2015 Exhibition of School Planning and Architecture

Intrinsic School

Category: Renovations
Chicago Public Schools (CPS)
Chicago, IL

Designing for a New Curriculum

Overview

"Our school is unique. Our campus was designed from the ground up with the Blended Learning philosophy in mind."
– Intrinsic Parent

School buildings rarely are designed to support nontraditional teaching models. Intrinsic's bold and unprecedented vision required a campus worthy of its mission. The result—**the first campus in the country designed to truly support a Blended Learning curriculum—**is a school without a single traditional classroom. Instead, large customizable learning environments are populated by a variety of distinct zones, each of which is tailored to a specific style of learning.

Empowered by the accessibility of technology and robust online educational platforms, schools around the world are experimenting with individualized educational models. Launched in 2014, Intrinsic is a new network of public charter schools in Chicago that blends adaptive, individualized, and peer to peer learning with traditional, teacher-led instruction—a model known as Blended Learning.

The school's mission is to provide a revolutionary new model of urban education in order to ensure postsecondary success. The school's leadership is simultaneously committed to reinventing the classroom for 21st-century needs and establishing best practices that can be shared with other schools.

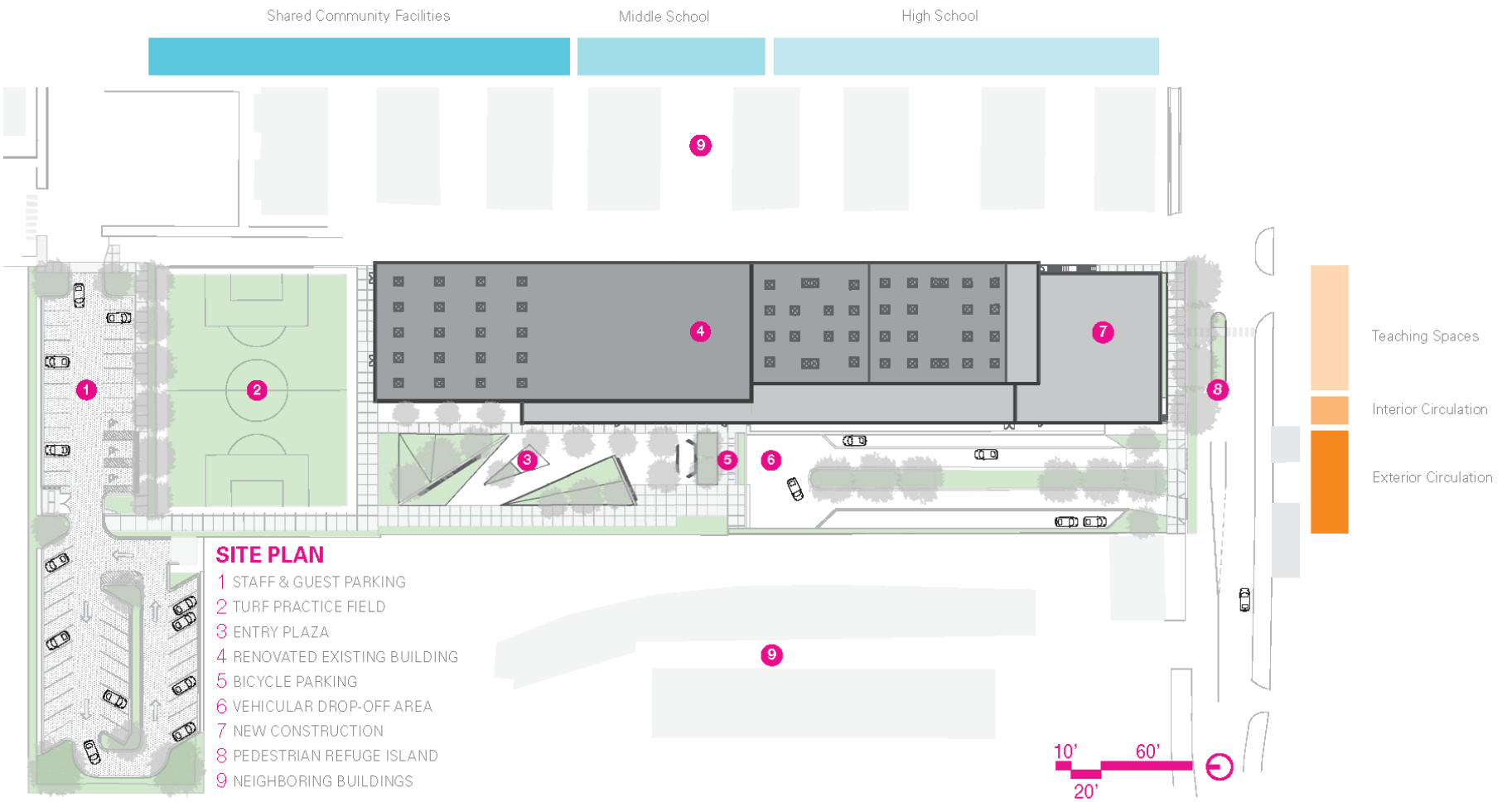
21st Century Learning in a Historic Building

Not many educators would look at a shuttered lumber yard on Chicago's Northwest Side and declare it the perfect place for a new school. But Intrinsic School's leaders were looking through a unique lens. Their aim wasn't to replicate a traditional school but to reinvent learning spaces. The large column-free spaces located in a high-need neighborhood provided just the place they needed for next-generation learning.

