Comp Sci High School

Bronx, NY



KSS



SCOPE OF WORK

Location: Bronx, NY

Total Site Area: 12,310 sf

Building Area: 47,222 sf

Number of Stories: 6 Stories

Completion Date: August 2024

Project Budget: $24,000,000

Executive Summary

Civic Tech Campus

Blending the core principles of a educational high school with a career-focused curriculum, Comp Sci High's mission is to equip students with the skills they need to thrive in a tech-focused, global economy. To support Comp Sci High's mission—developing students' emotional, academic, professional, technical, and civic competencies—a flexible, collaborative environment with connections to the surrounding community was prioritized. Ideally located on a south-east facing corner, the new high school boldly takes its place within the South Bronx neighborhood. School branding, contrasted by a step-backed variegated brick facade, inspires school spirit and a glimpse of playful color schemes within. Large floor-to-ceiling windows with high performance glazing maximize daylight while blocking the sun's heat. Visual transparency connects the student body to the surrounding community and their civic-focused programing.

Through a collaborative charrette held with Comp Sci High educators, the design team set out to develop an adaptive, inclusive, and experience-driven learning environment. Daylight-filled classrooms are designed with operable walls and overhead doors, allowing spaces to expand or contract based on daily needs. Co-working zones, networking lounges, and special use spaces maximize engagement beyond the classroom, supporting both student agency and community use. The new Comp Sci High is a dynamic, compact campus that reunites the formally bifurcated school community under one roof. Through thoughtful mission-driven design, this newly constructed building strengthens neighborhood ties, embodies the school's mission to prepare students for college and careers, and is a beacon of learning within the community.

Project team:

Client: CompSci High School

Developer: Civic Builders

Architect: KSS Architects

Civil Engineering: AKRF

Structural Engineering: Lera Consulting Structural Engineers

MEP Engineering: MG Engineering

Acoustics: Longman Lindsey

Acoustics: JEMWest

Contractor: Kelmar Designs

School & Community Research and Engagement

Community Network

Through our partnership with Civic Builders, we came to know the growing community at Comp Sci High as a school dedicated to closing the gap between economically disadvantaged students and meaningful careers in technology and related industries. At the core of the school's mission is a commitment to ensuring that every student gain real-world work experience while fostering a culture rooted in shared values, opportunity, and economic mobility. What sets Comp Sci High apart is the strength of its network: partnerships with businesses, higher education institutions, and local organizations that connect students directly with mentors, innovators, and career pathways across New York City. Parents, faculty, students, and community partners together form the foundation of the school's identity and impact.

We were drawn to Comp Sci High because of the way it embraces its place in the South Bronx while actively challenging the systemic inequities that affect its students. The school serves as both a haven and a launchpad where students are supported, challenged, and connected to opportunities beyond the limits of their circumstances. Its location is powerful in that it is situated within one of the city's most underserved neighborhoods yet embedded in one of the world's greatest centers of economic and technological growth. Comp Sci High transforms that proximity into access, creating pathways to success while strengthening the surrounding community.

The school's existing facilities presented significant obstacles to fulfilling its mission. Comp Sci High operated across multiple locations and shared buildings with other schools that were neither designed for collaborative STEM education nor equipped to support the realities of co-located programs. Limited access to dedicated learning environments, technology infrastructure, and appropriately configured spaces restricted both the academic program and the student experience. These challenges became a driving force behind the pursuit of a new building designed specifically to support the school's educational model and long-term vision.

Understanding the school community, its network of partners, and the broader South Bronx context was essential to our evaluation of the project. We recognized that the school's spatial and programmatic challenges were inseparable from its larger mission, which is to expand opportunity for its students while remaining deeply connected to the community it serves.



School & Community Research and Engagement

Student and Parent Engagement

The School & Community Research and Engagement process for Comp Sci High was rooted in a deep understanding of both the school's unique mission and the broader South Bronx community it serves. Located in an under served urban district, the school supports a diverse student population, many of whom come from historically underrepresented and economically disadvantaged backgrounds.

