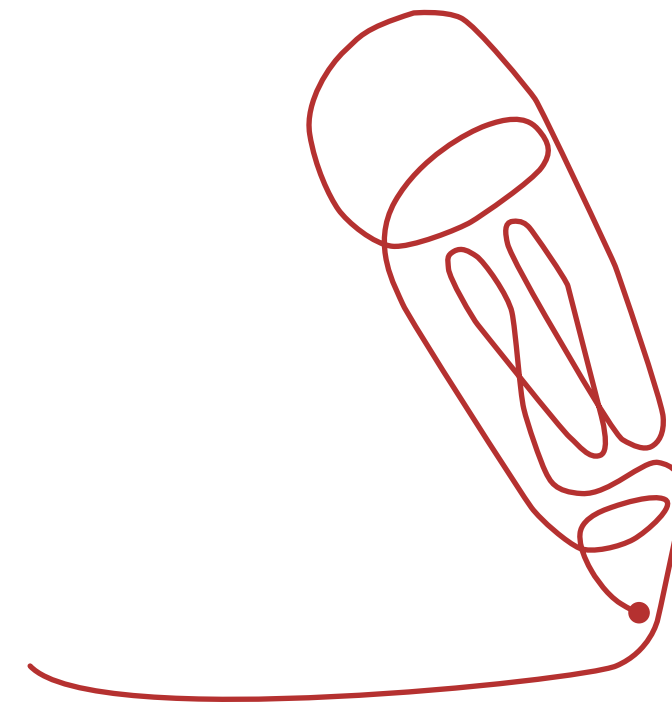




**EL ARTE**  
de la  
**EDUCACION**



RENZO A. CALDWELL

First and foremost I would like to say thank you to my gorgeous wife,  
Noelle Caldwell, for holding down the fort while I finish completing my  
Master's Degree in Architecture.

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# Acknowledgments

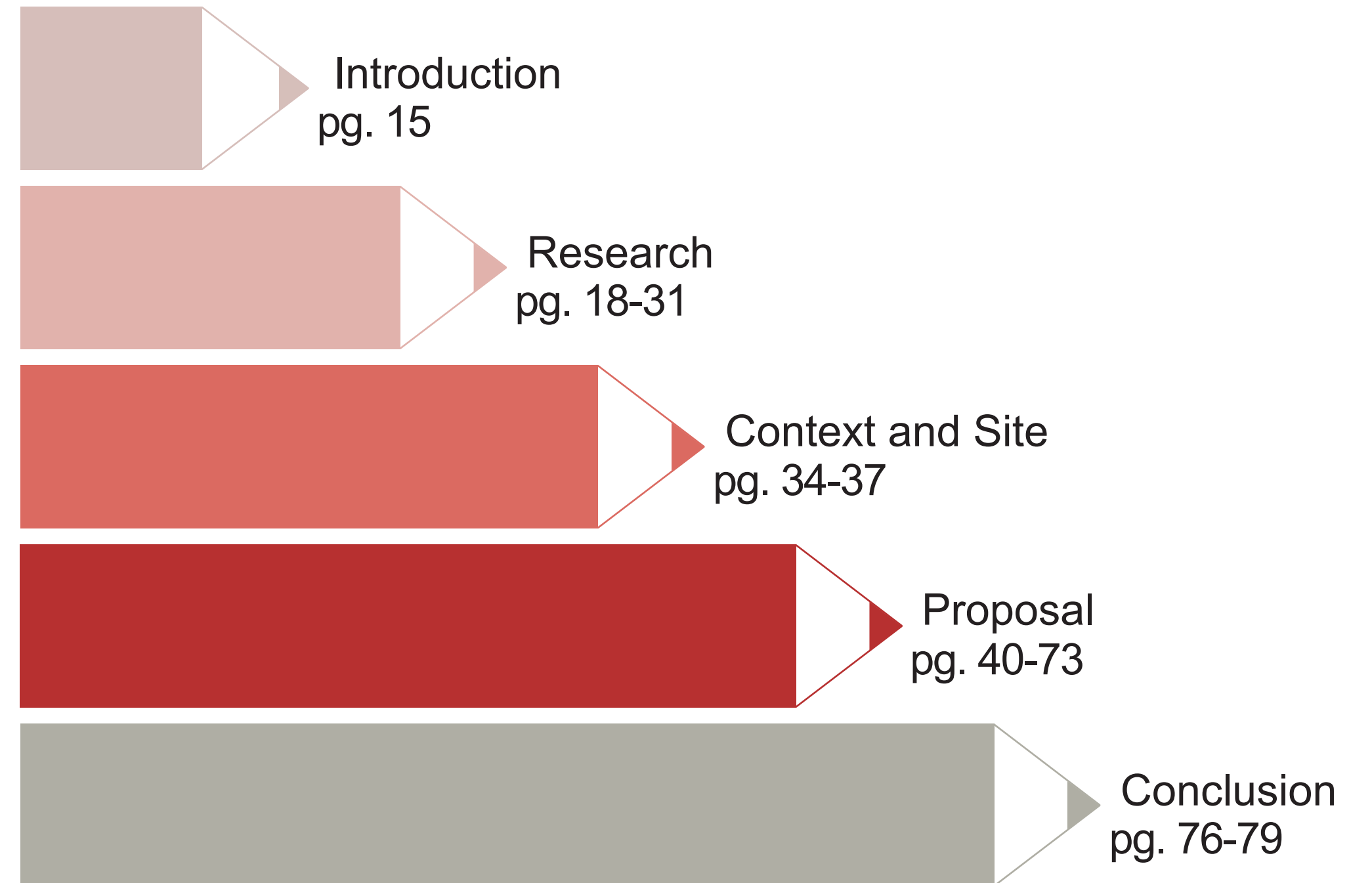
I wish to express my gratitude to Marcel Erminy, Dr. Ramos and my studio professor Andrew Hawkins for guiding me through this project. I also want to thank my mom and dad for all the sacrifices they had to endure in order to bring me to the United States. Without them I would not have been given a second opportunity to chase my dreams. To my mom, for not giving up on us. I know it was not easy watching me growing up from afar, but hey look at us now. To my dad, who not only adopted me but treated me like I was one of his own. A strong father figure that I love to look up too. Both my abuelito and abuelita for molding me into the man I am today. Diana, who took care of me when I was a baby so my mom could work. To Mrs. Felicia Canterbury, for being the best spiritual guidance and always sending out the Formed videos for daily reflections. Lastly, I want to thank God for providing me with the best supporting cast I could ever dreamed of.



“If opportunity  
doesn't knock, build  
a door.”

-Milton Berle

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The image features a minimalist, abstract design on the right side. It consists of several overlapping rectangular shapes in various shades of red and grey. The word "INTRODUCTION" is centered within a light grey rectangle. The overall composition is clean and modern, with a focus on geometric forms and color contrast.

# INTRODUCTION

# Introduction

I was born in Lima, Peru and moved to the United States when I was 7 years old. It was not until I got to go back home for the first time that I realized how thankful I was. It is the smallest thing you and I take for granted that someone in Peru wishes they could have. Ever since I had dreamed of different ways I could give back to the community and architecture has opened many doors to do so. By having the opportunity to attend both schools in Peru and the United States, it gave me a new perspective in life. Now, I was very fortunate to have a hardworking and determined single mother, who put me in a private school in Peru. She had to work long hours and even at times I rarely got to see her. Was it worth it? Yes, because now I was given a second chance to finish school in the U.S.A and soon be given my Master's Degree in Architecture. Would I be able to accomplish everything if I was studying in Peru? The chances of that happening would have been small. Do not get me wrong it is doable but the education system in Peru is nothing compared to what we have here. Even if you think the United States education system is not that great at all it is still better than what Peru can offer at its finest. That is what drove me to choose to design a public school near the same town I grew up in for my final year project.

An abstract graphic design featuring several overlapping rectangular shapes. A large, semi-transparent grey rectangle is positioned in the upper left. A smaller, semi-transparent grey rectangle is in the upper right. Two dark red rectangles are in the lower middle. A solid red rectangle is at the bottom. The word "RESEARCH" is written in white, bold, uppercase letters across the center of the grey rectangles.

RESEARCH

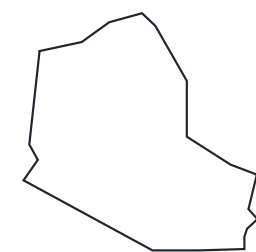
# Location



Peru, South America



Lima, Peru



Villa el Salvador

# Target

## Research

Any requirements of a primary school in Lima, Peru

Locating a site that would allow me to fulfill those requirements.

## Idea

To develop a school that enriches a passion for learning and creativity.

To design a school that utilizes Peru's primary materials.

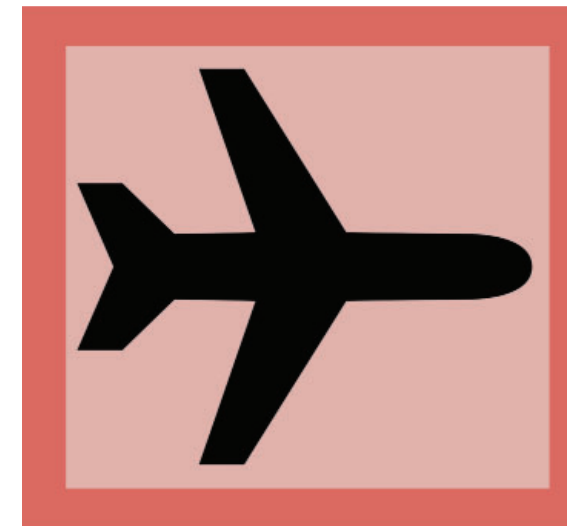
## Question

In what ways can we bring the focus back to Peru's education system?

## Goal

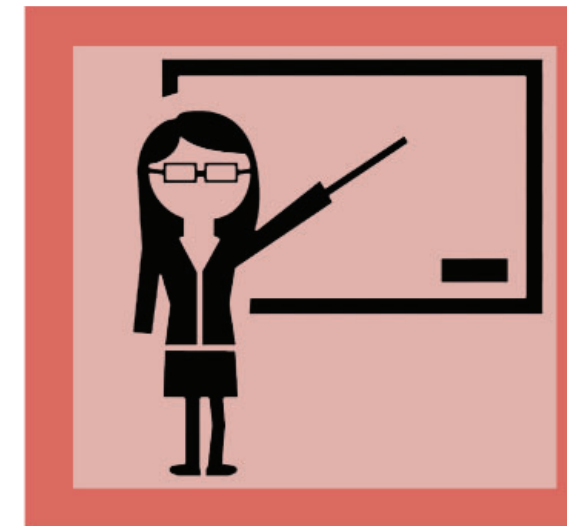
Design a fine art primary school that can enhance creative learning and provide beyond the basic needs students need to prosper.

## Visitors



Providing a place for visitors to come.

## Teachers



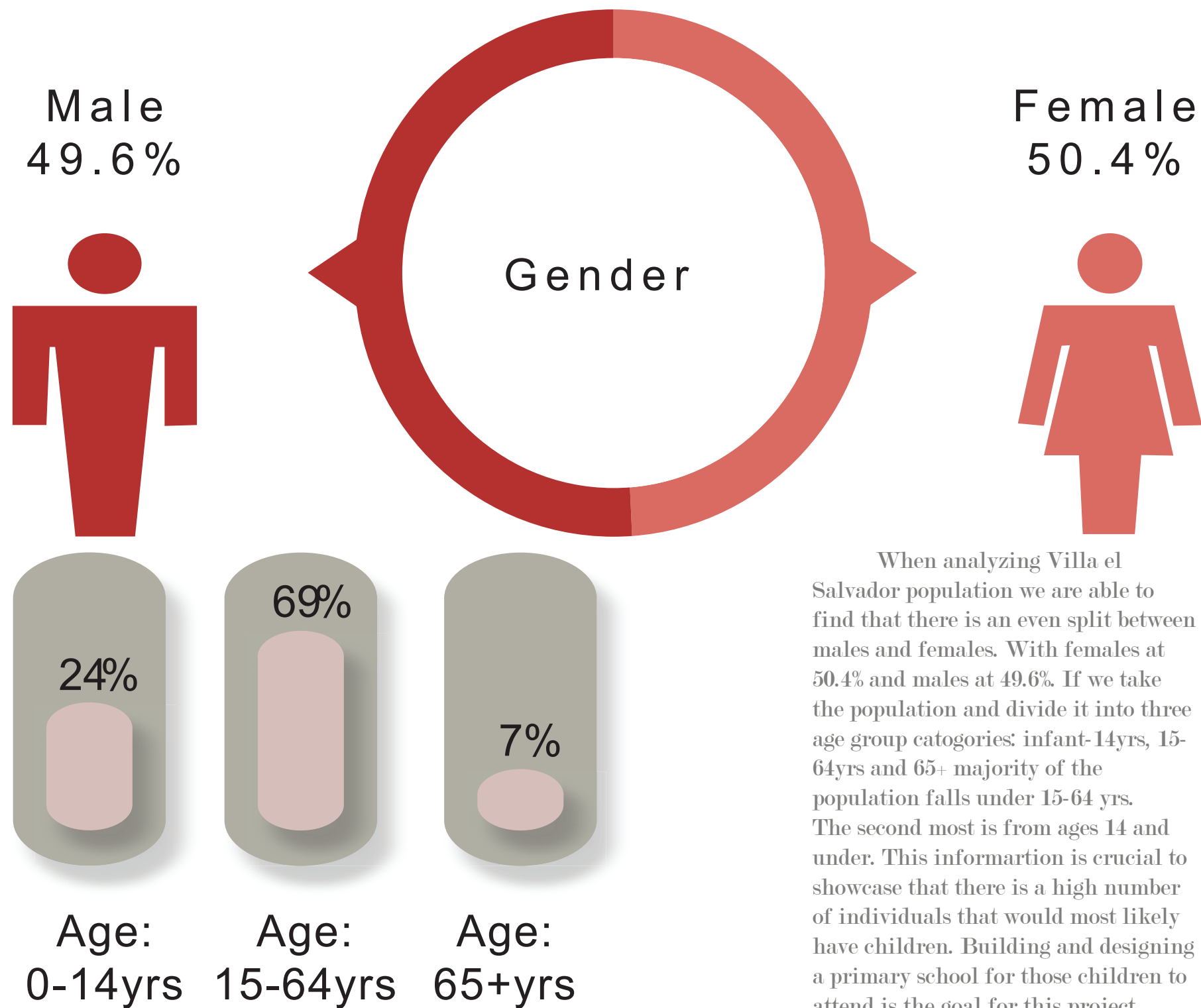
Giving the teachers beyond the basic needs to teach

## Students



Primary focus.

# Population



When analyzing Villa el Salvador population we are able to find that there is an even split between males and females. With females at 50.4% and males at 49.6%. If we take the population and divide it into three age group categories: infant-14yrs, 15-64yrs and 65+ majority of the population falls under 15-64 yrs. The second most is from ages 14 and under. This information is crucial to showcase that there is a high number of individuals that would most likely have children. Building and designing a primary school for those children to attend is the goal for this project.