Seventy-five percent of the existing lumberyard buildings, some over 100 years old, were preserved and left exposed in the new school. Purposefully blending new and old is a metaphor for Intrinsic's educational mission, where technology is used strategically by classroom teachers to personalize education for each student.

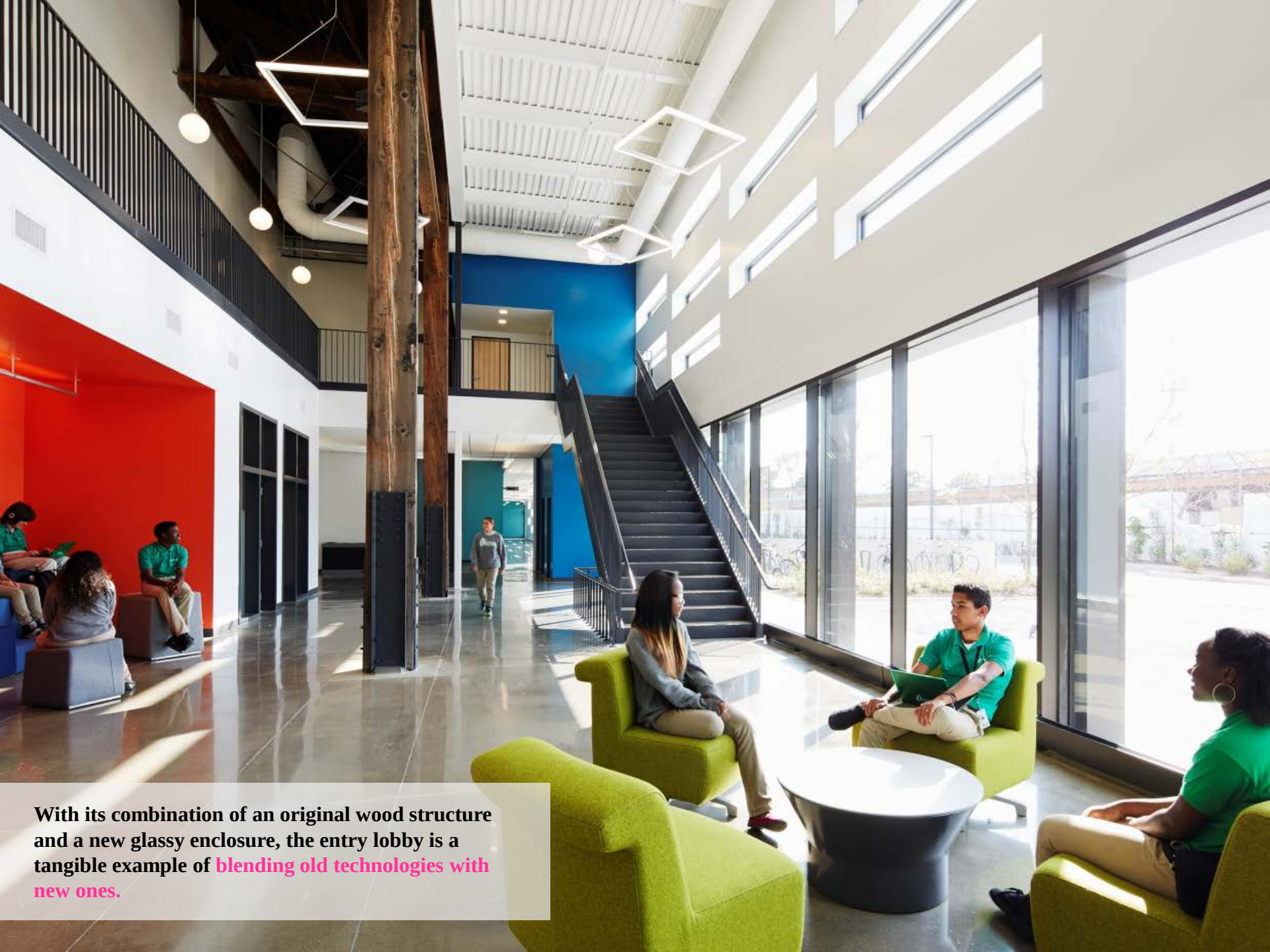
Instead of creating a procession of 30-student classrooms, where a single teacher struggles to differentiate instruction for an academically diverse group of students, Intrinsic created a series of "super-classrooms" or pods where students and teachers could be more effective.

Intrinsic School sits at the convergence of four neighborhoods that have seen historic disinvestment and are currently in flux.



SITE PLAN

1 STAFF & GUEST PARKING
2 TURF PRACTICE FIELD
3 ENTRY PLAZA
4 RENOVATED EXISTING BUILDING
5 BICYCLE PARKING
6 VEHICULAR DROP-OFF AREA
7 NEW CONSTRUCTION
8 PEDESTRIAN REFUGE ISLAND
9 NEIGHBORING BUILDINGS



With its combination of an original wood structure and a new glassy enclosure, the entry lobby is a tangible example of blending old technologies with new ones.

