SUMMATIVE ASSESSMENT (EVEN SEMESTER: 2023-24)

FINAL PROPOSAL

TASK 4

PRIETA KRISHNA

Introduction - Current Scenario

- New data indicates that working parents are experiencing burnout and due to their struggle with work-life balance; especially women owing to dual-responsibility.

- But, when women work, the GDP of the country is greatly boosted and hence, it is important to attend to their needs. According to an SBI report, unpaid work done by women contributes to 7.5% of the GDP.

- Women in India not only shoulder domestic work, but also boost GDP. Hence, there is a dire need for increased support from social systems and integrating childcare facilities for working mothers.

Introduction - Current Scenario

- The Indian government has initiated the Anganwadi system of child services which function in rural settings; although, they only function from 9 am to 1 pm.

- In 2017, the Govt. of India introduced the Maternity Benefit Act wherein the paid maternity leave for mothers was increased from 12 weeks to 26 weeks. Paternity leaves are offered up to 1-2 weeks.

Introduction - Current Scenario

- It is said that the first 1,000 days of a child's life is extremely impactful on their development and future. Hence, it is important that they are provided with a nourishing and loving environment. Unfortunately, long working hours of parents often prevent proper nurturing, putting a child's health, education, and emotional-well-being at risk.

- Currently in India, popular childcare facilities are SEWA (Sangini Cooperative) and Mobile Creches are also a popular choice among migrant labourers.

Developmental Mapping

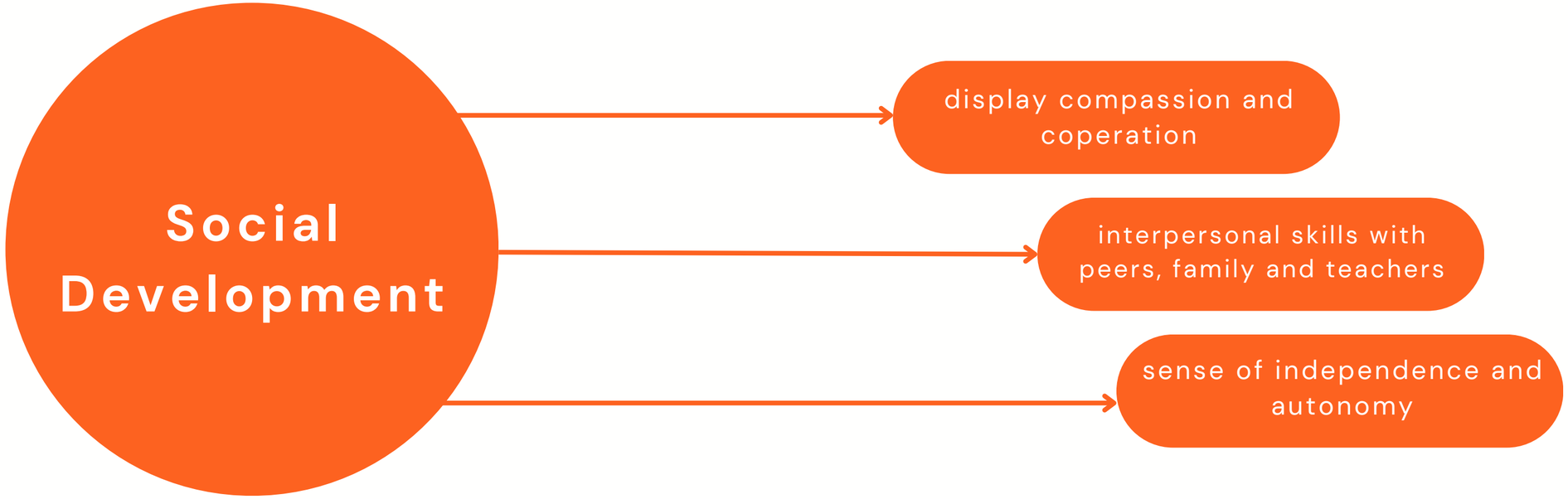
Cognitive Development

- predicting patterns, sequential thinking, classification
- critical thinking, estimating differentiating past, present and future
- knowledge of relationship between people, place and regions

Sensorial Development

- use of different senses to guide and recognize objects
- awareness of space and direction
- awareness of distance and quantity

Developmental Mapping



STEAM

- The STEAM approach focuses on critical thinking and problem solving and allows for art-based learning and a creative curriculum by bringing in real-life examples to the classroom.
- It includes role-playing, story-telling, design thinking and discussions.
- STEAM is interdisciplinary in nature and student-centered.

Industry Specification

- I have chosen to focus on government offices for my final proposal.
- There is a great need for better facilities and ample scope for improvement of childcare services and in the government.
- The demographics are divided into Group A (Officer Grade, Highest Rank: IAF/Navy/Army), Group B (Executive Type JCO SCS), Group C & D (Peons, Drivers, Ground-level staff)

Workflow

A childcare facility must be safe, innovative, space efficient and fosters creativity.
I further divided the given 20x20 space into the following:

Childcare Facility

Indoor Area

- small group activities
  - quiet spaces
  - non - quiet spaces
- large group activities
- free play

Outdoor Area

- ball pit, sand pit
- climbers, swings

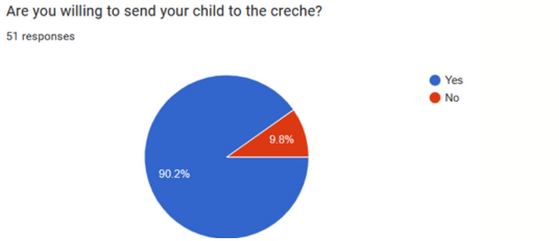
Questionnaire on Creches in ISRO

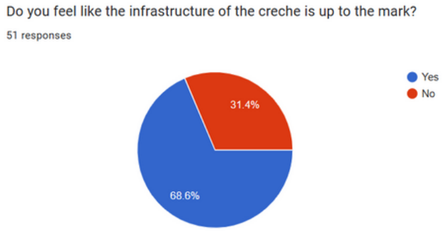
To know the ground reality of these childcare facilities in government offices, I chose to use a primary source of a questionnaire that was filled out by 51 women at ISRO Bengaluru.

