new Somerville High School (SHS) provides educational
and life-skill-building experiences for an ethnically and
socioeconomically diverse population of 1,600 students.
A comprehensive high school, SHS offers academic
and career and technical education (CTE) programs
strategically interwoven beneath one roof. In addition,
SHS contains robust public-facing components (including
health and daycare centers, a restaurant/café, beauty
salon, and auto repair services) that foster relationships
between the school and surrounding community.

Since the mid-nineteenth century, SHS has occupied a prominent site, perched alongside city hall and the main public library atop Somerville's Central Hill. The previous high school had grown incrementally over the decades, its oldest building dating from 1895 and its most recent substantive renovation in the 1980s. The resulting conglomeration struggled with infrastructural and spatial constraints that fragmented the student body and prevented the use of modern pedagogical approaches. Furthermore, the educational complex overlooked opportunities to invigorate its highly visible, symbolic environment by connecting with the adjacent localized community of Gilman Square or engaging with its neighbors, such as the residents of a nearby senior housing development, through targeted programming.

Embarking on a journey of intensive research, planning, and visioning, the city partnered with the design team to translate the shared aspirations of the Somerville community into an urban design solution that reimagines the high school, transforms its historic Central Hill campus, and creates a sustainable educational and public asset for the city's entire population. A single yet multifaceted facility, SHS features the resources, educational environments, and technology to expand learning horizons beyond the classroom and prepare each student for future success.

Scope of Work and Budget

Owner: Somerville Public Schools

Location: Somerville, Massachusetts

Project Description: Occupied renovation/ expansion of a comprehensive high school for 1,600 students in academic and 14 CTE programs

Building Area: 396,500 sf

Sustainability: LEED Silver, LEED 4.0 certification

Public-Facing Features: restaurant/café, auto repair facility, health center, daycare, beauty salon, cable broadcasting station, theater, outdoor athletic fields, parkour course

Cost: \$206 M

Jul 2015 Project Initiated Sep-Dec 2015 Visioning, Educational Program, Feasibility Study

Phase 0 - Temporary Modular Classrooms

pr 2018

 ${\sf Design\ Completed,\ Construction\ Started}$

Phase 2A- Theater Building Renovation Completed and School Occupied

May 2024

Phase 3- Site Work and New Field Completed

2016–2018
Design Documents (SD-CD)

Jul 2018-Feb 2021
Phases 1 & 2 Building Demo, New Addition, Field House, Gym

A City That Embraces Diversity and Learning

Somerville, a city of 80,000 people northwest of Boston, ranks as New England's most densely populated municipality. Following its incorporation in 1872, the city rapidly urbanized and grew to support a large, workingclass population. Somerville's blue-collar roots and down-to-earth character persist a century and a half later, even as its population has diversified. Residents include a robust mix of

- » Tradespeople
- » Professionals
- » Academics
- » Artists
- » College students
- » Recent immigrants from countries including Haiti, El Salvador, and Brazil

Today nearly 25% of Somerville residents are foreign born and 52 languages are spoken within the city's 4.12 square miles, making Somerville one of the country's most ethnically diverse cities.

languages spoken

24% foreign-born population

67% of residents are renters

higher education institutions in the greater metropolitan area

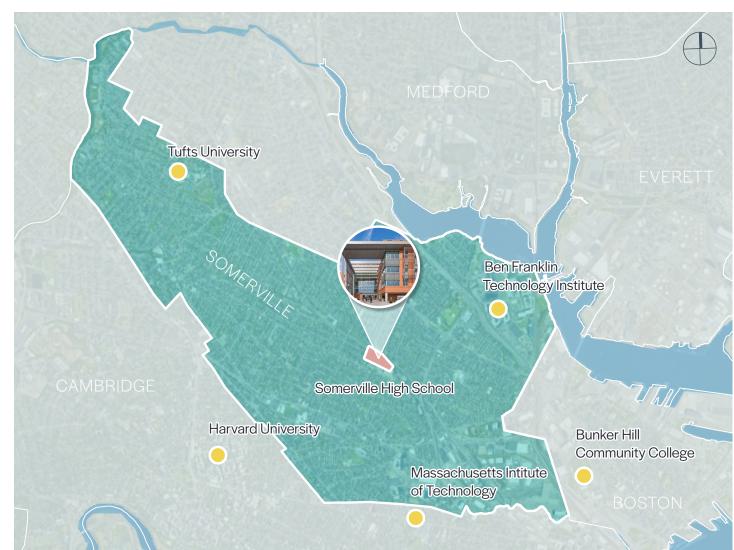
Alongside its socioeconomic and ethnic variety, Somerville is further enriched by its proximity to worldclass universities—including Harvard, MIT, Tufts, and Northeastern—many of which provide educational programming for facets of the Somerville Public School District. Likewise, faculty, staff, and students from these and other institutions reside in Somerville, fashioning a community that embraces diversity and learning as core values. The new Somerville High School is a product of this involved populace who, from the project's initiation in 2015, set out to support and celebrate their city's exceptional eclecticism.











