



K.R. MANGALAM UNIVERSITY
THE COMPLETE WORLD OF EDUCATION

Sohna Road,
Gurugram

**"Revitalizing Community Spaces: A Comprehensive Design Proposal for the
Ghamroj Community Center"**

SCHOOL OF ARCHITECTURE AND DESIGN

Programme code: APAR217A

Project Guide: Ar. Praveen Gupta, Associate Professor, SOAD

Academic Year – 2023-24

TABLE OF CONTENTS

	Page Number
Declaration	2
Certificate	3
Introduction	5
Objectives	5
Description of Activities	6
Analysis & Interpretation	9
Conclusion & Recommendation	10-11
Appendix includes Geo-Tagged Photographs	12-25

I. Introduction

"Vernacular architecture: where the wisdom of the past meets the innovation of the present, crafting a timeless dialogue between culture and construction."

In the tapestry of architectural design, the concept of **vernacular architecture** stands as a testament to the intimate dialogue between a community and its built environment. As we embark on this journey of crafting a community center in Ghamroj, we find inspiration in the rich tapestry of vernacular styles that have shaped diverse communities across the globe.

Our exploration began with a literature study through the architectural narratives of various states, unraveling the stories woven into the very fabric of their buildings. This literary study served as a prologue to our deeper understanding of vernacular architecture—where local traditions, materials, and techniques converge to create structures that resonate with the essence of a place.

From these textual landscapes, we ventured into the realm of practicality by delving into two compelling case studies. The first, an international voyage, unfolded the pages of a community center abroad, showcasing how vernacular elements transcend borders, forming a universal language of architecture. The second, nestled within the heart of India, illustrated how vernacular aesthetics bridge the past and the present, honoring heritage in the context of community spaces.

Our immersion into the living vernacular heritage took us to Ghamroj village, where the soil itself seemed to whisper the stories of generations past. Through keen observation, we absorbed the nuances of local construction, the artistry in using indigenous materials, and the wisdom embedded in age-old construction techniques. The village became a living museum, showcasing the seamless integration of architecture with the natural and cultural landscape.

As we stand on the threshold of designing a community center in Ghamroj, we approach this endeavor not merely as architects but as custodians of a narrative. It is a tale of tradition and innovation, of a place finding its voice in the language of bricks and mortar. Our mission is to synthesize the whispers of vernacular wisdom into a harmonious design that resonates with the soul of Ghamroj.

II. Objectives:

- Cultural Preservation and Integration:
To Preserve and celebrate the local cultural identity by incorporating vernacular architectural elements and design aesthetics.
- Sustainability and Environmental Sensitivity:
To utilize local materials and construction techniques that align with the principles of sustainability.
Design an energy-efficient and environmentally friendly community center that minimizes its ecological footprint.
- Local Materials and Construction Techniques:
To Explore and utilize indigenous materials found locally for construction.
Incorporate traditional construction techniques that have proven effective in the local context, ensuring sustainability and resilience.

III. Description of Activities

Literature study:

Our exploration into vernacular architecture commenced with a comprehensive literature study, a collective endeavor aimed at unraveling the diverse architectural narratives woven across the states of India. Individuals were tasked with delving into the vernacular architecture of a specific state, with the objective of gaining insights into the unique techniques, local materials, and construction methods inherent to each region.

Local Materials and Construction Methods:

The study emphasized the intimate connection between vernacular architecture and locally available materials.

From the red sandstone of Rajasthan to the bamboo structures of Northeastern states, the choice of materials was deeply rooted in the geographical and environmental attributes of each region.

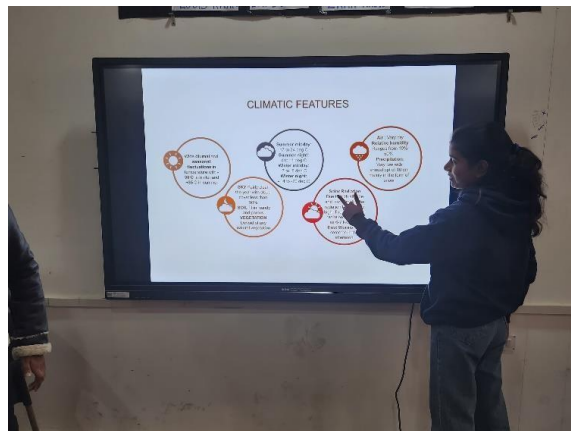


Figure 1 PRESENTATION OF LITERATURE STUDY

Case Study:

Our exploration expanded to global perspectives through case studies of vernacular architecture buildings around the world. This phase aimed to deepen our understanding of community center planning, emphasizing architectural considerations such as building orientation, climatic responsiveness, material integration, and the role of local craftsmanship.

