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RESEARCH ARTICLE OPEN ACCESS

Redesign of a multi-use children's hall in The Village, Seeb–Oman

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Abstract:
This project proposes redesigning a multipurpose children's hall at The Village, Seeb, Muscat, to provide kids aged 3 to 12 with a lively, engaging, and screen-free environment. The project highlights the significance of natural play, hands-on exploration, and social connection in child development in recognition of the growing concerns regarding children's reliance on digital devices. Through functional zoning that incorporates areas for open play, education, creativity, relaxation, events, and community involvement, the renovated area aims to provide a diverse range of experiences. The setting promotes independence, creativity, and cooperative play while maintaining safety and inclusiveness using natural materials, adaptable furniture, and textures that are rich in sensory experiences. Case study analysis, site inspection, and literature review are all integral to the technique, which informs a child-centered design based on the principles of experiential learning and developmental psychology. The suggested layout encourages movement, creativity, and emotional health and is influenced by modern sustainable design concepts and the Montessori approach. Additionally, the project supports education, sustainability, and cultural identity, all of which are goals of Oman Vision 2040. As a model for future community-oriented child spaces in Oman and elsewhere, this research ultimately aids in the creation of meaningful, tech-free environments that promote early childhood cognitive, physical, and social development.
Keywords: Children's hall, interior design, non-digital play, flexible space, sensory-rich environment, holistic development, The Village Seeb, Oman Vision 2040, child-centered design, natural materials, early childhood development.

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I. Introduction:

The study focuses on redesigning the village's children's multipurpose hall, emphasizing a technology-free environment that promotes creativity, social interaction, and physical engagement.Inanera where digital devices dominate many aspects of childhood, the project aims to create an environment that fosters experiential learning, creative play, meaningful social interactions, andflexible,interactiveinstallations. Theredesignedhallwillincorporatenaturalmaterials, groupplay,artsandcrafts, and thoughtful space design to facilitate a range ofactivities,including storytelling. The project draws inspiration from designingforchildrenaged 3 to 12 yearsandphysical exercise.

Theprojectaimstoincorporatetraditionaldesign elementsandprinciples of nature-based learning. Through careful planning and thoughtful design, create a warm and welcoming atmosphere. This study examines how well-structured environments can create engaging and supportive spaces for children, providing them with opportunities to learn, explore, and connect in an environment free from electronic distractions.

II. Literature Review:

1. **The Montessori Method by Maria Montessori (1912). Montessori promotes self-directed learning and creativity by emphasizing a child-centered setting with natural and tactile materials.** When it comes to creating engaging, non-digital settings for kids, this book is essential. One of the first books to focus on child-centered learning settings was Maria Montessori's The Montessori Method (1912), which serves as a cornerstone resource for creating stimulating surroundings for young children. The core tenet of Montessori education is that children learn best when allowed to freely explore and engage with their environment in a self-directed way. To stimulate children's senses and improve cognitive development, she advocates using tactile and natural materials, such as wooden toys and textured surfaces. She also emphasizes the value of open areas and furniture that is proportionately scaled to promote autonomy, enabling kids to roam about freely and interact with their surroundings as they see fit. Overstimulation and clutter are strictly discouraged by the Montessori method. Promoting

simplicity and deliberateness in the use of materials instead. Because it emphasizes experiential, inquisitive learning above passive entertainment, this attitude is especially pertinent for creating non-digital play areas.
Reference: Montessori, M. (1912). The Montessori Method: Scientific pedagogy as applied to child education in "The Children's Houses". Frederick A. Stokes Company.

