

an architecture of play

Hajar Mohammad Ebrahim (Al-Kandari)

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MASTER OF ARCHITECTURE

In
Architecture

Hans Christian Rott, Committee Chair

James R. Jones

William Galloway

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abstract

Play is important in a child's development, growth and education. Children must be given a space where--in place of formal education--wonder and the love of play can be fostered and encouraged, allowing them to transition into becoming young individuals. By constructing a building with them in mind, children are offered opportunities to discover, play, and wonder.

This thesis challenges the typical symmetrical, standard, or traditional school system in an attempt to teach children concepts of light, shadow and color, geometry and to provide them with a sense of their natural environment, or surroundings all while inviting them to learn in a playful matter.

To my mother, my best friend, and first teacher:
To my wonderful father, grandparents, sisters and my closest friends:

Thank you for all your unconditional love, patience, and support.

To my committee members, teachers, and classmates:

It has been an honor learning and growing with you.
Thank you for always challenging me.

To Hans Christian Rott:

I am so grateful to have had the opportunity to start and “end” this journey with you;
from our first confusing lecture on Philosophy to my final defense.
I will always cherish all that you have taught me, and all that you have inspired me to
learn.

To Angie Hani,

My High school Art teacher who saw in me what I did not see in myself, thank you for
encouraging me to pursue my education in something that was more “me”.

“I am convinced that most people do not grow up. We find parking spaces and honor our credit cards. We marry and dare to have children and call that growing up. I think what we do is mostly grow old. We carry accumulation of years in our bodies and on our faces, but generally our real selves, the children inside, are still innocent and shy as magnolias.

We may act sophisticated and worldly but I believe we feel safest when we go inside ourselves and find home, a place where we belong and maybe the only place we really do.”

-- Maya Angelou, Letter to My Daughter

table of contents

Title Page	i
Abstract	ii
Acknowledgements	iii
Table of Contents	iv
Introduction	
Safe Space	1-2
Kindergarten + Play	5-6
Transparency + Openness	7-8
The Hexagon	
Geometry	9
Structure	10
Color Scheme	11-12
Mass Model	13-14
Site Plan	15-16
Detail Plan	17-18
Drawings: Plan + Section	
Quiet Rooms: Low Activity	20
Active Rooms: Medium + High Activity	21
Quiet Rooms: Low Activity	22
The Restroom - W.C.	23-24
Model photographs	
Low Acitivity	27-28
Medium Acitivity	29-30
High Activity	31-32
Studies	35-38
Early Sketchs + Kindergarten Visit	41-44
List of Figures	45

the beginning: a safe space

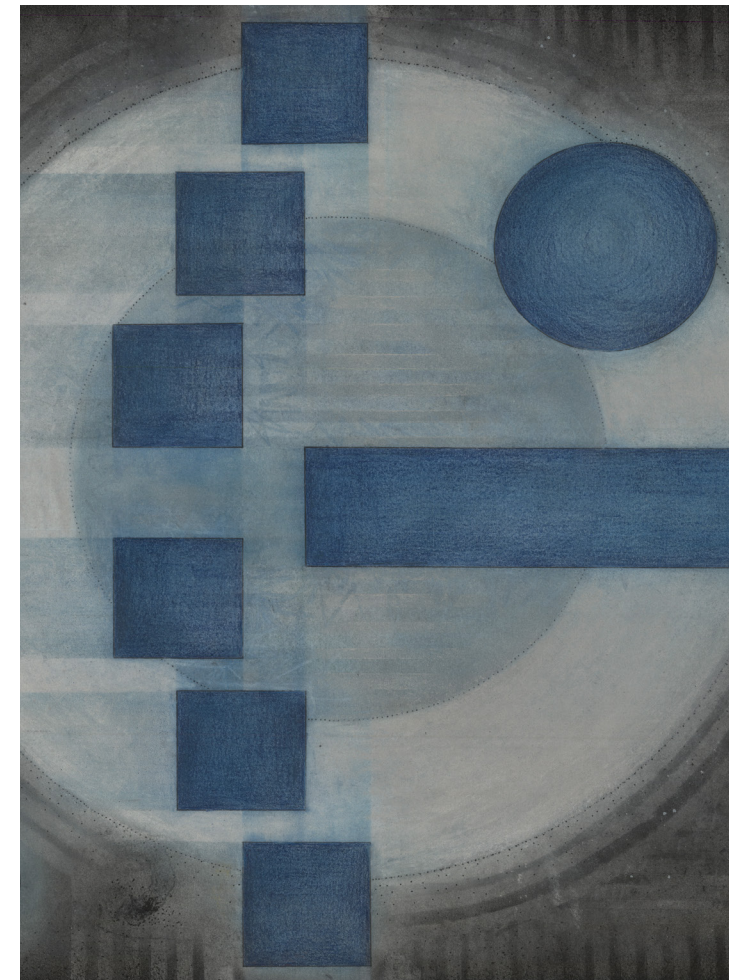
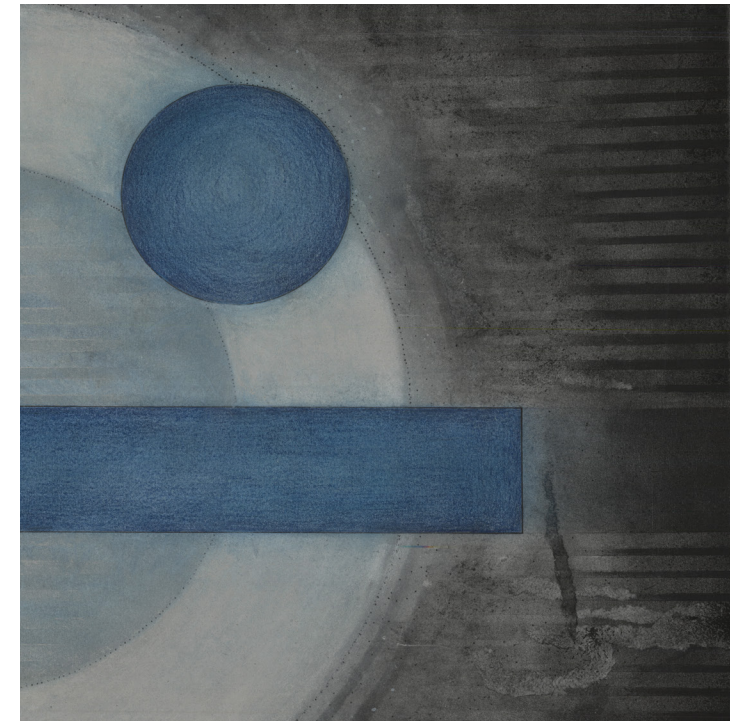
This thesis begins in the beachrch for a space where children can grow and develop natural curiosity and a creative version of themselves. A space free from fear of rules and regulations, a space that encourages thinking outside the box they may be otherwise forced to think inside of.

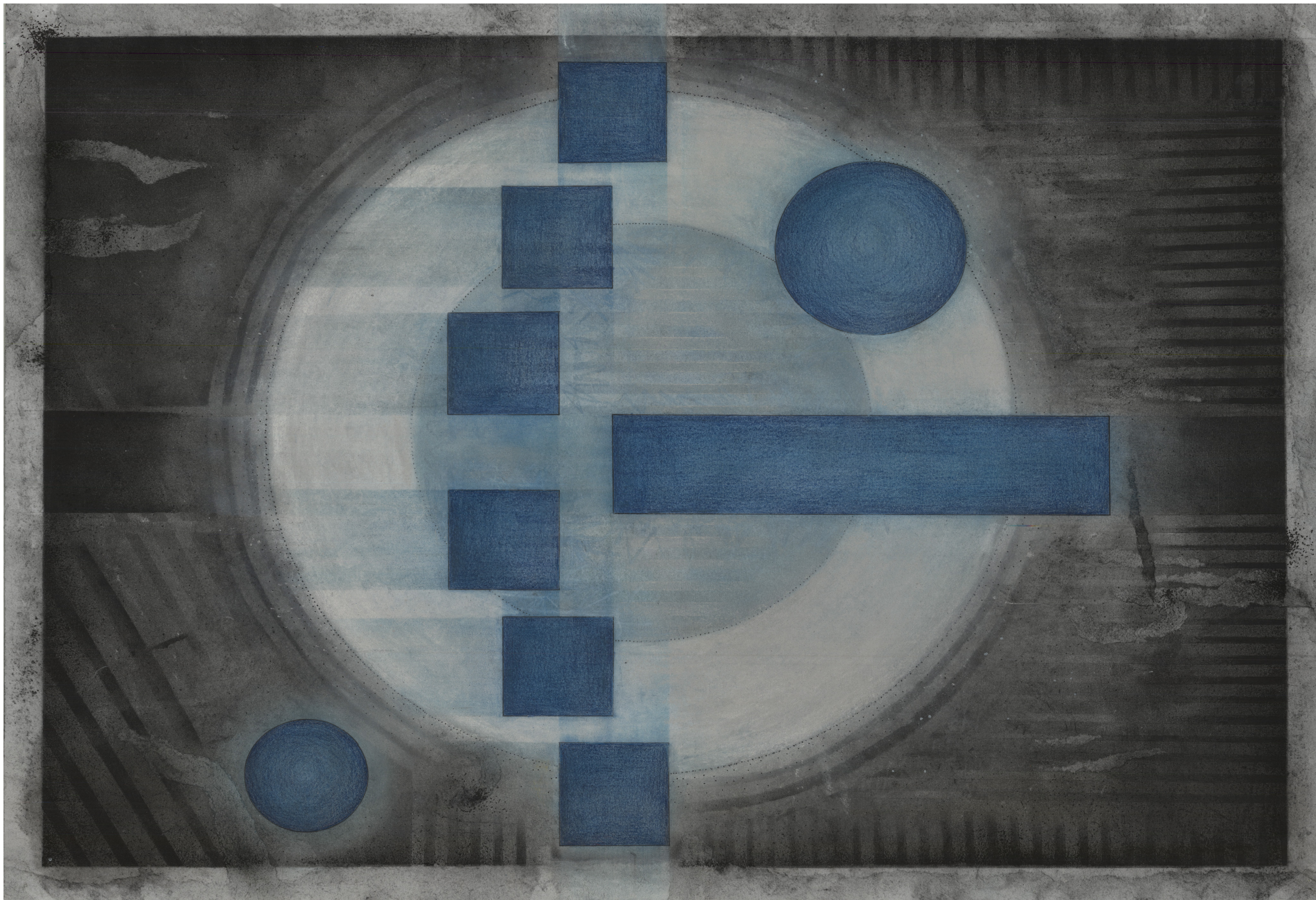
Simple geometry is enough to represent standard yet abstract concepts. The circles indicate a space where children might play, create and explore together. As the circle has no straight, harsh lines, there is no rigidity in its shape; therefore, it presents a more welcoming and encompassing area.

The long rectangle creates a bridge-like symbol, a link between the harsh outer area, and the softer inner one. It is split into smaller rectangles, where order and organization takes place.

The color blue represents this safe space. Although blue may represent several different emotions or meanings, for me, it represents comfort, safety, and solace. Blue is the ocean; vast, distant, deep. Blue is also the sky --where we look to in moments of fear, helplessness. Or, perhaps, we simply look towards the blue sky to dream. Blue is soft, quiet and sacred; it is fragile, honest, and pure.

Children are--and always have been--the purest forms of human beings. They are full of untarnished potential and wonder. Somewhere along the line, however, they are forced to regulate all that is beautifully unique about them. Their curiosity, their innocence, their sensitivity, their display of emotion; even their confusion. They are forced to regulate the very substance that makes them children. I would like to preserve this purity for as long as possible, as it stems--not necessarily from a place of naivety--from kindness, optimism and generosity.





abstract drawing - plan
18" x 24" colored pencil, graphite,
chacoal, ink.