Comp Sci High had outgrown its previous co-located facilities—where it shared space with other schools—and this fragmentation created challenges around identity, cohesion, and access to dedicated learning environments. The need for a unified home was both a spatial and cultural priority, allowing the school to fully embody its vision as a tech-focused, career-oriented institution that prepares students to support themselves, their families, and their community.

"I want to build connections with the people in the new community in order to help create a safer environment for students."

- Coach Johnson





Pedagogy Methods

HANDS-ON, INQUIRY BASED LEARNING
that minimizes lecture and forces students to think

PERSONALIZED INTERVENTION
so every student gets the support he or she needs to access the curriculum and experiences success

WORK BASED LEARNING
that allows students to regularly learn from industry professionals, both during school and beyond the school building/day

PERFORMANCE BASED ASSESSMENT
paired with traditional test and mastery-based grading, to ensure a complete view of what students know

RESTORATIVE PRACTICES
that use instances of disrespect and disruption as opportunities to teach and build community, instead of purely punish

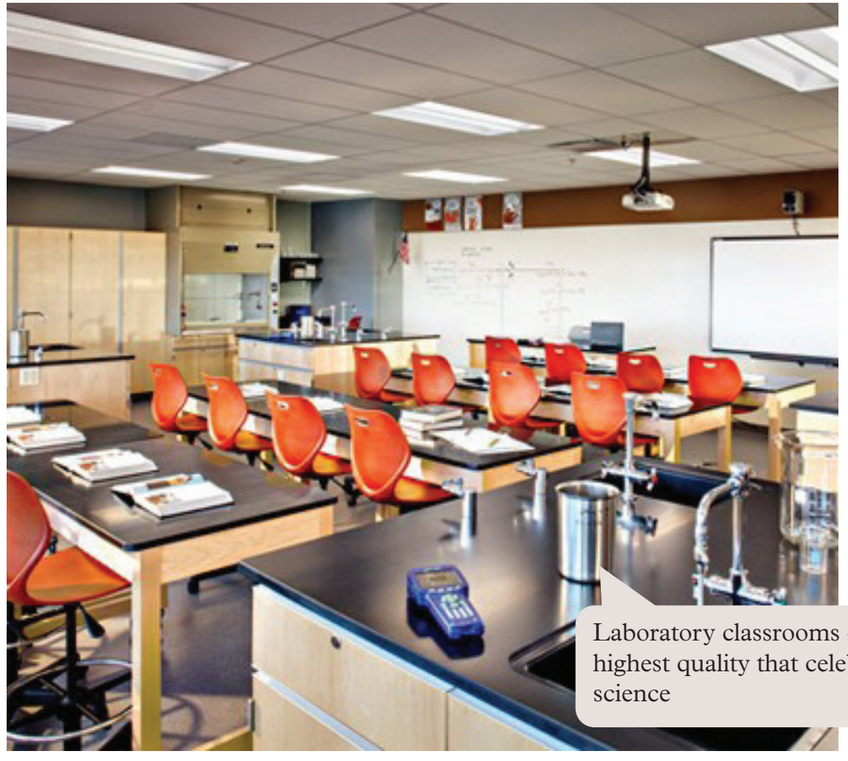
School & Community Research and Engagement

Staff and Faculty Engagement

Early in the design process, a select group of long-tenured faculty and staff were invited to share their aspirations for the new facility and reflect on the emotional experience they envisioned for students, parents, and visitors.

Four techniques were used to gather insights that would inform the design:

