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

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DESIGNING SCHOOL COMMUNITY
Changing Inner-City Middle School Culture Through Interiors
Rachel Ramey
MFA with a Concentration in Interior Environments
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A thesis submitted in partial fulfillment of the requirements for the Degree of Master of Fine Arts at Virginia Commonwealth University.

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Rachel Ramey  
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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 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 negativity 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?

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 negativity 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, in Australian primary schools, non-traditional 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 (Ahenkorah, Evan, 1994).

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.

Abstract
Although deceptively an inner-city school is fairly common knowledge, most do not know of the impact that school facilities have on having students and, consequently, how this could outweigh threat of school closings from poor facility conditions, lack of resources, and pressure to relocate; this being, due to the school struggles to retain teachers (Journey For Justice Alliance, 2014). A main cause of the frustration is obsolete educational facilities and resources, which have created a toxic environment for inner-city students and faculty. Due to budget restrictions, there is serious when being taught in spaces that were in disrepair, but classroom design and class size are two fundamental factors that could create a number of benefits for students and teachers. I decided to focus on classroom design because of the rhetoric of “Designing and educating a new student learning: Ergonomics in all but name.”

As current schools age and pedagogy continues to change with time and technology, the need for wardiness grows. Flexible classroom design is the key to a better learning environment. For students who have a significant attention problem, active classroom environments allow for a wider variety of configurations of the typical classroom. Although it is not widely used in United States public schools, authors Imms and Byers conducted a study in Australian primary schools on the impact of environmental changes that facilitate teacher skill and promote increased student receptivity to teaching. Consequently, middle school teacher felt that these middle school classrooms promoted increased student receptivity to learning. As a result of this study, it was found that open perimeter classrooms had a greater correlation to teacher satisfaction, closed perimeter classrooms affected the learning environment of $15,000, but also created an environment that emphasized collaboration. Another method that is being used is open perimeter classrooms. In Ahrentzen and Evans study, they requested the feedback of 13 teachers (teaching 4 grade level). This study analyzed how closed perimeter classrooms versus open perimeter classrooms affected the learning environment for the teachers and the students. In their study, they found that open middle school classrooms can help teachers devoted more one-on-one time with each student and feel less overwhelmed. In their analysis, they assert, “simply reducing class size can produce significant changes such as more classroom resources and space, student participation and time on task, and fewer discipline problems, all which contribute to environmental changes that facilitate teacher skill.”

Another important factor is that Richmond Schools’ disabled student population (emotional, physical and 5th, 6th, and 7th grade) this study analyzed how closed perimeter versus open perimeter classrooms affected the learning environment for the teachers and the students. In their analysis, they assert, “simply reducing class size can produce significant changes such as more classroom resources and space, student participation and time on task, and fewer discipline problems, all which contribute to environmental changes that facilitate teacher skill.”

A main cause of the frustration is obsolete educational facilities and resources, which have created a toxic environment for inner-city students and faculty. Due to budget restrictions, there is serious when being taught in spaces that were in disrepair, but classroom design and class size are two fundamental factors that could create a number of benefits for students and teachers. I decided to focus on classroom design because of the rhetoric of “Designing and educating a new student learning: Ergonomics in all but name.”

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Another important factor is that Richmond Schools’ disabled student population (emotional, physical and learning) makes up 10% of all students. In Richmond’s
article “A small school design for students with social/ emotional disabilities and other special education needs.” Uline et al. (2008) found that students with special educational needs acknowledged that school was an academic on these individuals. By providing a smaller student-to-teacher ratio, high school students to gather information, the author found that students with more direct treatments and increased classroom sizes. While going over their study results, Uline et al. (2008) found that students with more direct treatments and increased classroom sizes. While going over their study results, Uline et al. (2008) found that students with more direct treatments and increased classroom sizes. While going over their study results, Uline et al. (2008) found that students with more direct treatments and increased classroom sizes. While going over their study results, Uline et al. (2008) found that students with more direct treatments and increased classroom sizes. While going over their study results, Uline et al. (2008) found that students with more direct treatments and increased classroom sizes. While going over their study results, Uline et al. (2008) found that students with more direct treatments and increased classroom sizes. While going over their study results, Uline et al. (2008) found that students with more direct treatments and increased classroom sizes. While going over their study results, Uline et al. (2008) found that students with more direct treatments and increased classroom sizes. Within this context, our students find a growth that is a shift in student and teacher mentality.