Context

Barriers to Equity

Even as the city placed a premium on education, Somerville's high school suffered from a lack of organization, modernization, and space, resulting in facilities that failed to serve students equitably and effectively. Challenges faced by the students, teachers, and staff stemmed from the ad-hoc campus, composed of buildings from 1895, 1914, 1929, and 1986 (the date of the last substantive addition/renovation). Resulting problems included

- » Antiquated mechanical systems
- » Impending structural failures
- » Crumbling masonry
- » Ineffective/non-existent climatic control, poor insulation, single-pane
- » Insufficient infrastructure for contemporary technology and pedagogical approaches
- » Excessive travel distances between classrooms
- » Small, inflexible classrooms
- » Too few and irregularly placed bathrooms

Furthermore, the high school's physical organization separated the academic and CTE students in distinct wings at opposite ends of the school's Central Hill campus. Detrimental impacts of this arrangement

- » Prevented interaction between academic and CTE students
- » Introduced a hierarchy between the programs
- » Restricted students' ability to participate in both programs

Aside from dividing the academic and CTE populations, lack of space restricted the district's ability to comprehensively assist students, who each participate in one of the following programs

» Student-Support Communities

- Four 400-student cohorts
- Counselors and guidance staff provide educational and social
- Students grouped alphabetically by last name

» Multilingual Learner Education (MLE)

- Dedicated student-support community for low-literacy students
- 150+ students enter annually
- Once proficient, students move to one of other three student-support communities

» Next Wave/Full Circle (NW/FC)

- Project-based therapeutic learning environment
- Grades 6 through 12
- Housed elsewhere in the city before new SHS

» Somerville High School Intensive Program (SHIP)

- Self-contained classroom for medically fragile students
- Program requires access to an outdoor respite garden for therapeutic benefit

Overall, the existing high school's physical environment prevented the intermingling of cultures, ideas, and activities that characterize Somerville's vibrancy and multiplicity.



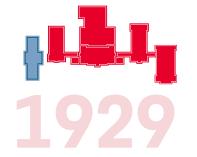


History of Somerville High School

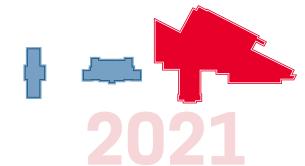














CHALLENGES

- + Site constraints: Steep and crowded existing high school site with little room for new construction; dense urban environment with few large open parcels
- + Historic and existing structures: Which buildings merit preservation and restoration? How to connect SHS with larger context of Central Hill and the city?
- + One school, many pedagogical profiles: How to interweave academic and CTE resources to support belonging, unity, individual learning styles, and requirements for MLE, NW/FC, and SHIP programs?
- + Phased, occupied construction: Students attending school in temporary modular classrooms on site throughout renovation/construction

ASSETS

- + Engaged community that values diversity and education: Referendum for new SHS supported by 70% of Somerville's population
- + **Distinctive urban site:** SHS located on prominent civic and historic site next to city hall and main public library
- + Adjacent transportation and sustainability improvements: New Gilman Square light-rail station and Community Path connect SHS with surrounding areas, encouraging sustainable travel methods
- + Student diversity: Ethnically, culturally, and socioeconomically diverse urban population with 52 languages spoken, 24% of population foreign born, and minorities comprising 65% of student body

Stakeholders

More than 2,000 stakeholders took part in over 150 meetings throughout the planning and design process for the new Somerville High School. They include



Students: 1,600 total, who take part in one or more of the following

- » Academics
- » 14 CTE programs
- Advanced Manufacturing
- Automotive Technology
- Carpentry
- Cosmetology
- Culinary Arts
- Dental Assisting Technology
- Drafting Design/Pre-Engineering
- Early Education
- Electrical
- Graphic Communications
- Health Assisting/Pharmacy Technology
- HVAC-R
- Metal Fabrication and Joining Technology
- Plumbing
- » MLE
- » NW/FC (105 students)
- » SHIP (10 students)

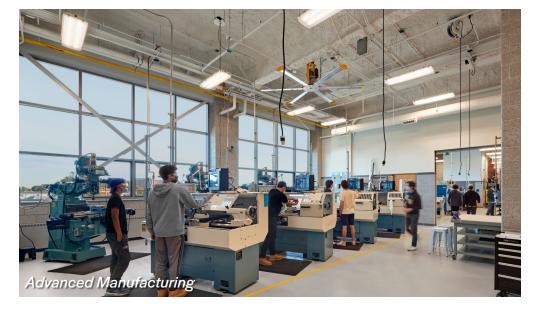


School Building Committee: 15-member committee representing

- » City government
- » School district administration
- » High school faculty and administration
- » Student body
- » Community

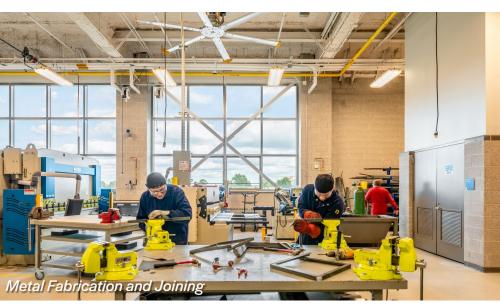












Stakeholders



Teachers/Staff:

- » 250 teachers
- » 15 administrators
- » 25 staff



Employees and Community Patrons of the resources located within the new high school:

- » Somerville City Cable, provides programming and production for city's two municipal cable TV stations
- » Cambridge Health Alliance (CHA) Teen Center, serves students and young adults in the community
- » CTE Program components open to community members, including
- Restaurant/café
- Auto repair shop
- Beauty salon
- » Somerville Child Care Center, daycare for local children
- » Theater and lecture hall, double as venues for community meetings



Massachusetts School Building Authority (MSBA):

Quasi-independent government authority created to reform capital funding process for improvements in the Commonwealth's public schools; works with local communities to create affordable, sustainable, energyefficient schools across the state















Visioning Process

Educational Planning and Goals

To express what learning in Somerville High School might encompass over the next fifty years and determine how the new facility can support these aspirations, the design team underwent a series of intensive explorations.