Building Social Capital and Networks

Community Environment

Although many neighborhood schools are built on the premise that their amenities will be available to the community in off-hours, such sharing is often frustrated by the school's design. At Intrinsic, community access is enabled by its architecture, which segregates academic areas from community spaces by a common entry vestibule.

Areas such as the multipurpose room, locker rooms, kitchen, and practice field are entered separately from the academic areas, so Intrinsic can easily open them to the Community. A digital fob system enables a Community group to access the common areas for a predetermined window of time.

Although Intrinsic's artificial turf field is sized for high-school practices only, it is permanently lined for youth soccer so it can be used by local clubs on weekends for competitive games.

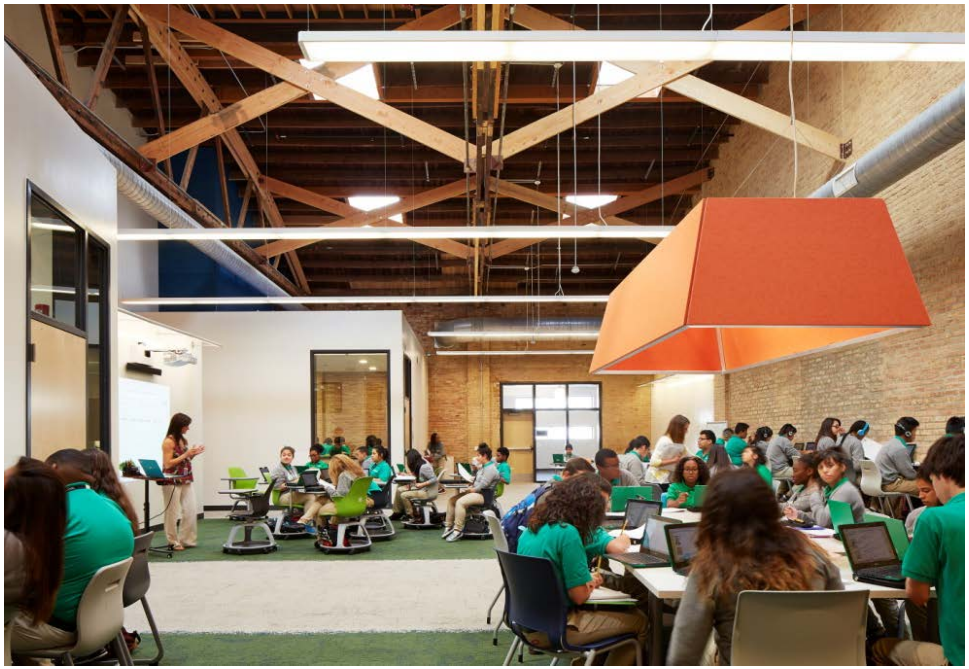
By opening its facility to the neighborhood, Intrinsic encourages local families to get acquainted with its mission before their children reach seventh grade. Unlike many urban campuses, Intrinsic's does not have a continuous perimeter fence. It remains open in philosophy and reality.

Building Social Capital and Networks

Community Environment

Even in its academic areas, Intrinsic eliminates the social isolation of traditional schools, where a child's daily social interactions are predominantly limited to thirty classmates.

At Intrinsic, students learn in cohorts as large as 180 that navigate within a single flexible area—the interconnected tandem **Pod**. Students have potential for a much larger social network than their counterparts in traditional schools. These larger networks increase the possibilities of encounters between students of different abilities and backgrounds, enriching their experience.



Adaptability

Learning Environment

"We all learn differently. Some need to hear it. Some need to see it. At Intrinsic, students are empowered to own their own education via blended, personalized learning." - *Parent, Intrinsic Schools*

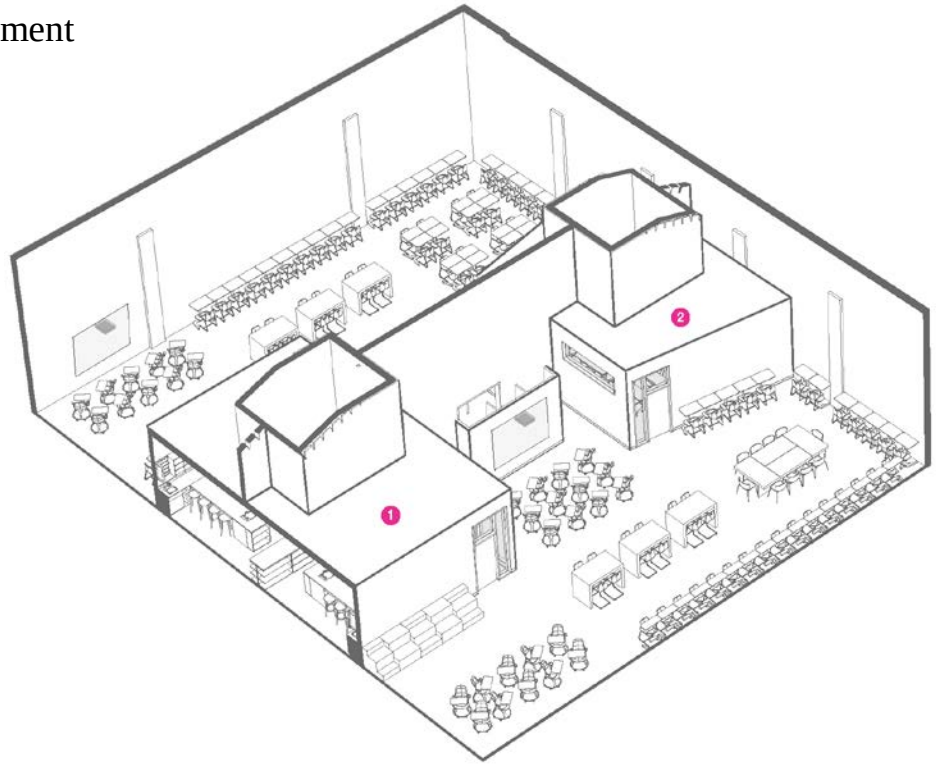
Adaptability is embedded in the DNA of Intrinsic. Learning spaces, building systems, and the curriculum itself are highly responsive to the needs of the students and teachers. Adaptive software responds to a student's preferences. The architecture responds to the school's context. And the building responds to the needs of the community.