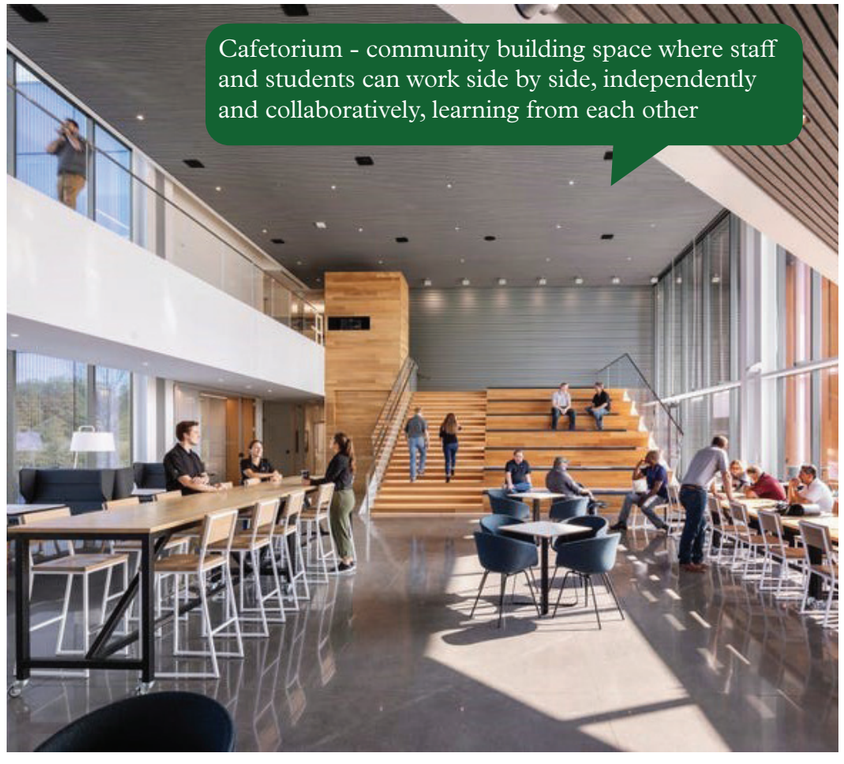
1. Values – Our process begins with the school's mission and core values. Open dialogue around these principles reveals opportunities to express the school's ethos through the design.
2. Personal Imagery – Participants were asked to share images and discuss how they reflect both the functional needs and emotional qualities of their future school.
3. Probing Questions – Staff responded with single words describing the feelings, energy, and mindset shifts they hope occupants will experience when entering and engaging with the space.
4. Precedent Studies – A review of diverse precedent spaces provided insight into how elements such as color, transparency, materials, and light influence learning and comfort.



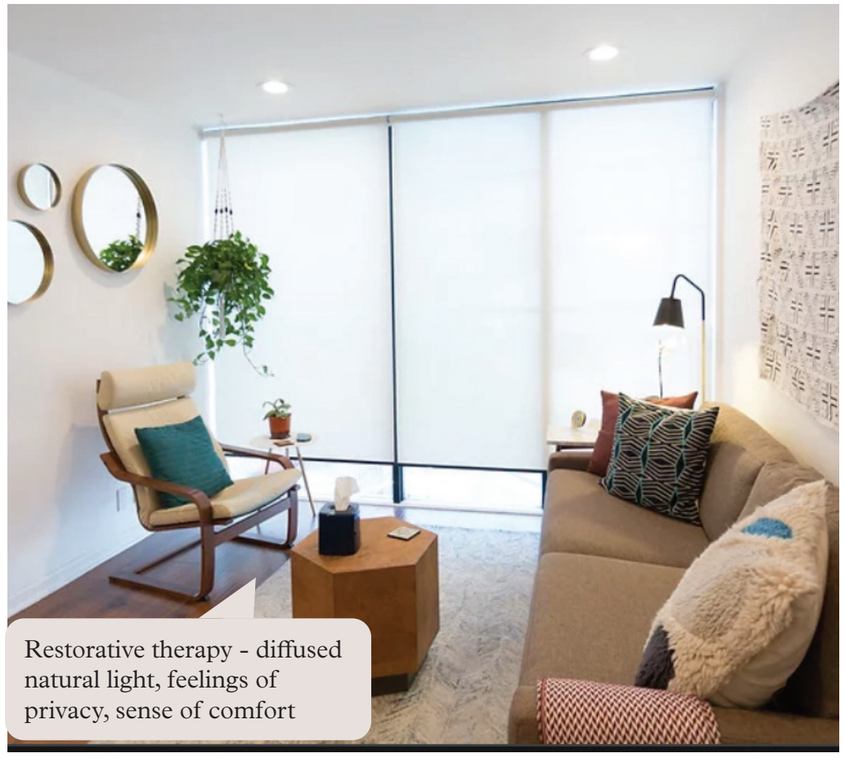
Laboratory classrooms of the highest quality that celebrate science



Independent learning - individual and group working spaces that are accessible to the whole school



