2018

Designing School Community: Changing Inner-City Middle School Culture Through Interiors

Rachel A. Ramey
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DESIGNING SCHOOL COMMUNITY
Changing Inner-City Middle School Culture Through Interiors

Rachel Ramey
MFA with a Concentration in Interior Environments
May 2018
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When I first decided to become an interior designer, it was because of my love for beautiful spaces. As I studied designers in the field, I realized that interior design has the power to change lives and the world we live in. I believe that design can create the immense positive change in society. From designing plans to a piece of furniture, design enables people to address a problem and make a change for better or worse. I believe that design from the human mind has been the most influential tool to propel the evolution of human civilization and it is a designer’s responsibility to design with empathy for humanity and our planet as a whole.
Motivation

While the knowledge of disrepair in inner city schools is fairly common, the impact that school facilities are having on students and faculty is not as widely known. More recently, the closing of inner city schools has greatly increased across the United States; Reduction in public school enrollment from 2006-2013: Detroit -63%, Cleveland -32%, Indianapolis -27%, D.C. -23%, L.A. -23% etc. (Journey For Justice Alliance, 2014).

Due to budget cuts, threat of school closings from poor facility conditions, large class size, and pressure to raise test scores, inner city schools struggle to keep teachers (Journey For Justice Alliance, 2014). Poor teacher retention along with a lack in care for educational facilities has created a toxic environment for inner-city students.

Problem

Although there are many reasons that inner city schools suffer negatively within school culture seems to be a common denominator within many of these problems. With larger population percentages of minority, economically disadvantaged and disabled students, difficulties arise in communicating student-to-teacher and student-to-student (Bellwether Education Partner, 2016). The question becomes, how does one design a space to provide comfort, safety and communication in order to foster healthy relationships?

Method

In order to determine the most vital areas that need improvement, interviews with teachers, students and administration from inner-city middle schools will need to be conducted. Interviews with teachers will delve into their main day-to-day school challenges, what their ideal space would look like and what additional areas of the school they would like to utilize in the future.

Students will complete surveys rating their current school (classrooms, library, etc.), and administration will rate the current building, pros/cons from their current layout, and review their history at other schools to see if their other experiences can inform new designs.

Results

Although there are many reasons that inner-city schools suffer negatively within school culture seems to be a common denominator within many of these problems. With larger population percentages of minority, economically disadvantaged and disabled students, difficulties arise in communicating student-to-student and teacher-to-student (Bellwether Education Partner, 2016). The question becomes, how does one design a space to provide comfort, safety and communication in order to foster healthy relationships?

Many reports on school design have found that classroom design can have one of the largest impacts on teachers and students alike. One study found that U.S. student performance could decrease 10-25% due to poor classroom design and facility maintenance (Smith, 2013). New layouts such as flexible classroom designs, have been found to positively impact students. This concept allows the teacher to change the front orientation of the classroom and allows for more student-teacher customization (Topcu, 2013). While traditional classrooms still exist, new classrooms were found to positively impact student performance in mathematics (Immso, Byers, 2017).

Another classroom design method that was found to be beneficial for the teacher is the open perimeter classroom. This leaves an open between a line of classrooms allowing teachers to see one another in case of an emergency. In a U.S. study, they found that open perimeter classrooms had a greater correlation to teacher satisfaction than a closed perimeter classroom (Ahrentzen, Evan, 1984).

Conclusions

This research will inform the design of a middle school that focuses on community and communication. The goal will be to design a school where flexibility and team work is made easier through furniture and layout solutions in order to foster growth and respect for students and teachers.
Although disrepair in inner-city schools is fairly common knowledge, most do not know of the impact that school facilities have on students and teachers. Because of this, this study, titled "Making Peace with the Classroom: A Case Study of Classroom Design and Its Impact on Student Performance," intends to shed light on the conditions that many students face in their daily lives. Through this research, the author highlights the most important aspect of classroom flexibility so that classrooms can continuously change based on the subject, teaching style or needs of the students. 