# GDP % on Education

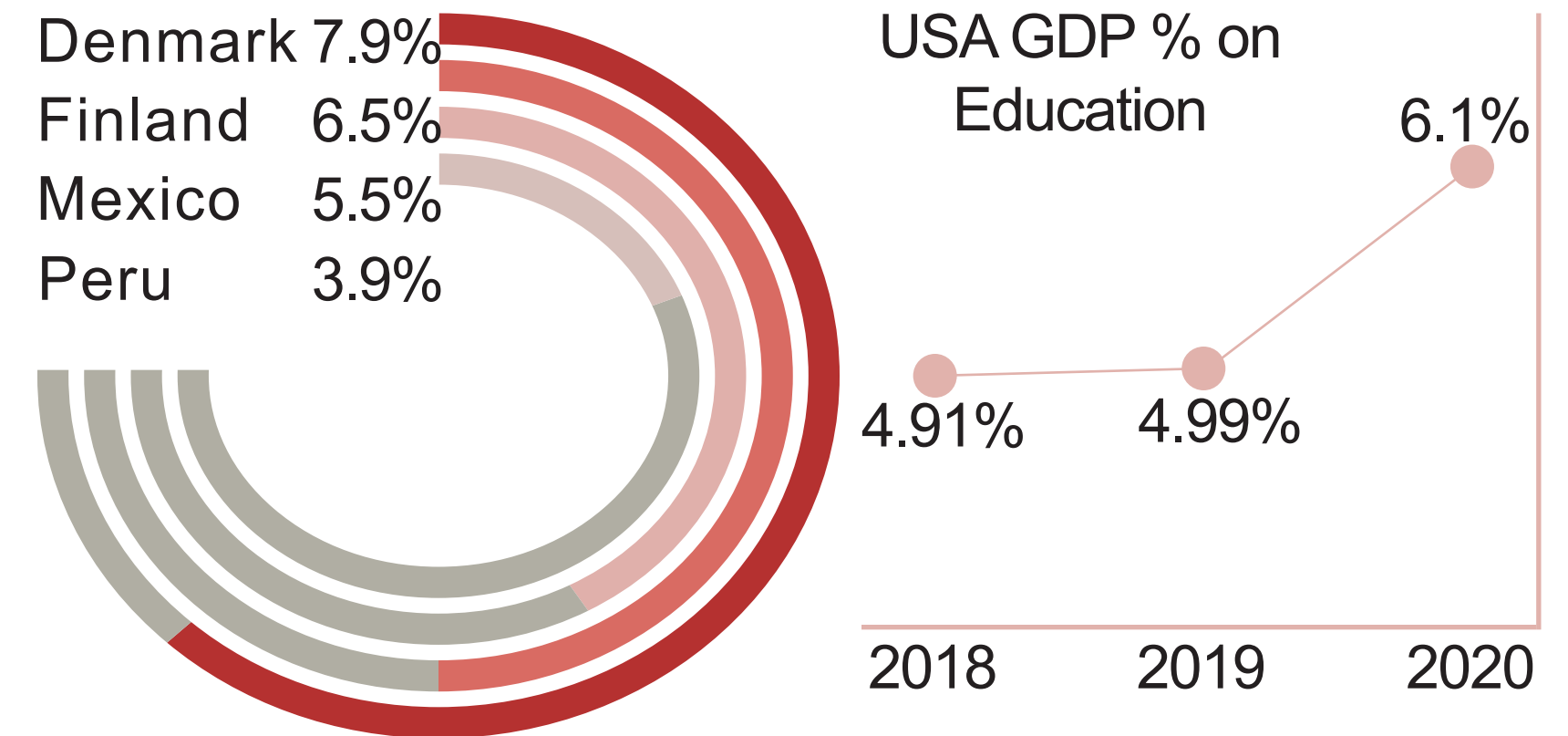


Image 1

This chart I am taking two of the well known countries and analyze their GDP on education. Both Finland and Denmark have numbers well above the average of 6%. Mexico is slightly lower sitting at 5.5%. Meanwhile, Peru is trailing with a 3.9% GDP on education.

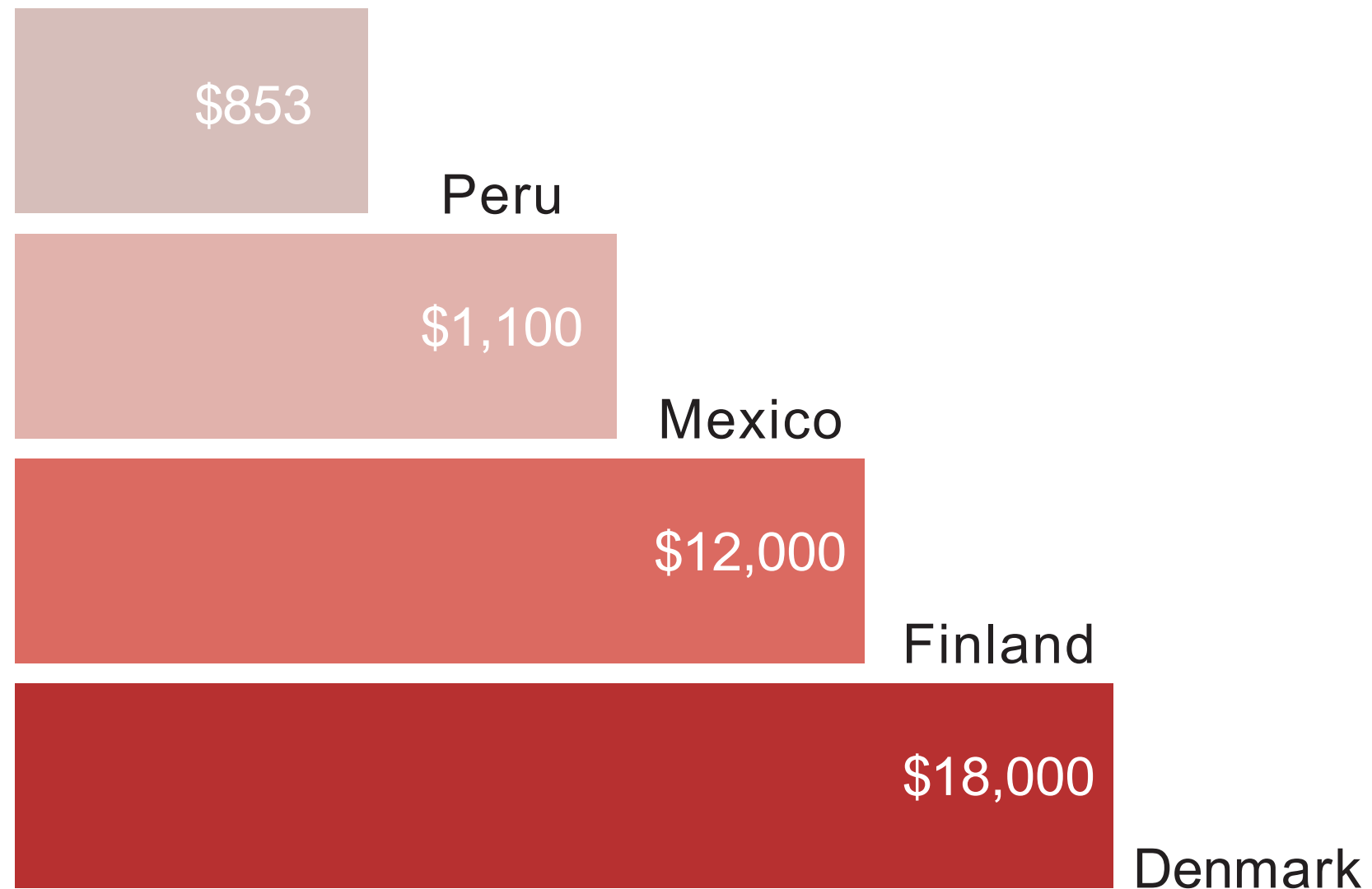


Image 2

Next, we will analyze the GDP on education right here in America. When we look at the chart we can see that the USA is improving their numbers the last few years. You can see how a small difference in GDP on education can impact the design and development of schools.



# Spending



As we use the same four countries from before we can breakdown how much is given to public and private schools each year. Without a doubt in mind Peru is once again trailing behind with a total of \$853. Currently the school system in Lima, Peru is one the last priority for the government to take care of.

There is no accountability and schools are left to swim for themselves. The amount of funding each school receives is not enough to keep them running properly. The same schools are then forced to provide with minimum funding to accommodate all of their current and future students.

# \$853



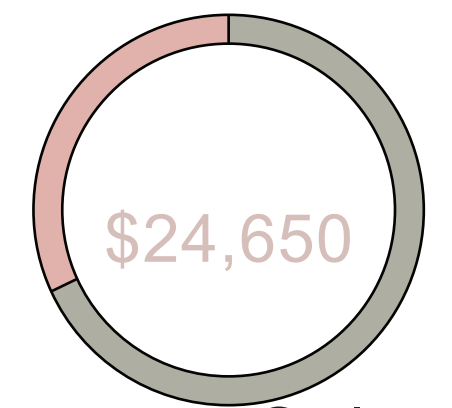
Image 3



Image 4

With the \$853 schools in Lima, Peru are not able to spend on new tables, chairs or white boards. There is a clear difference between classrooms in the United States vs the ones we see in Peru. The paint on the walls seem to be falling apart. The chalk board is on its last leg. Then on top of that some of the classrooms have poor natural lighting, which makes it difficult for students to learn or pay attention. Another difference is that schools in Peru do not have A/C, which means it gets uncomfortable during the summer.

Teachers salary is another issue as they are getting paid way below average salary. Not only you have to teach students in a poor environment, but you also get the less than minimum salary.



Average Salary  
\$43,206



# Dance



Image 5

It is tradition for schools in Lima, Peru to host dance competitions either within themselves or against other schools. Throughout the school year students would take time away from the classrooms and rehearse their dances. This becomes an important aspect of the public schools in Lima, Peru. Not only are these young students learning in the classroom but outside as well. During competition days students would dress up according to their dances and perform in front of a large crowd.



Image 6

Since dance is a rich part of the Peruvian's culture adding some dance studios where students get the opportunity to practice would be beneficial. Giving these young and bright students a space where they get to express themselves through movement.

# Music



Image 7

Music is another way students get to connect with the tradition and culture of Peru. Students can get away from learning their curriculums and step into a whole new world of making music. These students do not be

RESEARCH



Image 8

Music rooms is another necessity for students to get with a teacher to practice and improve. Also providing practice rooms where students are free to use anytime they want.



# Art



Image 9

Weaving is another important aspect when describing Peru's rich culture. This activity has been provided to students from all ages. This can provide students with creative problem solving and patience. Both good qualities to teach young children at a young age. Typically, students who live in poor neighborhoods end up making their own gloves or hats. Something as simple as learning how to weave can set up any student up to success in their upcoming school years.



Image 10

Weaving classes have slowly deteriorated the last couple of years. There are many reasons why this could be the cause. The one that stands out the most is the lack of funding these schools receive each year.

# Security

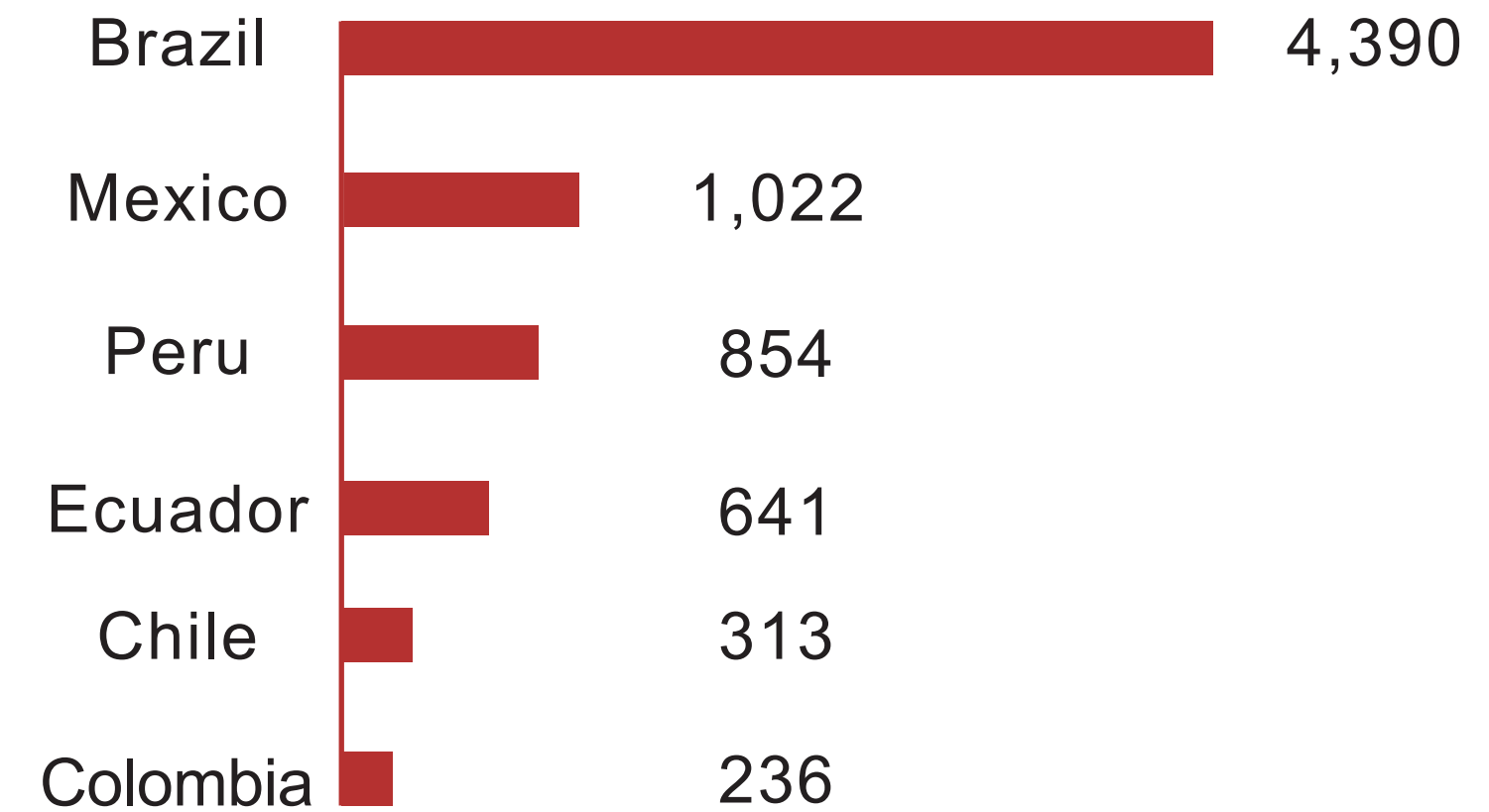


Image 11

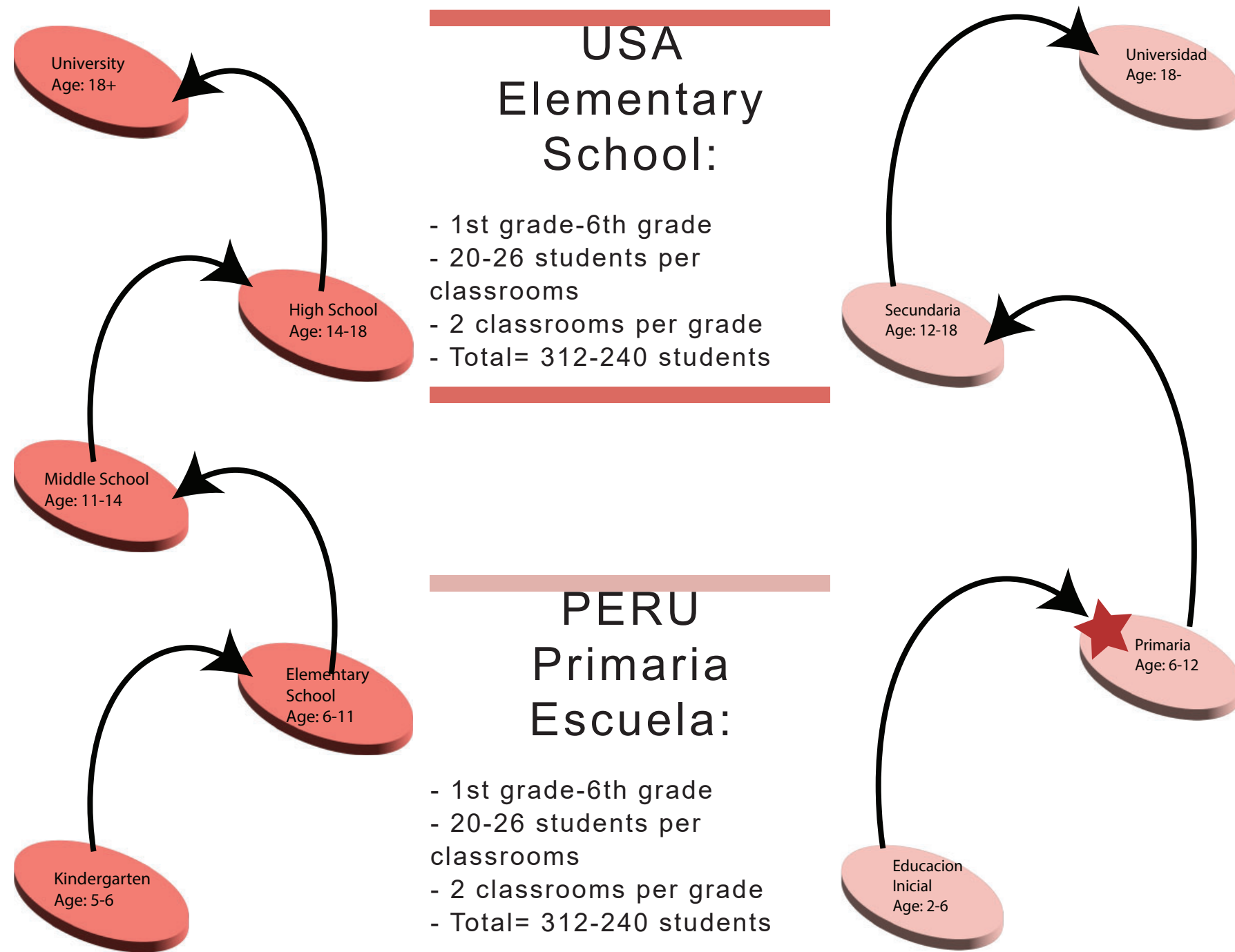
Crimes in Lima, Peru are so high that security becomes an important factor. These high numbers of kidnapping cases are targeting younger children. To the point that schools have no choice but to build a metal door as their main entrance. This is the first and last image children are left with as they come and go from school.

