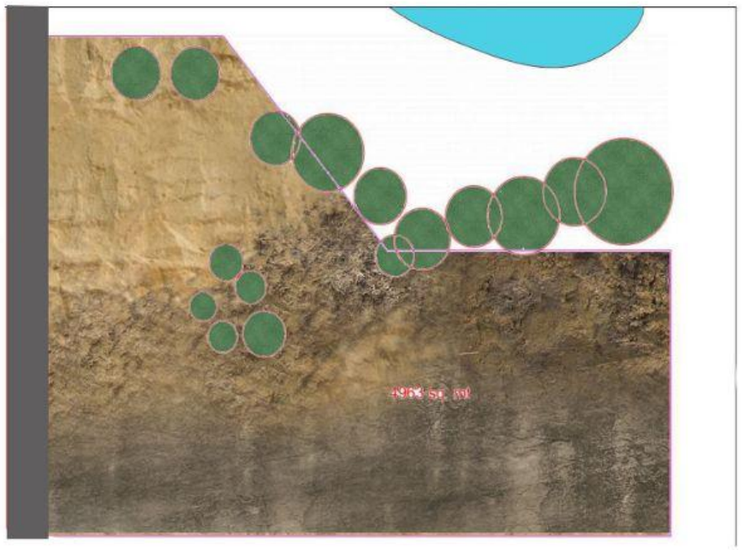
ARCHITECTURE PORTFOLIO

A Piece of my architectural work

THE KHATRI COMMUNITY OF AJRAKHPUR,BHUJ.



-THE PLACE IS KNOWN FOR ITS AJRAKH PRINT (BLOCK PRINTING ON CLOTH)ALL OVER THE WORLD.
-LOCATED AT A DISTANCE OF 15 KM FROM CITY OF BHUJ.
-IT HAS A HOT AND DRY CLIMATE ZONE
-THEIR IS AN INFLUENCE OF ISLAMIC ARCHITECTURE SEEN.INTRICATE JALI,WINDOWS AND TREFOIL ARCHES.

DESIGN CONSIDERATIONS

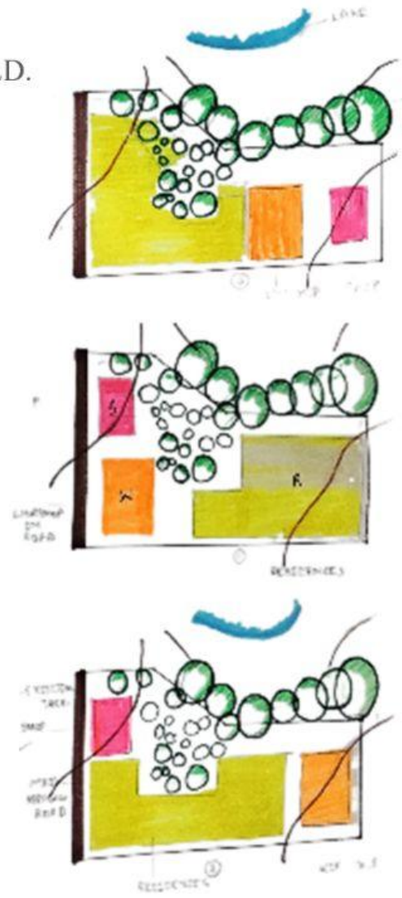
-SMALL WINDOWS TO COMPRESS THE AIR MAKING THE AIR COOL.

-WOODEN DOORS AND WINDOWS AS WOOD IS A GOOD INSULATOR OF HEAT.

-PATHWAYS IN THE COMMUNITY HOUSING TO RESTRICT VEHICULAR TRAFFIC.

-COMMON COURTYARDS FOR A SENSE OF CONNECTIVITY.

-SHADED VERANDAS WHICH CAN BE USED AS AN EXTRA SPACE FOR VARIOUS ACTIVITIES..

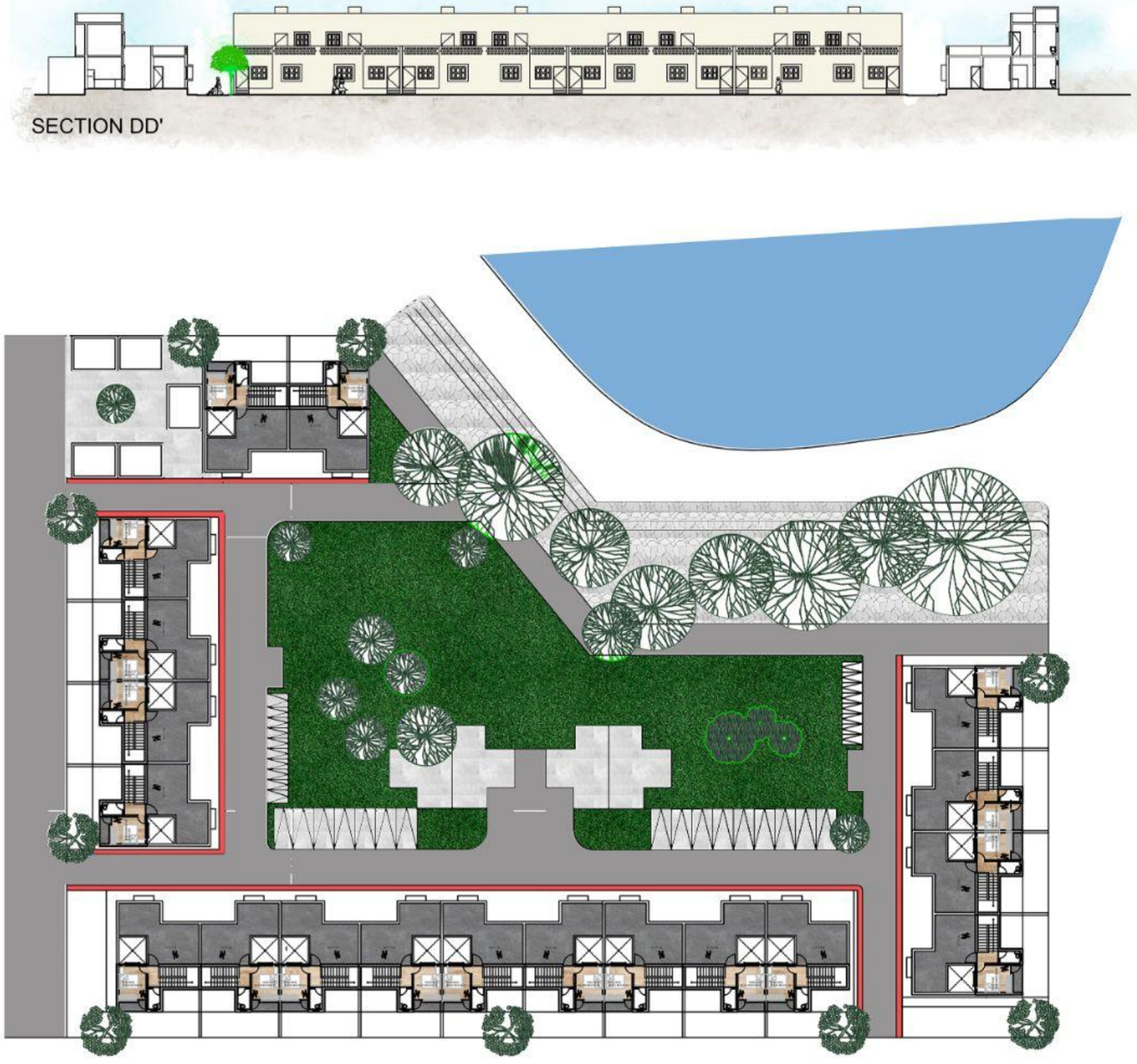


CONCEPTUAL PROCESS

COMMUNITY HOUSING STUDIO IV

SECTION CC'

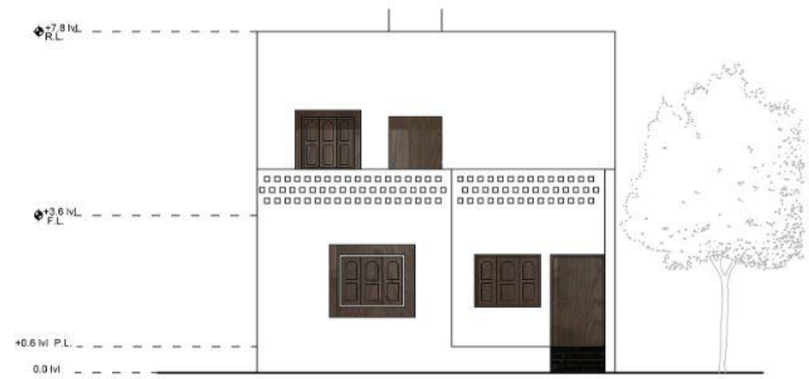
SECTION AA'



SECTION DD'

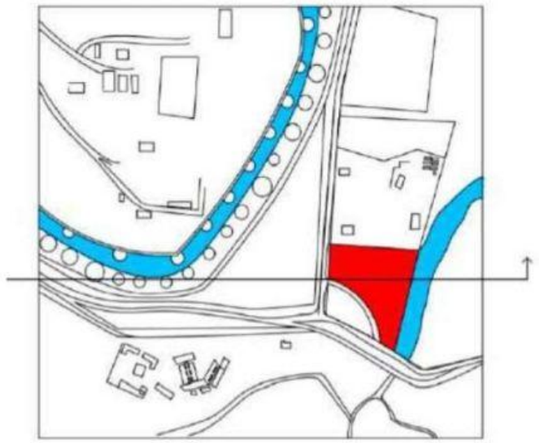
GROUND FLOOR PLAN

FIRST FLOOR PLAN

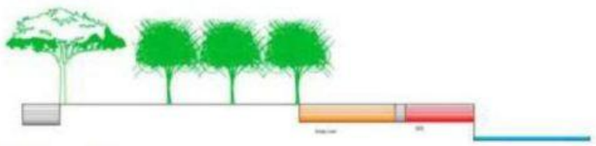


FRONT ELEVATION

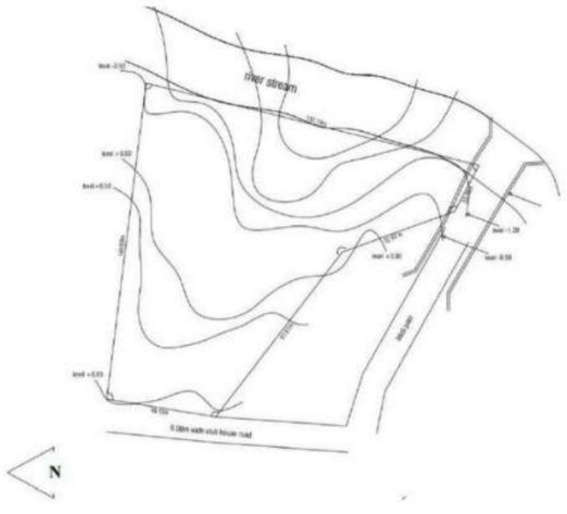
INSTITUTIONAL BUILDING



Plan



Site section



The site is located Near Ahmednagar Fort,near lokhandi B
Next to Nagar Club, Ahmednagar, Maharashtra.

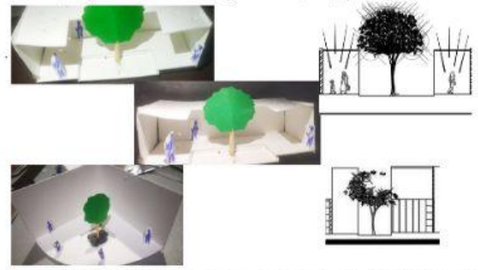
It has a Hot and dry climate of average temperature 24 C.