Cafetorium - community building space where staff and students can work side by side, independently and collaboratively, learning from each other



Restorative therapy - diffused natural light, feelings of privacy, sense of comfort

School & Community Research and Engagement

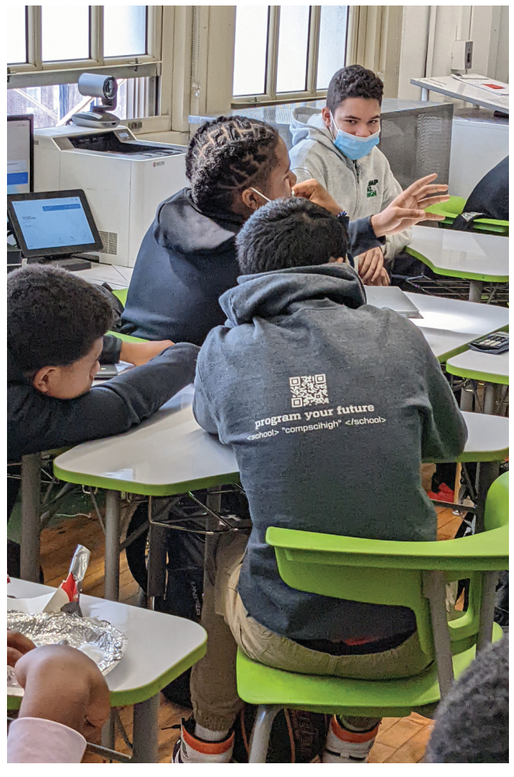
Continued Engagement

During the design phase, the project maintained a strong, ongoing relationship with the school community. The design team continues to participate in school events, serve as mentors and advisors during student projects, and receive direct feedback from faculty and leadership. This sustained engagement reflects the project's broader impact: Comp Sci High is not only a building but a community anchor that has transformed its immediate neighborhood and expanded opportunities for local students. By aligning architectural design with authentic stakeholder input and community context, the project demonstrates how meaningful engagement can create a learning environment that is both responsive and empowering.

Key Takeaways:

- Transparency of interior/exterior as well as interior connections.
- Flexible spaces that could allow for larger groups to quickly gather.
- Access to natural light
- A building that feels "of the Bronx"







Physical Environment

Site and Context

The project is situated in a neighborhood that transitions between residential and light manufacturing. Yet there is a unique collection of charter and traditional schools that dot the neighborhood. One block to the west is the expansive St. Mary's park, vegetated oasis in the city which provides views and access to nature. Much of the manufacturing uses are based around automotive services and warehouse storage. The site offered a unique opportunity to anchor a street corner and bridge between these two often opposing uses. We find this project shepherds the transition from multi-family residential buildings to the north and low-rise automotive and warehouse buildings to the south by helping with scale and materiality while utilizing the south-facing viewsheds and daylight opportunities for the school's interior environment.