Methodology:

Group Case Study:

Teams of three individuals were formed for a collaborative exploration of a vernacular community center located abroad.

The focus was on understanding the design principles, incorporating locally available materials, roof structures, planning, circulation, design strategies.

Individual Case Study:

Subsequently, each team member conducted an individual case study on a vernacular community center in India.

The objective was to analyze the building's orientation, roof structure, use of local materials, involvement of local craftsmen, and the balance between passive and active design strategies.

Key findings:

Community Center Planning:

Both case studies highlighted the meticulous planning involved in community center design, emphasizing functionality, accessibility, and community engagement.

Climate-Responsive Design:

Orientation and roof structures were tailored to the climatic conditions of the respective regions.

Material Integration and Craftsmanship:

Locally available materials played a pivotal role in the design, contributing to sustainability and cultural relevance.

The involvement of local craftsmen showcased a synergy between traditional skills and modern design needs.

Passive Design Strategies:

Both case studies demonstrated a commitment to passive design strategies, minimizing energy consumption through natural ventilation, lighting, and shading.

Active strategies were judiciously employed, with an emphasis on sustainability.

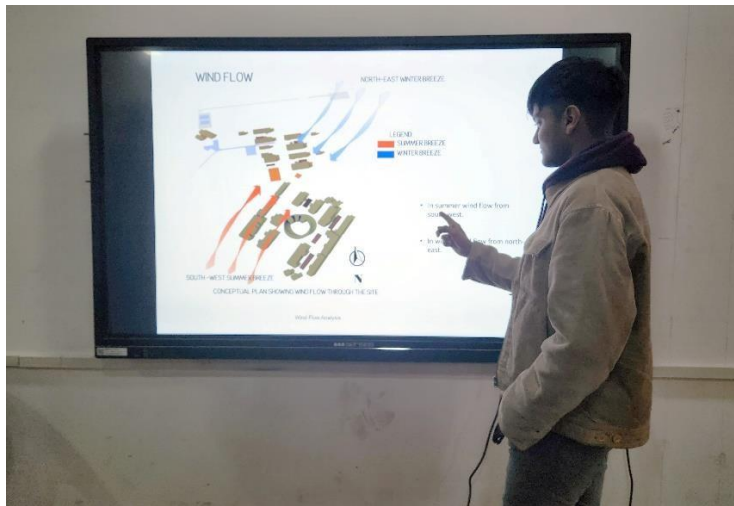


Figure 2 PRESENTATION OF INDIVIDUAL CASE STUDY

Design Process

Site Description

The project site, spanning 1176 sq m, presents a unique set of challenges and opportunities. Key site elements include a BSNL tower, transformer, existing building, vegetation, and a washroom.

Program Requirements

The community center program was developed with requirements of two meeting halls, a library, office room, reception, sitting spaces, kitchen/pantry, washrooms, parking area, and outdoor spaces. Each element was carefully considered to meet the specific needs of the community.

Concept Development

The design concept revolves around the celebration of vernacular architecture. Traditional building forms, materials, and spatial arrangements were explored to create a design that is not only functional but also deeply rooted in the cultural identity of Ghamroj village.

Schematic Designs

A series of schematic designs were developed to explore various design possibilities. Each iteration considered the unique characteristics of vernacular architecture, experimenting with different layouts, forms, and façade treatments.

Building Permits and Bye-law

The design complies with local building permits and bye-laws, ensuring regulatory requirements are met. Special attention was given to the vernacular theme while adhering to safety and accessibility standards.

Detailed Design Development

The double line plans, site plans, sections, and elevations were meticulously developed, reflecting the culmination of the design process. Integration of site elements is seamlessly woven into the overall design narrative.

Sustainability Considerations

The project incorporates sustainable design principles, utilizing locally sourced materials and implementing energy-efficient strategies. This approach not only aligns with environmental goals but also promotes economic resilience within the community.