It is a Private plot of 13050 sqm

DESIGN CONSIDERATIONS

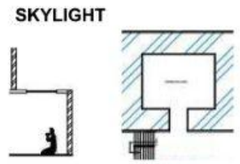
CONNECTION WITH NATURE

Courtyard makes a connection with nature
Due Complexity & Order the overlooking of corridors, the play of linear is seen



Dynamic & Diffuse Light -The open courtyard helps to play natural light and circulate the light all and inside

SKYLIGHT



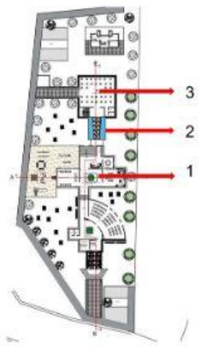
Non -visual connection with nature

Dynamic & Diffuse Light

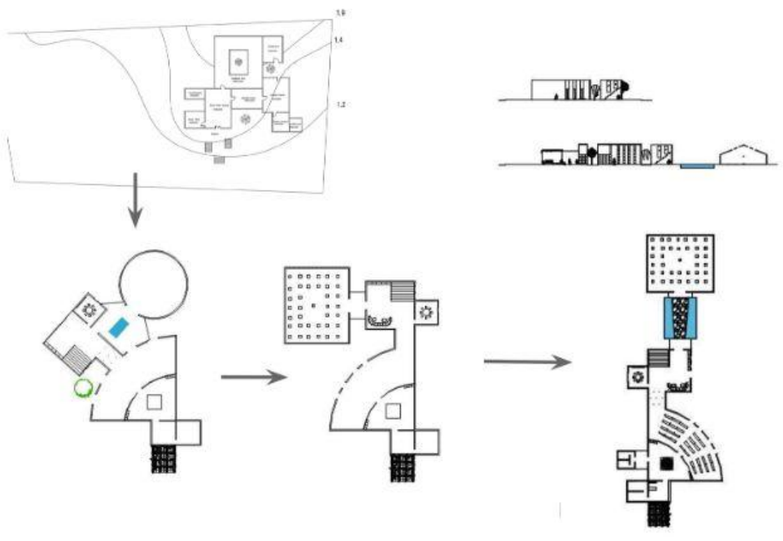
PRESENCE OF WATER

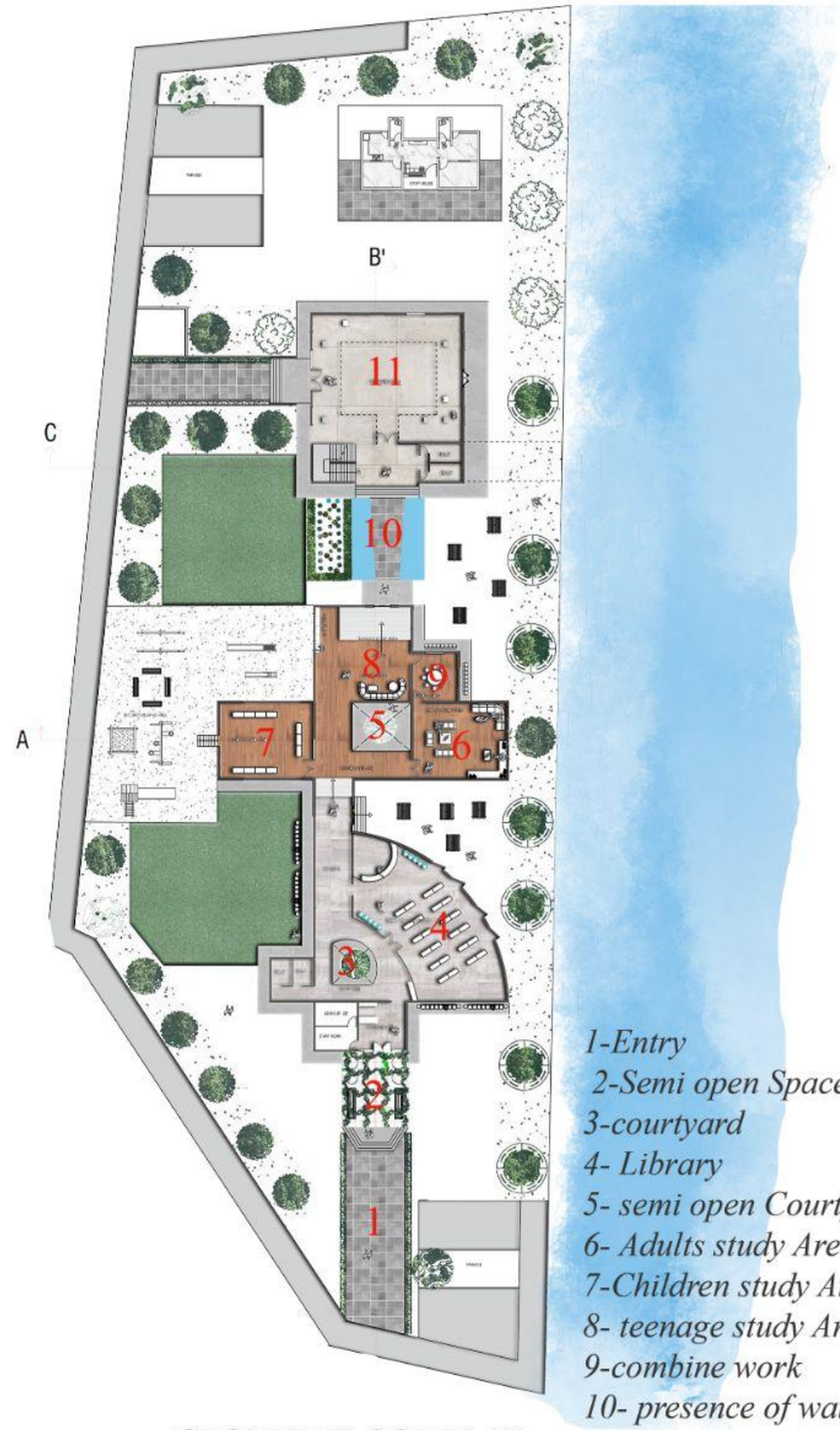
Thermal & Airflow Variability is there as water body to cool the hot winds into breeze can be a strategy from the planning stage.

Due to presence of water it helps to cool down the air and blew the breeze



CONCEPTUAL PROCESS

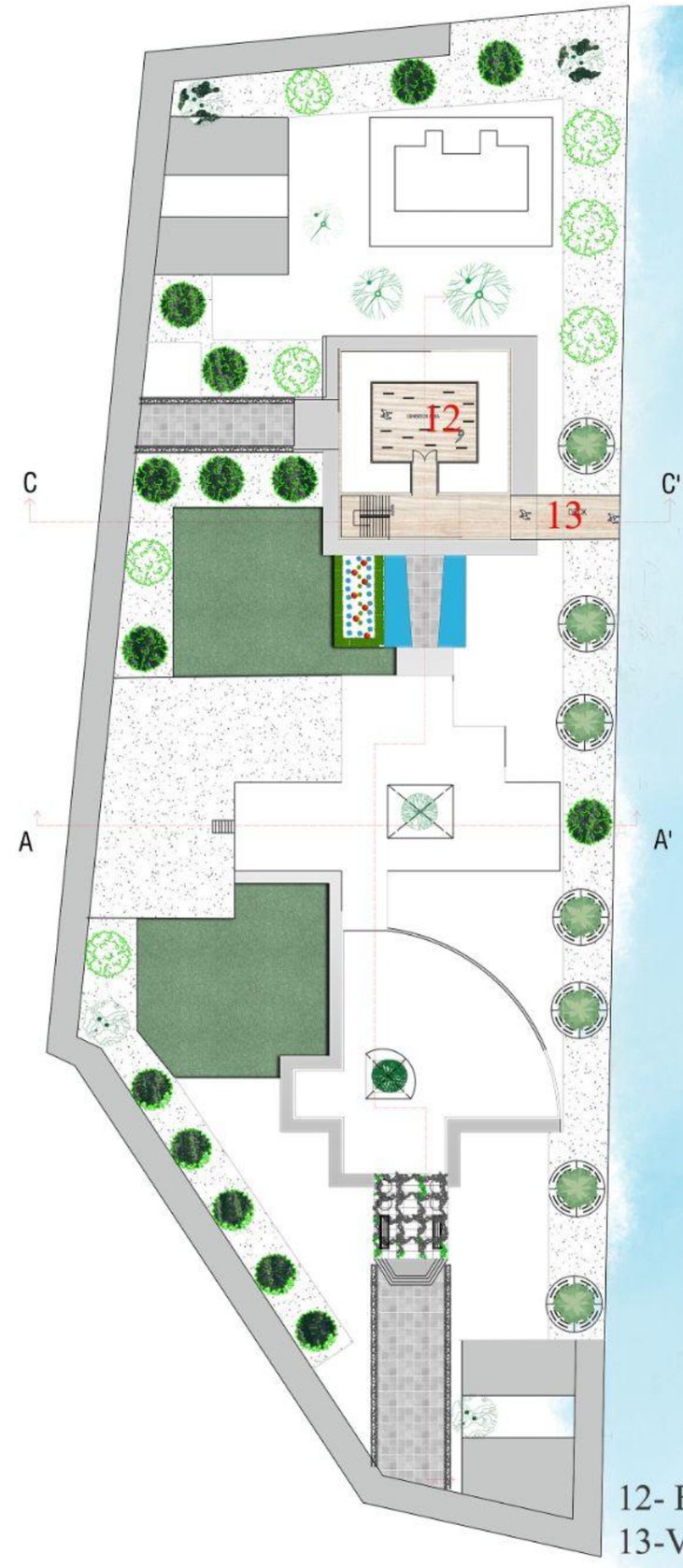


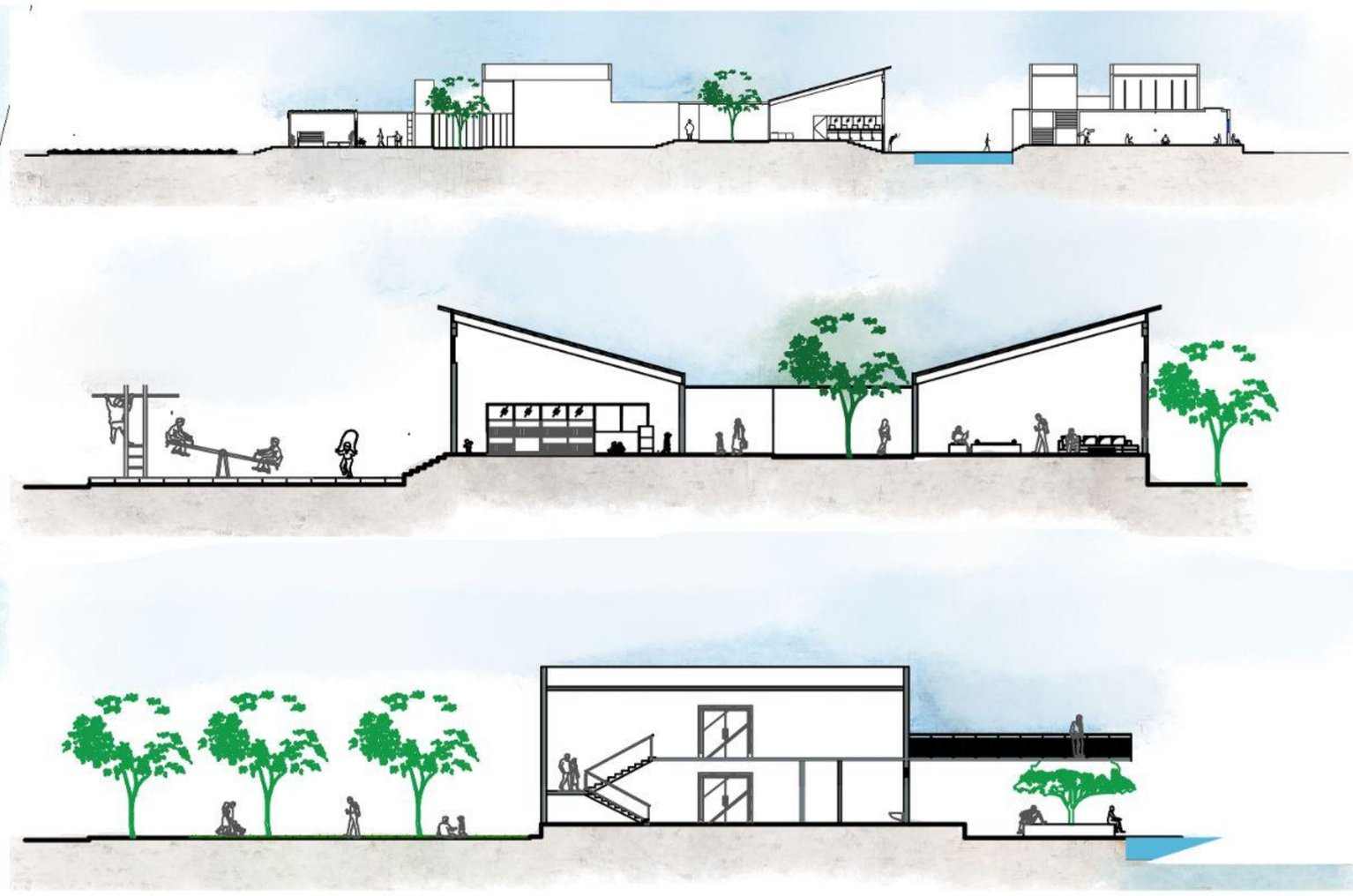


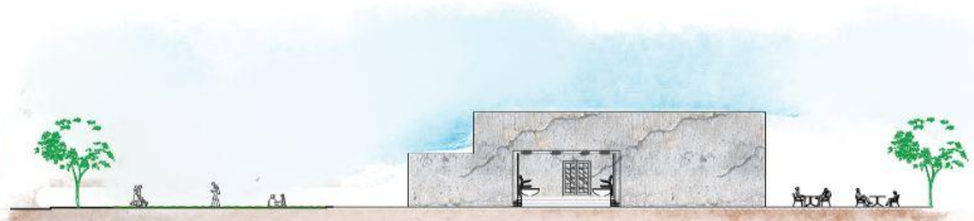
1-Entry
2-Semi open Space
3-courtyard
4- Library
5- semi open Courtyard
6- Adults study Area
7-Children study Area
8- teenage study Area
9-combine work
10- presence of water
11- meditation Area