## Crime Levels:

U.S.A: 56%  
Peru: 77%



# Grade Levels vs USA



When comparing grade levels between Peru and the United States, there are similarities. The only difference is that in Peru there is not a middle school. The main focus for this project will be on a primaria school with ages from 6-12 years old.

# Booker T. Washington High School



Image 12



Image 13

Location: Dallas, Texas

Completion: 2008

Architecture: Allied Works

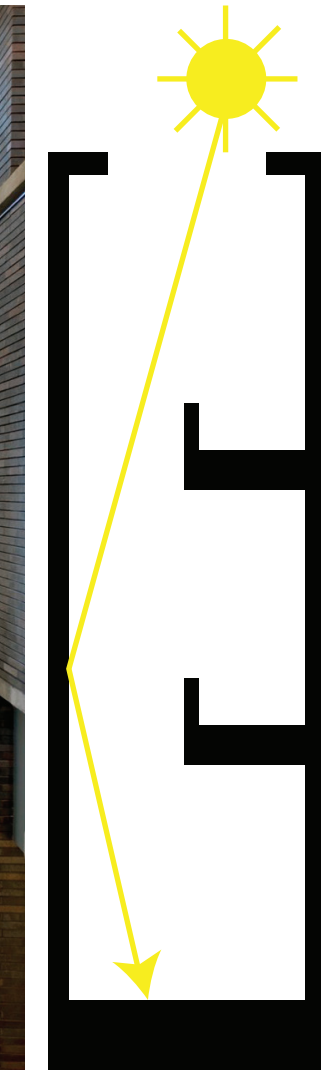
Size: 200,000 sq ft

The interior hallways are illuminated by the skylight right above. Providing enough natural light to come in and penetrate each floor. This is possible due to the voids occurring in each hallway. This is carefully placed to give each floor a sense of a unique space for students to interact.



Image 14

Another key factor that I want to take away from this precedent is the layout and design of the dance studio. The glazing on both sides not only provide light to come, but access for other students to view below. As students are moving to their classes they have the opportunity to experience a rehearsal.



RESEARCH



# Escuela Santa Elena



Image 15



Image 16

Location: Satipo, Peru

Completion: 2015

Architecture: Semillas

Size: 35,000 sq ft

The location of this school is placed where high temperatures are a norm. The main goal for the design of the school is to provide enough comfort for their students. This is where the design and placement of the perforated brick wall comes into play.

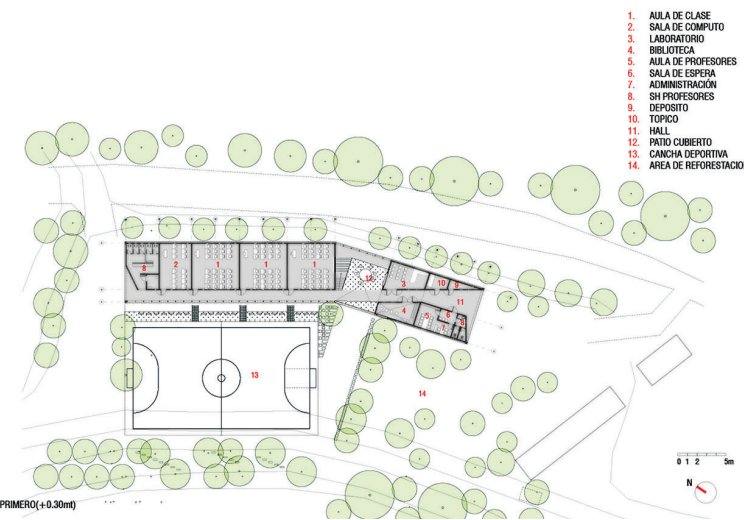


Image 17

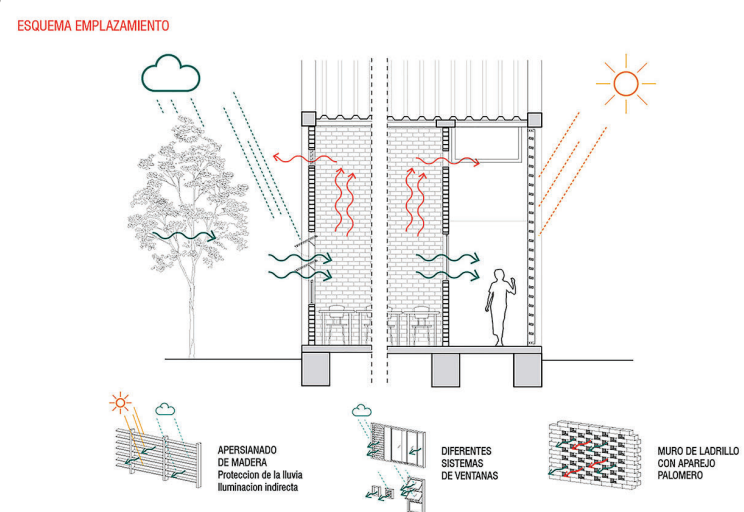


Image 18

The common material in Peru is brick. The perforated brick wall is a perfect example of how to push the material to its limits. Instead of having a plain brick wall the design of a perforated brick wall can bring the building to life. Not only that but the amount of natural air flow it brings to the school is crucial if needed.

# Benetton Daycare Center



Image 19



Image 21

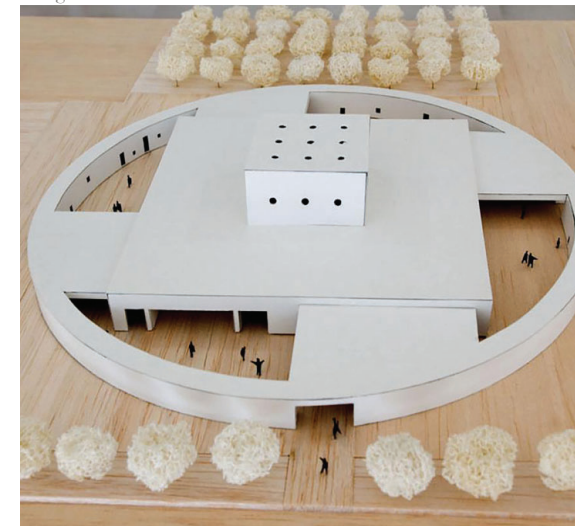


Image 20

Location: Treviso, Italy

Completion: 2007

Architecture: Alberto Campo Baeza

Size: 20,128 sq ft

The daycare has four different entrances all leading you to the vestibule. From there you are then able to get to your desired room in the building. Even though the shape is in a radial form the center is a square. This provides a great amount of hierarchy.

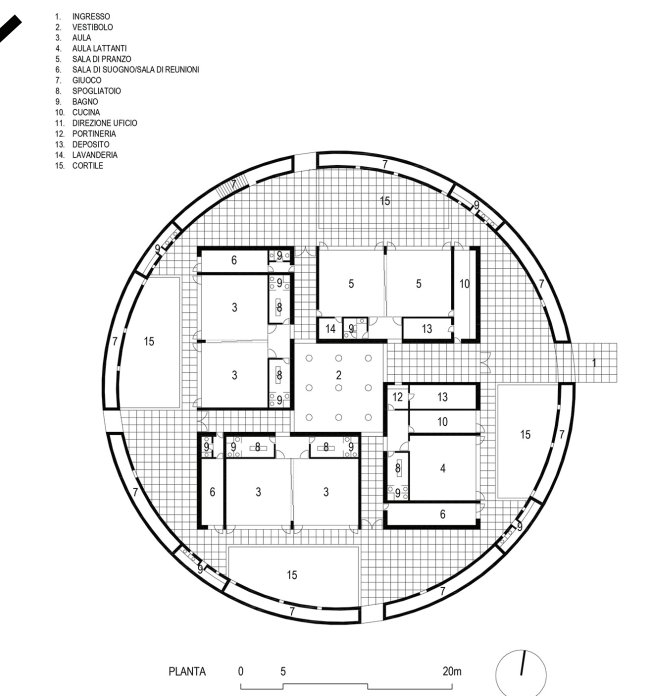
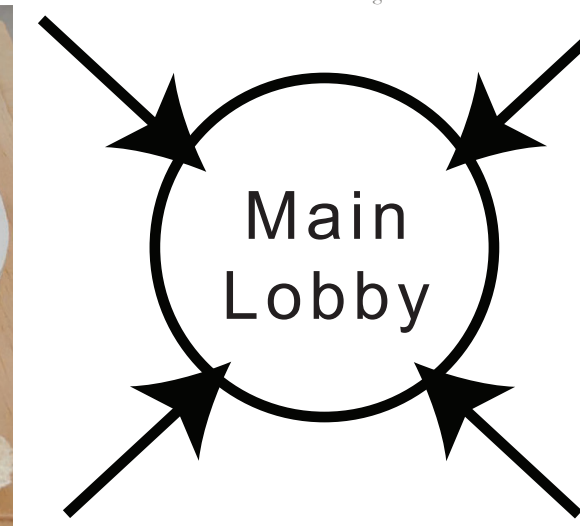


Image 22

The same concept is later used in the overall design scheme. A central service space where stairs, elevator, and bathrooms can be located.

RESEARCH

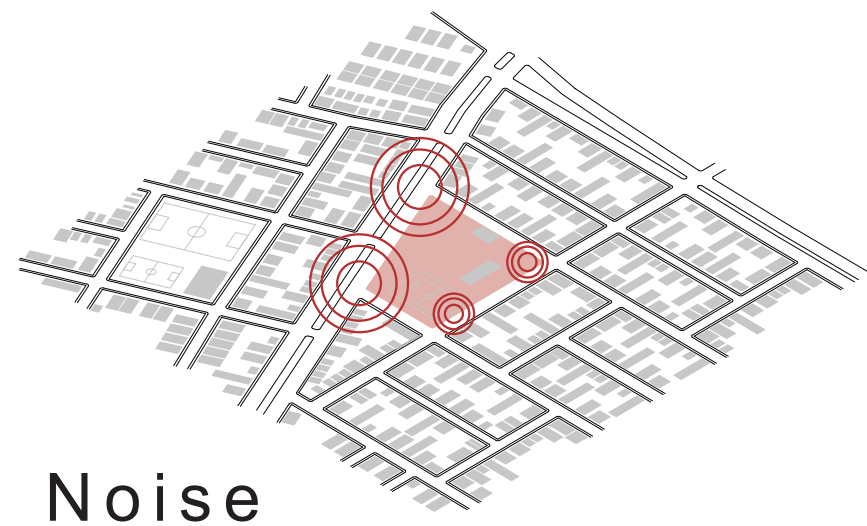




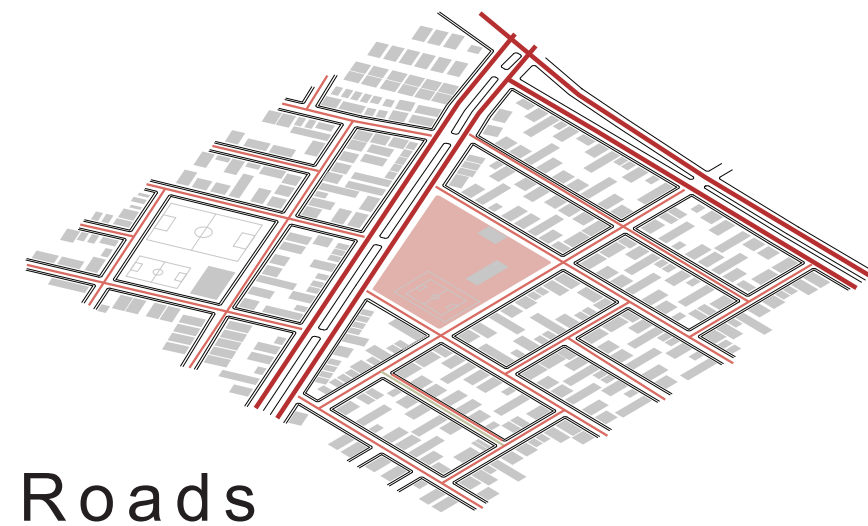
# CONTEXT AND SITE



# Context



Noise



Roads



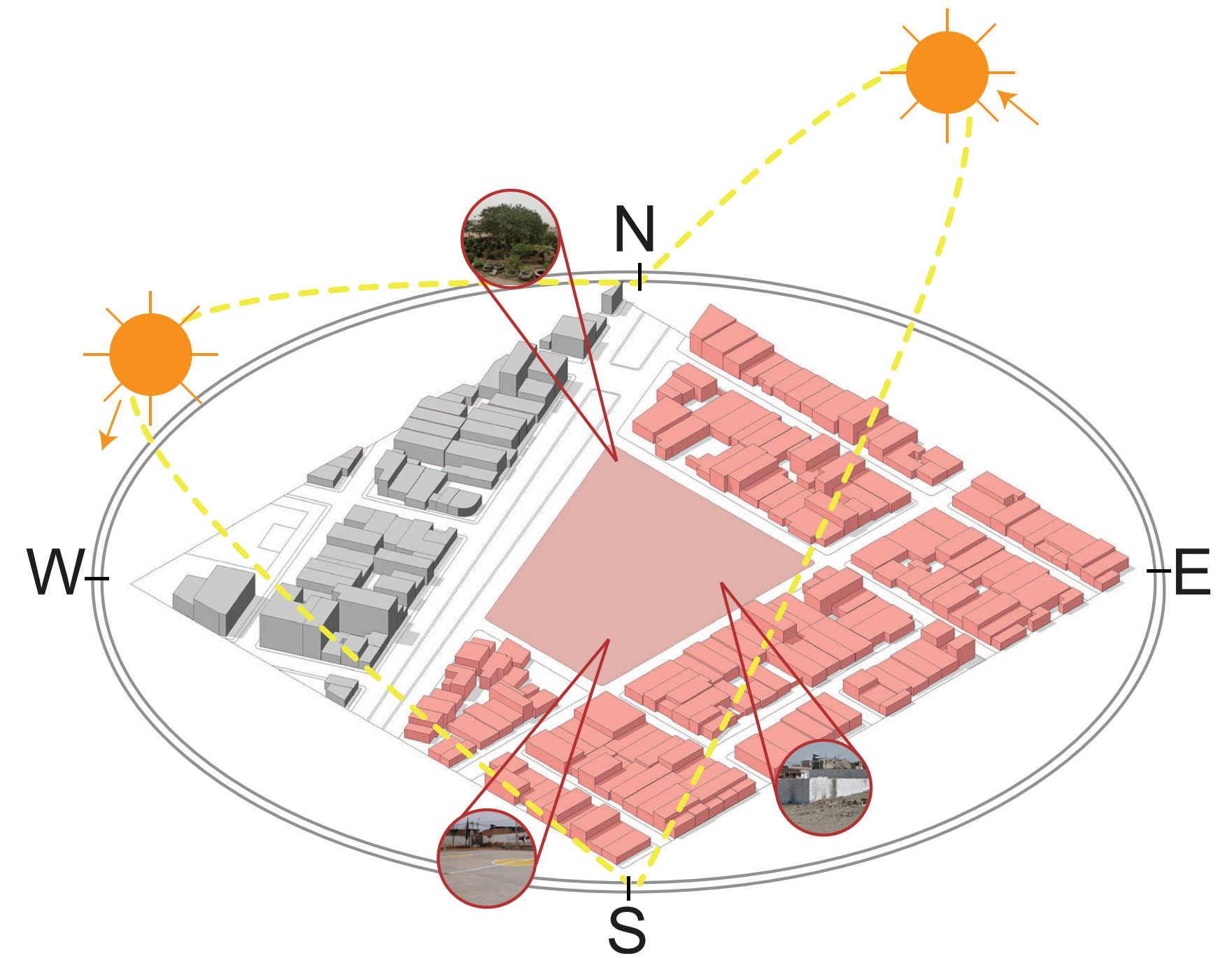
Trees



Site

The noise diagram indicates that majority of the noise will be coming from the major roads. South-East of the site there is a neighborhood all connected by minor roads. The vegetation around the site is very scarce. The total size of the site is 72,000 square feet.