Appendices

Drawings, renderings, and sheets are included in the appendices to provide a comprehensive understanding of the design process.

IV. Analysis & Interpretation

Community Needs Assessment:

The identified shortcomings in the village, notably the absence of common meeting halls and a library, underscore the immediate need for communal spaces and educational resources. Recognizing the lack of a community center further emphasizes the void in facilities that could benefit a diverse range of village residents, especially students.

Strengths of the Design:

The design developed by us emerges as a robust solution to address these shortcomings. The inclusion of meeting halls provides a dedicated space for community gatherings and events, fostering a sense of unity and shared experiences. The addition of a library meets the educational needs of students, offering a resourceful haven for accessing books and promoting knowledge dissemination.

Community Empowerment:

The designed community center serves as a source of strength for the village. It empowers residents by providing a central hub for social, educational, and cultural activities. The inclusion of various spaces caters to the diverse needs of the community, creating an inclusive environment that fosters growth and community engagement.

Sustainability and Vernacular Architecture:

The integration of sustainability principles in the design reflects a forward-thinking approach. By utilizing vernacular architecture, the project not only pays homage to the cultural identity of the village but also ensures that the construction aligns with local climate conditions and available resources. This choice is advantageous, promoting environmental sustainability and economic resilience within the community.

V. Conclusion

Our venture in vernacular architecture, manifested in the Ghamroj community center, signifies a seamless fusion of tradition and innovation. From global case studies to the vibrant living heritage of Ghamroj village, we've witnessed the universal language spoken by vernacular elements.

As architects, we see ourselves as stewards of a narrative, intricately woven with local materials, transcending the structure into a nuanced blend of tradition and innovation. The community center stands as a living testament to the harmonious coexistence of tradition and modernity in Ghamroj.

Incorporating local materials and honoring vernacular wisdom, the center becomes a vibrant expression of cultural identity, engaging in a continual dialogue with contemporary innovation. The design choices ensure the center's integration with its surroundings, fostering social cohesion and reflecting the values ingrained in the vernacular fabric of Ghamroj. By seamlessly blending tradition with innovation, the design transcends temporal boundaries, ensuring its relevance in the past, present, and future.

Our commitment is rooted in a deep respect for the wisdom embedded in vernacular architecture, with the community center serving as a vessel that carries the rich tapestry of local heritage forward.

The design of the Ghamroj community center, rooted in a fusion of tradition and innovation, directly benefits the locals in real-time by contributing to their overall holistic development. The incorporation of locally available materials and adherence to vernacular wisdom not only respect the community's cultural identity but also stimulate economic activity by engaging local craftsmen. This involvement fosters skill development and empowers the community, promoting sustainable practices and enhancing the local economy.

Moreover, the community center serves as a social hub, fostering interaction and cohesion among the locals. The thoughtful planning and integration with the surroundings create a space that accommodates various communal activities, contributing to the social development of the community. The center becomes a platform for gatherings, events, and cultural activities, enriching the social fabric of Ghamroj.

In terms of sensitizing students towards local issues, the design itself becomes an educational tool. By incorporating vernacular elements, materials, and construction techniques, students are exposed to the importance of cultural sensitivity and context-specific design. The community center stands as a living example of the harmonious coexistence of tradition and modernity, encouraging students to appreciate and learn from the local context.

The process of designing the Ghamroj community center has offered valuable insights into societal dynamics. The collaborative exploration, including global case studies and immersion in the living heritage of Ghamroj, has reinforced the significance of inclusive design practices. It underscores the importance of understanding and respecting local cultures, engaging with communities, and addressing their needs and aspirations in the architectural process.

Finally, the design of the Ghamroj community center not only benefits the locals in real-time through

economic, social, and cultural enhancements but also serves as an educational tool for students, sensitizing them towards the intricacies of local issues. The learning from this experience extends beyond the technical aspects of architecture, emphasizing the broader societal responsibilities and the role of architects in contributing to holistic community development.

VI. Appendix



Figure 3: SITE VISIT TO GHAMROJ



Figure 4: INTERACTION WITH LOCAL PEOPLE



Figure 5: DISCUSSION WITH OFFICIAL MEMBER.