In a study conducted in Delaware, researchers Byers and Byers found that "Classroom design has a significant effect on student achievement." This design method is also being used classrooms within the same achievement level (Imms, 2015). This was confirmed in a case study, "Making Peace with the Classroom: A Case Study of Classroom Design and Its Impact on Student Performance," in which a researcher named Byers conducted a study in Delaware middle schools. Through his research, he highlighted the importance of classroom flexibility so that classrooms can continuously change based on the subject, teaching style or needs of the students.

In a study conducted by Imms and Byers, they found that students in nontraditional classrooms not only reacted more positively to the classrooms, but they also scored higher than those in traditional classrooms. In addition, students in nontraditional classrooms showed a greater correlation to teacher satisfaction, and found that students took their classes more seriously when teaching in updated spaces. (Uline, Tschannen-Moran, 2008).

In another study, researchers Byers and Byers found that teachers were more likely to go above the call of duty when teaching in updated spaces. Through his research, he highlighted the importance of classroom flexibility so that classrooms can continuously change based on the subject, teaching style or needs of the students.

As a result, this study found that students in nontraditional classrooms not only reacted more positively to the classrooms, but they also scored higher than those in traditional classrooms. In addition, students in nontraditional classrooms showed a greater correlation to teacher satisfaction, and found that students took their classes more seriously when teaching in updated spaces. (Uline, Tschannen-Moran, 2008).
The environment of school should not be underestimated. At the very least, design building improvements and design features leverage mediating role in the effect that school building quality findings. Speaking on how a building impacts students, and Tschannen-Moran reflected on implications of their most of the research on this topic. Classroom design School Climate is a phrase that is repeated throughout Richmond middle school students. suggests that smaller school size would positively benefit this study, an informal qualitative analysis found many attendance, lower levels of discipline issues and scores. Emotionally, students had higher levels of successful. Plosker found that, "students demonstrated individual time with teachers and counselors were more found that students with more direct treatments and school students to gather information, the author By studying 3 different groups of New England high article “A small school design for students with social/ and emotional disabilities and students with intellectual disabilities that also have a high percentage of students with disabilities, this suggests that communication and development of new relationships. Studies see that cultural social work areas can also encouraged development in student identity, and identity and independence. In Wolsey and Uline’s research, that school size has on academic on these individuals. At the same time we seek to improve science laboratories and integrate state of the technology systems, we should also pay particular attention to the ways in which we gather, display and encourage or impede daily interactions between and among students, teachers and parents. If carefully conceived, the separate areas of a school reinforce each other physically and aesthetically, creating rich environments where interpersonal relations can fulfill. Within such spaces, occupants find themselves comfortable enough to take the individual and collective risks required to most meaningful interaction and learn. Tschannen-Moran’s students, a key problem with Richmond City Schools is the discord in communication from different racial group neighborhoods. With the introduction of less structured work areas, teacher and students can have a greater chance of interacting with those that they don’t have to see on a daily basis. Due to the large population of students with disabilities, this suggests that communication and development of new relationships.

In Kenn Fisher’s book "The Translational Design of School: Aligning Pedagogy and Learning Environments," he explores the reasons why some schools have been greatly altered since the school was built in the 1960’s and focusing on activating more than one wall in keeping students engaged during certain activities. The overall impression is that faculty and students don’t have individual time with teachers and counselors were more. Plosker found that, “students demonstrated individual time with teachers and counselors were more. They believed the spaces and furnishings that comprise school environments to learning and instruction” (Wolsey, 2010, p.46). Students’ of this age spend the turning, becomes part of their identities. From the photo-series, students begin to think about the ways in which they can become more aware of ourselves and others around them, and change their behaviors to better fit in. They need to have the support system they need to understand that students understood school as a place where their actions as students were consequential. They believed the spaces and furnishings that comprise school environments to learning and instruction. In 2015, a new school that is currently under construction.

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The South Harbor School is an elementary and middle school, which focuses its design on creating community inside and outside of the space. The building itself is woven into a city district and the interior uses a variety of casual spaces outside of the classroom to encourage group work and communication.

