

# THE GREEN BOX

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Abstract



01-04

Comics



06-11

Site  
Analysis



12-15

EBD



16-17

Literature  
Review



18-21

Concepts  
Massing



22-29

Plan  
&Section



30-31

Engineering  
Drawing



32-33

# Abstract

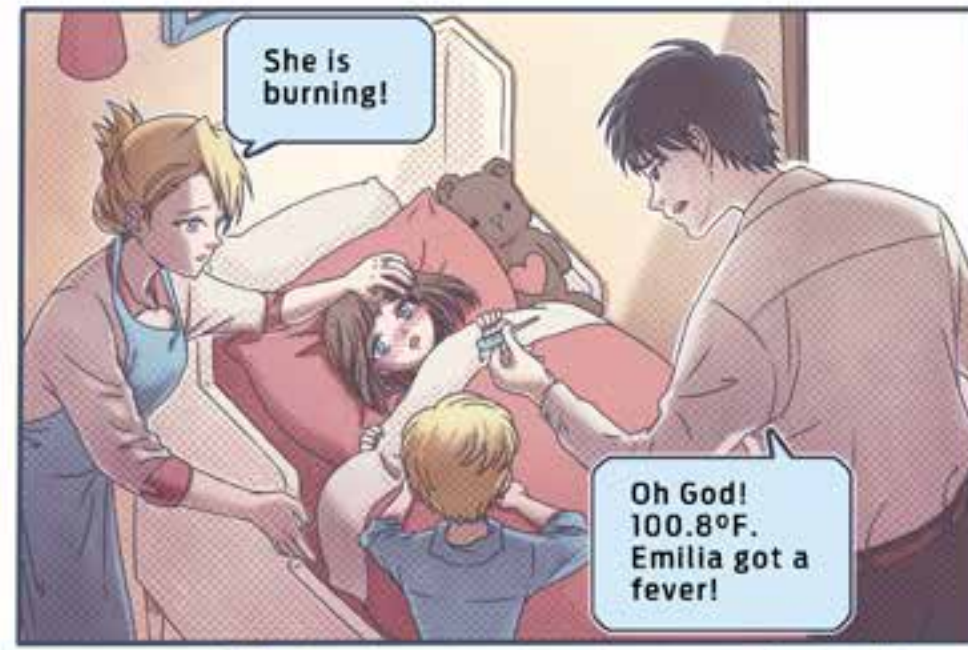
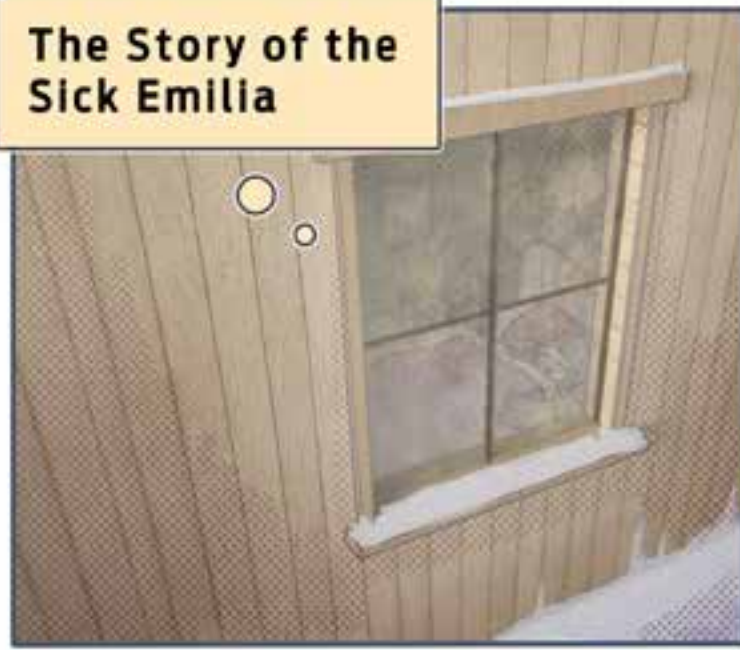
The project of 'Green Box' aims to propose a new pediatric hospital to solve the indigenous children health problems of Deptford Township, New Jersey. Based on the local medical condition, the project will be the first overall pediatric hospital in the town. Jeffrey S. Kent from Nemours provided the program of the project at the beginning of the process as well as the generous academic help.

The aim of the project is to provide enough medical space and service for the family with children in Deptford, NJ and maintain the long-term mental and physical health for children and their families. The design intends to provide children with public activity space, routine examination clinic, surgical space and emergency department. The site itself is located adjacent to a residential area of Deptford Township, New Jersey.

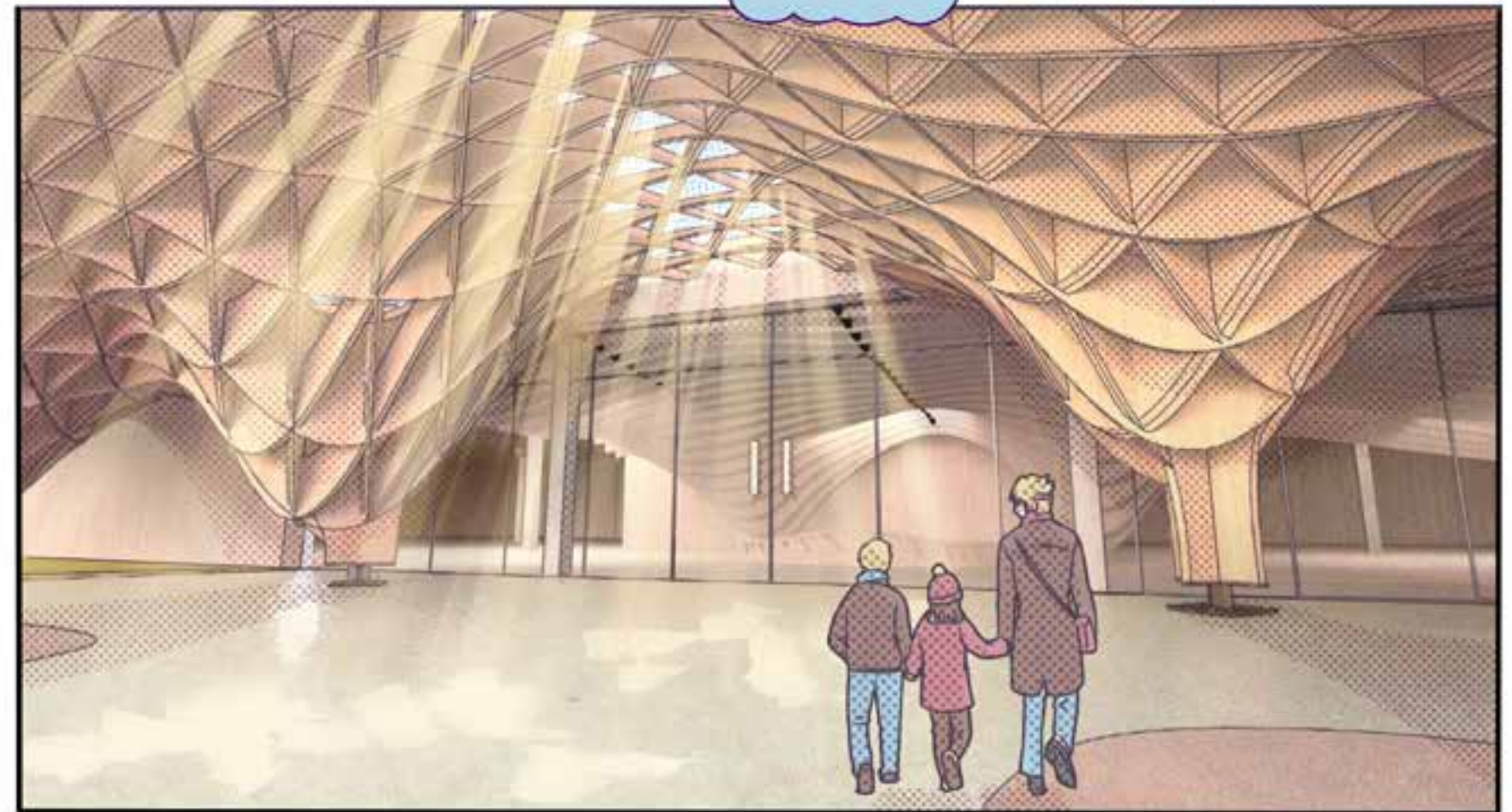


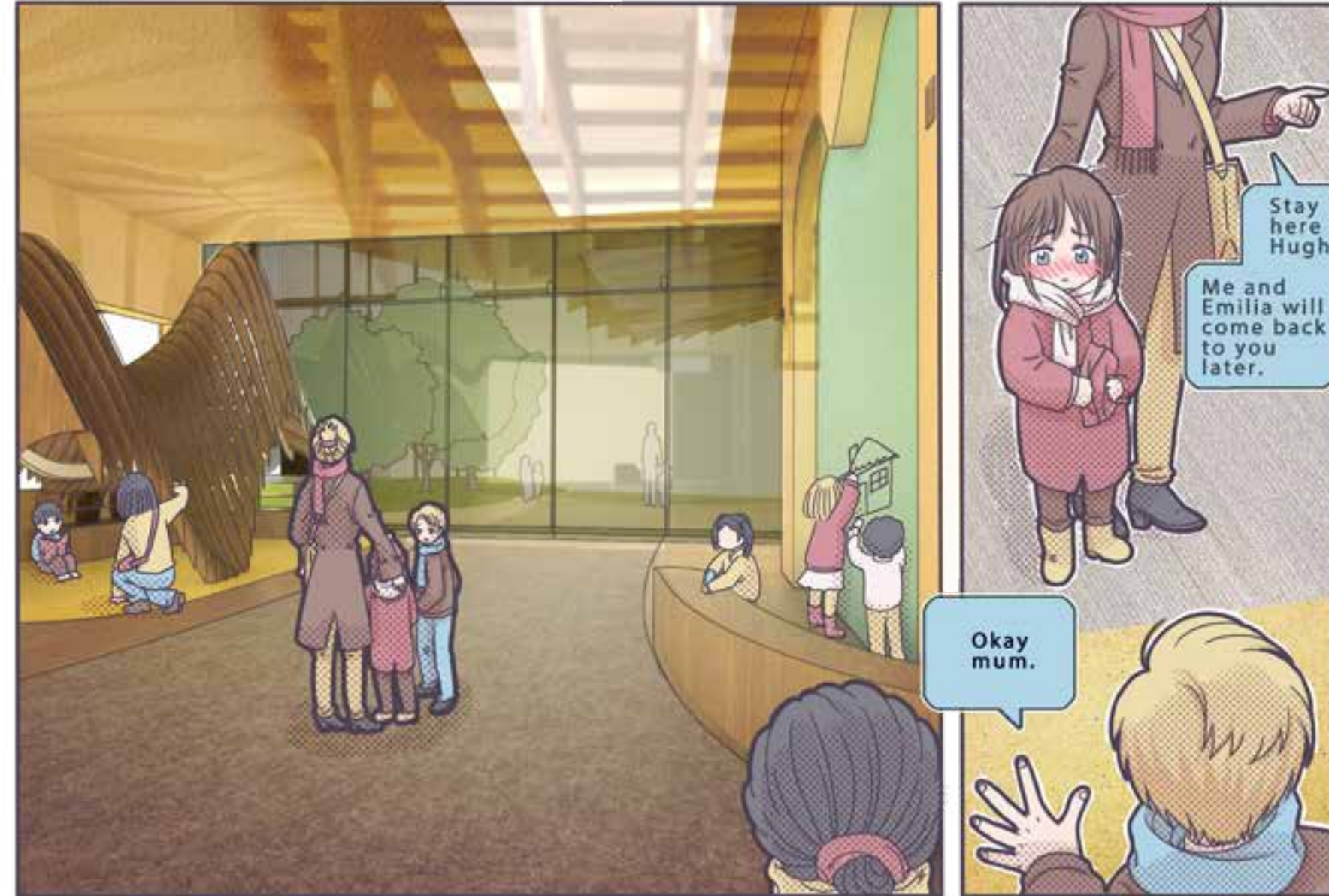
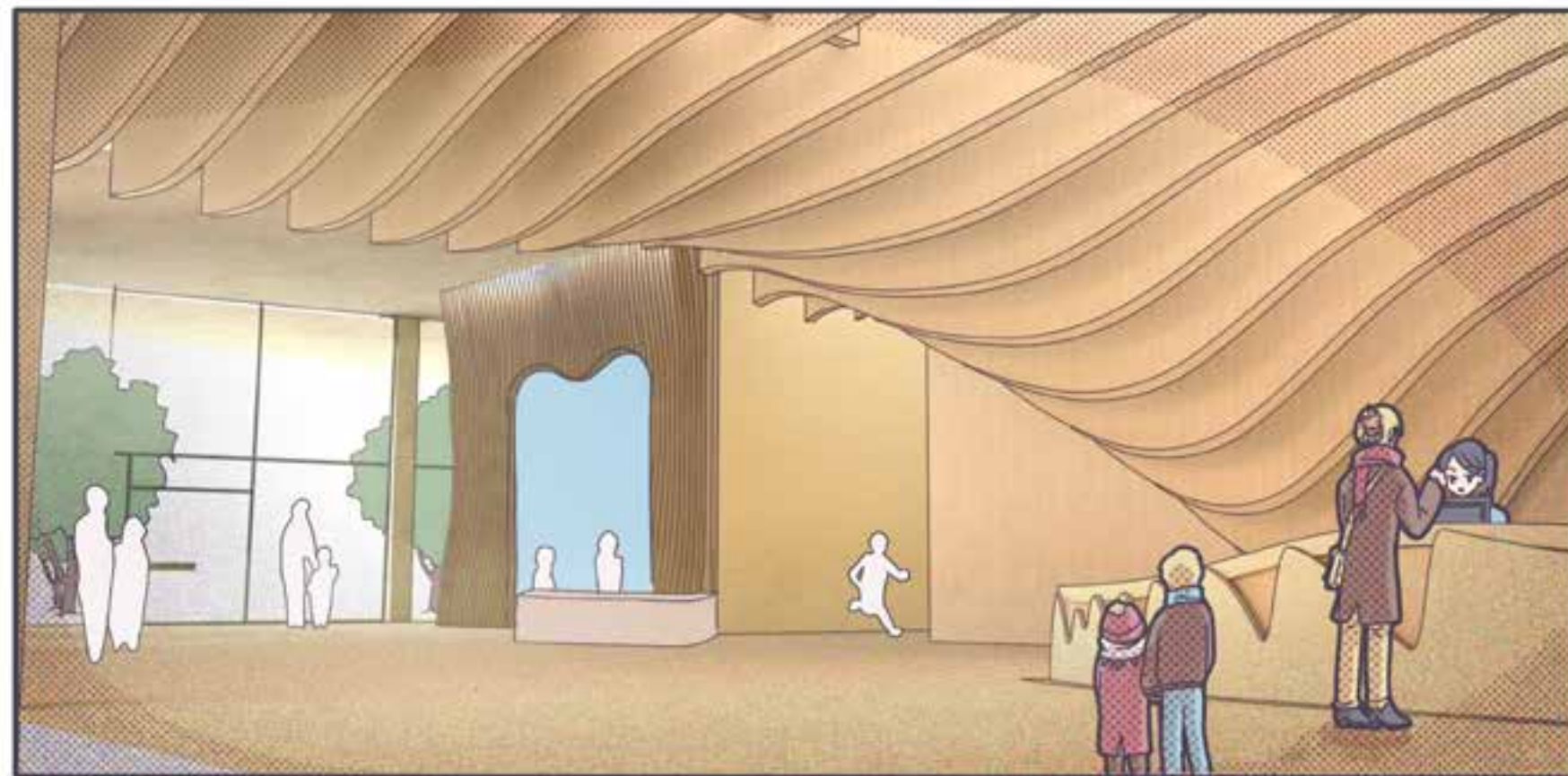
# The Story