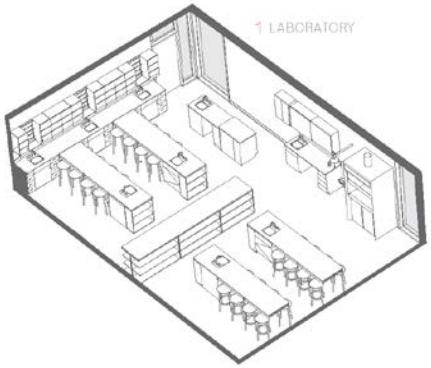
With highly flexible learning environments, the school is able to respond to the needs of students as technology and Blended Learning continue to evolve.

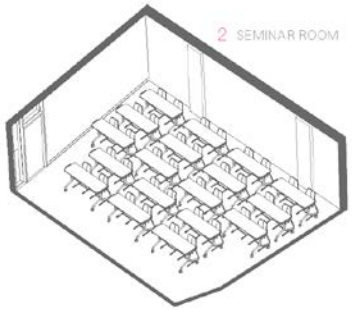
The Pod is defined by adaptability. It is the culmination of years of study, observation, discussion, and student and teacher engagement. Each Pod responds to the spatial and temporal requirements of Blended Learning's diverse modalities and is divided into five zones: The Exchange, The Genius Bar, The Coastline, The Pop-Up Class and The Ocean.

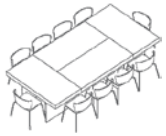
Typical Pod Configuration

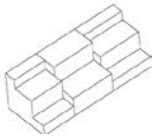
Learning Environment

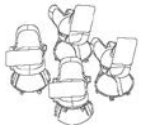


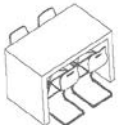












THE EXCHANGE, OR SHADE

Area of grouped desks or tables, where students work collaboratively and/or independently.

THE OCEAN

A study lounge formed by soft, tiered seating risers is used as an alternative learning location for students during independent study periods.

THE POP-UP CLASS

Also known as the Big Board, so name for the oversized smart board at its front, this setting is designed for traditional teacher-led instruction.

THE COASTLINE

The most introspective space within the Pod and is tailored to individual learning such as reading or completing independent lessons online. The desks range in height, accommodating sitting, standing, and students in wheelchairs, and line the perimeter of the Pod.

THE GENIUS BAR

A standing-height work area where students receive on-on-one assistance from instructors.

Adaptive Reuse

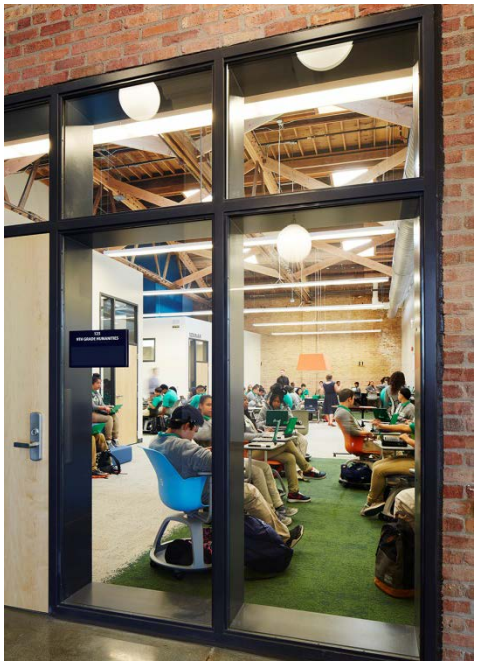
Physical Environment

Adaptive reuse was prioritized in order to save on costs and reduce the project's carbon footprint. Following the selection of the site and the design team's proposal, the educators became highly energized by the idea of adaptive reuse, which would provide immediate and long-lasting social, economic, and environmental benefits.