- » Sept. 2015: met with staff, administration, and students over two full weeks
- » Oct. and Nov. 2015: conducted two all-day sessions leading an Educational Working Group of 30 representatives through a visioning process. Included city and school administrators; educators from arts, music, academic, athletic, and CTE disciplines; SHS parents; and area experts from community institutions such as Tufts University, Lesley University, and Biogen's Community Lab
- » Nov. and Dec. 2015: design team reconvened with the staff to confirm goals and objectives for the new SHS

The resulting educational plan defined four overarching goals for a building that would act as a model for high quality inclusionary and comprehensive education for urban school districts.

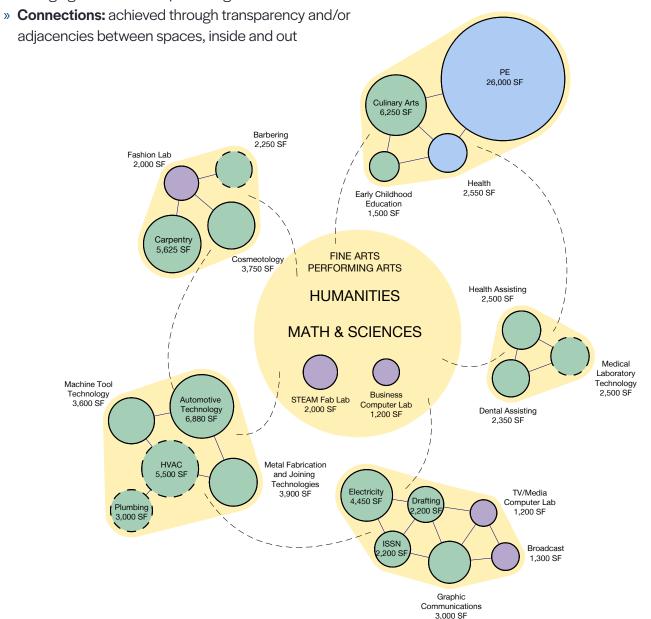
- One School for All Students: Create a school that supports and welcomes diverse learning profiles, ethnic and cultural backgrounds, and socioeconomic populations
- Student-Centric Learning: Cultivate student-focused, handson learning that immerses students in problem solving, critical thinking, and collaborative situations in the classroom and beyond
- Educate the Whole Student: Provide opportunities for students to explore their interests while discovering and refining skills needed to be successful beyond high school, college or career ready
- Community Connections: Expand the high school's already strong relationships with local business, educational, and civic partners while fostering interactions between the public and high school communities

"The process started with an important strategic question: What is Next Generation Learning?"

-Tony Pierantozzi, School Building Committee Chair and former Superintendent

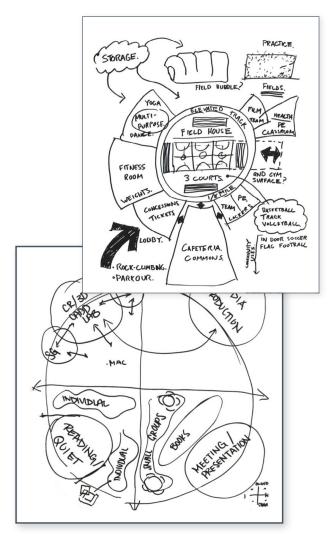
The educational plan included **three key design concepts** to support the plan's goals

- » Adjacencies: strategically locating spaces to encourage interaction, communication, and cross-pollination of ideas
- » Flexibility: Proper sizing and appointments to promote changing uses and multiple configurations









Creating Community Value

Community and Sustainability Driven Planning

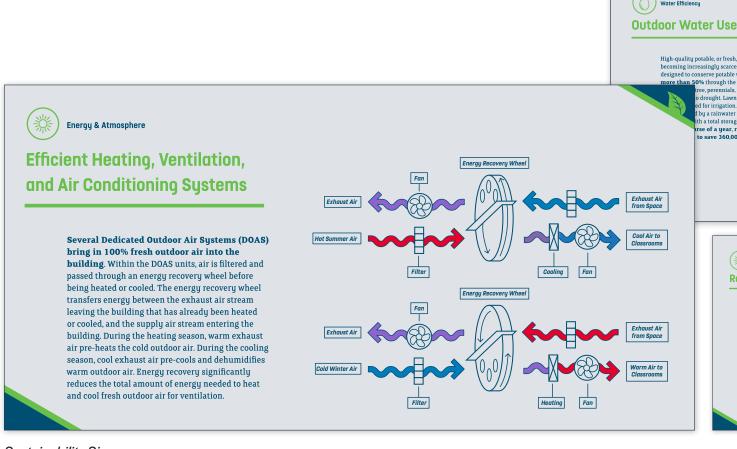
Concurrent with the visioning sessions that defined the project's educational goals, the design team worked closely with the city, the school district, specialty consultants, and stakeholder groups to investigate four site options—that of the existing high school and three alternative sites—as well as building approaches from base renovation to entirely new construction. Considerations included assessments of

- » Community input
- » Cost
- » Site-specific benefits and constraints
- » Environmental and neighborhood impacts
- » Construction schedule

The most favorable approach quickly emerged: combined renovation and new construction on the existing high school site.