“My ideal goal is to “mature” into childhood. That would be genuine maturity.”

-- Bruno Schulz

kindergarten + play

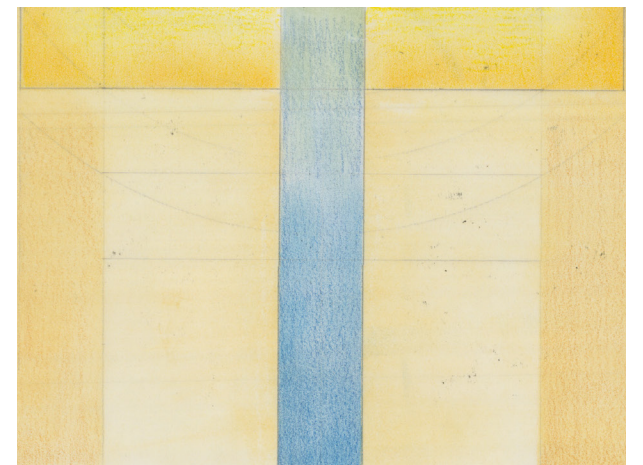
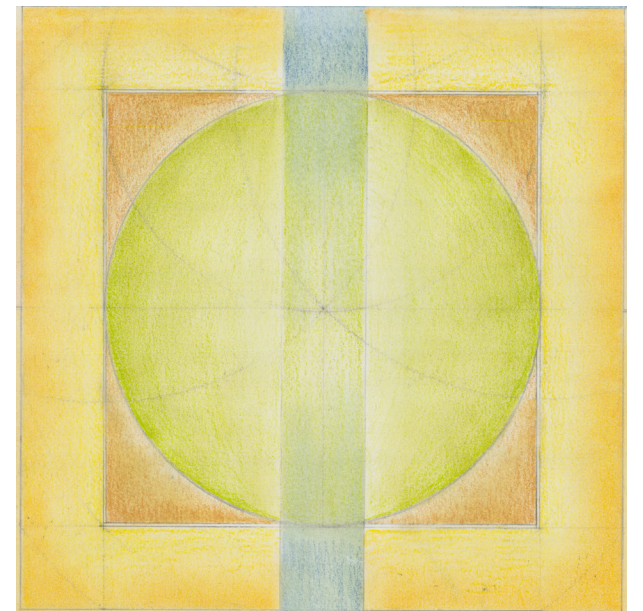
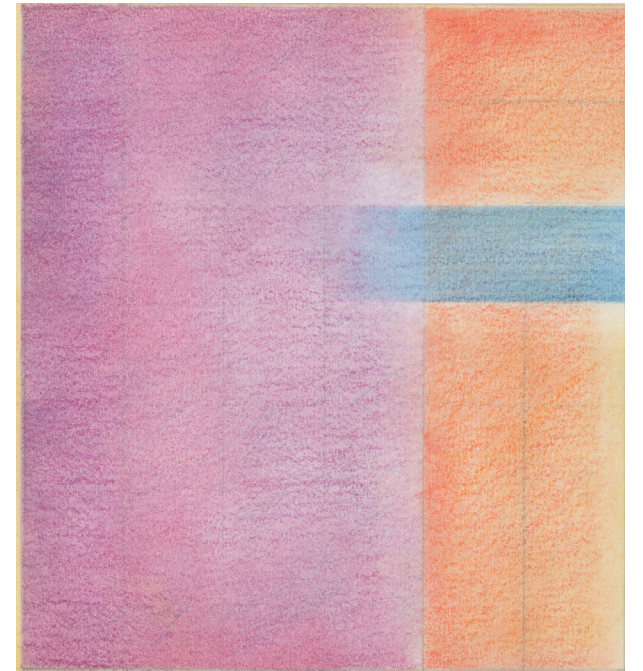
As far as we know, the perfect place for a child to start growing, developing, and learning usually starts with kindergarten, as it is the first transition a child makes to becoming more independent. To make for a richer experience, the child's transition must not be daunting or dull. Rather, it must be welcoming and fun.

Children, on their own, are full of wonderful ideas. They are creative, energetic, and forgiving. These aspects give them so much to offer to the world, yet so much to learn from it as well. As it stands, these children must conform to the standard child that adults want them to be; which discourages the behaviors creativity and curiosity require. Hence, the child's right to play must be preserved and encouraged, which means the architecture of the kindergarten space should support this.

The initial idea was to have a circular, central gathering place, with a playground, as well as open areas for higher levels of activity and play. These higher levels of activity would be designed with brighter colors. There would then be areas further from the central area, designated for classes and spaces that require more silence and allow for reflection. These would be designed in cooler colors.

"Everything is a ceremony in the wild garden of childhood."

-- Pablo Neruda





abstract drawing 2 - plan
18" x 24" colored pencil, graphite, soft pastel.

transparency + openness

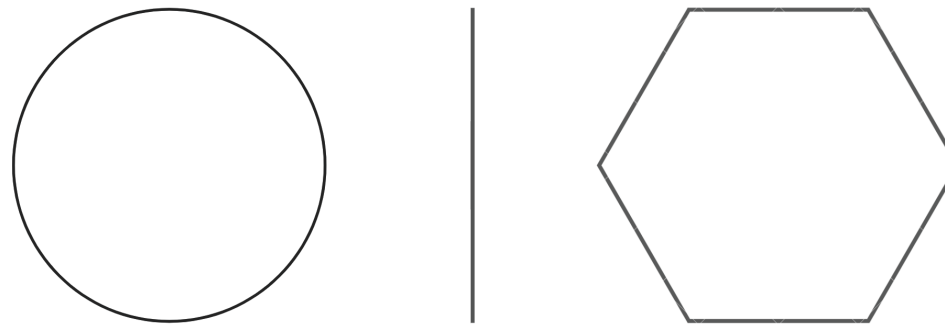
Transparency, and openness are also important. Some classes are more open and connected, whereas others are more private and reserved. This drawing proposes an idea for a plan that is less connected by a central playground. Instead, the students can have the playground encompass the entire school. Meaning, the kindergarten belonged to the playground, not the other way around. This proposition led to a more superficial understanding of “play.” However, play can and should take place in every aspect of kindergarten: not merely in one, specific open area. This lead to further breaking down the play areas, further challenging the existing forms.

How could I use architecture to encourage play; lights and shadows, structure, form, geometry, material..the list goes on.





abstract drawing 3 - plan
18" x 24" colored pencil, graphite,
soft pastel.

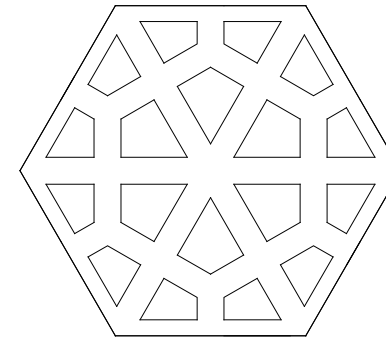


The early abstract drawings and studies looked at the simple geometry of the circle and the square: or more specifically, the circle and the line. Lines represent a space for more order and rationale, while circles represent a more playful, welcoming, and relaxed space. The desire for having both aspects in a kindergarten lead to the choice of a hexagon. This geometric proposition also includes several smaller geometric shapes within, creating both playful and educational opportunities for the children.

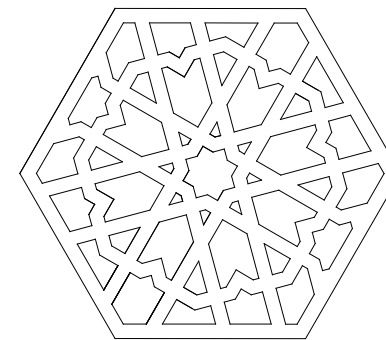
“That early kindergarten experience with the straight line; the flat plane; the square; the triangle; the circle! If I wanted more, the square modified by the triangle gave the hexagon, the circle modified by the straight line would give the octagon. Adding thickness, getting ‘sculpture’ thereby, the square became the cube, the triangle the tetrahedron, the circle the sphere.”

-- Frank Lloyd Wright, from An Autobiography

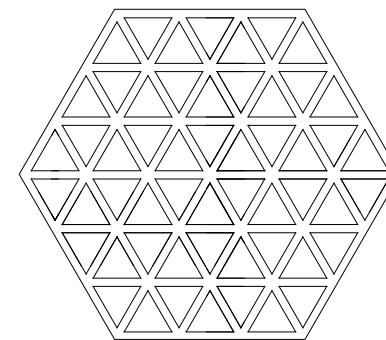
The classrooms were further split into 3 separate groups, based on activity/stimulation level from low, to medium, to high. These patterns would be incorporated into the structure, each held by a collector beam. The pattern on the ceiling is reflected on the wooden flooring as well.



A more abstract pattern was chosen for the blue, quiet, contemplative spaces. These rooms are for a more relaxed introverted type of play.



The classrooms with a medium level of stimulation and activity have a more traditional, local pattern - arabesque.



A triangular waffle slab structure forms the most active classroom; the level with the highest level of activity. The geometry is simple and repetitive showing in a very simplified manner how one geometry or shape is linked to and may create another.



color scheme

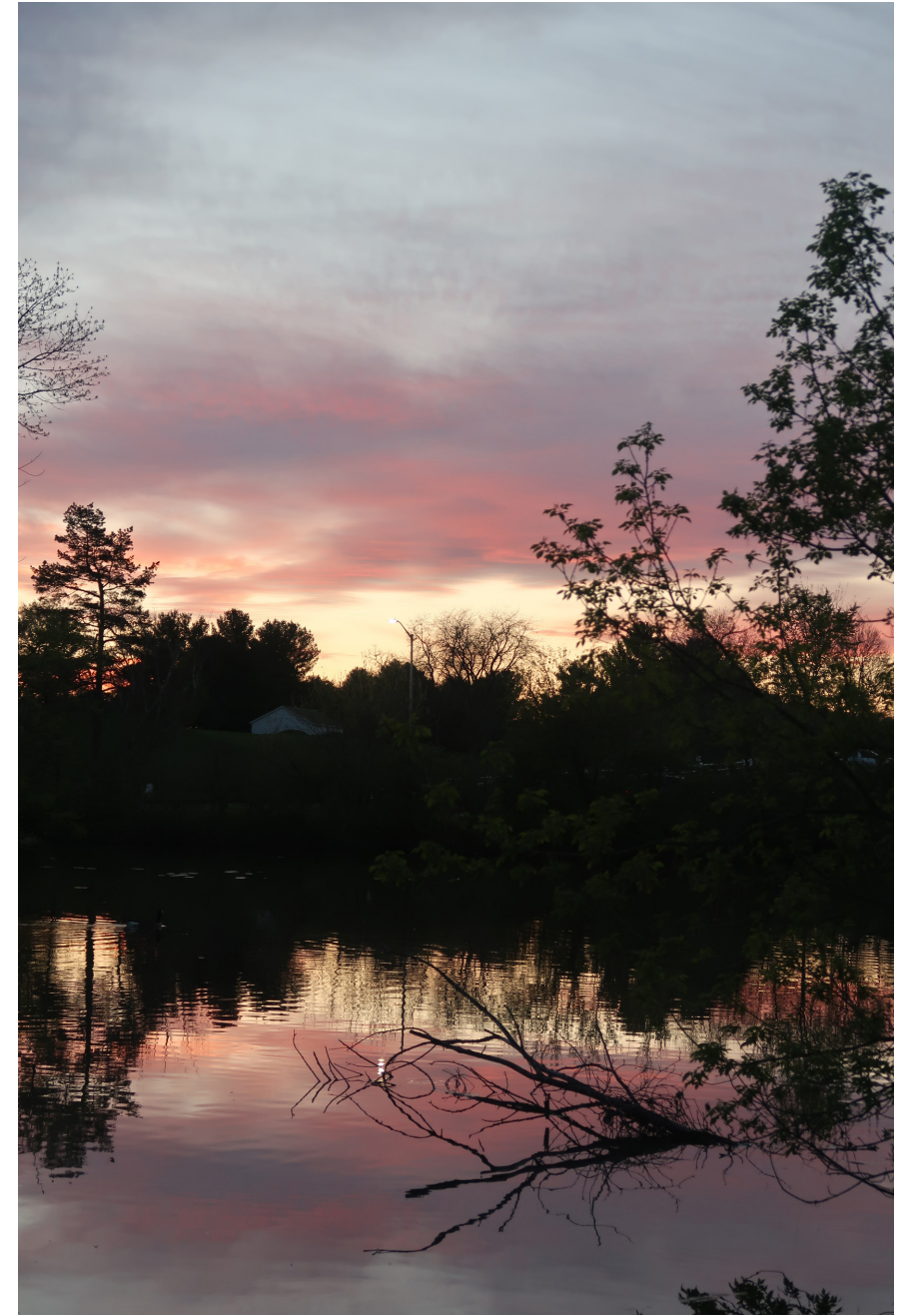
In the idea of a kindergarten that celebrates and invites play, color became an important factor the two, primarily being blue, and yellow and all the colors that should fall in between.