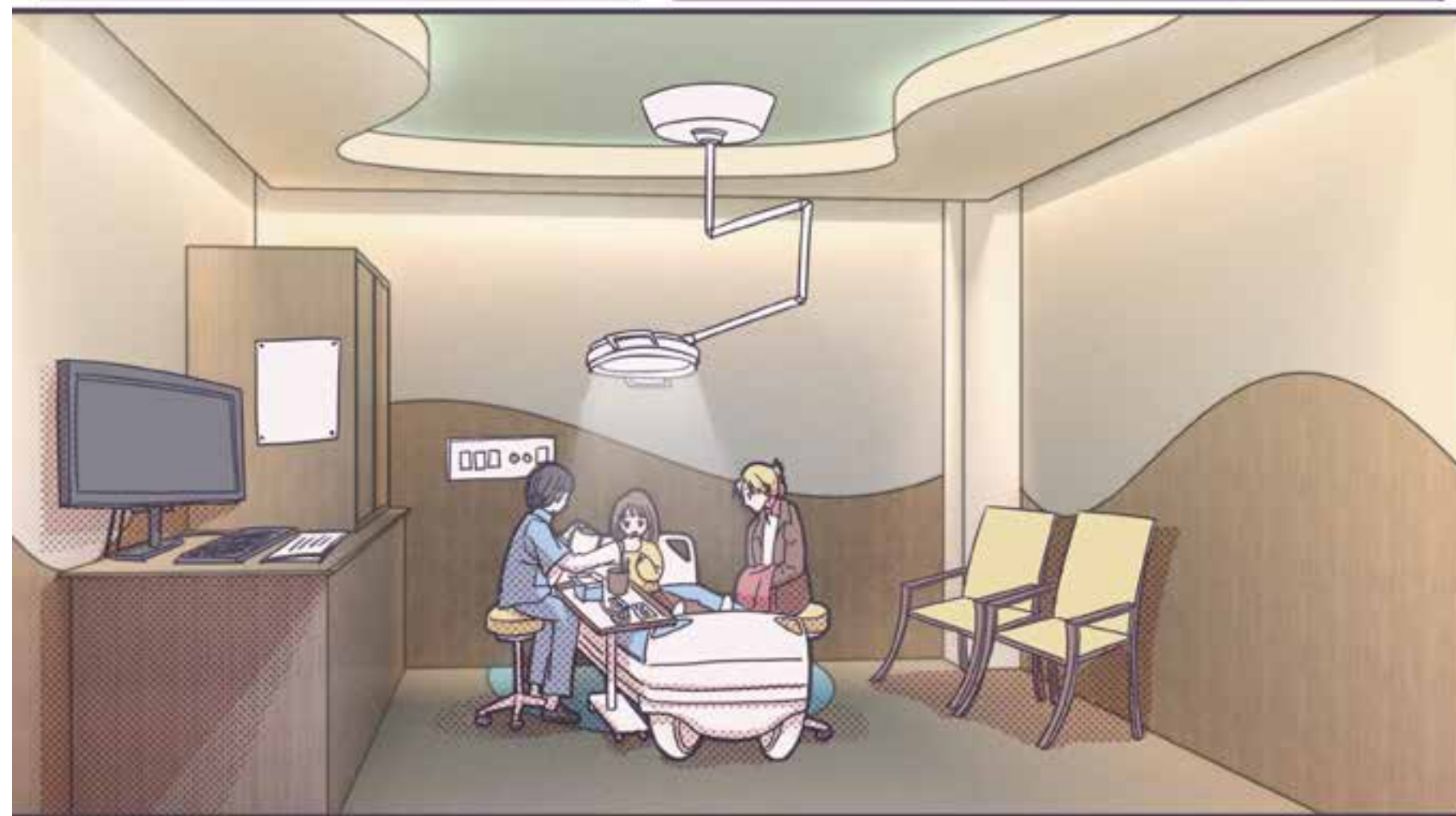
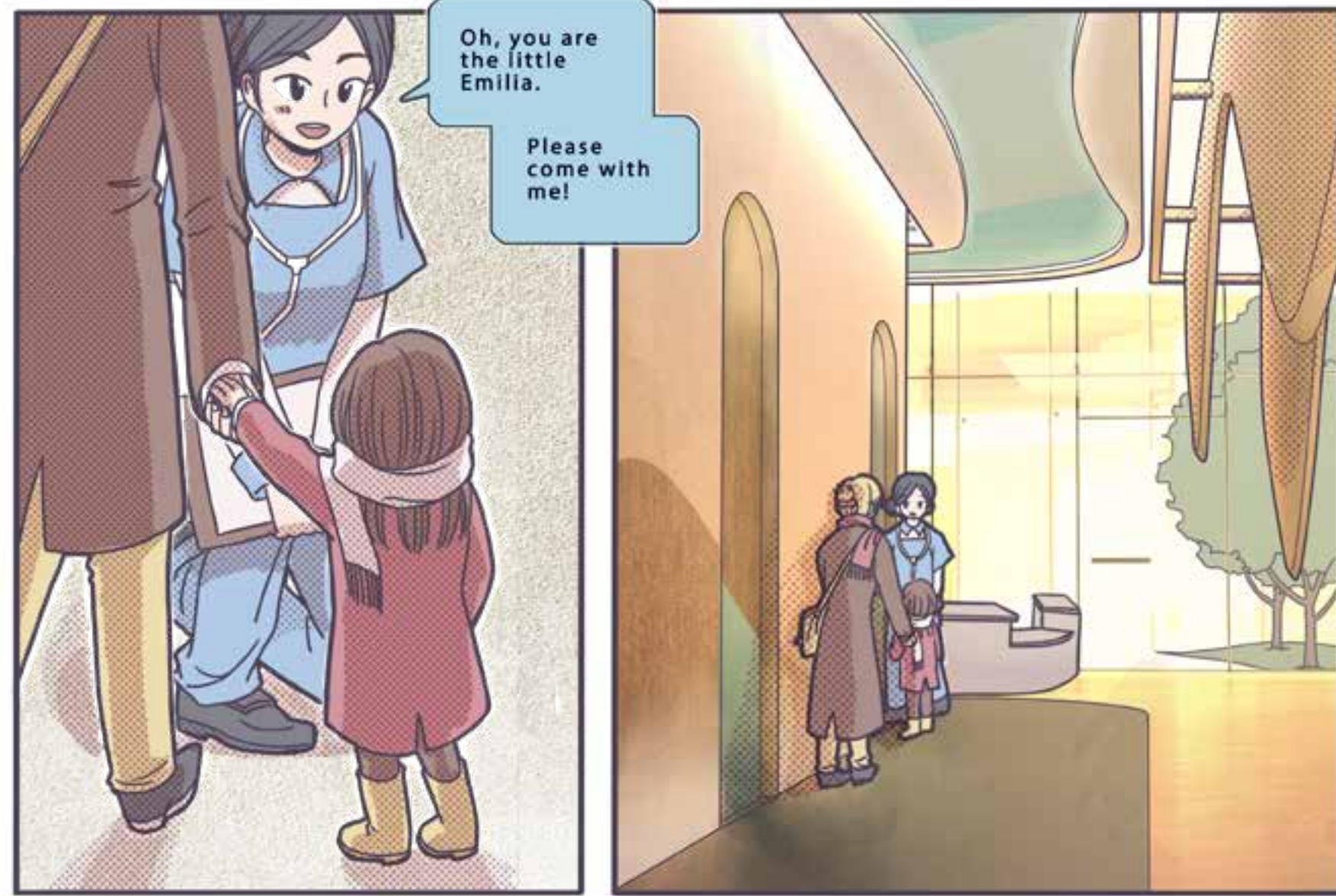
## The Story of the Sick Emilia



The hospital... No...  
Not this time again...  
The horrible white gowns and  
the sterilizers...







# SITE ANALYSIS

The project is provided by Nemours, Big Box Project, NJ. The original site is located south west New Jersey in Deptford Township. Surrounded by woods, the site is adjacent to several local neighborhood areas. The major purpose of the project is to provide the local families with the necessary medical treatment particularly for the children.