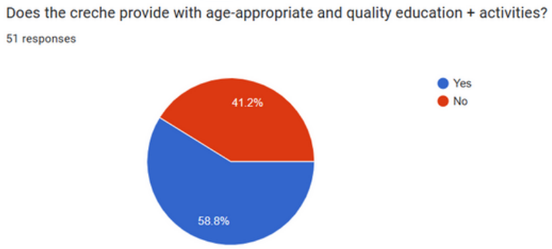
Key Takeaways from Questionnaire:

- Most mothers think that quality education/skills are not imparted enough (41.2%).
- The caretakers are not very sensitive to the children's needs.
- Lack of space and need for better/modern infrastructure.

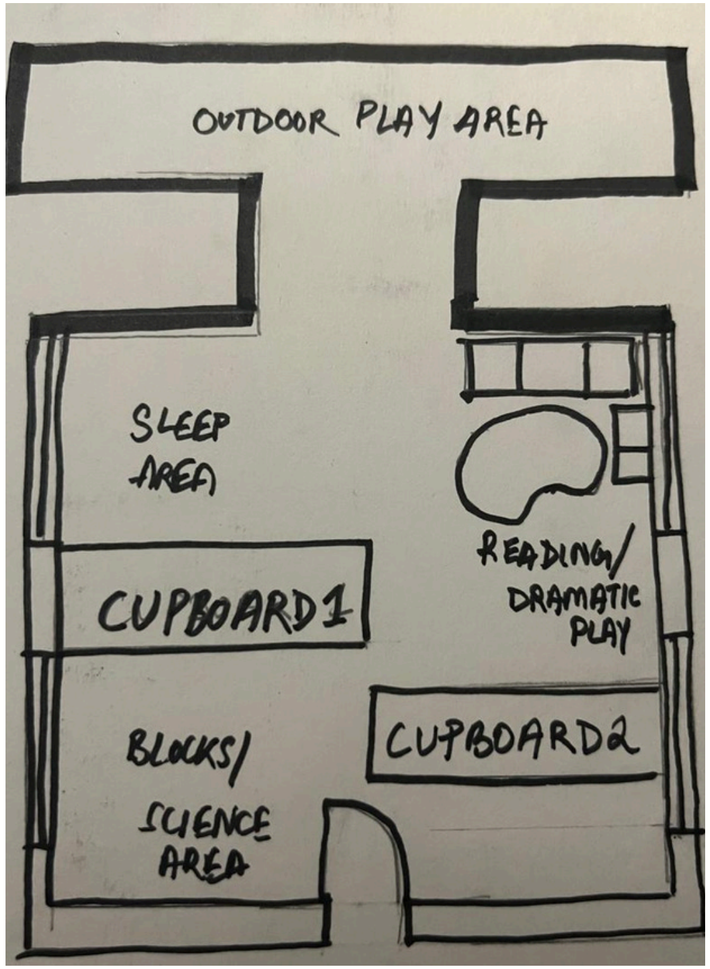
I have tried to address the above problems to the best of my ability by incorporating it into the design of the facility.



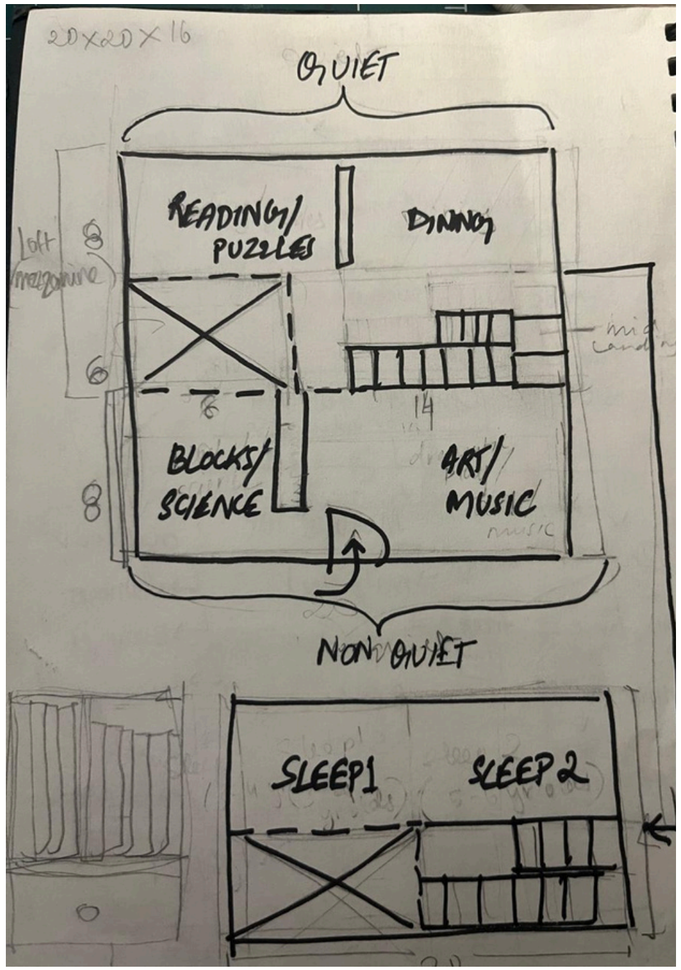




Iterations



Iteration 1



Iteration 2

Why did I reject these iterations?