Blue is a color of wondering, dreaming, contemplation. Its quiet, and distant and peaceful. Yellow on the other hand is more loud, its bright and invites a higher level of activity.

The breakdown of these colors scientifically--or rationally--is reversed. Typically, yellow or warmer colors aid in melatonin release; whereas blue light raises a sense of alertness. This scientific basis, however, applies to artificial lighting. In the school, the colors are not used as light themselves, but as a shadow to teach. This is a colored transparent surface, when--once hit by light--produces a colored shadow unlike the usual dark grey or black shadow that we see. Even a shadow can be a playful, colorful way of labeling a place.

"I sense the world might be more dreamlike, metaphorical, and poetic than we currently believe--but just as irrational as sympathetic magic when looked at in a typically scientific way. I wouldn't be surprised if poetry--poetry in the broadest sense, in the sense of a world filled with metaphor, rhyme, and recurring patterns, shapes, and designs--is how the world works. The world isn't logical, it's a song."

-- David Byrne, *Bicycle Diaries*



The colors have to be presented in a subtle way, where they are not merely paint on a wall, but rather make the room feel alive. In the images above, the picture on the far left and the far right are reflected in the windows of the building. These photographs were all taken at roughly the same time but the way the windows captured the view, it was as though the sunset brought life into the building.

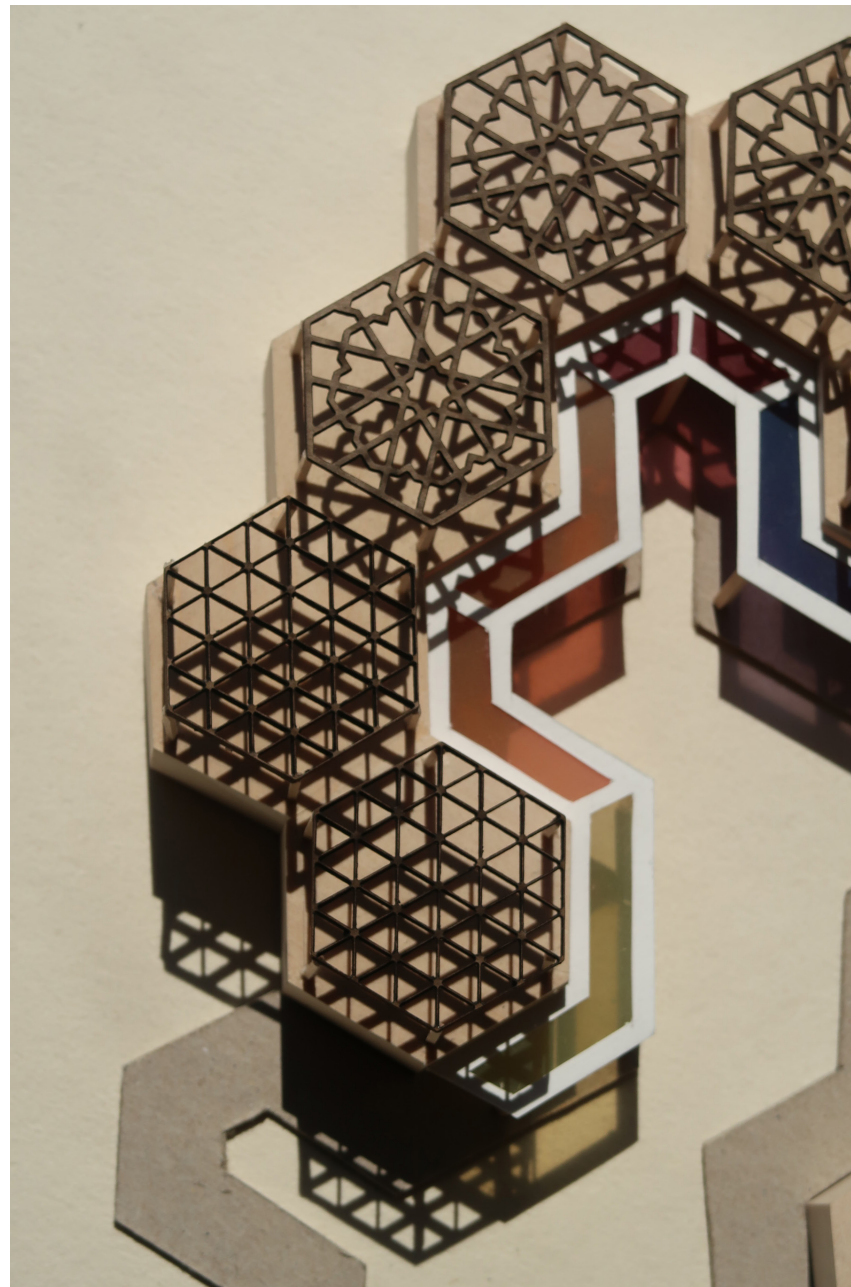
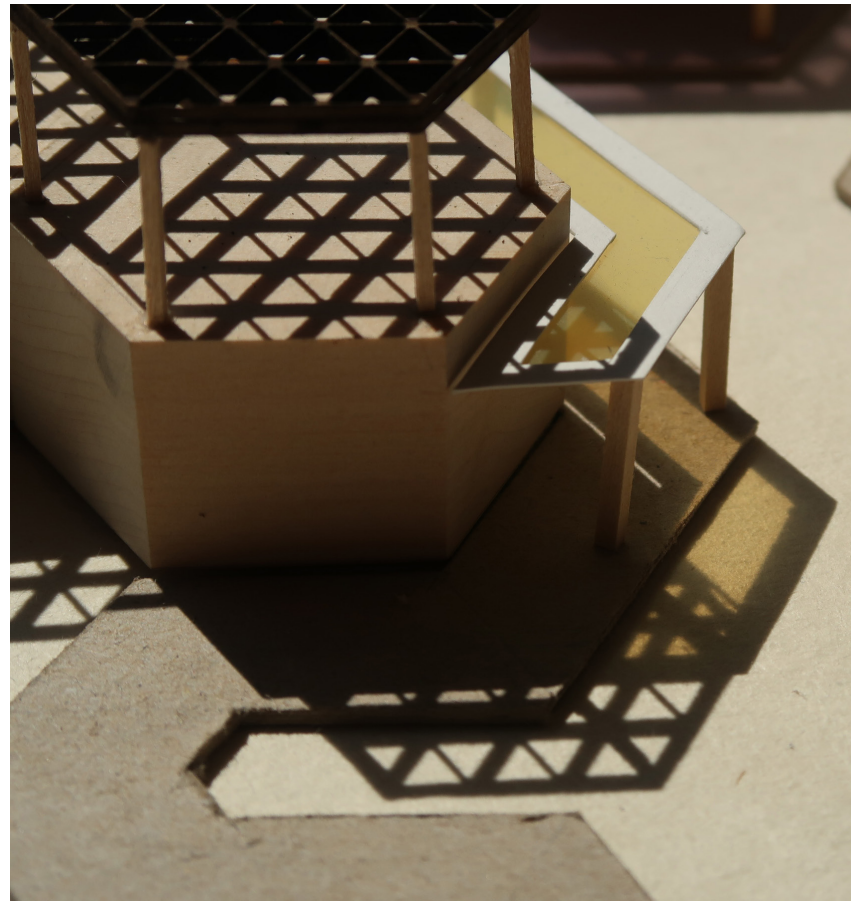
“The sky broke like an egg into full sunset and the water caught on fire.” - Pamela H. Johnson

As a child, I remember looking at sunsets reflected onto the water, and I always wondered what would happen if I dipped my fingers in it. One day, I rushed to dip my fingers in, and thought my hand might be dyed with the colors of the sunset. There was no logic or rationale to my behavior, but noticing this beautiful phenomenon, I remember always being deeply disappointed that only the water could hold the sunset. The reflection, however, was beautiful nonetheless.

The idea that arose from this, involves colored glass panels, bordering the entrance of each classroom indicating the activity level, and thus creating a rainbow of light. I imagine the children in the kindergarten extending their arms at the shadows this colored glass roof casts and watching it paint their skin. As well as noticing the intensity of the color, or the length of the shadow change throughout the day.



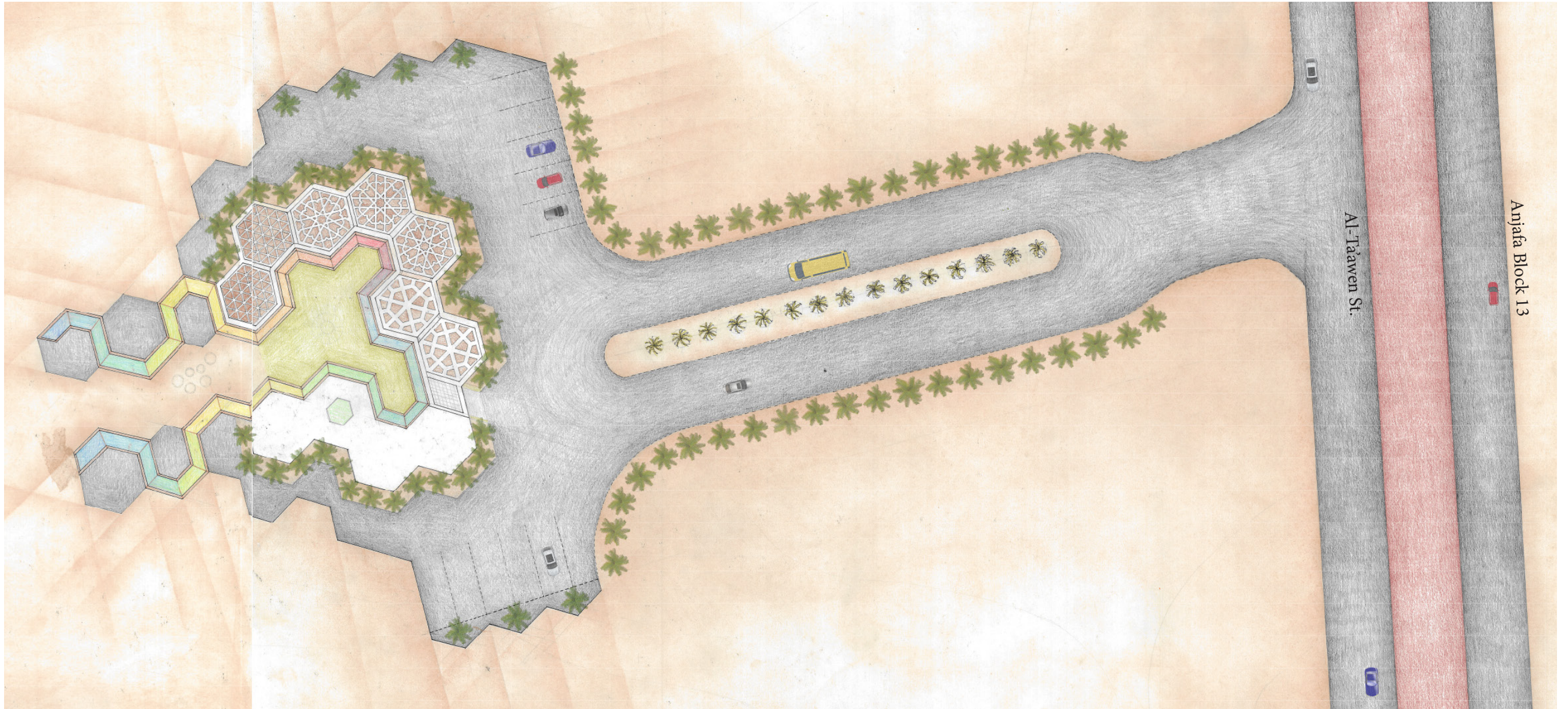
mass model N>



Location: Kuwait,
Anfaja Block 13
Across from Salwa St. 8
Al-Taawen Street.



site plan
24" x 36" x 2 (24"x72") colored pencil,
ink, soft pastel, photoshop.



site plan closer view
24" x 36"x 2 (24"x72")
colored pencil, ink, soft
pastel, photoshop.

classroom layout - plan

The kindergarten is comprised of 11 white, concrete hexagons, connected to one another. Each side of the hexagon is 12ft in length. The frames of the windows and sliding doors are made of African teak wood.