In addition, preserving a part of the neighborhood's history, they felt, would be symbolic of the school's emphasis on both traditional and nontraditional education. By blending new and old, the building helps dispel the misconception that Intrinsic is focused solely on technology and "screen time."

The design team repurposed as much of the former lumberyard as possible to minimize the use of building materials and the embodied energy of demolition and rebuilding the structure. Original wood beams and bowstring trusses, built between 1911 and 1954, were restored and left exposed, a counterpoint to the Pod's contemporary furnishings and wireless connectivity.

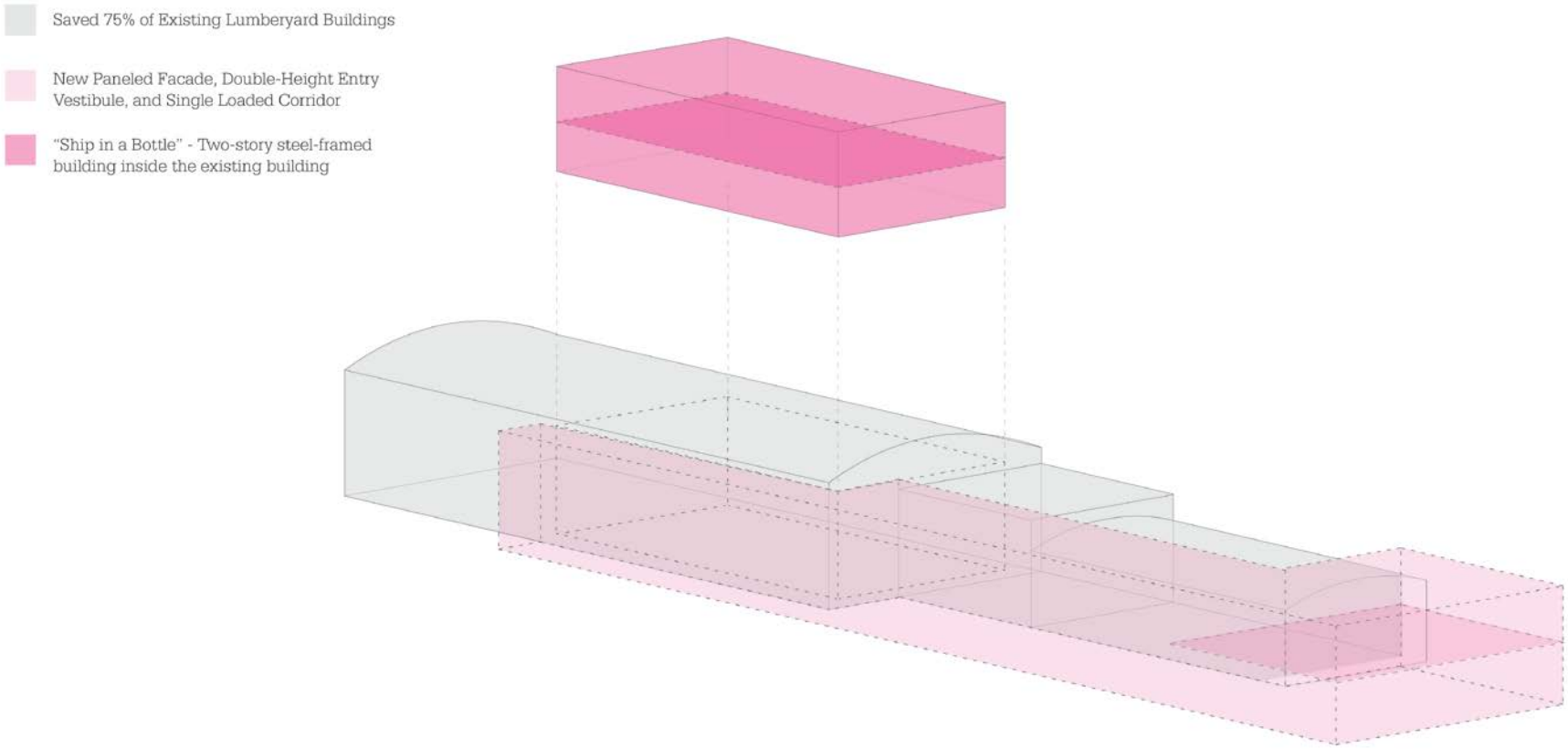
In the school's double-height lobby, geometric light fixtures and colorful seating contrast elegantly with the original Douglas fir beams, highlighting this juxtaposition. The preservation and exposure of these elements offers building inhabitants a connection to the site's industrial history while the new high-performance skin on the building's exterior hints at the revolutionary education happening inside. Overall, 75% of the historic structures were preserved and restored.



“Ship in a Bottle”

Physical Environment

Inside, a “ship in a bottle” approach was used to create a two-story steel-framed building inside the existing building. This solution is visible from the main lobby where the new overlaps the old.