A small hallway was converted into the current teacher’s lounge and is lined with lockers. Due to the large teacher population and the limited copiers, all copies are made by school assistants and have to be sent two days prior to the day they are needed. Overall, the staff of Elkhardt-Thompson suggests that the school has been greatly altered since the school was built in the 1960’s and focusing on activating more than one wall for teaching lessons could present new teaching challenges. The change in the design of the space needs to one that can create a shift in student and teacher mentality.

Although Richmond Public Schools has a multitude of problems that need to be fixed, I believe that more thoughtful design for classrooms and schools can create a shift in student and teacher mentality. Overall, the design of the space needs to one that facilitates flexibility in teaching style and promotes student independence and emotional support. The change in the future and the general Richmond community would help create schools a role of refuge for these students, but it also can give them the support system they need to identify their interests that may impact their path in the future.

In contrast with newly developed schools, Richmond public schools such as Elkhardt-Thompson Middle School, was built in the 1960’s, named “Adolescent Identity Formation and the School Environment.” Abbasi found that the student does have to be sent two days prior to the day they are needed. Overall, the staff of Elkhardt-Thompson suggests that the school has been greatly altered since the school was built in the 1960’s and focusing on activating more than one wall for teaching lessons could present new teaching challenges. The change in the design of the space needs to one that can create a shift in student and teacher mentality.
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 spaces 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.
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.
Richard J. Lee Elementary School

Firm: Stantec
Size: 96,000 sq. ft.
Year Completed: 2014
Location: Dallas, Texas

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.
The active learning area denoted in the plan is lofted 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 Harbor 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

- Least Flexible
- Most Flexible
- Least Control
- Most Control
- Least Teamwork
- Most Teamwork

Richard J. Lee Elementary
Pitt River Middle School
South Harbour School
Elevations

South Exterior Elevation

West Exterior Elevation

North Exterior Elevation

East Exterior Elevation
Existing Material Language

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

- **Concrete**
  - Use: Floor on 1st floor
  - Finish: Polished

- **Red Brick**
  - Use: Building facade

- **Steel**
  - Use: Window frame
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 distinctive 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 element 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, 380, 301 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

District History
Science Classrooms

Purpose: teaching/learning
Description: classrooms for science, includes sinks
Important Adjacencies: Other Classrooms
FF&E: sinks, storage, shelves, projectors, smart board, dry erase board
Visa Privacy: semi-private
Acoustic Privacy: very secure
Physical Security: very secure

Users of Space: teachers, students, janitors
# of Users at a time: 15-30 students, 1 teacher
Accessibility: accessible during class time for students, accessible during teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 3
Minimum Square Feet: 3,800 sq. ft.

Science Lab

Purpose: teaching/learning
Description: classroom for science, includes sink
Important Adjacencies: Other Classrooms
FF&E: demonstration desk with acid resistant top, sink, and utility connections
Visa Privacy: semi-private
Acoustic Privacy: very secure
Physical Security: very secure

Users of Space: teachers, students, janitors
# of Users at a time: 15 students, 1 teacher
Accessibility: accessible during class time for students, accessible during teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 1
Minimum Square Feet: 1,000 sq. ft.

Band Classroom

Purpose: teaching/learning
Description: classrooms for Language Arts, History, Math
Important Adjacencies: Other Classrooms
FF&E: instrument storage, music stands, pianos, chairs
Visa 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 teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: Choral
# of Spaces: 1
Minimum Square Feet: 1,000 sq. ft.