The more private and quiet classrooms have sliding wooden doors, while the more open classrooms are semi-transparent (frosted glass) allowing plenty of sunshine into each space.

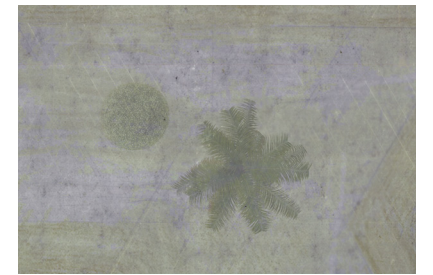
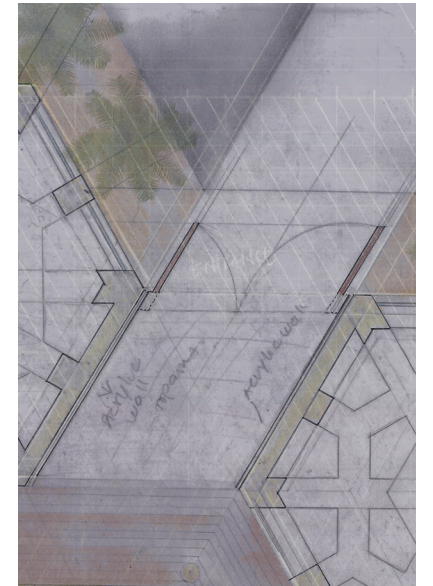
An important component in the school is its transparency and connectedness between classes and play areas. This allows the children to know what is happening in each classroom, to feel welcome and involved in the larger community. Since the school is more than just one classroom, this unity can be schoolwide and encourage a variety of diversity.

The large, colored glass panels above the entrance of each class hint at the activity level inside. Cooler colors indicate lower levels of activity, designed for contemplation and deep thought. Warmer colors are for more active classrooms, where children can play more freely.

There is a central garden area for planting and gardening activities. Further east, and closer to the beach, there is a sandy area with white concrete hexagons protruding from the ground. This creates a maze-like sculpture for the children to hide around, climb, or sit on.

The classrooms that are connected are joined by swinging doors, which may be locked if necessary. These swinging doors are attached to walls with glass blocks, subtly allowing for further transparency and openness between classes.

The classrooms are strategically placed, so that the kindergarten as a whole is both inward-facing (creating a sense of belonging and togetherness), as well as forward-facing. They face towards the beach, with additional roof-top views to create a sense of special-awareness so the children can learn where they are relative to their surroundings as well as play outdoors on a hard surface.





detail plan - layered

24" x 36" grid: pencil on paper.
 24" x 36" colored pencil, ink,
 soft pastel, photoshop.

- | | |
|--------------------------------------|--|
| 1. Entrance | 8. Classroom (High Level Activity) |
| 2. Teachers Lounge | 9. Garden/Planting Area |
| 3. Transition Room | 10. Sand Playground |
| 4. Classroom (Medium Level Activity) | 11. Classroom (High Level Activity) |
| 5. Classroom (Medium Level Activity) | 12. Restroom -W.C. |
| 6. Classroom (Medium Level Activity) | 13. Classroom/Nap room (Low Level Activity) |
| 7. Classroom (High Level Activity) | 14. Classroom/Reading room (Medium Level Activity) |

drawings: plan + section



quiet rooms: low activity

Upon entry to school, the closest classrooms are quiet. These two, specifically, are a teachers lounge and a transition room.

The two rooms are joined by a central glass block bordered wall and swinging door that may be locked.

The transition room's structure is altered slightly as a result of a massive glass circular staircase and center to take the children to the rooftop play area.

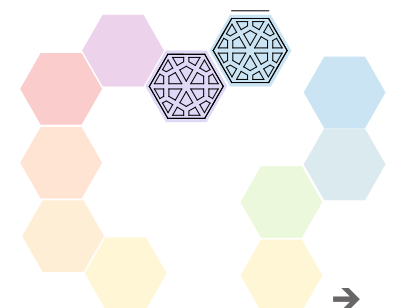
A central hydraulic lift carries children (and staff) who are unable to climb the spiral staircase to the play area above.

The spiral staircase wraps around the lift, so those in it do not feel as though they are missing out on the experience - running together to the play area.

The transparent and glass structure of the stairs and elevator presented an opportunity for children not only to go from one point to another and see each other, but it allowed them to see how a lift may operate. In this case, with the pump going up and down and the mechanics behind it revealed.

Windows and clerestories were introduced into the quiet rooms because the sliding doors here are African teak traditional Kuwaiti designed sliding doors. This gives these spaces a sense of privacy, whilst still allowing sunlight and the view of the palm trees.

plan + section
24" x 36" : pencil, colored pencil, soft
pastel on paper (photoshop).



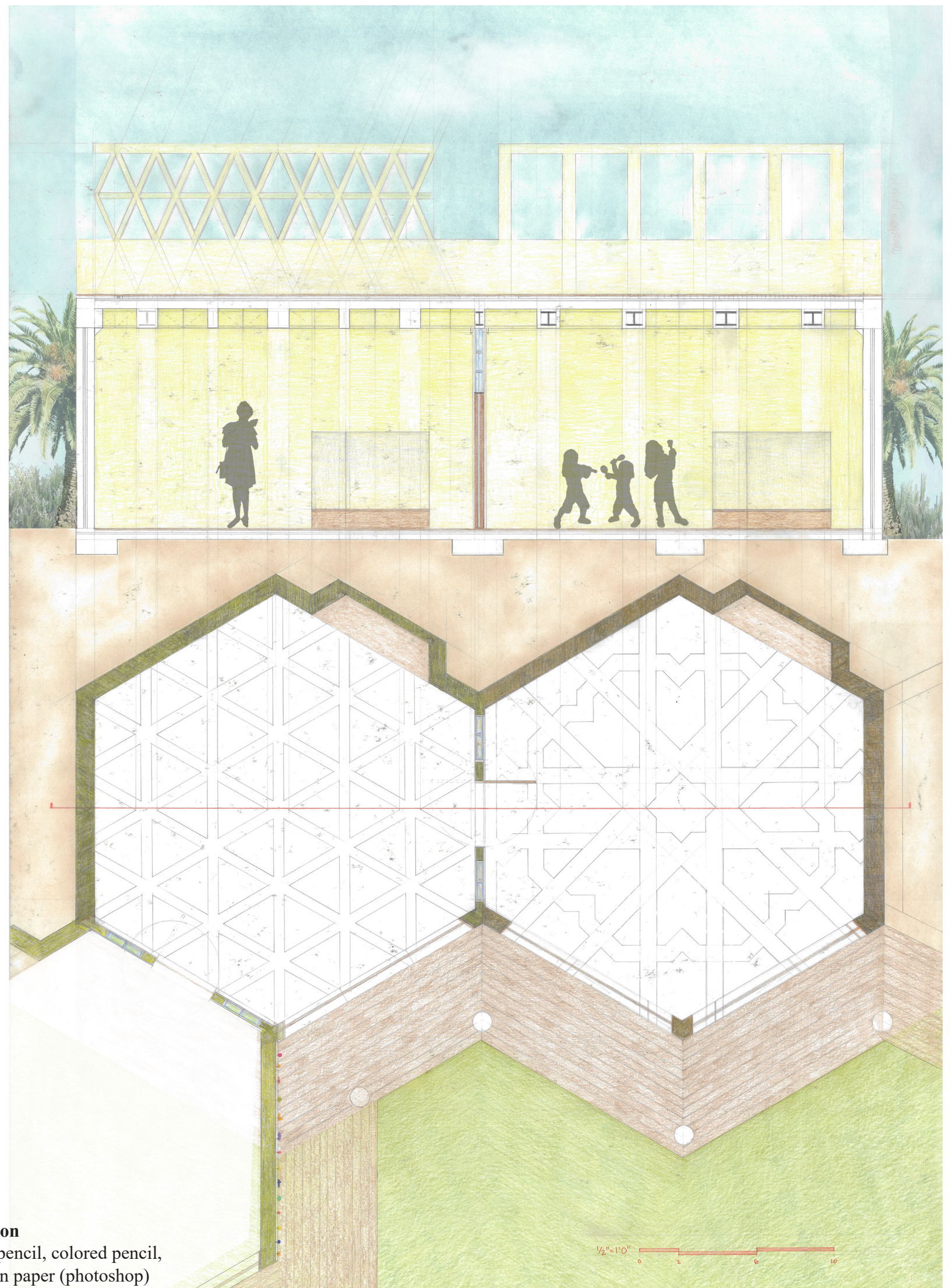
active rooms: medium + high activity

The classes with warmer colored entry shadows are the more active spaces. These classes have wall benches for children to inhabit the wall, they also have the benefit of having large amounts of natural light coming in from the frosted glass sliding entrance doors. These rooms are bright, open, and welcoming.

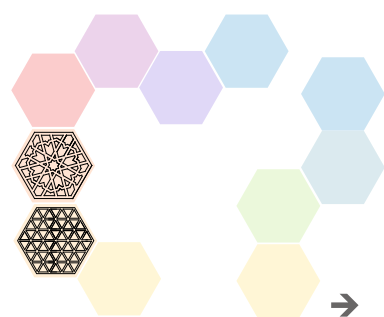
The ones with arabesque structure and floor pattern are form are medium level stimulation/activity classes. This includes classes in art, humanities, drama. The closer the medium level classes get to the cooler colors, the more distant from the playground the classes are. They are used for mathematics and science classes, where more quiet and concentration might be required.