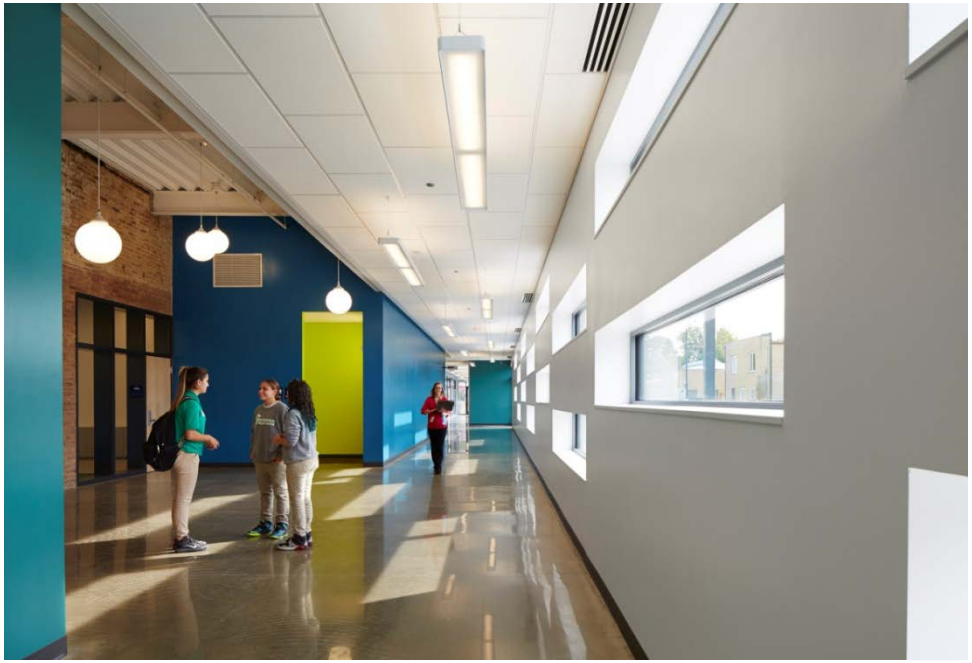


Promotes Well-Being Through Physical Liberation

Physical Environment

You won't find hallway lockers in Intrinsic School's corridors. In fact, you won't find the ubiquitous double-loaded school corridor anywhere. Instead, you will find a hallway lined with windows and views connecting all six tandem pods. Since Intrinsic students use Chromebooks, they don't have to constantly lug heavy books from room to room, using a locker as their depot.

The light from the lobby is brought into the classrooms through a single-loaded corridor and glazed partitions. Although windows on the east wall were not permitted, natural light is funneled into the enclosed science labs and seminar rooms via skylights.



A Hands-On Planning Process

The lack of a precedent, and the fact that this was the charter network's first school, created a distinct set of challenges that only amplified the importance of a thorough and collaborative planning process.

In order to create a learning environment that was an active participant in the Blended Learning curriculum, the design team participated in **mock school days**, led **charrettes**, and designed a temporary facility for an **incubation year** that became instrumental to both the architects and educators in understanding the needs of the students.

Intrinsic's leadership traveled to 10 different schools across the country, including Blended Learning networks such as Summit and Carpe Diem, and observed the curriculum in action. Often, the design of the facilities did not support the next-generation teaching happening inside.

Following the school visits, the design team assisted the educators with two pilots. These mock school days, conducted between October and December 2012, tested various aspects of the curriculum, including technologies, spatial layouts, and transitions between subjects and modalities.

Pilot Programs

Planning Process

At the end of the first pilot, teachers and students filled out surveys and participated in focus groups. Data also was collected by on-site observers. This information was recorded and used to design the second pilot, which explored additional questions and iterations while maintaining the same feedback processes.

A series of charrettes followed the pilots. These focused on refining the students' schedule and exploring the spatial impacts of that schedule. The design team focused on the large, open classroom, exploring a variety of scenarios and animating them at hourly intervals in order to show where student groups would be located throughout the day.

Key decisions came out of these discussions. For instance, in response to the rigidity witnessed at other Blended Learning schools, Zaikos and her team sought to maximize student autonomy. Classrooms originally were envisioned as highly libertarian environments with near total self-direction.

The pilots proved, however, that too much freedom could lead to a chaotic learning environment, and the team was tasked with identifying ways to add structure to the classroom without inhibiting freedom of movement.

Incubation Year

Planning Process

Armed with data and observations from the early pilots and design charrettes, the architects worked with the school to design a temporary facility in Chicago's Loop to serve Intrinsic's inaugural class. This provided a unique opportunity for both teaching staff and the design team to observe firsthand which environments were working and which ones would need to be tweaked, as well as address additional needs that became apparent throughout the year.

These observations, combined with continued feedback from the teachers, played a crucial role in the design of the classroom, or Pod, as it became known. Conceptualized around the school's research and feedback from teachers, parents, and students, the Pod is a large, open space that can be arranged into various zones, providing flexibility as well as structure. To help parents and visitors visualize this, the architects used a 3D printer to create a scale model of the Pod and placed it in the lobby during the incubation year.

The limitations of the temporary space taught the design team a valuable lesson. The location could accommodate only one Pod in a singular space; the other Pod was divided into two rooms and separated by a corridor. The larger of the two spaces became used primarily for math, which required the most instruction of any subject, while science and social science were taught in the smaller of the two spaces.