GROUND FLOOR PLAN

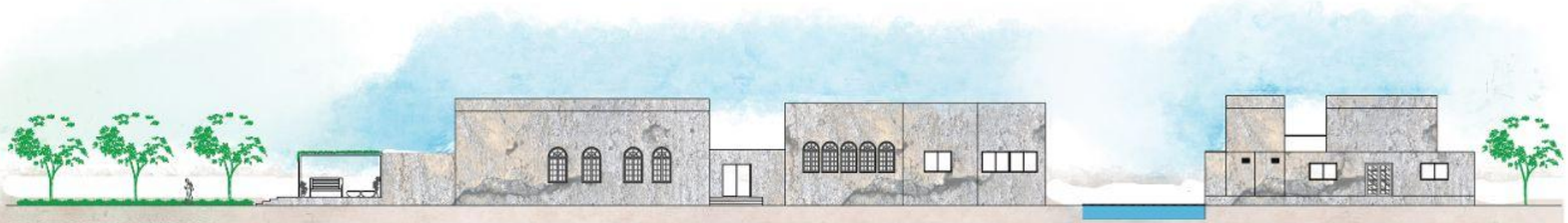
INSTITUTIUNAL STUDIO V







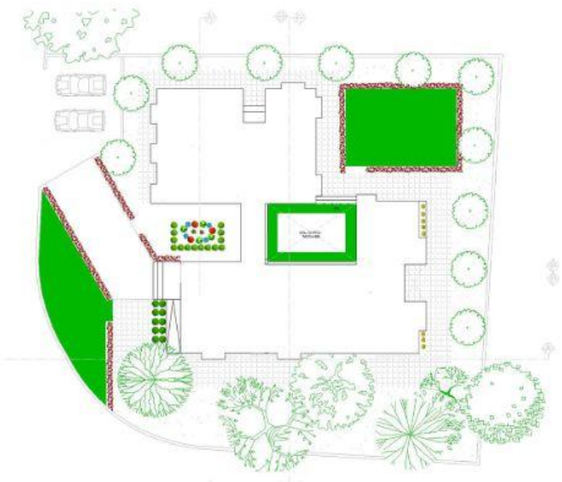
NORTH ELEVATION



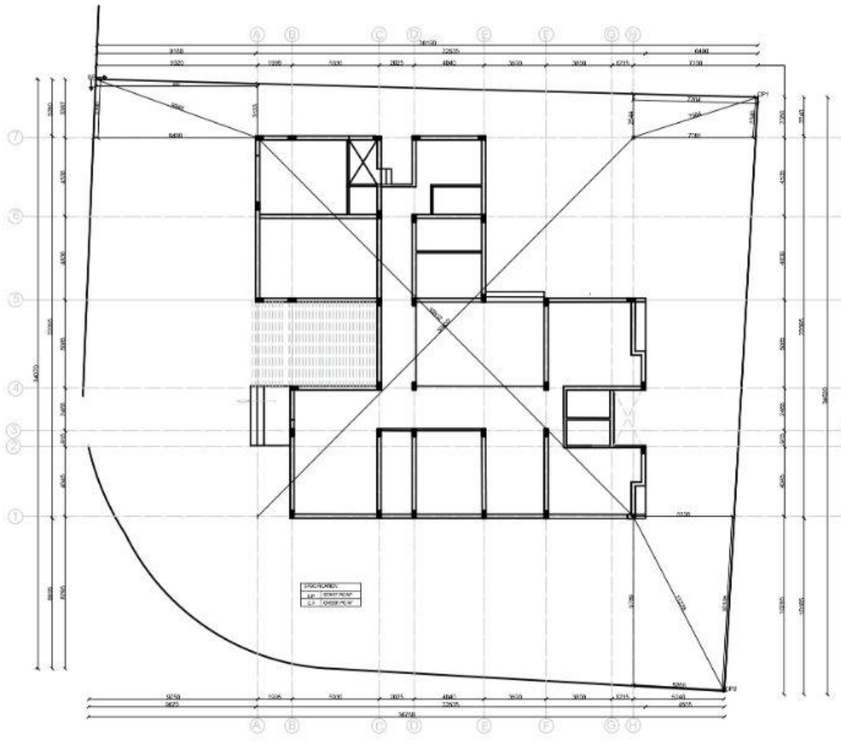
EAST SIDE ELEVATION

12- Exhibition Area
13-Viewing Deck

ANANT NATIONAL UNIVERSITY,AHMEDABAD



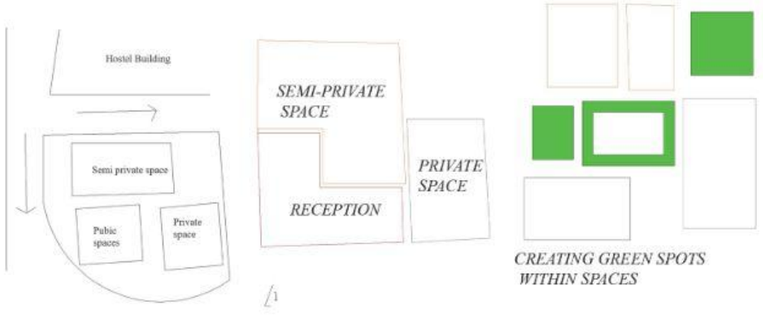
-The site is situated in the vicinity of Sanskardham in Ahmedabad, Gujarat.
-The site falls under hot and dry climatic zone.
-The average temperature is 27°C.
-The existing college building is situated towards the south of the site with an approach road in same direction and another road at the east side of the site.
-The dominant wind flows from south south to north east.

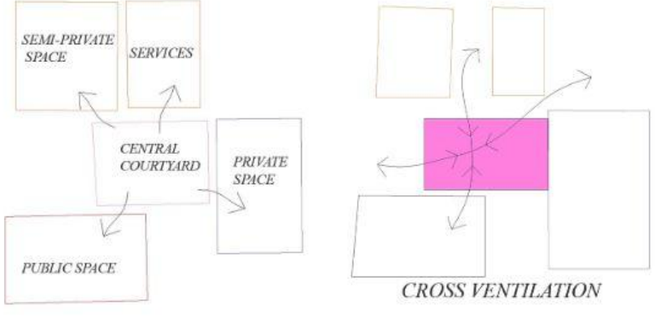


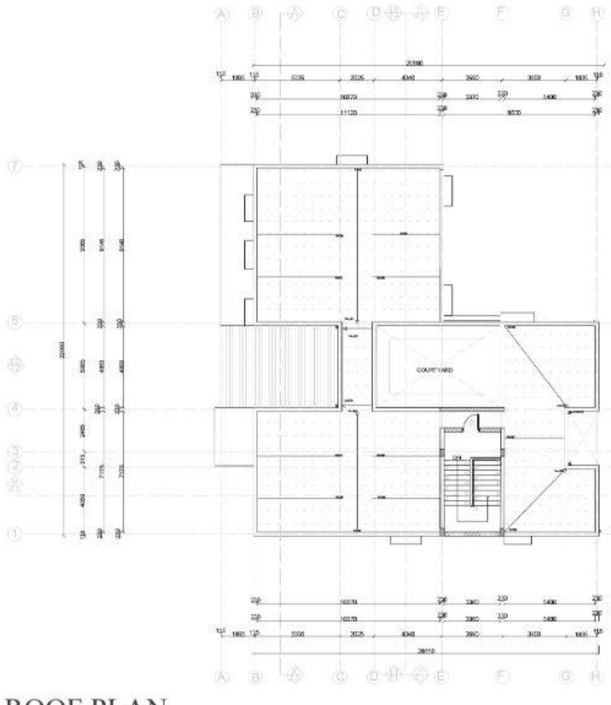
LINE OUT PLAN

GROUND FLOOR PLAN

CONCEPTUALIZATION DESIGN



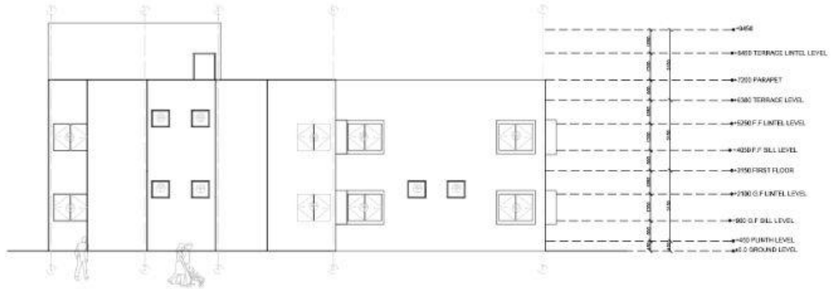




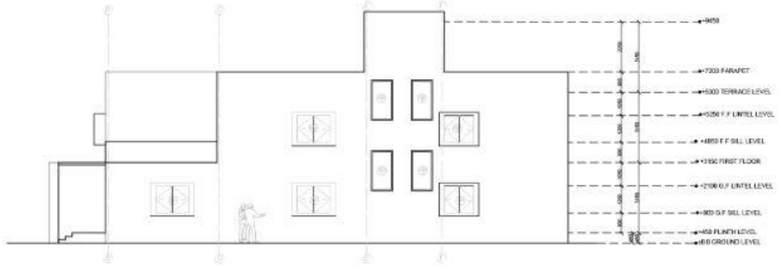
ROOF PLAN

FIRST FLOOR PLAN

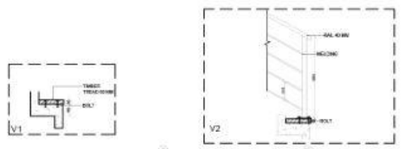
WORKING STUDIO VI

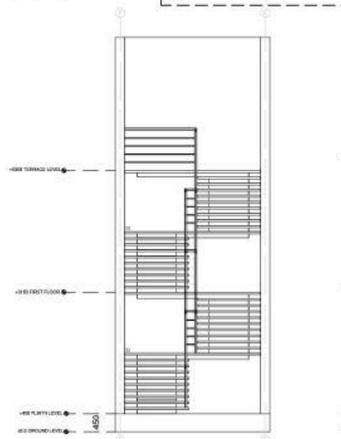


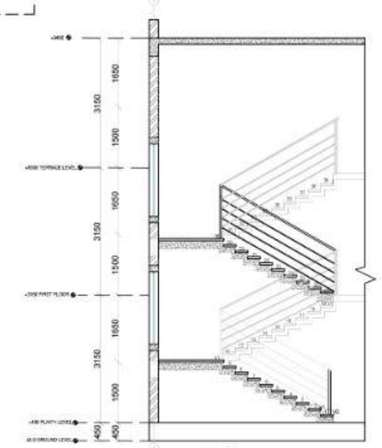
ELEVATION 4

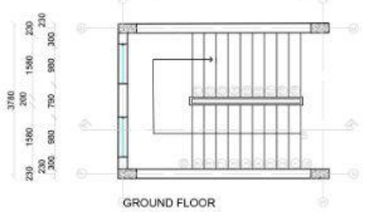


ELEVATION 1

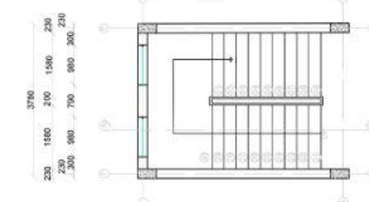




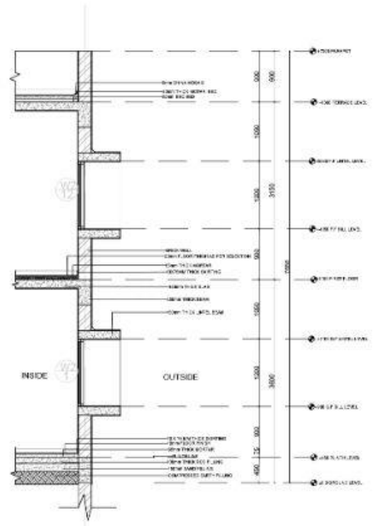




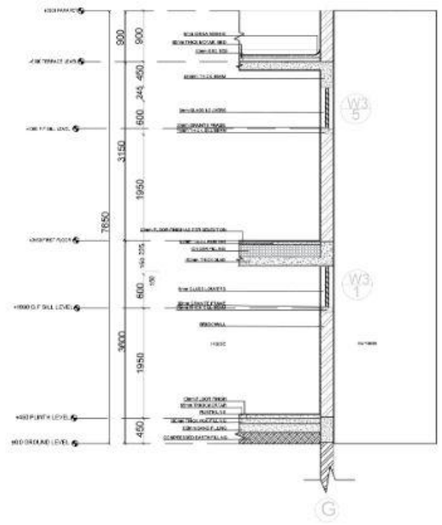
GROUND FLOOR



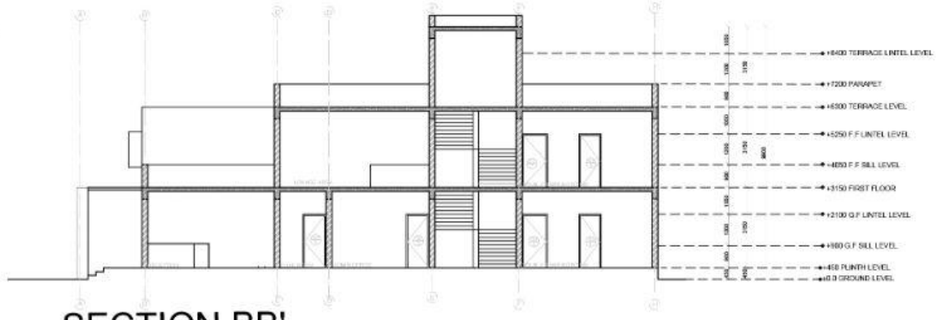
FIRST FLOOR



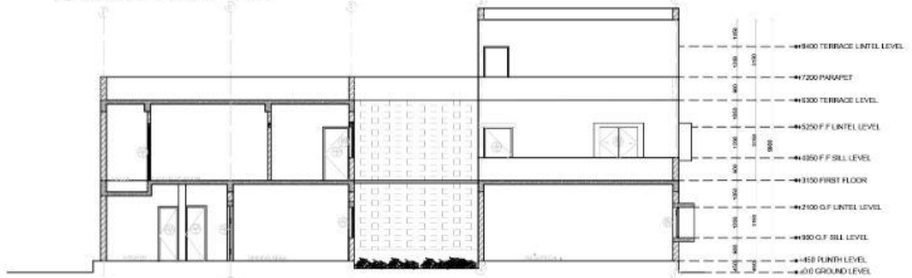
WALL SECTION - WINDOW



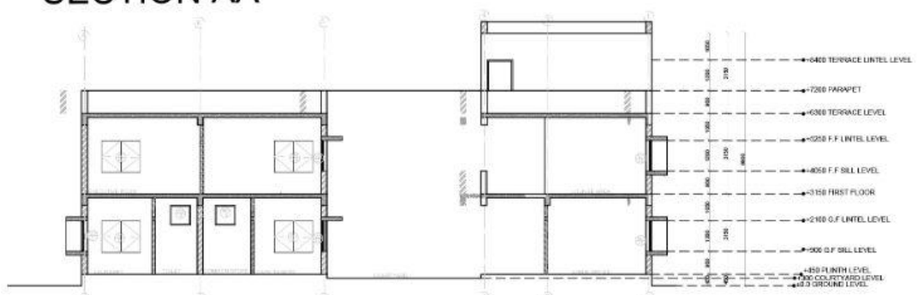
WALL SECTION-WASHROOM



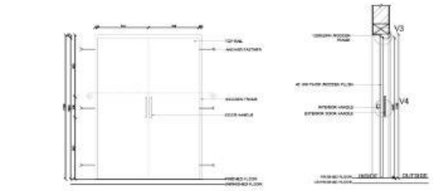
SECTION BB'