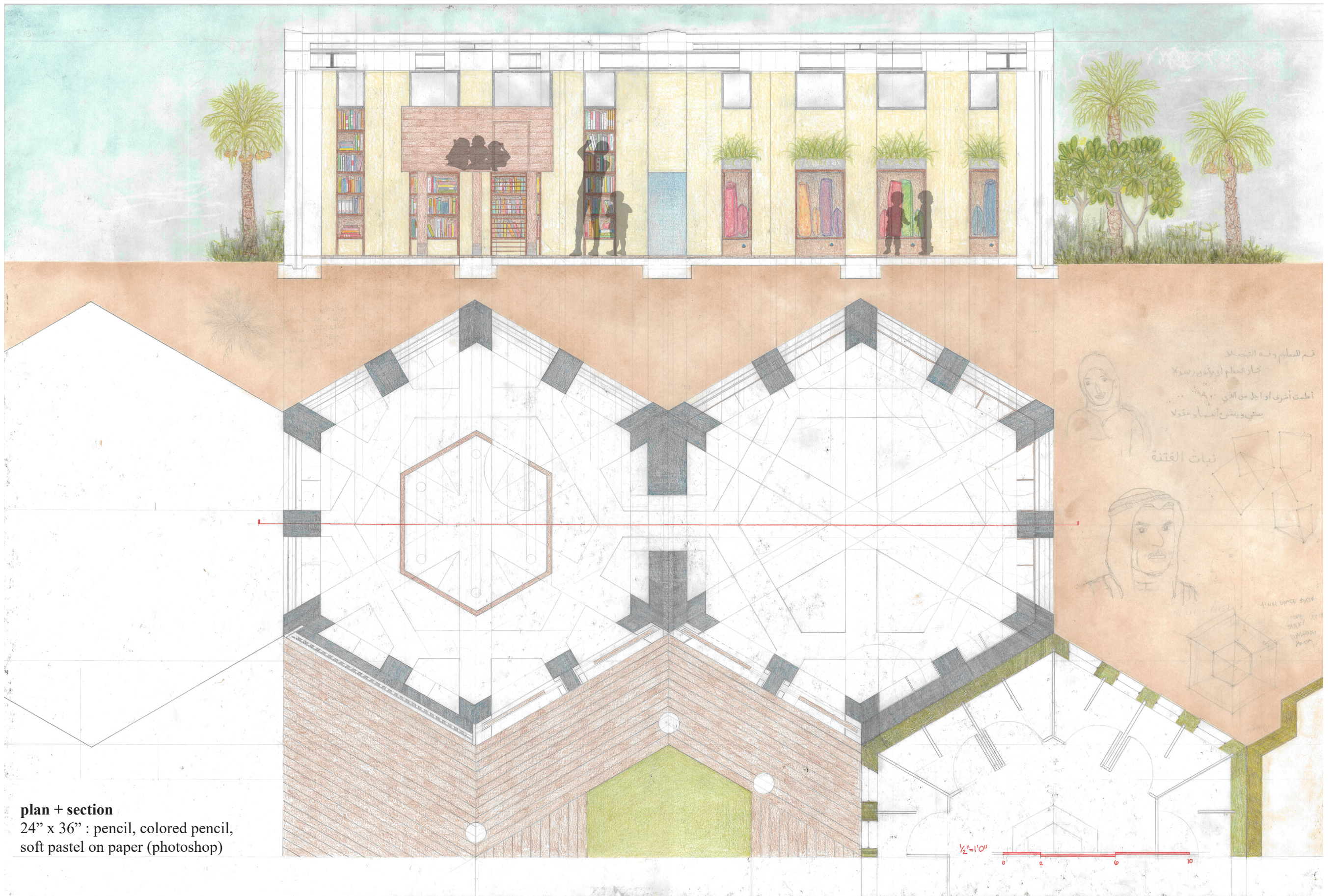
The classrooms with the triangular waffle slab structure are the most active, they are for play that is not as regulated, or classes that allow high levels of activity; such as dance, and music classes.

The accessible roof patterns are the same as those of the structure beneath it. As children play, they may interact with these shadows and learn how it relates to the spaces below (structure and floor pattern.)



plan + section
24" x 36" : pencil, colored pencil,
soft pastel on paper (photoshop)



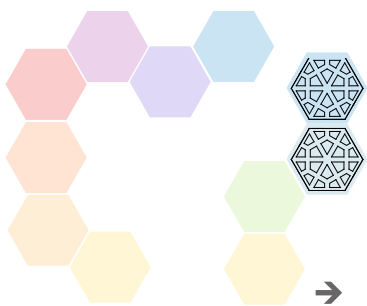


plan + section
 24" x 36" : pencil, colored pencil,
 soft pastel on paper (photoshop)

quiet rooms: low activity

The rooms shown here are on the opposite side of the entrance, they too are quiet spaces. One of the rooms is a reading room, a library with a reading nook for children to climb into or sit below and read. the columns here are extended, protruding from the wall, emphasizing the structure and used to create shelf space for books.

There is a 4.5ft small blue concrete "secret entrance" for children, that connects the reading room to the nap room. In the nap room the spaces between the columns contain shelves for blankets, pillows and shoe storage below, with plants above.



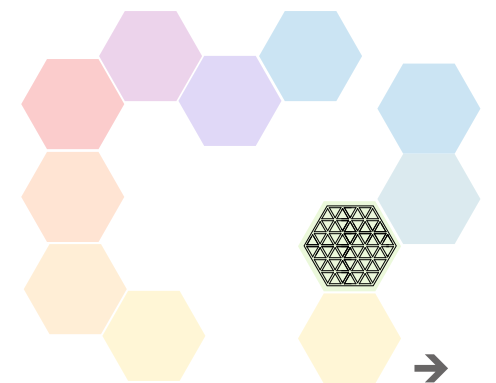


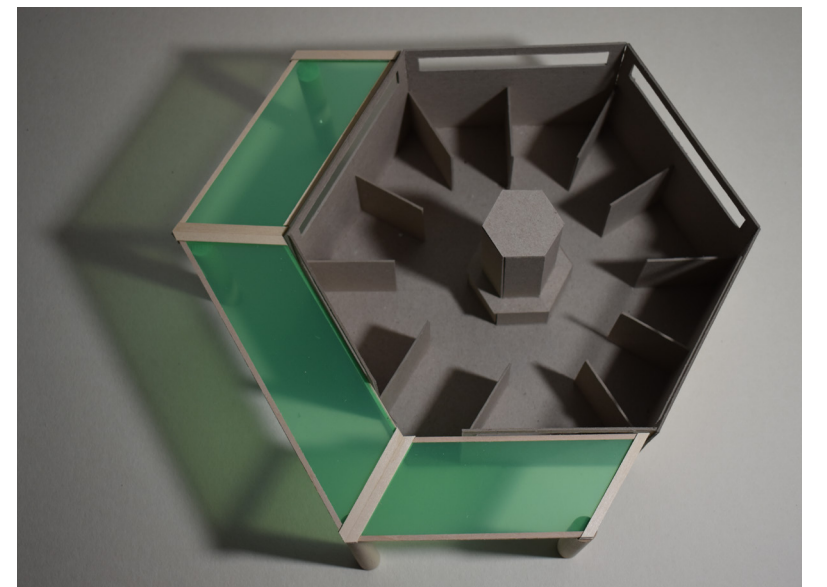
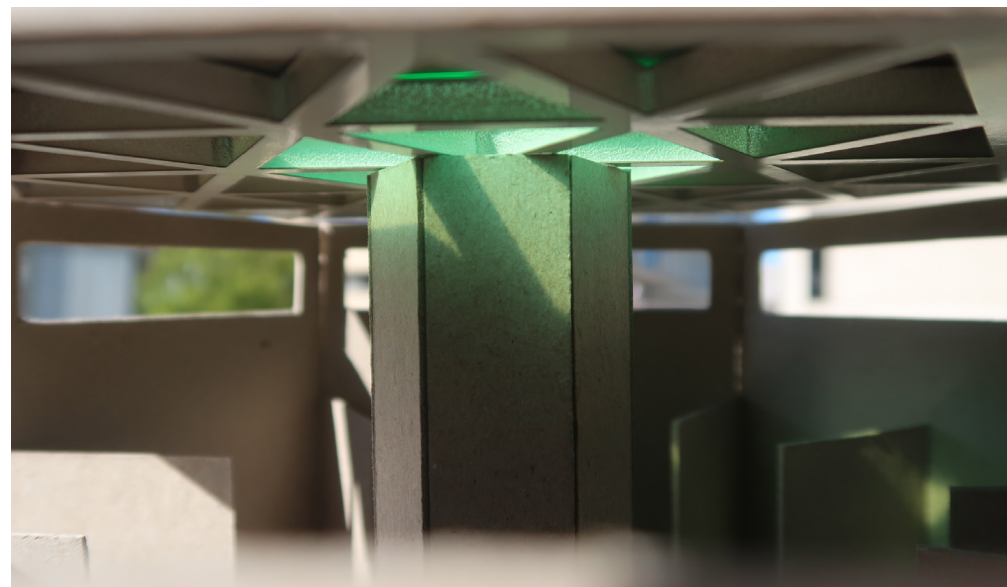
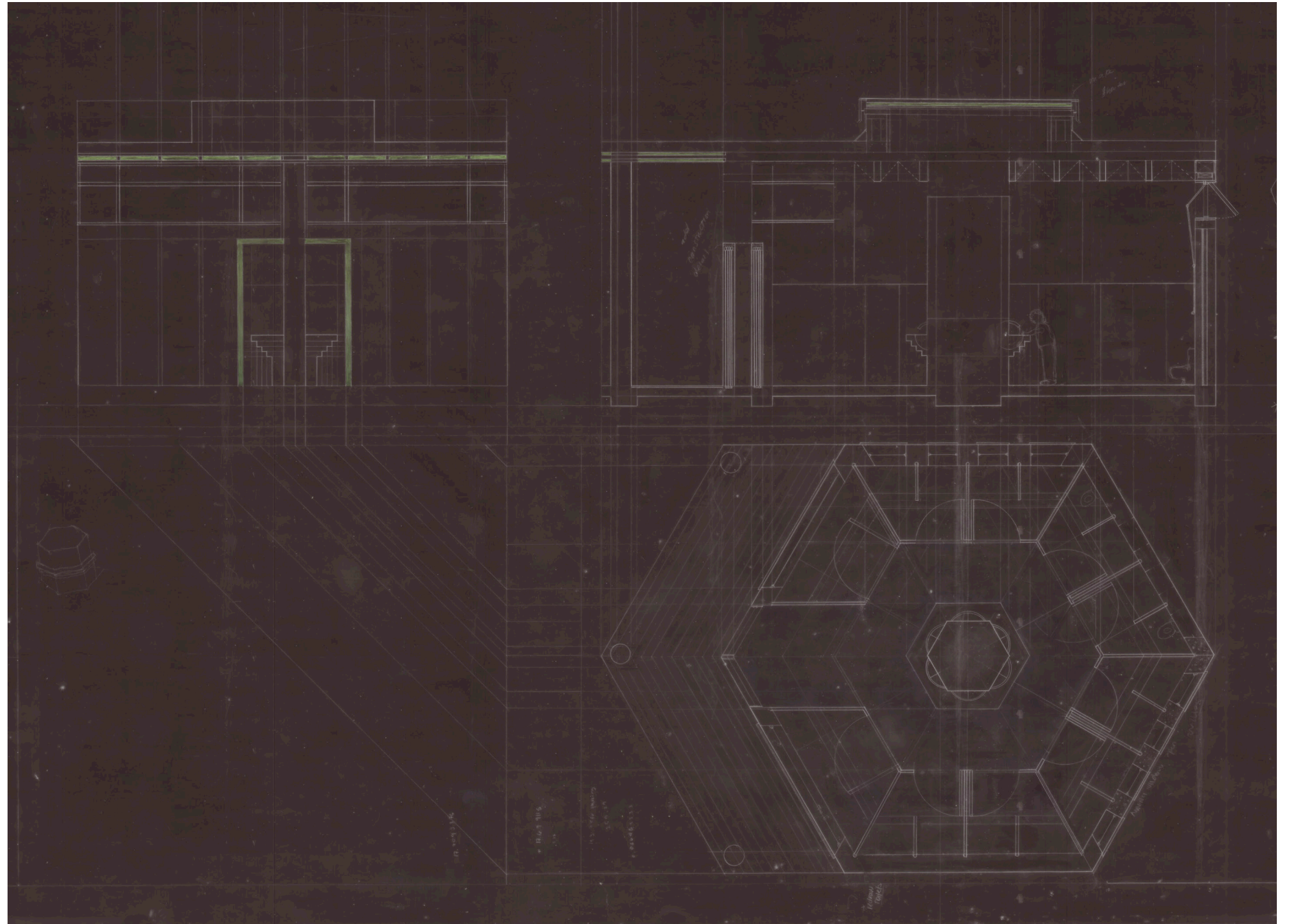
the restroom - w.c.

the bathroom was created with a large central column, with sinks on each flat side of the column. This is all attached to the main structure with a colored green skylight above.