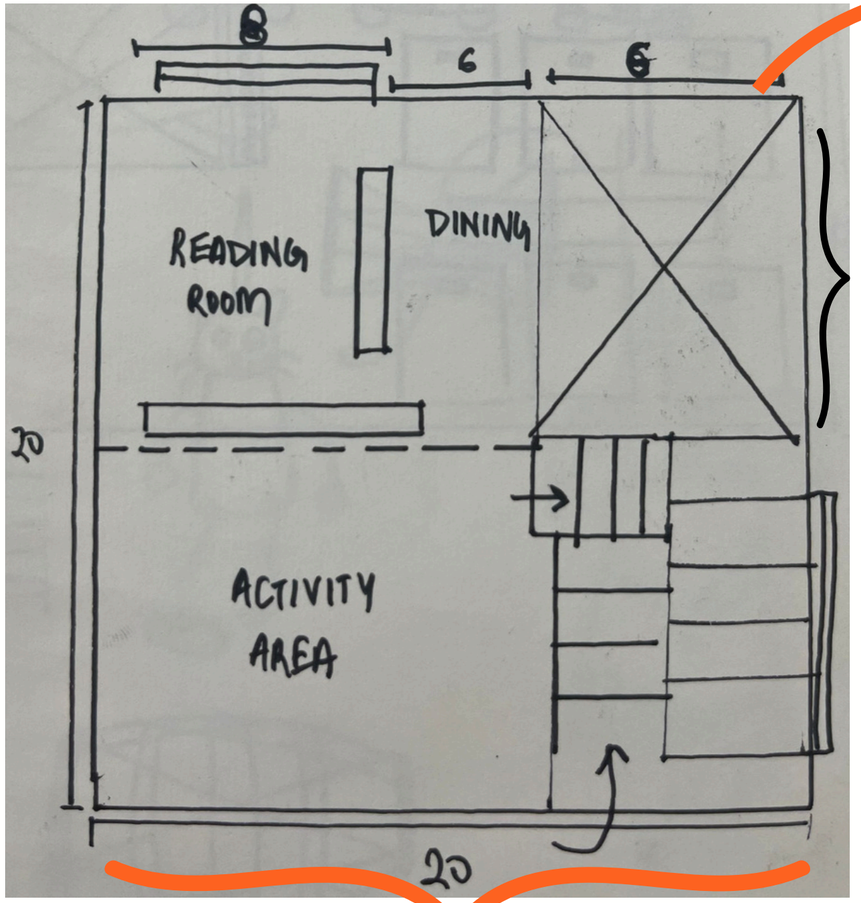
Iteration 1: This was a rough sketch where I was figuring out the space I had. I did not have enough space horizontally.

Iteration 2: I decided to increase the space vertically by utilizing a mezzanine floor. The measurements of the stairs were not adding up with the height here.

Final Plan

Estimated number of children: 30-35
(14 sq.ft. per child)

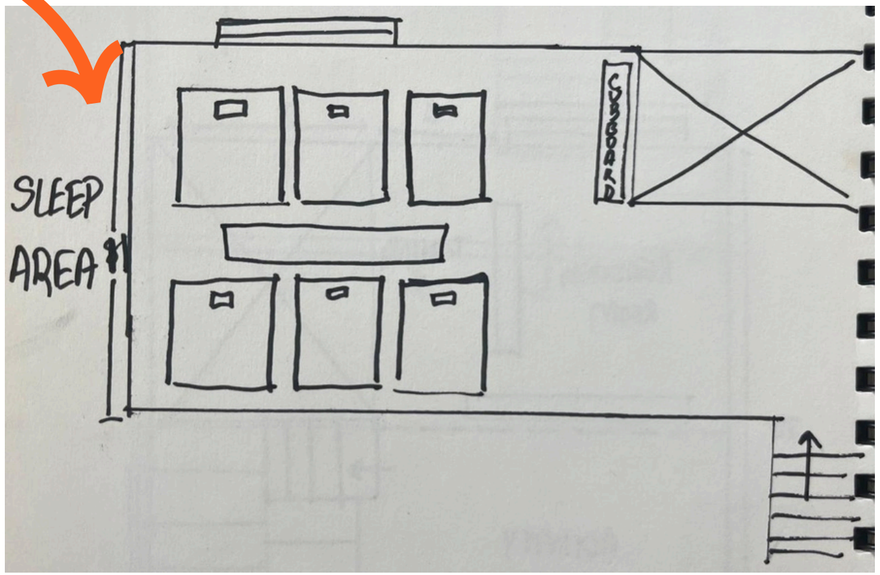
Quiet Area



Skylight (Outdoor Play Area)

Non-Quiet Area

Loft (Mezzanine)



The final plan is characterised by high and low ceilings (due to space constraint), large windows for ample lighting, comfortable and safe furniture and bright and subtle color palettes as required. Use of cost-effective and locally available materials.

Final Proposed Model

(Done in Maya)