# Site Analysis



SITE AND ANALYSIS

The site consists of a soccer field, abandoned buildings and a small amount of vegetation near the major road. I will be removing both the soccer field and the abandoned buildings while keeping the trees. This will give me more space to provide a parking lot for teachers that will be commuting.

The main entrance of the building will be facing towards the South-East providing walking distance to the site. With another issue being transportation students at a young age are forced to walk to school. That is why I am placing this public school at the heart of this community and giving everyone living around it access to it.



# Schools Nearby

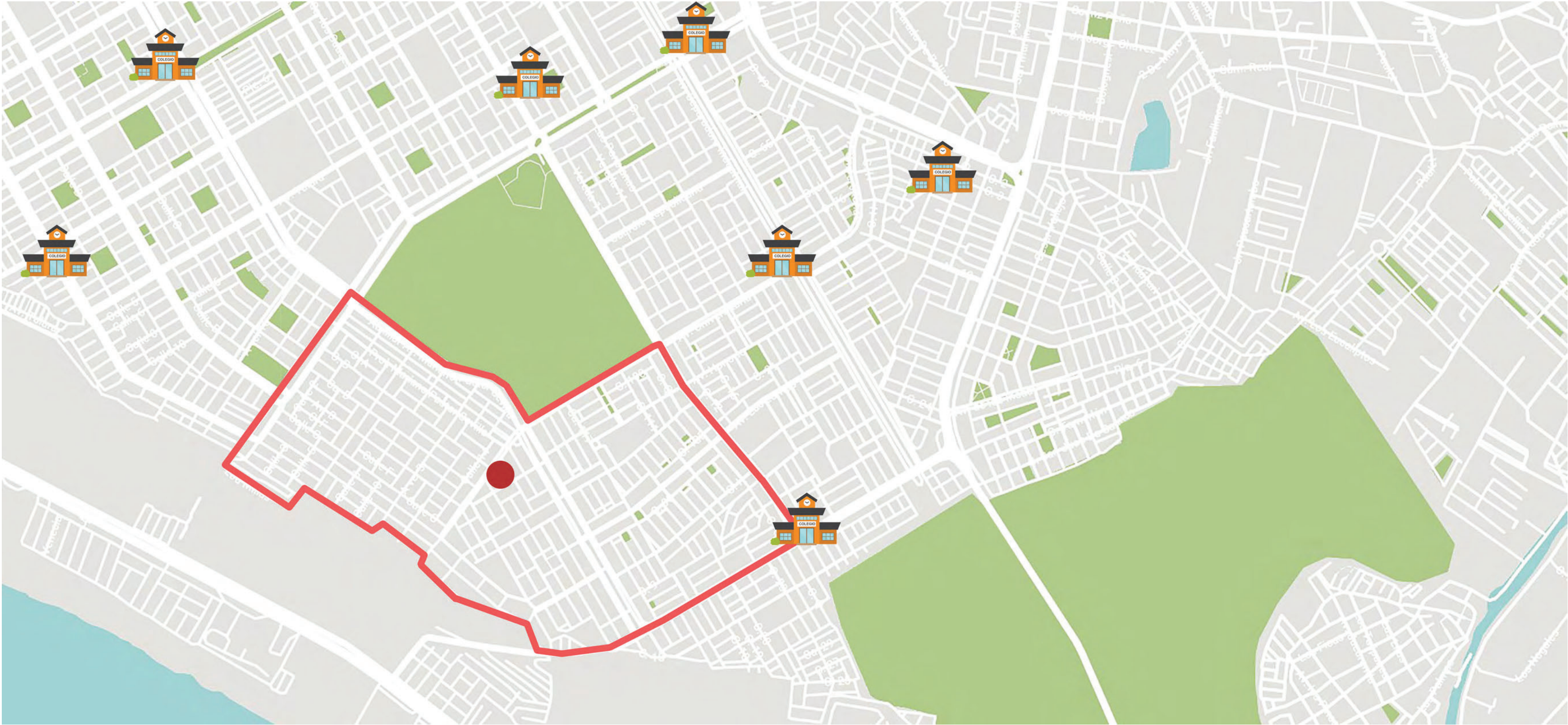


Image 23



Image 24

The two images above are schools nearby the site I will be using to design the school. The size for each of these schools is alarming as they can only fit a few classrooms. From the outside it seems that these schools were not intended to be here. It just happened that these buildings got transformed into schools.

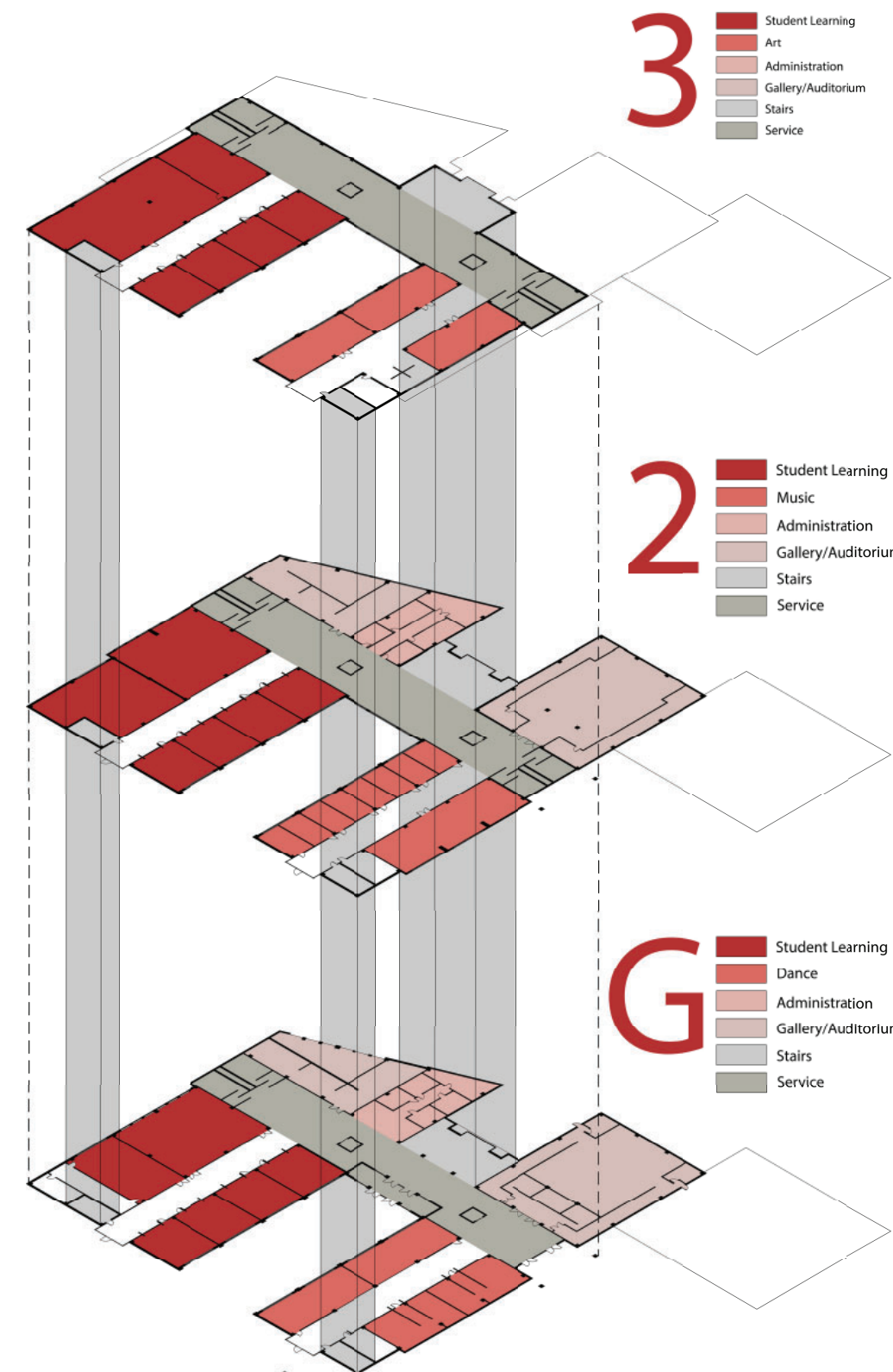
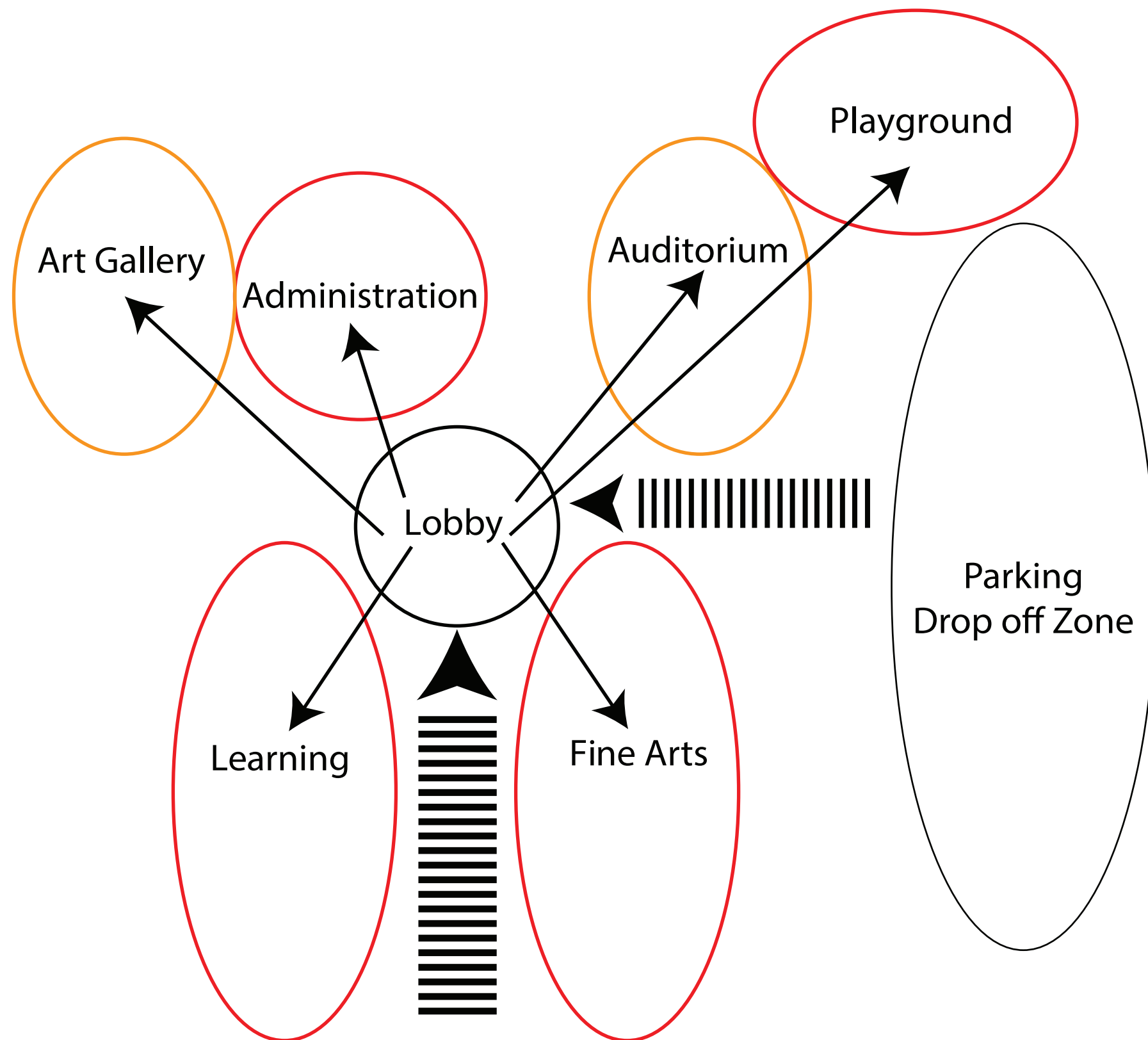