Thereafter, a **Sustainable Design Working Group** composed of city and school administration, technical experts, students, and community members was convened to further explore environmentally responsible practices and strategies for the new SHS. Recommendations included

- » Connection to adjacent Community Path and light-rail station
- » Support for multiple alternative modes of transportation
- » Green roofs and solar PV arrays
- » Rainwater collection for landscaping use
- » Robust recycling programs



Sustainability Signage

Solar PV Arrays



Sustainable Si

Filter

Overflow

School Vegetable Garden



Fostering Diversity, Equity, and Inclusion

Tailored Stakeholder Engagement

In addition to the stakeholders engaged during the educational planning and visioning process, between fall 2015 and spring 2017, the design team conducted over 150 meetings with teachers and staff, community members, and students to learn about their priorities for the new high school. The team tailored their research methods to best connect with each group and cultivate actionable information to guide floor plans and infrastructural designs.

Students

To better understand what students valued—and their experiences of attending SHS—the design team met with a 50-student focus group. The discussion and writing/drawing exercises revealed that students

- » Embrace SHS's diversity
- » Welcome all individuals, regardless of nationality, race, gender, primary language, or cultural identity
- » Laud Somerville's eclectic array of festivals, locally owned businesses, and ethnic restaurants

To cultivate additional student input, the design team then launched a survey/competition through the school's intranet—and promoted via posters, handouts, and SHS's morning announcements—for students to express their community experiences through words and images.

- » 70 SHS students participated
- » 14 prizes (\$50 to \$100 gift certificates) were awarded
- » All grades were represented

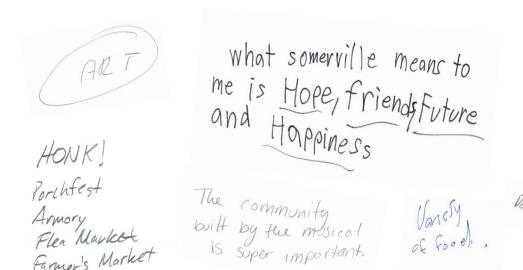












SHS has a great community

Fostering Diversity, Equity, and Inclusion

Teachers and Staff

The design team held three rounds of programming meetings with educators in all academic, arts, music, athletic, and CTE disciplines as well as guidance, counseling, reception, food service, and custodial staff. These sessions revealed needs and aspirations such as

- » Welcome Center near main entrance for MLE students and their families
- » Gender-neutral bathrooms
- » Large group instruction room for senate debates, visiting speakers, and more
- » Dedicated entrance for NW/FC students
- » Separate space within Metal/Machine shop for "dirty" activities such as grinding
- » Alternative and technology-rich PE spaces

Community

The design team held programming meetings, listening sessions, public workshops, and online forums with community members. These sessions revealed needs and aspirations such as

- » Dedicated entrances for Somerville Child Care Center and CHA Teen Center
- » Beauty salon and restaurant/café with mid-day hours to accommodate residents of nearby senior housing facility
- » Public green space, playground, parkour course





"I'm in the cosmetology program. I like it; it's fun. I plan to get my cosmetology license coming out of this program."

-Student





"It's a school of dreams. When I was in high school, this is what I dreamed about. You can learn mechanics, plumbing, electricity—everything you can think of. It gives kids chances, if they don't want to be in the classroom, to learn skills and trades."

-Staff



"The state-of-the-art facilities we have here are just amazing. The 14 CTE programs are all very well built, set up to succeed. As students go out into the world of work and industry, they're going to be ready...Having brand-new equipment takes their education to the next level."

-CTE Program Director

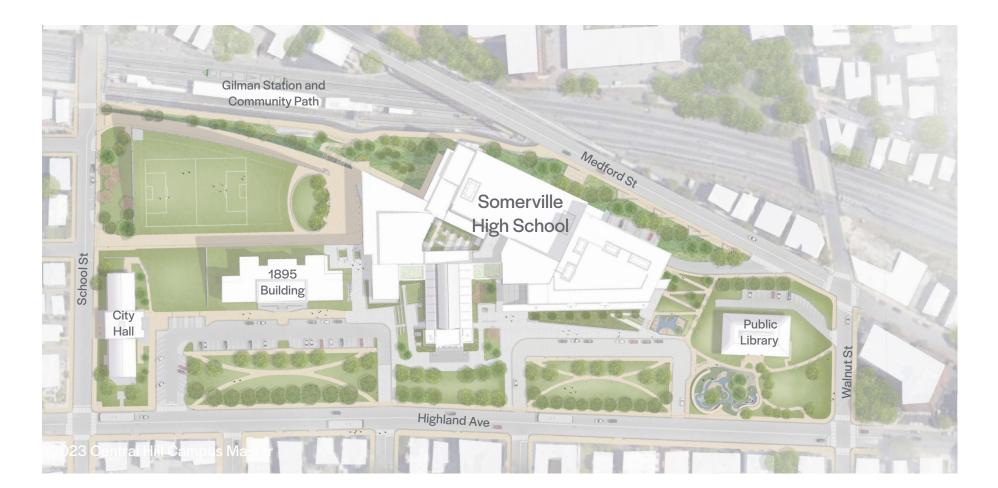
Physical Environment 12

Physical Environment Urban Integration of Building and Site



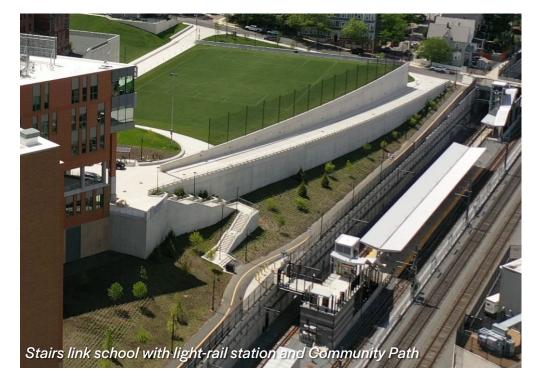
To transform SHS and its distinctive site, the design team conducted a long-range master plan for its Central Hill campus that