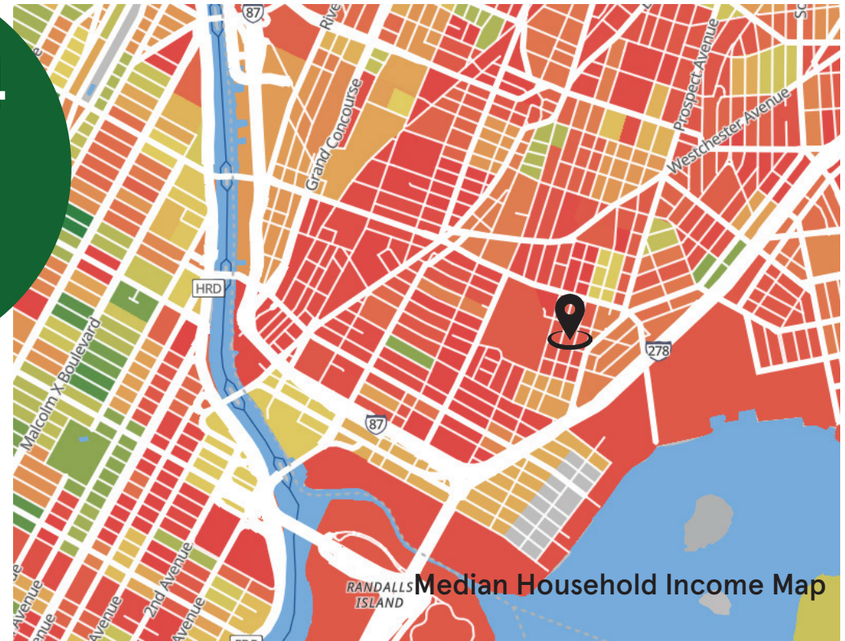


About South Bronx

460 Kids
220 Alumni

468,694
Living at or near the poverty line

$26,096
Median Household Income



Median Household Income Map

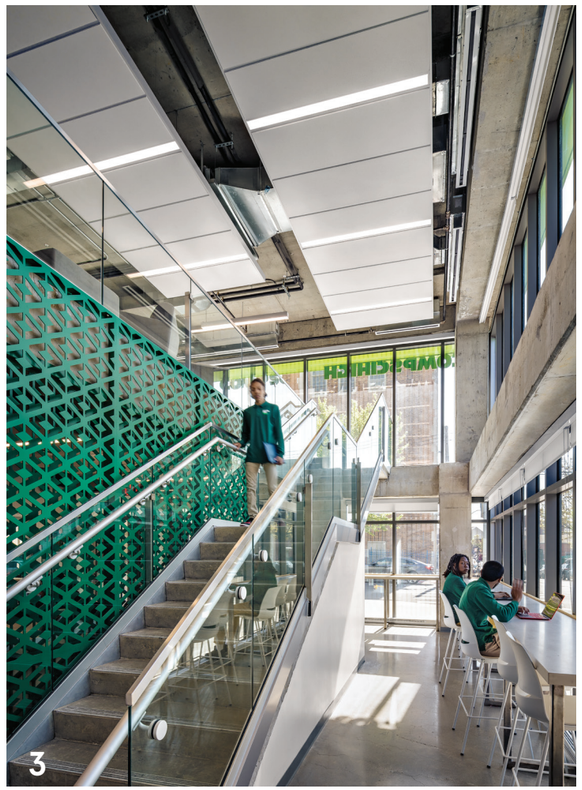

Intersection at E 145th St and Wales Ave



1



2

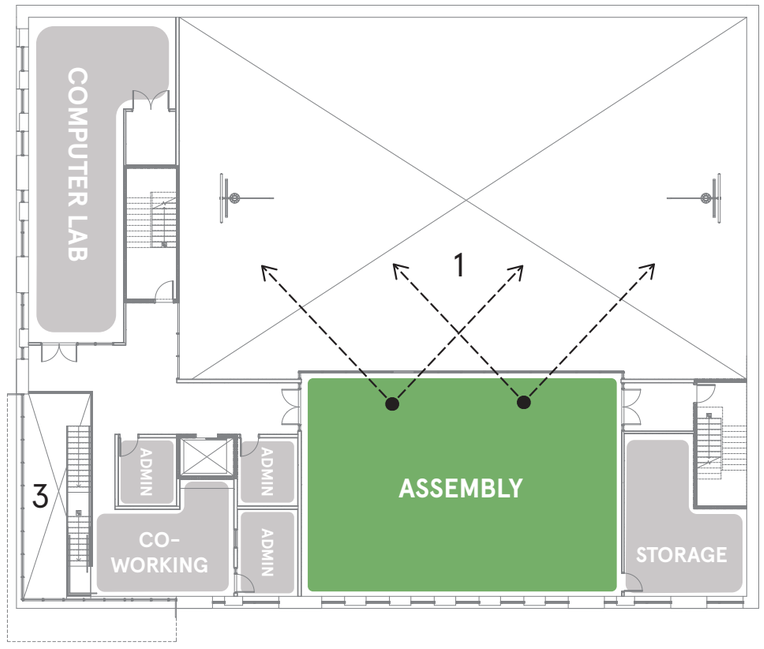


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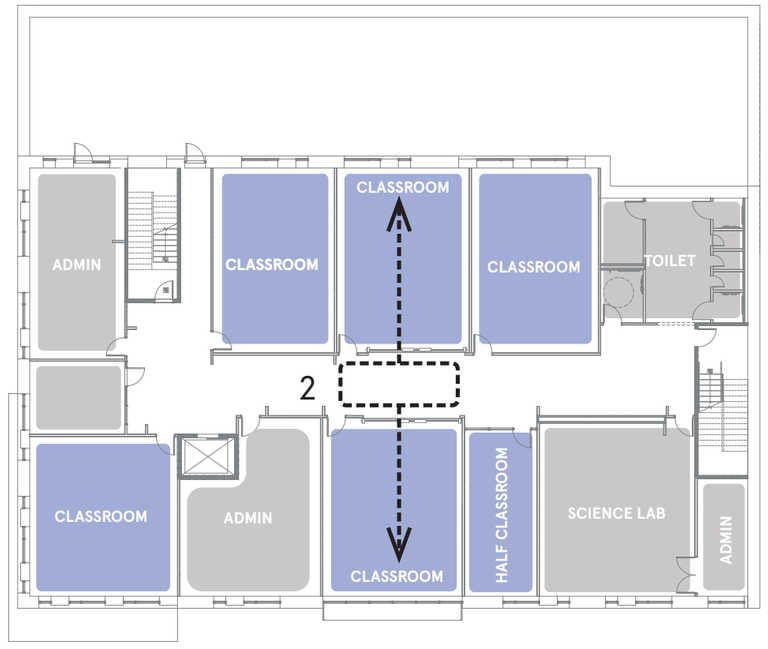
Physical Environment

Internal Connectivity

Challenged by a compact footprint, the design reimagines the traditional double-loaded corridor by carving out strategic openings and cross-flows to promote flexibility and openness. Classrooms are designed with operable walls and overhead doors, allowing spaces to expand or contract based on daily needs. Special-use spaces such as co-working zones, networking lounges, and a rooftop gathering area maximize engagement beyond the classroom, supporting both student agency, community use and access to light, air, and views.



Assembly Level Plan

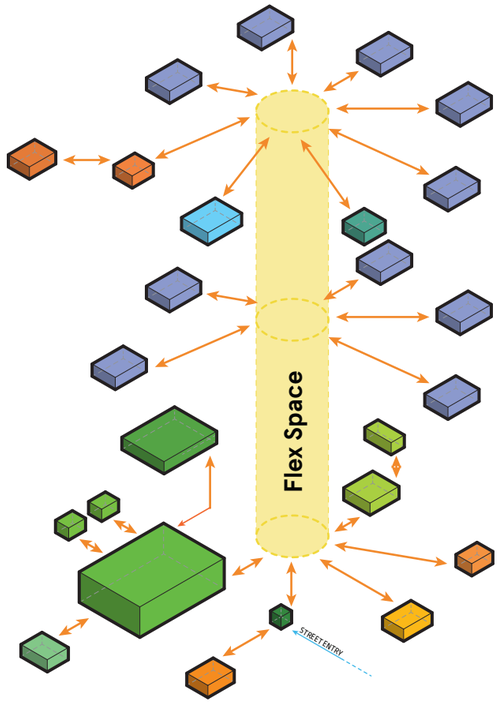


Typical Classroom Level Plan

Physical Environment

A School Like Home

The project redefines what a vertical urban high school can be—adaptive, inclusive, and experience-driven. Through bold graphic schemes, unique finishes, and interstitial gathering spaces, the design supports Comp Sci High's commitment to experiential learning and real-world readiness. It proves that verticality and cohesion are not mutually exclusive, but rather, can reinforce a thriving and connected school culture.



"The floorplan benefits us tremendously because it's custom made for us. Not only do we have more space, but we finally have the ability to be in control of our space. We have always envisioned ourselves as a community school and this will allow us to reach even more of the community. This is a real game changer for us."

- Angel Morales
  Chair of the Board of CompSci High

Physical Environment

Stewardship

The façade strategy uses large "view frames" to activate the school's edge along the public realm. At the lower levels, these expansive openings put the co-working spaces on display, highlighting a curriculum that celebrates student entrepreneurship, innovation, and collaboration. On upper levels, the windows bring generous daylight into classrooms and drawing it through to the central flex corridor, creating bright, open learning zones that challenge the notion of traditional, enclosed school interiors. Due to the buildings height, views to the west bring in nature via the treetops in St. Mary's Park.