**Firm:** JJW Architects  
**Size:** 31,200 sq.ft.  
**Year Completed:** 2015  
**Location:** Copenhagen, Denmark

Applications of green are applied to sections of upholstery and flooring for active and loosely programmed spaces outside of the classroom, while blue is used in classrooms and areas of quiet and focus. Wood, metal, concrete and neutral paint tones are applied to walls and floors in areas of circulation and gathering areas such as the cafeteria. These visual signals promote gathering in the indicated spots and give an indication of the expected sound level in a given area.
Denoted by the color green, flex spaces often intersect with corridors, but classrooms are physically separated with use of glass walls. Visual connection is used to connect although every space, but flex and corridors use primarily color to separate the two.
This middle school is a great example of flexible classroom design. Through natural light, folding walls and moving desks, Perkins + Will created a sense of openness and flexibility that promotes work between multiple classrooms.

Scale is another element used to increase the amount of natural light, especially in hallways. Classrooms have lower ceilings with sections of skylights, while the hallways extend the ceiling to the top floor and use light colored wall panels to reflect light throughout the building.

Firm: Perkins + Will
Size: 60,000 sq.ft.
Year Completed: 2012
Location: Port Coquitlam, BC - Canada
The front of classrooms can also fold into the ceiling allowing connection between classroom and corridor adding more possibilities for lessons and group exercises between classes.

Through foldable walls between classrooms, teamwork and connection to other classes can be easily facilitated by teachers.
Using a vertical central core, Richard J. Lee creates connection to all other spaces. The central core is also the more area for large groups of students to gather and classrooms are placed on the outer edges of the building. This connection allows for students to still feel familiar and comfortable with the space even as they change grades and learning environments.

**Firm:** Stantec  
**Size:** 96,000 sq.ft.  
**Year Completed:** 2014  
**Location:** Dallas, Texas
The active learning area denoted in the plan is lifted to the second floor and centrally connects all surrounding areas physically and visually.
Through all three projects, connection and transitions from one space to another is the main focal point. By using central vertical connection, transparency, wall flexibility and color indicators, these schools strive to keep students connected with other spaces, and allow teachers to monitor the safety of students inside and outside of the classroom.

All of these concepts can be applied to 815 Porter Street, by the verticality of Richard J. Lee Elementary and South Harbour School directly relate to the architecture of the central atrium which lends itself to visual connection between.

Conclusions

**Independence/Flexibility**

**Control/Rigidity**

**Community/Teamwork**

**Types of Connections**

- Richard J. Lee Elementary
- Pitt River Middle School
- South Harbour School
Existing Material Language

Material: Heavy Oak Timbers
Use: Columns and beams
Finish: Stain

Material: Concrete
Use: Floor on 1st floor
Finish: Polished

Material: Red Brick
Use: Building Facade

Material: Steel
Use: Window frame
Photographic Studies
Originally, the building was constructed in 1895 as a bakery and was converted into a warehouse by Southern Distributors Inc in the 1940s. After being purchased in 2003, the space was adapted into its current use as lofts.

The overall structure consists of brick, heavy timber, and polished concrete flooring on the ground level. The most distinguishable elements of the building include the heavy timber columns/beams, exposed brick walls and the central atrium. The building has characteristics of the Chicago School period with its uniformity and ample natural light, but the heavy timber trusses add a hand made elements that lends itself to the Arts and Crafts period.
Manchester

When was the district established?
• 1663 - William Stegge received 5000-acre royal land grant on the south bank of the James River (including future Manchester)
• 1769 – Incorporated as a town
• 1874 – Declared an independent city

How has the district evolved?
• Originally a port city separate from Richmond
• Port for slave ships in 18th century
• Shipped tobacco and coal
• Absorbed by Richmond in 1910
• Industry and factories boomed in the area in the 20th century
• Manchester is now turning into an upcoming residential district in the city

What is the current state of the district?
• Many older factories are being adapted into apartments
• New apartment buildings are currently being built in multiple locations

What are some defining characteristics of the district?
• Brick façade buildings, factories, some Victorian town houses
• Near the James River
• Near railroad tracks
• Industrial

What are the edges (boundaries) of the district?
• The James River (North and East)
• 301/Cowardin Ave (West)
• Goode Creek/Broad Rock Creek (South)

What are the paths into, through, and across the district? What is their significance?
• Bridges: 301, S. 9th Street, S. 14th Street, Richmond-Petersburg Turnpike (allows connection to the downtown area of the city)
• Roads from the Southwest: 60, 30, 321 and 95 (connect to Chesterfield county)