Special Education Classroom

Purpose: teaching/learning
Description: classroom for special needs students
Important Adjacencies: private restroom
FF&E: ADA bathroom, special desks and chairs
Visa Privacy: semi-private
Acoustic Privacy: very private
Physical Security: very secure

Users of Space: teachers, students, janitors
# of Users at a time: 10-15 students, 2-3 teachers
Accessibility: accessible during class time for students, accessible during teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 1
Minimum Square Feet: 700 sq. ft.

Teacher Offices

Purpose: administrator workplace
Description: administrative offices
Important Adjacencies: guidance, nurse, waiting area
FF&E: desks, file cabinets
Visa Privacy: very private
Acoustic Privacy: very private
Physical Security: very secure

Users of Space: teachers, students, administrators
# of Users at a time: 2-4 people
Accessibility: N/A
Occupancy Classification: E
# of Spaces: 3
Minimum Square Feet: 750 sq. ft.

Computer Lab

Purpose: teaching/learning
Description: available computers for research and class activities
FF&E: student desks, teacher desk, projector, computers
Visa Privacy: semi-private
Acoustic Privacy: very private
Physical Security: very secure

Users of Space: students, teachers, janitors
# of Users at a time: 30-40 students, 1 teacher
Accessibility: accessible during class time for students, accessible during teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 1
Minimum Square Feet: 700 sq. ft.

Resource Classroom

Purpose: teaching/learning, classroom
Description: for extra space for testing
desks, chairs
Visa Privacy: semi private
Acoustic Privacy: very private
Physical Security: very secure

Users of Space: students, teachers, janitors
# of Users at a time: 20-30 students, 1 teacher
Accessibility: accessible during class time for students, accessible during teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 1
Minimum Square Feet: 700 sq. ft.

Art Lab

Purpose: teaching/learning
Description: classroom for all different types of art activities
FF&E: storage, group tables, pin up space, sink, shelves, drying racks
Visa 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 teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 1
Minimum Square Feet: 1,200 sq. ft., 45 square feet per student, not including storage. A secure storage space of 400 square feet.

Administrator Offices

Purpose: administrator workplace
Description: administrative offices
Important Adjacencies: guidance, nurse, waiting area
FF&E: desks, file cabinets
Visa Privacy: very private
Acoustic Privacy: very private
Physical Security: very secure

Users of Space: teachers, students, administrators
# of Users at a time: 2-4 people
Accessibility: N/A
Occupancy Classification: E
# of Spaces: 3
Minimum Square Feet: 750 sq. ft.

Choral Classroom

Purpose: teaching/learning [choral]
Description: classroom for chorus/music
Important Adjacencies: Band room
FF&E: pianos, chairs, pianos, chair desk, storage
Visa 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 teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: Band room
# of Spaces: 1
Minimum Square Feet: 1,000 sq. ft.

FF&E:
Risers, piano, chairs, teacher desk, storage

Visa Privacy: very 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 teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 1
Minimum Square Feet: 1,000 sq. ft.

Feeder Classroom

Purpose: teaching/learning
Description: classrooms for all different types of art activities
FF&E: storage, group tables, pin up space, sink, shelves, drying racks
Visa 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 teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 1
Minimum Square Feet: 700 sq. ft.

Special Education Classroom

Purpose: teaching/learning
Description: classroom for special needs students
Important Adjacencies: private restroom
FF&E: ADA bathroom, special desks and chairs
Visa Privacy: semi-private
Acoustic Privacy: very private
Physical Security: very secure

Users of Space: teachers, students, janitors
# of Users at a time: 10-15 students, 2-3 teachers
Accessibility: accessible during class time for students, accessible during teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 1
Minimum Square Feet: 700 sq. ft.

Programmatic Adjacencies

Important Adjacencies (other than teacher's workspace):
FF&E: student desks, teacher desk, projector, computers
Visa Privacy: semi-private
Acoustic Privacy: very private
Physical Security: very secure

Users of Space: students, teachers, janitors
# of Users at a time: 20-30 students, 1 teacher
Accessibility: accessible during class time for students, accessible during teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 1
Minimum Square Feet: 700 sq. ft.