The idea was to make the bathroom more “playful,” and inviting, emphasizing the geometry with a central washing area. Throughout the day, the colored skylight dyes the column a faded green color and heeds light on the formation of this geometry. The skylight is broken down into six triangles, which together form the classic hexagon design that mirrors the other rooms. Green was chosen as the most appropriate color to use here, as it represents cleanliness.

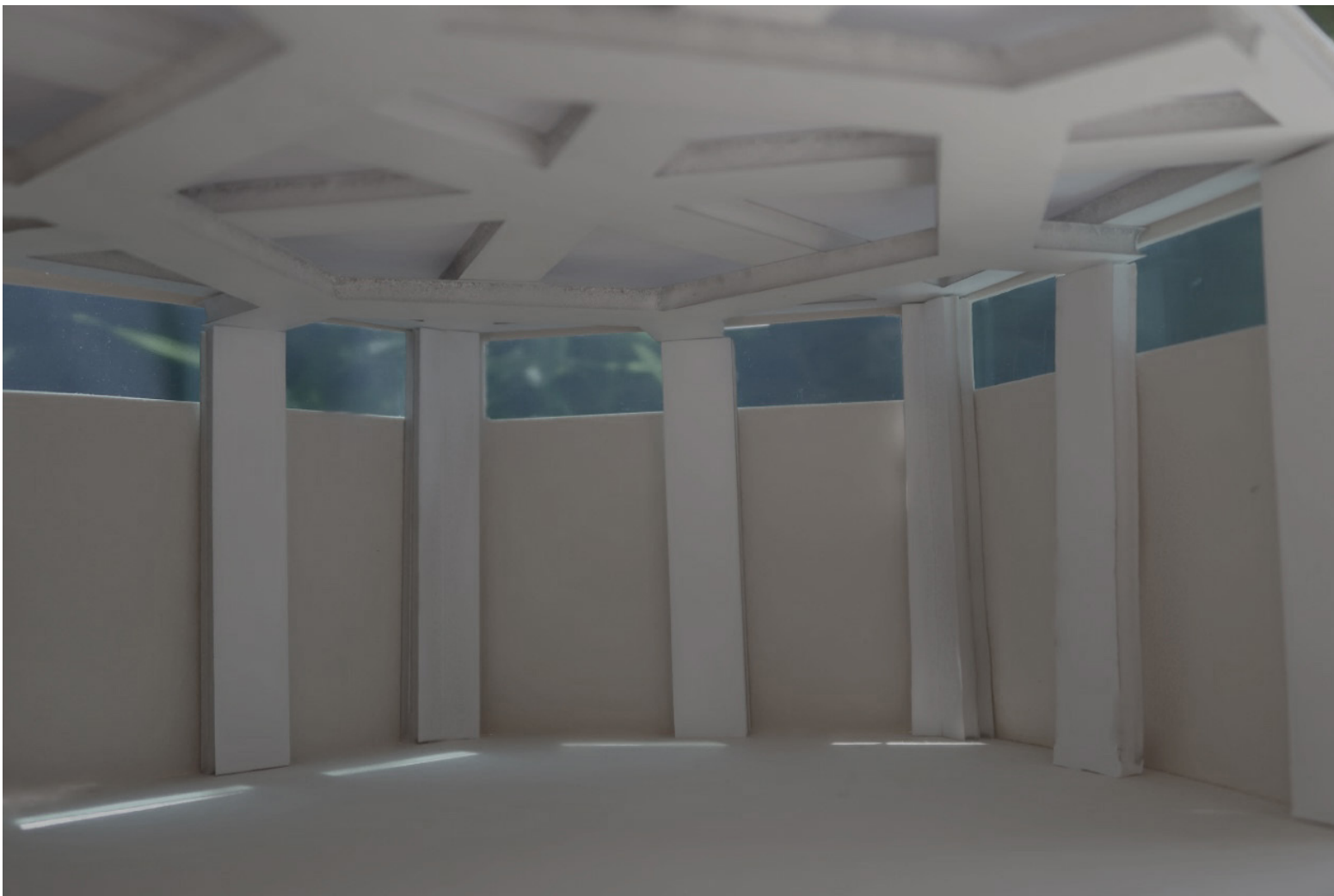
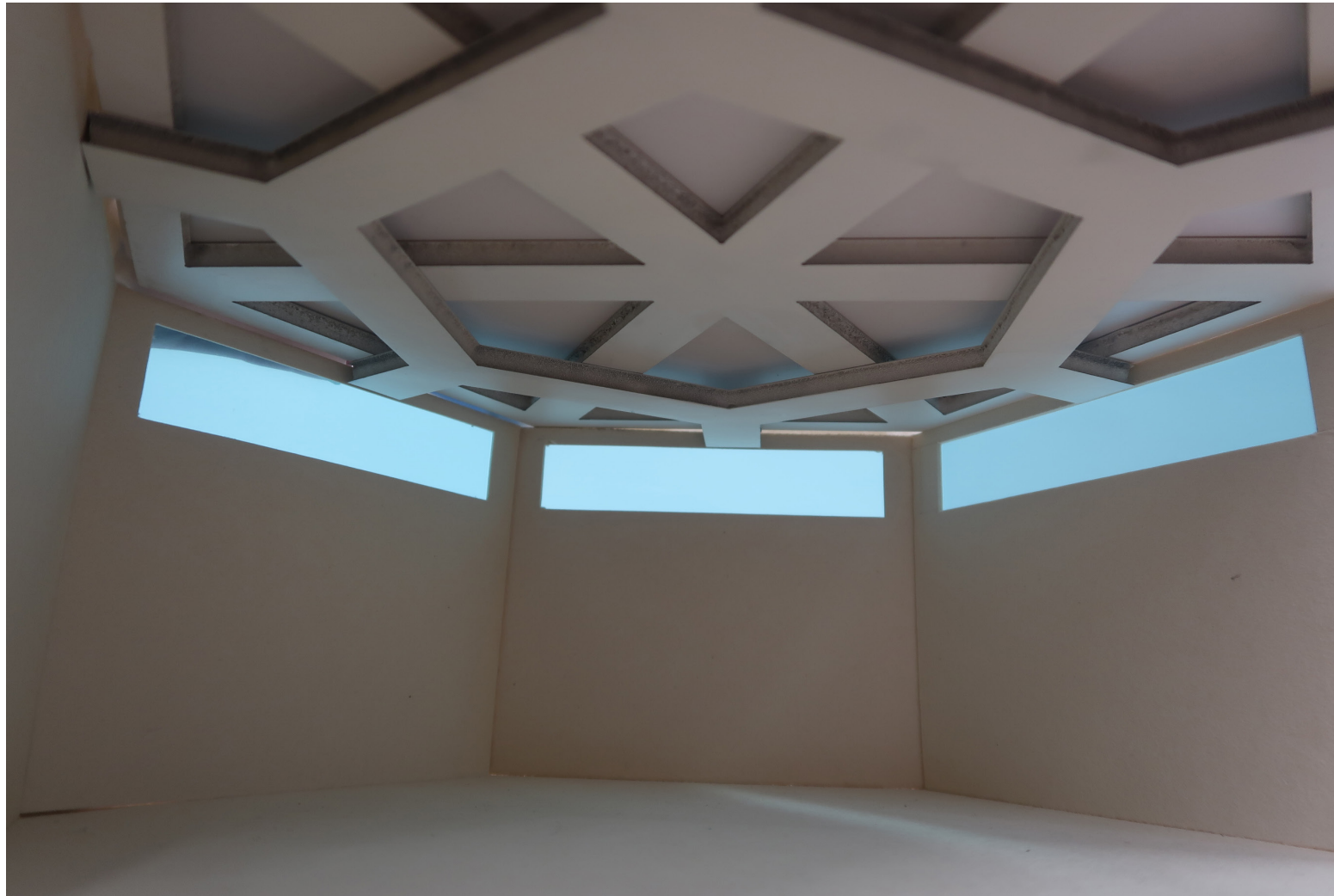
Clerestory windows with frosted glass allow sunshine and fresh air into the bathroom while maintaining privacy. The two stalls closest to the entrance area are larger; for children who use wheelchairs and staff. The idea is for the bathroom to have a more dramatic statement, as it is often a place children avoid; since it might disrupt their playing.





parallel projection
model interior views
24" x 36" grid: pencil on vellum (photoshop)

model photographs: interior + rooftop views



model study: interior view
low level activity class interior view (with and without extended columns)



model study: light and shadow
rooftop play area over low level activity classes.



model study: interior view
medium level activity class interior view.

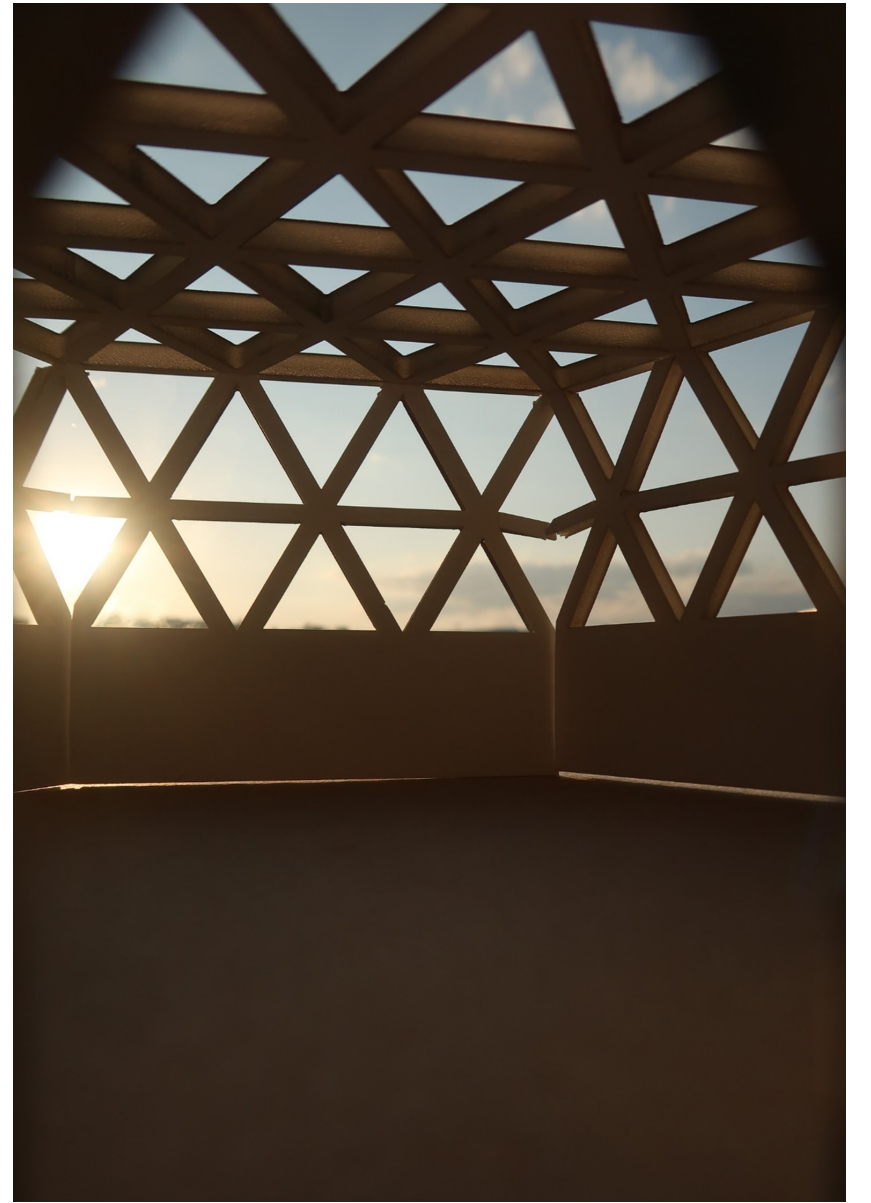


model study: light and shadow
rooftop play area over medium level activity classes.





model study: interior view
active class interior view.