What are the landmarks in this district? Why?
• Richmond Railroad Museum - This was a central transportation hub in the Richmond area
• Southern States Silo - This building towers over the rest of Manchester and is one of the most identifiable buildings from downtown Richmond
| Science Laboratories | Purpose | teaching/learning | Description | classroom for science, includes sink and utility connections | Important Adjacencies | Other Classrooms | FF&E | demonstration desk with acid resistant top, sink, and utility connections | Visual Privacy | semi private | Acoustic Privacy | very private | Physical Security | very secure | Users of Space | teachers, students, janitors | # of Users at a time | 15-20 students | 1 teacher | Accessibility | accessible during class time for students, accessible during leisure hours for teachers | Occupancy Classification | E | Programmatic Adjacencies | N/A | # of Spaces | 1 | Minimum Square Feet | 1,000 sq. ft. |
|----------------------|---------|------------------|-------------|-----------------------------------------------------------|-----------------|----------------|----------|------------------------------------------------------------|----------------|----------|----------------|------------|----------------|----------|----------------|----------------------------|-----------------|-----------------|----------------|---------------------------------------------|-----------------|-----------------|----------------|---------------------------------------------|
| Art Laboratory | Purpose | teaching/learning | Description | classroom for chron/visual art activities | Important Adjacencies | Band room | FF&E | Racks, pianos, chairs, teacher desk, storage | Visual Privacy | semi private | Acoustic Privacy | very private | Physical Security | very secure | Users of Space | teachers, students, janitors | # of Users at a time | 20-30 students | 1 teacher | Accessibility | accessible during class time for students, accessible during leisure hours for teachers | Occupancy Classification | E | Programmatic Adjacencies | Band room | # of Spaces | 1 | Minimum Square Feet | 1,000 sq. ft. |
| Band Classroom | Purpose | teaching/learning | Description | Classroom for Language Arts, History, Math | Important Adjacencies | Other Classrooms | FF&E | instrument storage, music stands, pianos, chairs | Visual Privacy | semi private | Acoustic Privacy | very private | Physical Security | very secure | Users of Space | teachers, students, janitors | # of Users at a time | 20-25 students | 1 teacher | Accessibility | accessible during class time for students, accessible during class time for teachers | Occupancy Classification | E | Programmatic Adjacencies | Choral | # of Spaces | 1 | Minimum Square Feet | 1,000 sq. ft. |
| Choral Classroom | Purpose | teaching/learning | Description | classroom for chron/visual art activities | Important Adjacencies | Band room | FF&E | storage, group tables, pin up space, sink, shelving, drying racks | Visual Privacy | semi private | Acoustic Privacy | private | Physical Security | very private | Users of Space | teachers, students, janitors | # of Users at a time | 20-30 students | 1 teacher | Accessibility | accessible during class time for students, accessible during class time for teachers | Occupancy Classification | E | Programmatic Adjacencies | Band room | # of Spaces | 1 | Minimum Square Feet | 1,000 sq. ft. |
**Guardsance Office**

**Purpose:** administrator workspace

**Description:** room to counsel students and police

**Important Adjacencies:** guidance, nurses, visiting area

**FF&E:** desks, file cabinets

**Visually Private:** very private

**Accessibility:** private

**Physical Security:** very secure

**Users of Space:** teachers, students, administrators

- # of Users at a time: 4

- Accessibility: accessible during teacher hours for teachers

- # of Spaces: 1

- Minimum Square Feet: 200 sq. ft.

---

**Library**

**Purpose:** teaching/learning

**Description:** Classroom for Language Arts, History, Math

**Important Adjacencies:** Other Classrooms

**FF&E:** shelving, computers, tables, chairs

**Visually Private:** not private

**Accessibility:** accessible during class time for students

**Physical Security:** very secure

**Users of Space:** teachers, students

- # of Users at a time: 30

- # of Students: 2 teachers

- Accessibility: accessible during class time for students

**Occupancy Classification:** E

**Programmatic Adjacencies:** N/A

- # of Spaces: 1

- Minimum Square Feet: 800 sq. ft.