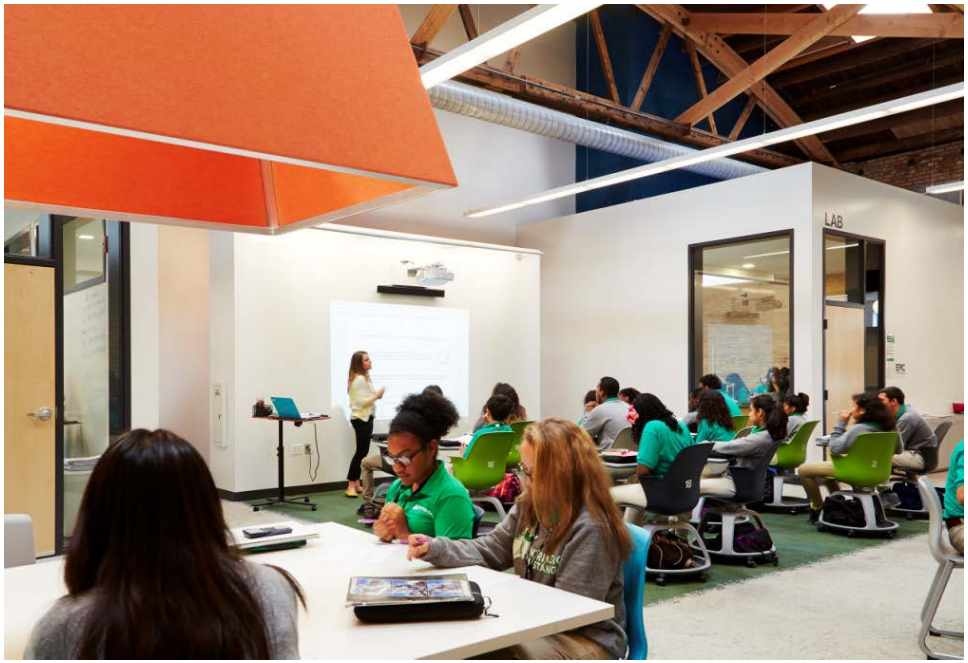
"I think to understand how kids will use things, you really have to test them with kids."
– Melissa Zaikos, Founder & Principal, Intrinsic Schools

Incubation Year, cont.

Planning Process

The incubation year resulted in other major changes to the Pod. Originally, 80% of the Pod's seating consisted of Node chairs, a mobile seat and desk that can be quickly reconfigured for a variety of uses. Though this adaptability was crucial to the Blended Learning model, during meetings with the design team, educators reported a "bumper car effect." They identified a need for more anchored seating, as well as a way to better control the moveable seating.

The design team was faced with the challenge of constraining movement without completely inhibiting it. The solution, employed in the final design, was two-fold. First, the designers created several areas within the Pod where the seating is more fixed. Second, using distinct colored carpet tiles, the design team created zones for the Node chairs, giving instructors the ability to constrain movement to appropriate sections of the Pod and giving students subtle visual boundaries.



Site Selection

Planning Process

Uncertainty characterized the early stages of the planning process. A site had not yet been identified when the design team was brought on, and over the course of eight months, 18 different sites across the city came under consideration. Only once a site was selected would the team have an understanding of the school's community context.

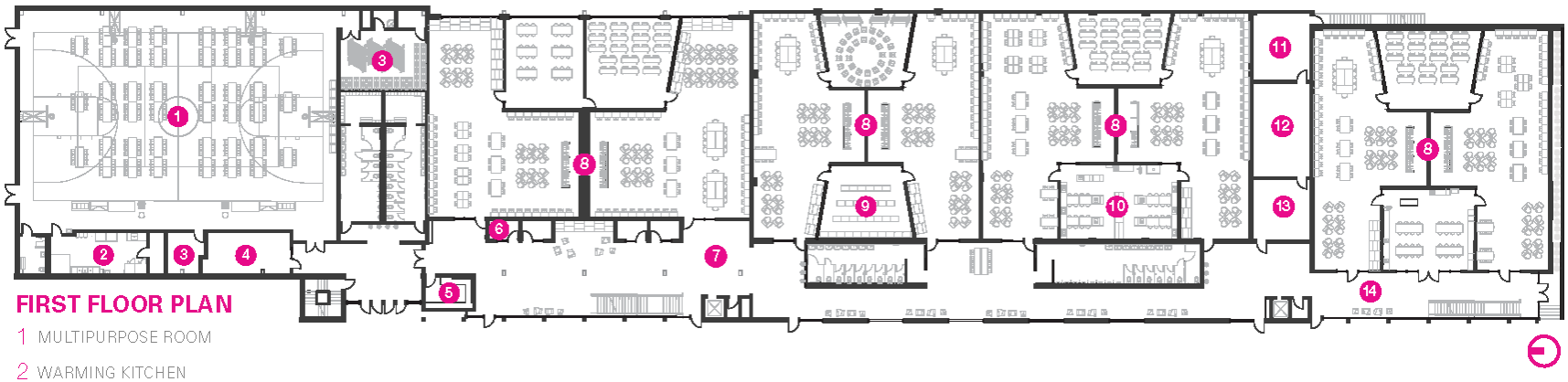
A set of priorities established by the school guided the search for a site:

- Target underserved neighborhoods with high poverty rate
- Prioritize existing buildings to limit building materials and reduce the project's carbon footprint
- The need for large-span structures to accommodate the large, open classrooms
- Accommodation for the primary school building, on-site parking and drop-off, outdoor learning space, and an athletic practice field
- Avoid Environmental hazards and high costs demanded by remediation

The 2.6-acre parcel on Chicago's northwest side, previously occupied by a 75-year old lumberyard, quickly became the frontrunner due to its size, location, and the presence of existing long-span structures that lent themselves to the programmatic needs of the school.