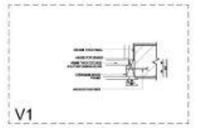
SECTION AA'



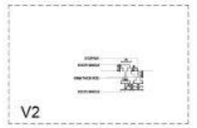
SECTION CC'



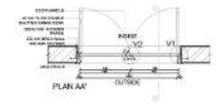
PLAN CC'



V1

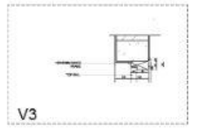


V2

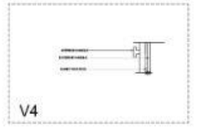


PLAN AA'

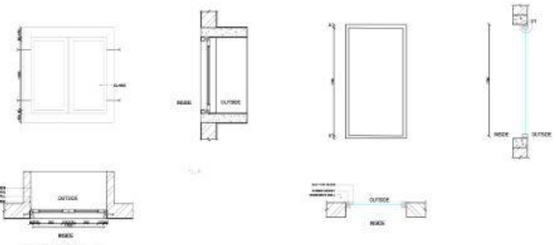
DOOR- 1



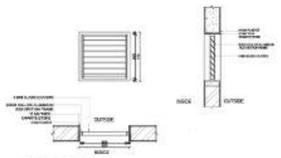
V3



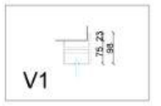
V4



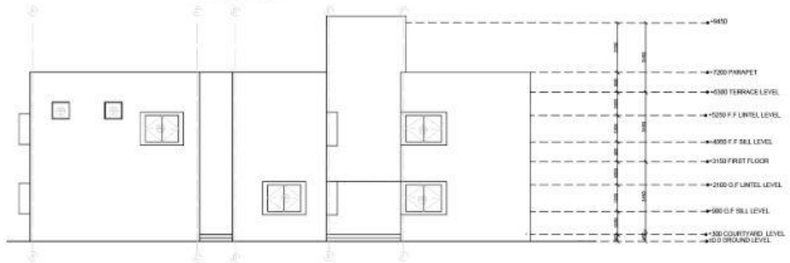
WINDOW -2



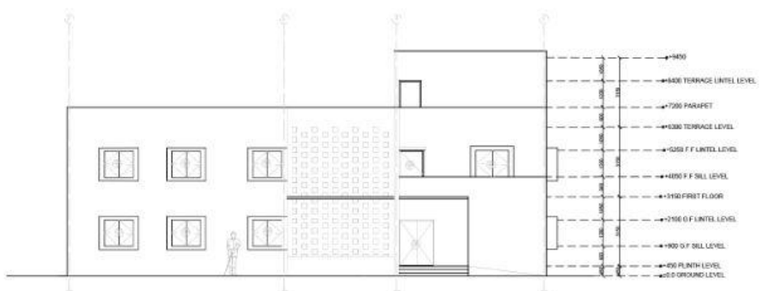
WINDOW -3



FIXED WINDOW -5

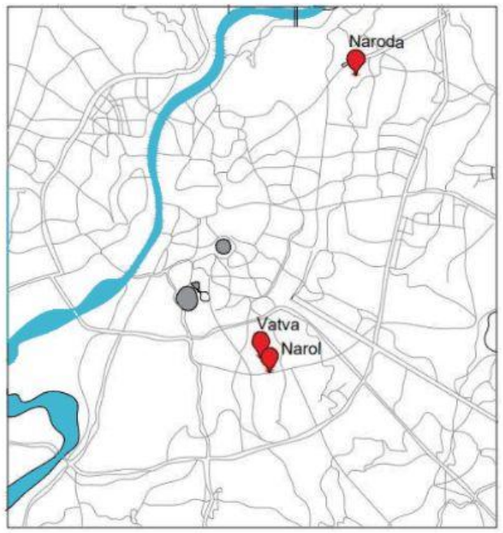


ELEVATION 3



ELEVATION 2

SABARMATI RIVER ,AHMEDABAD



RESONS OF SABARMATI RIVER GETTING DAMAGED

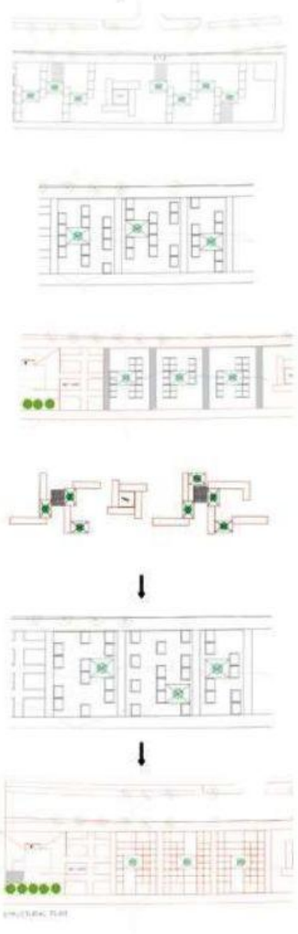
-The Sabarmati river is the main water source for the Ahmedabad district.

-The Chandrabhaga drainage discharges a staggering 60 million litres of untreated sewage into the Sabarmati every day.

-The AMC's Vasna treatment plant contributes 48 MLD of untreated sewage into the river.

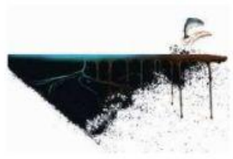
-The Dafnala area adds 20 MLD of untreated sewage to the Sabarmati.Other areas like Koteshwar, Motera, and Acher release 5MLD of untreated sewage each into the river.

PROCESS SHEET OF MARKET



SITE PLAN

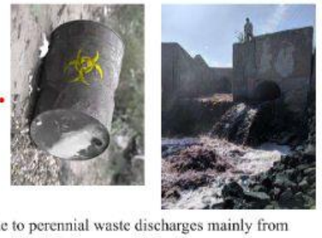
a "pool of polluted stagnant water"



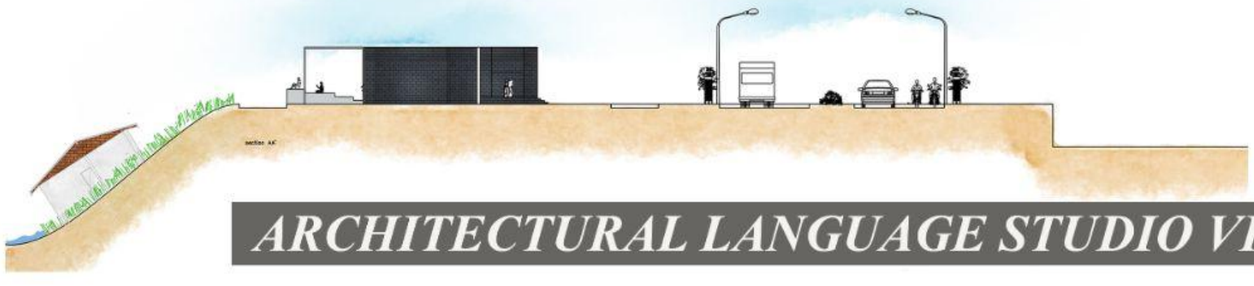
The groundwater and food contamination, associated health hazards, loss of natural river habitat, depletion of groundwater levels due to lack of water recharge, loss of flora and fauna, etc.

MAIN CAUSE OF POLLUTION

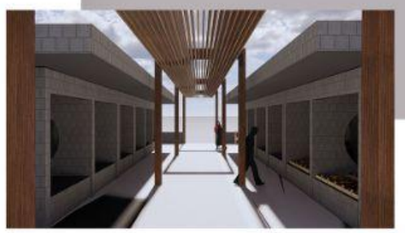
E.coli Bacteria just besides Sabarmati Gandhi ashram on the riverfront .

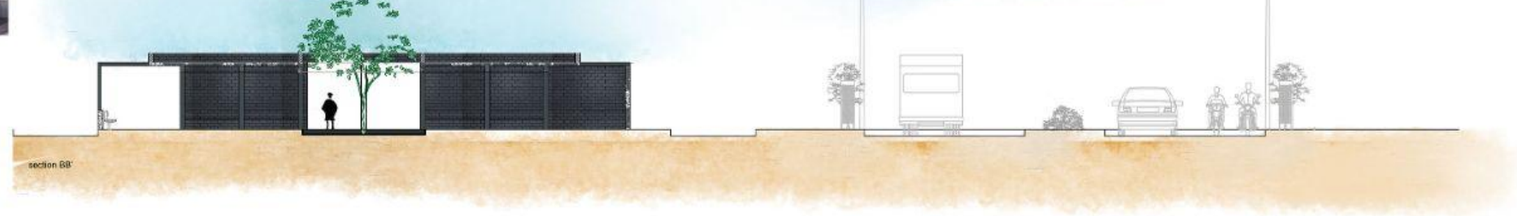


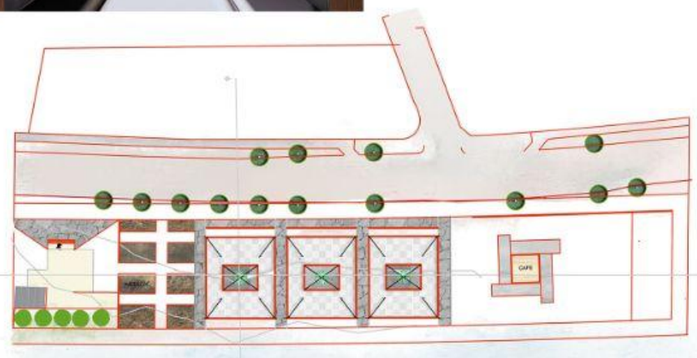
due to perennial waste discharges mainly from municipal drainage and industries.
There were not less than 40 outlets of storm-water drainage which carry nearly 225 MLD untreated sewage every day into the river



ARCHITECTURAL LANGUAGE STUDIO VII



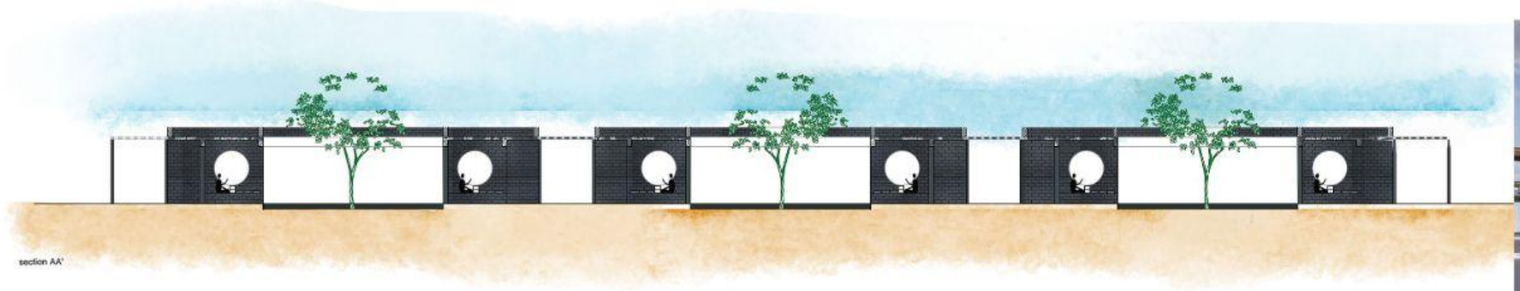




ROOF FLOOR PLAN

GROUND FLOOR PLAN

STRUCTURAL PLAN

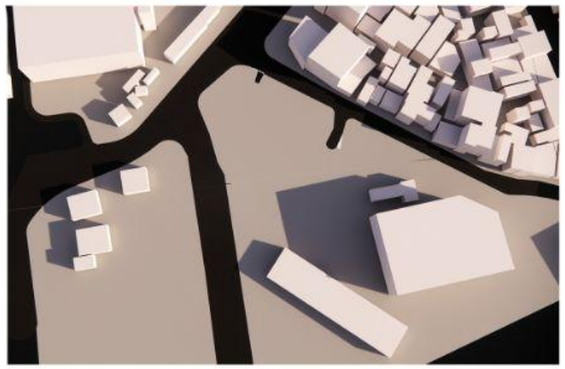


ARCHITECTURAL LANGUAGE STUDIO VII

BEEJ

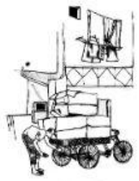
KALUPUR EAST SIDE

The site is in Kalupur ,Ahmedabad on the east side of the railway station.As analysed near the railway station area and due to the railway connecting routes it will help the slum area and residential areas to develop in an effective manner.On the site visit we saw a balanced perception of families according to the needs And resources Major occupations in the communityare tailor,auto rickshaw driver,vegetable and milk vendor ,embroidery work etc.