Outdoors, the design team moved beyond NYC LL 92 sustainability and resilience requirements designing an accessible green terrace on the 6th floor in addition to the green roof that supports the student engagement through the gardening and hydroponics club. Stormwater is managed on-site through both detention and controlled discharge into the municipality's combined sewer, and by retaining stormwater and releasing it back into the atmosphere through evapotranspiration with green

100% electric

54% of on site stormwater is managed through Evapotranspiration

19% improved thermal envelope performance

21% improved solar heat gain resistance on operable windows



Physical Environment

Inclusivity

Finally, the physical environment is deeply rooted in inclusivity and engagement. The design process itself incorporated feedback from students, faculty, and leadership through workshops and charrettes, ensuring that the final spaces reflect the needs and culture of the school community. The resulting environment supports diverse learners by offering choice, flexibility, and access to daylight-filled, visually connected spaces that promote well-being and focus. By blending formal and informal learning settings, the school creates an ecosystem where students can explore, collaborate, and innovate to ultimately transforming the building into an active participant in the educational experience rather than simply a backdrop for it.

"To use the power of education, technology, and community to become an engine of opportunity and a force for economic freedom in the South Bronx. Out mission is to ensure every student graduates with college acceptance letters, high tech skills, real work experience, and a plan to rurn those opportunities into a successful career."
- Mission statment, Comp Sci High

Our Mission = Economic Freedom

Educational Environment

Informal Learning

Comp Sci High sees themselves as a tech start-up, not as a traditional school. With programming focused on AI, coding, and other technology-based programs, its intentionally designed to extend education beyond the classroom, aligning closely with the school's career-oriented and technology-focused curriculum. At its core, the building supports a model of education centered on student agency, collaboration, and real-world application. Rather than relying solely on static classrooms, the design introduces a network of flexible, interconnected spaces that allow students to move fluidly between individual work, small group collaboration, and larger instructional settings. This approach reflects the school's mission to prepare students not just academically, but professionally and technically, equipping them with skills relevant to a rapidly evolving, tech-driven economy.

Educational Environment

Adaptability

A defining feature of the educational environment is the emphasis on adaptability. Classrooms are equipped with operable walls and overhead garage-style doors, enabling them to expand into adjacent corridors and shared areas. This creates a dynamic learning landscape where spaces can be reconfigured throughout the day to support different teaching methods, from lectures to workshops to collaborative projects. These flexible zones mirror the kinds of environments students may encounter in professional settings, reinforcing a sense that learning is active, iterative, and not confined to a single room. Moreover, the incorporation of large, open “flex spaces” at each level serves as a central hub for interaction, fostering spontaneous collaboration and peer-to-peer learning.

Educational Environment

Multi-modal Learning

Equally important is the integration of co-working and informal learning environments throughout the building. Inspired by workplace and entrepreneurial settings, these areas provide students with opportunities to work independently or in teams in a more relaxed, self-directed manner. The prominent double-height co-working zone at the building's entrance reinforces the idea that learning can happen anywhere and is a direct reflection of the schools core mission of giving students opportunity for real world learning experiences. This space serves as a transition for students coming and going from their internships, a touchdown space to acclimate between the professional and academic worlds. This design strategy not only supports a variety of learning styles but also helps students develop autonomy and responsibility, key components of the school's educational philosophy.

Results

Vision to Achievement: School Goals

Comp Sci High fosters student success through flexible, inclusive learning environments and a curriculum grounded in emotional, academic, professional, technology, and civic development. With a career-oriented curriculum, students are equipped with the skills they need to thrive in a tech-focused, global economy. At the school level, this is achieved through informal and multi-modal learning, adaptability, and inclusivity. The school is one community, located in their new home, at a scale that allows for individualized attention but also small team collaboration.

At the district level, Comp Sci High contributes a specialized curriculum and career development model not found elsewhere within the South Bronx school district. By partnering with local organizations and companies in New York City, Comp Sci High is attracting dedicated scholars in its district and pairing them with mentors and opportunities that will elevate these scholars beyond the district itself.