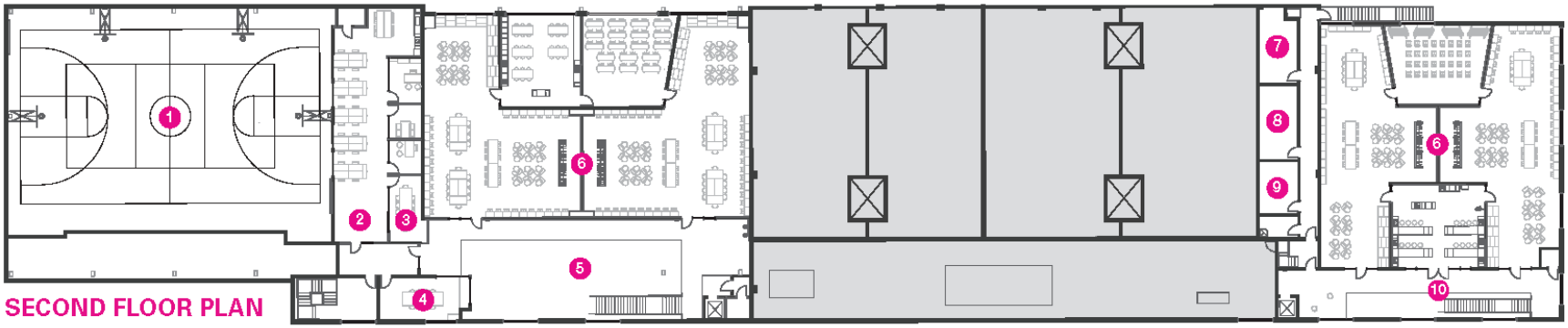

4540
Intrinsic Schools
Belmont Campus

The plaza's pathways feature permeable pavers and a series of angled berms planted with turf, native plants, and trees. These artificial berms invite sitting, creating inhabitable outdoor space for both students and teachers.



FIRST FLOOR PLAN

1 MULTIPURPOSE ROOM
2 WARMING KITCHEN
3 STORAGE
4 LEARNING LAB
5 RECEPTION
6 HUDDLE ROOM
7 NORTH ATRIUM
8 GRADE LEVEL PODS
9 DIGITAL LAB
10 CHEMISTRY LAB
11 MECHANICAL ROOM
12 ELECTRICAL ROOM
13 STAFF ROOM
14 SOUTH ATRIUM



SECOND FLOOR PLAN

1 MULITIPURPOSE ROOM (BELOW)

2 ADMINISTRATION

3 CONFERENCE ROOM

4 LEARNING LAB

5 NORTH ATRIUM

6 GRADE LEVEL PODS

7 STORAGE

8 ROOM

9 MECHANICAL ROOM

10 SOUTH ATRIUM

"We created Intrinsic to do two things. One is to provide life-changing opportunities and postsecondary success. Two, to create the roadmap for all the other educators about how you do this in a sustainable and replicable way."
– Melissa Zaikos, Founder & Principal, Intrinsic Schools

Exhibition of School Planning and Architecture Project Data

Submitting Firm :	Wheeler Kearns Architects
Project Role	Architects
Project Contact	Larry Kearns
Title	Principal
Address	343 S. Dearborn St, Suite 200
City, State or Province, Country	Chicago, IL 60604
Phone	312-939-7787

Joint Partner Firm:	N/A
Project Role	
Project Contact	
Title	
Address	
City, State or Province, Country	
Phone	

Other Firm:	N/A
Project Role	
Project Contact	
Title	
Address	
City, State or Province, Country	
Phone	

Construction Firm:	Clune Construction Co.
Project Role	General Contractor
Project Contact	Will McGowan
Title	VP, Senior Project Manager
Address	300 S. Riverside Plaza #2302
City, State or Province, Country	Chicago, IL 60606
Phone	312-930-2200

Exhibition of School Planning and Architecture Project Details

Project Name	Intrinsic School
City	Chicago
State	IL
District Name	Chicago Public Schools (CPS)
Supt/President	David Vitale
Occupancy Date	8/22/14
Grades Housed	7-12
Capacity(Students)	920 students
Site Size (acres)	2.6 Acres
Gross Area (sq. ft.)	58,234 sf
Per Occupant(pupil)	63 gsf/student
gross/net please indicate	
Design and Build?	No
If yes, Total Cost:	
Includes:	
If no,	
Site Development:	$1,500,000
Building Construction:	$13,500,000
Fixed Equipment:	$1,000,000
Other: Land Purchase	$2,065,000
Other: Soft Costs	$1,490,000
Total Development Costs	$ 19,555,000