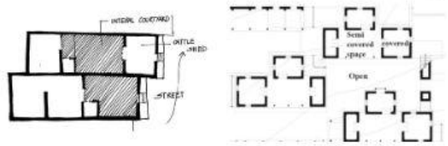
ISSUES

POTENTIALS



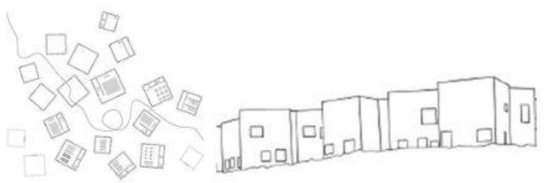
DESIGN INFRENCES

KHAMIR CRAFT RESOURCE CENTRE, BHUJ

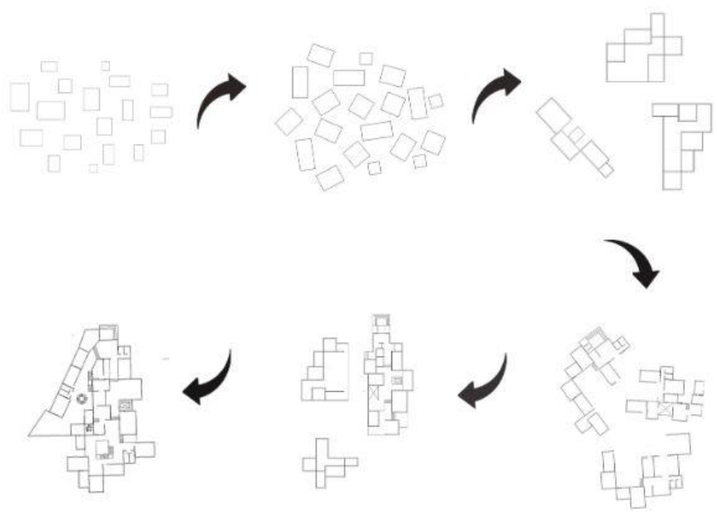


The Ronda Building / Estudio Lamela

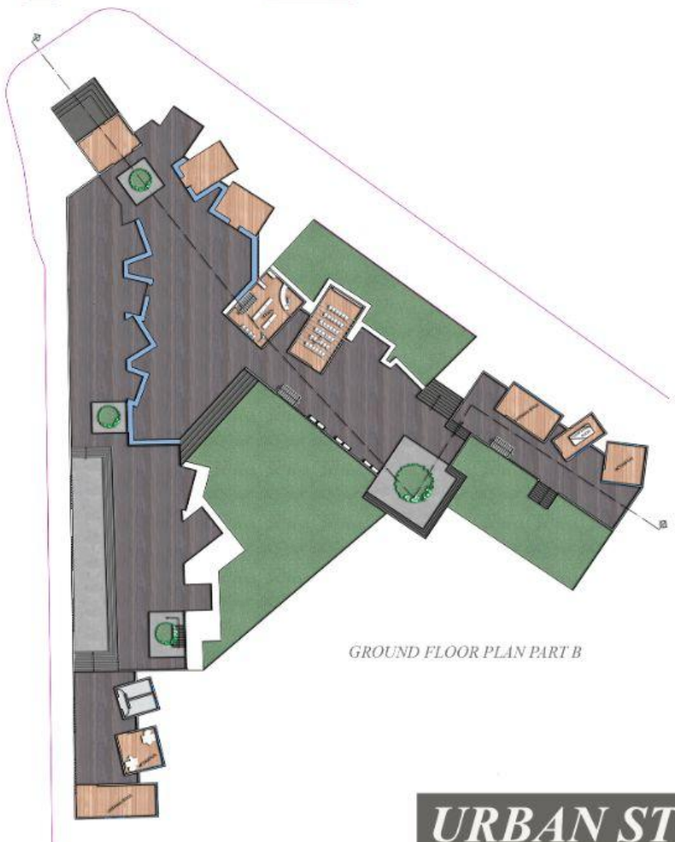
Children's Center for Psychiatric Rehabilitation



CONCEPTUAL DESIGN



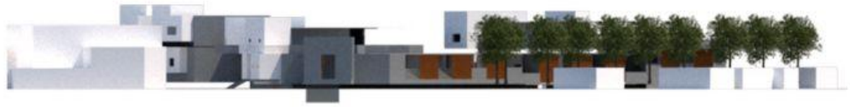
GROUND FLOOR PLAN PART A

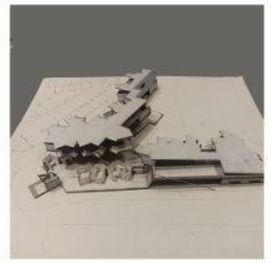


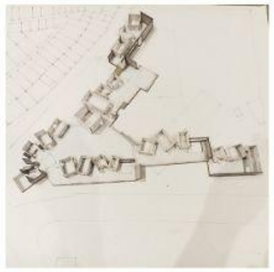
GROUND FLOOR PLAN PART B

URBAN STUDIO IX

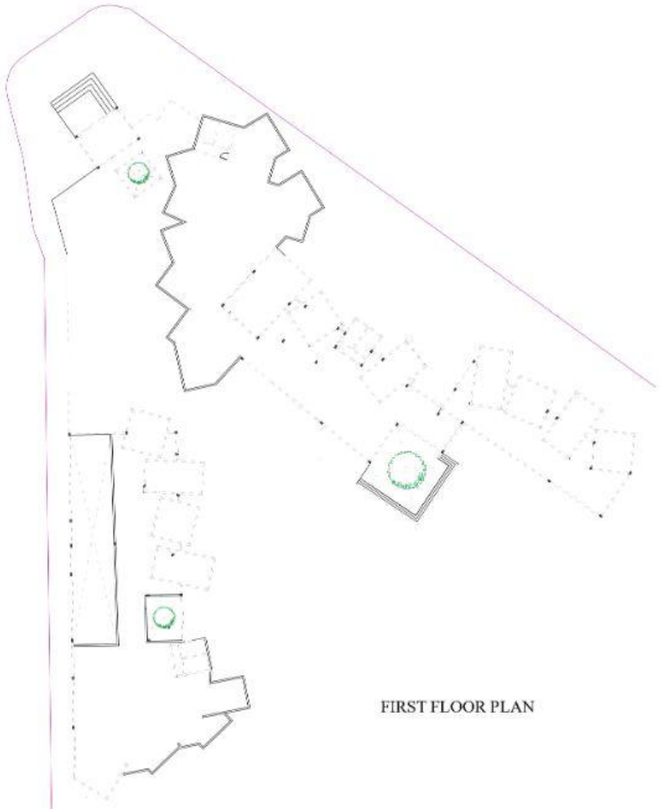
ELEVATIONS







FIRST FLOOR PLAN

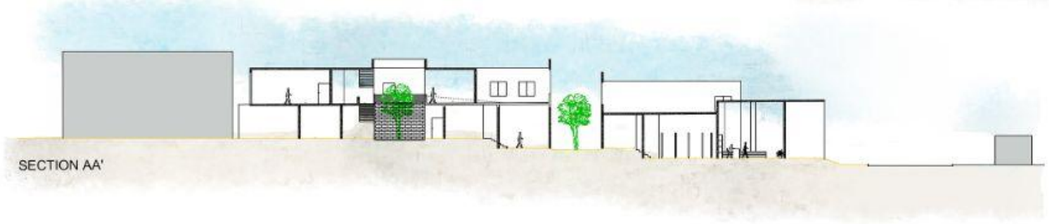


FIRST FLOOR PLAN

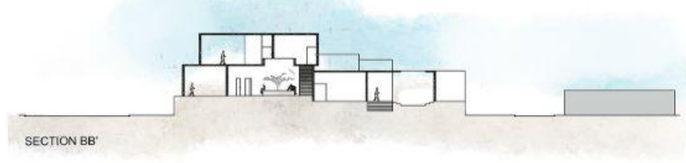
GROUND FLOOR PLAN

STRUCTURE PLAN

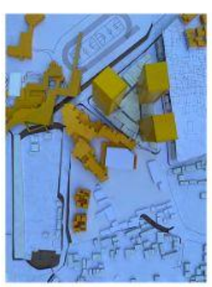
SECTION -CC'



SECTION AA'



SECTION BB'



URBAN STUDIO IX

A STUDY IN SOUNDSCAPES AND ITS MAPPING:A CASE OF IIM AND SARKHEJ ROZA IN AHMEDABAD

Abstract

This thesis examines how sound is represented in architecture with a special emphasis on the idea of soundscape. The theme and area of interest—the need to comprehend how sound is perceived in architecturalenvironments—are provided in the introduction. The importance of sound in the built environment and its potential to have a big impact on people's quality of life serve as the basis for this study. The scope of the work comprises an examination of the literature on soundscape and how it is represented in architecture.The definition of the soundscape and how it is represented acoustically are the main topics. Taking into account the context of the various buildings and the limited epistemological history of soundscape, it investigates the aural field and the difficulties of describing the soundscape through them.The components of architecture are covered, including both concrete and abstract elements like the constructed environment, the natural world, and formal components that create or modify the aural environment. In order to generate a good soundscape, the chapter also looks at how these components interact with one another and how they might be optimised.With the help of examples to illustrate the topic,It investigates the importance of new media, particularly audio and environmental media. In addition, the chapter looks at how technology can be used to represent and produce soundscapes.A sonic auto-ethnography methodology is used to examine the soundscape of two particular structures. This chapter seeks to provide readers a more thorough grasp of how sound is perceived in particular architectural settings.An experiential investigation of the architecture history of a site, including plan, section, and elevation analysis. In-depth study of the site's soundscape and recommendations for how to improve it are also provided in this chapter.The final chapter summarises the research and offers recommendations for how to portray sound in architectural design. It highlights the importance of architects taking the soundscape into account when planning structures and offers suggestions for improving the soundscape. For additional reading, the thesis includes references and a bibliography.

Introduction

-A soundscape encompasses all the sounds present in a location and emphasizes the interplay between individuals' or society's perception, understanding, and engagement with the auditory environment.
-Designers often overlook the aural component and primarily focus on visual aspects when considering fundamental design concepts.
-Aural architecture should be recognized as a crucial element of design principles because sound and hearing significantly influence the quality of spatial design.
-Soundscape architecture is an emerging field that aims to create a specific atmosphere and enhance occupants' experience by carefully designing the acoustic environment of a space, considering its acoustic characteristics, surroundings, and intended use..

Theme of interest

Soundscape architecture urges architects and designers to consider the auditory dimension of places, enhancing their liveliness and synergy with visual elements.This motivation has driven me to study soundscape architecture, recognizing the power of soundscapes and the aural environment in shaping architectural expressions.

Limitations:

Limited availability of time for conducting thorough research, analysis, and implementation of sound design principles within the given project timeframe.Limited access to specific locations or restricted areas of the building s, hindering the ability to gather comprehensive data and insights for the soundscape design process.Challenges in accessing diverse locations or environments to explore different soundscapes, which may restrict the scope of the project.

Scope:

Resemblance of the Building: Exploring the architectural resemblance between Sarkhej Roza and IIM Ahmedabad to identify common design elements and spatial characteristics that can inform the soundscape architecture.Serve Node to Situation: Considering the buildings' role as significant nodes or focal points within their respective contexts and to align with the specific situational requirements and functions.Fabric and Elements Used: Analyzing the building materials, textures, and elements employed in Sarkhej Roza and IIM Ahmedabad known for their utilization of light, and studying how these aspects can be translated into the perception of sound as a perpetual dimension.

Research Questions

How is sound represented and integrated within the architectural design process?
What innovative strategies or approaches are employed to incorporate sound in the visual representation and communication of architectural designs?

How ?

How are sound and architecture related to each other to create a soundscape?

How architectural elements (physical embodied functions) create opportunities for soundscape that affect senses by design?

What ?

In what ways can architectural representations account for the aural experience and spatial qualities of a built environment?

Why ?