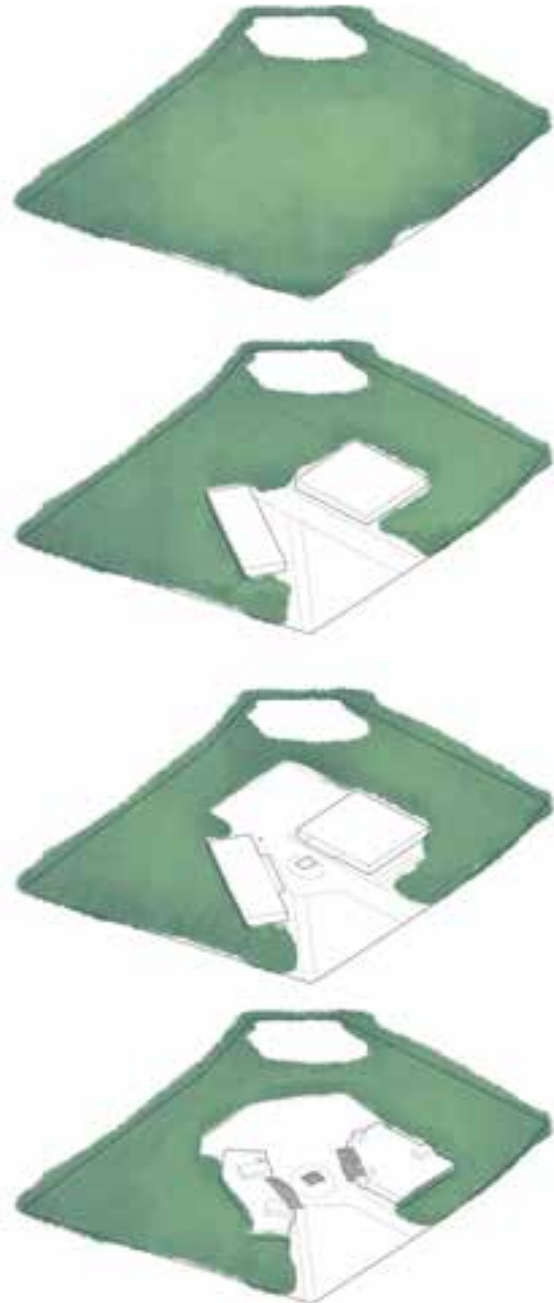


28° 50'31.18"N  
75° 9'12.16"W

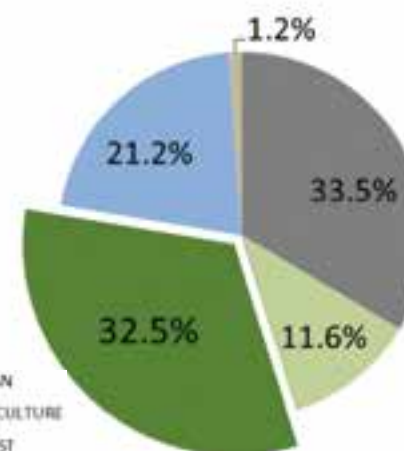


## Location

The program site is located near several residential clusters which are surrounded by woods. The township of Deptford does not have any overall pediatric center which means this project will be the first pediatric center in Deptford.



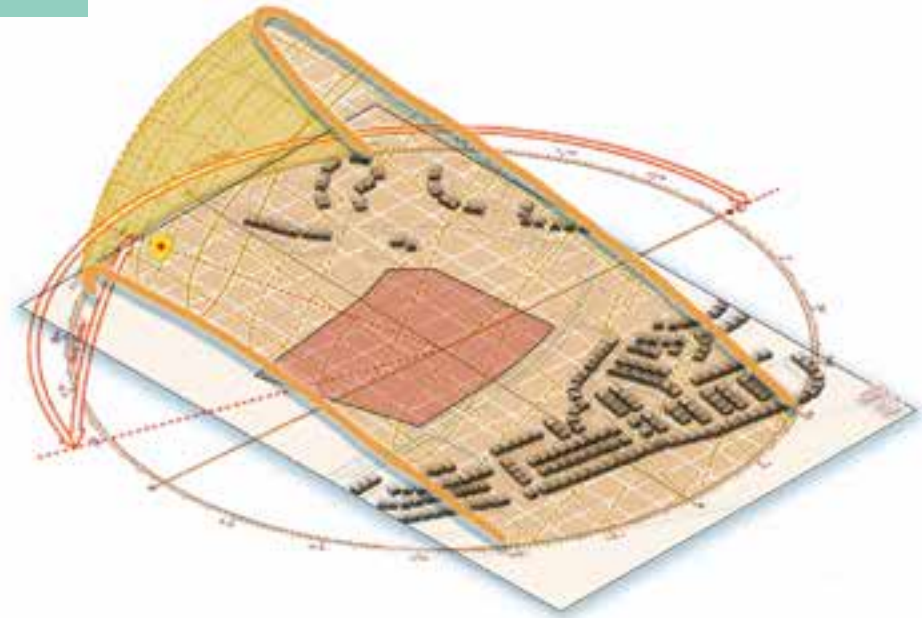
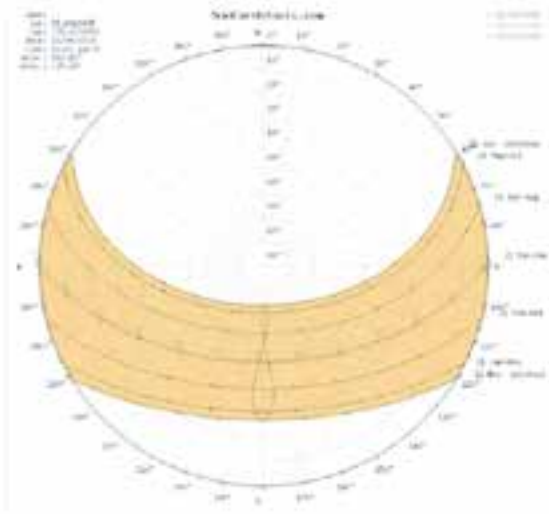
## The Local Woods



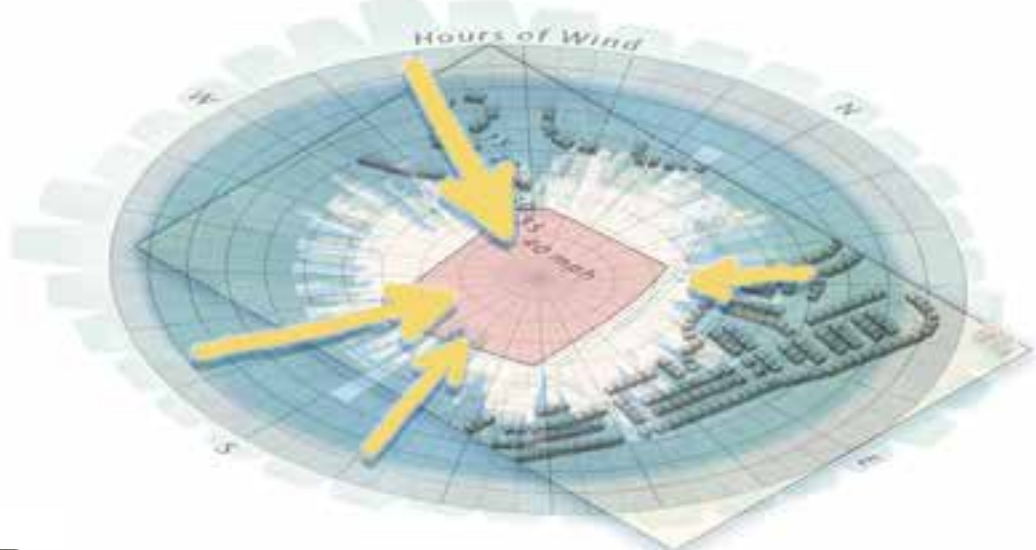
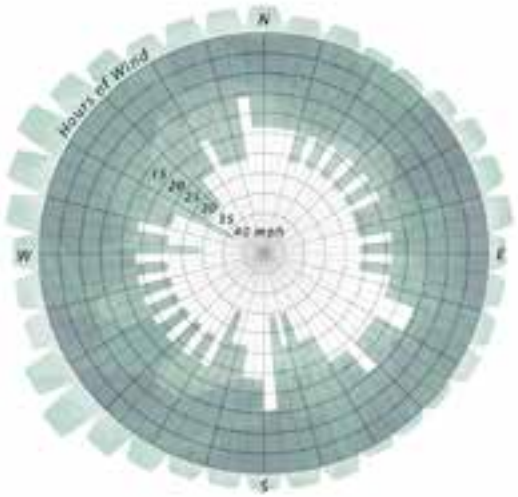
■ URBAN  
■ AGRICULTURE  
■ FOREST  
■ WETLANDS  
■ BARREN LAND



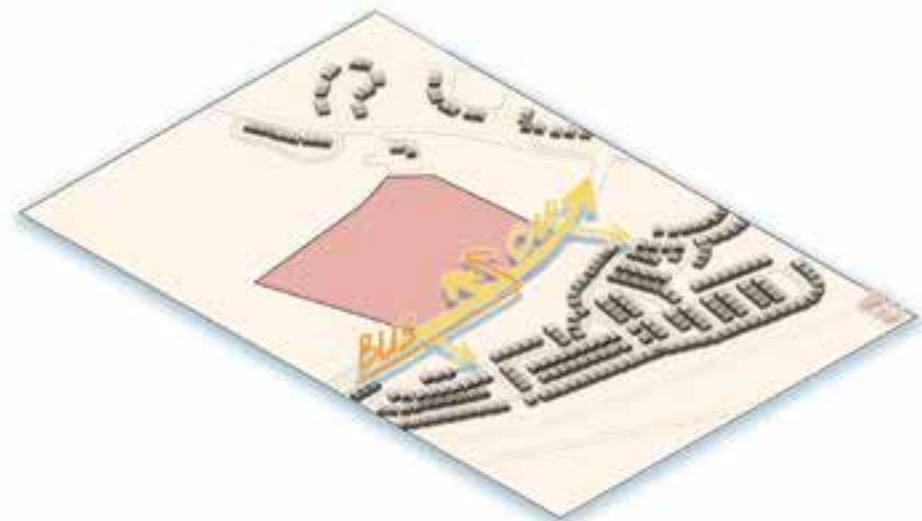
# Site Data



- Both shading and openings on the facade for sunlight access
- Consideration of better access to the light and outdoor playing area or the indoor with greenery and light



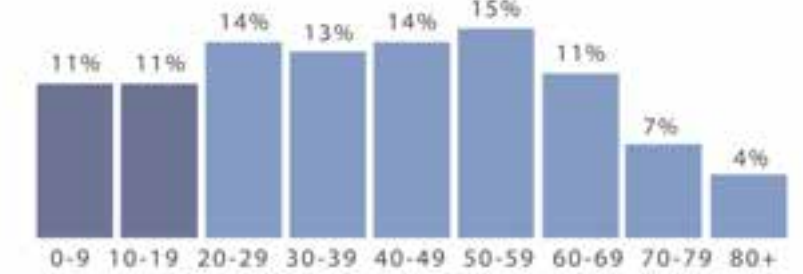
- Wind break to avoid wind tunnel
- Down-wind location for soiled utility picking-up



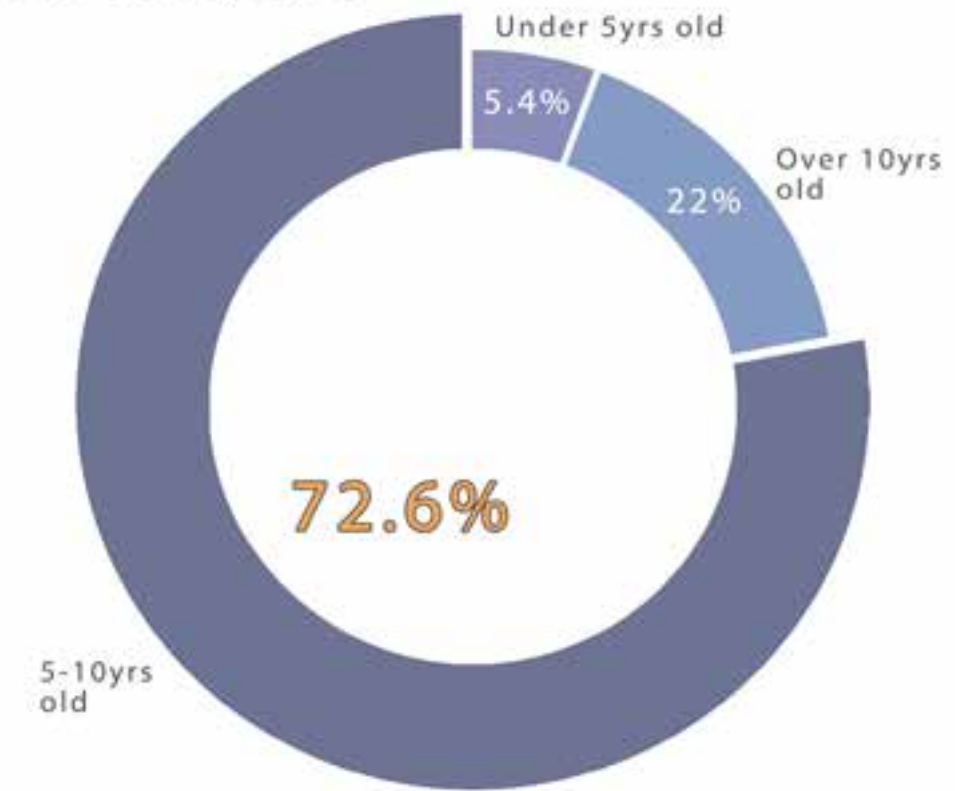
- personal vehicle
- future bus stops in walkable distance
- possible bus station near the site