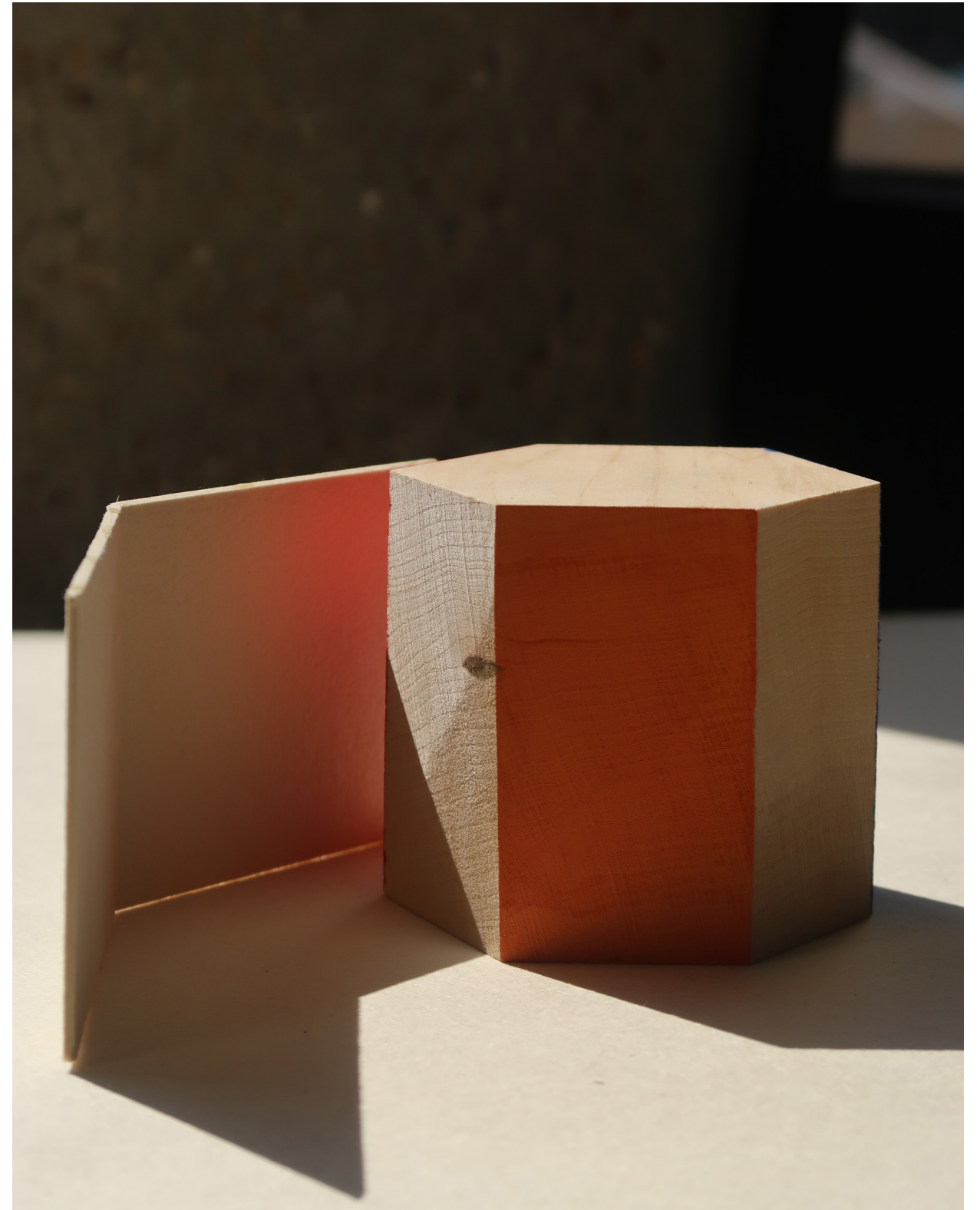
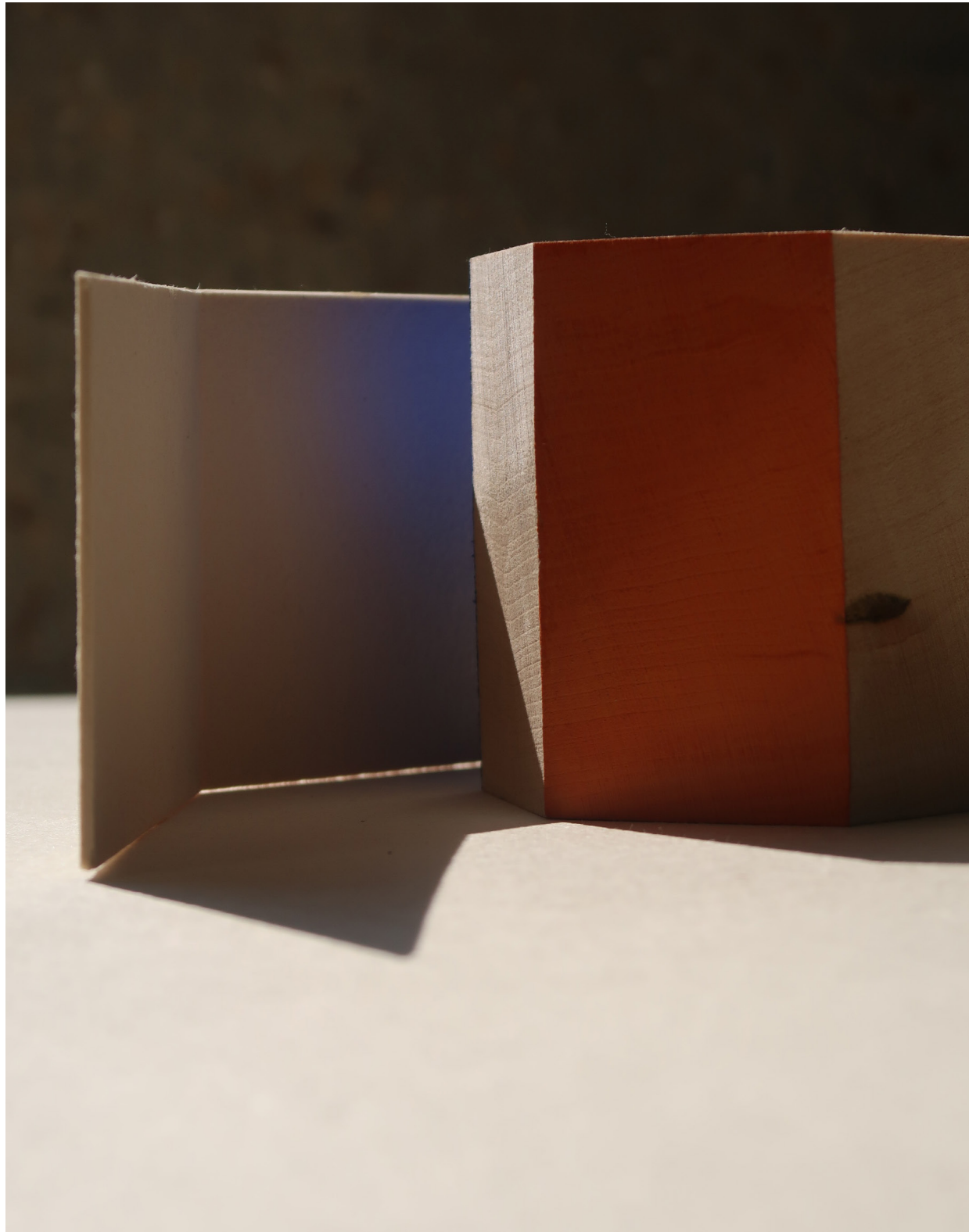


model study: light and shadow
rooftop play area over active level classes.

studies



pieces of an abstract work - inspired the idea of having large plexiglass wall panels placed on the entrance walls of the kindergarten so children could be greeted by their artwork but the wall also may be washed when necessary.