# PROPOSAL



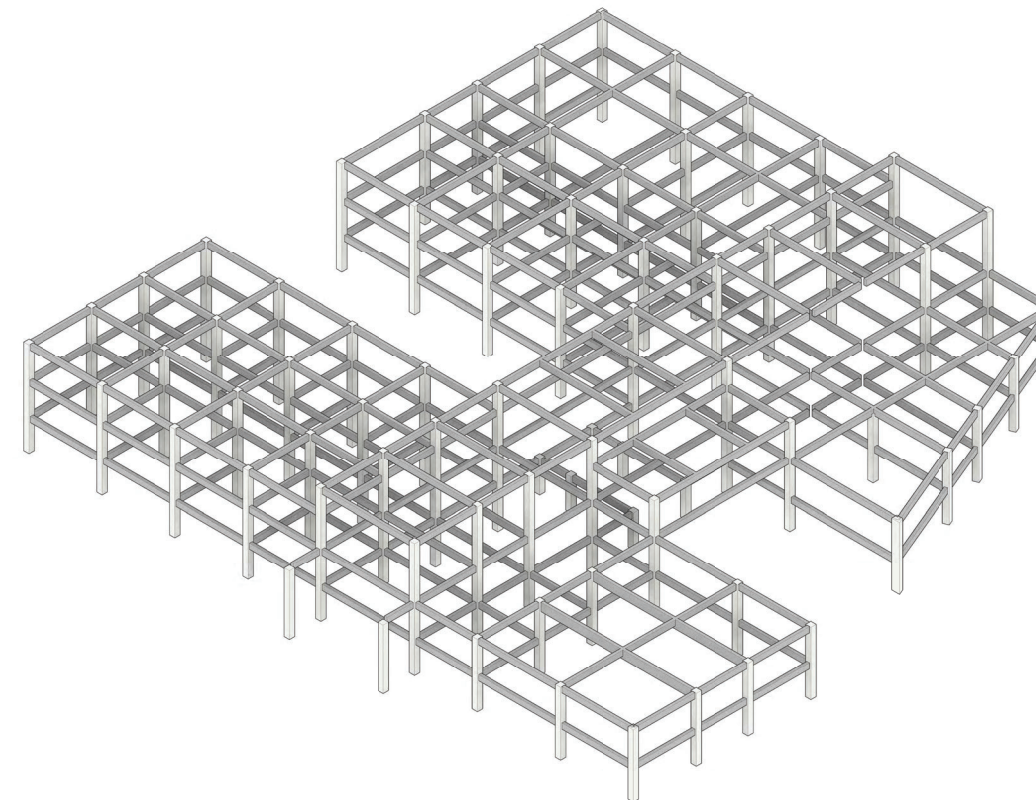
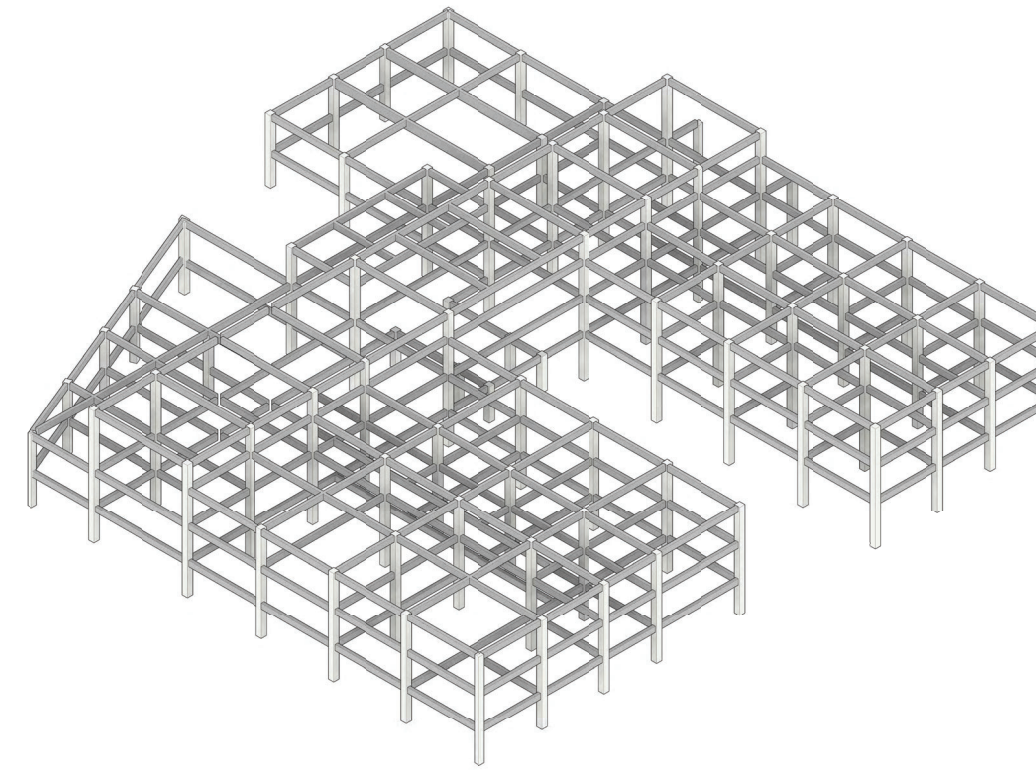
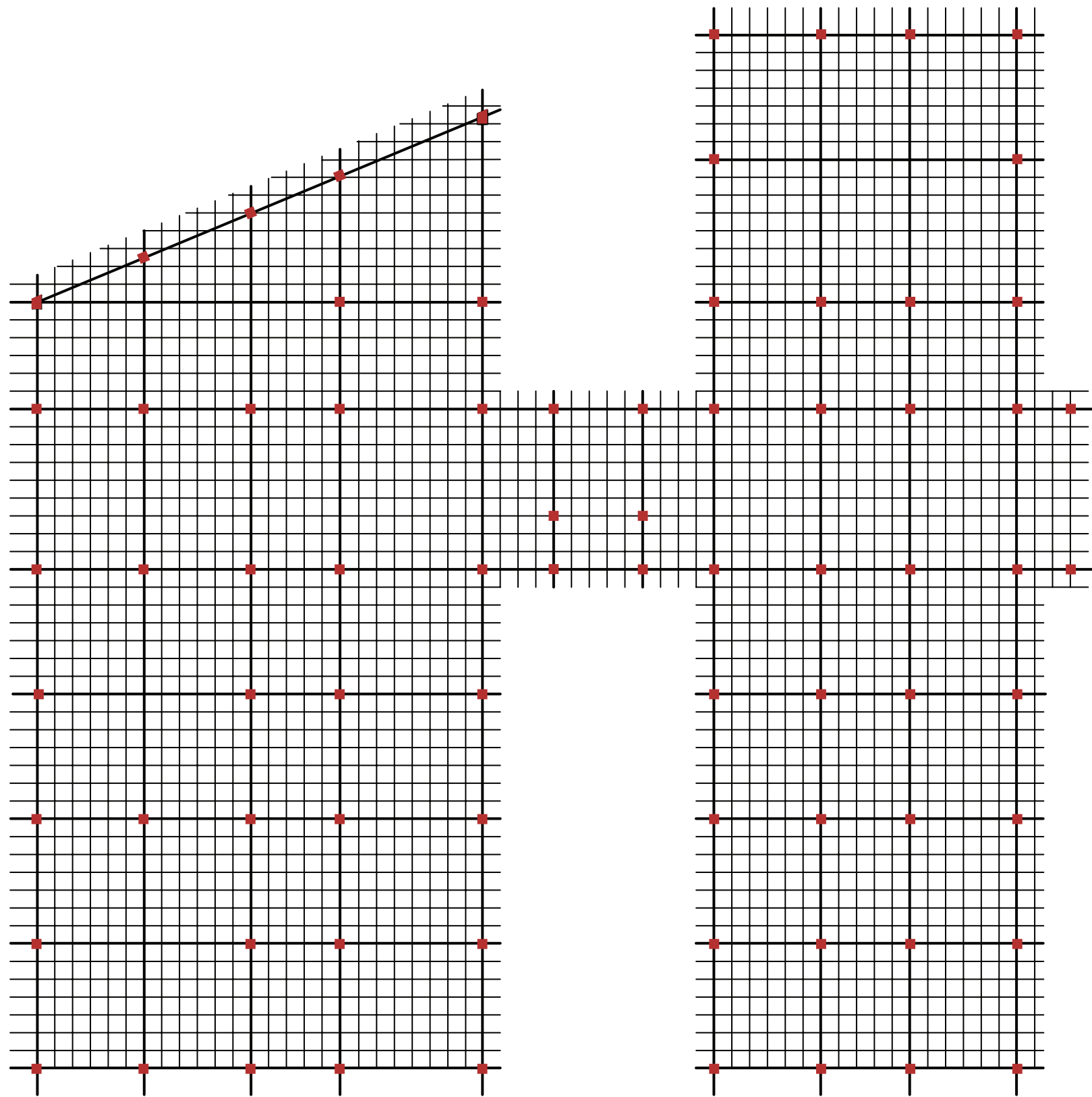
# Program



When organizing the programs the goal was to separate both the learning space and the fine art spaces. By doing so each one was able to have its own hallway. The learning hallway will have the classrooms, library, cafeteria and computer lab. This becomes the main hallway as students will be spending more time here. The fine art hallway consists of dance rooms, music practice rooms and art classrooms.

Both hallways are then attached by the service space, which consists of restrooms, elevators and the main stairs. The service space creates a clear division from administration, art gallery and the auditorium. This is also where both entrances will be located. All bringing individuals to the center of the building. Fire exits are located at the end of each hallway and have access to them from all three floors.

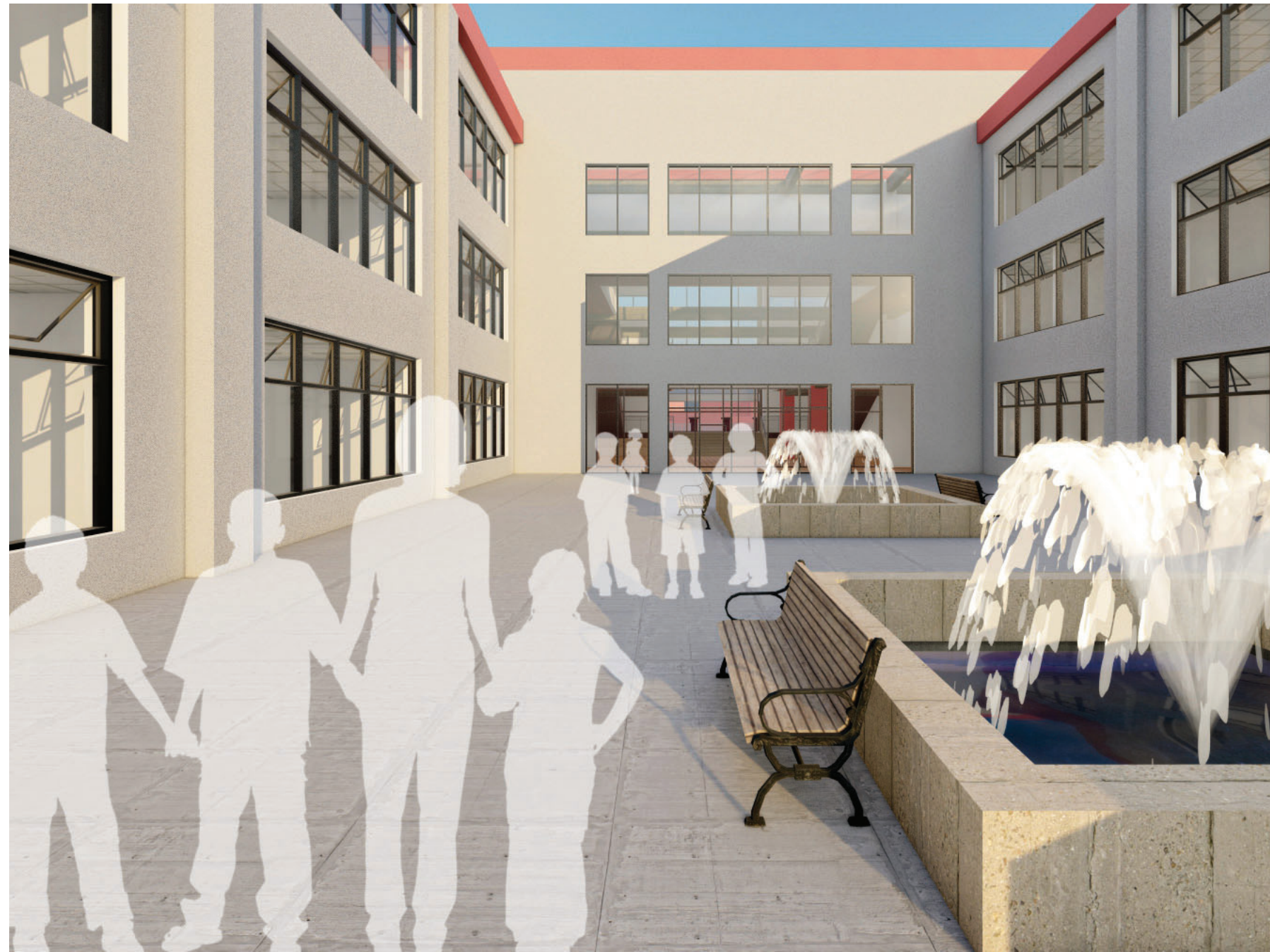
# Structure



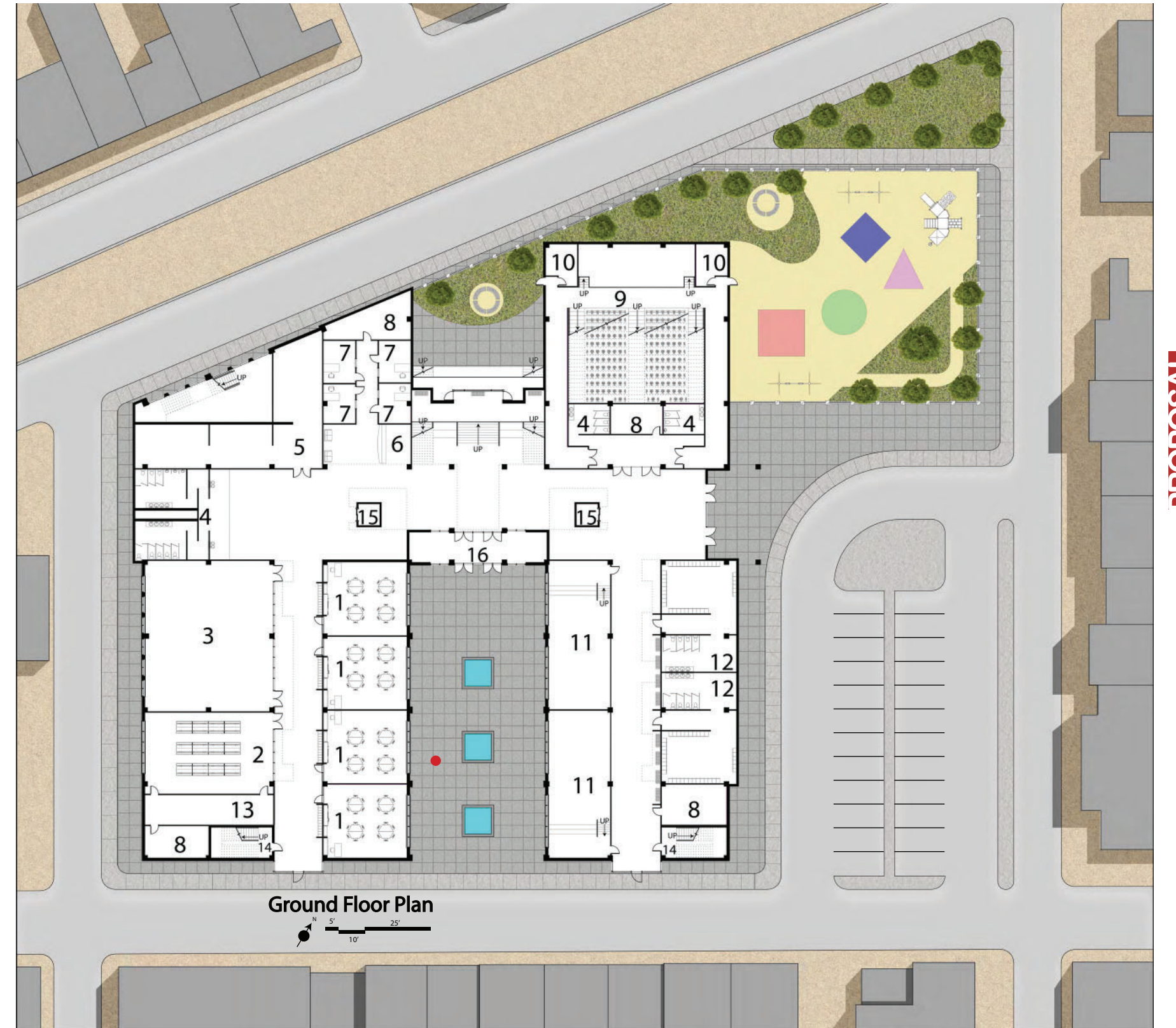
The first step was to lay out a 4x4' grid where each intersection is a possibility of having a column placed. This helped when organizing and placing each room. Each of the columns is made out of concrete. The size of these columns are 2x2'. The shortest columns are used both in the art gallery and the auditorium. Where the highest columns were used in the service space. By doing so it raised the roof throughout the service space creating a three story height space. This becomes important as this is the first space you will be encountering as you walk in.

The art gallery is the only place in the building where the walls are breaking the grid. Since we are using concrete columns the shape could easily be altered in order to provide enough contact surface with the beam.