- » Integrates SHS with surrounding community
- » Connects SHS with Gilman Station and Community Path
- » Encourages alternative modes of transportation
- » Improves circulation
- » Adds green space
- » Preserves historic buildings
- » Interweaves old structures into new construction
- » Establishes educational concourse with public library on the east, civic concourse around city hall to the west









Physical and Educational Environment Building and Community

The high school contains multiple components that serve the Somerville community.

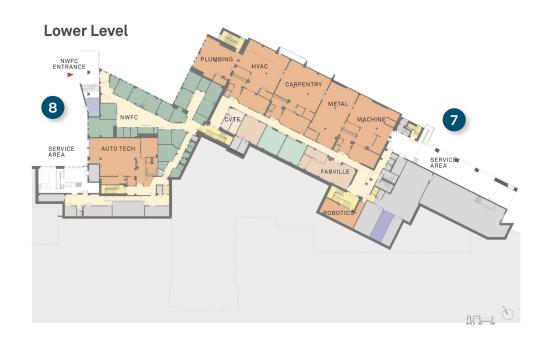
- 1 Theater & Lecture Hall
- 2 Restaurant/Café
- **3** Beauty Salon
- 4 Somerville Child Care Center
- **5** Cambridge Health Alliance
- 6 City Cable Station
- 7 Parkour Course
- 8 Athletic Fields

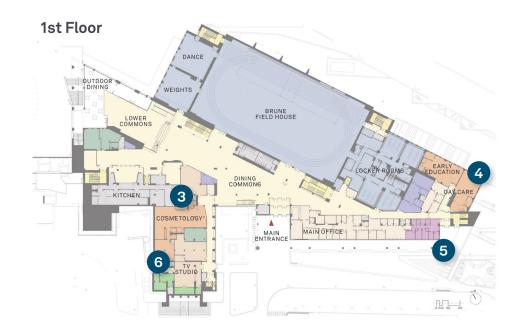
- Athletics & Wellness
- Commons & Circulation
- CTE Shops
- Fine Art
 General Academic Classrooms
- Science Labs
 Special Education

Performing Arts & Music

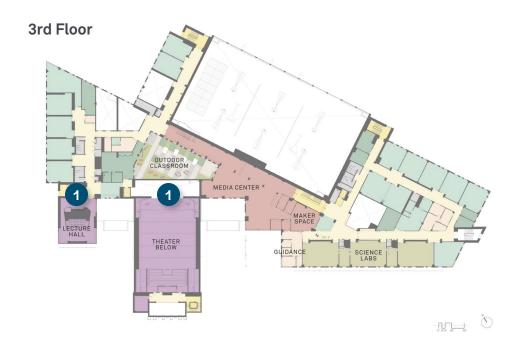
Classrooms

Media Center













Adjacencies: Weaving Academic, CTE, and Community Spaces

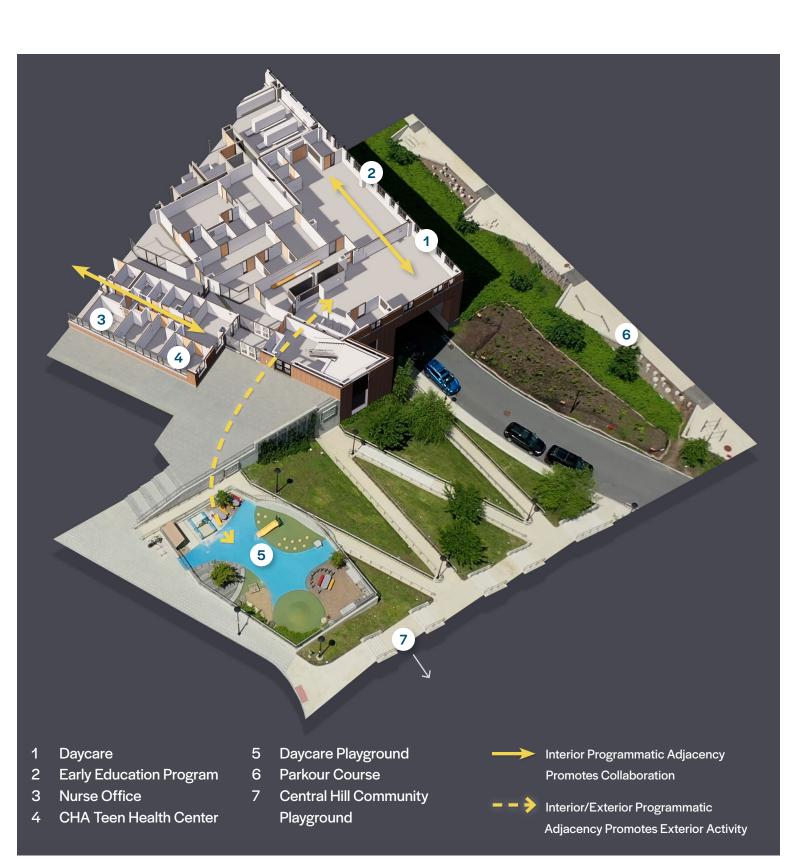
SHS fosters interaction between the academic and CTE programs using strategic adjacencies. The designers placed elements with natural connections in direct proximity to inform and enrich each other, creating authentic learning opportunities.