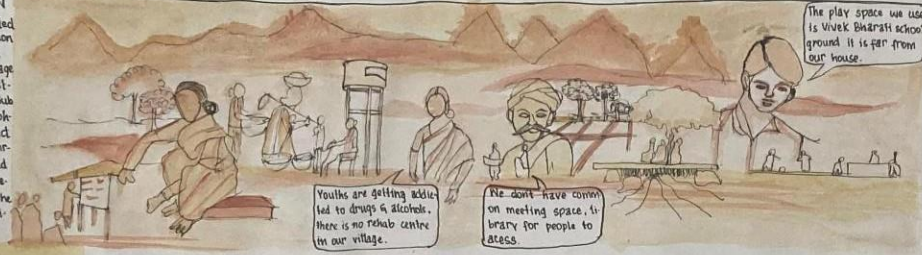
Figure 6: EXISTING ELEMENTS IN THE SITE.

ARCHITECTURAL DESIGN - I! PORTFOLIO

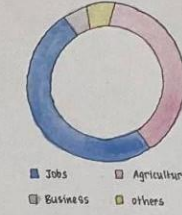
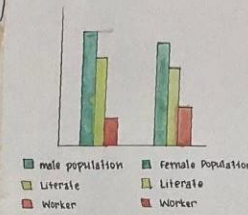
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BARCH, SEM - I!
KRMU

INTRODUCTION

Gamroj village is located in Sohna tahsil of Gurgaon district in Haryana. Total geographical area of village is 1157 hectares. It is situated 4kms away from Sub district headquarters Sohna and 15kms from district headquarters Gurgaon. Gamroj village is administered by a sarpanch who is elected representative of the village by the local elections.



DEMOGRAPHY



Population	-	4797
Male	-	2494
Female	-	2303
Literacy Rate	-	84.13%
Male	-	78.3%
Female	-	65.39%
Families	-	842
Sex Ratio	-	923

INDIA



HARYANA



CHAMROJ



LAND USE



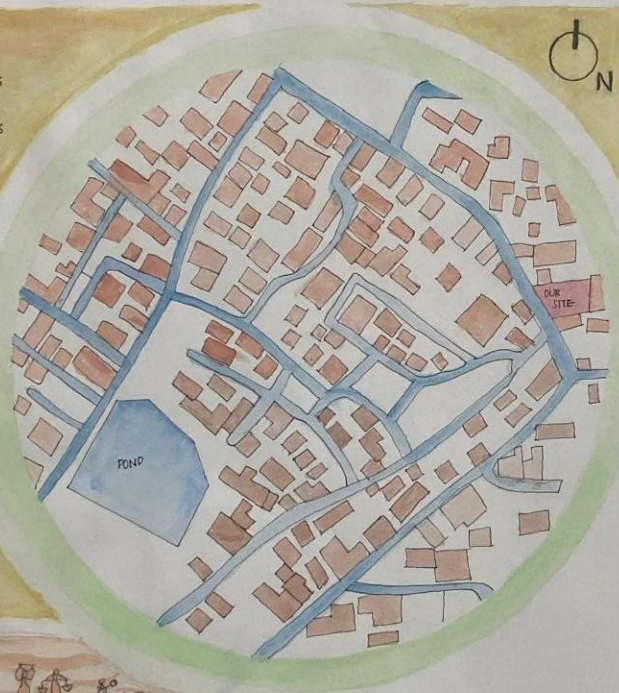
ACCESSIBILITY

IGI Airport	-	34 Kms
Gurgaon Railway Station	-	21 Kms
Gamroj Bus Stop	-	1.2 Kms
Vardaan Hospital	-	3.2 Kms
Govt girls School	-	350 M
Bondsi Police Station	-	15 Kms

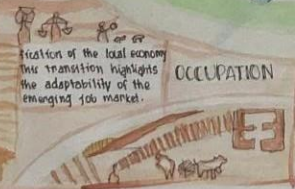
Location: BSNL exchange tower, Gamroj, Gurgaon, India.
Site Area: 1176 M²

LANDMARK

Pond	-	400m
Krishna Mandir	-	240m
DK Medical Store	-	200m
Anshul Mobile Centre	-	250m
Ambaji Hardwares	-	110m