- |              |              |                    |                    |
|--------------|--------------|--------------------|--------------------|
| 1. Classroom | 5. Gallery   | 9. Auditorium      | 13. Kitchen        |
| 2. Cafeteria | 6. Reception | 10. Dressing Rooms | 14. Emergency Exit |
| 3. Gym       | 7. Offices   | 11. Dance Room     | 15. Elevator       |
| 4. Bathroom  | 8. Storage   | 12. Lockerrooms    | 16. Vestibule      |

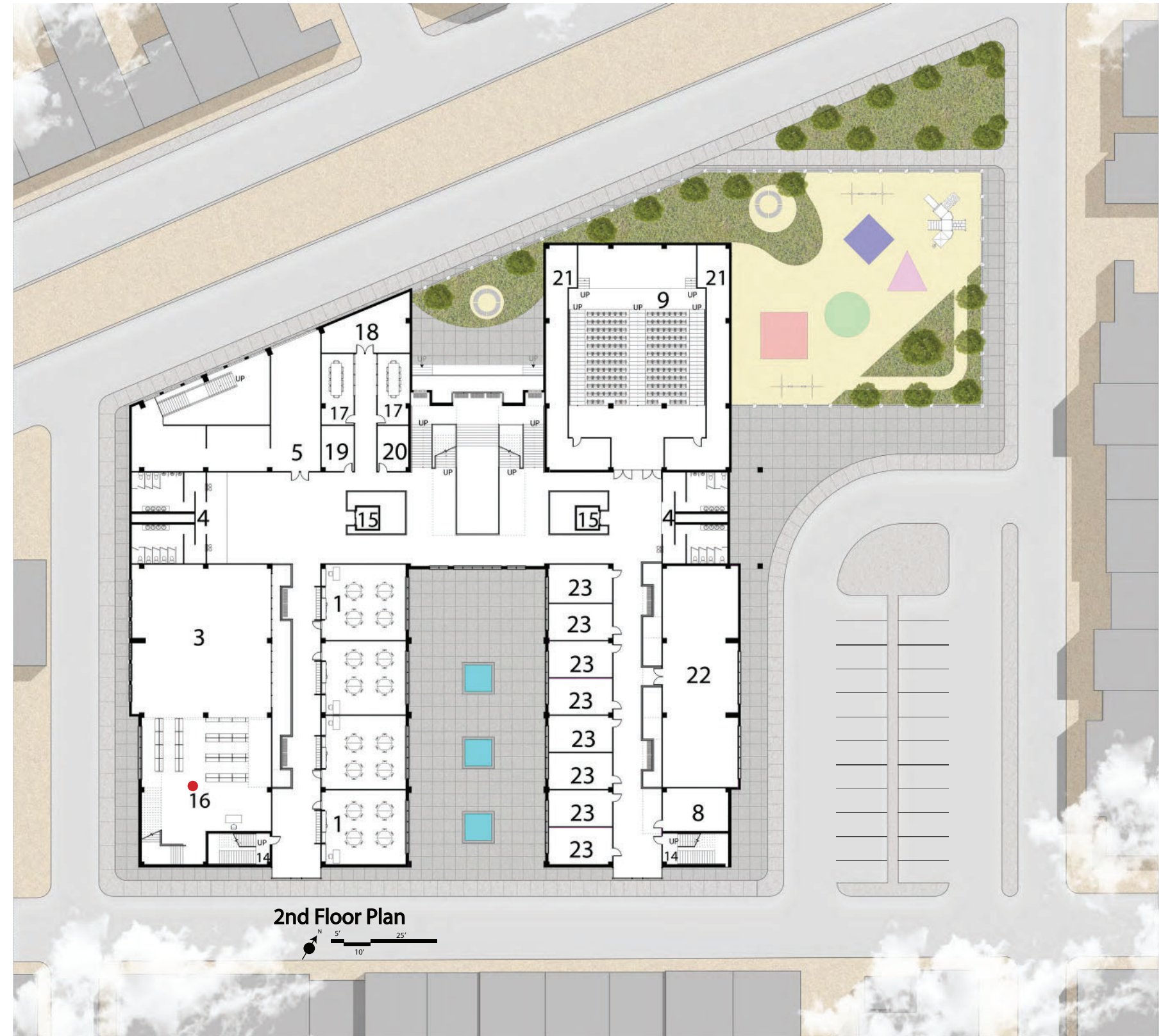


Ground Floor Plan





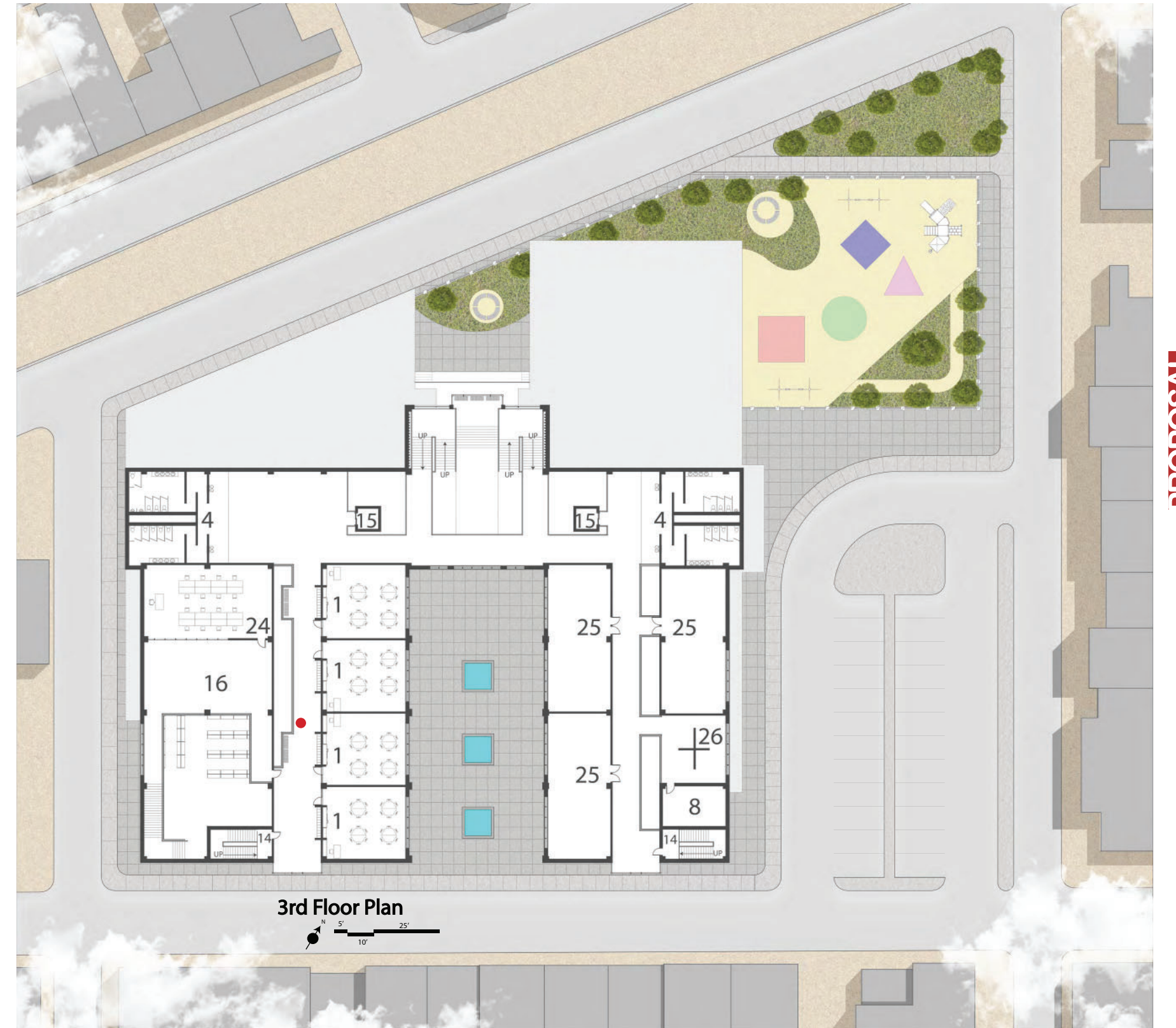
- |              |                    |                     |                     |
|--------------|--------------------|---------------------|---------------------|
| 1. Classroom | 8. Storage         | 16. Library         | 20. Multi Purpose   |
| 3. Gym       | 9. Auditorium      | 17. Conference Room | 21. Mechanical Room |
| 4. Bathroom  | 14. Emergency Exit | 18. Lounge          | 22. Music Room      |
| 5. Gallery   | 15. Elevator       | 19. Nurse           | 23. Practice Room   |





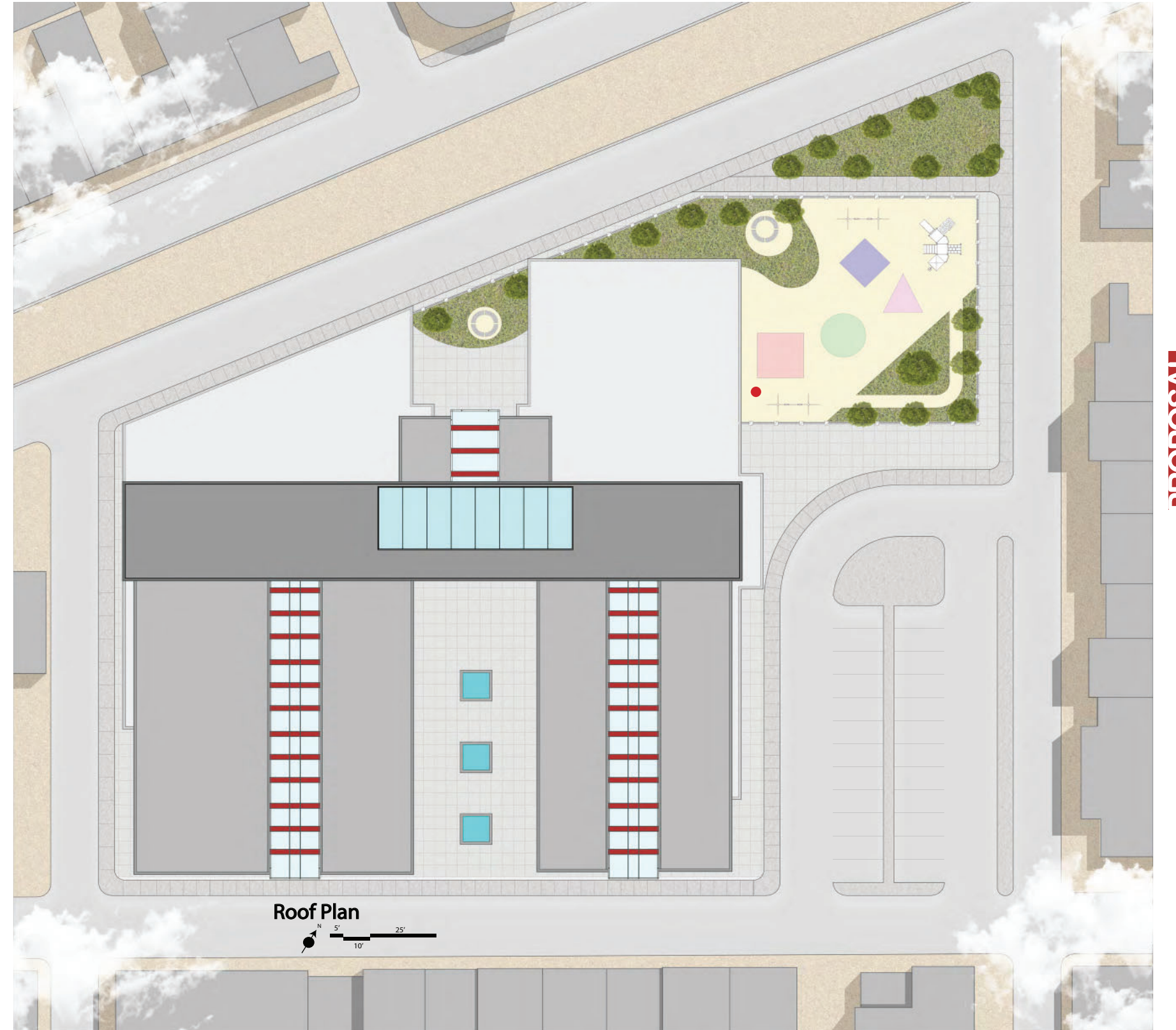


- 1. Classroom
- 4. Bathrooms
- 8. Storage
- 14. Emergency Exit
- 15. Elevator
- 16. Library
- 24. Computer Lab
- 25. Art Room
- 26. Display



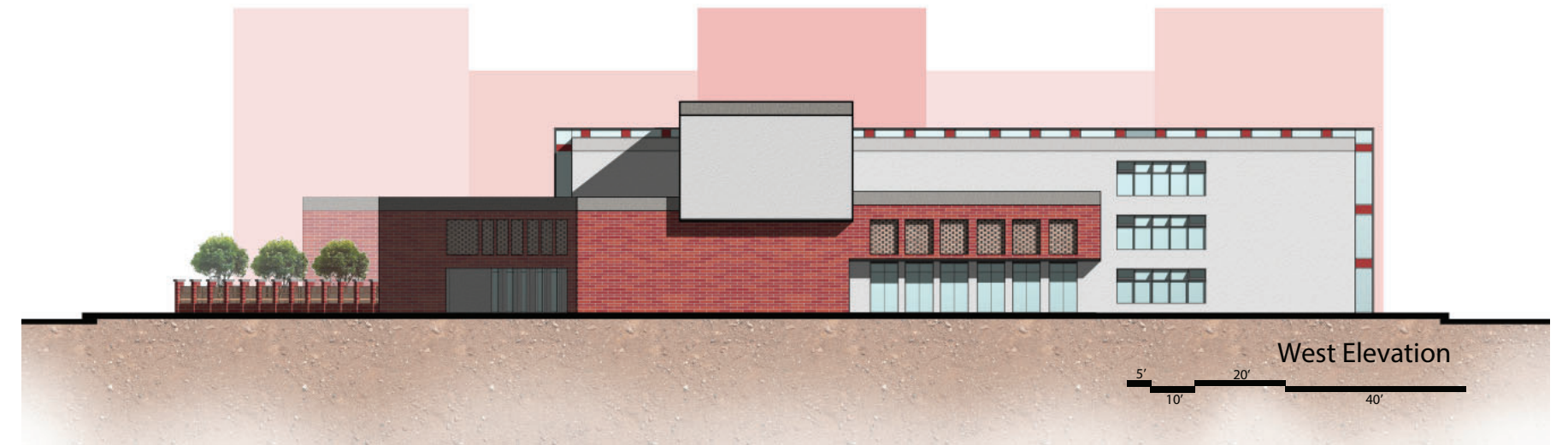
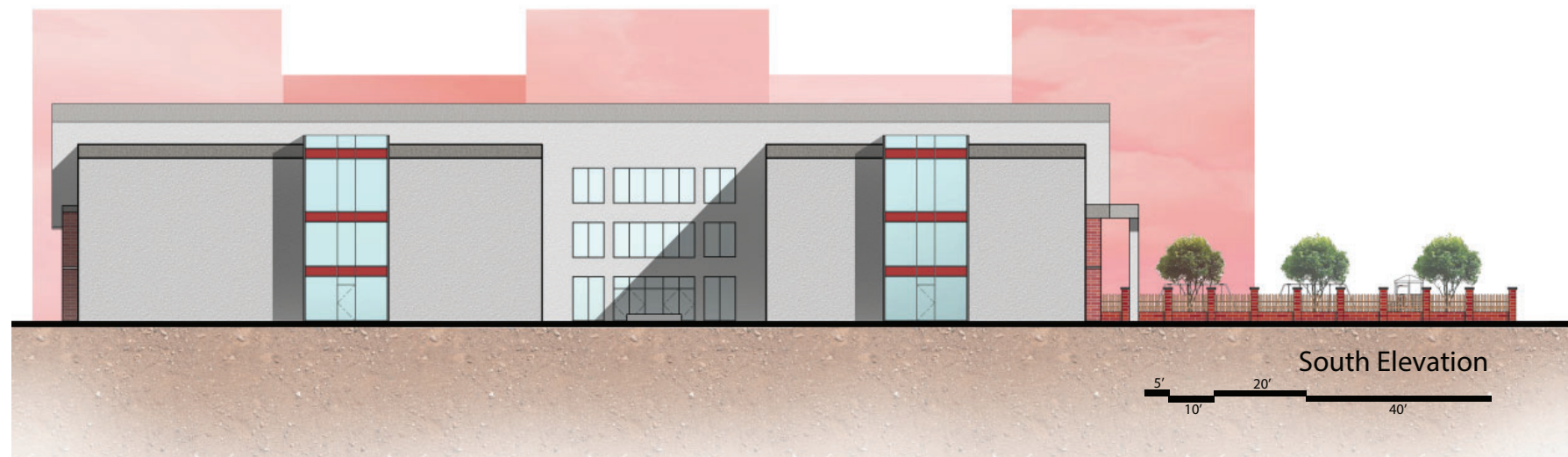
3rd Floor Plan