Entrance

Legend

(a) Stairs leading up to the Loft

(b) Wall of Fame for Caretakers

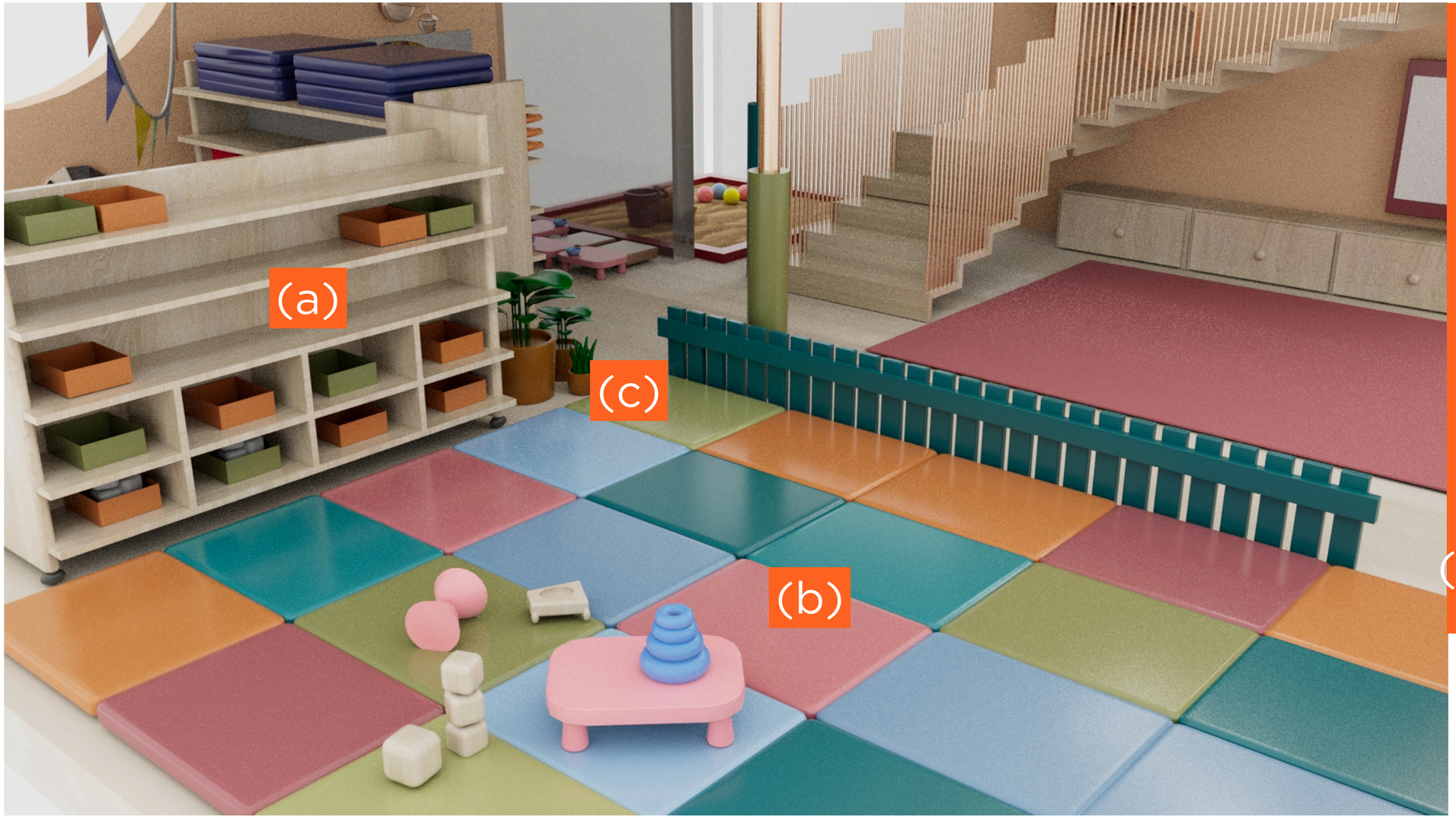
Entrance

(a) **Stairs leading up to the Loft**: There are 3 flights of steps and 3 mid landings - each landing being 3 feet each. The high railings have minimal space in between each other to ensure safety of children.

(b) **Wall of Fame for Caretakers**: After analysing the questionnaire, it seemed as if the creche staff were not motivated enough to take care of the children and were solely doing it for the money involved. Instead of only providing them incentives, a wall of fame as well as a staff lounge can be set up as a system where consistent effort leads to incentives. Children's artworks can be put up as well.

(c) **Cabinets**: The cabinets at the entrance serve the purpose of placing bags, shoes and other belongings of the children. The area near the cabinets is of multi-purpose use and can be used as an art area.

Activity Room



Legend

(a) Shelf

(b) Toys and Musical Instruments

(c) Plant Corner

Activity Room

This non-quiet area is characterized by high-ceilings, bright colours and has resilient surfaces. This room acts as a dramatic play area, science, block-play and music area. (based on developmental mapping)

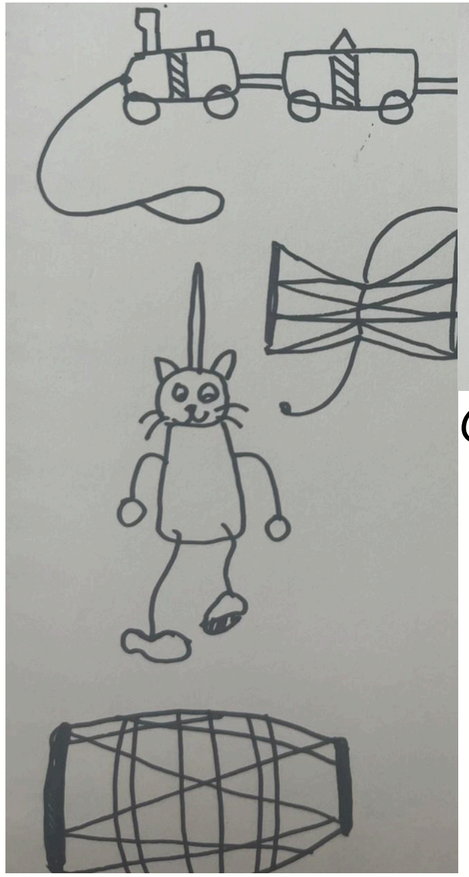
(a) **Shelf/Bookcase**: This double-sided bookcase not only acts as a partition between two areas in order to save space but also as extra storage space. The lower shelves store toy boxes that are within reach of the children. The high shelves store items that must be kept out of children's reach, such as first aid boxes, cleaning materials, sharp and small objects, or anything that can pose as a choking hazard.

Activity Room

(b) **Toys and Musical Instruments**: The toys are not sharp and too small and are safe for children. Children are inspired to think creatively when they construct various sorts of constructions with blocks.

Additionally, kids can work together to construct a building, which means they have to interact with one another and cooperate as a group. They get to experiment with many musical instruments, including tambourines, flutes, string instruments, and other local instruments.

Some examples of toys and musical instruments to instill the Indian culture include *Channapatna* toys (made of wood - from Karnataka) and *Katputhli* (from Rajasthan) and *Damru.*



Channapatna Toys

Katputhli

Activity Room

(c) **Plants Corner (Science)**: This helps children explore different kinds of flora and help them learn about the basic workings of a plant through activities and lessons. Plants that are non-toxic such as ferns, hibiscus, lilac, etc. can be used.

All play materials can be changed periodically and not shown all at once in order to not overwhelm the children. Labelling boxes can help them to differentiate different sets of materials logically.