2. **Olds, Anita (2001): Design Guide for Child Care Olds talks on how to use material selection, lighting, and space design to create surroundings that are exciting for young children.** The book emphasizes how thoughtfully designed areas promote creative play and social connection without the need for technology. The idea that children's development is greatly influenced by their physical surroundings is expanded upon in Anita Olds' Design Guide for Child Care (2001). She offers thorough suggestions on how lighting, material selections, and space design might affect a child's play area experience. Her work highlights how crucial it is to use materials that are safe, long-lasting, and interesting to encourage both creative and sensory play. Another important factor is lighting. Olds recommends using as much natural light as possible because it has been demonstrated to enhance children's mood, vitality, and cognitive abilities. She also talks about how important it is to zone a play area so that different sections may accommodate different activities, including socializing, quiet reading, and energetic play. Her work emphasizes the necessity for flexible and adaptable spaces that can accommodate a variety of activities while guaranteeing safety and comfort, which makes it especially relevant in the context of a multipurpose children's hall.
Reference: Olds, A. R. (2001). Child Care Design Guide. McGraw-Hill Professional.
3. **Lisa Daly and Miriam Belo Glovsky, Loose Parts: Inspiring play in young children.** This book supports screen-free play spaces by emphasizing the use of natural, recycled, and open-ended items to encourage children's creativity. It offers helpful advice on how to create a hall or nursery that promotes inquiry and participation. The concept of loose parts play is introduced in Amy Strickland's 2017 book Loose Parts: Motivating Young Children to Play. It is predicated on the notion that children are inherently drawn to unrestricted materials that they may manipulate, mix, and repurpose in inventive ways. Natural elements like stones, wood, and shells, as well as common home objects and repurposed materials, can all be considered loose pieces. Strickland contends that because these materials allow children to explore independently without strict guidelines or preconceived results, they foster curiosity, experimentation, and problem-solving skills. The sustainability of loose parts play is a major benefit as it encourages the use of natural and recycled items instead of manufactured plastic toys. This strategy fits in nicely with the layout of a children's hall, where sections for storing and displaying loose pieces can be included to let kids choose and interact with whatever things best suit their unique interests and creative tendencies. **Reference:** Daly, L., & Belo Glovsky, M. (2014). Loose Parts: Inspiring play in young children. Redleaf Press.

4. **Integrating Natural Loose Parts and Topographical Diversity in Play Spaces.** It has been demonstrated that including varied topography and natural loose components into children's surroundings greatly improves their physical development, inventiveness, and resilience. In contrast to artificial or structured play areas, children engage in more creative and productive play when they work with natural materials like wood, sand, stones, and leaves (Zamani, 2016). Because they are open-ended, loose parts encourage curiosity and provide kids with the chance to create their own games. The use of natural terrain, such as slopes, logs, and uneven surfaces, in addition to loose materials, promotes risk-taking, balance, and the development of motor skills in a secure setting. This encourages the development of dynamic and enriching play environments that let kids push boundaries and develop their self-confidence via movement (KOMPAN, n.d.). To create a strong link between exploration and physical activity in a non-digital environment, the multipurpose children's hall can deliberately employ natural loose pieces and built-in topographical variability both indoors and in transitional outside spaces.
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5. Designing Sensory-Rich and Flexible Indoor Environments. Many studies highlight how important sensory-rich and flexible interior spaces are for fostering children's creativity, independence, and emotional health. According to Studio Huske (n.d.), using natural materials, textures, and colors,

such as wood, stone, fabrics, and gentle lighting, stimulates children's senses while fostering a calm environment that lessens overstimulation. In addition to their practical uses, these materials help create a more grounded, outdoorsy feel indoors. Additionally, spatial design must be flexible. Spaces that can be rearranged according to the type of activity, whether for storytelling, crafts, group play, or relaxation, support a range of learning styles and developmental needs, claims the Natural Learning Initiative (n.d.). These flexible areas enable kids to take charge of their surroundings, make choices, and participate more fully in activities. This method improves child-led learning and social interaction by enabling seamless transitions between play, relaxation, and educational activities without the need for technology in a multipurpose hall.

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III. Definition:

Problem Statement

1. The existing multi-purpose hall in the village was not optimized for a variety of activities and lacked clear zoning, adequate transportation links, and activities that were attractive to children.
2. Visible support columns can interrupt the flow of activity or limit the flexibility of the space's use.
3. Add more doors and corridors in the large area for more effortless movement.
4. The large area may hinder the entry of natural light into the interior if the windows are not optimally distributed.
5. Using and choosing safe and natural materials may be better for children.
6. Designing the hall without using electronics may require replacing it with flexible materials that help children move and adapt.