Early Education, Somerville Child Care Center, Cambridge Health Alliance (CHA) Teen Health Center, Nurse's Office

- » Early Education abuts the Somerville Child Care Center and playground, where CTE students assist teachers
- » Nurse's office adjoins CHA Teen Health Center to facilitate communication and resource sharing between health care professionals



1st Floor











Adjacencies: Weaving Academic, CTE, and Community Spaces

Culinary Arts, Music, Theater

- » Culinary Arts contains the restaurant/café, which serves the SHS community and the public
- » Music abuts Culinary Arts, allowing student and staff musicians to serenade diners
- » Outdoor student vegetable garden, which supplies Culinary Arts program with student-tended produce, sits beneath public entrances to the restaurant and theater.
- » Music spaces including orchestra, band, and choral spaces are placed near theater, which holds school and public performances



2nd Floor











Adjacencies: Weaving Academic and CTE Spaces

Dental Assisting, Health/Pharmacy, Science Labs, Electrical Shop

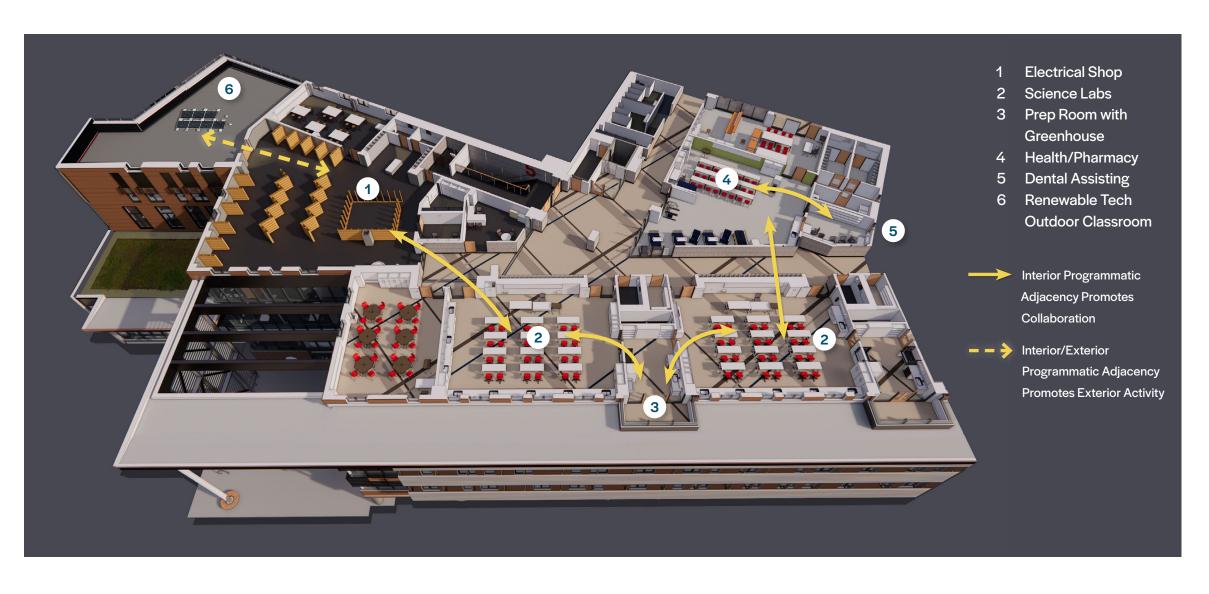
- » Glass walls encourage visibility and interest between CTE and Science classes
- » Electrical shop has direct access to outdoor space for testing photovoltaics and renewable energy technologies



5th Floor



Electrical Shop Outdoor Space











Flexible Spaces

Media Center

SHS's media center offers a flexible, diverse learning environment with ubiquitous technology. Rather than a fixed destination room, the media center serves as a passageway for all students as they move between classes. The media center also features

- » Open collaboration areas with white boards and soft seating that cater to small-scale projects and peer-topeer learning
- » Two classroom areas for technology-driven instruction
- » Small group rooms for private student or one-to-one instruction, as well as push-in community providers
- » A makerspace for hands-on projects such as 3D printing, robotics, and video production
- » Comfortable, easily reconfigurable furniture
- » Generous daylighting
- » Access to adjacent green roofs
- » Welcoming, multilingual graphics











Flexible Spaces

Dining Commons

Far from being an out-of-the-way, single use, enclosed space, SHS's dining commons sits at the heart of the school and serves multiple roles, including

- » Lobby/entrance
- » Gathering space
- » Passageway/circulatory spine
- » Connector between educational and athletic facilities
- » Areas for small group gatherings, with whiteboards and display technology
- » Exhibition space

The double-height dining commons features

- » Glass walls and open second-floor balconies that promote visibility
- » Lower commons for additional gathering/dining space
- » Large dining terrace overlooking athletic fields
- » Displays on Somerville's history and diversity
- » Different table heights and shapes for varied seating configurations, providing differentiated seating opportunities for a more comfortable dining experience
- » Environmental graphics that reflect the unique and colorful aspects of the school and city communities



