Abstract

Site Analysis

EBD

Literature Review

Concepts Massing

Plan & Section

Engineering Drawing

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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 of the Sick Emilia

She is burning!

Oh God! 100.8°F. Emilia got a fever!

Running late for work! I gonna come back earlier today.

Take me to the new hospital. Royally, darling.

Alright then.

Sit back. Nugh. We are leaving now.

I hope this will be different...

The hospital... No...
Not this time again...
The horrible white gowns and the sterilizers...
I just saw a playground, Emil!

It looks like a dinosaur skeleton...

We can come back when you're better.

Okay mum.

Stay here, Hugh. Me and Emily will come back to you later.
Oh, you are the little Emilia. Please come with me!

Nothing to worry about for sure. She just gets a cold in the cold weather. Take this twice per day after meals. Please come back after a week.

Oh, I didn’t expect you coming, darling.

Daddy!!

I finished work earlier. Daddy had to come to pick you up.

She’ll be fine, let’s go!
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.
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 lack of insurance and physical exercise places.

-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.

-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

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.

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01 Design with Family/Sibling-Centered Care

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

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

03 Design for Children

Proportion difference
Visual difference
Physical difference
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

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Diagnosing and Treatment

Education

Mechanical

Storage

Outpatient

Patient Rooms

Public Space

Staff

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

Color Coding

Clinic Department

Surgical Department

Imaging Department

Emergency Department
To tackle 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 having these translucent building blocks inserted 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

\[
\text{Number of Trees per Acre} = \frac{43,560}{(\text{spacing between trees in feet for direction 1}) \times (\text{spacing between trees in feet for direction 2})}
\]

\[
(43560/5*6)*34 = 49368 \text{ trees got removed}
\]

Departmental Models
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.
What makes the space "space"?

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

The Gaps between the Structures
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: Leaning gap for car lane and adjust for shapes

4. Adjustment: Adjust to the best working shape
EAST SECTION

CLINIC BUILDING ELEVATION

MEDICAL BUILDING ELEVATION


http://www.nccp.org/publications/pub_929.html
THANK YOU
FOR READING