Motivation

We chose this project for the Village location because there is no suitable children's play area in the area, and the Village is also a shopping destination that caters to parents. In today's technology-driven world, children are increasingly using electronic devices for entertainment and learning, often at the expense of physical activity, social interaction, and imaginative exploration. This trend has raised concerns among parents and educators about the impact of excessive screen time on children's overall development. Spaces explicitly designed for children often lack features that encourage hands-on engagement, exploration, and meaningful connections with peers. The Village's existing multi-purpose hall provided an opportunity to address these challenges by creating a space that emphasizes holistic development in a screen-free environment for children. Designing a hall that fosters creativity, curiosity, and collaboration can offer children a valuable alternative to digital distractions. The project was motivated by the desire to create a supportive and engaging environment that supports children's growth while addressing the inefficiencies of the current design.

Research Questions

1. How can a multipurpose hall's layout encourage innovation, teamwork, and physical activity without the use of electronic devices for children?
2-What layouts and design features may be employed to maximize the hall's usability for Children?
3-How can a warm and sustainable environment be created by combining natural materials with conventional design ideas?
4- What are the most important factors to balance in a multipurpose hall for kids in terms of flexibility, safety, and engagement?

IV. Identity:

Location

The Village Oman is a mixed-use development located in the Al Seeb area of Muscat, Oman. It is designed to blend traditional Omani charm with modern amenities, offering a variety of retail, dining, and entertainment options.

Sun direction:

According to the typical east-to-west trajectory, the sun rises in the east and sets in the west. The sun may, however, be more directly overhead due to Seeb's proximity to the equator, particularly in the summer. Predominant Winds: Seeb has a warm, desert climate, with sporadic northwest and west sea breezes, especially in the late afternoon and evening. Particularly close to the seaside, the air flow might provide some respite from the heat.

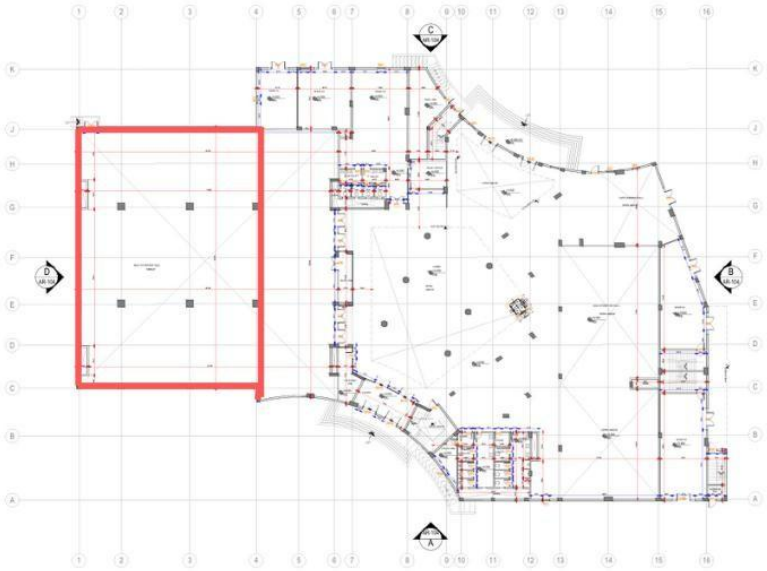
Objectives

1-To provide a vibrant, that fosters children's imagination, curiosity, and deep connection.
2- Redesigning the hall to provide a place for the player, educational activities, and communication between children.
3- Maximize the hall's layout for better space use, better circulation, and greater versatility for a variety of uses.

4- Use natural and safe materials for children, such as Solid Wood, Rubber Flooring, Wool, or Cotton Rugs. 5-To guarantee that the renovated area satisfies safety regulations and provides a stimulating and engaging setting for kids' overall development.

Building map

2D Plan for the location specified in red for the multi-use hall with an area of 820 meters.



Expected outcome

- **Enhanced Functionality:** An adaptable area with zones for various purposes and movable or flexible furniture that may support a variety of activities, including learning, play, performances, workshops, and events.
- **Safety and accessibility: an emphasis on child-friendly furnishings**, finishes, and materials that put safety first. Children of all ages and abilities, including those with impairments, would be taken into consideration when it comes to accessibility.
- **Using vibrant, creative, and innovative design features** that promote creativity, exploration, and engagement with sensory experiences through textures, colors, and lighting is known as interactive and stimulating design.
- **Spaces that may be rearranged according to the occasion** or size of the gathering, including areas for calmer pursuits, group play, performance, and energetic play.
- **Community Engagement:** An area with features that represent the local culture, values, and inclusion that promote social interaction and teamwork.
- **Durability and Sustainability:** Using long-lasting finishes that are easy to maintain and can withstand intensive usage, as well as sustainable materials.
- **Wellness and Comfort:** Providing natural lighting, ventilation, and comfy places to unwind so that both kids and caregivers may feel at ease.