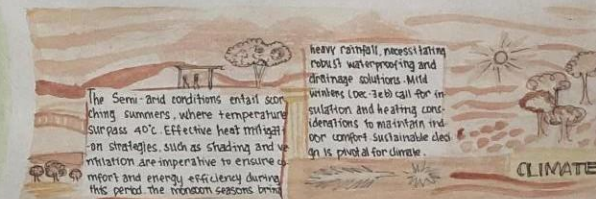
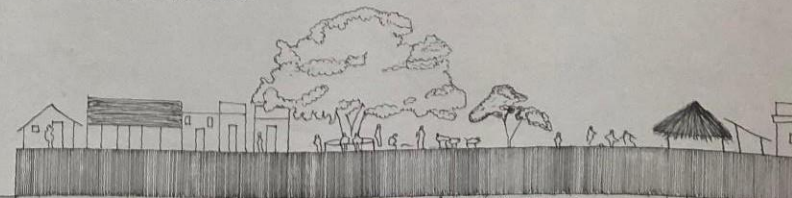


growing number of residents are now engaged in non-agricultural jobs with many commuting to nearby suburban centres. Additionally, some villagers have ventured into business contributing to diversification of the local economy. This transition highlights the adaptability of the emerging job market.



OCCUPATION

COMMON GATHERING SPACE



The Semi-arid conditions entail scorching summers, where temperature surpass 40°C. Effective heat mitigation strategies, such as shading and ventilation are imperative to ensure comfort and energy efficiency during this period. The monsoon seasons bring heavy rainfall, necessitating robust waterproofing and drainage solutions. Mild winters (Dec-Feb) call for insulation and heating considerations to maintain indoor comfort. Sustainable design is pivotal for climate.

CLIMATE

STRENGTH	WEAKNESS	OPORTUNITY	THREAT
Position in central village. Traditional style of the Biodiversity	No medical facility No place for engagement of people. Noise disturbance	Provides opportunity to gather. Create sustainable environment.	It is not resistant to earthquake. Load bearing structure cannot develop more than 2 levels.

GRAMODAYA

- PANCHAYAT BHAWAN

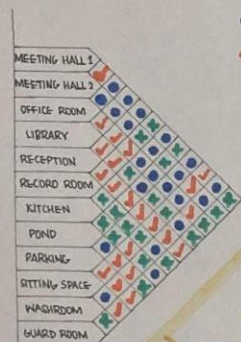
SITE ANALYSIS

REMARKS	DEECKSHITHA S 2206160013 BARCH, SEM-III ARCH DESIGN-II	SHEET NO 01
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REQUIREMENTS

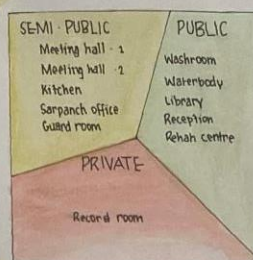
- MEETING ROOM
- LIBRARY
- RECEPTION
- SITTING SPACE
- OFFICE
- KITCHEN / PANTRY
- RECORD ROOM
- WASHROOM
- GUARD ROOM
- PARKING
- OUTDOOR SPACE

PROXIMITY CHART

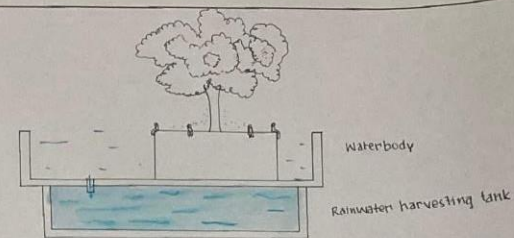
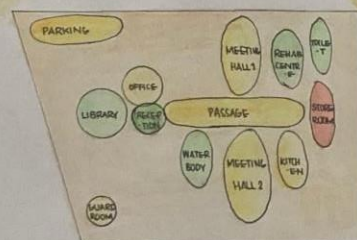