Reading/Puzzle Room

Legend

(a) Sensory Wall

(b) Bookshelf

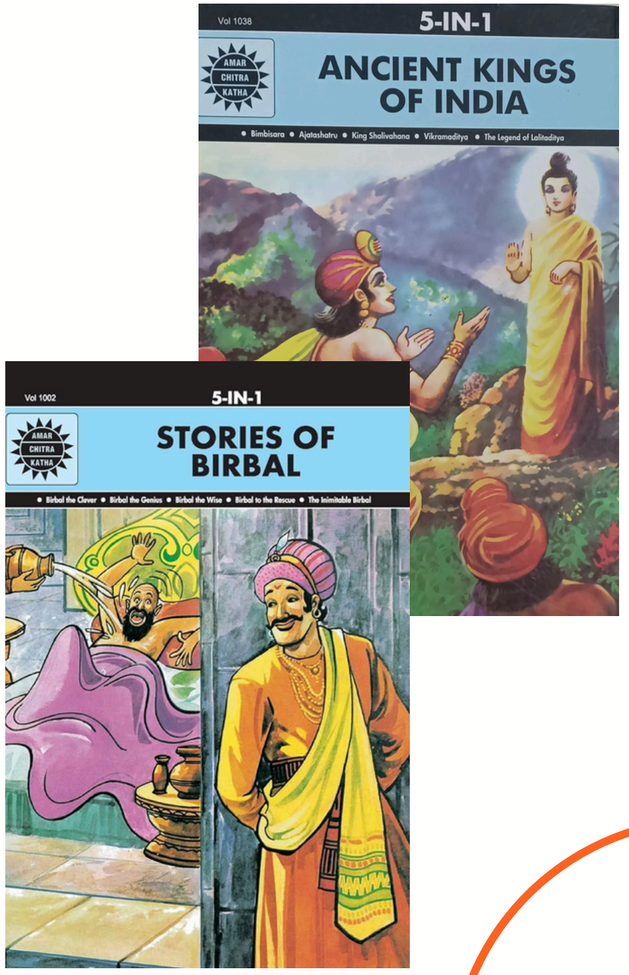
(c) Rug, Pillows and Cozy Corner for reading

Reading/Puzzle Room

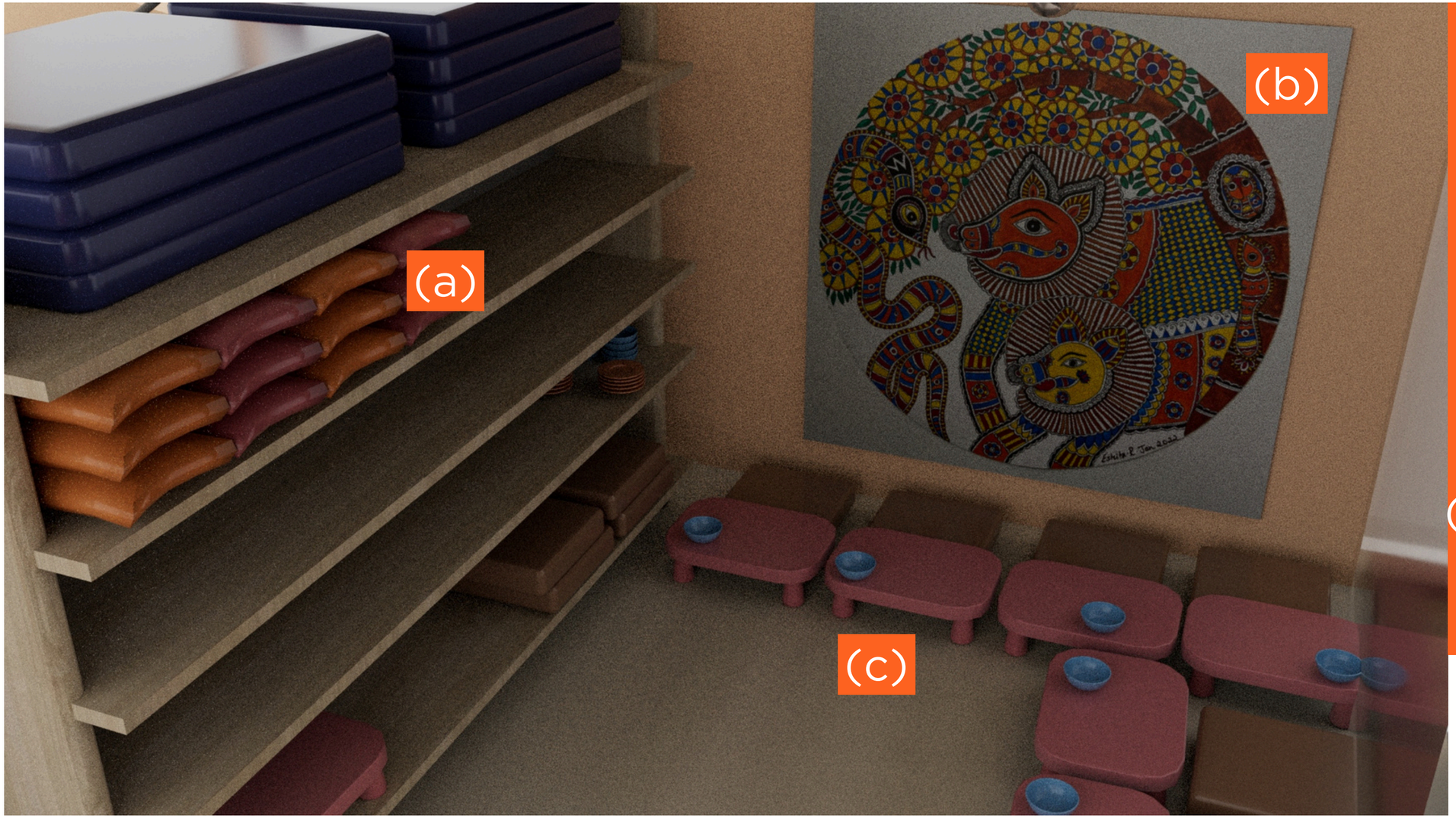
This quiet area is characterized by low-ceilings, pastel colours and has softer surfaces.

(a) **Sensory Wall**: This wall helps children to understand soft and hard touch. This tactile experience fosters cognitive growth and problem-solving abilities. It stimulates the senses of taste, touch, hearing, and sight. This specific sensory wall has textures of animals, which helps them to learn about different animals as well. It helps to calm, focus and comfort.