# Demographic Data

Population by Age Range



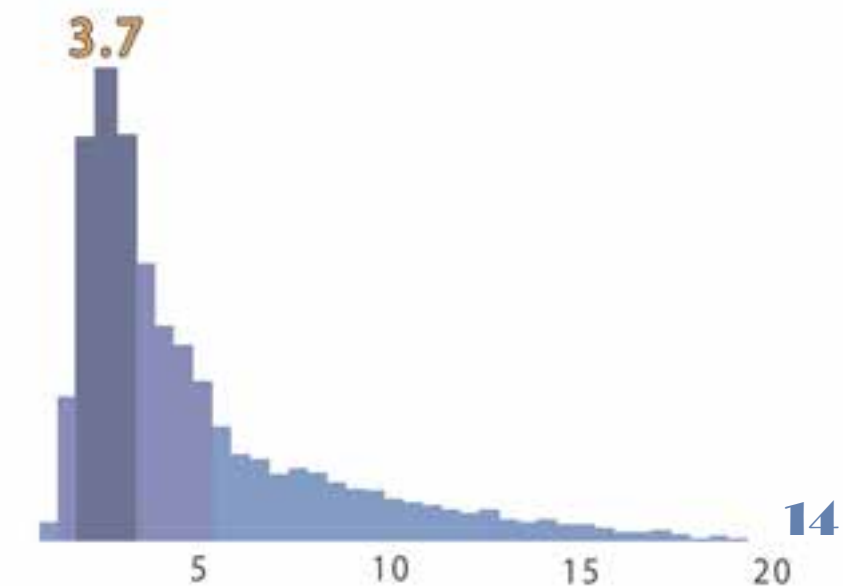
Percentage of Children Demographic



- 11% of the local residence are aged from 0-9 and 11% are 10-19. As a result, 22% of the population are children.
- The average size of the family in New Jersey is 3.3, which means children usually have siblings in the family.

Children are majorly ranged from 5 to 10 years old, which occupies 72.6% of the total children population. In design process, it is necessary to separate the proportion based on the needs.

Age of First Diagnosis of Autism in NJ



Average number of the local family are 3.3 which means children tend to have siblings. The majority of the children population is 22% while 72.6% of the children ranges from 5 to 10 years old (State of New Jersey, 2016). However, children in Deptford are facing serious mental issues and lack of preventive and routine care (State Health New Jersey, 2017)the



# EVIDENCE BASED DESIGN

*"Evidence-based design is a process for the conscientious, explicit, and judicious use of current best evidence from research and practice in making critical decisions, together with an informed client, about the design of each individual and unique projects."*

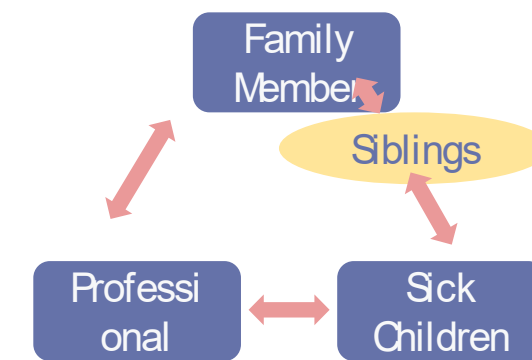
**How to improve long-term children's health with family-centered care by architecture design?**

## 01 Design with Family/ Sibling-Centered Care

## 02 Connection, partition and relationship for the public space in pediatric

## 03 Design for Children

Definition: Family-sibling centered care concentrates on providing sufficient medical help to not only the sick children but the family as a whole, especially including the siblings together into the treatment process.



- Architectural Scale:  
Children view and adult view
- Connectivity and Surveillance:  
Visually connections for orientation and mental comfort
- Aware of the openness and embarrassment
- Wayfinding, access and vertical integration:  
Assistance of maps, signs, landmarks, artworks, parents and "friendly people"
- Architectural associations:  
Distraction from the typical imagination of "hospital"
- Consumption and Distraction:  
Distract and delight children and family members

Proportion difference  
Visual difference  
Physical difference

## FAMILY-SIBLING CENTERED CARE

4 core for family-centered care:

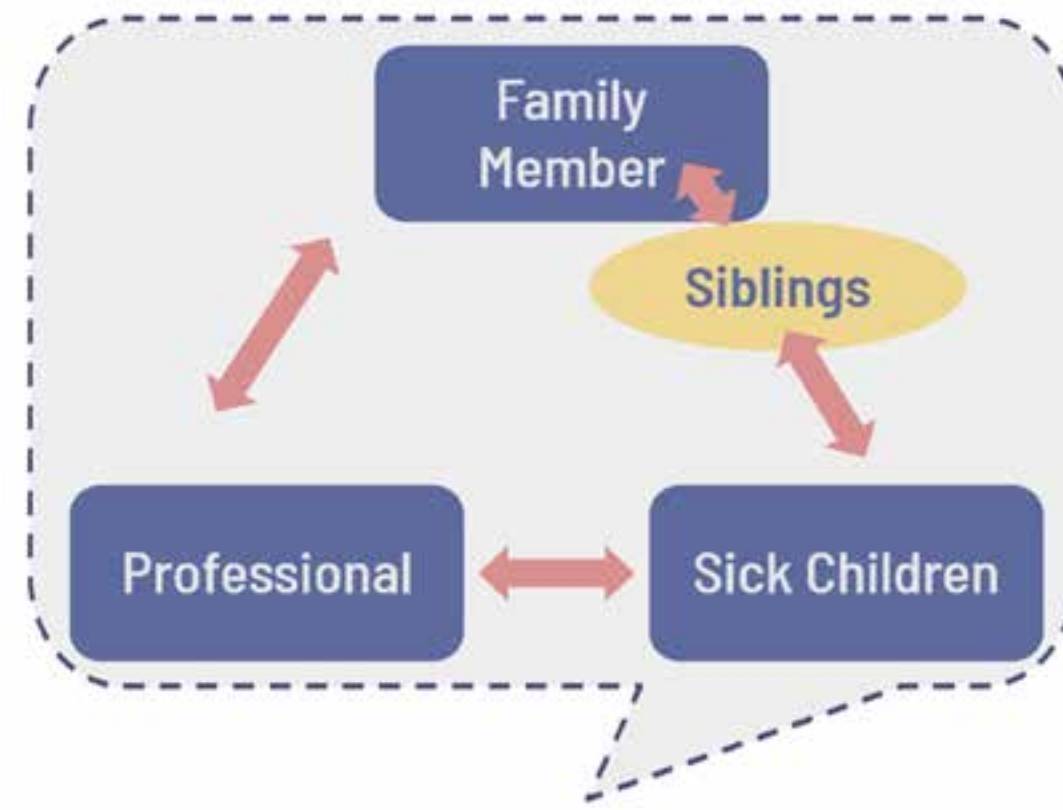
- Dignity and Respect
- Information Sharing
- Participation
- Collaboration

Emphasis on:

- Family-professional collaboration/ communication
- Family members and sick children communication
- Family-to-family collaboration network

Siblings help with hospitalized children/

- Siblings' mental health which having a sick children in the family
- Feelings of neglected by the parents which may result in sensitive and mental illness
- Overly concentrated by parents sometimes results in higher stress level of sick children
- Sibling companion helps to reduce stress level and recovering



In and Outside Relationships

- Access to nature helps both healthy and sick children

Contribute to physical and psychological health by reducing stress for the health children

Exposed to sunlight can effective against insomnia, premenstrual syndrome, seasonal affective disorder (SAD), melatonin precursor, serotonin, nature access helps building physical and mental strength especially for those under medical treatment , reduces stress, increases social interactions

and reconnects to the society

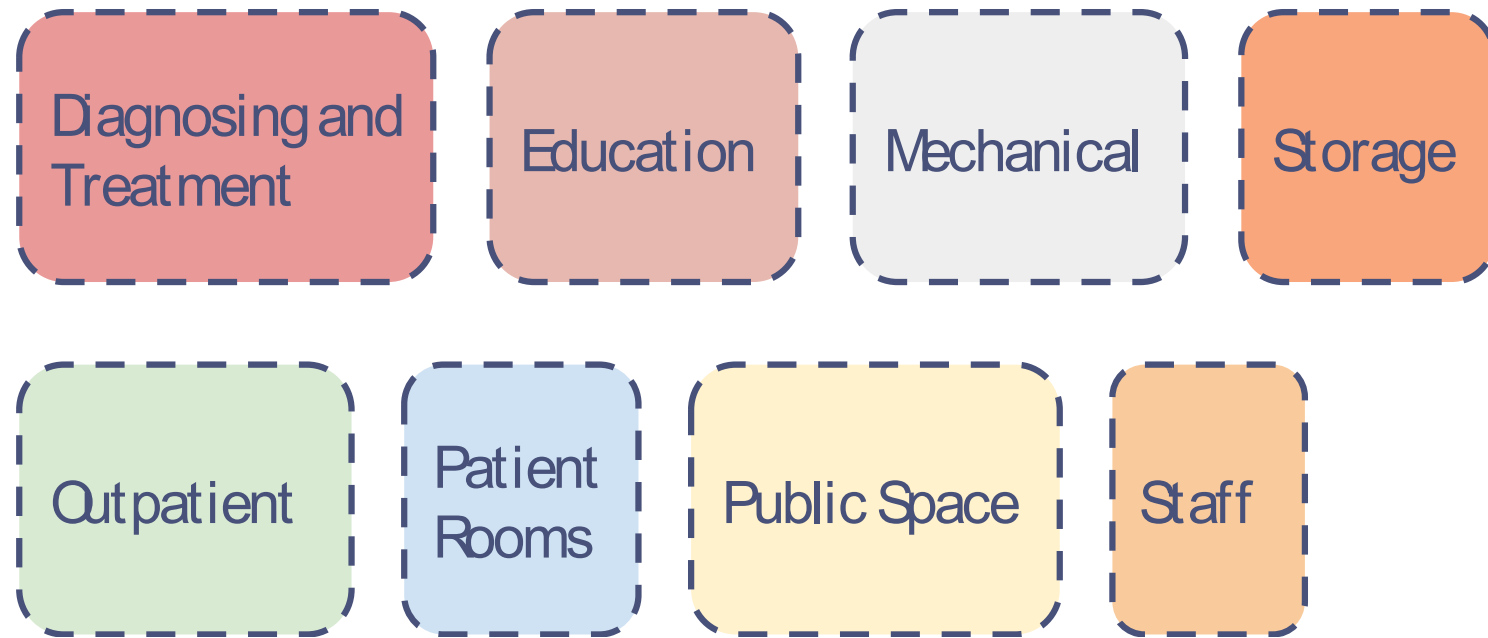
Three Levels of Nature Participation:

1. Active Playing Area:  
Green buffer around  
Small cluster
2. Walkable Area:  
Curved walkway  
Sitting area around  
Small green landscaping
3. View and Art



# Departmental Models

## Color Coding



## Routine Care:

- Clinic
- Pharmacy
- Sleep medicine
- Alternative medicine
- Gym
- Community Space