---

**Teacher Workroom**

**Purpose:** place to prepare copies/leaves

**Description:** place to prepare copies/leaves

**Important Adjacencies:** FF&E, tables connected to chairs, table storage

**Visually Private:** private

**Accessibility:** accessible during class time for students

**Physical Security:** very secure

**Users of Space:** teachers, students, janitors

- # of Users at a time: 15

- # of Students: 5 teachers

- Accessibility: accessible to teachers and admin during school hours

**Occupancy Classification:** E

**Programmatic Adjacencies:** N/A

- # of Spaces: 1

- Minimum Square Feet: 450 sq. ft.

---

**Teacher’s Office**

**Purpose:** avoiding sick students

**Description:** office for nurse to treat sick students

**Important Adjacencies:** admin, offices, nurses office guidance

**FF&E:** supply storage, nurse’s desk

**Visually Private:** private

**Accessibility:** accessible during teacher hours for teachers

**Physical Security:** very secure

**Users of Space:** teachers, students, parents

- # of Users at a time: 1 nurse, 5 students

- Accessibility: accessible to nurses and students during school hours

**Occupancy Classification:** A-2

**Programmatic Adjacencies:** N/A

- # of Spaces: 1

- Minimum Square Feet: 200 sq. ft.

---

**Cafeteria**

**Purpose:** eating

**Description:** place for breakfast and lunch

**Important Adjacencies:** FF&E, tables connected to chairs, table storage

**Visually Private:** not private

**Accessibility:** accessible during class time for students

**Physical Security:** very secure

**Users of Space:** teachers, students, janitors, admin

- # of Users at a time: 100 students, 5 teachers

- Accessibility: accessible during class time for students, accessible during teacher hours for teachers

**Occupancy Classification:** A-2

**Programmatic Adjacencies:** N/A

- # of Spaces: 1

- Minimum Square Feet: 8,000 sq. ft.

---

**Waiting Area**

**Purpose:** seating area for parents/guests

**Description:** seating area for parents and visitors

**Important Adjacencies:** admin, office, nurse’s office guidance

**FF&E:** chairs

**Visually Private:** not private

**Accessibility:** accessible during class time for students

**Physical Security:** very secure

**Users of Space:** guests, parents

- # of Users at a time: 15

- Accessibility: accessible during teacher hours for teachers

**Occupancy Classification:** E

**Programmatic Adjacencies:** N/A

- # of Spaces: 1

- Minimum Square Feet: 500 sq. ft.

---

**Nurse’s Office**

**Purpose:** avoiding sick students

**Description:** office for nurse to treat sick students

**Important Adjacencies:** admin, offices, nurses office guidance

**FF&E:** supply storage, nurse’s desk

**Visually Private:** private

**Accessibility:** accessible during class time for students

**Physical Security:** very secure

**Users of Space:** teachers, students, parents

- # of Users at a time: 1 nurse, 5 students

- Accessibility: accessible to nurses and students during school hours

**Occupancy Classification:** A-2

**Programmatic Adjacencies:** N/A

- # of Spaces: 1

- Minimum Square Feet: 200 sq. ft.

---

**Gym**

**Purpose:** teaching/learning athletics

**Description:** includes athletic activities

**Important Adjacencies:** locker room, gym storage

**Visually Private:** not private

**Accessibility:** very private

**Physical Security:** very secure

**Users of Space:** teachers, students, janitors

- # of Users at a time: 15

- Accessibility: accessible during class time for students

**Occupancy Classification:** A-3

- # of Spaces: 1

- Minimum Square Feet: 2,000 sq. ft.

---

**Auditorium**

**Purpose:** assemblies

**Description:** place for in school assemblies and extra curricular performances

**Important Adjacencies:** music classrooms

**Visually Private:** very secure

**Accessibility:** accessible during class time for students

**Physical Security:** very secure

**Users of Space:** teachers, students, janitors, guests

- # of Users at a time: 500

- Accessibility: accessible to all during assemblies

**Occupancy Classification:** E

- # of Spaces: 1

- Minimum Square Feet: 5,000 sq. ft.