FORM EVOLUTION

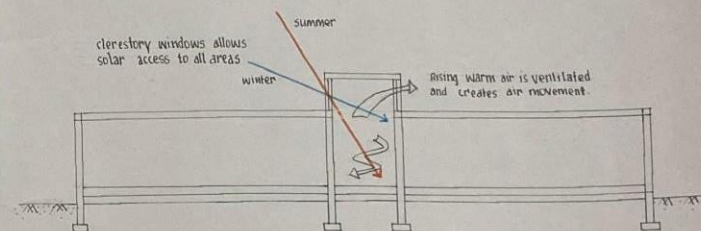
ZONING



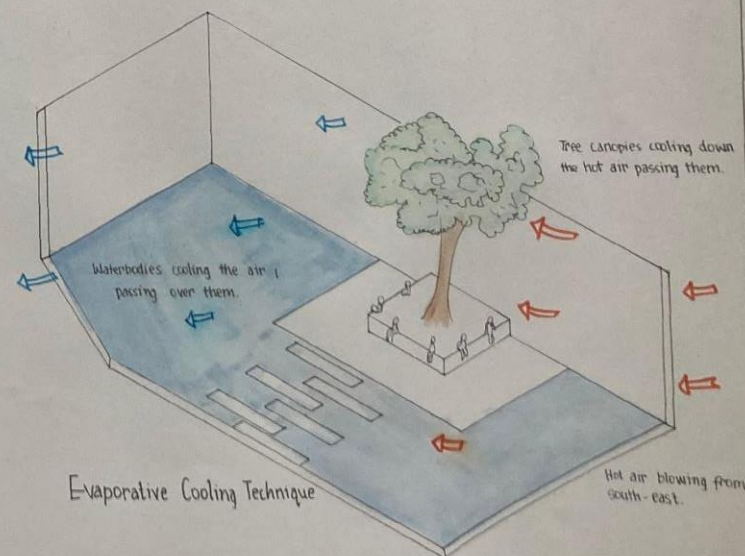
BUBBLE DIAGRAM



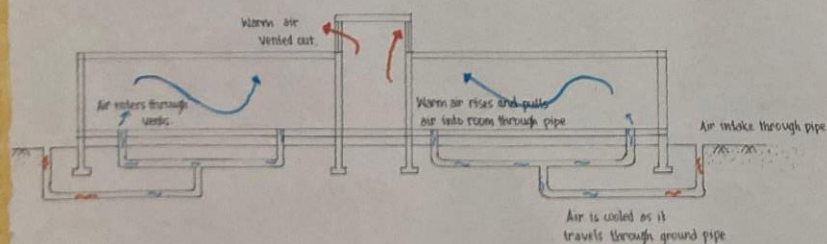
Rainwater Harvesting Technique



Clerestory Window Passive Design



Evaporative Cooling Technique



Solar Chimney

PASSIVE COOLING TECHNIQUES

GRAMODAYA

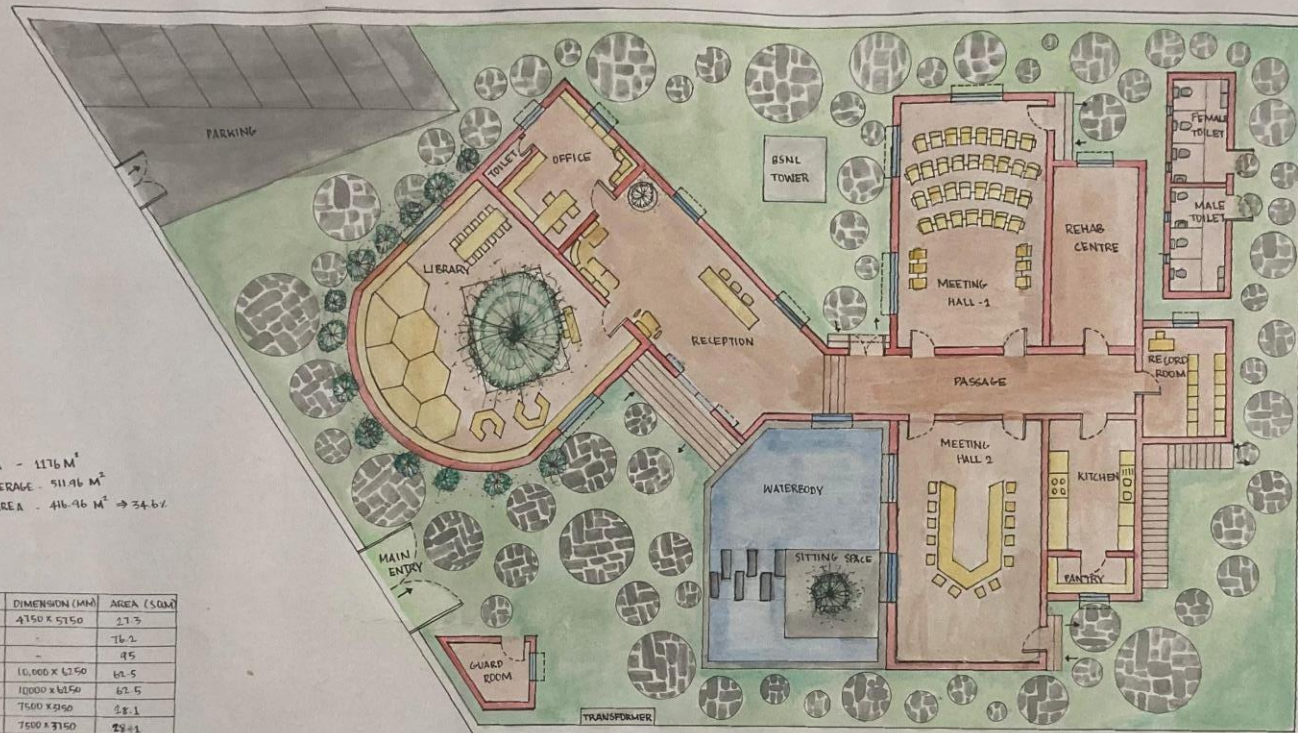
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CONCEPT