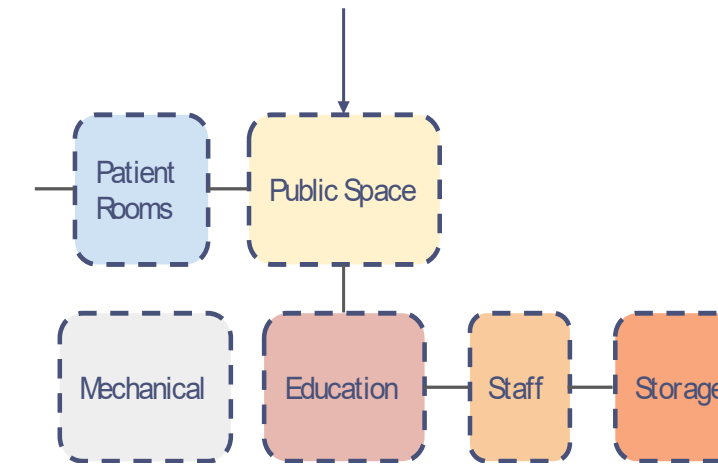
## Medical Care:

- Surgery
- ED
- Audiology
- Imaging
- Infusion
- Lab

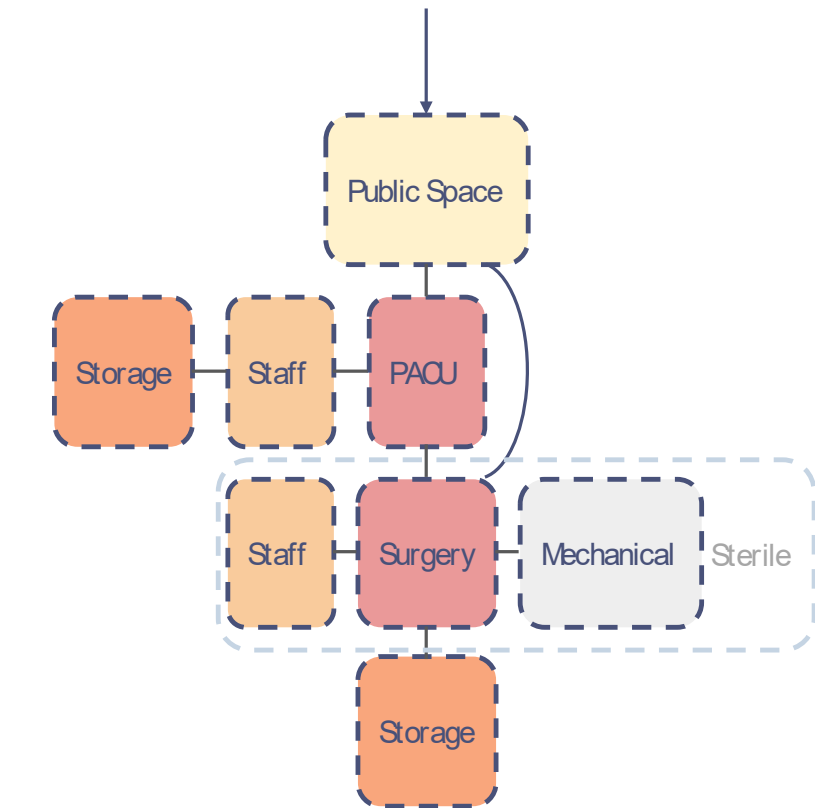
## Alternative Care:

- Public playing outside
- Public playing inside
- Sub playing area

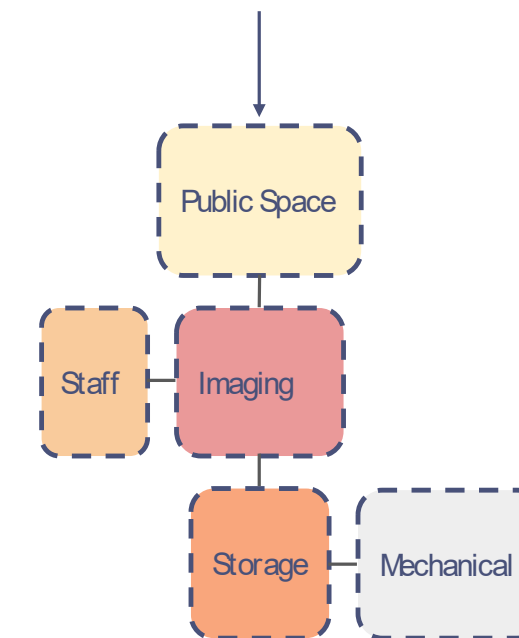
## Clinic Department



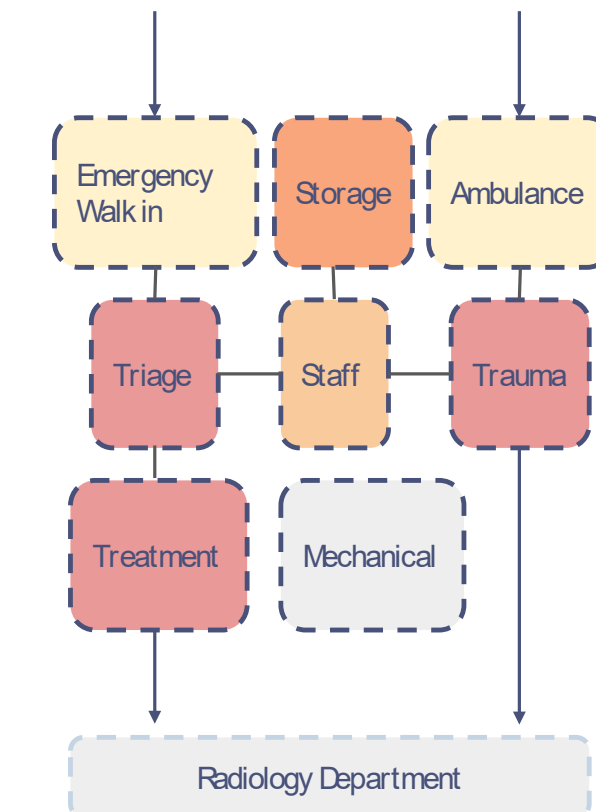
## Surgical Department



## Imaging Department



## Emergency Department



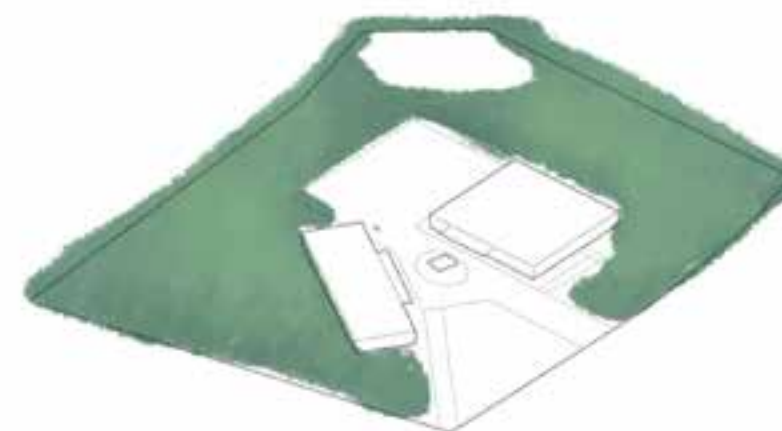
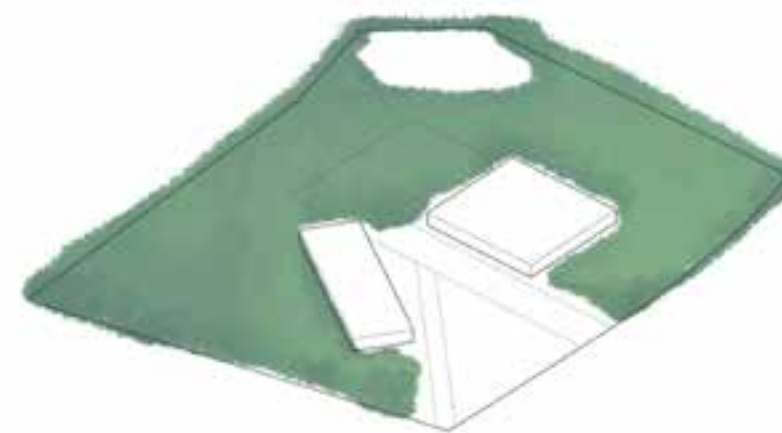
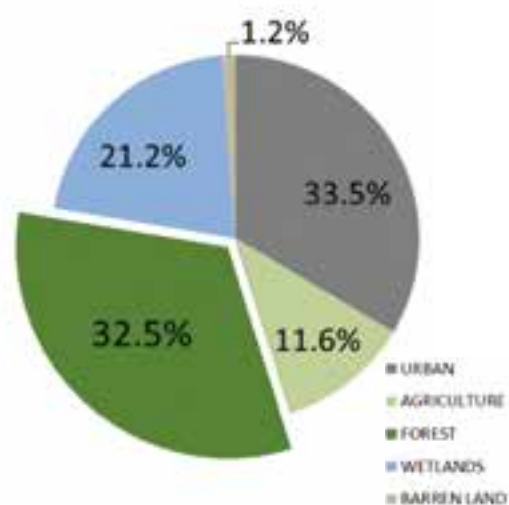
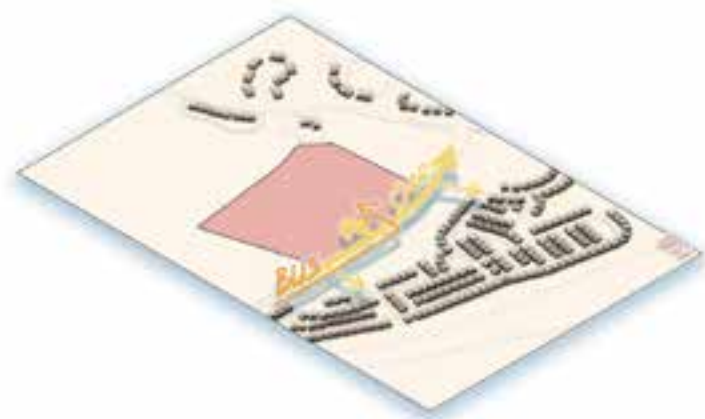
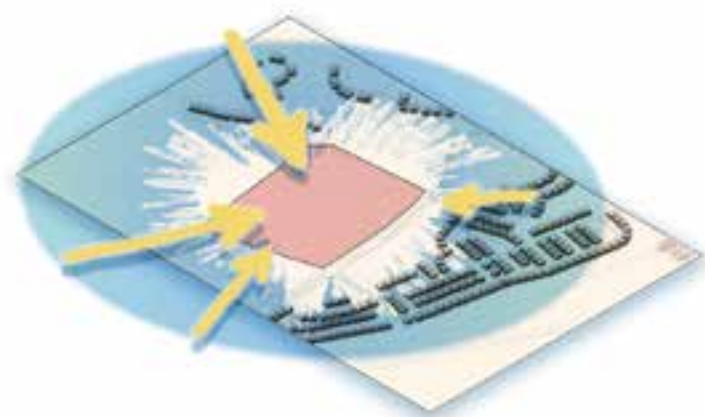
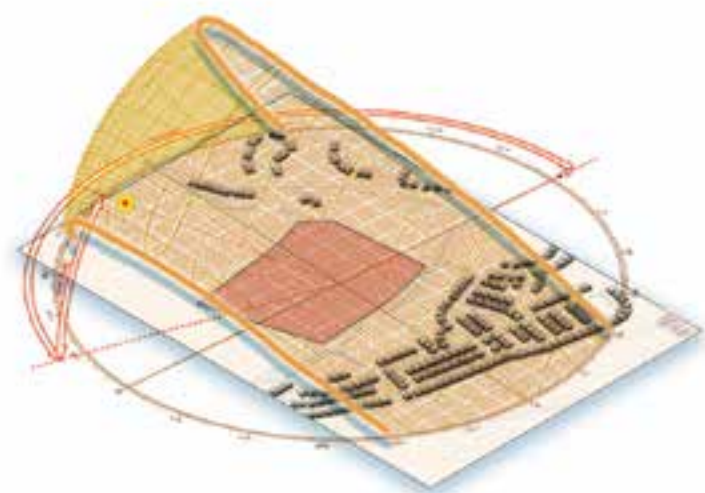
# Massing Development

To tackle with these climate challenges, the first concept 'Lanterns', which means the visual attraction and mental comfort during the cold long New Jersey winters, is proposed. By have these translucent building block inserting into the main block, the workstations and offices could be proposed around them as an alternative wayfinding solution and positive visual distraction(Pasha and Samira, 2011).