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**Locker Room**

**Purpose:** changing and showering for gym

**Description:** Important Adjacencies: gym

**Visually Private:** very private

**Accessibility:** very private

**Physical Security:** very secure

**Users of Space:** teachers, students

- # of Users at a time: 30

- Accessibility: accessible during class time for students

**Occupancy Classification:** E

- # of Spaces: 1

- Minimum Square Feet: 2,000 sq. ft.
Janitorial Closets

Purpose: Janitor storage
Description: for cleaning supplies and equipment prep
Important Adjacencies: N/A
FF&E: sink, drain, shelving
Visual Privacy: private
Acoustic Privacy: private
Physical Security: very secure
Users of Space: janitors
# of Users at a time: 1
Accessibility: only to janitors
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 8
Minimum Square Feet: 25 sq. ft. per closet – 200 sq. ft.

Teacher Bathrooms

Purpose: restrooms
Description: for teaching/learning
Important Adjacencies: Classrooms
FF&E: stalls, sinks
Visual Privacy: max private
Acoustic Privacy: max private
Physical Security: very secure
Users of Space: teachers, janitors
# of Users at a time: 1
Accessibility: accessible during work hours
Occupancy Classification: E
# of Spaces: 4
Minimum Square Feet: 50 sq. ft.

Soft Learning Spaces

Purpose: Independent learning space outside of the classroom
Important Adjacencies: Corridors
FF&E: Group work tables and seating
Visual Privacy: none
Acoustic Privacy: none
Physical Security: in the open
Users of Space: students
# of Users at a time: varies
Accessibility: accessible during school hours
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: TBD
Minimum Square Feet: TBD

Student Bathrooms

Purpose: restrooms
Description: for students
Important Adjacencies: Classrooms
FF&E: stalls, sinks
Visual Privacy: max private
Acoustic Privacy: max private
Physical Security: very secure
Users of Space: students, janitors
# of Users at a time: 6 students
Accessibility: accessible during class time for students
Occupancy Classification: E
Programmatic Adjacencies: max of 200’ from furthest classroom
# of Spaces: 4 girls, 4 boys
Minimum Square Feet: 3,200 sq. ft.

Gym Storage

Purpose: teaching/learning
Description: Classrooms for Languages Arts, History, Math
Important Adjacencies: gym
FF&E: shelving
Visual Privacy: none
Acoustic Privacy: none
Physical Security: in the open
Users of Space: teachers
# of Users at a time: 1 teacher
Accessibility: accessible only to teacher
Occupancy Classification: E
# of Spaces: 1
Minimum Square Feet: 400 sq. ft.

Corridors

Purpose: teaching/learning
Description: Classrooms for Languages Arts, History, Math
Important Adjacencies: N/A
Visual Privacy: no privacy
Acoustic Privacy: no privacy
Physical Security: semi secure
Users of Space: everyone
# of Users at a time: varies
Accessibility: Occupancy Classification: E
# of Spaces: N/A
Minimum Square Feet: min of 10'-0 wide, hallways with lockers measure from locker door swing, admin hallways need to be min. of 5’ wide

Teacher Bathrooms

Purpose: teaching/learning
Description: Classrooms for Languages Arts, History, Math
Important Adjacencies: Classrooms
FF&E: stalls, sinks
Visual Privacy: max private
Acoustic Privacy: max private
Physical Security: very secure
Users of Space: teachers, janitors
# of Users at a time: 1
Accessibility: accessible during work hours
Occupancy Classification: E
# of Spaces: 4
Minimum Square Feet: 50 sq. ft.
Adjacency Matrix & Code Summary

- Classrooms
- Science Classroom
- Science Lab
- Chorus Classroom
- Band Classroom
- Art Lab
- Computer Lab
- Special Education Classroom
- Resource Classroom
- Admin. Offices
- Guidance Offices
- Waiting Area
- Library
- Nurse’s Office
- Teacher Workroom
- Teacher’s Lounge/Assistant
- Cafeteria
- Auditorium
- Gym
- Locker Room