Science Classrooms

Purpose: teaching/learning
Description: classrooms for science, includes sink
Important Adjacencies: Science lab
FF&E: sinks, storage, shelves, projectors, smart board, dry erase board
Visa Privacy: semi-private
Acoustic Privacy: very private
Physical Security: very secure

Users of Space: teachers, students, janitors
# of Users at a time: 15 students, 1 teacher
Accessibility: accessible during class time for students, accessible during teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 3
Minimum Square Feet: 2,100 sq. ft.

Science Lab

Purpose: teaching/learning
Description: classroom for science, includes sink
Important Adjacencies: Other Classrooms
FF&E: demonstration desk with acid resistant top, sink, and utility connections
Visa Privacy: semi-private
Acoustic Privacy: very secure
Physical Security: very secure

Users of Space: teachers, students, janitors
# of Users at a time: 15 students, 1 teacher
Accessibility: accessible during class time for students, accessible during teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 1
Minimum Square Feet: 1,000 sq. ft.

General Education Classrooms

Purpose: teaching/learning
Description: Classrooms for Languages Arts, History, Math
Important Adjacencies: Other Classrooms
FF&E: student desks, teacher desk, projector, smart board, dry erase board
Visa Privacy: semi private
Acoustic Privacy: very private
Physical Security: very secure

Users of Space: teachers, students, janitors
# of Users at a time: 15, 30 students, 1 teacher
Accessibility: accessible during class time for students, accessible during teacher hours for teachers
Occupancy Classification: E
Programmatic Adjacencies: N/A
# of Spaces: 12
Minimum Square Feet: 4,950 sq. ft.
## Guidance Office
**Purpose**: Administrator workspace
**Description**: Room to counsel students and parents
**Important Adjacencies**: guidance, nurse, waiting area
**FF&E**: desks, file cabinets
**Visual Privacy**: very private
**Accessibility**: accessible during school hours
**Users of Space**: teachers, students, administrators
# of Spaces: 1
**Occupancy Classification**: 6-8 people
**Access Control**: N/A
**Occupancy Classification**: E
**Minimum Square Feet**: 600 sq. ft.

## Library
**Purpose**: teaching/learning
**Description**: Classroom for Language Arts, History, Math
**Important Adjacencies**: Other Classrooms
**FF&E**: shelves, computers, tables, chairs
**Visual Privacy**: not private
**Acoustic Privacy**: very private
**Physical Security**: very secure
**Users of Space**: teachers, students
# of Spaces: 1
**# of Users at a time**: 30-60 students, 2 teachers
**Accessibility**: accessible during class time for students, accessible during teacher hours for teachers (after school activities)
**Occupancy Classification**: A-2
**Programmatic Adjacencies**: N/A
**# of Spaces**: 1
**Minimum Square Feet**: 400 sq. ft.

## Nurse’s Office
**Purpose**: aiding sick students
**Description**: Office for nurses to treat sick students
**Important Adjacencies**: admin. offices, nurses’ office
**FF&E**: supply storage, nurse bed/chair
**Visual Privacy**: private
**Acoustic Privacy**: very private
**Physical Security**: very secure
**Users of Space**: teachers, students/patients
# of Users at a time: 1 nurse, 5 students
**Accessibility**: accessible to nurses and students during school hours
**Occupancy Classification**: E
**Programmatic Adjacencies**: N/A
**# of Spaces**: 1
**Minimum Square Feet**: 200 sq. ft.

## Teacher Workroom
**Purpose**: place to prepare copies/lessons
**Description**: Important Adjacencies: FF&E: copies, supply storage
**Visual Privacy**: very private
**Acoustic Privacy**: very private
**Physical Security**: very secure
**Users of Space**: teachers, students, janitors
# of Users at a time: 15 teachers
**Accessibility**: accessible during class time for students, accessible during teacher hours for teachers
**Occupancy Classification**: E
**# of Spaces**: 1
**Minimum Square Feet**: 400 sq. ft.

## Cafeteria
**Purpose**: eating
**Description**: place for breakfast and lunch
**Important Adjacencies**: FF&E: tables connected to chairs, table storage
**Visual Privacy**: no privacy
**Acoustic Privacy**: no privacy
**Physical Security**: not secure
**Users of Space**: teachers, students, janitors, admin.
# of Users at a time: 100 students, 5 teacher
**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**: 6,000 sq. ft.