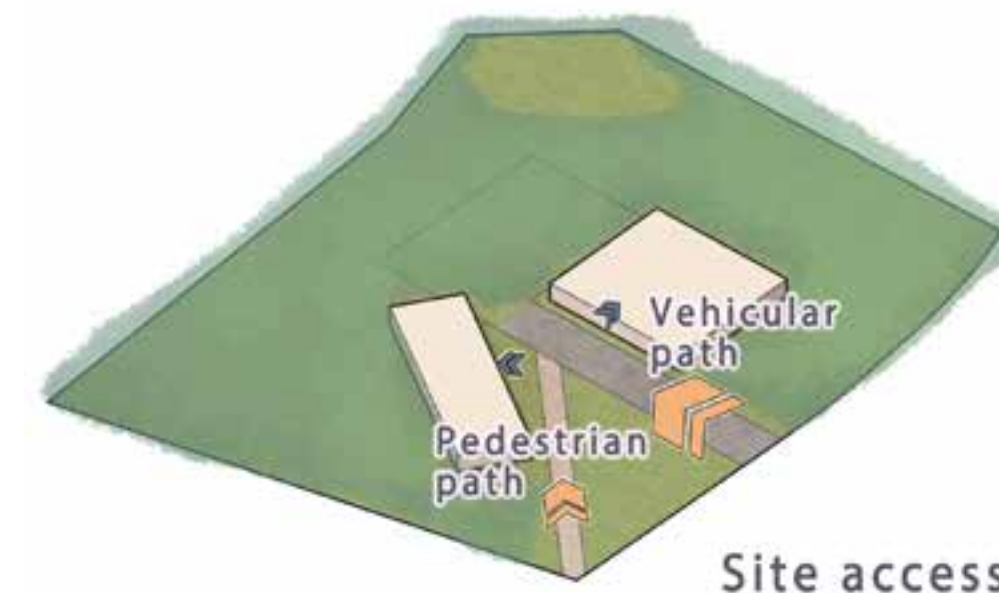
## Trees Removed from the Site

$(43560/5*6)*34$   
=49368 trees got removed

Number of Trees per Acre = 43,560 /  
[[ spacing between trees in feet for  
direction 1 ) X ( spacing between  
trees in feet for direction 2 )]



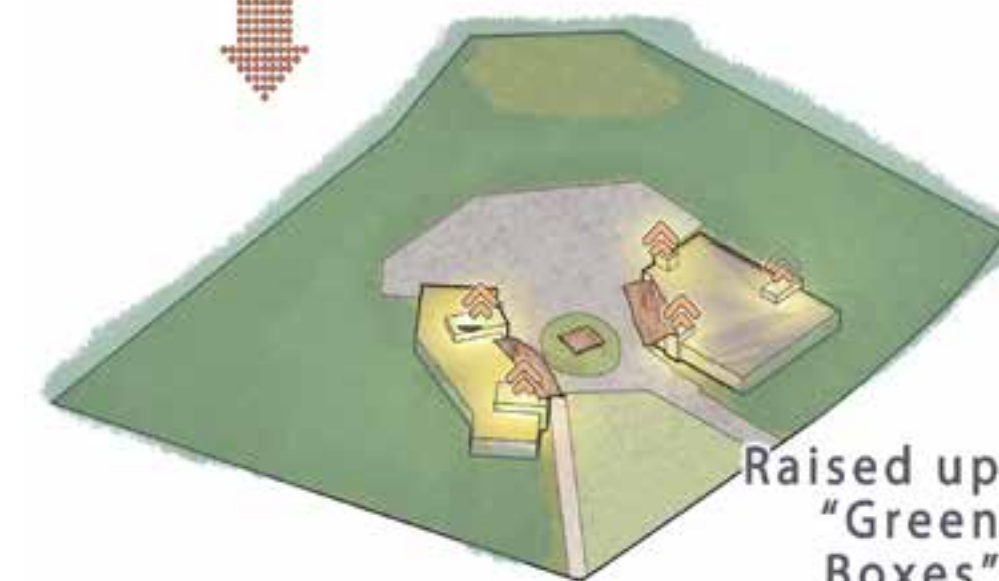
## Departmental Models



Site access



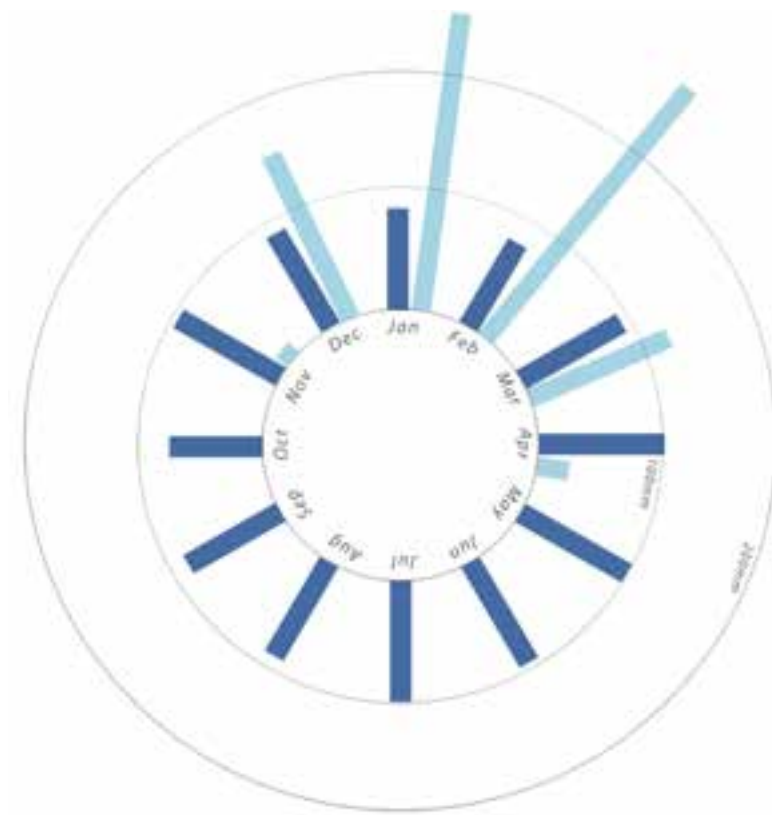
Site nodes



Raised up "Green Boxes"

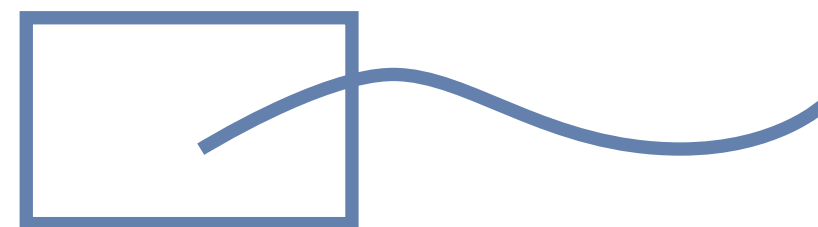
# THE GREEN BOX

The climate of the New Jersey has cold long winter and relatively hot summer while the modest spring and autumn is short. Short daytime during winter could also be major contributor to the mental depression. Since the site currently is empty, the wind tunnel becomes a severe problem. As a result, certain wind breaks in the center of the site in order to break the tunnel is necessary. Also, soil utility collection should be located at the downwind and place easily accessible to the outside collection.



Long winter and the snow covering contribute to some of the children physical wellbeing problems and mental issues. The concept of "Lanterns" means not only the visual attractions in the night times, but also as sort of mental comforts and shelters for those who are needed in the tedious winters.

Typologically speaking, the main shapes for the elevation will be the organic canopy system with the regular-boxed lanterns.



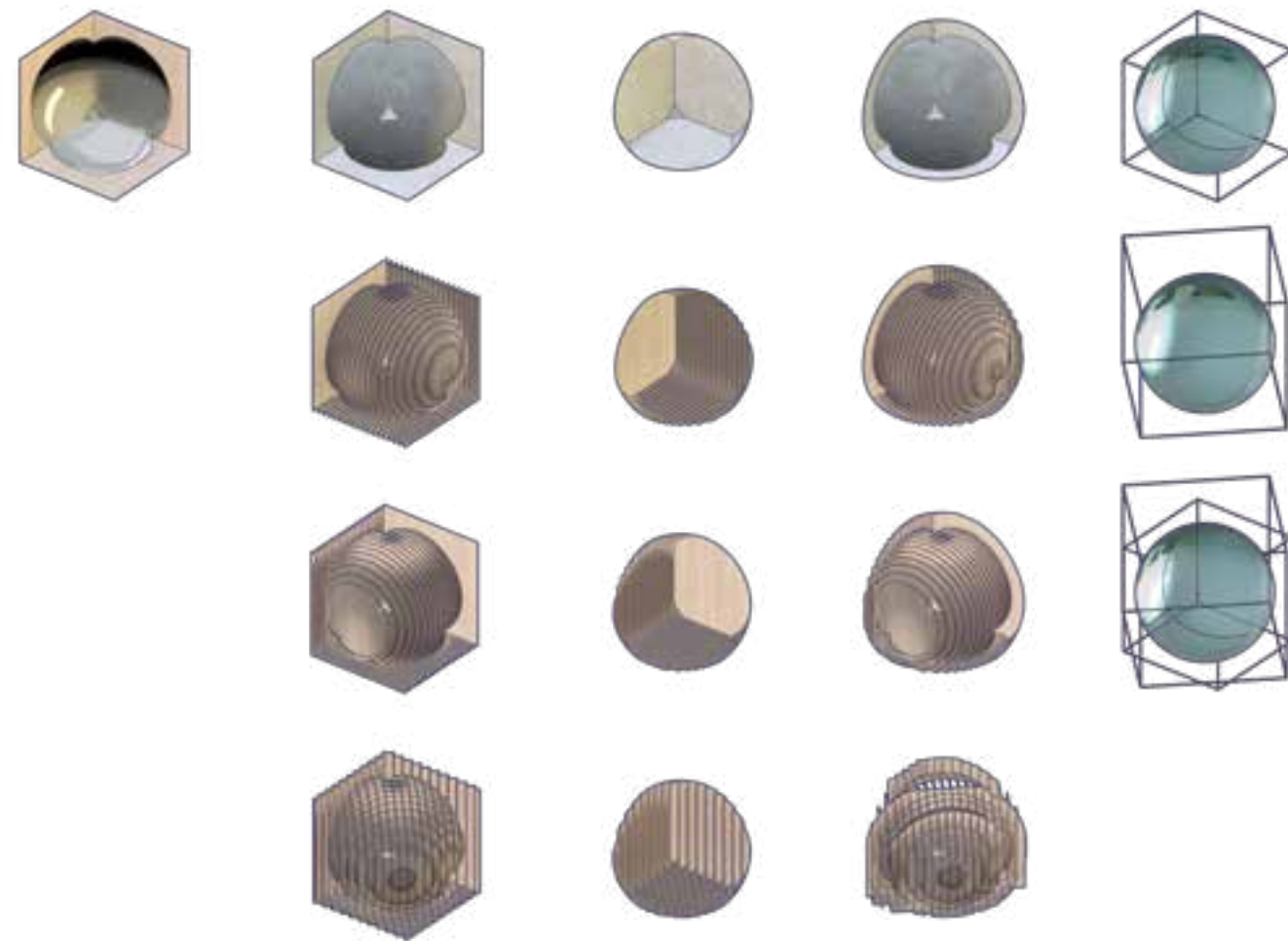
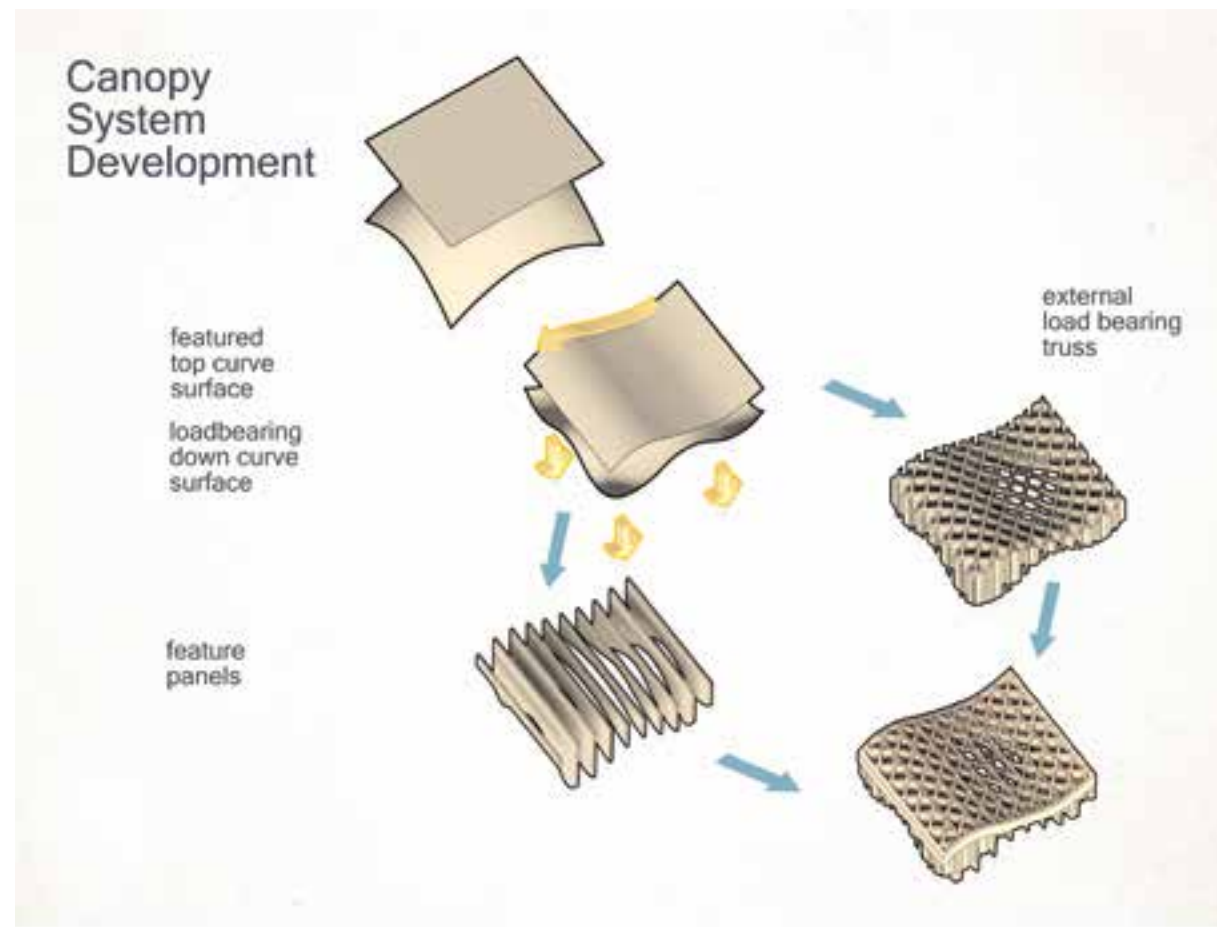
## The Lanterns