REMARKS

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ARCH DESIGN - II

SHEET NO
02



TOTAL AREA - 1176 M²
 GROUND COVERAGE - 511.96 M²
 BUILT-UP AREA - 416.96 M² → 34.6%

SPACE	DIMENSION (MM)	AREA (SQ.M)
SARPANCH OFFICE	4750 X 5750	27.3
LIBRARY	-	76.2
WATERBODY	-	95
MEETING HALL 1	10,000 X 6750	67.5
MEETING HALL 2	10000 X 6750	67.5
RECORD ROOM	7500 X 3250	24.4
REHAB. CENTRE	7500 X 3750	28.1
KITCHEN / PANTRY	3350 X 4750	15.8
TOILET	4000 X 2250	20.2 SQ.M
GUARD ROOM	-	6.56M
PASSAGE	2.5M WIDE	-



SOUTH ELEVATION

5.7M
 4.7M
 0.6M
 0.3M

GRAMODAYA -PANCHAYAT BHAWAN

FLOOR PLAN & ELEVATION

REMARKS	DEECKSHITHA S 2206160013 B ARCH - 5EM - III ARCH DESIGN - II	SHEET NO 04
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MATERIALS



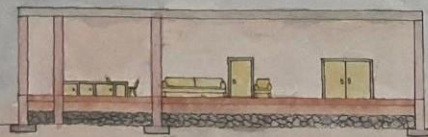
BRICK WALL



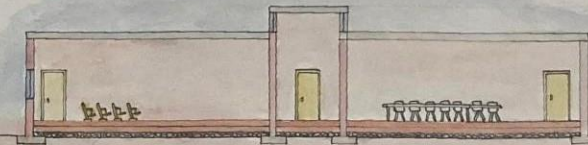
MUD FLOORING



STONE PAVEMENT



SECTION B-B



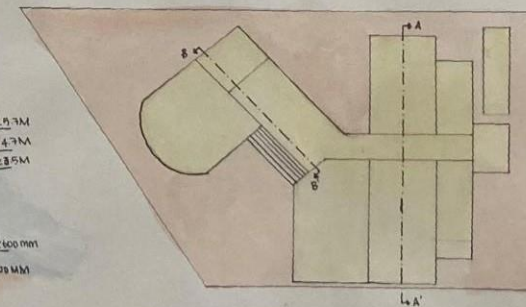
SECTION A-A



WEST ELEVATION

2.9.7M
2.4.7M
1.8.5M

1.600 mm
300 MM



KEYPLAN SCALE 1:250

GRAMODAYA

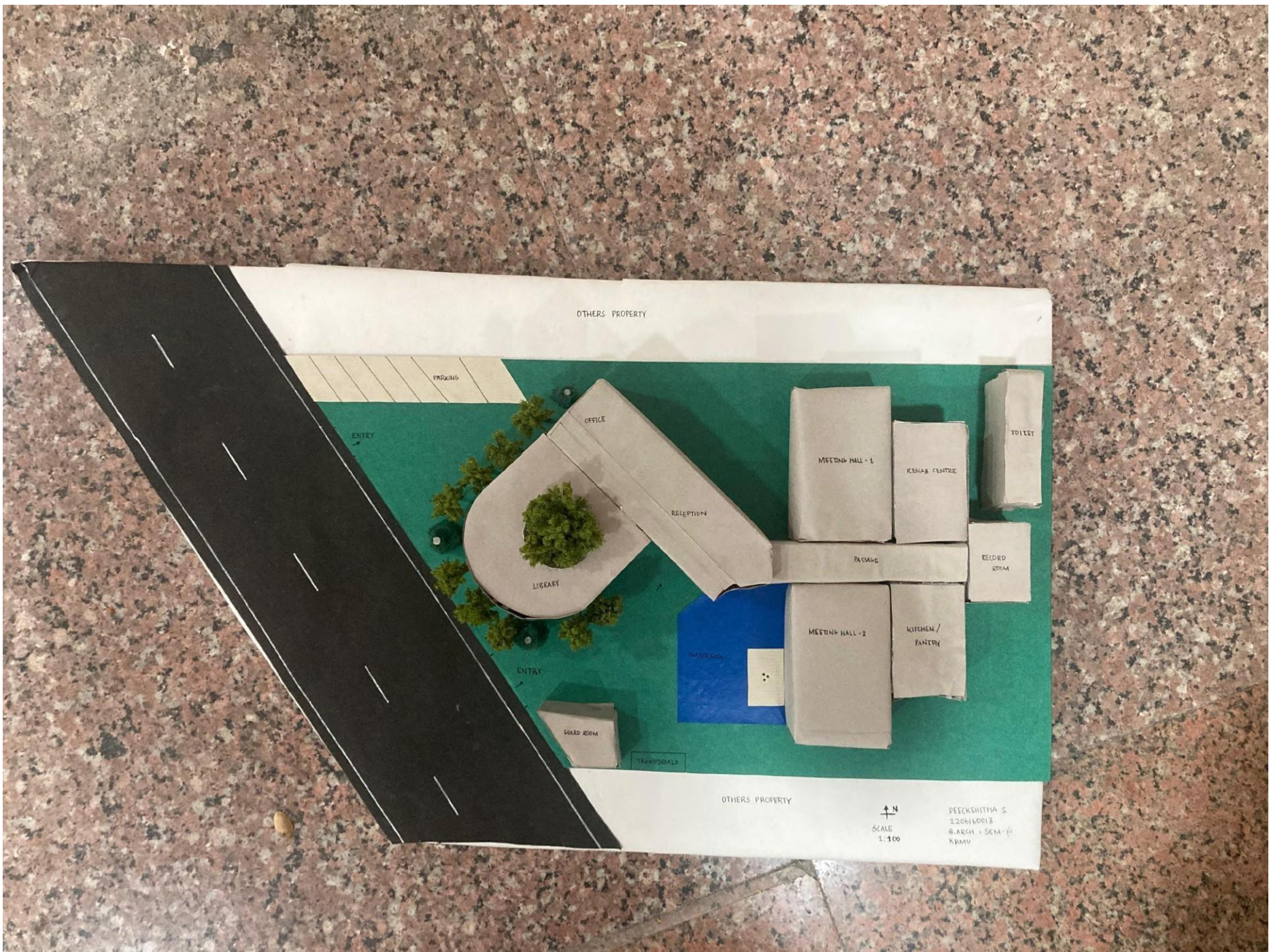
- PANCHAYAT BHAWAN

SECTION, ELEVATION & MATERIAL

REMARKS
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ARCH DESIGN - II

SHEET NO
05





OTHERS PROPERTY

PARKING

ENTRY

OFFICE

RECEPTION

LIBRARY

ENTRY

GUARD ROOM

TRANSFORMER

OTHERS PROPERTY

↑ N
SCALE
1:500

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MEETING HALL - 1

REHAB CENTRE

TOILET

PASSAGE

RECORD ROOM

MEETING HALL - 2

KITCHEN/
PANTRY

WATER TANK