To propose and demonstrate a toolkit in action,depending on how the soundscape is used in different structures

RESEARCH THESIS X

LITERATURE REVIEW

In the book ,Kang, J., & Schulte-Fortkamp, B. (2018b). Soundscape and the Built Environment describes

-Schafer's book "Our Sonic Environment and The Tuning Of The World" is a comprehensive guide to creatively exploring soundscapes, providing a broad overview of the field of acoustic ecology and its historical context.
-The book covers various aspects often overlooked in modern analyses, including the transition from aural to visual societies, the impact of post-industrial soundscapes on quality of life, and methodologies for measuring and recording soundscapes.
-Schafer introduces the concept of a Soundscape Designer as a profession, emphasizing the positive contributions that individuals from different fields can make in improving the soundscape and suggesting a relevant pedagogy for soundscape understanding.

In the book ,Goldsmith, M. (2015). Sound: A Very Short Introduction describes

-Sound as a communication medium played a crucial role in the evolution of hearing, offering advantages over visual signals and providing insights into social conditions and societal evolution.
-Understanding the movement of sound and the relationship between the source and the listener is essential in shaping our sound experience, considering parameters such as diffraction, interference patterns, and the 3D distribution of loud and quiet areas.
-Sound encompasses both sensation and physical phenomena, transmitted through pressure waves in different mediums (solid, liquid, or gas), with the ability to create pleasant experiences, distract from unwanted noise, and even be utilized for measurement and localization purposes, such as acoustic emission in solids.

In the book ,Architecture and Movement: the Dynamic Experience Buildings and Landscapes described :

-The perception of the environment while walking involves both visual and auditory aspects, with sound playing a significant role in creating engaging and suitable spaces.
-Historical examples, such as medieval monasteries and constitutional walks,demonstrate the careful consideration of soundscapes and movement in indoor and outdoor environments, including the interplay between materials, spatial configurations, reverberation time, and ambient noise levels.
-Water sounds are highly preferred in soundscapes, and their incorporation in outdoor spaces, along with measures like steel barriers to reduce road noise, can enhance the overall soundscape experience. In indoor spaces, intentional arrangements, such as long enclosures, can create a sense of movement and allow individuals to engage with the spatial environment through sound.

Lynch, K. (1964). The Image of the City. MIT Press.

-the appearance of cities, if it is significant, and whether it can be altered. In addition to its various functions, the urban landscape is something to be observed, enjoyed, and remembered for. Giving the city a visual identity is a unique, relatively recent design challenge.
-In the book, Boston, Jersey City, and Los Angeles are examined as three American cities. It presents a strategy for how we might start addressing visual form at the urban scale and some basic design guidelines for cities.
- the principles of urban planning, focusing on how people see their cities. how individuals visualize the cities in which they reside and work. the methods through which people generate mental pictures and use those traits to design cities that are recognizable, appealing, and easy to navigate. uses the word "imageability" to characterize a city's ability to be mentally recreated.

Ching, F. D. K. (2014). Architecture: Form, Space, & Order. John Wiley & Sons.

-The introduction to form, space, and the rules that govern how they are organised in the built environment. Architecture relies on form and space to create a design vocabulary that is both fundamental and timeless.
-Examples from today, chosen to show the new shapes that go beyond the timeless components of fundamental statics
-New connections, interconnections, and degrees of meaning may be developed as the design concepts and elements become more accustomed to the user.the electronic component used to animate specific design choices made by designers throughout the creation of a project, including those involving scale and proportion.

Aburawis, A. a. M., & Yorukoglu, P. N. D. (2018d).

-An integrated framework on soundscape perception and spatial experience by adapting post-occupancy evaluation methodology. Building Acoustics,25(1),
-The article explains the thorough analysis of contemporary developments in research of spatial perception and soundscape perception. The post-occupancy evaluation (POE) is described in the final section, and a study design combining soundscape perception and space experience elements is suggested.aims to integrate such factorial variations and synthesise the diversity of soundscape classifications and schemes to create an integrated framework for soundscape perception and spatial experience through a systematic review of recent advancements and the post-occupancy evaluation methodology.
-Six merging elements are suggested based on soundscape perception analysis: 1.Sonic;2.Spatial;3.Temporal; 4.Psychological; 5.Behavioural; 6.Personal. Additionally, research on the space experience is evaluated, and five combined criteria are suggested:the user, the use, the architecture, the social context, and the physical environment.

Sonic auto Ethnography(methods)

Autoethnographic writings can bridge the roles of researcher, writer, and reader, allowing for the construction of a narrative that combines personal experiences and research.
The use of various techniques such as field recording, sound collage, installation, audio-visual composition, and performative action can create a cohesive collection of sonic autoethnographies.

Methods and tools in autoethnography

Archival research

Artifact analysis

Conversational engagement

Document analysis

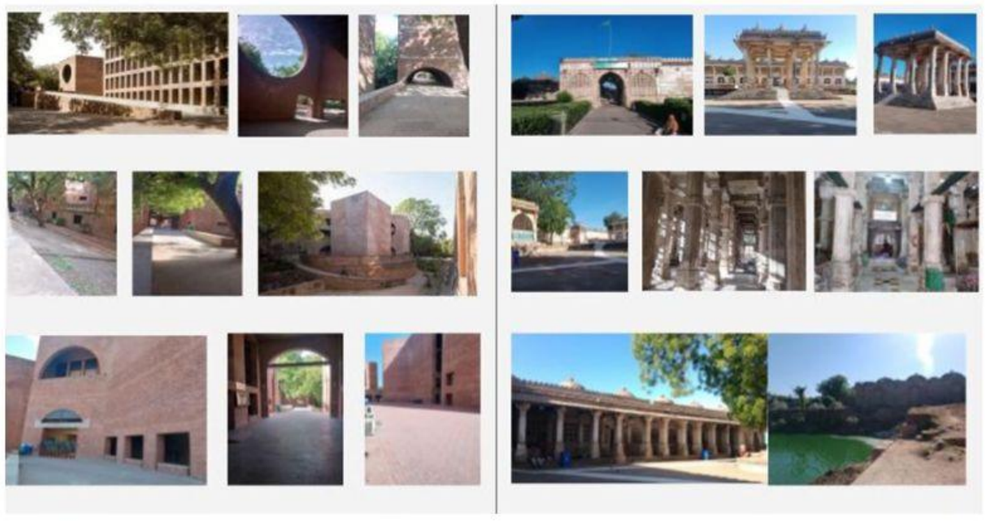
Field notes

Field observation

Thematic analysis

Journaling

Narrative analysis



ANALYSIS

IIM AHMEDABAD

-In 1962, Balkrishna Doshi approached Louis Kahn to design the Indian School of Management in Ahmedabad, India.
-The goal of the institution was to develop specialized professions through a new school of thought that included more western-style instruction and student participation.
-The design of the Indian Institute of Management included massive facade omissions that were abstracted motifs from Indian culture, serving as light wells and a natural cooling mechanism.
-The porous, geometric facade also allowed for the construction of new gathering places for students and professors.

DENSITY

Fig 90: (7:30am-9am)

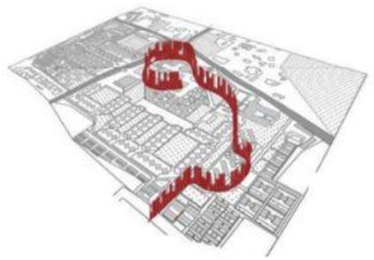
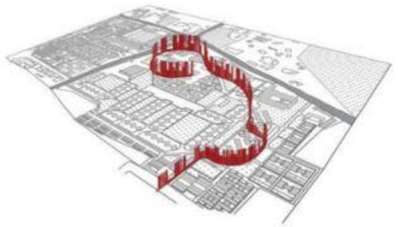


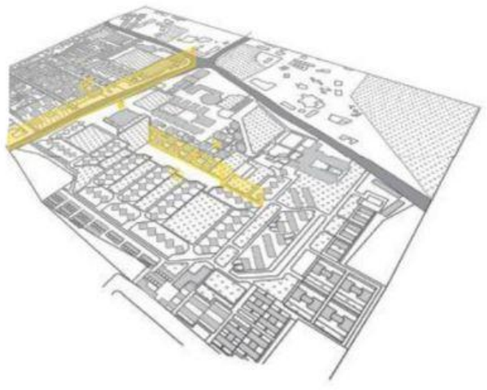
Fig 91 : (7:30pm-9pm)



Density

These green spaces act as visual and auditory buffers, mitigating the perceived density by introducing natural elements and soothing sounds, such as rustling leaves and flowing of air.These elements can counterbalance the visual density, making the space feel more welcoming and harmonious, ultimately promoting a calm and pleasant experience for its occupants.

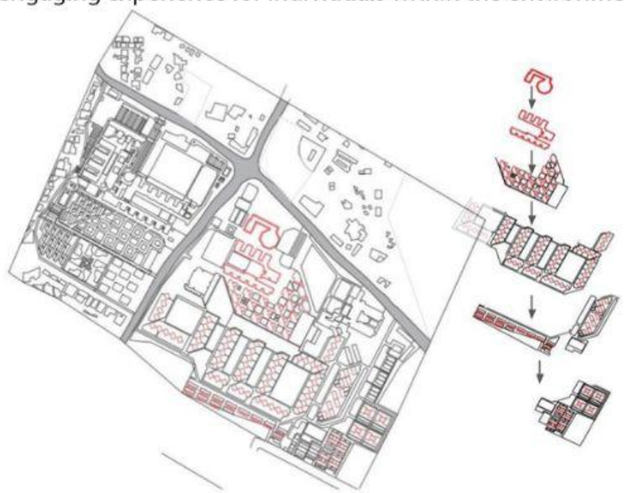
EDGES



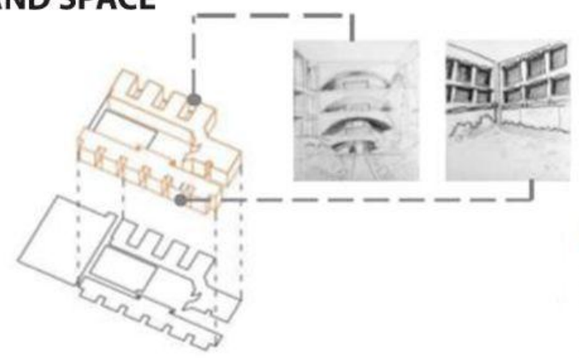
"Edges" refers to the boundaries or transitional spaces between different sound environments or acoustic zones, involving how sound interacts with physical elements and spatial arrangements. These elements create an interplay of boundaries and transitions within soundscape architecture,shaping the overall auditory experience of a place. The voices,traffic sounds, and wind in trees interact to define and shape the acoustic spaces, influencing individuals' perception and navigation within the environment.The dynamics of these sounds at the edges evoke a sense of place, reflecting the unique characteristics of the location and its relationship with both urban and natural elements.

Hierarchy

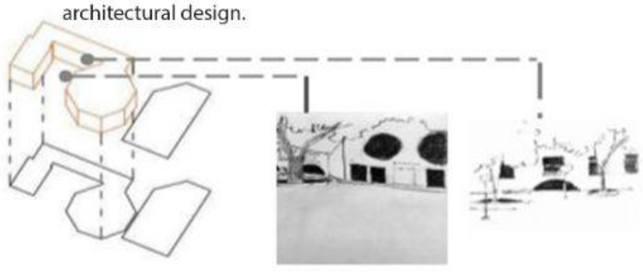
Alignment in soundscape architecture establishes order and guides the viewer's attention by creating a subconscious flow along lines. Similarly, the organization and prioritization of sound sources based on their significance and function result in an intentional and well-balanced auditory experience, emphasizing desired focal points. This involves arranging and distributing sound sources strategically within a space, utilizing elements such as speakers, acoustic design, and architectural features to shape sound propagation and perception. Through these design choices, soundscape architects establish a spatial hierarchy that enhances the overall auditory perception, ensuring a deliberate and engaging experience for individuals within the environment.



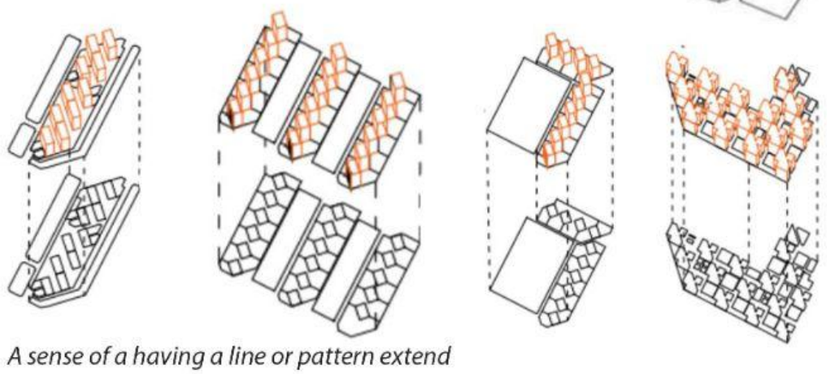
FORM AND SPACE



Form refers to the physical structure and arrangement of architectural elements, which can shape sound propagation and influence the overall auditory experience. Intensity plays a crucial role in highlighting architectural features by strategically modulating sound levels, creating focal points or moments of emphasis. Context considers the surrounding environment, cultural context, and functional requirements, influencing the design choices and ensuring harmonious integration of sound within the space enhancing the experiential and aesthetic qualities of the architectural design.