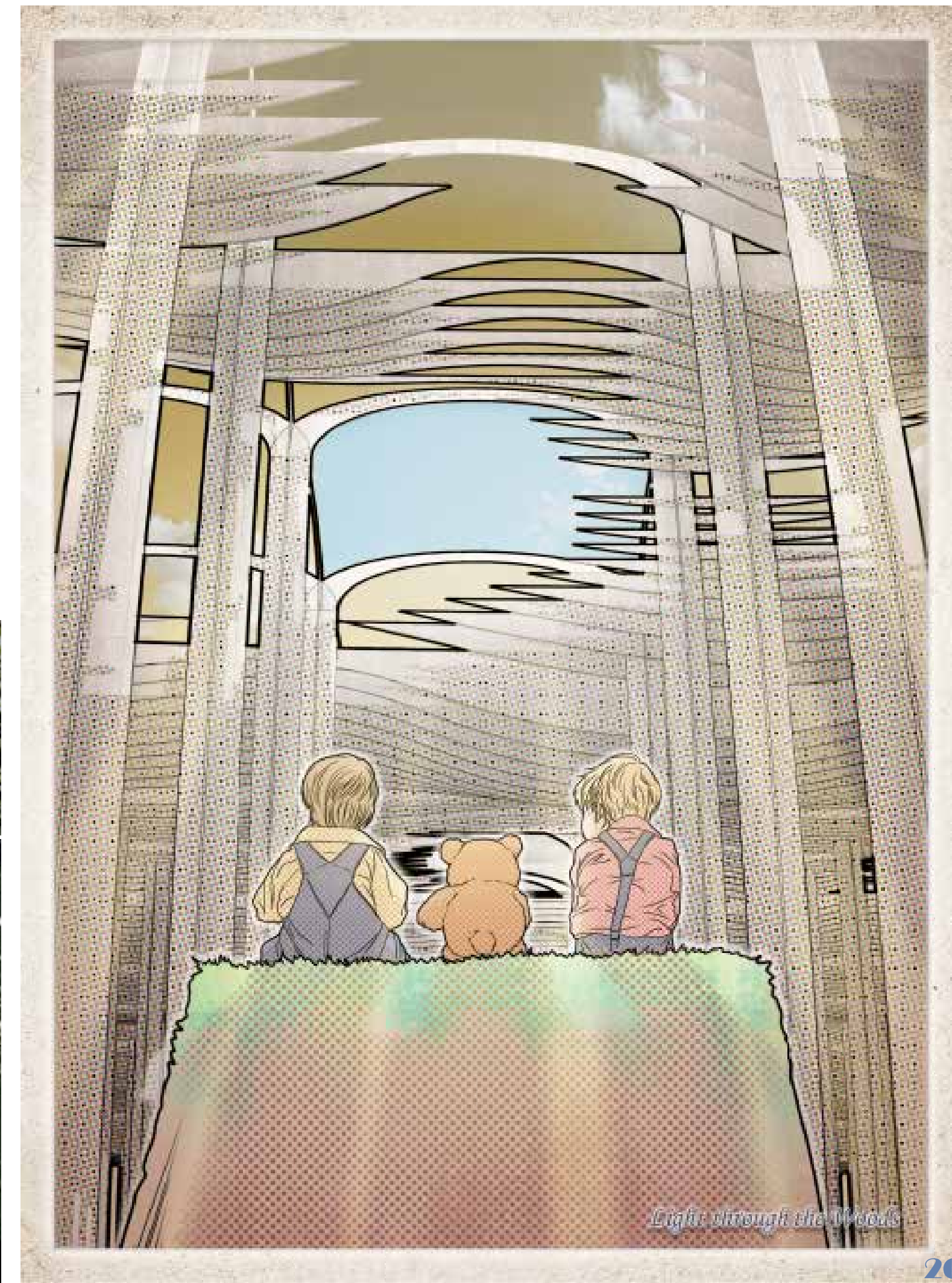
# UNDER THE WOODS

What makes the space "space"?

- grid structure with organic structure
- solid and void space
- gaps between the structures

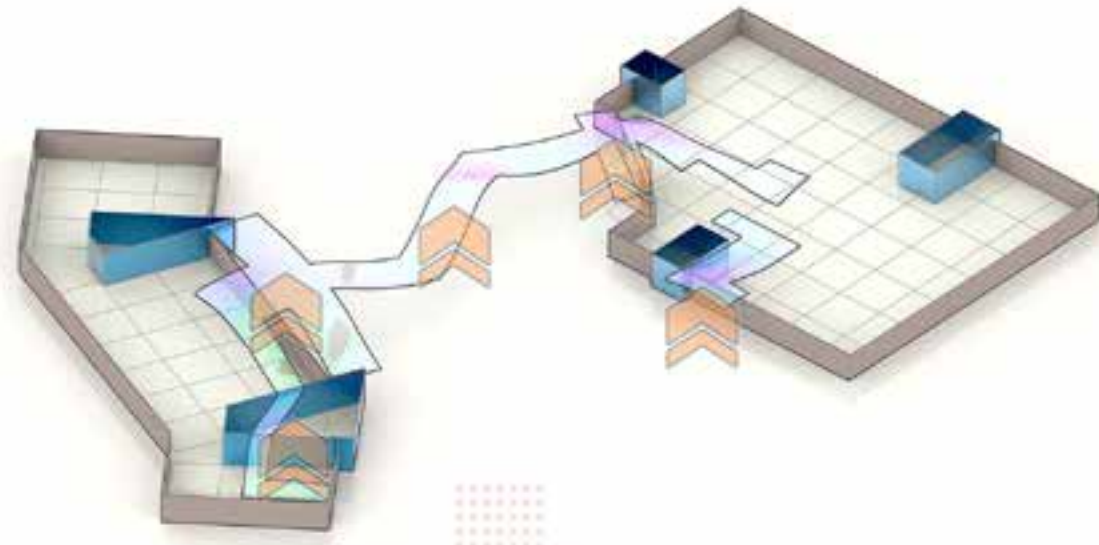


## The Gaps between the Structures

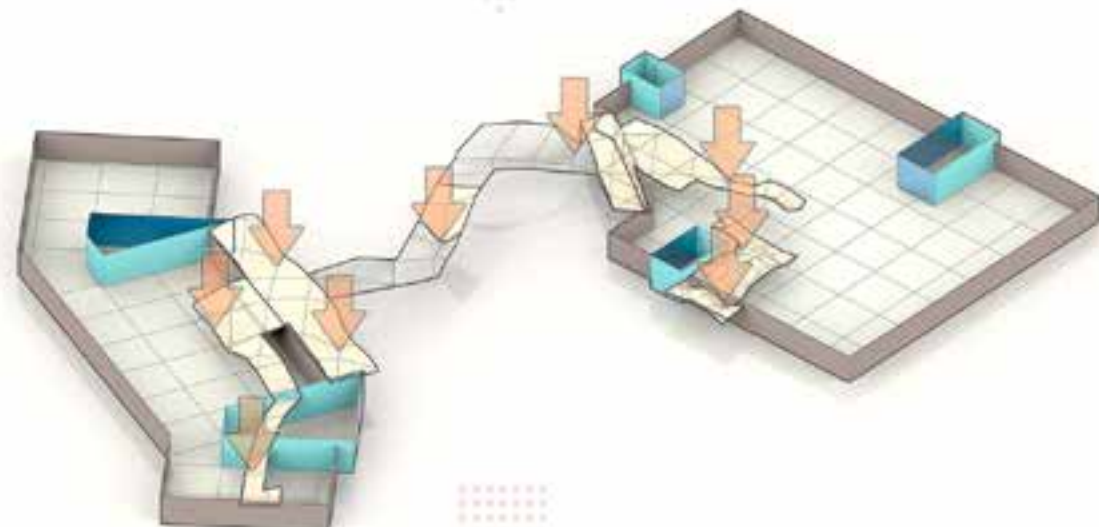
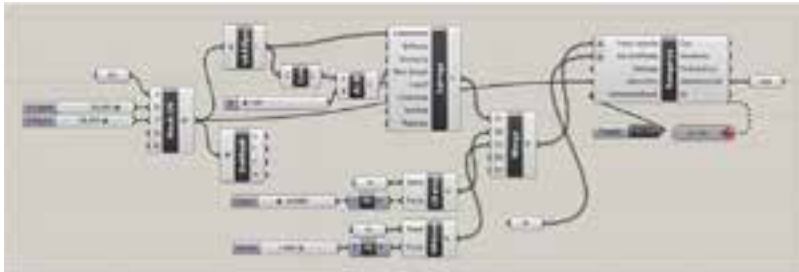