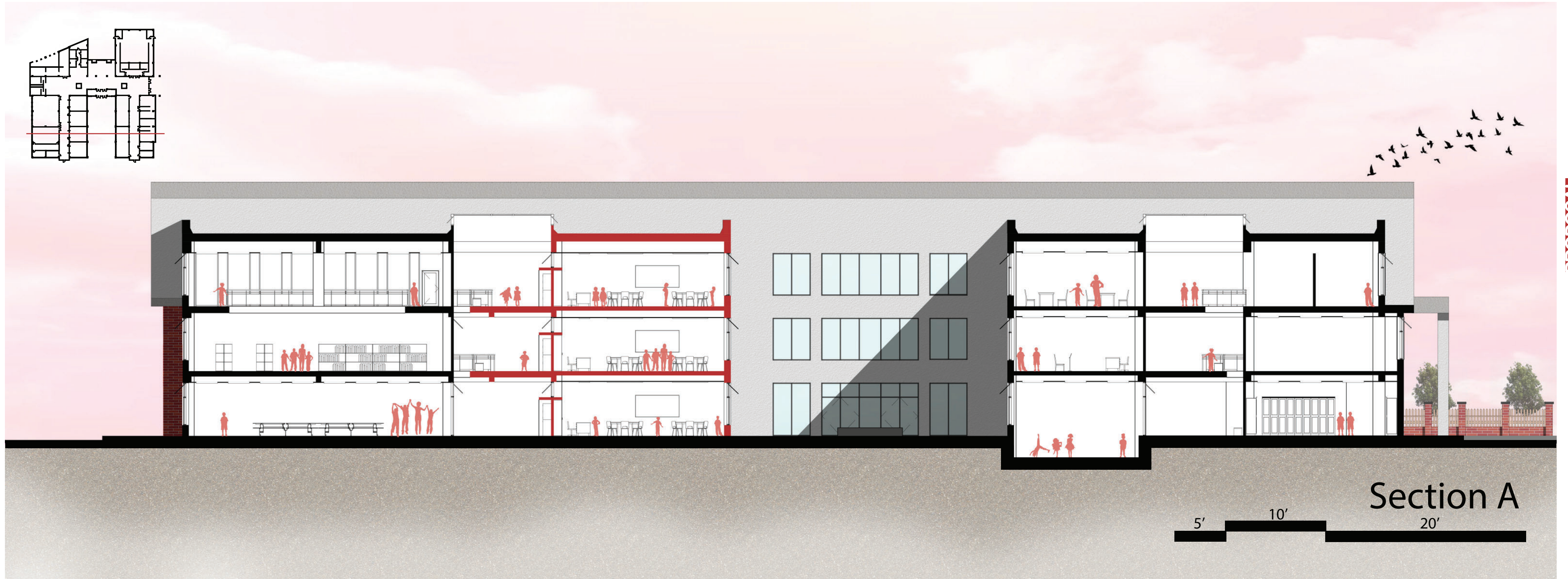
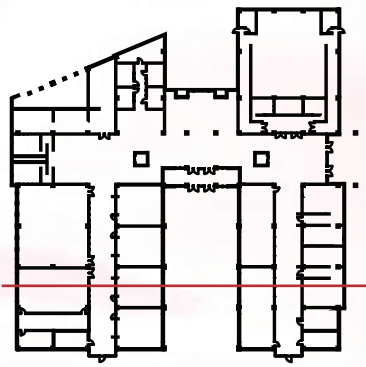


# Elevations



PROPOSAL

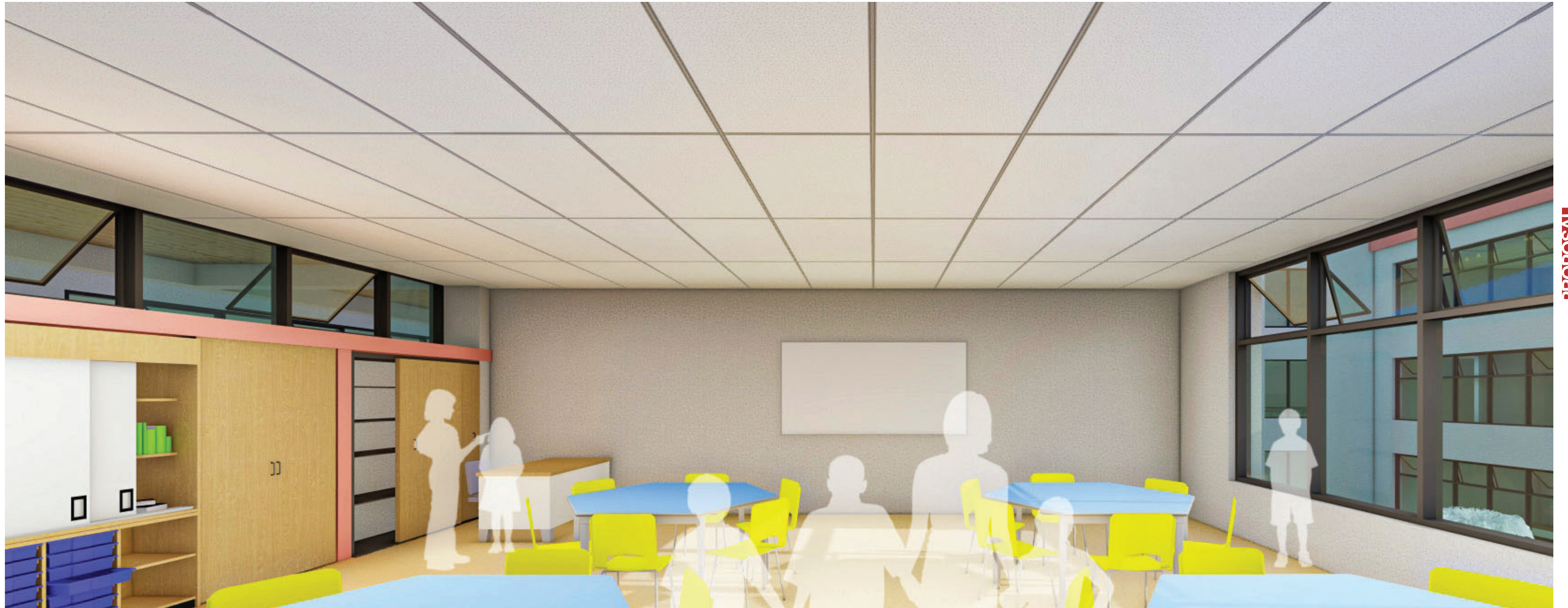




PROPOSAL

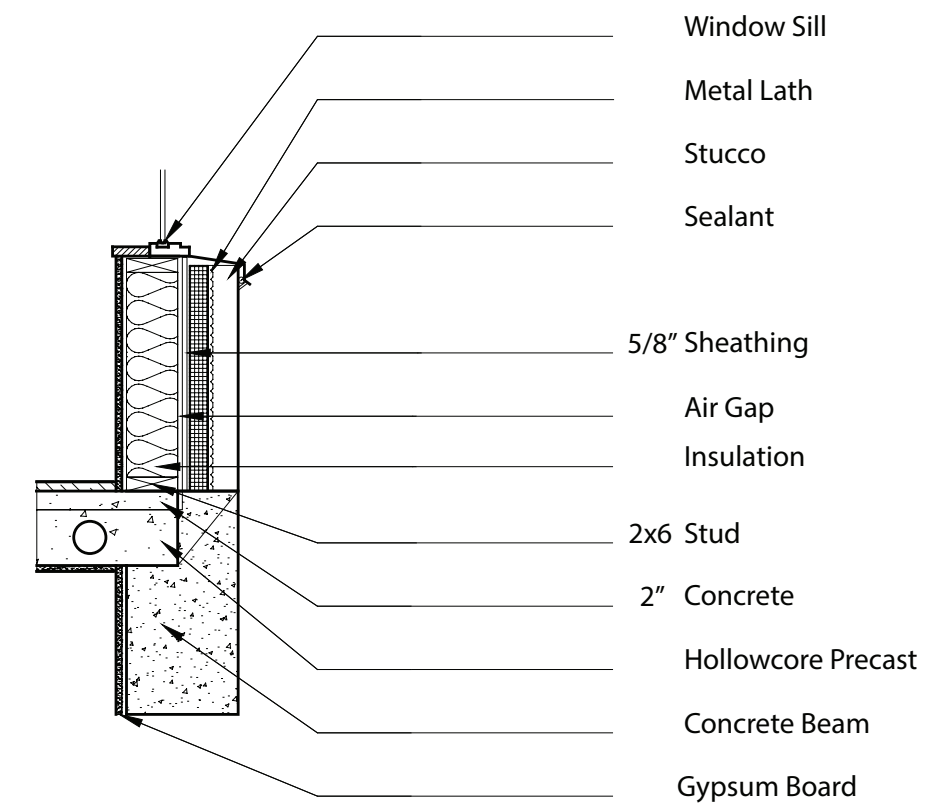
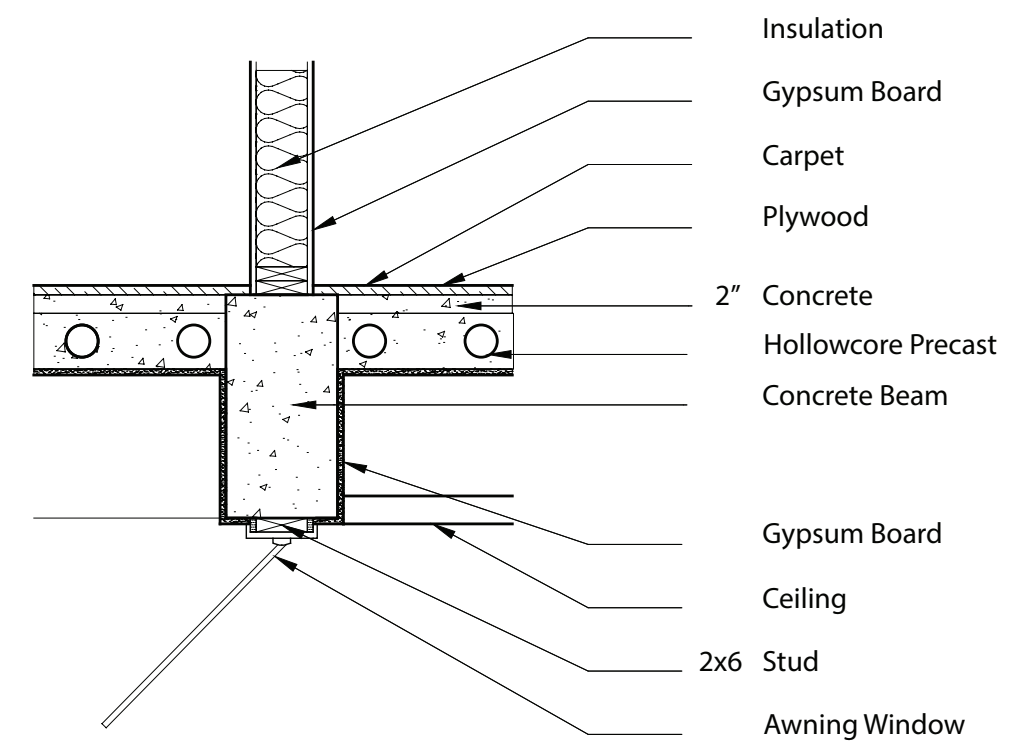
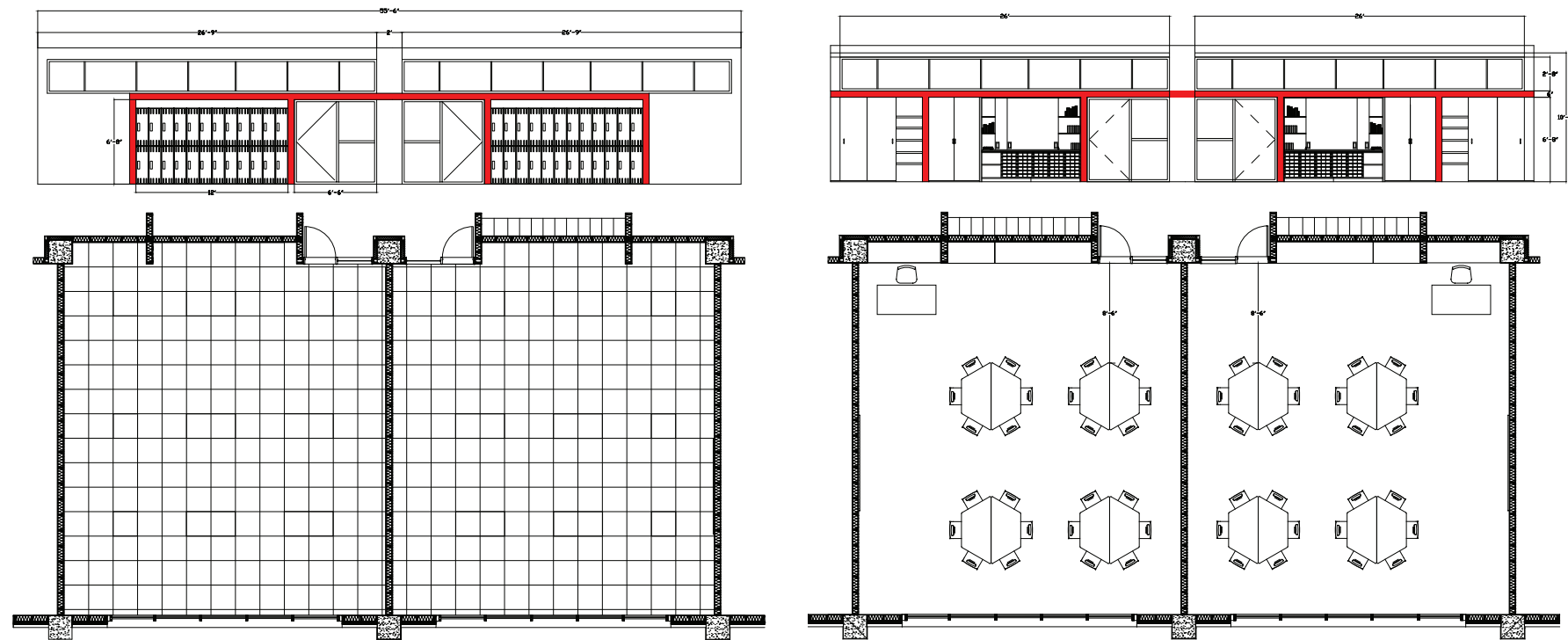
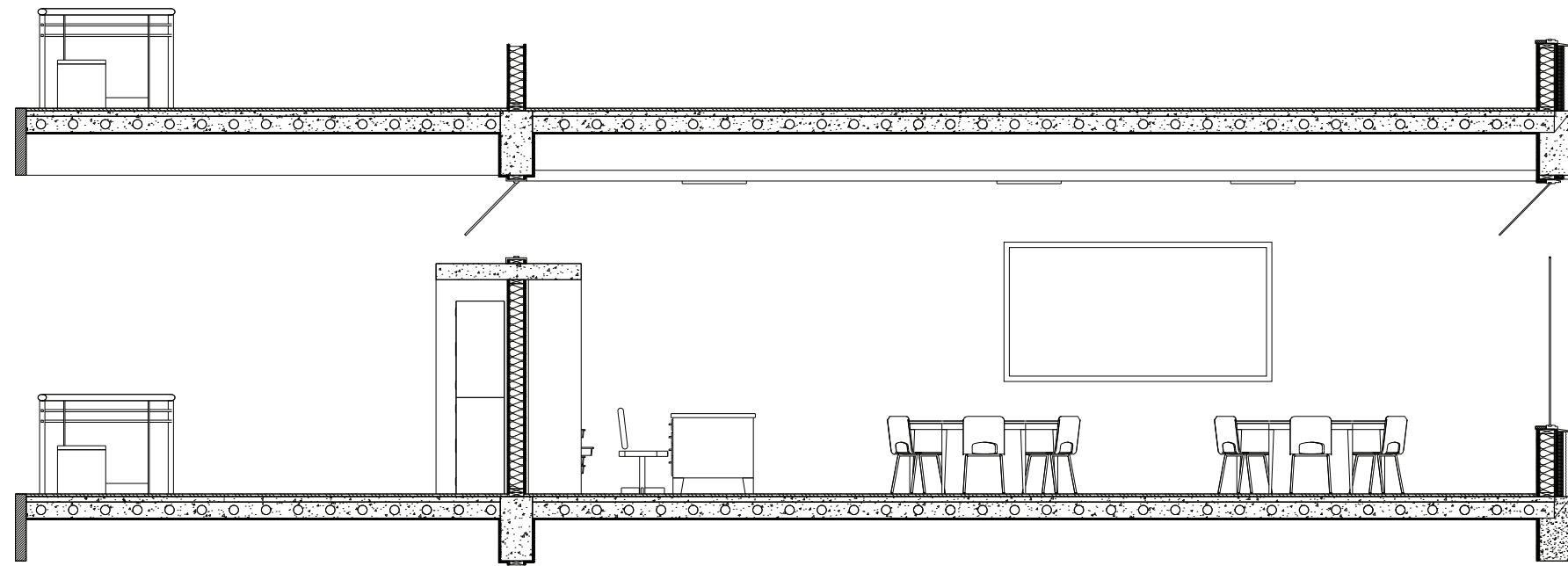