1st Floor







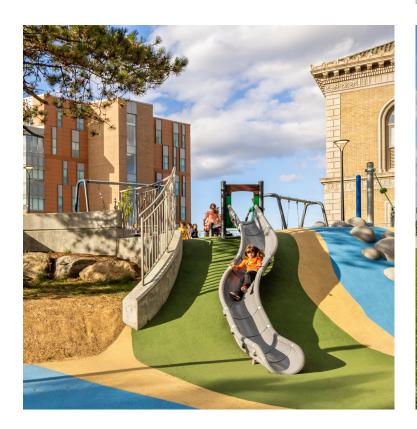


Outdoor Connections

Outdoor Learning Environments

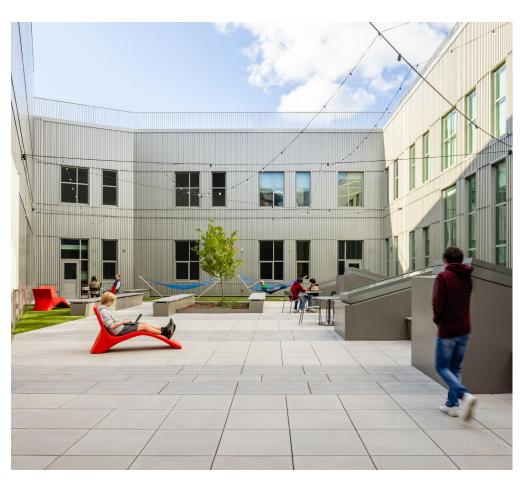
SHS offers students and community members a variety of outdoor spaces that allow them to connect with nature in the middle of Somerville's dense urban context. These include

- » Two outdoor classrooms
- » Dining terrace
- » Gardens
- » Paved plaza
- » Shaded colonnades
- » Athletic fields
- » Parkour course
- » Open green space
- » Playgrounds







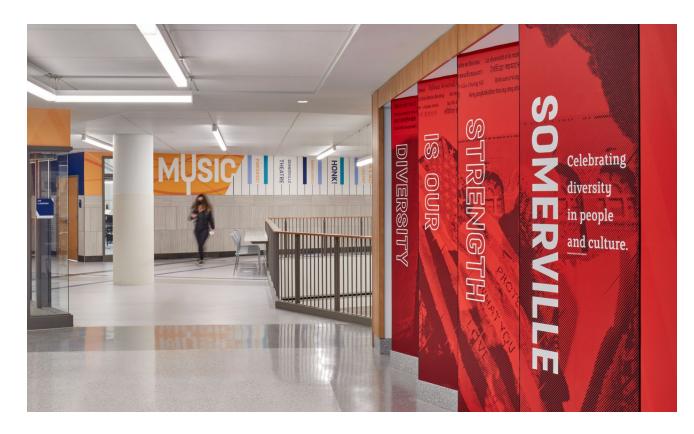




Connections

Environmental Graphic Design

Drawing on the knowledge gained from a student focus group and aggregated survey responses, the design team created more than 4,000 sf of environmental graphics for SHS that relate to themes of diversity and community.





Somerville's history and diversity is highlighted in a magnetic, removable wall collage. The collage showcases immigration statistics and local photography capturing the city's inclusive events.



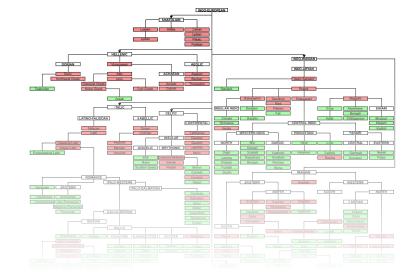




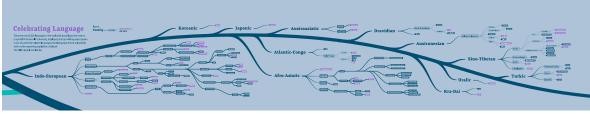
By representing global cultures, the graphics at SHS serve to educate while reflecting diversity. The Culinary Arts wall features cooking tools used

all around the world.

The graphics highlight the school's interconnected academic and CTE programs by showing how different learning disciplines can weave together. The Celebrating Language wall depicts how history connects to language by tracing the roots of the 50 most common languages spoken in Somerville.