(b) **Bookshelf:** This double-sided bookshelf is on lockable rollers can be moved around with ease to change up the space as needed. Books such as picture books, local folk tales, theme related books, comics, etc. can be kept here. A good example for culturally relevant books includes Amar Chitra Katha.



Dining/Sleep Area



Legend

(a) Shelf

(b) Madhubani Mural

(c) Low Seating (*peeta*)

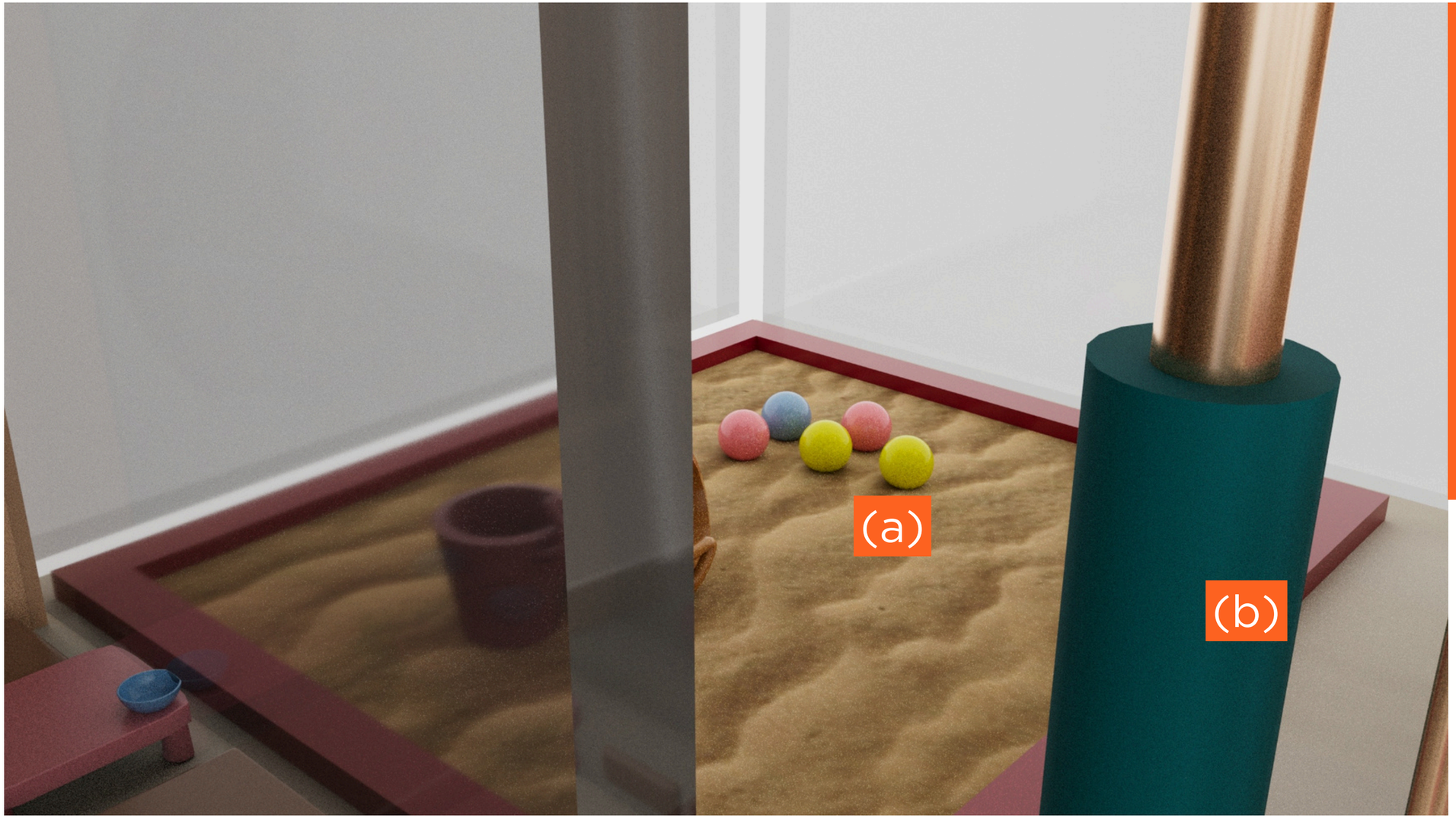
Dining/Sleep Area

(a) **Shelf**: As mentioned previously, the bookcases are movable. This area doubles as a sleep area for 3-4-year-olds. The foldable mattresses, pillows, blankets are stored in the shelves. Utensils and other cleaning (in case of spills) materials are also stored here.

(b) **Madhubani Mural**: To bring together the children using culture. Madhubani is characterised by natural elements of flora and fauns like fish, birds, animals which are painted with bright colours, making it look attractive. This instigates curiosity and helps children learn more about the Indian culture.

(c) **Low Seating (Peeta)**: This is also a traditional Indian practice. This seating position is called *sukhasana* or *half padmasana*, and aids with digestion. When seated down, swallowing requires you to lean forward somewhat and return to your starting posture while eating from a plate that is on the ground. This activates your abdominal muscles and increases the release of stomach acids.

Semi-Outdoor Play Area



Legend

(a) Sandpit

(b) Rubber encasing of column

Semi-Outdoor Play Area

(a) **Sandpit:** This area has purposely been made semi-open in order to ensure safety of the children. The walls are made of glass to facilitate the feeling of an outdoor area and let in sunlight. This high-activity area has a high ceiling (skylight).

(b) **Foam Encasing**: The column has been encased in foam in order to ensure the children's safety. All objects in the facility are child-proofed with soft and rounded edges so that they do not accidently hurt themselves during play.