1. Case study:

1.1. Oman:

The project is in line with Oman Vision 2040, especially when it comes to community wellbeing, sustainable development, and education.

1) Complementing the Development of Humans and Society (Education & Childhood Development):

• Oman Vision 2040 aims to improve education and lifelong learning, and this is in line with the emphasis on a technology-free environment that fosters creativity, social contact, and physical involvement. The goal is to develop abilities beyond academics, such as critical thinking, creativity, and communication. 32

• Child Development: The project promotes the vision's goals of holistic education and early childhood care by encouraging social engagement and interactive, hands-on learning, ensuring that children grow up in a balanced and engaging setting.

2) Traditional Values & Cultural Identification:

• The integration of traditional Omani design elements and nature-based learning is in line with

Oman Vision 2040, which aims to preserve Omani culture while incorporating it into contemporary development.

• **The project strengthens community ties by promoting face-to-face interactions**, group play, and storytelling, all of which support the social and familial values that are central to Omani identity.

3) Environmental Awareness & Sustainability:

• **Eco-Friendly Design & Use of Natural Materials:** Oman Vision 2040 places a strong emphasis on environmentally responsible development and sustainability. Reducing environmental effects is one of the sustainable development goals that the project supports with its emphasis on natural materials and adaptable space design.

• **Nature-Based Learning:** One of Oman's long-term sustainability objectives is to foster environmental awareness and responsibility in children by allowing them to engage with natural components and sustainable design elements.

4) Improving Oman's Quality of Life:

• **Public Spaces & Community Well-Being:** The vision places a strong emphasis on developing welcoming, stimulating environments for well-being and social engagement. The Village's redesigned multipurpose children's hall contributes to Oman's goal of livable, community-focused urban development by providing a safe, stimulating, and healthy environment for kids.

• **Alternative to Digital Dependency:** The project supports Oman's objective of encouraging healthy lives and lowering children's screen dependency by offering an area free from technological distractions.

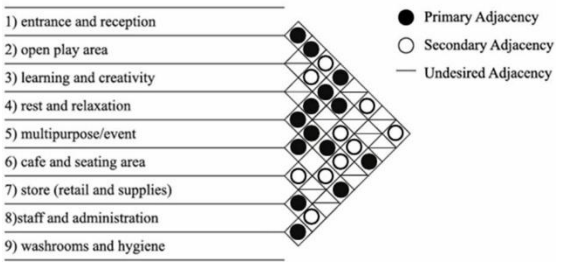
V. Discussion:

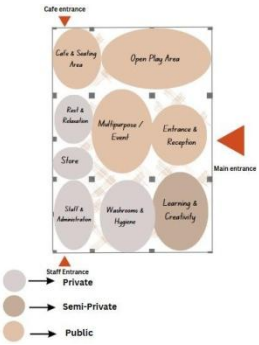
Methodology

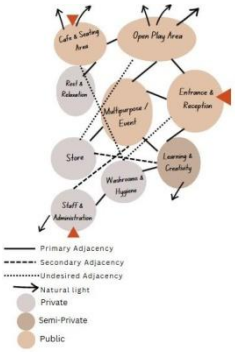
This study takes a thorough and methodical approach to renovating The Village's multipurpose hall for kids. To guarantee that the finished design meets user demands and fixes discovered inefficiencies, the process combines qualitative and quantitative methodologies. An extensive literature study is conducted at the start of the process to examine the body of knowledge on technology-free and kid-friendly environments. This includes reading ideas pertaining to children's cognitive, social, and physical development as well as examining effective case studies and best practices in spatial design. Literature's insights will form the basis for creative ideas and well-informed design choices. To evaluate the present hall's layout, zoning, circulation, and environmental elements like lighting, ventilation, and acoustics, a thorough site survey will be carried out. The materials chosen and their appropriateness for an interactive, child-focused environment will also be examined. This stage will point out opportunities for improvement and uncover inefficiencies in the hall. Input from stakeholders is an essential part of the study. Through surveys, interviews, or focus groups, input from kids, parents, teachers, and community members will be gathered. While parents and educators will offer insights into safety, usefulness, and developmental goals, children's preferences and needs will direct the design of entertaining places. Feedback from the community will guarantee that the redesign honors regional customs and cultural values. These results will produce preliminary design concepts that include natural materials, safe circulation patterns, and functional zoning. Sketches, 3D models, or virtual simulations will be used to illustrate various layout alternatives. By testing these designs' usability and feasibility, prototyping will assist in making sure they achieve the project's goals Stakeholders will be shown the suggested designs for comments and improvement. The design solutions will be addressed and will meet user expectations thanks to this iterative procedure. To determine if the redesign can be implemented realistically, given the time and budget restrictions, a feasibility study will also be carried out. Finally, a thorough design proposal will be the result of the investigation. Detailed layout designs, material specifications, and implementation suggestions will all be included. The ultimate design will strive to create an environment that is useful, entertaining, and devoid of technology, encouraging children's creativity, interaction, and overall growth.