## Auditorium
**Purpose**: assemblies
**Description**: place for in school assemblies and extra curricular performances
**Important Adjacencies**: music classrooms
**FF&E**: built-in seating, stage, curtains, stage lighting
**Visual Privacy**: very private
**Acoustic Privacy**: no privacy
**Physical Security**: very secure
**Users of Space**: teachers, students, janitors, guests
# of Users at a time: 300
**Accessibility**: accessible during class time for students, accessible during teacher hours for teachers
**Occupancy Classification**: A-3
**# of Spaces**: 1
**Minimum Square Feet**: 6,000 sq. ft.

## Gym
**Purpose**: teaching/learning athletics
**Description**: Indoor athletic activities
**Important Adjacencies**: locker room, gym storage
**FF&E**: mats, basketball hoops
**Visual Privacy**: no privacy
**Acoustic Privacy**: no privacy
**Physical Security**: no privacy
**Users of Space**: teachers, students, janitors
# of Users at a time: 90-120 students, 2 teachers
**Accessibility**: accessible during class time for students, accessible during teacher hours for teachers
**Occupancy Classification**: A-3
# of Spaces: 1
**Minimum Square Feet**: 7,000 sq. ft., Middle school gym
**Minimum Square Feet**: 8,000 sq. ft., Middle school auxiliary gym

## Locker Room
**Purpose**: changing and showering for gym
**Description**: Important Adjacencies: gym
**Visual Privacy**: max private
**Acoustic Privacy**: max private
**Physical Security**: very secure
**Users of Space**: students, janitors
# of Users at a time: 30 students, 1 teacher
**Accessibility**: accessible during class time for students, accessible during teacher hours for teachers
**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, shelf, 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 teachers
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.

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: gym
Description: for gym equipment
Important Adjacencies: Classrooms
FF&E: shelving
Visual Privacy: max private
Acoustic Privacy: max private
Physical Security: very secure
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.

Soft Learning Spaces

Purpose: Independent learning space outside of the classrooms
Description: N/A
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
# of Spaces: TBD
Minimum Square Feet: TBD

Corridors

Purpose: teaching/learning
Description: Classrooms for Language Arts, History, Math
Important Adjacencies: Classrooms
FF&E: N/A
Visual Privacy: no privacy
Acoustic Privacy: no privacy
Physical Security: semi secure
Users of Space: everyone
# of Users at a time: 1
Accessibility: Occupancy Classification: E
# of Spaces: N/A
Minimum Square Feet: min of 10’ wide, hallways with lockers measure from locker door swing, admin hallways need to be min. of 5’ wide

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/Assistance
- 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
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, so 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.
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.
Schematic Design - Option 3

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 3 - Section A

Option 3 - Section B

Option 3 - Level 1 Plan

Option 3 - Level 2 Plan

Option 3 - Level 3 Plan

Option 3 - Level 4 Plan
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 flexible seating could be arranged in each classroom, while still corresponding to the central staircase.

This color study based on the window grid became a main graphic used on the fourth mural wall on the 4th floor. Pieces of this also became the graphics on the built-in glass boards found in the flex spaces.
I then focused on the shelving wall system in the classrooms and how the shelving would be arranged on each unit.
Final Design
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.

Classroom FF&E

- Studio Set/VT
  - Color: AD2772 Powter
  - Manufacturer: Interface
  - Application: Flooring

- CeramicSteel/White Board
  - Color: White
  - Manufacturer: Polycor
  - Application: Shelving Unit

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

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

- Caspian Box
  - Dimension: 22" x 22" x 8"
  - Manufacturer: LightArt
  - Application: Classroom lighting

- 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
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.
MFA Thesis Exhibition
May 10th, 2018 - VCUarts Depot

Interior Design MFA Thesis Show 2018
VCUarts Depot
May 7-20, 2018

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Final Boards
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 effected 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 looked 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 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.

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Works Cited


(7), (8), (9):