Sleeping Area

Legend

(a) Matresses

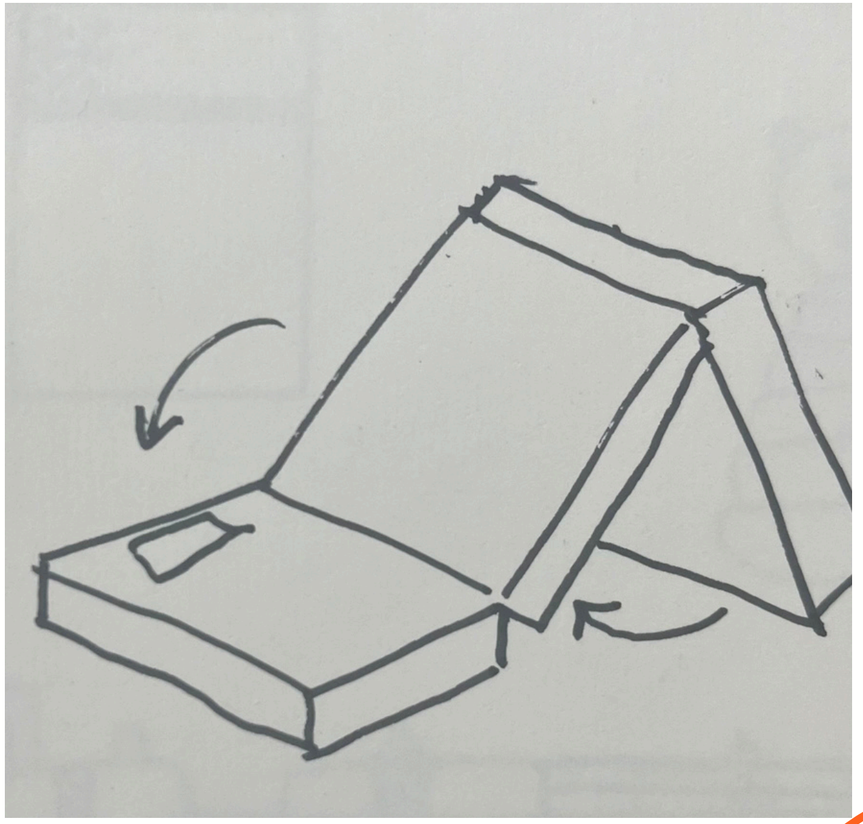
(b) Shelf

Sleeping Area

(a) **Mattresses:** The sleep area is on a mezzanine floor at heigh of 8 feet, assuming the height of the entire facility is 16 feet. This sleep area is reserved for 5-6 year olds.

(b) **Shelves**: The cupboard is designed in such a way that it can easily store foldable mattresses (for increased space-efficiency), pillows and blankets.

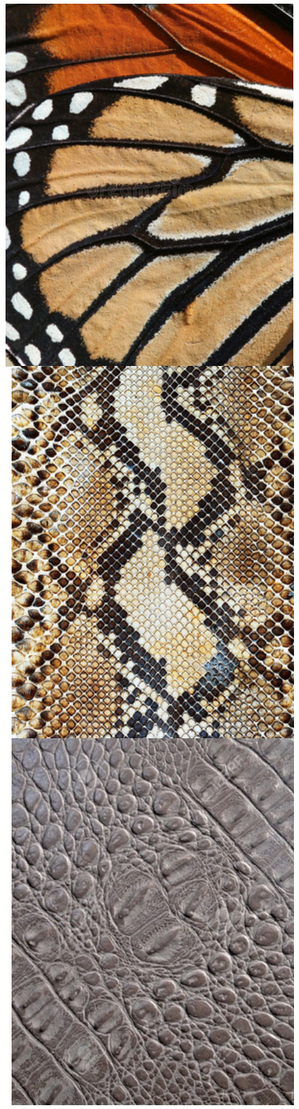
Foldable Mattress Mechanism



Material Moodboard

(Non - VOC Paint)

(katputhli made of old clothes)



(different animal-like textures for sensory wall)

(Bamboo flooring)

(polypropylene 100% recycled plastic and washable surfaces)

(wooden toys)

Estimated Budgeting

Using a city like Bangalore as a reference, the current rates per sq. ft. is around Rs. 1500 - Rs. 1700. Taking Rs. 1600 as an average estimate, for 400 sq. ft. (20x20) + 99 sq. ft. (mezzanine - 11x9) = 8,00,000 Lakh.

<u>Rough figures:</u>
toys = 300*50 = 1500, 300*25= 7500
staircase= 20,000
cupboards= 50,000*3 = 150000
cabinets= 50,000
skylight= 80,000
mattresses= 1000*15= 15,000
pillows= 500*30= 15,000
chairs= 1500*30= 45,000
misc= 50,000
books and stationary= 70,000

Total estimate of interiors = 5,20,000
Hence, estimated total budget = 8,00,000 + 5,20,000 = **13,20,000 Lakh**

Final Reflection

The modern Indian woman is many things. She shoulders many responsibilities and juggles multiple areas of her life; Indian working mothers especially. The research papers by ECCE, ICDS, SEWA and the Ministry of Women and Child Development have strict protocols that are claimed to be followed in childcare facilities. But the ground reality can never be known unless one visits a child care facility. Socio-economic diversity in demographics among employees equals socio-economic diversity in demographics among their children. The aim is to foster a sense of belonging, community and inclusivity in the children despite their differing backgrounds using Indian culture. My child-centred design aims to achieve this very thing. I modelled the final submission in Maya, as I learnt how to use it during my Even Semester workshop.

Structurally, to foster exploration and excitement, the final plan is characterised by high and low ceilings in accordance with quiet and non-quiet spaces, large windows for ample lighting, comfortable and child-proofed furniture and bright and subtle colour palettes as required.

Final Reflection

For space efficacy, the double-sided bookshelves are on lockable rollers and can be moved around with ease to make more space as needed. Foldable mattresses have also been used that can easily be stored in the shelves.

To make the design Indian culture-centric and bring in a feeling of belonging, I have incorporated many elements from the traditional Indian toys, seating, etc. The Indian traditions value down-to-earth upbringing and respects the plant and animal world. It is family-centric and respects different cultures. Toys such as those from Channapatna and Katputhli, having traditional paintings and murals on the wall like that of Madhubani, traditional low-seating while eating, etc. grounds the children to their Indian roots.

Inclusivity plays a huge role in the design as I have incorporated elements like that of a Sensory Wall which helps to calm children and also helps them to focus.

The questionnaire that I had distributed had many interesting insights which helped me to further shape my design solution. I made sure to divide the space up into separate activity areas (according to quiet and non-quiet activities and developmental mapping) as a lot of parents felt as if there were no educational skills being imparted to the children.