# Canopy Development

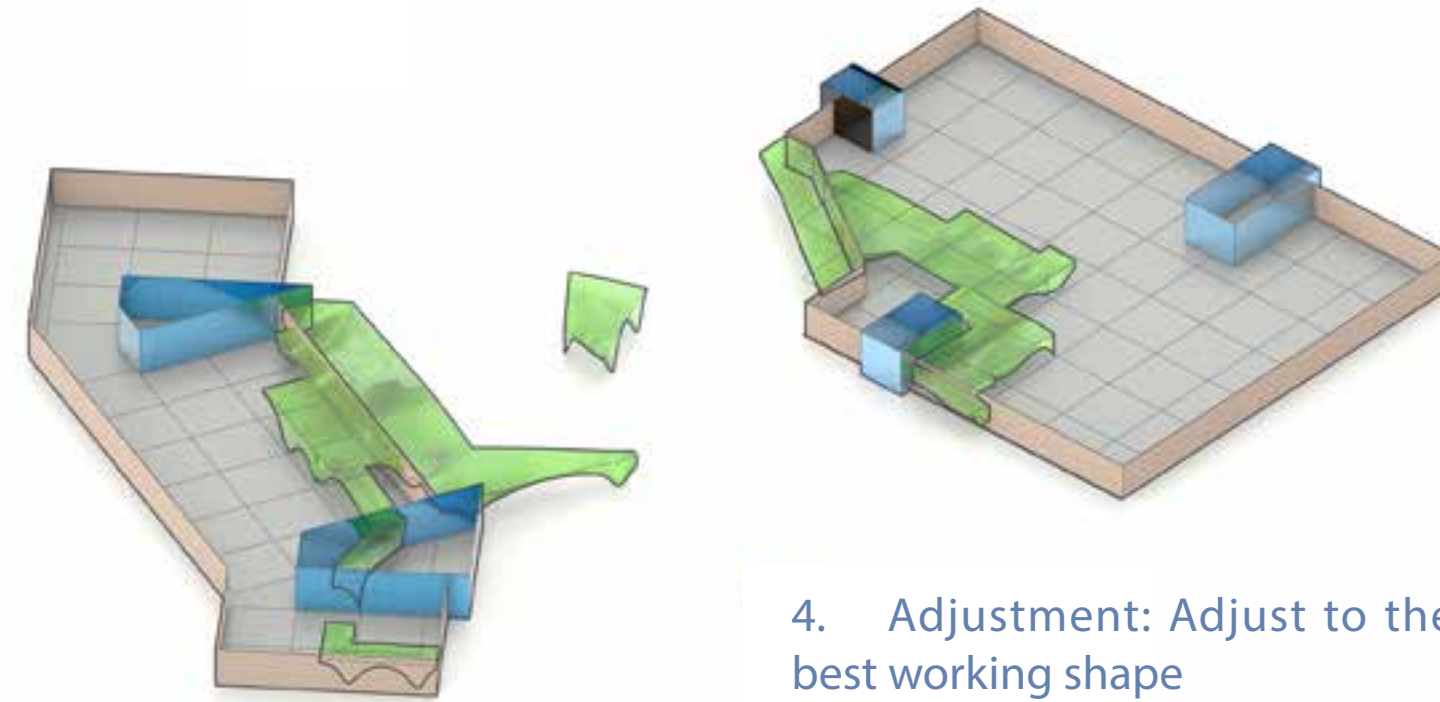
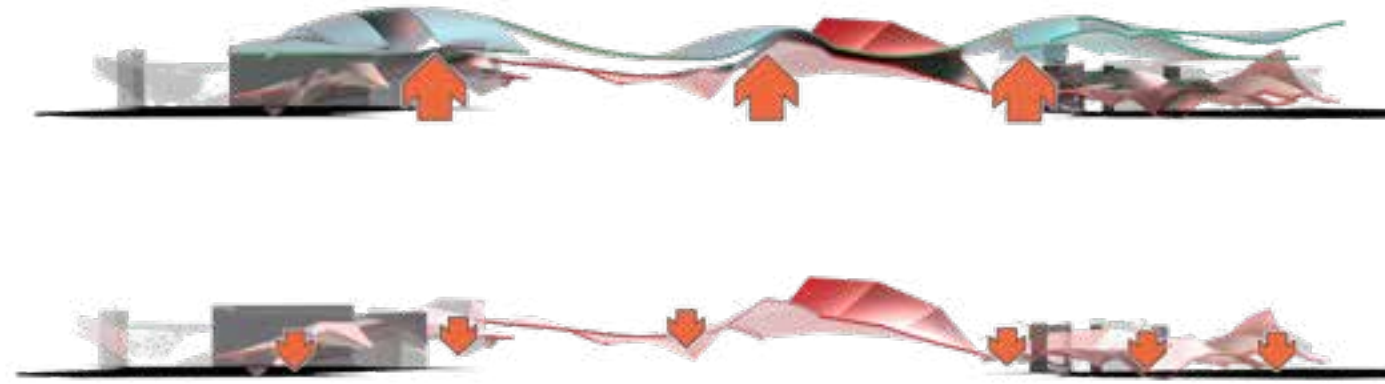
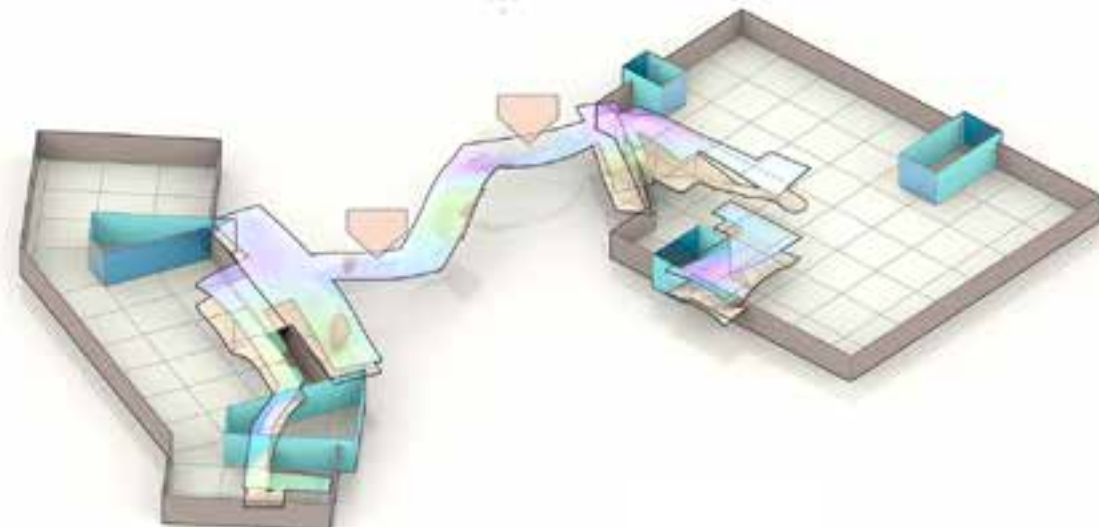
1. Up Curves: Raised up points for local emphasizing



2. Down Curves: Anchored down based on physical shaping for functions and visual way-finding



3. Combination: Leaving gap for car lane and adjust for shapes



4. Adjustment: Adjust to the best working shape



Section & Elevation

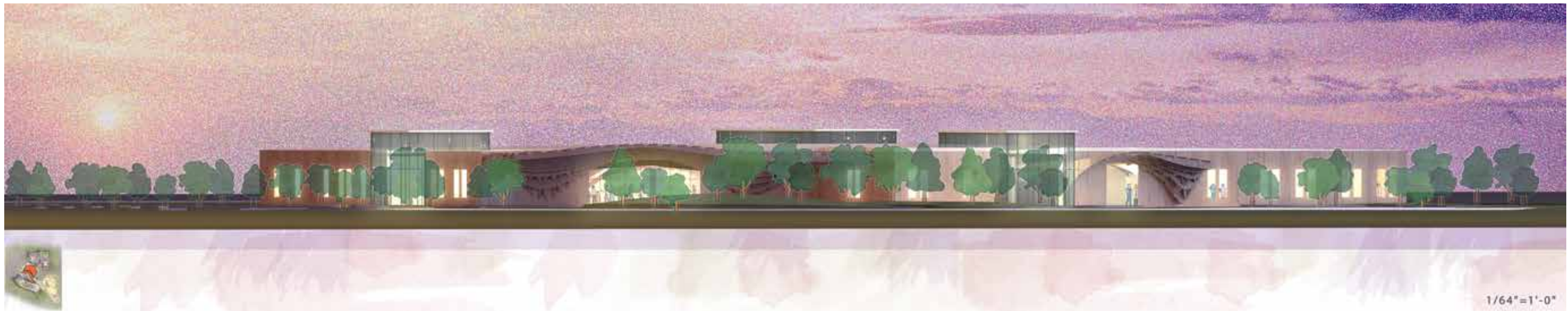
EAST SECTION



CLINIC BUILDING ELEVATION



MEDICAL BUILDING ELEVATION

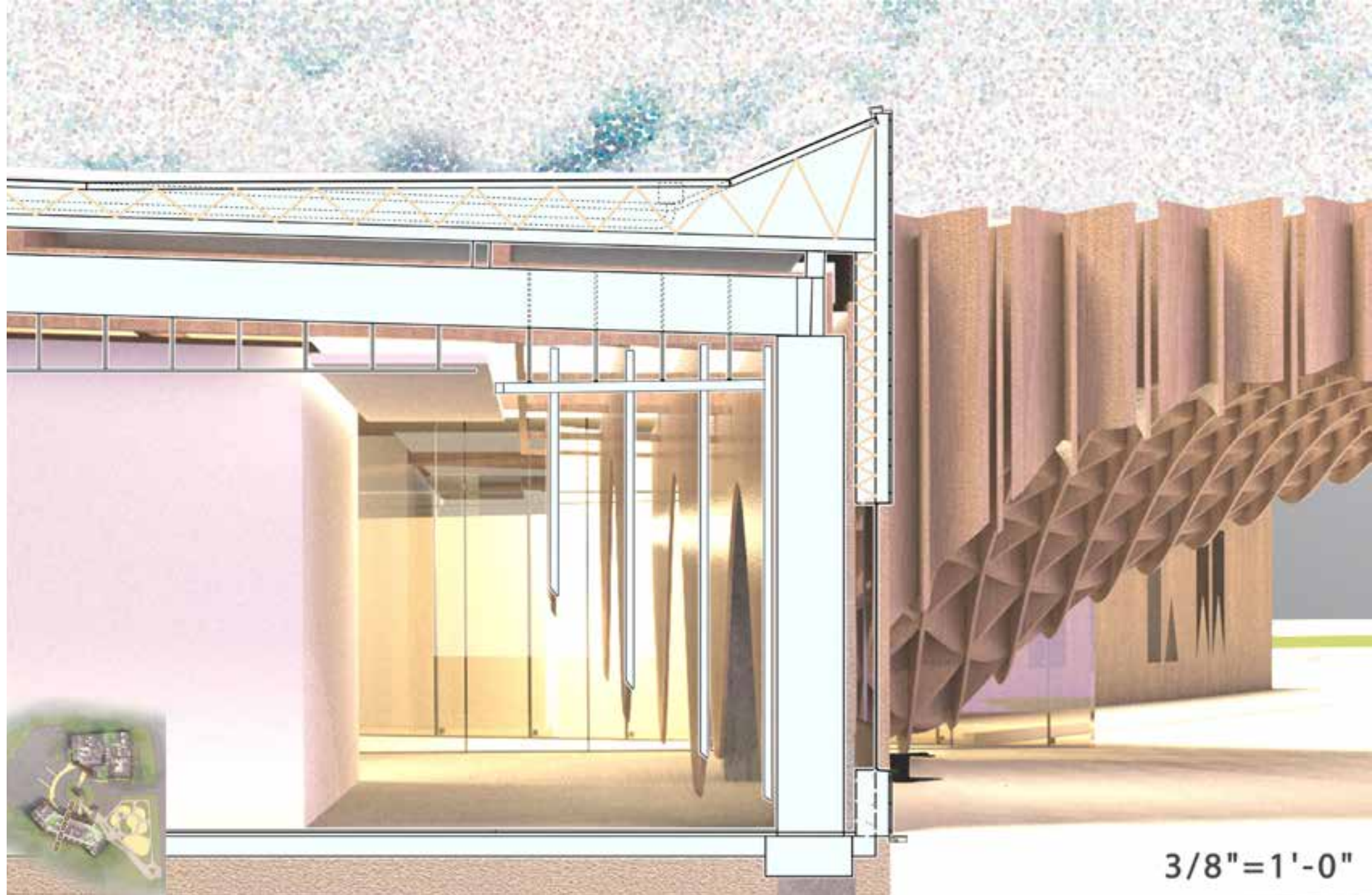






- Diagnose and Treatment
- Education
- Mechanical Room
- Outpatient Room
- Patient Room
- Public Space
- Staff Space
- Storage

1/32" = 1'-0"



3/8" = 1'-0"

# REFERENCE LIST

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[http://www.nccp.org/publications/pub\\_929.html](http://www.nccp.org/publications/pub_929.html)

**THANK YOU  
FOR READING**