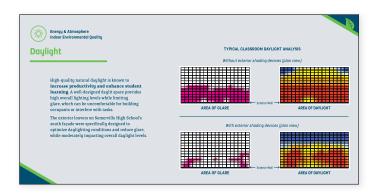


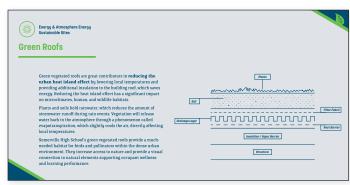


Connections

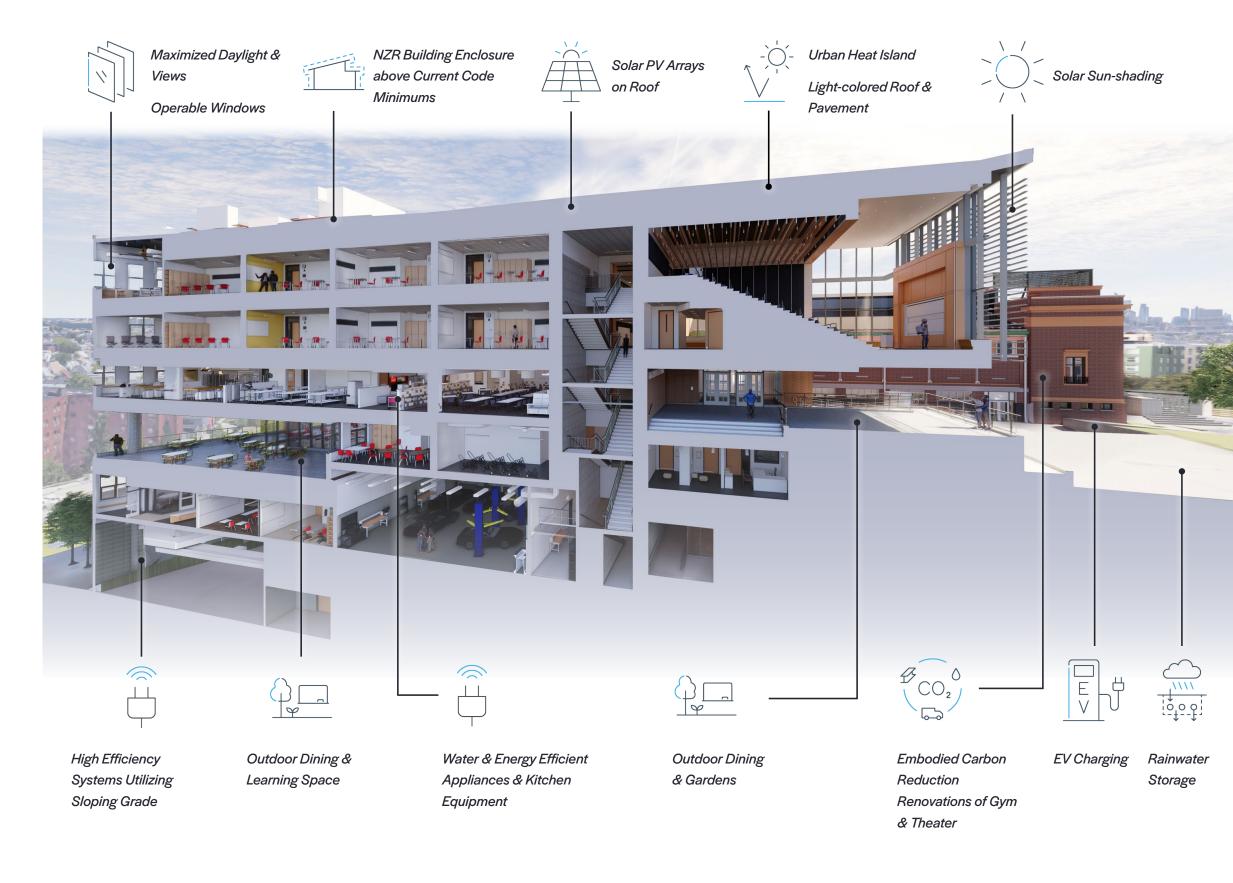
SHS promotes health, wellness, and sustainability in a variety of ways, including

- » Energy- and water-efficient building systems and equipment
- » Net Zero Ready building enclosure
- » Outdoor learning and dining spaces
- » Bike storage and EV charging stations
- » Rainwater capture and storage
- » Fixed solar shading
- » Solar PV arrays
- » Green roofs
- » Light-colored roofs and paving
- » Ample Daylighting
- » Data acquisition system to share sustainability performance on displays within the school









Results 24

Results

From its visioning phases through completion, the new Somerville High School celebrated the community's diversity—and the community's pride in its diversity. Likewise, equity and inclusion remained top of mind, from the design team's targeted stakeholder engagement to the ultimate achievement of creating one comprehensive high school that embraces all students, regardless of learning profile or ethnic/socioeconomic background, and the entire Somerville community.

To help **SHS** achieve its educational, school district, and community goals, the design team harnessed three key concepts to guide their efforts.

- » Adjacencies: strategically locating spaces to encourage interaction, communication, and crosspollination of ideas between students across programs, teachers and staff, and members of the community
- » Flexibility: Proper sizing and appointments that allow spaces—classrooms, common spaces, and more—to accommodate multiple activities, populations, and configurations
- » Connections: strengthening relationships among students, teachers/staff, and the Somerville community through intentional adjacencies, lines of sight, and creative programming

SHS provides value and good stewardship of financial resources by creating an innovative, future-oriented educational facility that

- » Preserves and reuses portions of the existing high school complex—both historically significant (the War Memorial Building) and structurally viable (1986 Field House)
- » Transforms its Central Hill location through connections to civic buildings and transportation structures
- » Functions as a multipurpose facility, used throughout the day/evening and on weekends
- » Houses community resources including CTE-related components such as the restaurant/café, auto repair shop, beauty salon, and Somerville Child Care Center as well as the theater, lecture hall, Somerville Community Cable, CHA Teen Center, and outdoor recreational space
- » Incorporates an array of sustainability and wellness features

SHS promotes sustainability and wellness through incorporating elements such as

- » Operable windows that maximize daylight and views
- » Outdoor learning, dining, and recreation space
- » Light-colored roofs and paving
- » Solar PV arrays on roof
- » Solar shading and using sloping grade for cooling/ insulation
- » High efficiency building systems
- » Rainwater capture and water conservation measures
- » Embodied carbon reduction renovations of gym and theater
- » Bike storage and EV charging stations
- » Direct connections to light-rail station and Community Path
- » Encourages multiple alternative modes of transportation