Final Reflection

They also felt as if the staff were not sensitive enough to the children's needs and were only monetarily driven. Incorporating a very simple feature such as a Wall of Fame and Staff Lounge into the design can help motivate the staff; consistent efforts can be rewarded with incentives. They also felt the infrastructure and play items needed an upgrade. I have made sure to take this into consideration and have also made them cost effective, locally sourced and child-friendly. I have used materials such as non-VOC paint, bamboo flooring, 100% recycled plastic, block board from green ply for cupboards and shelves, fabrics of khadi and rugs of dhurries.

This project has helped me learn how to fairly draw a basic floor plan along with the industry-standard measurements.

I also had the opportunity to gauge an idea of the creche market (also using a questionnaire as a primary source of information) and explore the variety of sustainable and local materials available in the market.

Bibliography

NATIONAL EARLY CHILDHOOD CARE AND EDUCATION (ECCE) CURRICULUM FRAMEWORK
https://wcd.nic.in/sites/default/files/national%20ecce%20framework%20final.pdf
Laufa Alfers, WIEGO Child Care Initiative https://www.wiego.org/sites/default/files/publications/files/Alfers-Child-Care-Initiative-Full-Report.pdf
July 2023, Needs Assessment of Childcare Facilities in Remote and Tribal Settings of Gujarat, Odisha, Kerala and Meghalaya
Needs_Assessment_of_Childcare_Facilities.pdf
This Indian women's union invented a flexible childcare model, JUN 18 2018
https://apolitical.co/solution-articles/en/this-indian-womens-union-invented-a-flexible-childcare-model
Dr. Kumud Sharma, Project Director, Honorary Dr. Vasanthi Raman, Project Coordinator with Ms. Pooja Dhawan, Research officer, Need Assessment for
Creches and Child Care Services
https://wcd.nic.in/sites/default/files/Need%20Assessment%20of%20Creches%20-%20Final%20Report%20%281%29.pdf
https://vahsa.memberclicks.net/assets/docs/First-Five-Keys-to-Culturally-Sensitive-Child-Care.pdf
https://www.sarkarinaukriblog.com/2019/04/sarkari-naukri-employee-types.html https://www.sarkarinaukriblog.com/2019/04/sarkari-naukri-employee types.html
Empowering Students: The 5E Model Explained
https://lesley.edu/article/empowering-students-the-5e-model explained#:~:text=The%20findings%20of%20Atkin%20and,Explain%2C%20Elaborate%2C%20and%20Evaluate.
https://www.mdpi.com/2071-1050/15/8/6807
https://www.bu.edu/ctl/ctl_resource/project-based-learning-teaching guide/#:~:text=Project%2Dbased%20learning%20(PBL)%20involves%20students%20designing%2C%20developing,problems%2C%20commonly%20in%20sm
all%20teams
Anand, Ishan, and Anjana Thampi. “The Crisis of Extreme Inequality in India.” The Indian
journal of labour economics: the quarterly journal of the Indian Society of Labour
Economics, 2021. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8353929/.
Namrata Singh / TNN / Updated: Oct 12, 2021. “Companies Offer Childcare with Hybrid
Office - Times of India.” The Times of India. Accessed April 17, 2024.
https://timesofindia.indiatimes.com/business/india-business/cos-offer-childcare-with hybrid-office/articleshow/86950498.cms.
S.S. Rana & Co. Advocates, 29 January 2018, “India: Creche Facility Under Maternity
Benefit Amendment Act”, 2017Creche Facility Under Maternity Benefit Amendment
Act, 2017 - Employee Benefits & Compensation - India (mondaq.com)
UNICEF, 10 ways companies can be more family-friendly | UNICEF
“Importance of Daycare Nurseries for Working Mothers”, CheekyChums, Importance of
Daycare Nurseries for Working Mothers (cheekychums.co.uk)
Sanjana Manaktala, Namya Mahajan, Vishnu Bharathram, Oct 19, 2023. “The measure
of the working woman”. The Hindu. The measure of the working woman - The Hindu
Anand, Ishan, and Anjana Thampi. Aug 10, 2021 “The Crisis of Extreme Inequality in
India.” The Indian journal of labour economics: the quarterly journal of the Indian
Society of Labour Economics”. National Library of Medicine. The Crisis of Extreme
Inequality in India - PMC (nih.gov)
EasyLlama, “Socioeconomic Diversity in the workplace” Socioeconomic Diversity in the
workplace (easyllama.com)
Amitabh Kundu, P.C. Mohanan, “Employment and Inequality Outcomes in India”,
42546020.pdf (oecd.org)
Economic Times, May 8, 2016, Corporates roll out benefits for new mothers - The Economic
Times (indiatimes.com)
NiTSO, A Guide to Parental Leave Policies in India | Nitso (nitsotech.com)
The Quint, Apr 28 2018, “50% of New Mothers Leave Their Job, and Only 27% Return:
Report” thequint.com/news/india/working-mothers-in-india-report-ashoka-university
Sonam Joshi, Oct 20 2022, The Times of India, Sometimes I feel like running away: Working
moms on the brink of burnout | India News - Times of India (indiatimes.com)
Grace Pollok, Jul 12 2023, The Medium, UX Case Study — Working parents at breaking
point | by Grace Pollok | Medium
The Klay, A-View-Of-Childcare-Facilities-By-Employers-In India_KLAYSchools_PeopleMatters_Research-Report.pdf
Madhubani Painting by Eshita R. (2022)
NATIONAL EARLY CHILDHOOD CARE AND EDUCATION (ECCE)
CURRICULUM FRAMEWORK
https://wcd.nic.in/sites/default/files/national%20ecce%20framework%20fi
nal.pdf
Childcare Center Design Guide - U.S. General Services Administration
https://www.gsa.gov/system/files/designguidesmall.pdf
Textures and Materials: https://in.pinterest.com
Harish Gowda,January 8,2024 "Construction Cost In Bangalore 2024 – Detailed Cost" Analysishttps://www.homebazaar.com/knowledge/construction-cost-in-bangalore/