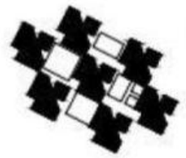
SYMMETRY



A sense of a having a line or pattern extend

Achieved when recurring position,size,colour and use of a graphic elementhas a focal point interruption. This spatial balance can have an impact on the soundscape by creatinga sense of coherence and unity .It can also enhance the clarity and intelligibility of sounds,allowing for a more effortless navigation and understanding of the space.

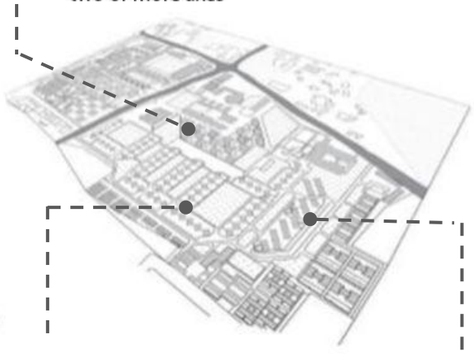
ORGANIZATION

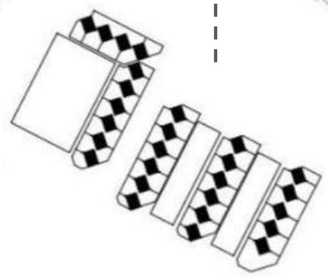


Centralized organizations

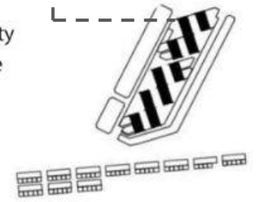
The secondary spaces of the organization may be equivalent to one another in function, form, and size, and create an overall configuration that is geometrically regular and symmetrical about two or more axes

The form of a linear organization is inherently flexible and can respond readily to various conditions of its site. It can be straight, segmented, or curvilinear. It can run horizontally across its site, diagonally up a slope, or stand vertically as a tower

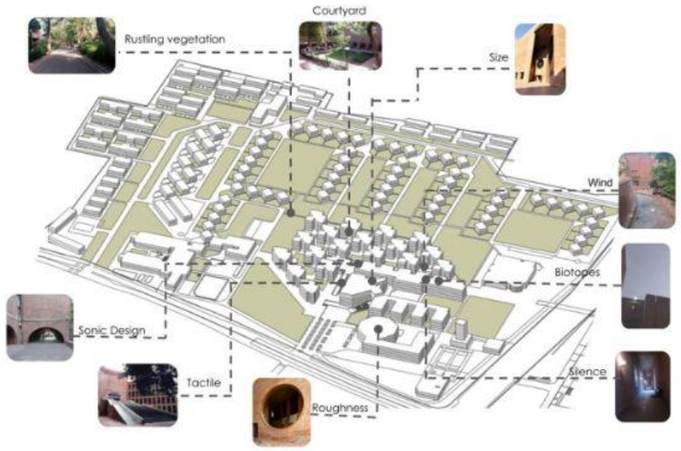




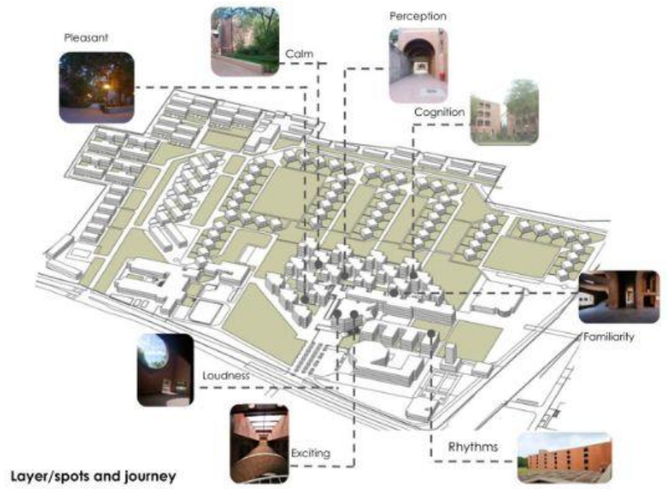
A clustered organization relies on physical proximity to relate its spaces to one another. It often consists of repetitive, cellular spaces that have similar functions and share a common visual trait such as shape or orientation



Rhythms can be used to create a sense of order and structure in the soundscape of an organization. Alteration of space can be used to create different acoustic environments that reinforce the values and culture of the organization. Sound art can be used to create a unique soundscape that reflects the identity of the organization



Typology(Building aural experience)

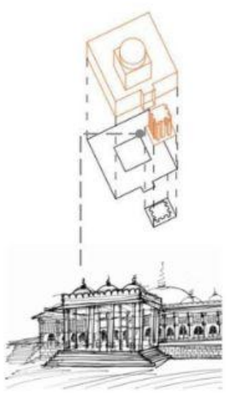


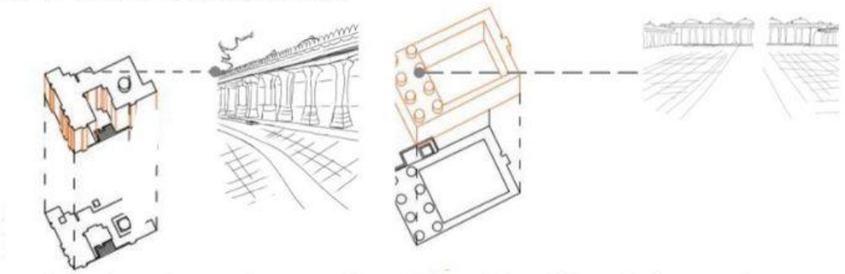
Layer/spots and journey

Sarkhej Roza

-It was a significant hub of Sufi culture in the nation while Shaikh Ahmed Ganj Baksh lived in Sarkhej.
-It was established by Sultan Ahmed Shah as his capital on the advice of the saint who lived there.
-The complex includes a historic mosque, library, lake, gardens, and palace remains, and is dedicated to Sheikh Ahmed Khattu.

Symmetry





Spatial balance in soundscape architecture is achieved through the recurring positioning, size, color, and use of graphic elements, which creates a focal point interruption. This balance has an impact on the soundscape by fostering coherence and unity, enhancing the clarity and intelligibility of sounds, and facilitating effortless navigation and understanding of the space. It creates a sense of continuity and extension, providing a clear line or pattern that guides individuals within the environment.

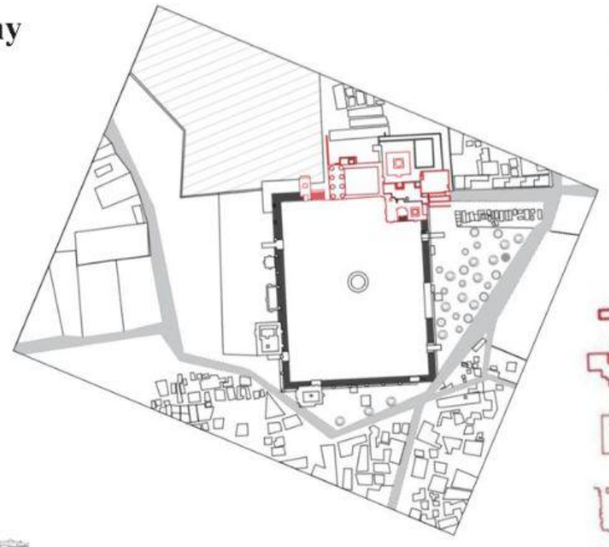
Density

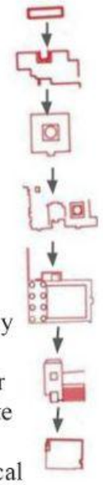
(7:30am-9am)

(7:30pm-9pm)

Density can be related to the arrangement and distribution of sound sources, as well as the overall richness of the auditory environment. Ensuring a balanced distribution of sound sources and managing their volume levels can help create a pleasant auditory experience.Incorporating elements of nature, such as flowing water, bird songs, or gentle breezes, can contribute to a pleasant soundscape

Hierarchy

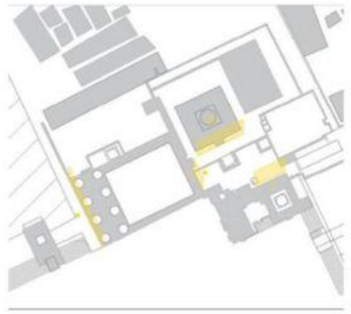




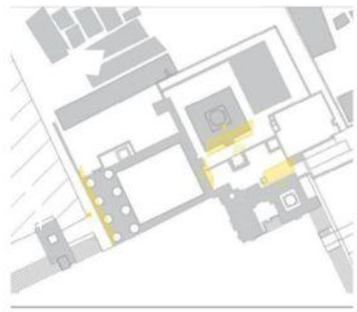
Order between design elements is often created through alignment, guides a viewer's eye around a page by allowing them to subconsciously follow lines.This involves organizing and prioritizing different sound sources based on their significance, function, and desired impact.It create an intentional and balanced auditory experience that directs attention and enhances the desired focal points.the arrangement and organization of sound within a space. It involves considering the distribution and placement of sound sources to create a spatial hierarchy. This can be achieved through strategic positioning of speakers, acoustic design elements, or architectural features that shape the propagation and perception of sound.

Edge

(7:30am-9am)



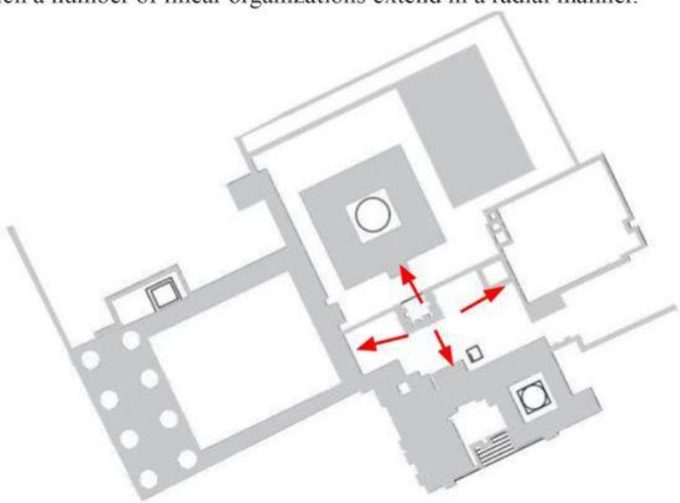
(7:30pm-9pm)



Edges refer to the boundaries or transitions between different spaces or elements within a soundscape. The combination of two voices, silence, and the sound of water can create distinct auditory zones or areas.These zones can be separated by edges,such as physical barriers or spatial arrangements, that define the boundaries between thedifferent sonic elements. Bycreating a clear edge between areas of silence and areas with the sound of water, the contrastbetween the two becomes more pronounced. This contrast can draw attention to both elements and create a sense of balance and harmony within the soundscape and the experience a seamless transition from stillness to the soothing qualities of water, promoting relaxation and reflection.

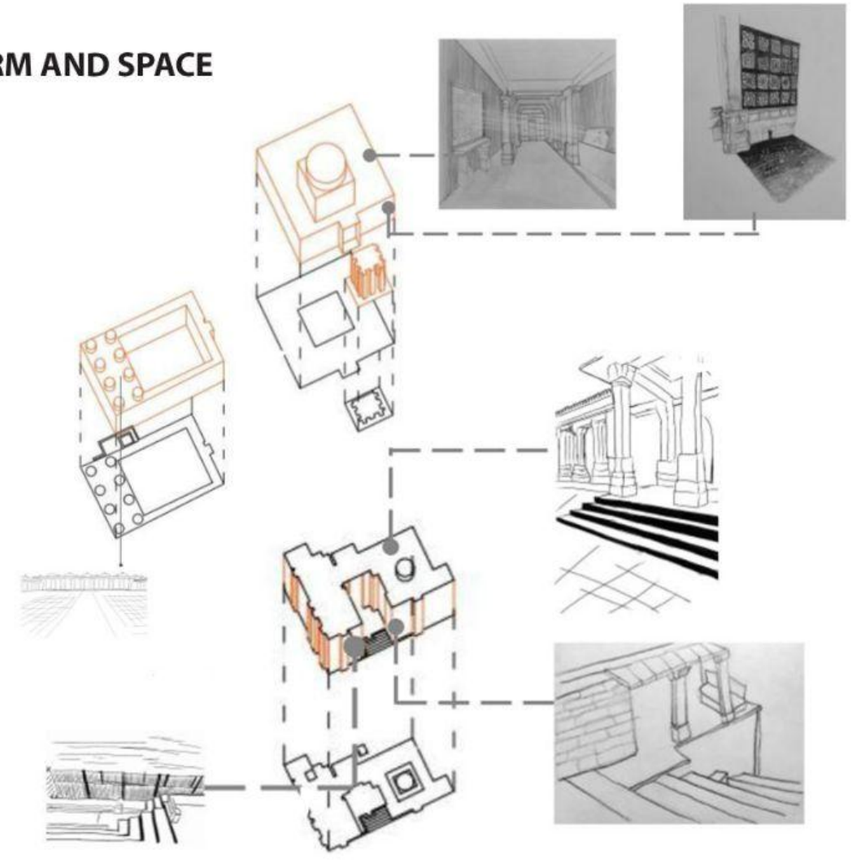
Organization

A radial organization of space combines elements of both centralized and linear organizations. It consists of a dominant central space from which a number of linear organizations extend in a radial manner.