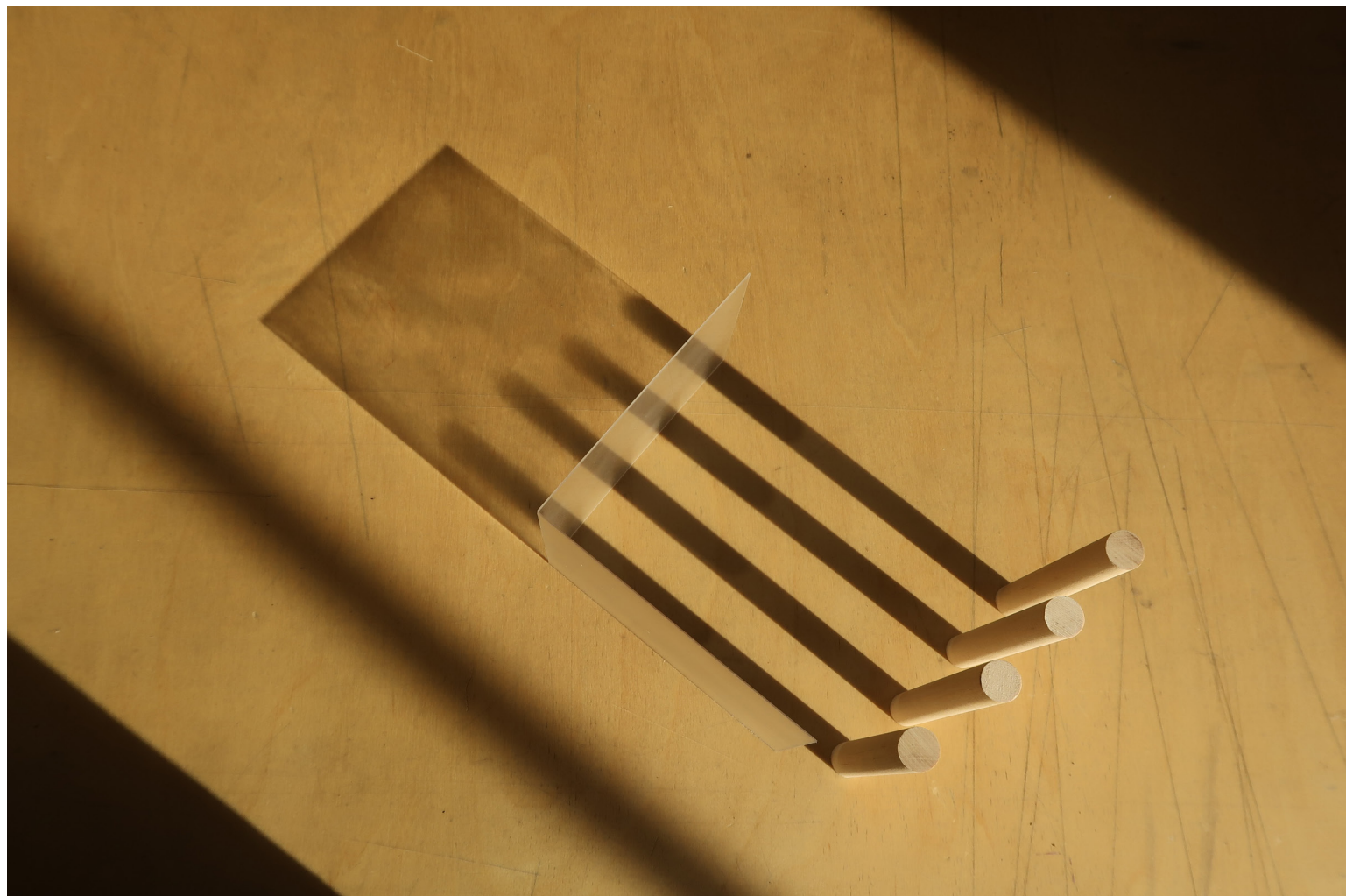
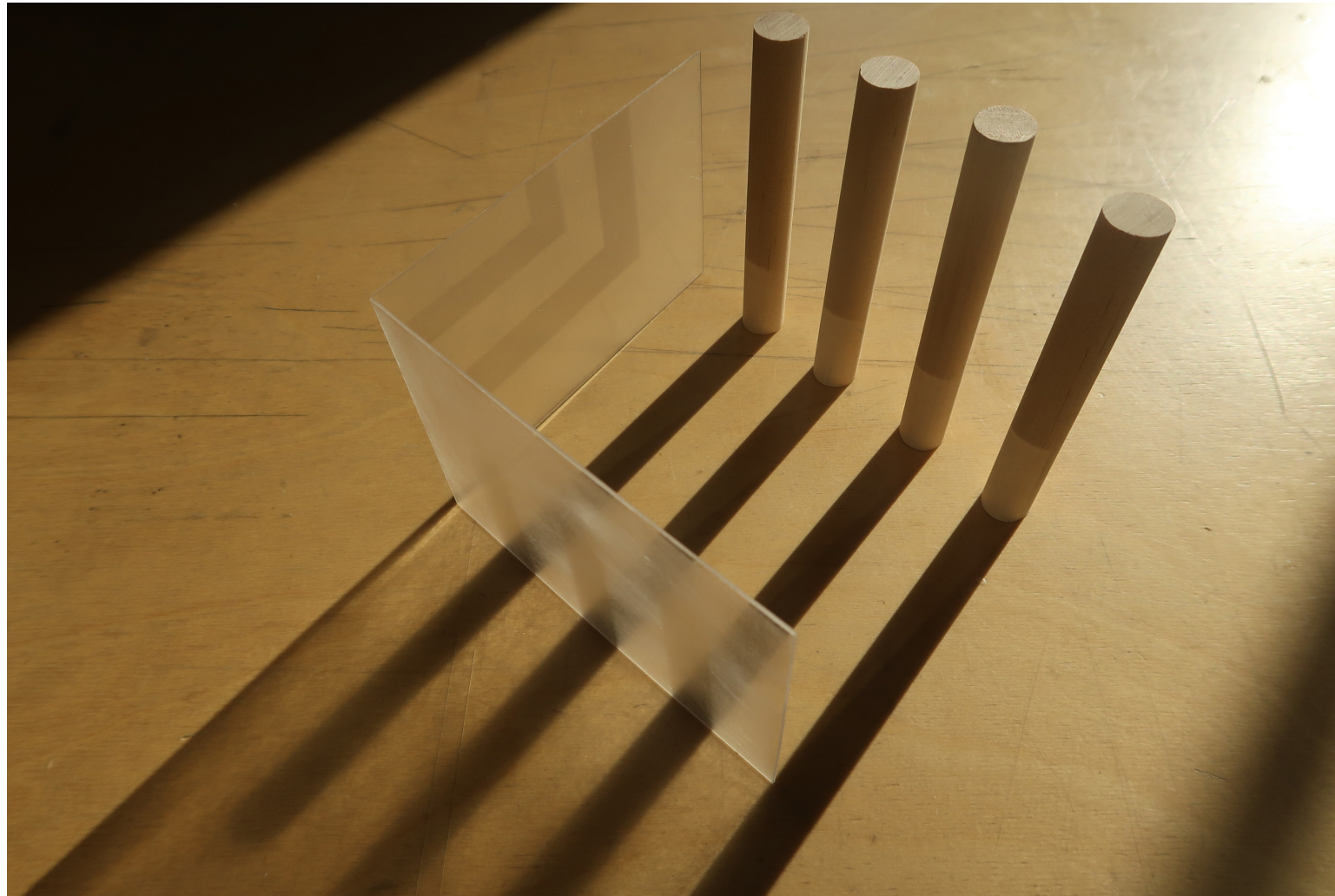


model study: color + light
used for protruding concrete hexagons
in sandy playground area as well as the
“secret entrance” connecting the reading
room / library to the nap room.



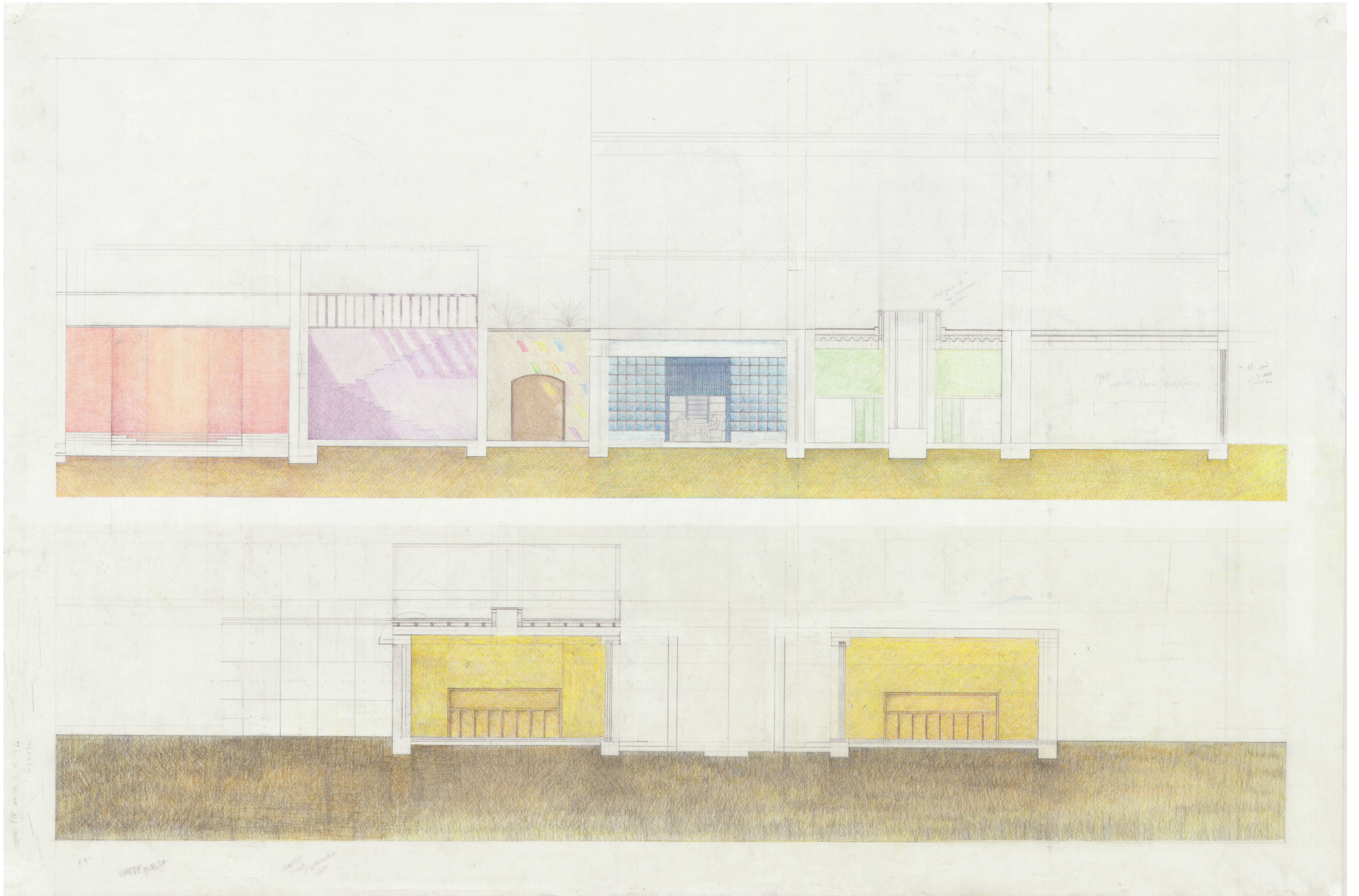
column + glass studies with light

the active classrooms let in large amounts of sunlight and are very transparent (columns create a distracting reflection), using frosted glass blurs the effect of the column.



column + glass studies with light
comparison of no frosted glass (with three columns) and no frosted glass.

early sketches + kindergarten visit



earlier sketch for kindergarten section
early sketch for kindergarten proposal classes
were changed after further studies and more
detailed plan layout.



kindergarten visit :
tomonoki-himawari kindergarten mamm design
inspiration was drawn from this kindergarten midway through thesis research. the kindergarten revealed how children interact with different spaces, and the value of transparency in classes.



list of figures

(all quotes cited by source)

abstract drawings

- | | | |
|---|-------------------------|--|
| 2 | abstract drawing 1 plan | 18"x24" colored pencil, graphite, charcoal, ink. |
| 6 | abstract drawing 2 plan | 18"x24" colored pencil, graphite, charcoal, ink. |
| 8 | abstract drawing 3 plan | 18"x24" colored pencil, graphite, charcoal, ink. |

symbols

- | | | |
|----|--------------------------|------------------------|
| 9 | circle + line = hexagon | autocad + illustrator. |
| 10 | three structural designs | autocad + illustrator. |

drawings

- | | | |
|-------|-----------------------------------|---|
| 15-16 | site plan + site plan closer view | 24"x36" x2 (24"x72") colored pencil, ink, soft pastel, photoshop. |
| 18 | detail plan - layered | 24"x36" grid: pencil on paper. + 24"x36" colored pencil, ink, soft pastel, photoshop. |
| 20 | plan + section : quiet room | 24"x36" pencil, colored pencil, soft pastel on paper, photoshop. |
| 21 | plan + section: active room | 24"x36" pencil, colored pencil, soft pastel on paper, photoshop. |
| 22 | plan + section : quiet room | 24"x36" pencil, colored pencil, soft pastel on paper, photoshop. |
| 24 | parallel projection | 24"x36" pencil, colored pencil on mylar, photoshop. |

sketches

- | | | |
|----|---|---|
| 41 | earlier sketch for kindergarten plan | 24"x36" pencil, colored pencil on paper. |
| 42 | earlier sketch for kindergarten section | 24"x36" pencil, colored pencil on vellum. |

models

- | | | |
|----------|--------------------------|---|
| 13-14 | mass model | basswood, lasercut chipboard, transparency color film plastic sheets. |
| 24 | restroom -w.c. | chipboard, lasercut foamcore, transparency color film plastic sheets. |
| 27-32,36 | interior + rooftop views | pulpboard, lasercut foamcore, transparency color film plastic sheets. |

studies

- | | | |
|-------|----------------------------------|--|
| 35 | pieces of an abstract work | screenprint on paper, softpastel, gouache, colored pencil. |
| 36 | model study: color + light | basswood, gouache (sanded). |
| 37-38 | colum + glass studies with light | basswood, plexiglass (sanded). |

photographs

- | | | |
|----------|------------------------|-------------------------------|
| 11-12,23 | color (blacksburg, va) | canon powershot g7 x mark ii. |
| 43-44 | kindergarten visit | canon powershot g7 x mark ii. |