This project achieved its core educational and community goals by creating a learning environment that directly supports student growth across academic, technical, and professional domains. Comp Sci High reunited a previously fragmented student body into a single, cohesive campus, strengthening school identity and fostering a greater sense of belonging. This unified environment, combined with flexible and collaborative learning spaces, enables the school to fully deliver on its mission of preparing students for college and careers in a technology-driven economy.

Beyond Tech: Unexpected Outcomes

While Comp Sci High is specifically a school with a tech-focused curriculum, we are delighted to hear about ways this project manifested itself in the minds and spirits of the school community beyond that curriculum and the greater tech and entrepreneurship community.

Feedback from students and faculty highlights the success of key design elements, particularly flexible classroom expansions and co-working spaces, which support collaboration, events, and varied learning experiences. Students reported more socialization and collaboration, promoted by additional school programs, and valued the co-working spaces and large flexible zones outside of the classroom.

Increased daylighting and the green roof were cited by both students and faculty as a reminder of their relationship to the outdoors. As a result, students began a gardening and hydroponics club, with some of the indoor flex spaces being set aside for indoor plantings. This was an unexpected outcome, but one we were excited to see flourish in the indoor environment.

While minor space constraints exist, the overall result is a dynamic, future-ready environment that catalyzes opportunity, innovation, and long-term community growth.

10% increase in student enrollment from 2023 to 2025

(NYSED Enrollment Figures)

6% increase in the 4 year graduation rate from 2023 to 2025, reaching 92%, the highest the school has yet achieved

(NYSED Graduation Rate Data)



Results

Bucking the Development Trend: Value and Financial Stewardship

The genesis of this project was the result of a collaboration between a non-profit developer and the school. Traditionally, independent schools build new buildings through either their own philanthropy, or in our case with a charter school, through a developer model. A quality of this developer model relationship is a tight budget. We worked closely with Civic Builders, the non-profit developer for Comp Sci High, to align and prioritize key design elements while keeping the construction cost under a certain threshold.

We successfully concluded the project under budget, which provided opportunities for the school to add gym equipment, signage, and green roof plantings that were not previously allowed in the project's design. By partnering with a mission-driven non-profit organization, this project did not follow the more traditional developer model that nearby charter school organizations within the South Bronx may have followed.

Circling Back to the Educator: Wellness and Environmental Consciousness

The project's design was focused on providing an environment that could support multiple modes of learning and working. The approach was to facilitate individual learning but also to foster small team and larger group collaborations. The result was to make spaces do many things. Qualities that aligned with this space design were using open floor planning, double-height volumes, and daylighting to create these flex zones. These qualities lend to greater wellness for its occupants and we're encouraged to see the school community embrace these flex zones for a variety of purposes.

Windows on multiple sides of the building and increased glazing in the flex zones allow for more viewsheds of the green roofs, surrounding street trees, and tree canopy of the proximate park. This creates greater environmental awareness for the school, as reported by students and faculty who resonated with this connection. Overall, the school's design achieved a greater level of wellness and environmental consciousness while simultaneously achieving the stated goals of multi-model learning and adaptability for the tech-focused curriculum and learning environments.

School as a Scholar Incubator: Community Goals

Comp Sci High is more than just a school building, it is a platform for opportunity, innovation, and empowerment. By merging architectural ingenuity with a deeply human-centered mission, the project becomes a catalyst for growth not only for its students but also for the South Bronx community it proudly serves. The school is a launchpad, and sees itself as serving this specific function for its scholars, their families, and their neighbors.

Early outcomes reflect this success, with students gaining acceptance to highly competitive universities and demonstrating the confidence and skills needed to pursue future opportunities. Beyond academic achievement, the project has generated meaningful impact. The building serves as a visible and active presence in its neighborhood, transforming a previously underutilized site into a vibrant educational hub. Its design encourages ongoing engagement, not only through daily student use but also through continued interaction between the school and the design team, reflecting a lasting partnership.

Unintended Outcomes:

Daylighting - Students pursued hydroponic and gardening extra-curricular activities resulting from outdoor environment awareness.

Coworking Lounge - Faculty reported increased attendance before/after school in this space for socialization and team collaboration.