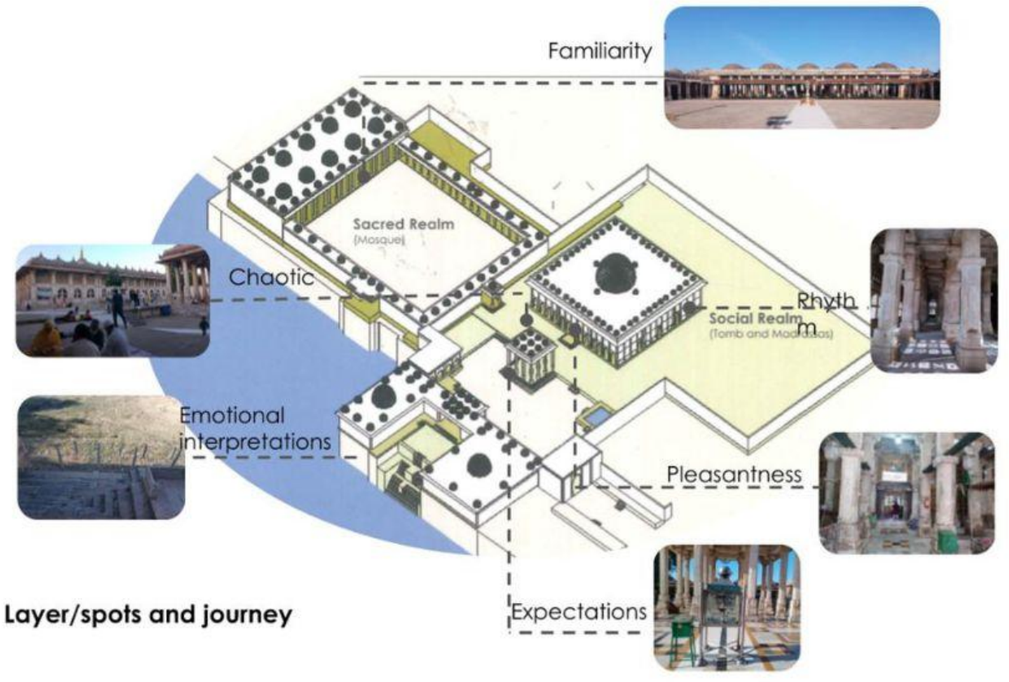


The organization's presence is like the gentle yet powerful whisper of wind in trees, echoing their commitment to adapt to changing circumstances while maintaining a sense of calm and resilience.. The harmonious symphony of wind in trees, the ever-flowing melodies of water, and the enduring strength of limestone encapsulate the spirit of this organization.

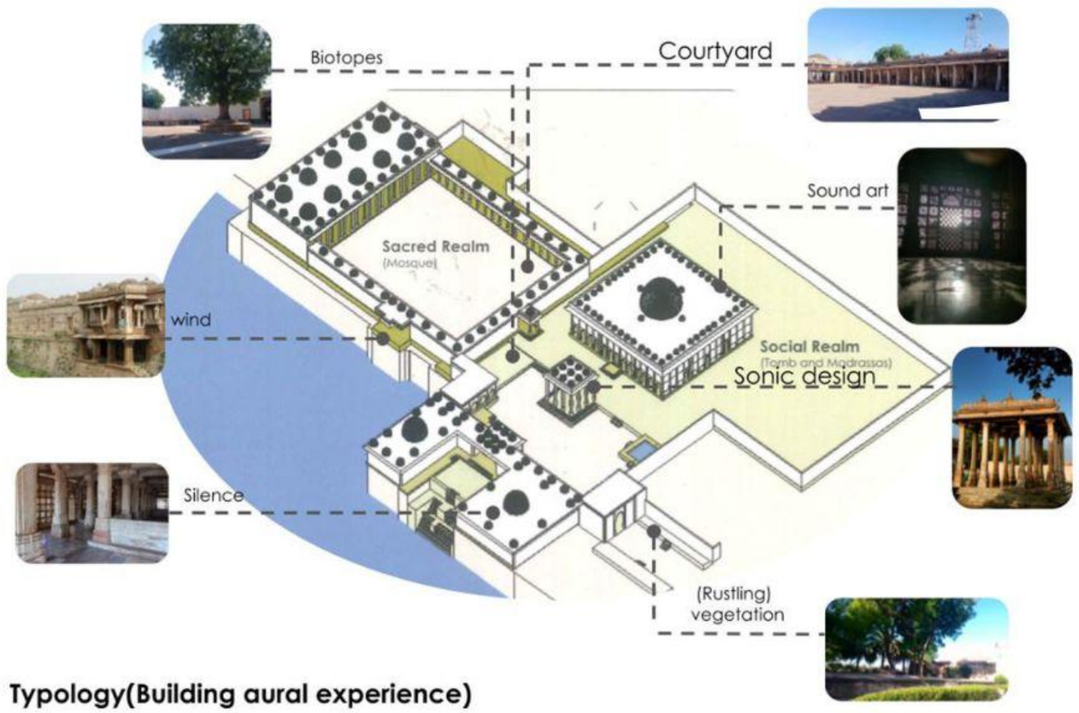
FORM AND SPACE



Form refers to the physical structures, while space refers to the environment or area in which sounds exist. Strategic placement of openings or skylights can allow high altitude winds to flow through, creating a natural soundscape with echoing effects.These elements can create unique sound interactions, amplifying or modulating the wind's sound as it passes through or around them.Openings or grilles strategically positioned to catch the wind can create specific sound effects, enhancing the overall sonic experience of a space.the acoustic qualities of the fire's crackling sounds, creating a focal point for community and reflection.



Layer/spots and journey



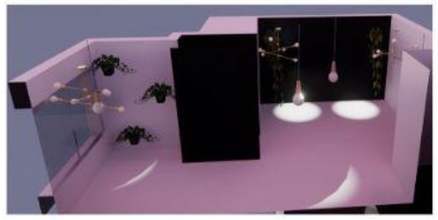
Typology(Building aural experience)

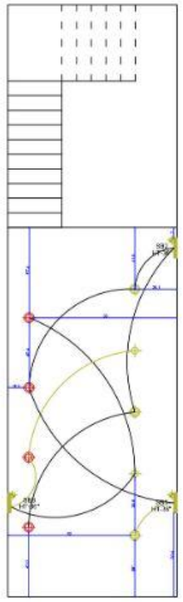
Conclusion

A practical approach to the sounds of spaces, how they might be more vibrant, and how they can support the visual features of architecture.Aural architecture should be considered an essential component of design principles because sound and hearing have an impact on the quality of space design. The three core elements of soundscape studies are sound, environment, and humans, Studying one or more of these elements results in the classic fields of landscape, physiological, and environmental acoustics (The sounds that birds and amphibians generate can be muffled by wind, moving water, and human-made noise.All of these signals-natural and synthetic-are synthesised to produce the soundscape. The phrase "soundscape" refers to both the acoustic environment of the natural world including noises made by animals, trees, water, weather, etc.) and sounds created by humans (including musical compositions, sounds from human activities, sounds from machines, etc.) The study attempts to demonstrate how sound and sight we interact to provide visitors with on aural experience in both natural and man-made environments. an aesthetic perspective and concentrates on the essential characteristics of sound in connection to public open space, as well as its interaction with people and ecosystems. the relationship between sound, architectural components, and spatiality creates an impact on the whole of the auditory resources-both natural and man-made-in a given area. The study presents five criteria for the development of the sound-space: diagrammatic/dynamic structure, immersion size, multidisciplinary, interactivity, and listening/hearing.

EXPRESSO CAFE

THE CAFE IS BEEN DESIGNED KEEPING IN MIND THE LIGHT OR HAPPINESS AND DARK OR SADNESS THEME WHERE IN THE LIGHT THEME EVERYTHING IS IN BRIGHT LIGHTS AND COLOURS AND IN DARK BLACK IS BEEN IMPLEMENTED ACCORDING TO THE HUMANS EMOTIONS

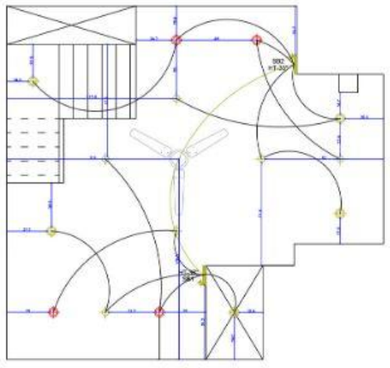




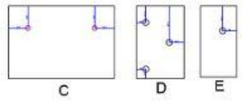
LEGEND

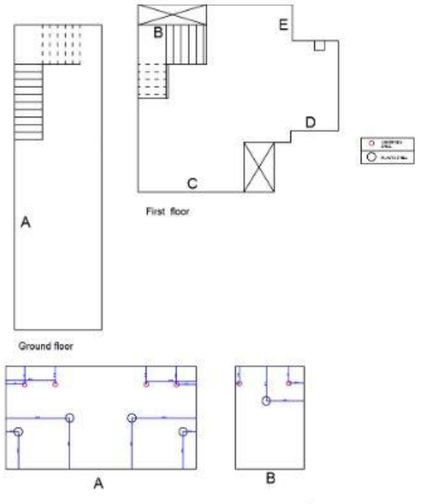
ROPE LIGHT
Wall Point
Switch Board
Single Way
Two Way Light

Ground floor

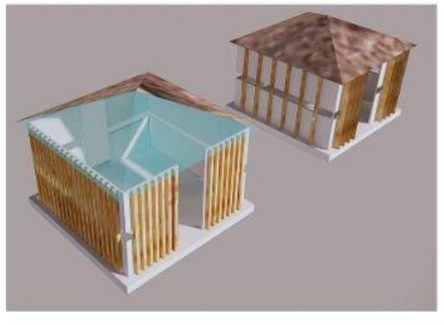


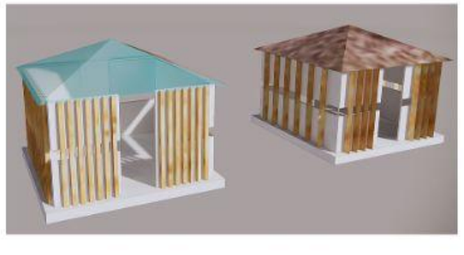
First floor



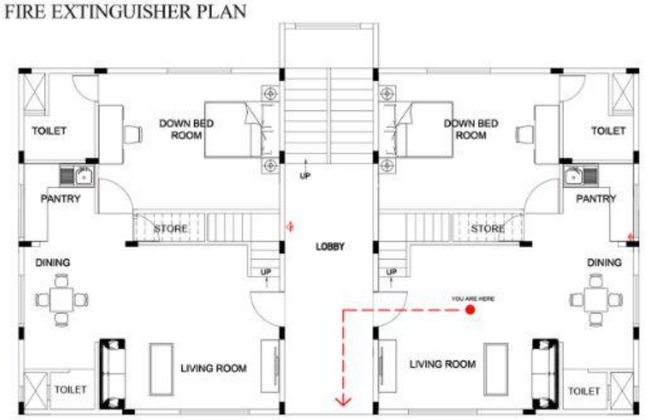


MAHINDRA CLUB RESORT HATGAD,NASIK

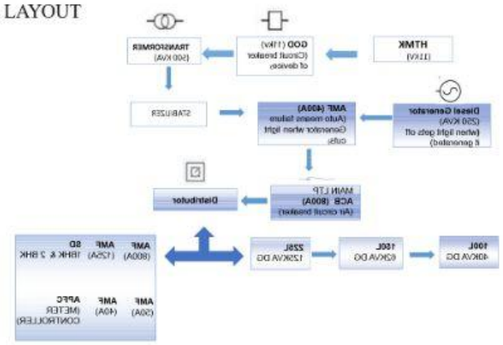




FIRE EXTINGUISHER PLAN

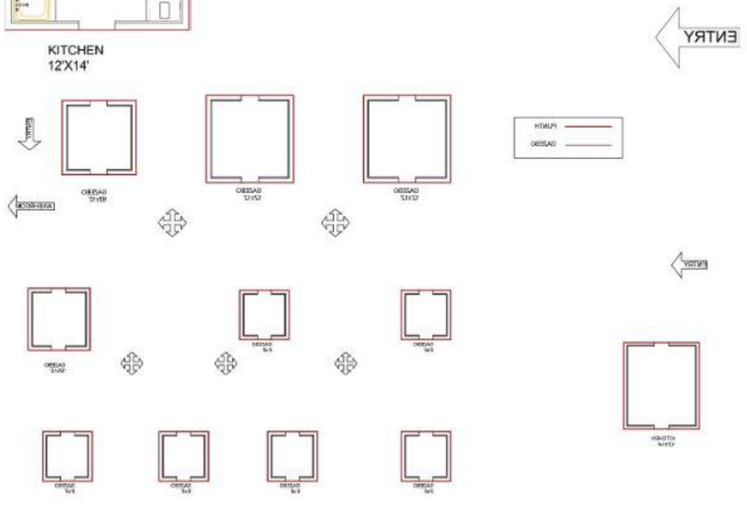


ELECTRICAL LAYOUT



TERRACE AREA LAYOUT

KITCHEN
12'X14'



MISCELLENEOUS

THANK YOU!