Occupancy Classification: Group E
Building Type: Type 4 - Heavy Timber
Type of Construction: Janitor storage
Total Gross Area: 100,000 sq. ft.
Gross Area for each floor: 25,000 sq. ft.
Efficiency Ratio: Net = Gross x .60
Total Net Area: 60,000 sq. ft.
Net Area per floor: 15,000 sq. ft.
Max Occupancy: 2,000
Max Occupants per floor: 500
Number of Egress Stairs: 4

Gross Square Footage: 100,000
Net Square Footage: 70,000

Graphic Program

- Art Lab: 1,200 sq. ft.
- Chorus/Band Classroom: 1,000 sq. ft.
- Guidance Offices: 300 sq. ft. each 600 total
- Admin. Offices: 200 sq. ft. each 600 total
- Locker Rooms: 6,000 sq. ft. total
- Computer Lab, Special Ed. (S), Resource Classroom: 700 sq. ft. each 3,500 total

- Auditorium: 10,000 sq. ft.
- Gym: 8,000 sq. ft.
- Library: 4,950 sq. ft.
- Nurse’s Office: 200 sq. ft. each

- Art Lab
- Chorus/Band Classroom
- Guidance Offices
- Admin. Offices
- Locker Rooms

- Science Lab
- Teacher’s Lounge
- Waiting Area
- Teacher Workroom

- Science Classroom
- Library
- Nurse’s Office
- Teacher Workroom
Through the power of gathering, schools have the opportunity to create a point of connection that can facilitate empathy and respect between students and teachers. With this in mind, the concept became an exploration of connection points that allow the user to shape elements of their environment. Through the dichotomy of flexibility and control, I explored light, sight-lines and systems that would allow visual and physical points of connections.
Using dowel rods and a foam-core base, I created a system for which square panels of different textures, opacities, colors and sizes could be manipulated. This exploration was inspired by the column grid of the building and was meant to delve into systematic flexibility of student spaces to encourage independence.
This model explored transitions on vertical surfaces and perceptions based on vantage points. From above, you only see the white layering of paper, but when tilted to the side, the green layer underneath becomes apparent and starts to bounce color into the central channels.
Light is an extremely important aspect of any school design, as it affects the overall atmosphere and productivity. Using acetate, I created a diagrammatic model to show the sunnier areas of the South and East interlocking with the darker sides of the building on the North and West. I also analyzed the grid system of the windows to find additional points of reference for space planning.
Schematic Design - Option 1

Through color blocking sketches, I examined the relationships of spaces through volume and acoustics. Most blocking plans focus classrooms on the Southeast side of the building to capture the morning sun, while larger and louder spaces such as the cafeteria, gym and auditorium are placed on the Northwest side.
Option 2 places the library on the ground floor in the atrium. The gym/cafeteria and auditorium are aligned on the Northwest side of the building taking all 4 floors.
This layout focuses on the auditorium being an open space within the atrium, which can also be used as additional flex space, lecture space or a staircase.
Option 4 takes option 3 and extends the central stair/auditorium to the 3rd floor. This layout uses the view from the lobby to sculpt the shape of the stair and to create visual connection through the entire building.
These studies were analyzing where flex space could be situated in each plan, while still corresponding to the central staircase.

Design Development

This color study based on the window grid became a main graphic used on the north mural wall on the 4th floor. Pieces of this also became the graphics on the built-in glass boards found in the flex spaces.

These diagrams analyze the different ways that flexible seating could be arranged in each classroom.
I then focused on the shelving wall system in the classroom and how the shelving would be arranged on each unit.
Final Design
Sections

Transverse Section

Longitudinal Section
Exploded Axon
The grand staircase is not only the core of the school, but the core of the concept of gathering. The angle of the stairs was determined by the sight-line from the lobby to the northeast corner of the building. Instead of creating a separate auditorium space, this staircase hosts bleacher seating with cushion inserts which can be utilized for performance seating or flex space that can be used by teachers and students between classes. This space can also be used as an alternative to classroom lecture.
The glassboard flex space is highly visible, which allows teachers to have group work activities outside of the classroom. The mobile and built-in seating help students control some elements of their own environment and the mobile stool storage creates a perimeter that separates circulation from the flex area.
The northeast corner of each floor has a smaller bleacher seating area, which can be used by teachers and students. The plywood structure is visible from the front of the school and the blue wall is felt paneling to dampen acoustics in the space.
Along each corridor, the central alley creates opportunity for smaller groups to work together. Carpeted pathways identify these alleys, while still having ample circulation space on either side. Each booth has seating for 4 students and the exterior can be used by an additional pair on both sides. This seating still provides important sight-lines and creates a consistent system of flex space on each floor.
Each floor has a series of 4 classrooms along the southeast wall of the building, which are separated into two pairs. Each pair is divided by two storage walls that slide along a series of tracks, allowing these classrooms to be connected for group-work activities or separated for individual class time.