Concept

A flowing, nature-inspired design with delicate, layered shapes. (inspired by the layers of sedimentary rock when cut). Engaging the senses using textured materials and 3D components. The redesigned children’s hall will be a dynamic environment where every layer represents a new opportunity for learning, creativity, and social interaction. The space will be shaped by soft, flowing forms that encourage movement and exploration, much like nature’s own evolving landscapes. By eliminating digital distractions, space becomes a multi-sensory journey that invites children to touch, explore, and engage in activities that enhance creativity, motor skills, and social development. The integration of textured materials, 3D elements, and organic forms stimulates curiosity and imagination, creating a truly immersive environment.

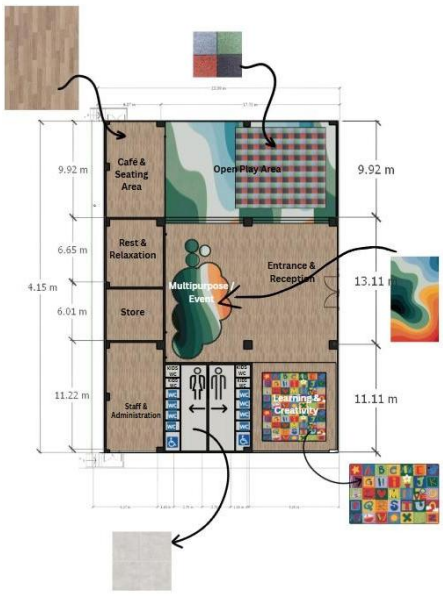






Criteria matrix Zoning Diagram
Relationship diagram

Design outcomes
Floor Plan:



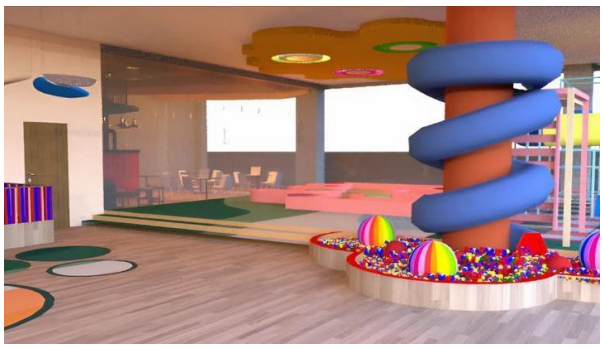
3D Perspectives (Rendered):

Learning area 3D View

Learning area 3D View

Café and seating area 3D View

Reception area 3D View



Open play area 3D View

Washroom and Hygiene area 3D View

VI. Conclusion:

In conclusion, the proposed redesign of the multipurpose children's hall at The Village in Seeb, Muscat, presents a visionary approach to fostering a nurturing environment for children aged 3 to 12. By emphasizing natural play, hands-on exploration, and social interaction, the project addresses the critical need to reduce children's dependence on digital devices while supporting their holistic development. With functional zoning for various activities and spaces, the design fosters independence, creativity, and cooperative play within a safe and inclusive framework. Rooted in principles of experiential learning and developmental psychology, this initiative not only aligns with modern sustainable design practices but also contributes to Oman Vision 2040 by promoting education, sustainability, and cultural identity. Ultimately, this project aspires to serve as a model for future community-oriented child spaces, creating meaningful, tech-free environments that foster cognitive, physical, and social growth in early childhood.

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