# Classroom



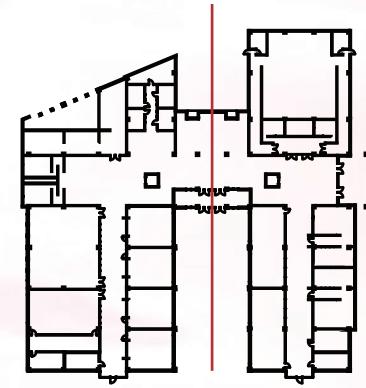


# Classroom Details

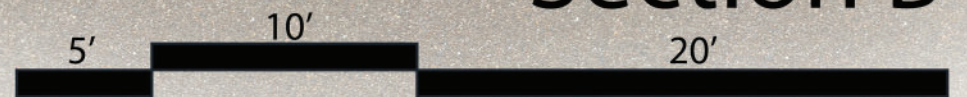


The layout of the classroom plays a major role for students to feel comfortable. The classroom is very spacious with round tables to encourage collaboration work between students. Each classroom does not have A/C units which is typical in Lima, Peru. Awning windows are placed in order to bring in natural ventilation and plenty of natural light. The outside courtyard has water fountains to cool off the air coming inside. On the interior elevation facing the hallways are lockers for students to use if needed. Each classroom has a capacity of 24 students and their teacher. The classroom also has plenty of wall space for teachers to pin up any posters that they feel will be needed to teach their class.





Section B





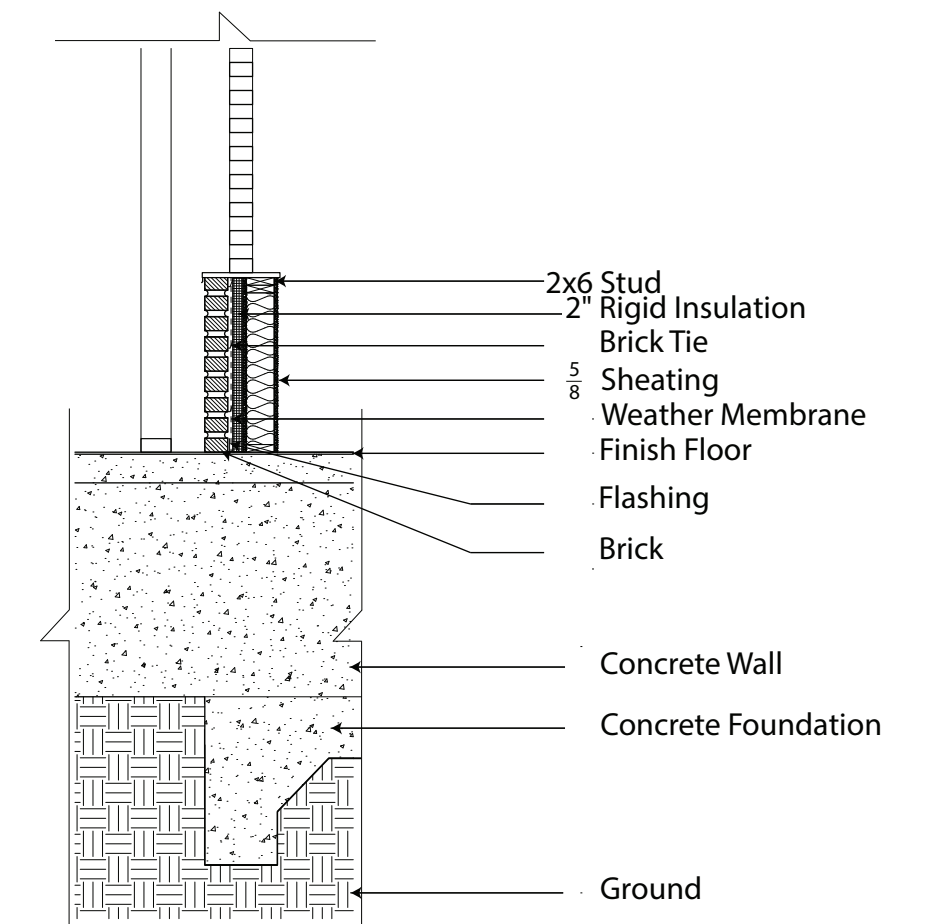
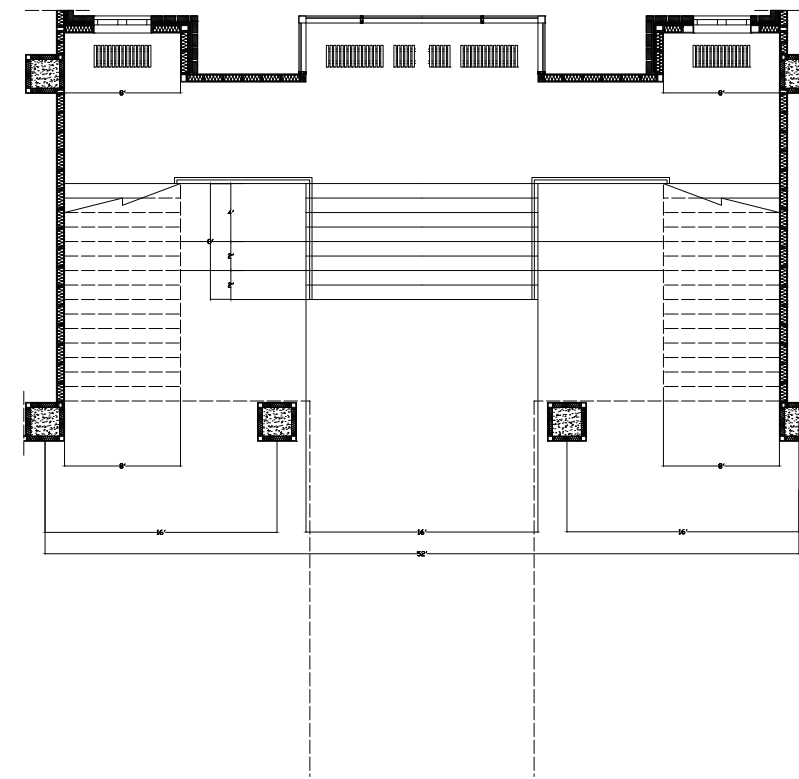
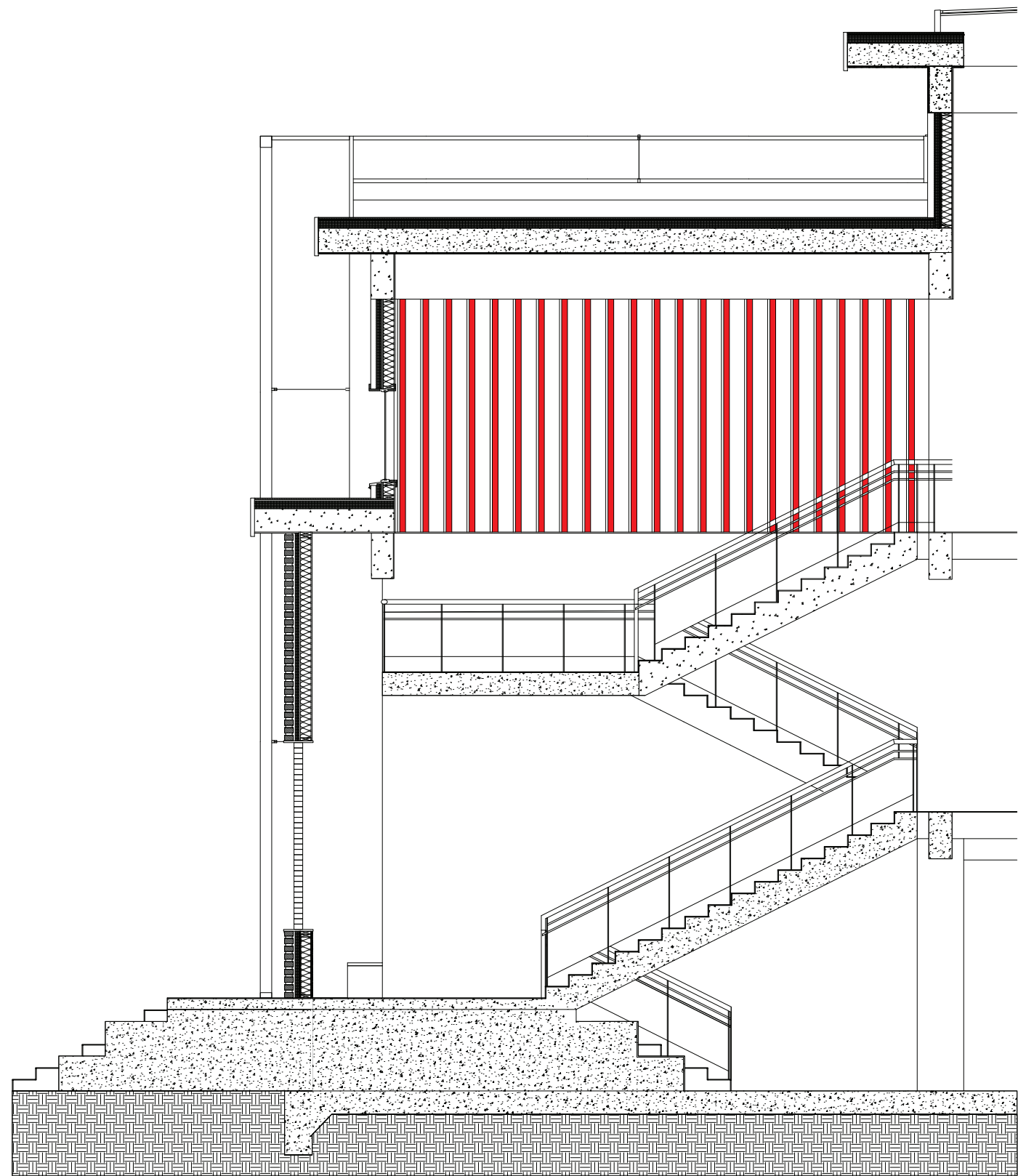
# Learning Steps



PROPOSAL



# Learning Steps Details



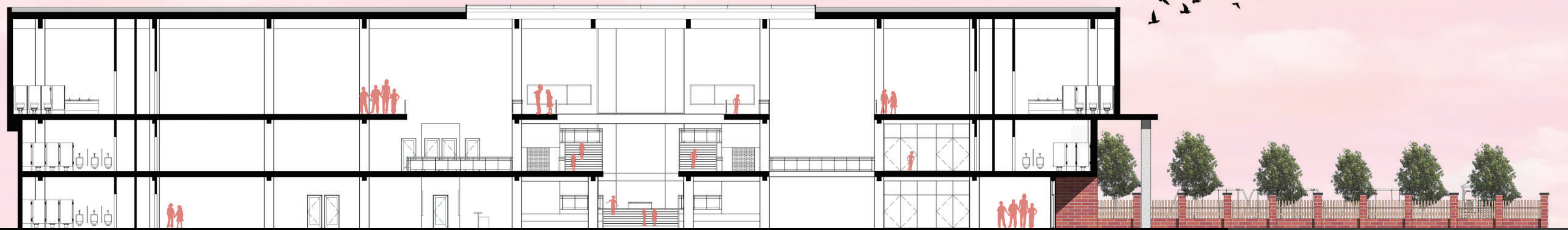
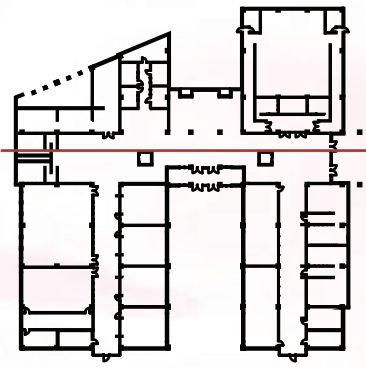
The main stairs of the building are going to provide access for students to get to all three floors. With a total of 288 students this place will be crowded at times. Two perforated brick walls will be placed on both sides of the glazing. This will bring in air flow into the space making it more comfortable for students as they get to each class.

The main stairs will include learning steps for students to pause from their busy day. At this time students can either talk to their friends or get work done. On the opposite side there will be opportunities for teachers to bring their students and have an outdoor lesson.









Section C

PROPOSAL











The image features a white background on the left and a graphic composition on the right. The graphic consists of several overlapping rectangular blocks. A large, dark red rectangle is at the top left of the graphic area. To its right is a lighter, semi-transparent red rectangle. Below the dark red rectangle is another dark red rectangle, which overlaps with the lighter one. To the right of this second dark red rectangle is a grey rectangle. The word 'CONCLUSION' is written in white, bold, uppercase letters across the top of the dark red rectangle.

**CONCLUSION**



# Autobiography

My name is Renzo Aaron Caldwell, I was born in Lima, Peru. During my early childhood I was raised by my grandparents. My mom was a single mom who worked tireless hours. She was constantly working which meant I rarely got to see her. Even at times I would not see her for months as she was traveling back and forth. Initially I was upset at the world as I felt that I was robbed of growing up with two parents. I moved to the United States when I was seven. The transition was very difficult as I did not know I would be leaving my family behind. It was not until I was 13 years old that I had the opportunity to go back and visit them. At that moment I realized just how fortunate and blessed I was. Then it hit me that all the hard work and sacrifice my mom had to go through was to give me a better opportunity at life.

My mom later on married my dad, who at the time was my step dad. He was the one who helped me with my homework and my English. Even though we are not connected by blood, he took me in as I was one of his own. He taught me what it meant to be a man. Most importantly he treats my mom with love and respect.

Going to school helped me learn English at a quicker rate. What also helped was my mom waking me up at 5am prior to school in order to study. I will admit at times I put my head down and as soon as I heard her coming down the hall I pretended I was flipping the page. She taught me resilience and hard work not by her words but her actions.

Right after High School was rough as I did not have a clear path of where I was going. I was rejected by the University of Houston. It was at that moment in my life I knew I had to change. What I was doing was not good enough. I went to Lone Star Community College for my first two years and got all my basic classes out of the way. I improved my GPA and transferred to Texas A&M University where I will be getting my Master's Degree in Architecture.



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