The node chair is used for student desks and allows for teachers to easily facilitate different types of group work without worrying about the amount of time taken to rearrange seats. Built-in shelving on the perimeter frees up most of the floor space for student activity and the teacher’s desk includes a small side table allowing for meetings with individual or pairs of students.

FF&E

Studio Set U/V
Color: AD07D2 Pewter
Manufacturer: Interface
Application: Flooring

CeramicSteel White Board
Color: White
Manufacturer: Polyvision
Application: Shelving Unit

Node Chair
Color: Plat. Solid Nickel, Jazz
Manufacturer: Steelcase
Application: Classroom

BuzziTrevira
Color: Hazy Ocean
Manufacturer: BuzziSpace
Application: BuzziCube

Wheelworks Regular - 94
Color: Constants Cherry
Manufacturer: Armstrong
Application: Classroom Ceiling

Casper Box
Dimension: 22” x 22” x 8”
Manufacturer: LightArt
Application: Classroom Lighting

BuzziSpot 3D Ottoman
Color: BuzziTrevira - Hazy Ocean
Manufacturer: BuzziSpace
Application: Teacher Desk

Bivi Desk
Color: Steelcase Oak Composite, Steelcase Anodized Aluminum
Manufacturer: Steelcase
Application: Teacher Desk

Campfire Slim Table
Color: Steelcase Oak Composite
Manufacturer: Steelcase
Application: Teacher Desk

Woodworks Tegular - W4
Color: Constants Cherry
Manufacturer: Armstrong
Application: Classroom Ceiling

CeramicSteel White Board
Color: White
Manufacturer: Polyvision
Application: Shelving Unit

Pine Plywood
Application: Shelving
The storage wall includes a CeramicSteel projection surface which doubles as a dry-erase board and a series of moving panels to conceal storage and provide more dry-erase surfaces. When classes are to be divided, there is a glass panel within the shelf that extends to the front wall of the classroom and allows for teachers to have visibility into adjacent rooms in case of an emergency. The bottom four feet of the panel is frosted to prevent distraction from other classrooms.
Reflection

As I look back on my thesis defense, I can truly say that I spoke from the heart and concentrated on areas of my project that would make the most impact on the existing middle school pedagogy structure. After my 15 minute presentation, the department professors brought up many valid points on areas of my project that could be changed or developed more thoroughly. The critique that affected me the most was about the location of the administration area. Since my concept is about creating community through gathering and transparency, several professors felt that keeping administration offices, guidance counselor offices, and the teachers lounge in a separate area didn’t match the rest of the building. I also felt that certain flex areas needed to be developed more thoroughly, but I came away from this project extremely proud of the work I did and feeling equipped for life after grad school.

Overall, the past two years have felt like the longest and shortest years of my life. The first year gave me so many necessary skills for this career, but the summer internship is what gave me the confidence in my own ability as a designer. I still worried that I wouldn’t have the chance to help those in need if I worked for a commercial architecture firm, but through the work I have done on my thesis, I have realized that designers can make positive changes to society by just challenging the norm of current design standards.

I’m so thankful that I had the opportunity to participate in this program with this faculty and all the members of my cohort. I truly felt like I was a part of a team and that I was supported when I needed help. I’m going to miss my time at VCU, but I’m excited to start my career as an interior designer.

Acknowledgements

Special thanks to:
Derek Hambright
Marlene Ramey
Amy Williams
Roberto Ventura
Emily Smith
Camden Whitehead
Jen Fell
Katie Rene
Jouburt Ramos
Bryan Clark
My MFA Cohort
Mark Freeman
Tom Stiles
Works Cited


